



# Pro ET500I W8

WORKSTATION SYSTEM

**USER GUIDE**

**Copyright © 2026 ASUSTeK COMPUTER INC. All Rights Reserved.**

No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except documentation kept by the purchaser for backup purposes, without the express written permission of ASUSTeK COMPUTER INC. ("ASUS").

ASUS provides this manual "as is" without warranty of any kind, either express or implied, including but not limited to the implied warranties or conditions of merchantability or fitness for a particular purpose. In no event shall ASUS, its directors, officers, employees, or agents be liable for any indirect, special, incidental, or consequential damages (including damages for loss of profits, loss of business, loss of use or data, interruption of business and the like), even if ASUS has been advised of the possibility of such damages arising from any defect or error in this manual or product.

Specifications and information contained in this manual are furnished for informational use only, and are subject to change at any time without notice, and should not be construed as a commitment by ASUS. ASUS assumes no responsibility or liability for any errors or inaccuracies that may appear in this manual, including the products and software described in it.

Product warranty or service will not be extended if: (1) the product is repaired, modified or altered, unless such repair, modification or alteration is authorized in writing by ASUS; or (2) the serial number of the product is defaced or missing.

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

# Contents

<b>Safety information</b> .....	<b>v</b>
Electrical Safety.....	v
Operation Safety.....	v
<b>About this guide</b> .....	<b>vi</b>

## Chapter 1: Product Introduction

<b>1.1</b>	<b>System package contents</b> .....	<b>1-2</b>
<b>1.2</b>	<b>Serial number label</b> .....	<b>1-2</b>
<b>1.3</b>	<b>Pro ET500I W8 specifications summary</b> .....	<b>1-3</b>
<b>1.4</b>	<b>Front panel features</b> .....	<b>1-6</b>
<b>1.5</b>	<b>Rear panel features</b> .....	<b>1-7</b>
<b>1.6</b>	<b>Internal features</b> .....	<b>1-8</b>
<b>1.7</b>	<b>LED information</b> .....	<b>1-9</b>
1.7.1	Front panel LEDs.....	1-9
1.7.2	LAN LEDs.....	1-9

## Chapter 2: Hardware Setup

<b>2.1</b>	<b>Chassis cover</b> .....	<b>2-2</b>
2.1.1	Removing the side cover.....	2-2
2.1.2	Installing the side cover .....	2-2
<b>2.2</b>	<b>CPU installation</b> .....	<b>2-3</b>
<b>2.3</b>	<b>Cooling system installation</b> .....	<b>2-7</b>
<b>2.4</b>	<b>System memory</b> .....	<b>2-9</b>
2.4.1	Installing a DIMM .....	2-11
2.4.2	Removing a DIMM .....	2-11
<b>2.5</b>	<b>Storage Devices</b> .....	<b>2-12</b>
<b>2.6</b>	<b>Expansion slots</b> .....	<b>2-15</b>
2.6.1	Installing an expansion card .....	2-16
2.6.2	Configuring an expansion card .....	2-18
2.6.3	Installing M.2 (NGFF) cards .....	2-19
<b>2.7</b>	<b>System fan</b> .....	<b>2-22</b>
2.7.1	Removing the rear system fan .....	2-22
2.7.2	Removing the front system fan.....	2-24
<b>2.8</b>	<b>Motherboard</b> .....	<b>2-26</b>
2.8.1	Removing the motherboard.....	2-26
2.8.2	Installing the motherboard.....	2-27
<b>2.9</b>	<b>CMOS battery</b> .....	<b>2-28</b>

<b>2.10</b>	<b>Motherboard rear and audio connection .....</b>	<b>2-29</b>
2.10.1	Rear I/O connection.....	2-29
2.10.2	Audio I/O connections .....	2-30

**Chapter 3: Motherboard Information**

<b>3.1</b>	<b>Motherboard layout .....</b>	<b>3-2</b>
<b>3.2</b>	<b>Onboard buttons and switches.....</b>	<b>3-4</b>
<b>3.3</b>	<b>Jumpers .....</b>	<b>3-5</b>
<b>3.4</b>	<b>Onboard LEDs.....</b>	<b>3-7</b>
<b>3.5</b>	<b>Internal connectors .....</b>	<b>3-9</b>

**Chapter 4: Software Configuration**

<b>4.1</b>	<b>System recovery and removing personal files.....</b>	<b>4-2</b>
<b>4.2</b>	<b>Putting your device into the lowest power mode.....</b>	<b>4-2</b>

