

**ROG  
MAXIMUS  
XII APEX**

**ASUS**

**Motherboard**

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# Contents

Safety information.....	v
About this guide.....	vi
ROG MAXIMUS XII APEX specifications summary.....	vii
Connectors with shared bandwidth.....	xii
Package contents.....	xiv
Installation tools and components.....	xv

## Chapter 1: Product Introduction

1.1 Before you proceed.....	1-1
1.2 Motherboard layout.....	1-2

## Chapter 2: Basic Installation

2.1 Building your PC system.....	2-1
2.1.1 CPU installation.....	2-1
2.1.2 Cooling system installation.....	2-3
2.1.3 DIMM installation.....	2-5
2.1.4 M.2 installation.....	2-6
2.1.5 Motherboard installation.....	2-8
2.1.6 ATX power connection.....	2-9
2.1.7 SATA device connection.....	2-10
2.1.8 Front I/O connector.....	2-11
2.1.9 Expansion card installation.....	2-12
2.1.10 Wi-Fi antenna installation.....	2-14
2.1.11 Removing the PCB piece (optional).....	2-15
2.2 BIOS update utility.....	2-16
2.3 Motherboard rear and audio connections.....	2-17
2.3.1 Rear I/O connection.....	2-17
2.3.2 Audio I/O connections.....	2-18
2.4 Starting up for the first time.....	2-21
2.5 Turning off the computer.....	2-21

## Chapter 3: BIOS and RAID Support

3.1 Knowing BIOS.....	3-1
3.2 BIOS setup program.....	3-2
3.3 EZ Update.....	3-2
3.4 ASUS EZ Flash 3.....	3-3
3.5 ASUS CrashFree BIOS 3.....	3-4
3.6 RAID configurations.....	3-5

## Appendix

Q-Code table .....	A-1
Notices .....	A-5
ASUS contact information.....	A-12

# 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.

## 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](http://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 manual.



**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 MAXIMUS XII APEX specifications summary

CPU	<p>Intel® Socket LGA1200 for 10<sup>th</sup> Gen Intel® Core™ Pentium® Gold and Celeron® processors*</p> <p>Supports Intel® 14 nm CPU</p> <p>Supports Intel® Turbo Boost Technology 2.0 and Intel® Turbo Boost Max Technology 3.0**</p> <p>* Refer to <a href="http://www.asus.com">www.asus.com</a> for CPU support list.</p> <p>** Intel® Turbo Boost Max Technology 3.0 support depends on the CPU types.</p>
Chipset	Intel® Z490 Chipset
Memory	<p>2 x DIMM, Max. 64GB, DDR4 5000+(OC) / 4900(OC) / 4800(OC) / 4700(OC) / 4600(OC) / 4500(OC) / 4400(OC) / 4266(OC) / 4133(OC) / 4000(OC)* / 3866(OC)* / 3733(OC)* / 3600(OC)* / 3466(OC)* / 3400(OC)* / 3333(OC)* / 3300(OC)* / 3200(OC)* / 3000(OC)* / 2933 / 2800 / 2666 / 2400/2133 MHz Non-ECC, Un-buffered Memory*</p> <p>Dual Channel Memory Architecture</p> <p>Supports Intel® Extreme Memory Profile (XMP)</p> <p>OptiMem III</p> <p>* Double Capacity DRAM support depends on the DRAM Models.</p> <p>* 10<sup>th</sup> Gen Intel® Core™ i9/i7 CPUs support 2933/2800/2666/2400/2133 natively, Refer to <a href="http://www.asus.com">www.asus.com</a> for the Memory QVL (Qualified Vendors Lists).</p>
Expansion Slots	<p><b>Intel® 10<sup>th</sup> Gen Processors*</b></p> <p>2 x PCIe 3.0 x16 slots (support x16 or x8/x8 modes)</p> <p><b>Intel® Z490 Chipset</b></p> <p>1 x PCIe 3.0 x4 slot</p> <p>1 x PCIe 3.0 x1 slots</p> <p>* Support PCIe bifurcation for RAID on CPU function.</p>
Multi-GPU support	<p>Supports NVIDIA 2-Way SLI® Technology</p> <p>Supports AMD 2-Way CrossFireX™ Technology</p>
Storage	<p><b>Total supports 3 x M.2 slots and 8 x SATA 6Gb/s ports</b></p> <p><b>Intel® Z490 Chipset</b></p> <p>DIMM.2_1 slot (Key M) via ROG DIMM.2, type 2242/2260/2280/22110 (supports PCIe 3.0 x4 &amp; SATA modes)*</p> <p>DIMM.2_2 slot (Key M) via ROG DIMM.2, type 2242/2260/2280/22110 (supports PCIe 3.0 x4 &amp; SATA modes)**</p> <p>M.2_1 slot (Key M), type 2242/2260/2280(supports PCIe 3.0 x4 mode)***</p> <p>8 x SATA 6Gb/s ports</p> <p>Intel® Rapid Storage Technology supports Raid 0,1,5,10</p> <p>Intel® Optane™ Memory Ready</p> <p>* When DIMM.2_1 slot is running at SATA mode, SATA6G_12 will be disabled.</p> <p>** When DIMM.2_2 slot is populated, SATA6G_56 will be disabled.</p> <p>*** M.2_1 shares bandwidth with PCIe x4 slot, when M.2_1 is populated with a x2 device, PCIe x4 slot will run at x1 mode, when M.2_1 is populated with a x4 device, PCIe x4 slot will be disabled.</p>

(continued on the next page)

## ROG MAXIMUS XII APEX specifications summary

Ethernet	1 x Intel® I225-V Ethernet ASUS LANGuard
Wireless & Bluetooth	Intel® Wi-Fi 6 AX201 2x2 Wi-Fi 6 (802.11 a/b/g/n/ac/ax) support 1024QAM/OFDMA/MU-MIMO Supports up to 2.4Gbps max data rate Supports 2.4/5GHz Dual-Band Supports channel bandwidth: HT20/HT40/HT80/HT160 Supports CNVI interface Bluetooth v5.1* * BT 5.1 function will be ready in Windows 10 build 19041 or later.
USB	<b>Rear USB (Total 10 ports)</b> 5 x USB 3.2 Gen 2 ports (4 x Type-A + 1 x USB Type-C®) 5 x USB 3.2 Gen 1 ports (5 x Type-A) <b>Front USB (Total 8 ports)</b> 1 x USB 3.2 Gen 2 front panel connector (supports USB Type-C®) 1 x USB 3.2 Gen 1 header supports additional 2 USB 3.2 Gen 1 ports 3 x USB 2.0 headers support additional 5 USB 2.0 ports
Audio	<b>ROG SupremeFX 8-Channel High Definition Audio CODEC S1220A</b> - Impedance sense for front and rear headphone outputs - 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/192kHz playback* <b>Audio Features:</b> - SupremeFX Shielding Technology - Gold-plated audio jacks - Rear optical S/PDIF out port - Premium Japanese audio capacitors * Due to limitations in HDA bandwidth, 32-Bit/192kHz is not supported for 8-Channel audio.
Back Panel I/O Ports	5 x USB 3.2 Gen 2 ports (4 x Type-A, 1 x USB Type-C®) 5 x USB 3.2 Gen 1 ports (5 x Type-A) 1 x ASUS Wi-Fi Module 1 x Intel® I225-V Ethernet port 5 x Gold-plated audio jacks 1 x Optical S/PDIF out port 1 x BIOS FlashBack™ button 1 x Clear CMOS button 1 x PS/2 mouse (green) port 1 x PS/2 keyboard (purple) port

(continued on the next page)



# ROG MAXIMUS XII APEX specifications summary

## Internal I/O connectors

### Fan and cooling related

- 1 x 4-Pin CPU Fan header
- 1 x 4-Pin CPU OPT Fan header
- 1 x 4-Pin AIO Pump header
- 3 x 4-Pin Chassis Fan headers
- 2 x 4-Pin Full Speed Fan headers
- 1 x W\_PUMP+ header

### Power related

- 1 x 24-pin Main Power connector
- 2 x 8-pin +12V Power connector
- 1 x 4-Pin EZ\_PLUG connector

### Storage related

- 1 x M.2 slots (Key M)
- 1 x DIMM.2 slot supports 2 x M.2 slots (Key M)
- 8 x SATA 6Gb/s ports

### USB

- 1 x USB 3.2 Gen 2 Front Panel connector (supports USB Type-C®)
- 1 x USB 3.2 Gen 1 header supports additional 2 USB 3.2 Gen 1 ports
- 3 x USB 2.0 headers support additional 5 USB 2.0 ports

### Miscellaneous

- 2 x AURA Addressable Gen 2 headers
- 1 x AURA RGB headers
- 1 x BIOS Switch button
- 1 x Clear CMOS header
- 1 x FlexKey button
- 1 x Front Panel Audio Header (AAFP)
- 1 x FS Mode switch
- 1 x LN2 Mode jumper
- 1 x Pause switch
- 8 x Probelts Measurement Points
- 1 x ReTry button
- 1 x RSVD switch
- 1 x Safe Boot button
- 1 x Slow Mode switch
- 1 x Speaker header
- 1 x Start button
- 1 x 10-1 pin System Panel header
- 1 x Thermal Sensor header
- 1 x Thunderbolt header

*(continued on the next page)*

# ROG MAXIMUS XII APEX specifications summary

<b>Special Features</b>	<p><b>ROG Extreme OC kit</b></p> <ul style="list-style-type: none"><li>- EZ PLUG</li><li>- FlexKey button</li><li>- LN2 Mode</li><li>- Probelt</li><li>- ReTry button</li><li>- Safe boot button</li><li>- Start button</li><li>- Slow Mode</li></ul> <p><b>Extreme Engine Digi+</b></p> <ul style="list-style-type: none"><li>- 10K Black Metallic Capacitors</li><li>- Infineon TDA21472 Power Stage</li><li>- MicroFine Alloy Choke</li></ul> <p><b>ASUS Q-Design</b></p> <ul style="list-style-type: none"><li>- ASUS Q-Code</li><li>- ASUS Q-Connector</li><li>- ASUS Q-DIMM</li><li>- ASUS Q-LED (CPU [red], DRAM [yellow], VGA [white], Boot Device [yellow green])</li><li>- ASUS Q-Slot</li></ul> <p><b>ASUS Thermal Solution</b></p> <ul style="list-style-type: none"><li>- Aluminum M.2 heatsink cover</li></ul> <p><b>ASUS EZ DIY</b></p> <ul style="list-style-type: none"><li>- BIOS FlashBack™ button</li><li>- Clear CMOS button</li><li>- Procool II</li><li>- Pre-mounted I/O shield</li><li>- SafeSlot</li></ul> <p><b>AURA Sync</b></p> <ul style="list-style-type: none"><li>- Standard RGB header</li><li>- Addressable Gen 2 RGB headers</li></ul> <p><b>Dual BIOS</b></p>
<b>Software Features</b>	<p><b>ROG Exclusive Software</b></p> <ul style="list-style-type: none"><li>- Mem Tweakit</li><li>- RAMCache III</li><li>- ROG CPU-Z</li><li>- Overwolf</li><li>- BullGuard Internet Security (1-year full version)</li></ul>

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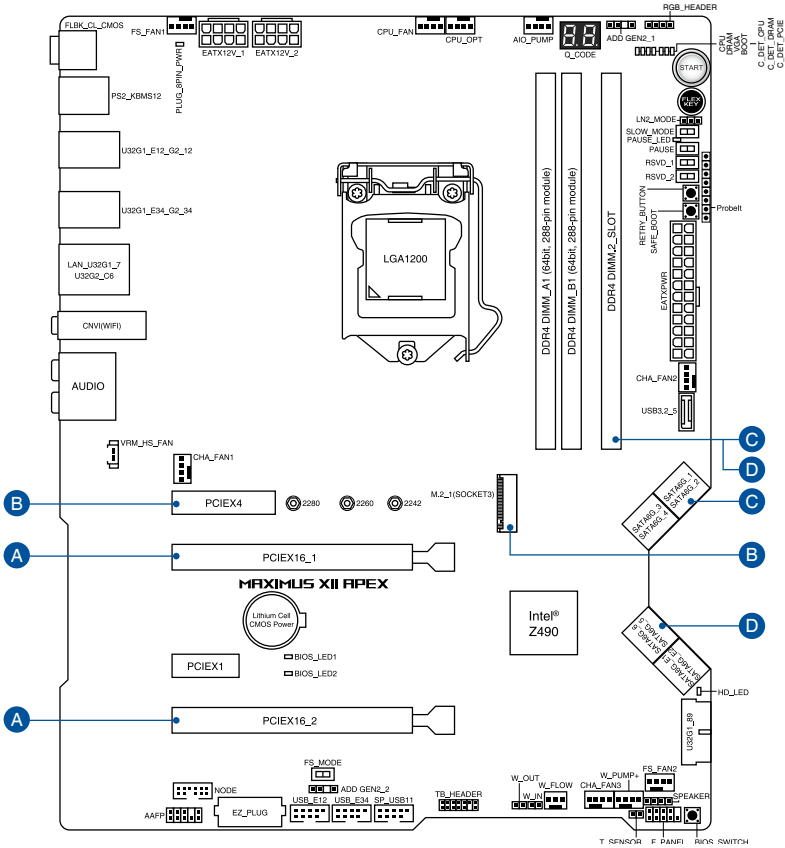
# ROG MAXIMUS XII APEX specifications summary

<b>Software Features</b>	<b>ASUS Exclusive Software Features</b>
	Armoury Crate
	- Aura Creator
	- Aura Sync
	AI Suite 3: 5-Way Optimization with AI Overclocking
	TPU
	EPU
	DIGI+ Power Control
	Fan Xpert 4
	Turbo APP
- EZ Update	
WinRAR	
<b>UEFI BIOS</b>	
AI Optimization Guide	
ASUS EZ DIY	
- ASUS CrashFree BIOS 3	
- ASUS EZ Flash 3	
FlexKey	
<b>BIOS</b>	2 x 256 Mb Flash ROM, UEFI AMI BIOS
<b>Manageability</b>	WOL by PME, PXE
<b>Operating System</b>	Windows® 10 - 64 bit
<b>Form Factor</b>	ATX Form Factor
	12 inch x 9.6 inch (30.5 cm x 24.4 cm)



Specifications are subject to change without notice. Please refer to the ASUS website for the latest specifications.

# Connectors with shared bandwidth



Configuration	1	2
<b>A</b>		
PCIEX16_1	x16	x8
PCIEX16_2	-	x8
<b>B</b>		
PCIEX4	x4	-
M.2_1	-	x4
<b>C</b>		
DIMM.2_1	x4	SATA
SATA_12	V	-
<b>D</b>		
DIMM.2_2	V	-
SATA_56	-	V



- 
- When DIMM.2\_1 slot is running at SATA mode, SATA6G\_12 will be disabled.
  - When DIMM.2\_2 slot is populated, SATA6G\_56 will be disabled.
  - M.2\_1 shares bandwidth with PCIe x4 slot, when M.2\_1 is populated with a x2 device, PCIe x4 slot will run at x1 mode, when M.2\_1 is populated with a x4 device, PCIe x4 slot will be disabled.
-

## Package contents

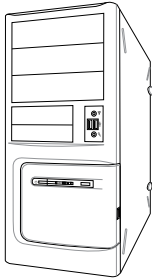

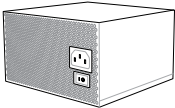
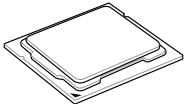
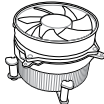
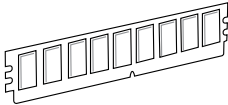
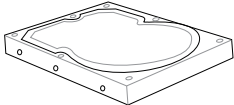
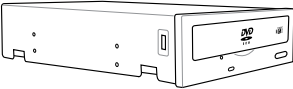
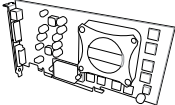

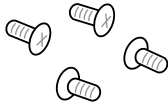
Check your motherboard package for the following items.

Motherboard	1 x ROG MAXIMUS XII APEX motherboard
Cables	1 x Addressable RGB extension cable
	1 x RGB extension cable
	8 x SATA 6Gb/s cables
	1 x Thermistor cable pack
ROG DIMM.2 with Heatsink	1 x ROG DIMM.2 with heatsink
	1 x M.2 pad for ROG DIMM.2
	1 x M.2 screw package for ROG DIMM.2
Miscellaneous	1 x M.2 Rubber Package
	1 x Q-connector
	1 x ROG stickers
	1 x ROG thank you card
	1 x Customizable nameplate sticker Pack
	1 x ASUS 2x2 dual band Wi-Fi moving antennas
Installation Media	1 x Support DVD
Documentation	1 x User manual



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

# Installation tools and components

	
	<p>Phillips (cross) screwdriver</p>
<p>PC chassis</p>	
<p>Power supply unit</p>	
<p>Intel® LGA 1200 CPU</p>	
<p>Intel® LGA 1200 compatible CPU Fan</p>	
<p>DDR4 DIMM</p>	
<p>SATA hard disk drive</p>	
<p>SATA optical disc drive (optional)</p>	
<p>Graphics card (optional)</p>	
<p>M.2 SSD module (optional)</p>	
<p>1 Bag of screws</p>	



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





# Product Introduction

# 1

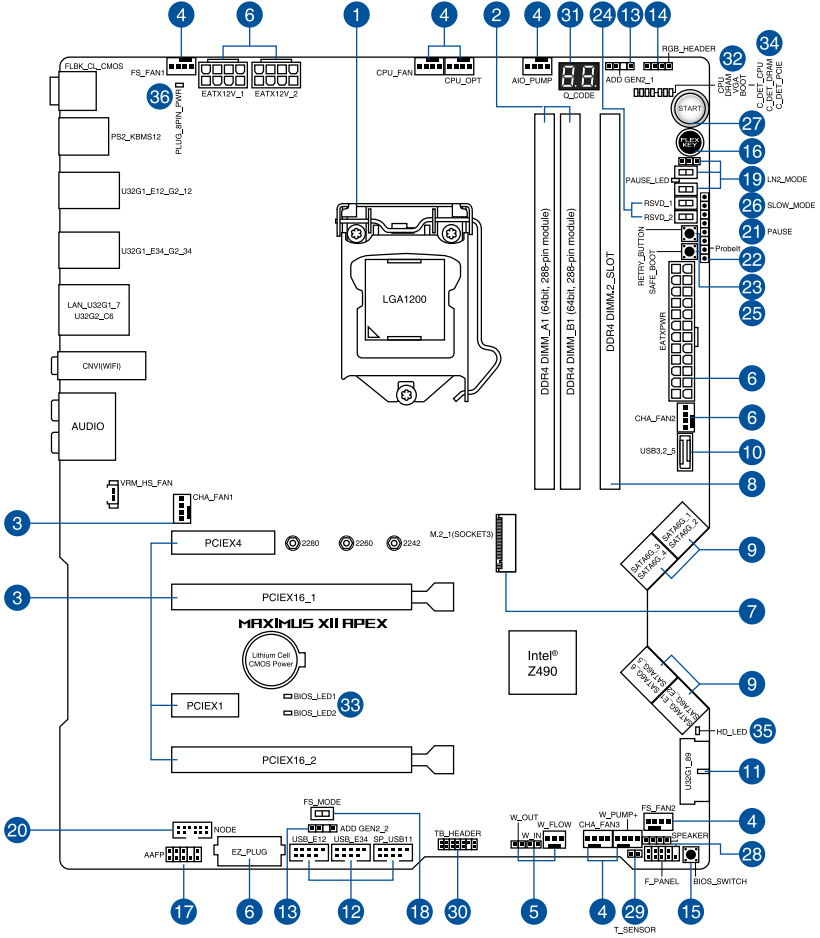
## 1.1 Before you proceed

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.
-

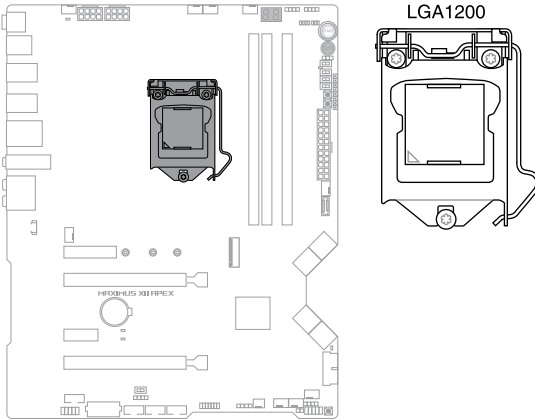
## 1.2 Motherboard layout



Layout contents	Page
1. CPU socket	1-4
2. DIMM slots	1-5
3. Expansion slots	1-7
4. Fan and Pump headers	1-9
5. Liquid Cooling System headers	1-10
6. Power connectors	1-11
7. M.2 slot	1-12
8. DIMM.2 slot	1-13
9. SATA 6GB/s ports	1-14
10. USB 3.2 Gen 2 Front Panel connector	1-15
11. USB 3.2 Gen 1 header	1-16
12. USB 2.0 header	1-17
13. AURA Addressable Gen 2 header	1-18
14. AURA RGB header	1-19
15. BIOS Switch button	1-20
16. FlexKey button (Reset)	1-20
17. Front Panel Audio header	1-21
18. FS Mode switch	1-21
19. LN2 Mode jumper	1-22
20. Node header	1-22
21. Pause switch	1-23
22. Probelst Measurement Points	1-24
23. ReTry button	1-25
24. RSVD switch	1-25
25. Safe Boot button	1-26
26. Slow Mode switch	1-26
27. Start button	1-27
28. System Panel header	1-28
29. Thermal Sensor header	1-29
30. Thunderbolt header	1-30
31. Q-Code LED	1-31
32. Q-LEDs	1-32
33. BIOS LED	1-32
34. Condensation Detection LEDs	1-33
35. Storage Device Activity LED	1-33
36. 8-pin Power Plug LED	1-34

## 1. CPU socket

The motherboard comes with a LGA1200 socket designed for 10<sup>th</sup> Gen Intel® Core™, Pentium® Gold and Celeron® processors.



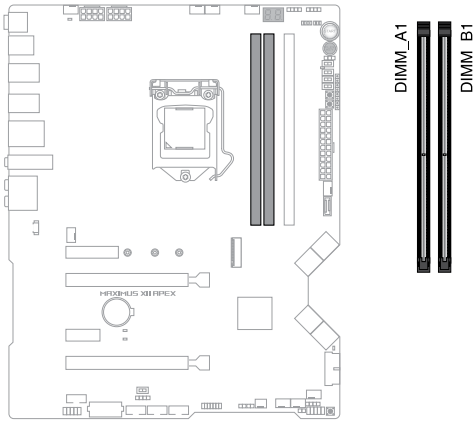
- Ensure that you install the correct CPU designed for LGA1200 socket only. **DO NOT** install a CPU designed for other sockets on the LGA1200 socket.
- The CPU fits in only one correct orientation. **DO NOT** force the CPU into the socket to prevent bending the connectors on the socket and damaging 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 LGA1200 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

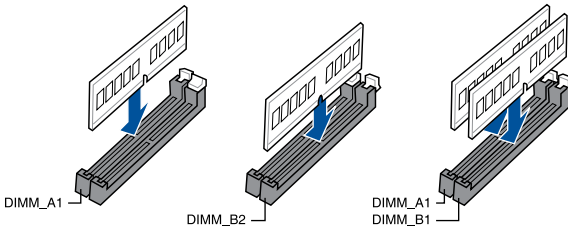
The motherboard comes with Dual Inline Memory Modules (DIMM) slots designed for DDR4 (Double Data Rate 4) memory modules.



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



### Recommended memory configurations



## Memory configurations

You may install 4 GB, 8 GB, 16 GB, and 32 GB unbuffered and non-ECC DDR4 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.

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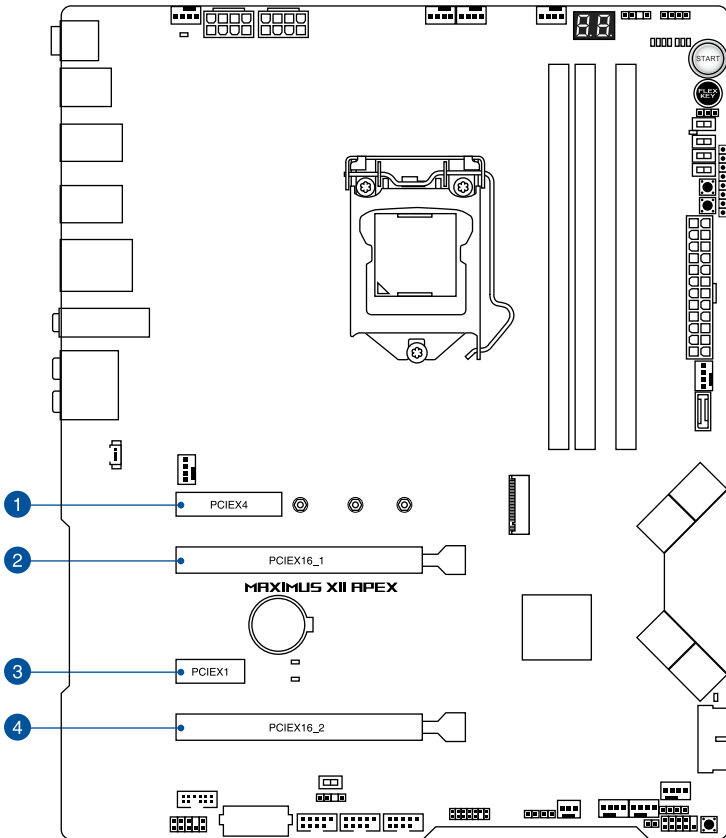


- The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value.
  - For system 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.
  - Double Capacity DRAM support depends on the DRAM Models.
  - Visit the ASUS website for the latest QVL.
-

### 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.



Please refer to the following table for the recommended VGA configuration.

## Recommended VGA configuration

Slot Description	Single VGA	Dual VGA
1. PCIe 3.0 x4	Shares bandwidth with M.2_1 (x1/x2/x4)	
2. PCIe 3.0 x16_1	x16	x8
3. PCIe 3.0 x1	V	V
4. PCIe 3.0 x16_2	-	x8
5. M.2_1 (PCH)	Shares bandwidth with PCIe 3.0 X4 (x1/x2/x4)	
6. DIMM.2_1 (PCH)	V	V
7. DIMM.2_2 (PCH)	V	V



- We recommend that you provide sufficient power when running CrossFireX™ or SLI® mode.
- Ensure to connect the 8-pin and 4-pin power plugs when running CrossFireX™ or SLI® mode.
- Connect a chassis fan to the chassis fan connectors when using multiple graphics cards for better thermal environment.

## Hyper M.2 X16 series card configuration

Slot Description	Up to 2 Intel® SSD on CPU support	Up to 3 Intel® SSD on CPU support
2. PCIe 3.0 x16_1	-	x8+x4+x4
4. PCIe 3.0 x16_2	x4+x4	-

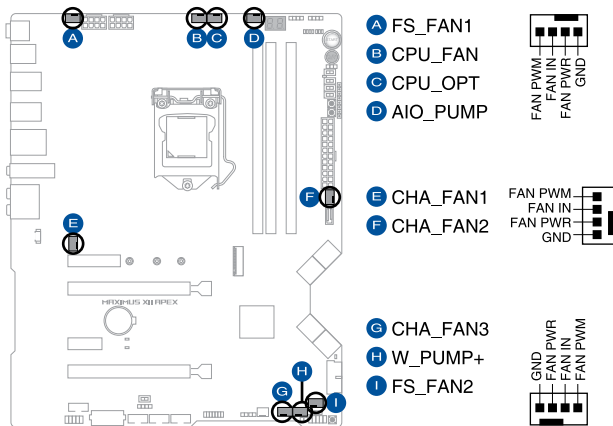


- Hyper M.2 X16 series card sold separately.
- When using up to 2 Intel® SSD on CPU support, PCIe 3.0 x16\_1 will run at x8.
- When using up to 3 intel® SSD on CPU support, PCIe 3.0 x16\_2 will be disabled. If you wish to connect a display, we suggest installing a VGA card to PCIe x16\_3, which will run at x4.
- Enable the Hyper M.2 X16 series card under BIOS settings.



#### 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.

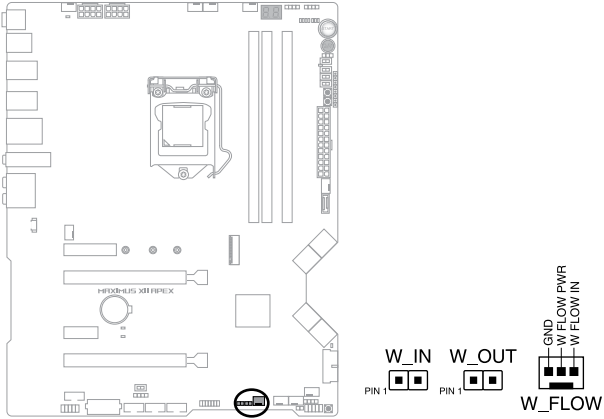


For water cooling kits, connect the pump connector to the **W\_PUMP+** header.