**Chapter 5: BIOS Setup**

<b>5.1</b>	<b>About the UEFI BIOS.....</b>	<b>5-2</b>
<b>5.2</b>	<b>BIOS FlashBack™.....</b>	<b>5-3</b>
<b>5.3</b>	<b>ASUS EzFlash Utility.....</b>	<b>5-5</b>
<b>5.4</b>	<b>ASUS CrashFree BIOS 3.....</b>	<b>5-6</b>

**Chapter 6: RAID Configuration**

<b>6.1</b>	<b>RAID configurations.....</b>	<b>6-2</b>
------------	---------------------------------	------------

**Appendix**

<b>Pro WS W880-S block diagram .....</b>	<b>A-2</b>
<b>Exploded view.....</b>	<b>A-3</b>
<b>Q-Code table .....</b>	<b>A-4</b>
<b>Notices .....</b>	<b>A-8</b>
<b>Warranty.....</b>	<b>A-16</b>
<b>ASUS contact information .....</b>	<b>A-19</b>
<b>Service and support.....</b>	<b>A-19</b>
<b>Product register.....</b>	<b>A-19</b>

## Safety information

### Electrical Safety

- Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.
- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing any additional devices to or from the system, contact a qualified service technician or your dealer. 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 service.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your dealer.

### Operation Safety

- Servicing of this product or units is to be performed by trained service personnel only.
- Before operating the server, carefully read all the manuals included with the server package.
- Before using the server, make sure all cables are correctly connected and the power cables are not damaged. If any damage is detected, contact your dealer as soon as possible.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Place the server on a stable surface.

---

**CAUTION!** This product is equipped with a three-wire power cable and plug for the user's safety. Use the power cable with a properly grounded electrical outlet to avoid electrical shock.

---

#### Lithium-Ion Battery Warning

**CAUTION!** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



#### Heavy System

**CAUTION!** This server system is heavy. Ask for assistance when moving or carrying the system.

# About this guide

## Audience

This user guide is intended for system integrators, and experienced users with at least basic knowledge of configuring a server.

## Contents

This guide contains the following parts:

**1. Chapter 1: Product Introduction**

This chapter describes the general features of the server, including sections on front panel and rear panel specifications.

**2. Chapter 2: Hardware Setup**

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

**3. Chapter 3: Motherboard Information**

This chapter includes the motherboard layout and brief descriptions of the jumpers and internal connectors.

**4. Chapter 4: Software Configuration**

This chapter provides instructions for changing software configuration settings.

**5. Chapter 5: BIOS Setup**

This chapter provides information on BIOS and updating the BIOS.

**6. Chapter 6: RAID Configuration**

This chapter provides information on RAID configurations.

## 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.

**3. Driver and Utilities FAQ**

Please visit <https://www.asus.com/support> for more information on downloading and installing drivers and utilities for your workstation.



**4. RAID Configuration Guide**

Please visit <https://www.asus.com/support> for more information on the RAID Configuration Guide.



**5. BIOS FlashBack™ Feature**

Please visit <https://www.asus.com/support> for more information on the BIOS FlashBack™ Feature.



## Conventions used in this guide

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

- WARNING:** Information to prevent injury to yourself when trying to complete a task.
- CAUTION:** Information to prevent damage to the components 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.

### Typography

- Bold text** Indicates a menu or an item to select.
- Italics* Used to emphasize a word or a phrase.
- <Key> Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key.  
Example: <Enter> means that you must press the Enter or Return key.
- <Key1> + <Key2> + <Key3> If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).  
Example: <Ctrl> + <Alt> + <Del>
- Command** Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets.  
Example: At DOS prompt, type the command line:  
**format A: /S**

## References

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

### ASUS websites

The ASUS websites provide updated information for all ASUS hardware and software products. Visit <https://www.asus.com> for more information.

# Product Introduction

# 1

This chapter describes the general features of the server, including sections on front panel and rear panel specifications.

## 1.1 System package contents

Check your system package for the following items.

---

Model Name	Pro ET500I W8
------------	---------------

---

Accessories	Support DVD AC power cable
-------------	-------------------------------

---

Optional Items	Smart Card Reader DVD-ROM McAfee Anti-Virus (Preinstall) OS Keyboard and mouse Print port cable
----------------	--