Header	Max. Current	Max. Power	Default Speed	Shared Control
CPU_FAN	1A	12W	Q-Fan Controlled	A
CPU_OPT	1A	12W	Q-Fan Controlled	A
CHA_FAN1	1A	12W	Q-Fan Controlled	-
CHA_FAN2	1A	12W	Q-Fan Controlled	-
CHA_FAN3	1A	12W	Q-Fan Controlled	-
W_PUMP+	3A	36W	Full-Speed	-
AIO_PUMP	1A	12W	Full-Speed	-
FS_FAN1	1A	12W	Full-Speed	-
FS_FAN2	1A	12W	Full-Speed	-

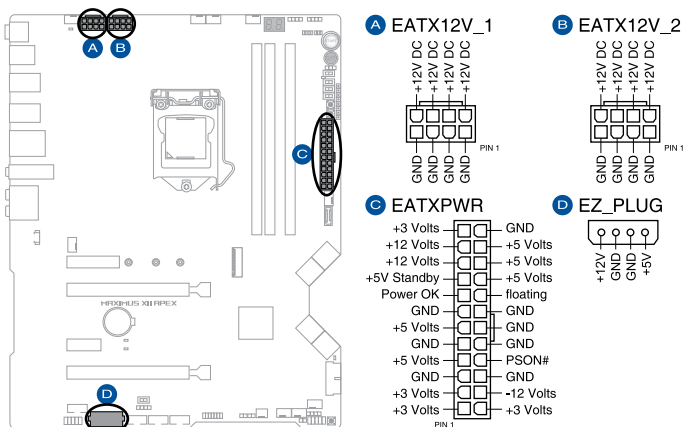
## 5. Liquid Cooling System headers

The Liquid Cooling System headers allow you to connect sensors to monitor the temperature and flow rate of your liquid cooling system. You can manually adjust the fans and water pump to optimize the thermal efficiency of your liquid cooling system.



## 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.



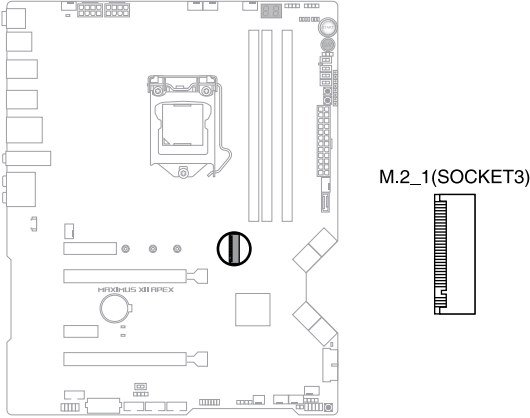
Ensure to connect the 8-pin power plug.



- For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.0 (or later version) and provides a minimum power of 350 W.
- Connect the 4-pin EZ\_PLUG power plugs to ensure sufficient power when you install multiple graphics cards.
- 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.
- If you want to use two or more high-end PCIe x16 cards, use a PSU with 1000W power or above to ensure the system stability.

## 7. M.2 slot

The M.2 slot allows you to M.2 SSD modules.



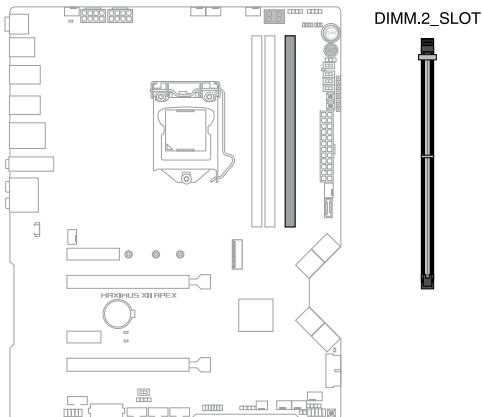
- M.2\_1 slot supports PCIe 3.0 x4 mode Key M design and type 2242 / 2260 / 2280 storage devices.
- M.2\_1 shares bandwidth with PCIe x4 slot, when M.2\_1 is populated with a x2 device, PCIe x4 slot will run at x1 mode, when M.2\_1 is populated with a x4 device, PCIe x4 slot will be disabled
- Intel® Optane Technology is supported by M.2\_1 when sourced from the PCH. Before using Intel® Optane memory modules, ensure that you have updated your motherboard drivers and BIOS to the latest version from ASUS support website.
- M.2 slot supports IRST (Intel® Rapid Storage Technology).



The M.2 SSD module is purchased separately.

## 8. DIMM.2 slot

The DIMM.2 slot allows you to install a DIMM.2 card to support additional M.2 SSD modules.



- Before you install or remove the DIMM.2 card, 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 or DIMM.2 card.
- The DIMM.2 card is notched to fit in only one orientation. Ensure that the notch on your card is aligned correctly with the DIMM.2 slot before inserting the card.



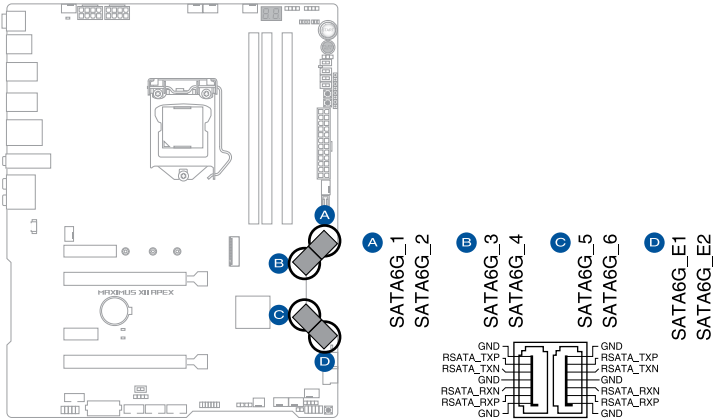
- DIMM.2 module supports PCIe 3.0 x4 and SATA mode M Key design and type 2242 / 2260 / 2280 / 22110 PCIe storage devices.
- When DIMM.2\_1 slot is running at SATA mode, SATA6G\_12 will be disabled.
- When DIMM.2\_2 slot is populated, SATA6G\_56 will be disabled.
- These sockets support IRST (Intel® Rapid Storage Technology).
- Intel® Optane Technology is supported by DIMM.2\_1 and DIMM.2\_2 when sourced from the PCH. Before using Intel® Optane memory modules, ensure that you have updated your motherboard drivers and BIOS to the latest version from ASUS support website.



The M.2 SSD module is purchased separately.

## 9. SATA 6Gb/s ports

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



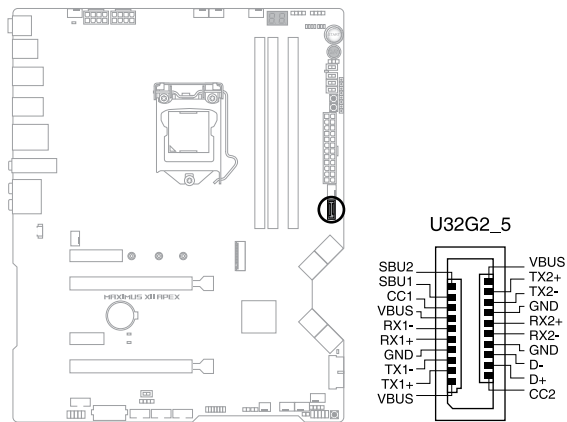
If you installed SATA storage devices, you can create a RAID 0, 1, 5, and 10 configuration with the Intel® Rapid Storage Technology through the onboard Intel® Z490 chipset.



- The slots are set to **[AHCI]** by default. If you intend to create a SATA RAID set using these connectors, set the SATA Mode item in the BIOS to **[Intel RST Premium with Intel Optane System Acceleration (RAID)]**.
- Before creating a RAID set, refer to the **RAID Configuration Guide**. You can download the **RAID Configuration Guide** from the ASUS website.

**10. USB 3.2 Gen 2 Front Panel connector**

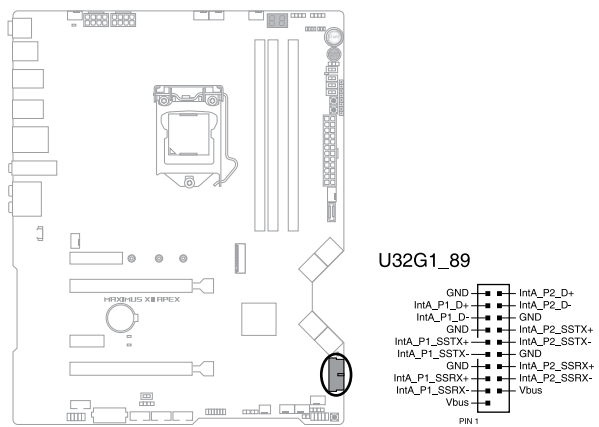
The USB 3.2 Gen 2 connector allows you to connect a USB 3.2 Gen 2 module for additional USB 3.2 Gen 2 ports. The USB 3.2 Gen 2 connector provides data transfer speeds of up to 10 Gb/s.



The USB 3.2 Gen 2 module is purchased separately.

**11. USB 3.2 Gen 1 header**

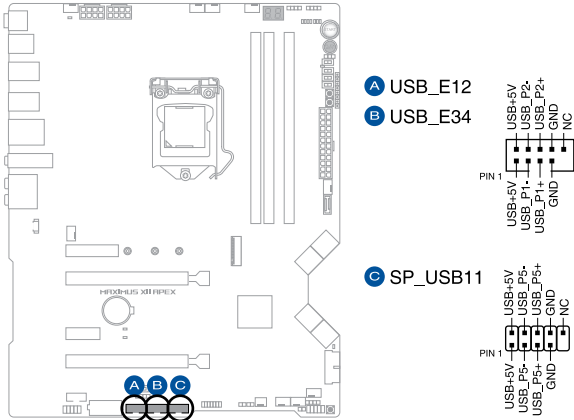
The USB 3.2 Gen 1 header allows you to connect a USB 3.2 Gen 1 module for additional USB 3.2 Gen 1 ports. The USB 3.2 Gen 1 header provides data transfer speeds of up to 5 Gb/s.



The USB 3.2 Gen 1 module is purchased separately.

## 12. 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.



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

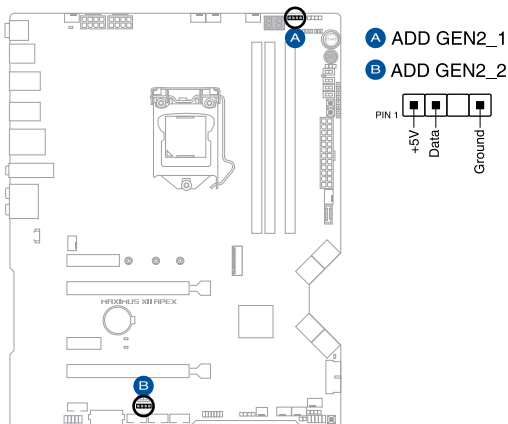


The USB 2.0 module is purchased separately.



### 13. AURA Addressable Gen2 header

The Addressable Gen2 header allows you to connect individually addressable RGB WS2812B LED strips or WS2812B based LED strips.



The Addressable Gen2 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.



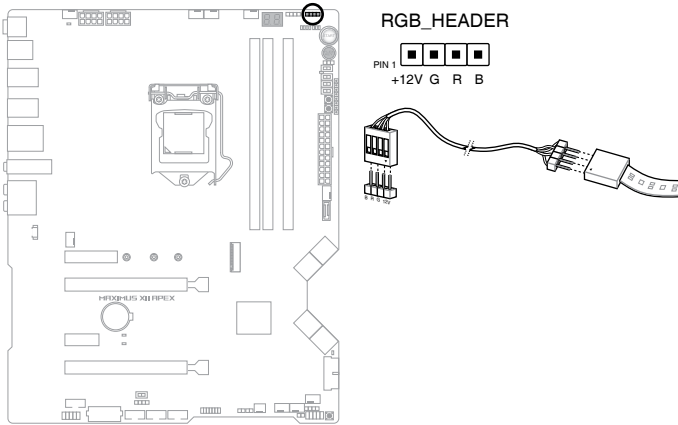
Before you install or remove any component, ensure that the power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.



- 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.

## 14. 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).



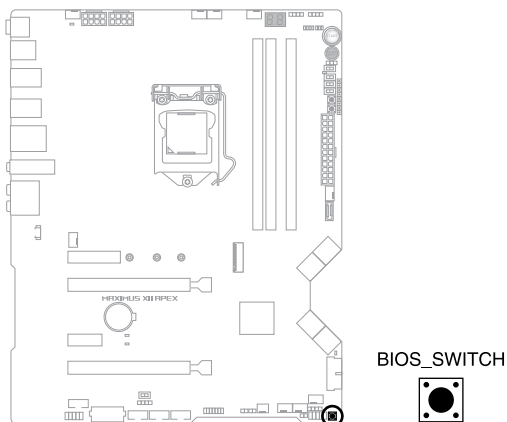
Before you install or remove any component, ensure that the power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.



- 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.

## 15. BIOS Switch button

This motherboard comes with two BIOS chips. Press the BIOS Switch button to switch BIOS and load different BIOS settings.



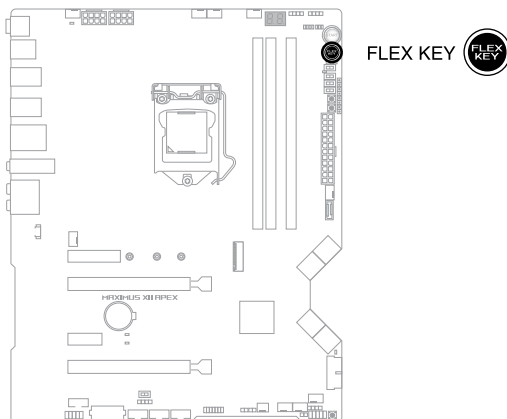

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The nearby BIOS\_LEDs indicate which BIOS is currently selected.

---

## 16. FlexKey button (Reset)

Press the FlexKey button to reboot the system. You may also configure the button and assign a quick access feature such as activating Safe Boot or turning Aura lighting on or off to the button.



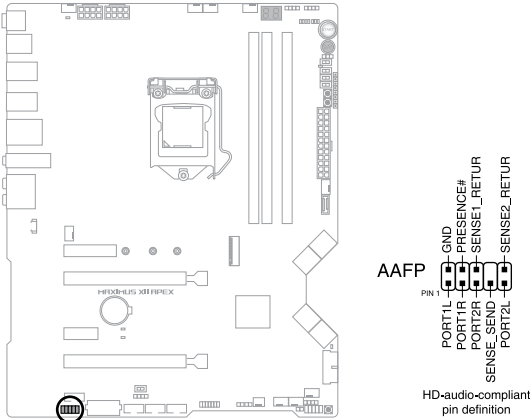

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This button set to **[Reset]** by default. You can assign a different function to this button in the BIOS settings.

---

## 17. Front Panel Audio header

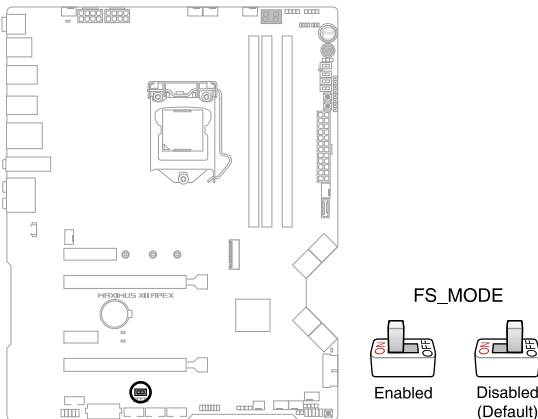
The front panel audio header is for a chassis-mounted front panel audio I/O module that supports HD Audio. Connect one end of the front panel audio I/O module cable to this header.