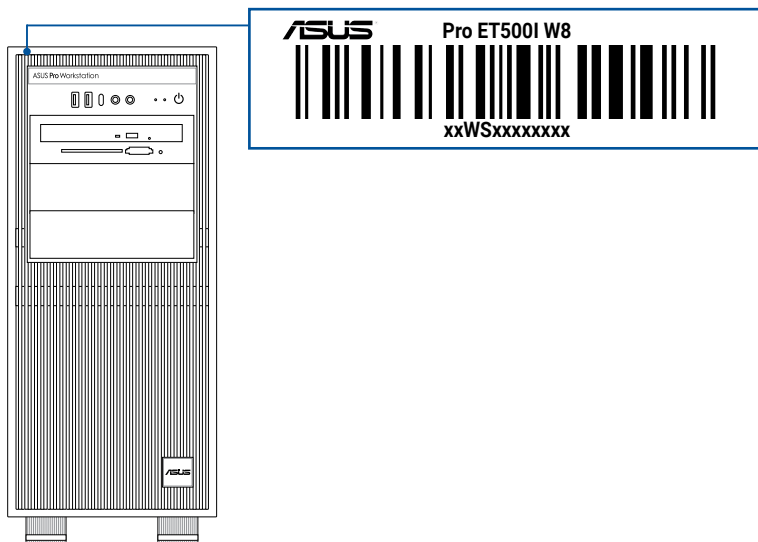
---

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

---

## 1.2 Serial number label

Before requesting support from the ASUS Technical Support team, you must take note of the product's serial number containing 12 characters such as xxWSxxxxxxx shown as the figure below. With the correct serial number of the product, ASUS Technical Support team members can then offer a quicker and satisfying solution to your problems.



## 1.3 Pro ET500I W8 specifications summary

The ASUS Pro ET500I W8 workstation features the ASUS Pro WS W880-S motherboard.

<b>Processor / System Bus</b>		1 x Socket LGA1851 Intel® Arrow Lake-S Series Processors  * Please refer to <a href="http://www.asus.com">www.asus.com</a> for Intel® CPU support list.
<b>Core Logic</b>		Intel® W880 Chipset
<b>Memory</b>	<b>Total Slots</b>	4 (2-channel)
	<b>Capacity</b>	Maximum up to 128GB (UDIMM)
	<b>Memory Type</b>	Dual Channel DDR5 5600/4800 ECC/non-ECC UDIMM  * Actual memory frequency differs from Intel CPU types and memory module. Please check Intel official site for more detail about the memory types supported by each CPU.
	<b>Memory Size</b>	32GB, 16GB, 8GB (UDIMM)  * Please refer to <a href="http://www.asus.com">www.asus.com</a> for latest memory AVL update.
<b>Expansion Slots</b>	<b>PCIe slots</b>	3
	<b>Slot Type</b>	Slot 1: PCIe x16 slots (Gen 5.0 x16/x8 link, FH, FL) Slot 2: PCIe x16 slots (Gen 5.0 x0/x8 link, FH, FL) Slot 3: PCIe x16 slots (Gen 4.0 x4 link)  * Specifications vary by CPU types.
<b>Storage</b>	<b>Storage controllers</b>	<b>Intel® Arrow Lake-S Series Processors</b> - M.2_1 slot (Key M), type 2280 (supports PCIe 5.0 x4 mode) - M.2_2 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode)  <b>Intel® W880 Chipset:</b> - M.2_3 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode) - 2 x SlimSAS ports (1 x PCIe/SATA modes, 1x PCIe mode) - 4 x SATA 6Gb/s ports  * Intel® Rapid Storage Technology supports PCIe RAID 0/1/5/10, SATA RAID 0/1/5/10.
	<b>Storage bays</b>	4 x Internal 3.5"/2.5" storage bays Support 3 Hot-swap 3.5"/2.5" Drive (optional)
	<b>Auxiliary storage</b>	8x DVD+/-RW 9.5mm Optical Disk Drive (optional) 4 in 2 Smart Card Reader (optional)
<b>Networking</b>		2 x Intel® 2.5Gb Ethernet
<b>Graphic</b>		Up to 2 GPU Cards
<b>Multi-GPU Support</b>		Please find the latest GPU support from <a href="https://servers.asus.com/support/gpu">https://servers.asus.com/support/gpu</a>

(continued on the next page)

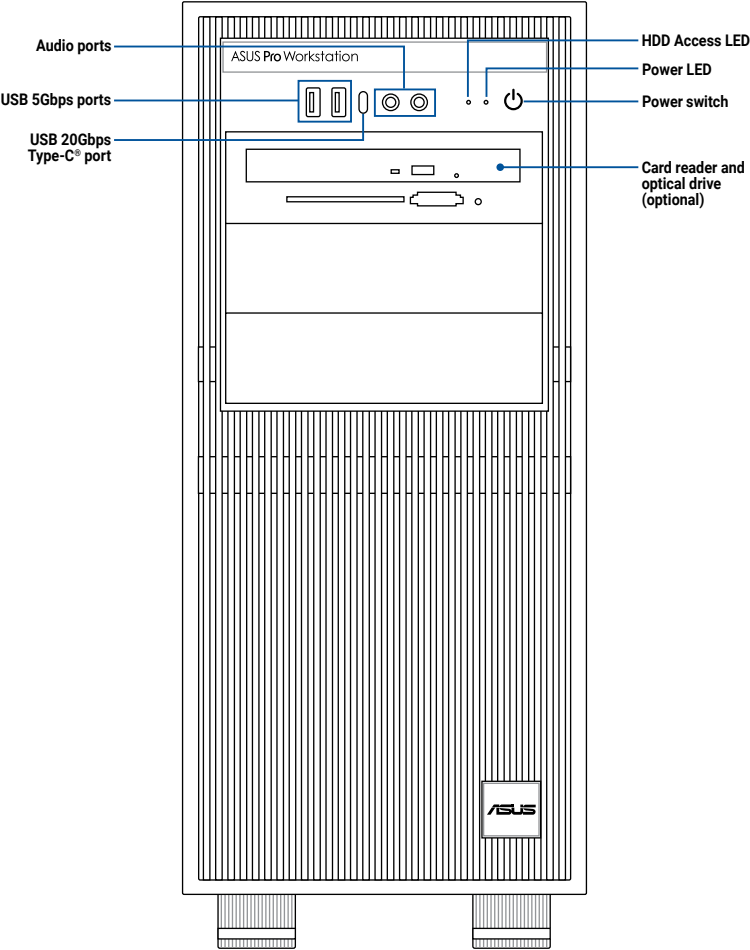
<b>Front I/O</b>	<ul style="list-style-type: none"> <li>1 x USB 20Gbps Type-C<sup>®</sup> port</li> <li>2 x USB 5Gbps ports</li> <li>1 x Headphone port</li> <li>1 x Microphone port</li> </ul>
<b>Rear I/O</b>	<ul style="list-style-type: none"> <li>1 x Thunderbolt™ 4 port (1 x USB Type-C<sup>®</sup>, 5V/3A &amp; 8K@60Hz or 4K@120Hz) from CPU iTBT</li> <li>1 x USB 20Gbps port (1 x Type-C<sup>®</sup>, 5V/3A) from CPU iTBT</li> <li>6 x USB 10Gbps ports (6 x Type-A)</li> <li>1 x HDMI™ port (8K@60Hz or 4K@120Hz)</li> <li>2 x Intel<sup>®</sup> 2.5Gb Ethernet ports</li> <li>1 x Serial COM port</li> <li>2 x Audio jacks with SPDIF OUT</li> <li>1 x BIOS FlashBack™ button</li> </ul>
<b>Internal I/O connectors</b>	<ul style="list-style-type: none"> <li>1 x ASUS Q-code</li> <li>1 x BMC header</li> <li>1 x LPT connector</li> <li>1 x USB 2.0 header</li> <li>1 x Thermal Sensor header</li> <li>1 x TPM-SPI header</li> </ul>
<b>Switch/LEDs</b>	<p><b>Front:</b></p> <ul style="list-style-type: none"> <li>1 x Power switch/LED</li> <li>1 x Reset switch</li> <li>1 x HDD Access LED</li> </ul> <p><b>Rear:</b></p> <ul style="list-style-type: none"> <li>1 x BIOS FlashBack™ button</li> </ul> <p><b>Internal:</b></p> <ul style="list-style-type: none"> <li>1 x FlexKey button</li> <li>1 x Start button</li> </ul>
<b>Management solution</b>	ASUS Control Center Express support
<b>OS support</b>	Please find the latest OS support from <a href="https://servers.asus.com/support/os">https://servers.asus.com/support/os</a>
<b>BIOS CAP filename</b>	A5646.CAP
<b>Regulatory compliance</b>	BSMI, CE, FCC, EPEAT, KCC, CCC
<b>Dimension (HH x WW x DD)</b>	423mm x 190mm x 435mm 16.7" x 7.48" x 17.1"
<b>Net Weight</b>	11.76 Kg
<b>Gross weight</b>	14.46Kg

(continued on the next page)