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.

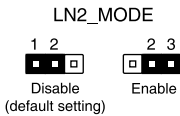
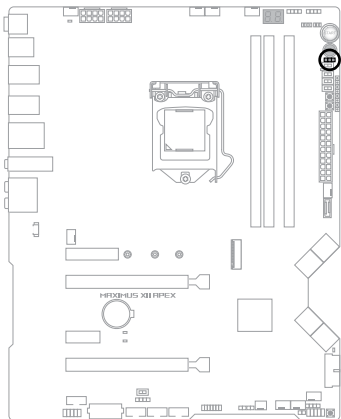
## 18. Full Speed Mode switch

The Full Speed Mode switch allows you to set all connected fans to run at 100% PWM when enabled.



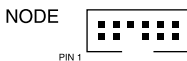
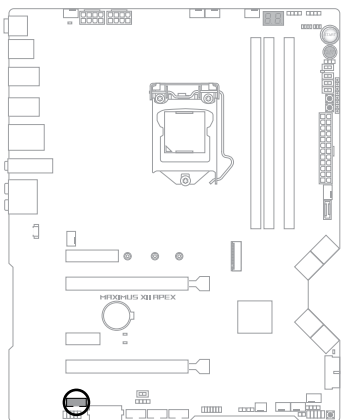
**19. LN2 Mode jumper**

Set to pins 2-3 to optimize the motherboard to remedy the cold-boot bug during POST and help the system boot successfully.



**20. Node connector**

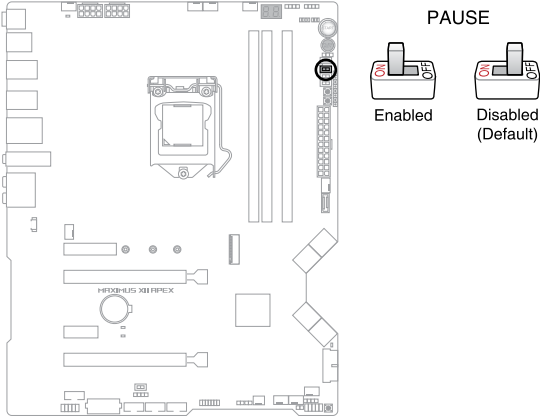
The Node connector allows you to connect a compatible PSU or control a compatible fan extension card.



Visit [www.asus.com](http://www.asus.com) for more information about the devices and the latest compatibility list.

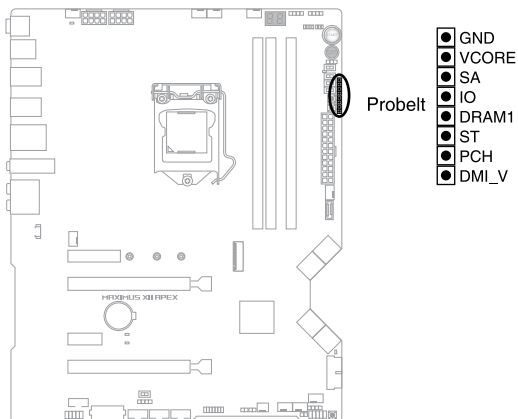
## 21. Pause switch

The Pause switch allows you to freeze the system at a hardware level, thus allowing you to adjust your system settings under heavy overclocking.



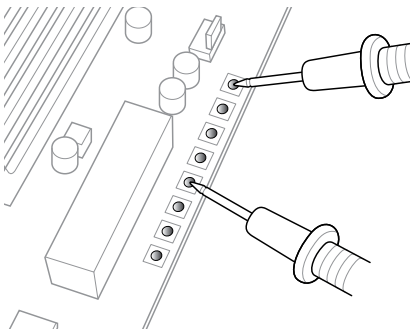
## 22. Probel Measurement Points

The ROG Probel allows you to detect your system's current voltage and OC settings using a multimeter. You can also measure the Probel points during overclocking.



### Using Probel

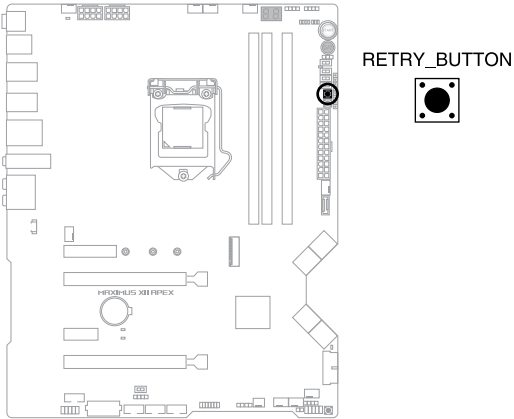
Connect one of the probe onto the **GND** Probel point, then connect the other probe onto another Probel point to measure the corresponding voltage information.



The illustration above is for reference only, the actual motherboard layout and measure points may differ by model.

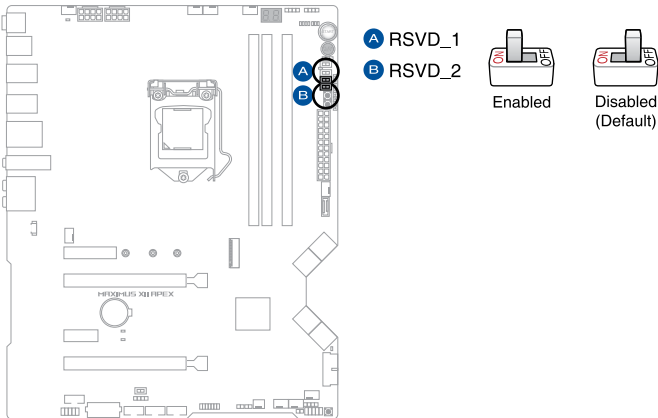
### 23. ReTry button

The ReTry button is specially designed for overclockers and is most useful during the booting process where the Reset button is rendered useless. Press this button to force the system to reboot while retaining the same settings to be retried in quick succession to achieve a successful POST.



### 24. RSVD switch

The RSVD switch is reserved for ASUS-authorized technicians only.

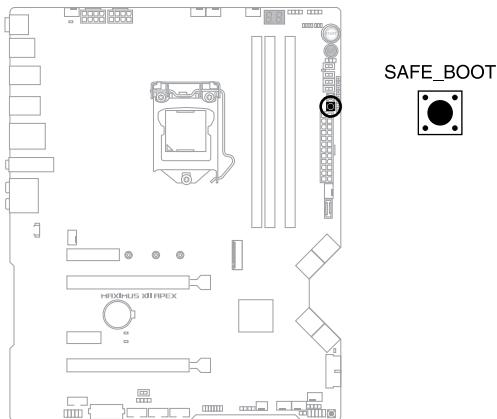


Please ensure the RSVD switch is set to **Disabled**. Setting this switch to **Enabled** may result in damages to your system.



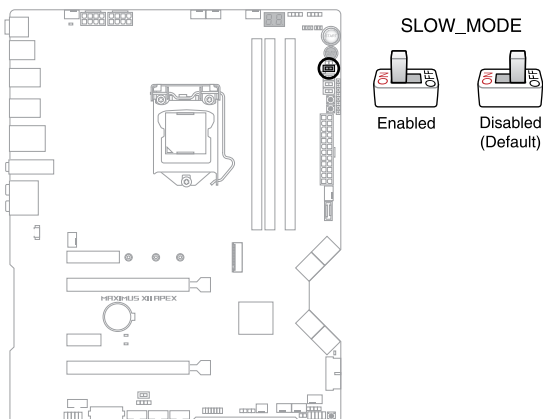
## 25. Safe Boot button

The Safe Boot button temporarily applies safe settings to the BIOS while retaining the overclocked settings, allowing you to modify the settings causing a boot failure. Press this button at anytime to force the system to reboot into the BIOS safe mode.



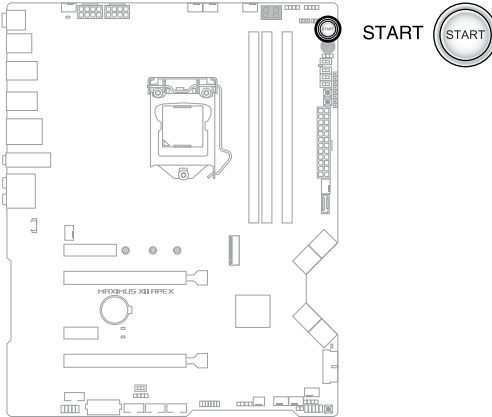
## 26. Slow Mode switch

The system may crash due to the CPU being unstable when using extreme overclocking settings. Enable the Slow Mode switch during LN2 benching to decrease the processor frequency and stabilize the system, allowing you to keep track of the overclocking data.



## 27. Start button

Press the Start button to power up the system, or put the system into sleep or soft-off mode (depending on the operating system settings).



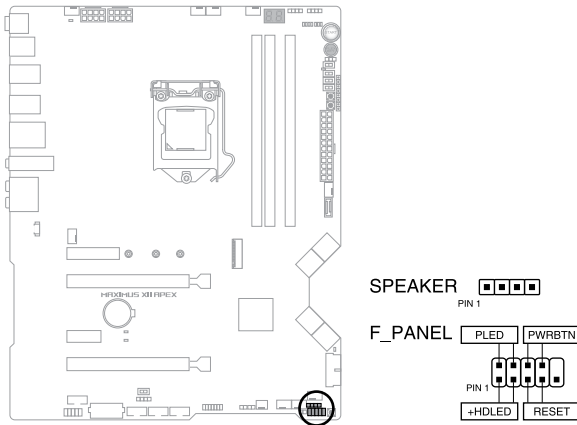
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The button also lights up when the system is plugged to a power source, indicating that you should shut down the system and unplug the power cable before removing or installing any motherboard component.

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## 28. System Panel header

The System Panel header supports several chassis-mounted functions.



- **System Power LED header (PLED)**

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 (HLED)**

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 (PWRBTN)**

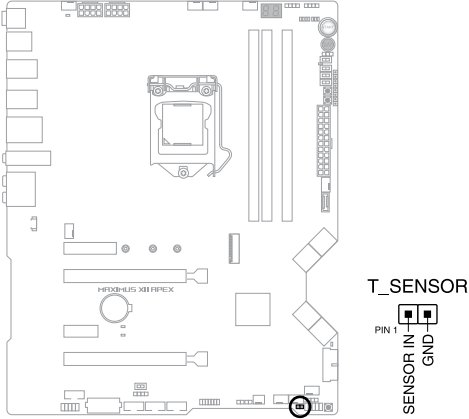
The 3-1 pin header allows you to connect the system power button. Press the power button to power up the system, or put the system into sleep or soft-off mode (depending on the operating system settings).

- **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.

## 29. 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.



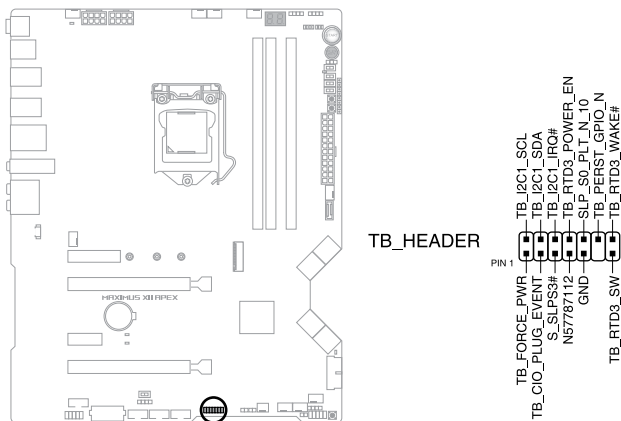
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The thermal sensor is purchased separately.

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### 30. Thunderbolt header

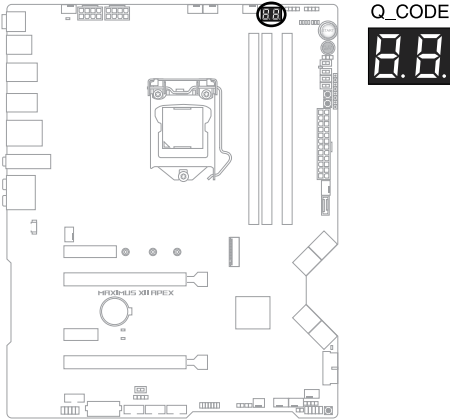
The Thunderbolt header allows you to connect an add-on Thunderbolt I/O card that supports Intel's Thunderbolt Technology, allowing you to connect up to six Thunderbolt-enabled devices and a DisplayPort-enabled display in a daisy-chain configuration.



The add-on Thunderbolt I/O card and Thunderbolt cables are purchased separately.

### 31. Q-Code LED

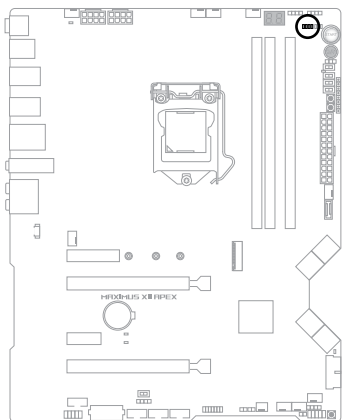
The Q-Code LED design provides you with a 2-digit error code that displays the system status.



- 
- The Q-Code 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.
  - Please refer to the Q-Code table in the **Appendix** section for more details.
-

### 32. 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.



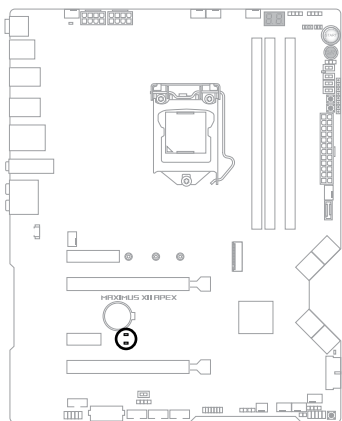
- CPU (RED)
- DRAM (YELLOW)
- VGA (WHITE)
- BOOT (YELLOW GREEN)



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.

### 33. BIOS LED

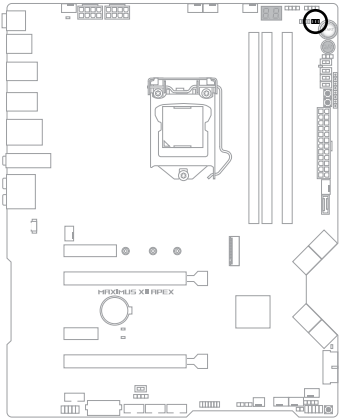
The BIOS LEDs indicate which BIOS chip is currently in use.



- BIOS\_LED1
- BIOS\_LED2

### 34. Condensation detection LEDs

The Condensation detection LEDs will light up when water condensation is detected on the corresponding critical key components (CPU, DRAM, and PCIe). This user-friendly design helps you quickly identify possible damages caused by condensation.