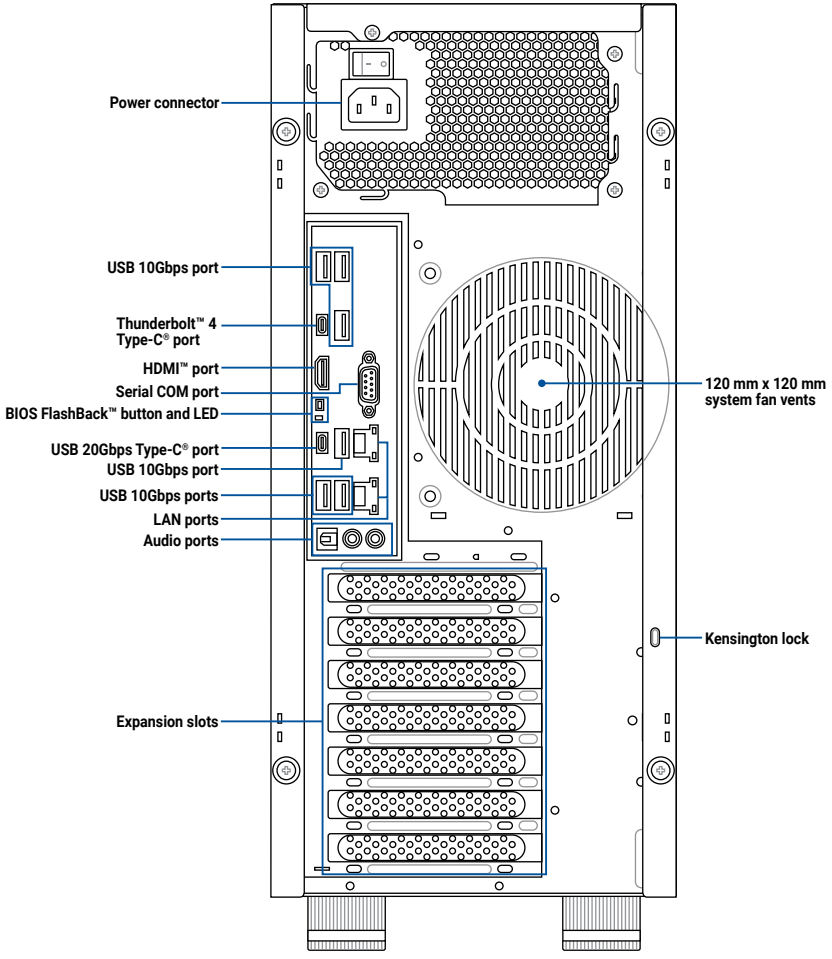
<b>Power supply and rating</b>	300W Bronze ATX Power Supply (100-127/220-240Vac, 6-3A, 50-60Hz, Class I) 550W Gold ATX Power Supply (100-240Vac, 9-4.5A, 50-60Hz,) 750W Gold ATX Power Supply (100-240Vac, 9-4.5A, 50/60Hz)
<b>Environment</b>	Operation temperature: 10°C ~ 35°C Non operation temperature: -40°C ~ 70°C Non operation humidity: 20% ~ 90% ( Non condensing)

**NOTE:** Specifications are subject to change without notice.

# 1.4 Front panel features

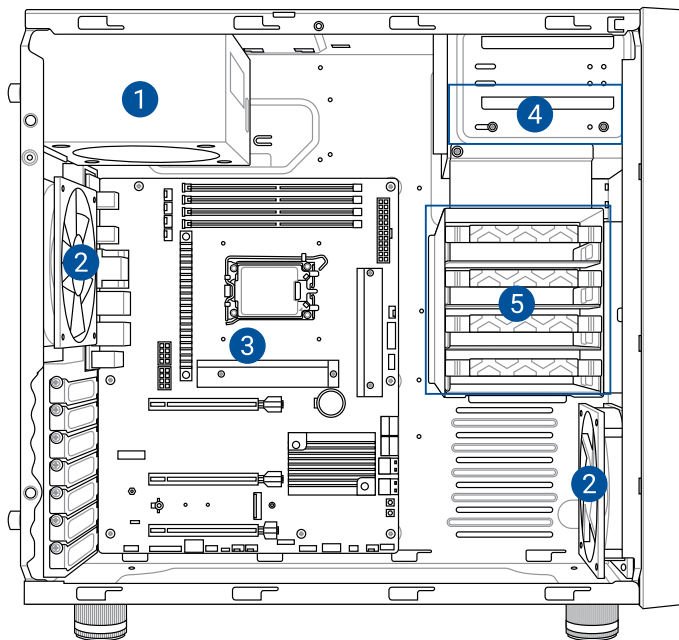


# 1.5 Rear panel features



## 1.6 Internal features

The ASUS Pro ET500I W8 workstation includes the basic components as shown:



- |                                |  |
|--------------------------------|--|
| 1. Power supply unit           | 4. Card reader or optical drive (optional) |
| 2. 120 mm x 120 mm system fans | 5. 4 x 2.5"/3.5" storage bays              |
| 3. ASUS W880-S motherboard     |  |

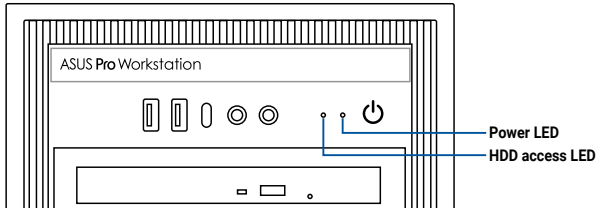
**CAUTION!** Turn off the system power and detach the power supply before removing or replacing any system component.