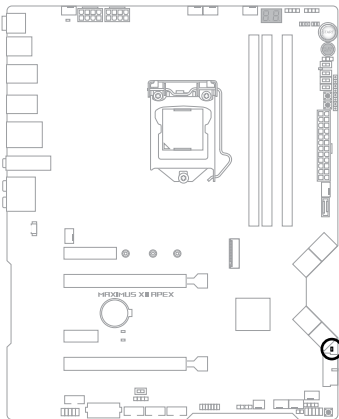
□ C\_DET\_CPU  
□ C\_DET\_DRAM  
□ C\_DET\_PCIE



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.

### 35. 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.

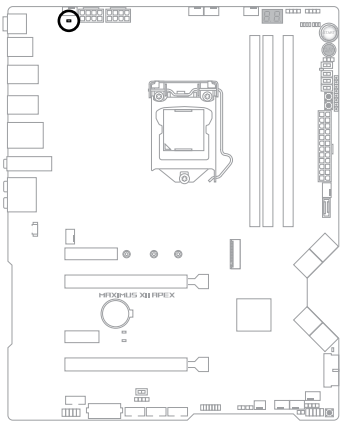


□ HD\_LED



**36. 8-pin Power Plug LED**

The 8-pin Power Plug LED lights up to indicate that the 8-pin power plug is not connected.



□ PLUG\_8PIN\_PWR



# Basic Installation

# 2

## 2.1 Building your PC system

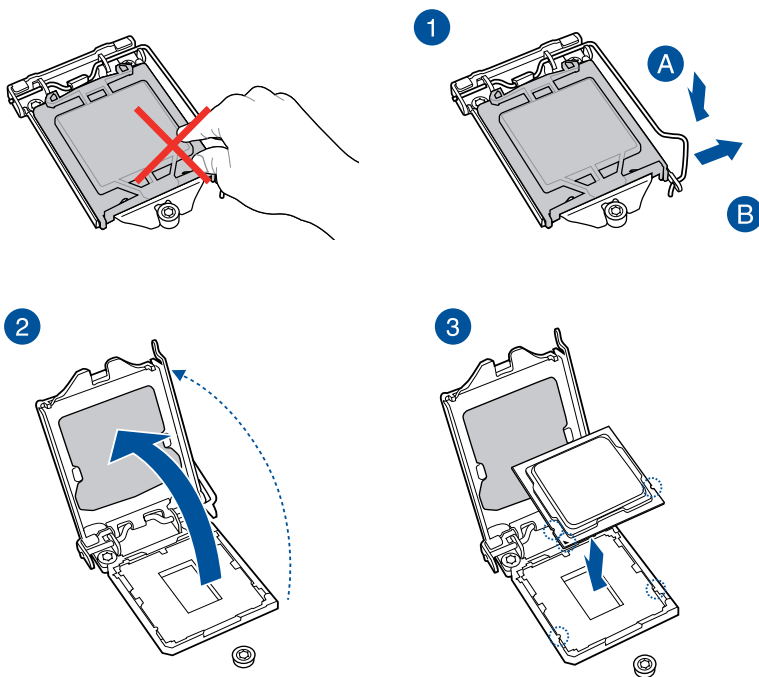


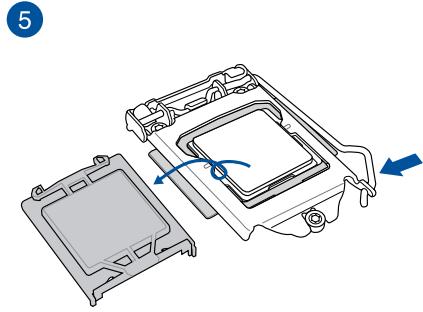
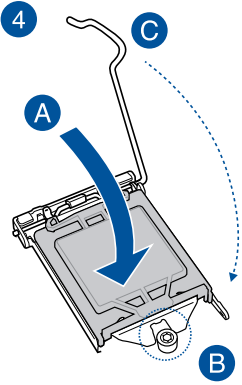
The diagrams in this section are for reference only. The motherboard layout may vary with models, but the installation steps are the same for all models.

### 2.1.1 CPU installation

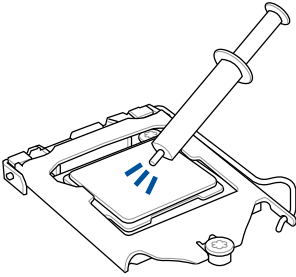


- Ensure that you install the correct CPU designed for LGA1200 socket only. DO NOT install a CPU designed for LGA1155, LGA1156, and LGA1151 sockets on the LGA1200 socket.
- ASUS will not cover damages resulting from incorrect CPU installation/removal, incorrect CPU orientation/placement, or other damages resulting from negligence by the user.





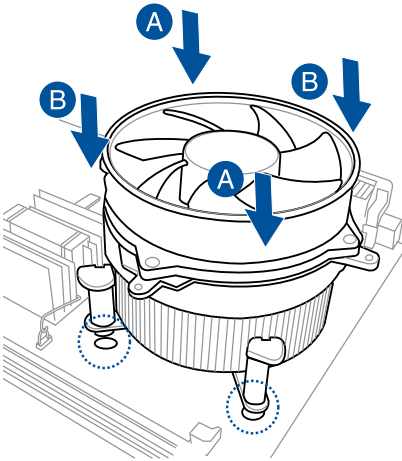
## 2.1.2 Cooling system installation



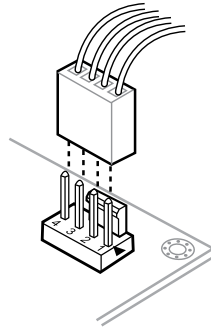
Apply Thermal Interface Material to the CPU cooling system and CPU before you install the cooling system, if necessary.

### To install a CPU heatsink and fan assembly

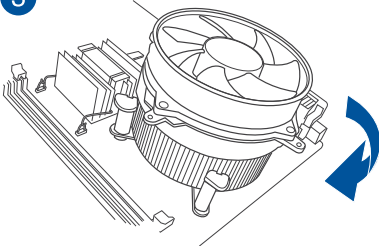
1



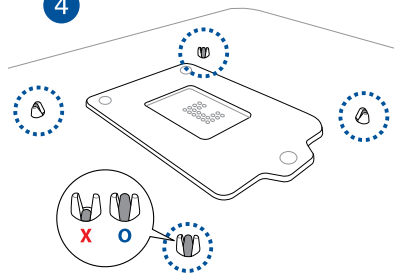
2



3



4

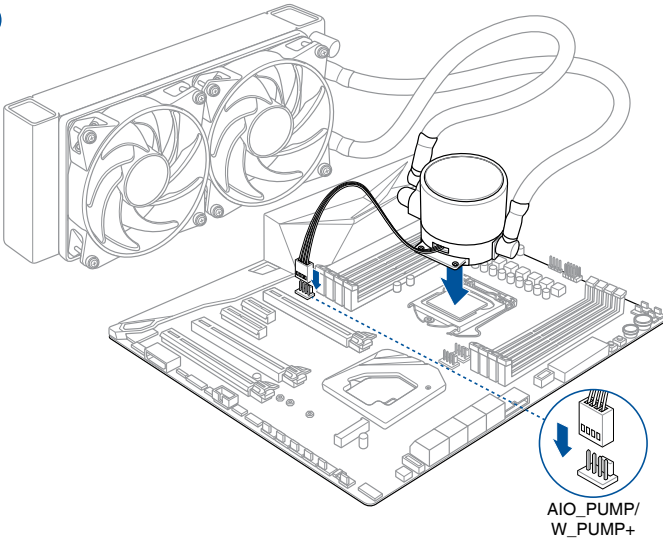


## To install an AIO cooler

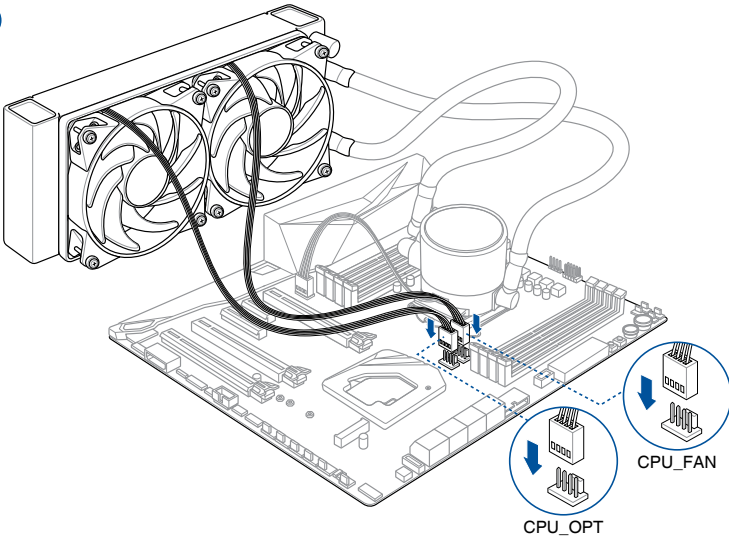


If you wish to install an AIO cooler, we recommend installing the AIO cooler after installing the motherboard into the chassis.

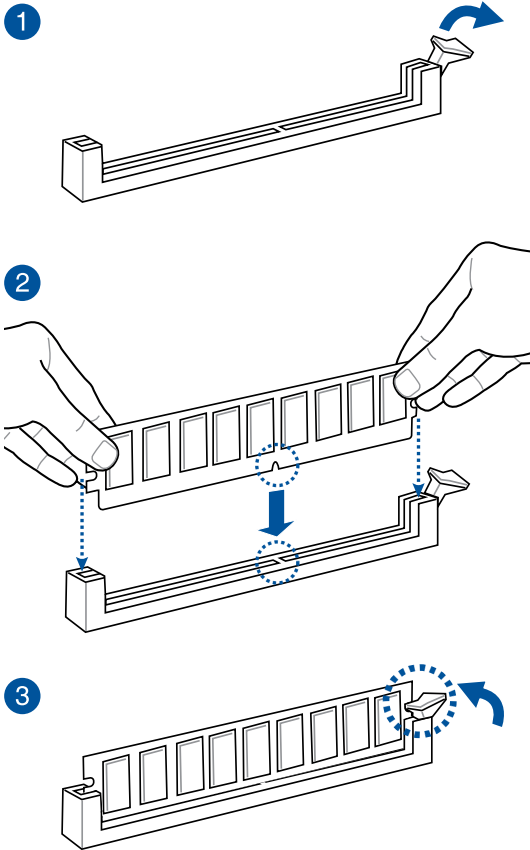
1



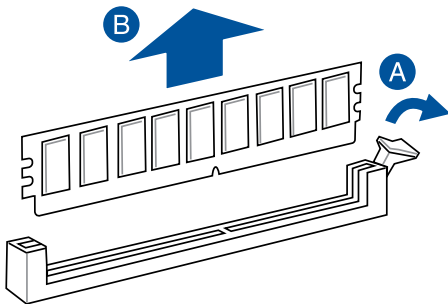
2



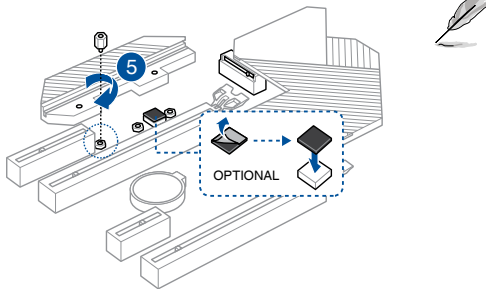
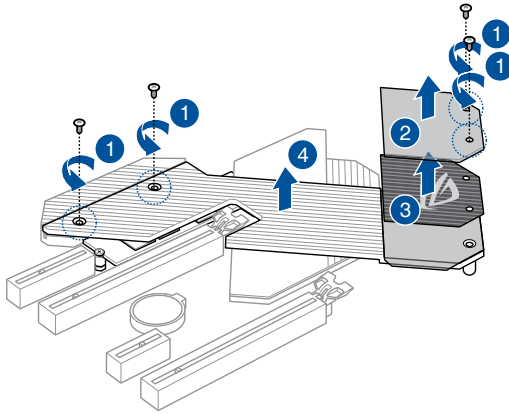
### 2.1.3 DIMM installation



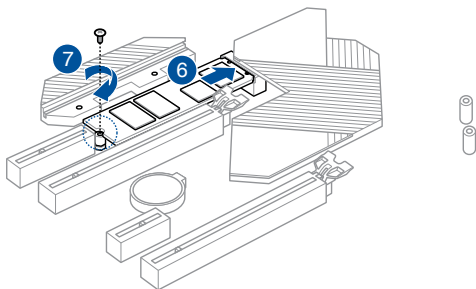
#### To remove a DIMM



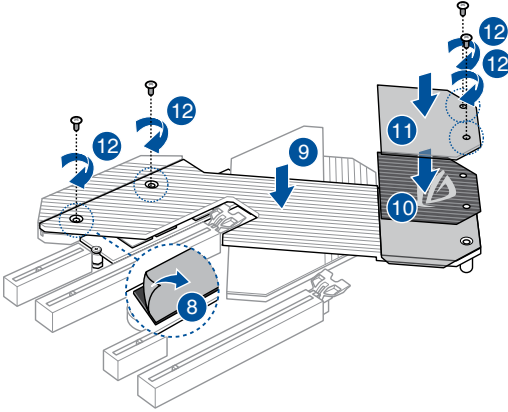
## 2.1.4 M.2 installation



- The M.2 rubber pad is optional for when installing a single sided M.2 storage device. Ensure to install the bundled M.2 rubber pad before installing your single sided M.2 storage device.
- DO NOT install the bundled M.2 rubber pads when installing a double-sided M.2 storage device. The rubber pad installed by default is compatible with double sided M.2 storage devices.







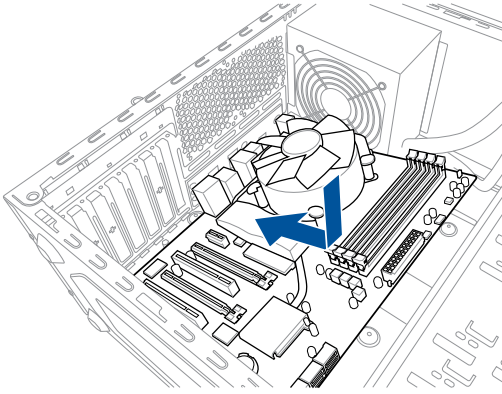
---

The M.2 is purchased separately.

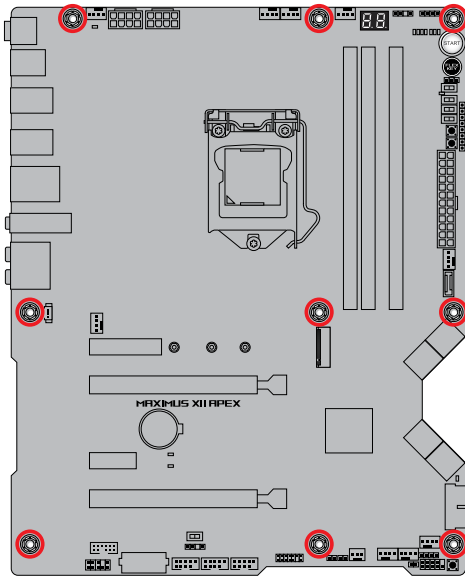
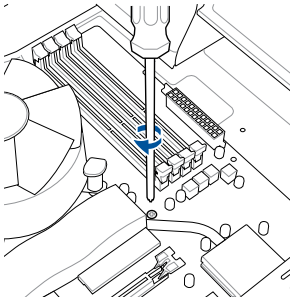
---

## 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.



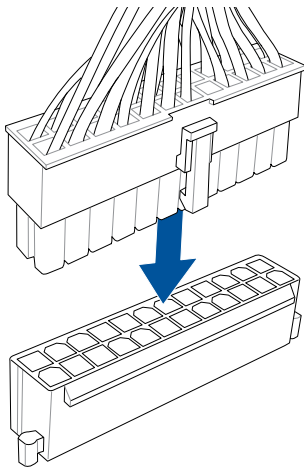
2. Place nine (9) screws into the holes indicated by circles to secure the motherboard to the chassis.



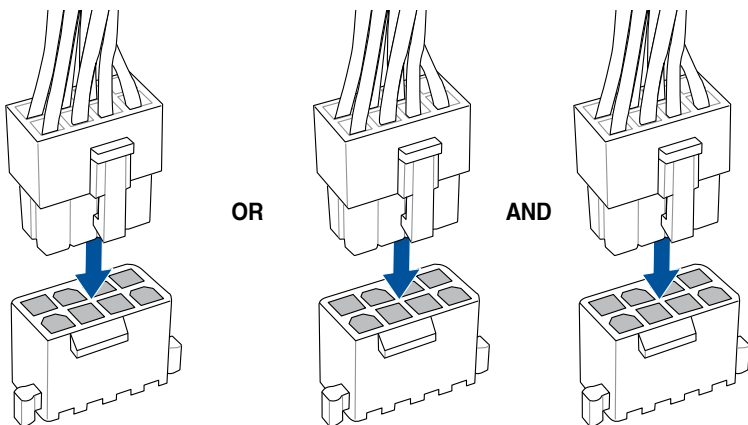
**DO NOT** over tighten the screws! Doing so can damage the motherboard.

## 2.1.6 ATX power connection

1

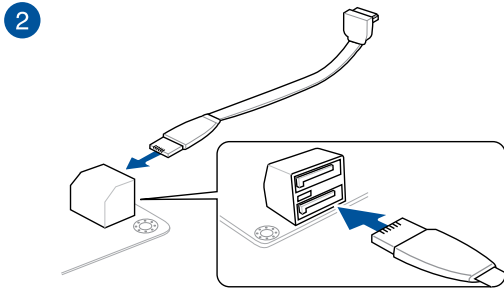
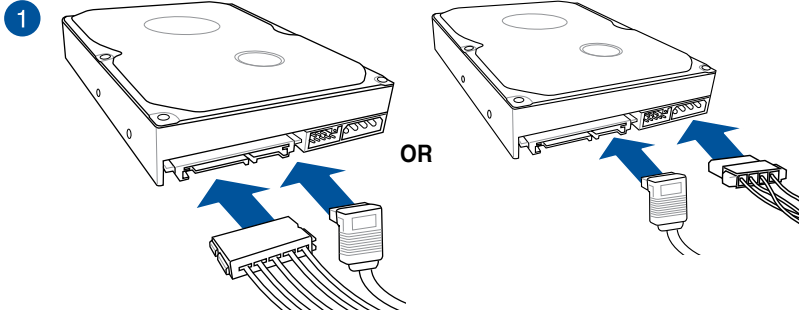


2



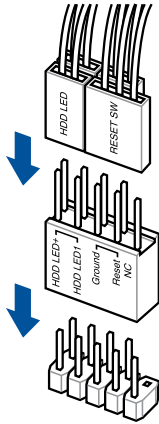
Ensure to connect the 8-pin power plug.

## 2.1.7 SATA device connection

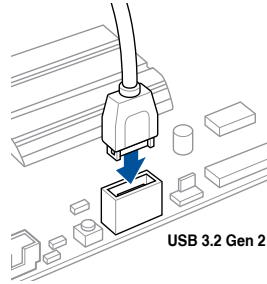


## 2.1.8 Front I/O connector

### To install ASUS Q-Connector

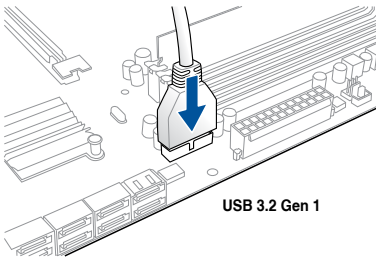


### To install USB 3.2 Gen 2 connector

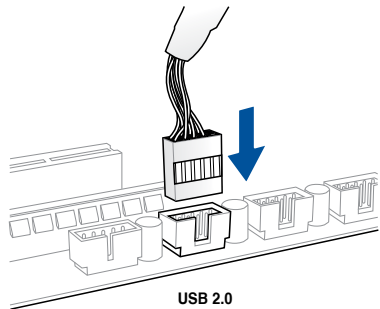


This connector will only fit in one orientation. Push the connector until it clicks into place.

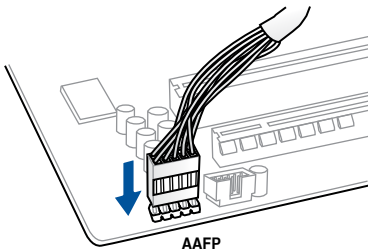
### To install USB 3.2 Gen 1 connector



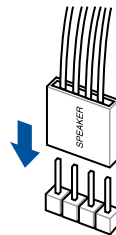
### To install USB 2.0 connector



### To install front panel audio connector

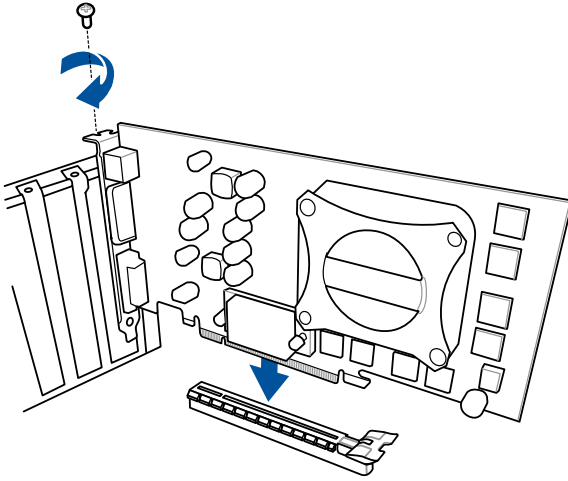


### To install system speaker connector

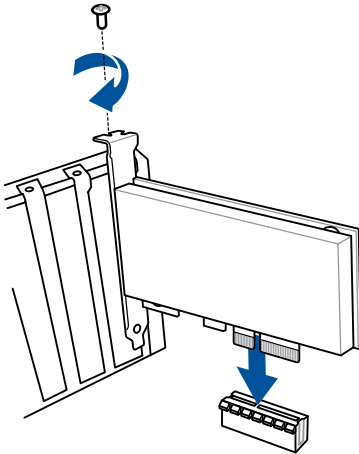


## 2.1.9 Expansion card installation

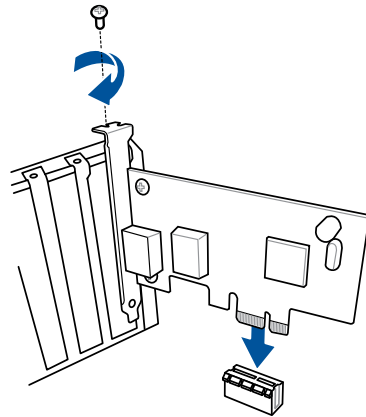
To install PCIe x16 cards



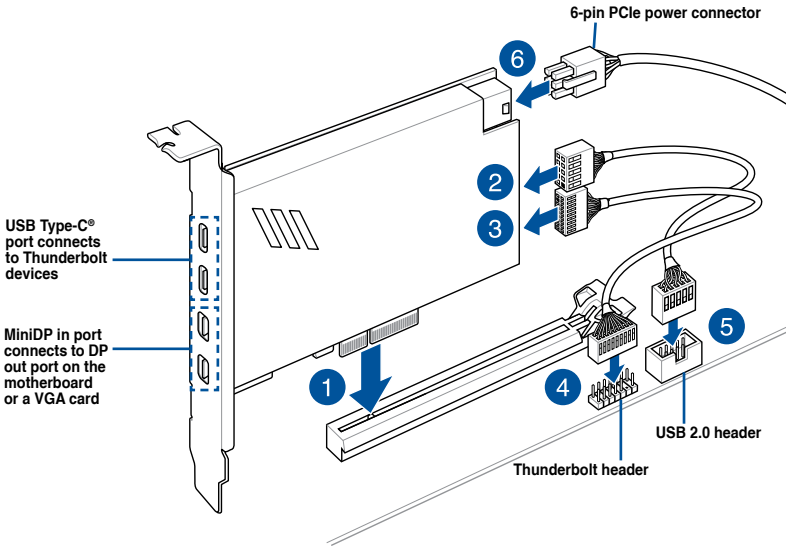
To install PCIe x4 cards



To install PCIe x1 cards



## To install ThunderboltEX 3-TR card



Ensure to install the ThunderboltEX 3-TR card to a PCIe slot from PCH.

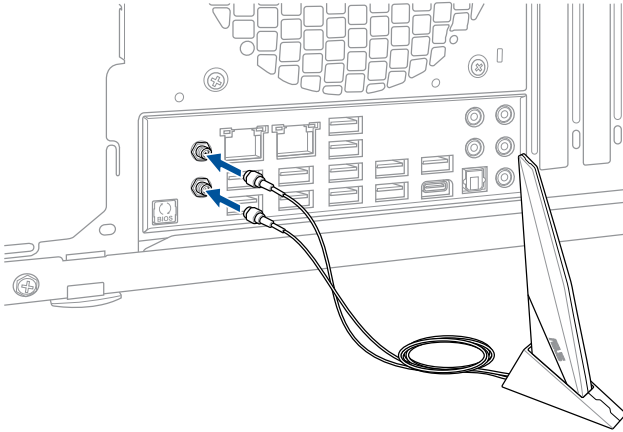


- Step 6 is optional, please connect a 6-pin PCIe power connector when you wish to use the USB Type-C® port Thunderbolt quick charge feature to charge a 5V or more device. The ThunderboltEX 3-TR card can support quick charging up to 100W.
- The TypeC\_1 port can support up to 20V devices, and the TypeC\_2 port can support up to 9V devices when the 6-pin PCIe power connector is connected.
- The Thunderbolt card is sold separately.

## 2.1.10 Wi-Fi antenna installation

### Installing the ASUS 2x2 dual band W-Fi antenna

Connect the bundled ASUS 2x2 dual band Wi-Fi antenna connector to the Wi-Fi ports at the back of the chassis.



- Ensure that the ASUS 2x2 dual band Wi-Fi antenna is securely installed to the Wi-Fi ports.
- Ensure that the antenna is at least 20 cm away from all persons.

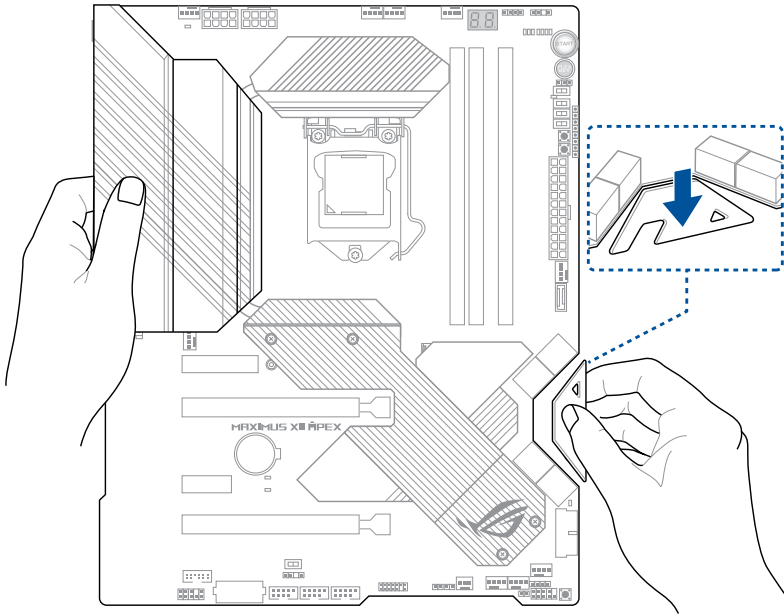


The illustration above is for reference only. The I/O port layout may vary with models, but the Wi-Fi antenna installation procedure is the same for all models.



## 2.1.11 Removing the PCB piece (optional)

This motherboard comes with a removable PCB piece. If you want to remove the PCB piece, please see the illustrations below to safely remove it.



Once the removal PCB piece is removed, the rough edges of the exposed stamp hole PCB edge may cause injuries, please use the appropriate tools (e.g. abrasive paper, finishing file, etc.) to smoothen the exposed stamp holes.



- Please hold the motherboard steady with a tight grip when removing the removable PCB piece.
- The removal PCB piece is not covered by the warranty.

## 2.2 BIOS update utility

### BIOS FlashBack™

BIOS FlashBack™ allows you to easily update the BIOS without entering the existing BIOS or operating system. Simply insert a USB storage device to the USB port (the USB port hole marked in green on the I/O shield) then press the BIOS FlashBack™ button for three seconds to automatically update the BIOS.

#### To use BIOS FlashBack™:

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



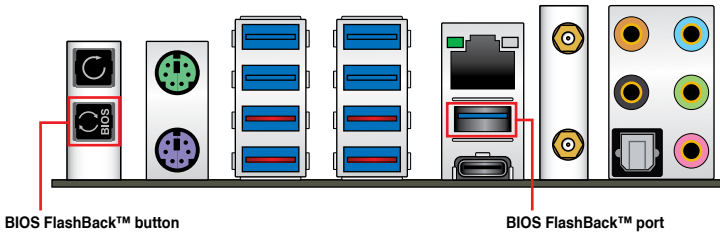
We recommend you to use a USB 2.0 storage device to save the latest BIOS version for better compatibility and stability.

2. Visit <https://www.asus.com/support/> and download the latest BIOS version for this motherboard.
3. Manually rename the file as **M12A.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 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.



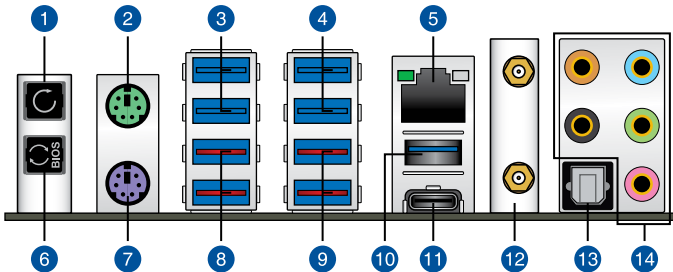
For more BIOS update utilities in BIOS setup, refer to the section **Updating BIOS** in Chapter 3.