**NOTE:** The barebone server does not include a floppy disk drive. If you need to use a floppy disk, connect the USB floppy disk drive to any of the USB ports on the front or rear panel.

**WARNING**  
HAZARDOUS MOVING PARTS  
KEEP FINGERS AND OTHER BODY PARTS AWAY

## 1.7 LED information

### 1.7.1 Front panel LEDs

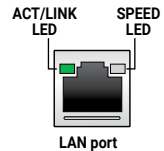


LED	Icon	Display status	Description
HDD Access LED		Off	No activity
		Blinking	Storage device reading or writing data
Power LED		Off	System is powered off
		Blinking	System is in sleep mode
		On	System is powered on

### 1.7.2 LAN LEDs

#### Intel® 2.5Gb Ethernet port LED indications

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





# Hardware Setup

# 2

This chapter lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard.

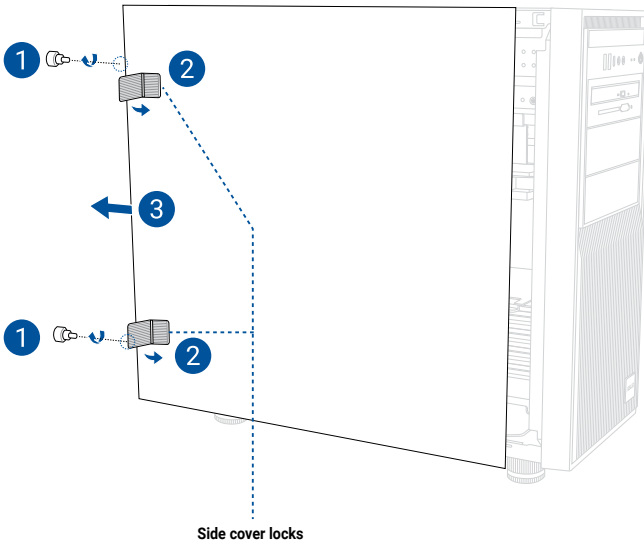
## 2.1 Chassis cover

### 2.1.1 Removing the side cover

**CAUTION!**

- Ensure that you unplug the power cord before removing the side cover.
- Take extra care when removing the side cover. Keep your fingers from components inside the chassis that can cause injury, such as the CPU fan, rear fan, and other sharp-edged parts.
- The images of the system shown in this section are for reference purposes only and may not exactly match the model you purchase.

1. Remove the two screws that secure the side cover.
2. Pull open the side cover locks.
3. Slightly pull the side cover toward the rear just enough to detach it from the chassis, then remove the cover and set it aside.

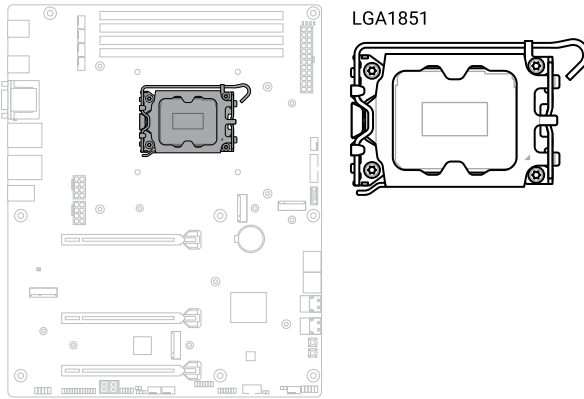


### 2.1.2 Installing the side cover

Align and install the side cover, then slide it towards the front of the chassis and secure it using the screws you removed earlier. Push and close the side cover locks.

## 2.2 CPU installation

The motherboard comes with a surface mount LGA1851 socket for Intel® Arrow Lake-S Series processors.



---

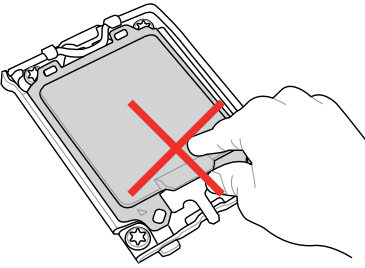
### CAUTION!