- Do not unplug portable disk, power system, or press the CLR\_CMOS button 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.

## 2.3 Motherboard rear and audio connections

### 2.3.1 Rear I/O connection



#### Rear panel connectors

1.	Clear CMOS button (CLR_CMOS). Press this button to clear the BIOS setup information only when the systems hangs due to overlocking.
2.	PS/2 Mouse port (green)
3.	USB 3.2 Gen 1 Type-A ports E1 and E2
4.	USB 3.2 Gen 1 Type-A ports E3 and E4
5.	Intel® I225-V Ethernet port
6.	BIOS FlashBack™ button
7.	PS/2 Keyboard port (purple)
8.	USB 3.2 Gen 2 Type-A ports 1 and 2
9.	USB 3.2 Gen 2 Type-A ports 3 and 4
10.	USB 3.2 Gen 1 Type-A port 7
11.	USB 3.2 Gen 2 Type-C® port C6
12.	Wi-Fi 6 (802.11 a/b/g/n/ac/ax), Bluetooth V5.1
13.	Optical S/PDIF out port
14.	Gold-plated audio jacks*

\* Refer to the table on the next page for audio port definitions.



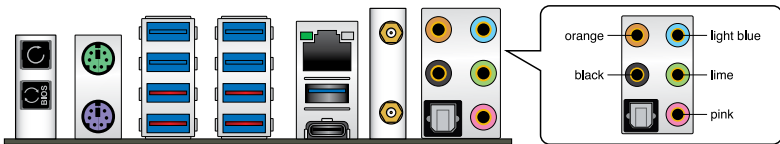
- We strongly recommend that you connect your devices to ports with matching data transfer rate. Please connect your USB 3.2 Gen 1 devices to USB 3.2 Gen 1 ports and your USB 3.2 Gen 2 devices to USB 3.2 Gen 2 ports for faster and better performance for your devices.
- Due to the design of the Intel chipset, all USB devices connected to the USB 3.2 Gen 1 ports are controlled by the xHCI controller. Some legacy USB devices must update their firmware for better compatibility.

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

Port	Headset 2-channel	4-channel	5.1-channel	7.1-channel
Light Blue	Line In	Line In	Line In	Side Speaker Out
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In	Mic In
Orange	–	–	Center/Sub woofer	Center/Sub woofer
Black	–	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out

## 2.3.2 Audio I/O connections

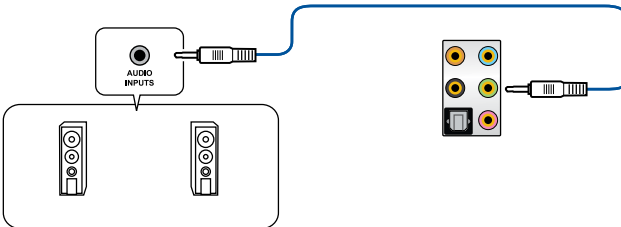
### Audio I/O ports



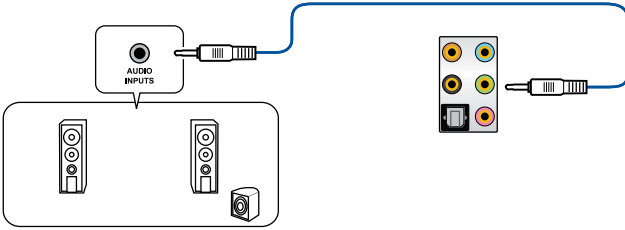
### Connect to Headphone and Mic



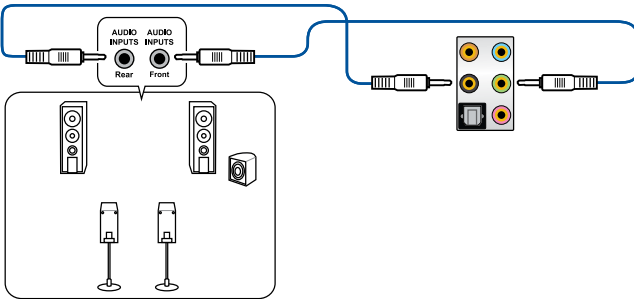
### Connect to Stereo Speakers



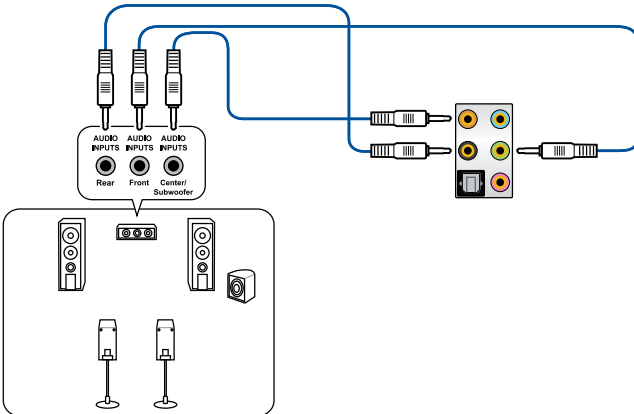
### Connect to 2-channel Speakers



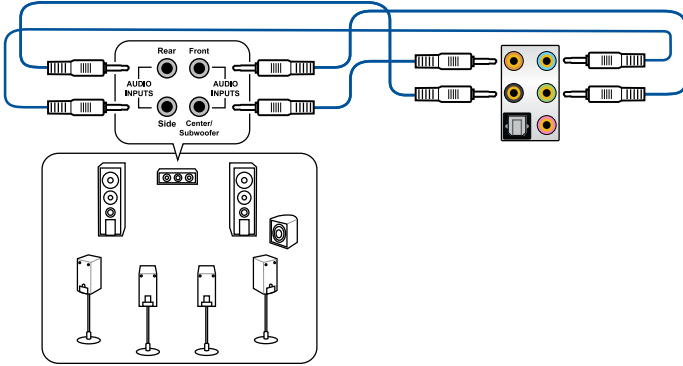
### Connect to 4-channel Speakers



### Connect to 5.1-channel Speakers



## Connect to 7.1-channel Speakers



## 2.4 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.

## 2.5 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

# 3



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For more details on BIOS and RAID configurations, please refer to [www.asus.com/support](http://www.asus.com/support).

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## 3.1 Knowing BIOS



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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 manual 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.**

---



- When downloading or updating the BIOS file, rename it as **M12A.CAP** for this motherboard.
  - 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 screen 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 EZ Update

The EZ Update is a utility that allows you to update the motherboard BIOS in Windows® environment.



- 
- EZ Update requires an Internet connection either through a network or an ISP (Internet Service Provider).
  - This utility is available in the support USB drive that comes with the motherboard package.
-

## 3.4 ASUS EZ Flash 3

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



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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 <Tab> 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 <Tab> 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.

## 3.5 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 the motherboard support DVD or a USB flash drive that contains the BIOS file.



---

The BIOS file in the motherboard support DVD may be older than the BIOS file published on the ASUS official website. If you want to use the newer BIOS file, download the file at <https://www.asus.com/support/> and save it to a USB flash drive.

---

### Recovering the BIOS

#### To recover the BIOS:

1. Turn on the system.
2. Insert the motherboard support DVD to the optical drive, or the USB flash drive containing the BIOS file to the USB port.
3. 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.
4. 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.



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

---

## 3.6 RAID configurations

The motherboard comes with the Intel® Rapid Storage Technology that supports RAID 0, RAID 1, RAID 5 and RAID 10 configuration.



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

**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 5** stripes both data and parity information across three or more hard disk drives. Among the advantages of RAID 5 configuration include better HDD performance, fault tolerance, and higher storage capacity. The RAID 5 configuration is best suited for transaction processing, relational database applications, enterprise resource planning, and other business systems. Use a minimum of three identical hard disk drives for this setup.

**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.



# Appendix

## Q-Code table

Code	Description
00	Not used
01	Power on. Reset type detection (soft/hard).
02	AP initialization before microcode loading
03	System Agent initialization before microcode loading
04	PCH initialization before microcode loading
06	Microcode loading
07	AP initialization after microcode loading
08	System Agent initialization after microcode loading
09	PCH initialization after microcode loading
0B	Cache initialization
0C – 0D	Reserved for future AMI SEC error codes
0E	Microcode not found
0F	Microcode not loaded
10	PEI Core is started
11 – 14	Pre-memory CPU initialization is started
15 – 18	Pre-memory System Agent initialization is started
19 – 1C	Pre-memory PCH initialization is started
2B – 2F	Memory initialization
30	Reserved for ASL (see ASL Status Codes section below)
31	Memory Installed
32 – 36	CPU post-memory initialization
37 – 3A	Post-Memory System Agent initialization is started
3B – 3E	Post-Memory PCH initialization is started
4F	DXE IPL is started
50 – 53	Memory initialization error. Invalid memory type or incompatible memory speed
54	Unspecified memory initialization error
55	Memory not installed
56	Invalid CPU type or Speed
57	CPU mismatch
58	CPU self test failed or possible CPU cache error
59	CPU micro-code is not found or micro-code update is failed
5A	Internal CPU error
5B	Reset PPI is not available
5C – 5F	Reserved for future AMI error codes

*(continued on the next page)*

## Q-Code table

Code	Description
E0	S3 Resume is started (S3 Resume PPI is called by the DXE IPL)
E1	S3 Boot Script execution
E2	Video repost
E3	OS S3 wake vector call
E4 – E7	Reserved for future AMI progress codes
E8	S3 Resume Failed
E9	S3 Resume PPI not Found
EA	S3 Resume Boot Script Error
EB	S3 OS Wake Error
EC – EF	Reserved for future AMI error codes
F0	Recovery condition triggered by firmware (Auto recovery)
F1	Recovery condition triggered by user (Forced recovery)
F2	Recovery process started
F3	Recovery firmware image is found
F4	Recovery firmware image is loaded
F5 – F7	Reserved for future AMI progress codes
F8	Recovery PPI is not available
F9	Recovery capsule is not found
FA	Invalid recovery capsule
FB – FF	Reserved for future AMI error codes
60	DXE Core is started
61	NVRAM initialization
62	Installation of the PCH Runtime Services
63 – 67	CPU DXE initialization is started
68	PCI host bridge initialization
69	System Agent DXE initialization is started
6A	System Agent DXE SMM initialization is started
6B – 6F	System Agent DXE initialization (System Agent module specific)
70	PCH DXE initialization is started
71	PCH DXE SMM initialization is started
72	PCH devices initialization
73 – 77	PCH DXE Initialization (PCH module specific)
78	ACPI module initialization
79	CSM initialization
7A – 7F	Reserved for future AMI DXE codes

*(continued on the next page)*



## Q-Code table

Code	Description
90	Boot Device Selection (BDS) phase is started
91	Driver connecting is started
92	PCI Bus initialization is started
93	PCI Bus Hot Plug Controller Initialization
94	PCI Bus Enumeration
95	PCI Bus Request Resources
96	PCI Bus Assign Resources
97	Console Output devices connect
98	Console input devices connect
99	Super IO Initialization
9A	USB initialization is started
9B	USB Reset
9C	USB Detect
9D	USB Enable
9E – 9F	Reserved for future AMI codes
A0	IDE initialization is started
A1	IDE Reset
A2	IDE Detect
A3	IDE Enable
A4	SCSI initialization is started
A5	SCSI Reset
A6	SCSI Detect
A7	SCSI Enable
A8	Setup Verifying Password
A9	Start of Setup
AA	Reserved for ASL (see ASL Status Codes section below)
AB	Setup Input Wait
AC	Reserved for ASL (see ASL Status Codes section below)
AD	Ready To Boot event
AE	Legacy Boot event
AF	Exit Boot Services event
B0	Runtime Set Virtual Address MAP Begin
B1	Runtime Set Virtual Address MAP End
B2	Legacy Option ROM Initialization
B3	System Reset

*(continued on the next page)*

## Q-Code table

Code	Description
B4	USB hot plug
B5	PCI bus hot plug
B6	Clean-up of NVRAM
B7	Configuration Reset (reset of NVRAM settings)
B8– BF	Reserved for future AMI codes
D0	CPU initialization error
D1	System Agent initialization error
D2	PCH initialization error
D3	Some of the Architectural Protocols are not available
D4	PCI resource allocation error. Out of Resources
D5	No Space for Legacy Option ROM
D6	No Console Output Devices are found
D7	No Console Input Devices are found
D8	Invalid password
D9	Error loading Boot Option (LoadImage returned error)
DA	Boot Option is failed (StartImage returned error)
DB	Flash update is failed
DC	Reset protocol is not available

### ACPI/ASL Checkpoints (under OS)

Code	Description
03	System is entering S3 sleep state
04	System is entering S4 sleep state
05	System is entering S5 sleep state
30	System is waking up from the S3 sleep state
40	System is waking up from the S4 sleep state
AC	System has transitioned into ACPI mode. Interrupt controller is in PIC mode.
AA	System has transitioned into ACPI mode. Interrupt controller is in APIC mode.

# 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

### Identification of the assembled product: INTEL® WI-FI 6 AX200

Identification of the modular components used in the assembly:

Model Name: INTEL® WI-FI 6 AX200 FCC ID: PD9AX200NG

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.

## 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-3(B)/NMB-3(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-3(B)/NMB-3(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。

VCCI-B

## 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 무선설비는 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없습니다.

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See the License for the specific language governing permissions and limitations under the License.

## NCC: Taiwan Wireless Statement

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

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 :

- a. 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).
- b. 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.
- c. 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.
- d. 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.

### **Turkey 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.



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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.

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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.

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## Regional notice for California



### **WARNING**

Cancer and Reproductive Harm -  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### Simplified EU Declaration of Conformity

ASUSTek Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. Full text of EU 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 countries listed in the table below:

### Déclaration simplifiée de conformité de l'UE

ASUSTek Computer Inc. déclare par la présente que cet appareil est conforme aux critères essentiels et aux autres clauses pertinentes de la directive 2014/53/UE. La déclaration de conformité de l'UE peut être téléchargée à partir du site internet suivant : <https://www.asus.com/support/>

Dans la plage de fréquence 5150-5350 MHz, le Wi-Fi est restreint à une utilisation en intérieur dans les pays listés dans le tableau ci-dessous:

### Vereinfachte EU-Konformitätserklärung

ASUSTek COMPUTER INC erklärt hiermit, dass dieses Gerät mit den grundlegenden Anforderungen und anderen relevanten Bestimmungen der Richtlinie 2014/53/EU übereinstimmt. Der gesamte Text der EU-Konformitätserklärung ist verfügbar unter: <https://www.asus.com/support/>

Der WLAN-Betrieb im Band von 5150-5350 MHz ist für die in der unteren Tabelle aufgeführten Länder auf den Innenbereich beschränkt:

### Dichiarazione di conformità UE semplificata

ASUSTek Computer Inc. con la presente dichiara che questo dispositivo è conforme ai requisiti essenziali e alle altre disposizioni pertinenti con la direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile all'indirizzo: <https://www.asus.com/support/>

L'utilizzo della rete Wi-Fi con frequenza compresa nell'intervallo 5150-5350MHz deve essere limitato all'interno degli edifici per i paesi presenti nella seguente tabella:

### Упрощенное заявление о соответствии европейской директиве

ASUSTek Computer Inc. заявляет, что устройство соответствует основным требованиям и другим соответствующим условиям директивы 2014/53/ЕU. Полный текст декларации соответствия ЕС доступен на <https://www.asus.com/support/>

Работа WiFi в диапазоне частот 5150-5350 должна быть ограничена использованием в помещениях для стран, перечисленных в таблице ниже:

إعلان التوافق المبسط الصادر عن الاتحاد الأوروبي  
تقر شركة ASUSTek Computer أن هذا الجهاز يتوافق مع المتطلبات الأساسية والأحكام الأخرى ذات الصلة الخاصة بتوجيه 2014/53/UE. يتوفر النسخ الكامل لإعلان التوافق الصادر عن الاتحاد الأوروبي على: <https://www.asus.com/support/>

يجب حصر استخدام WiFi العاملة « 5150-5350 ميجا هرتز على الاستخدام المنزلي للبلدان المدرجة بالجدول.