- Ensure that you install the correct CPU designed for LGA1851 socket only. DO NOT install a CPU designed for other sockets on the LGA1851 socket.
  - 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 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.
-

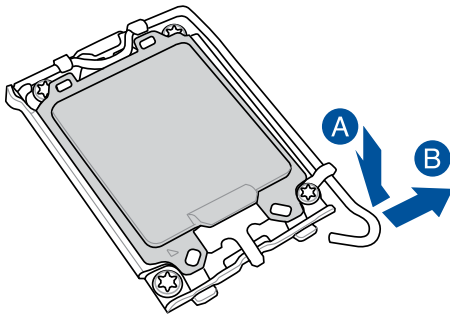
---

**NOTE:** To remove this component, follow the instructions in reverse order.

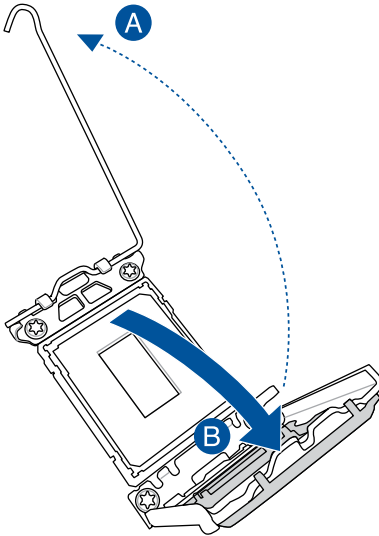
---



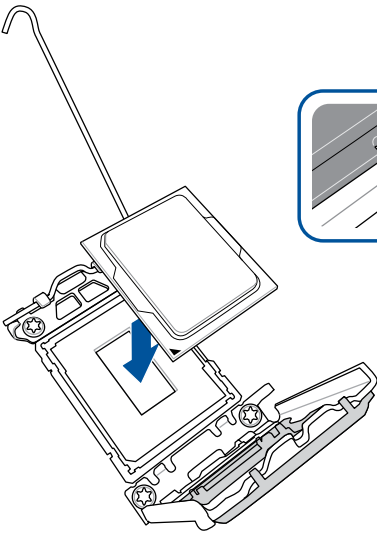
1



2

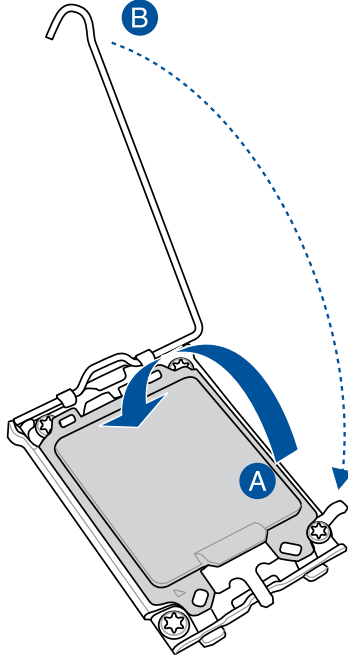


3

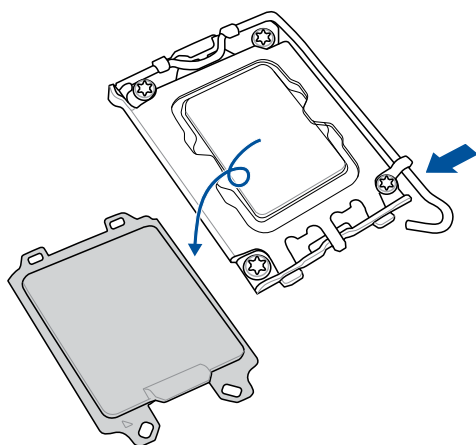


**IMPORTANT!** Ensure the notches on the CPU are properly aligned to the tabs in the CPU socket, and the triangle mark on the CPU is aligned to the same corner as the triangle mark on the socket.

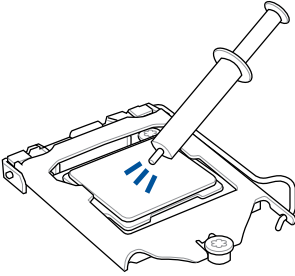
4



5



## 2.3 Cooling system installation



---

**IMPORTANT!** Apply the Thermal Interface Material to the CPU heatsink and CPU before you install the heatsink and fan, if necessary.