### Опрощенная декларация за съответствие на ЕС

С настоящото ASUSTek Computer Inc. декларира, че това устройство е в съответствие със съществените изисквания и другите приложими постановления на свързаната Директива 2014/53/ЕС. Пълният текст на ЕС декларация за съвместимост е достъпен на адрес <https://www.asus.com/support/>

WiFi, работеща в диапазон 5150-5350MHz, трябва да се ограничи до употреба на закрито за страните, посочени в таблицата по-долу:

### Deklaracja de Conformidade UE Simplificada

ASUSTek Computer Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e as outras disposições relevantes relacionadas às diretivas 2014/53/UE. O texto completo da declaração de conformidade CE está disponível em <https://www.asus.com/support/>

O WiFi operando na banda 5150-5350MHz deve ser restrito para uso interno para os países listados na tabela abaixo:

### Поједностављена ЕУ изјава о суладности

ASUSTek Computer Inc. овим изјављује да је овај уређај суладан с битним захтевима и осталим одговарајућим одредбама директиве 2014/53/ЕУ. Цјели текст ЕУ изјаве о суладности доступан је на <https://www.asus.com/support/>. WiFi који ради на опсегу фреквенција 5150-5350 MHz бит ће ограничени на употребу у затвореном простору у земљама на доњем попису:

### Zjednodušené prohlášení o shodě EU

Společnost ASUSTek Computer Inc. tímto prohlašuje, že toto zařízení splňuje základní požadavky a další příslušná ustanovení směrnice 2014/53/ EU. Plné znění prohlášení o shodě EU je k dispozici na adrese <https://www.asus.com/support/>

V zemích uvedených v tabulce je provoz sítě Wi-Fi ve frekvenčním rozsahu 5 150 - 5 350 MHz povolen pouze ve vnitřním prostoru:

### Forenklet EU-overensstemmelseerklæring

ASUSTek Computer Inc. erklærer hermed at denne enhed er i overensstemmelse med hovedkravene og øvrige relevante bestemmelser i direktivet 2014/53/EU. Hele EU-overensstemmelseerklæringen kan findes på <https://www.asus.com/support/>

Wi-Fi, der bruger 5150-5350 MHz skal begrænses til indendørs brug i lande, der er anført i tabellen:

### Vereenvoudigd EU-conformiteitsverklaring

ASUSTek Computer Inc. verklaart hierbij dat dit apparaat voldoet aan de essentiële vereisten en andere relevante bepalingen van Richtlijn 2014/53/ EU. De volledige tekst van de EU-conformiteitsverklaring is beschikbaar op <https://www.asus.com/support/>

De WiFi op 5150-5350MHz zal beperkt zijn tot binnengebruik voor in de tabel vermelde landen:

### Lihtsustatud EÜ vastavusdeklaratsioon

Käesolevaga kinnitab ASUSTek Computer Inc. et seade vastab direktiivi 2014/53/EU olulistele nõuetele ja teistele asjakohastele sätetele. EL vastavusdeklaratsiooni täisteksti on saadaval veebisaidil <https://www.asus.com/support/>

Sagedusvahemikus 5150-5350MHz töötava WiFi kasutamise on järgmistes riikides lubatud ainult siseruumides:

### Eurooppa - EY'n vaatimustenmukaisuusvakuutus

ASUSTek Computer Inc. ilmoittaa täten, että tämä laite on direktiivin 2014/53/EU olennaisista vaatimusten ja muiden asiaankuuluvien lisäysten mukainen. Koko EY:n vaatimustenmukaisuusvakuutuksen teksti on luettavissa osoitteessa <https://www.asus.com/support/>

5 150 - 5 350 MHz:llä toimiva WiFi on rajoitettu sisäkäyttöön taulukossa luetelluissa maissa:

تیجعت از نسخه ساده شده بیانیه تطبیحی اروپا  
ASUSTek Computer Inc در اینجا اعلام می کند که این دستگاه با نیازهای اساسی و سایر مقررات مربوط به بیانیه 2014/53/UE مطابقت دارد. متن کامل پیروی از این بیانیه تطبیحی اروپا در این آدرس موجود است: <https://www.asus.com/support/>

مطابق 5150-5350 مگاهرتز برای WiFi استفاده در فضای داخل ساختمان برای کشور های فهرست شده در جدول، محدود شود.

### Απλοποιημένη Δήλωση Συμμόρφωσης ΕΕ

Διά το παρόντος η ASUSTek Computer Inc. δηλώνει ότι αυτή η συσκευή είναι συμμόρφη με τις βασικές προϋποθέσεις και άλλες σχετικές διατάξεις της Οδηγίας 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης της ΕΕ είναι διαθέσιμο στη διεύθυνση <https://www.asus.com/support/>

To WiFi που λειτουργεί στη ζώνη 5150-5350MHz περιορίζεται για χρήση σε εσωτερικούς χώρους για τις χώρες που αναφέρονται στον παρακάτω πίνακα:

### הצהרת האימות הרגולטורית מקוצרת עבור האיחוד האירופי

ASUSTek Computer Inc. מודיעה כי מכשיר זה תואם לדרישות החיוביות ולשאר הסעיפים הרלוונטיים של תקנה 2014/53/UE. ניתן לקרוא את הטקסט המלא של הצהרת האימות הרגולטורית עבור האיחוד האירופי בתובנות: <https://www.asus.com/support/>

יש להגביל תשתות Wi-Fi הפועלות ברצועות התדרים 5150-5350MHz לשימוש

בתוך מבנים סגורים בארצות המפורטות ברשימה הבאה:

### Egyszerűsített EU megfelelési nyilatkozat

Az ASUSTek Computer Inc. ezennel kijelenti, hogy ez az eszköz megfelel az 2014/53/EU sz. irányelv alapvető követelményeinek és egyéb vonatkozó rendelkezéseinek. Az EU megfelelési nyilatkozat teljes szövegét a következő weboldalon tekintheti meg: <https://www.asus.com/support/>

Az 5150-5350 MHz-es sávban működő Wi-Fi-t belső használatra kell korlátozni az alábbi táblázatban felsorolt országokban:

### Pernyataan Kesesuaian UE yang Disederhanakan

ASUSTek Computer Inc. dengan ini menyatakan bahwa perangkat ini memenuhi persyaratan utama dan ketentuan relevan lainnya yang terdapat pada Peraturan 2014/53/UE. Teks lengkap pernyataan kesesuaian EU tersedia di: <https://www.asus.com/support/>

WiFi yang Beroperasi pada 5150-5350 MHz akan terbatas untuk penggunaan dalam ruangan di negara yang tercantum dalam tabel

### Vienkārtoša ES atbilstības paziņojums

ASUSTek Computer Inc. ar šo paziņo, ka šī ierīce atbilst Direktīvas 2014/53/ES būtiskajām prasībām un citiem citiem saistošajiem nosacījumiem. Pilns ES atbilstības paziņojuma teksts pieejams šeit: <https://www.asus.com/support/>

Wi-Fi darbība 5150-5350 MHz ir jāierobežo lietošanai telpās valstīs, kuras norādītas tālāk.



### Supaprastinta ES atitikties deklaracija

Šiame dokumente bendrovė „ASUSTek Computer Inc.“ pareiškia, kad šis prietaisas atitinka pagrindinius reikalavimus ir kitas susijusias Direktyvos 2014/53/ES nuostatas. Visas ES atitikties deklaracijos tekstas pateikiamas čia: <https://www.asus.com/support/>

Toliau nurodytose šalyse „WiFi“ ryšiu, veikiančiu 5 150-5 350 MHz dažniu juostose, galima naudotis tik palatose:

### Forenklet EU-samsvarserklæring

ASUSTek Computer Inc. erklærer herved at denne enheten er i samsvar med hovedsakelige krav og andre relevante forskrifter i direktivet 2014/53/EU. Fullstendig tekst for EU-samsvarserklæringen finnes på: <https://www.asus.com/support/>

Wi-Fi-området 5150–5350 MHz skal begrenses til innendørs bruk for landene som er oppført i tabellen:

### Uproszczone deklaracja zgodności UE

Firma ASUSTek Computer Inc. niniejszym oświadcza, że urządzenie to jest zgodne z zasadniczymi wymogami i innymi właściwymi postanowieniami dyrektywy 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod adresem <https://www.asus.com/support/>

W krajach wymienionych w tabeli działanie sieci Wi-Fi w paśmie 5150–5350 MHz powinno być ograniczone wyłącznie do pomieszczeń:

### Declaração de Conformidade Simplificada da UE

A ASUSTek Computer Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e outras disposições relevantes da Diretiva 2014/53/UE. O texto integral da declaração de conformidade da UE está disponível em <https://www.asus.com/support/>

A utilização das frequências WiFi de 5150 a 5350MHz está restrita a ambientes interiores nos países apresentados na tabela:

### Declaratie de conformitate UE, versiune simplificată

Prin prezenta, ASUSTek Computer Inc. declară că acest dispozitiv este în conformitate cu regulamentele esențiale și cu celelalte prevederi relevante ale Directivei 2014/53/UE. Textul complet al declarației de conformitate UE este disponibil la adresa <https://www.asus.com/support/>

Pentru țările listate în tabelul de mai jos, rețelele WiFi care funcționează în banda de frecvență de 5.150-5.350 MHz trebuie utilizate doar în interior:

### Pojednostavljena Deklaracija o usaglasenosti EU

ASUSTek Computer Inc. ovim izjavljuje da je ovaj uređaj usaglasan sa osnovnim zahtevima i drugim relevantnim odredbama Direktive 2014/53/EU. Ceo tekst Deklaracije o usaglasenosti EU dostupan je na lokaciji <https://www.asus.com/support/>

WiFi koji radi u frekventnom opsegu od 5150 MHz do 5350 MHz ograničen je isključivo na upotrebu u zatvorenom prostoru za zemlje navedene u tabeli ispod:

### Zjednodušené vyhlásenie o zhode platné pre EÚ

Spoločnosť ASUSTek Computer Inc. týmto vyhlasuje, že toto zariadenie je v súlade so základnými požiadavkami a ďalšími príslušnými ustanoveniami smernice č. 2014/53/EÚ. Plné znenie vyhlásenia o zhode pre EÚ je k dispozícii na lokalite <https://www.asus.com/support/>

Činnosť WiFi v pásme 5150 - 5350 MHz bude obmedzená na použitie vo vnútornom prostredí pre krajiny uvedené v tabuľke nižšie:

### Poenostavljena izjava EU o skladnosti

ASUSTek Computer Inc. tukaj izjavlja, da je ta naprava skladna s temeljnimi zahtevami in drugimi relevantnimi določili Direktive 2014/53/UE. Polno besedilo izjave EU o skladnosti je na voljo na <https://www.asus.com/support/>

WiFi, ki deluje v pasovnem območju 5150-5350 MHz, mora biti v državah, navedenih v spodnjem seznamu, omejen na notranjo uporabo:

### Declaración de conformidad simplificada para la UE

Para la presente, ASUSTek Computer Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones pertinentes de la directiva 2014/53/UE. En <https://www.asus.com/support/> está disponible el texto completo de la declaración de conformidad para la UE.

La conexión WiFi con una frecuencia de funcionamiento de 5150-5350 MHz se restringirá al uso en interiores para los países enumerados en la tabla:

### Förenklad EU-försäkran om överensstämmelse

ASUSTek Computer Inc. deklarerar härmed att denna enhet överensstämmer med de grundläggande kraven och andra relevanta bestämmelser i direktiv 2014/53/UE. Fullständig text av EU-försäkran om överensstämmelse finns på <https://www.asus.com/support/>

WiFi som används 5150-5350 MHz kommer att begränsas för användning inomhus i de länder som anges i tabellen:

### ประกาศเกี่ยวกับความสอดคล้องของสหภาพยุโรปแบบย่อ

### ASUSTek Computer Inc.

ขอประกาศในที่นี้ว่าอุปกรณ์นี้มีความสอดคล้องกับความต้องการที่จำเป็นและเงื่อนไขที่เกี่ยวข้องอื่น ๆ ของบทบัญญัติข้อกำหนด 2014/53/UE เนื่องจากคุณสมบัติของประกาศความสอดคล้องกับ EU มีอยู่ที่ <https://www.asus.com/support/>

การใช้งานของ WiFi ที่ 5150-5350MHz ถูกจำกัดให้ใช้เฉพาะสำหรับประเทศที่แสดงในตาราง

### Basitleştirilmiş AB Uyumluluk Bildirimi

ASUSTek Computer Inc., bu aygıtın 2014/53/UE Yönergesinin temel gereksinimlerine ve diğer ilgili hükümlerine uygun olduğunu bildirir. AB uygunluk bildiriminin tam metni şu adreste bulunabilir: <https://www.asus.com/support/>

5150-5350 MHz aralındaki WiFi çalışması, tabloda listelenen ülkeler için iç mekân kullanımla kısıtlanacaktır.

### Спрощена декларація про відповідність нормам ЄС

ASUSTek Computer Inc. заявляє, що цей пристрій відповідає основним вимогам та іншим відповідним вимогам Директиви 2014 / 53 / UE. Повний текст декларації відповідності нормам ЄС доступний на <https://www.asus.com/support/>

Робота Wi-Fi на частоті 5150-5350 МГц обмежується використанням у приміщенні для країн, поданих у таблиці нижче:



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	UK	HR		

### INTEL® Wi-Fi 6 AX201 output power table:

Function	Frequency	Maximum Output Power (EIRP)
WiFi	2412 - 2472 MHz	18.62 dBm
	5150 - 5350 MHz	19.15 dBm
	5470 - 5725 MHz	18.92 dBm
	5725 - 5850 MHz	9.25 dBm
Bluetooth	2402 - 2480 MHz	10.51 dBm

For the standard EN 300 440, if this device operates in 5725-5875 MHz, it will be considered as a receiver category 2.



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