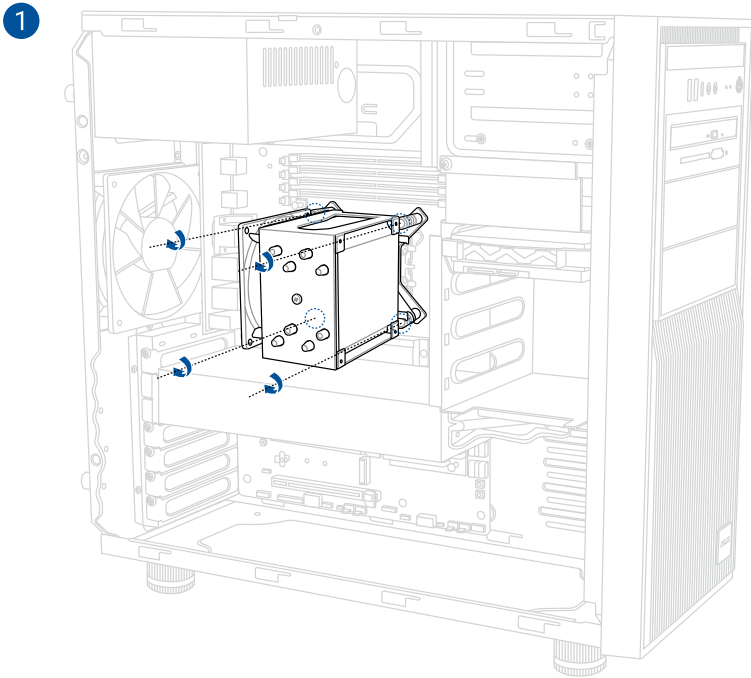
---

### CPU heatsink and fan assembly

---

**NOTE:** To remove this component, follow the instructions in reverse order.

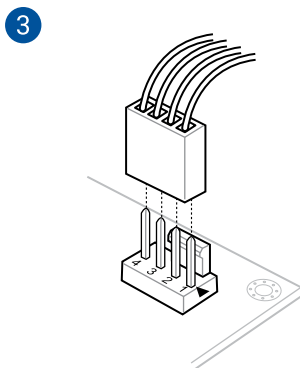
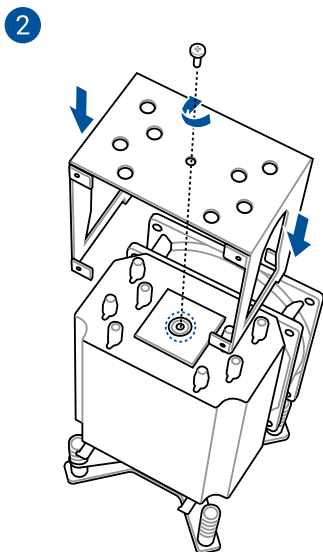
---



---

**NOTE:** A screwdriver with a torque value of  $4.5 \pm 0.5$  kgf-cm is recommended.

---



---

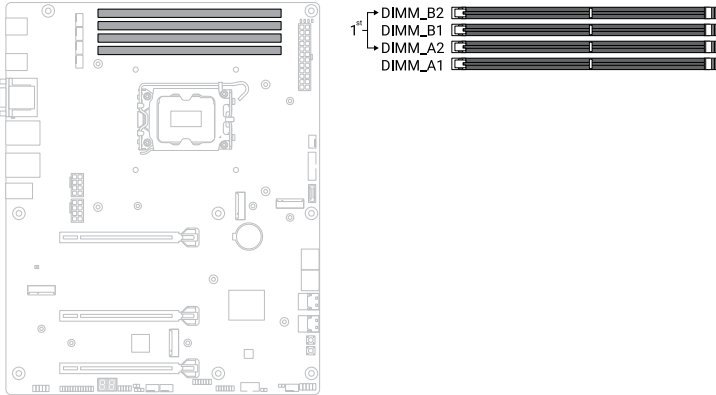
**NOTE:** A screwdriver with a torque value of  $3.5\pm 0.5\text{kgf}\cdot\text{cm}$  is recommended.

---

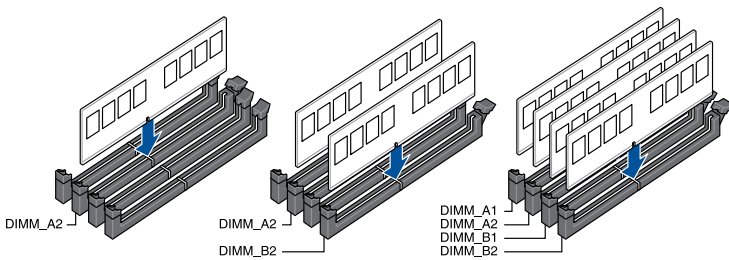
## 2.4 System memory

The motherboard comes with four DDR 5 (Double Data Rate 5) Dual Inline Memory Modules (DIMM) slots.

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



### Recommended memory configurations



DIMM configuration				
	A1	A2	B1	B2
1 DIMM		•		
2 DIMMs		•		•
4 DIMMs	•	•	•	•

## Memory configurations

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

---

### NOTE:

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

## 2.4.1 Installing a DIMM

---

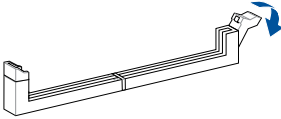
**IMPORTANT!** A DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket in the wrong direction to avoid damaging the DIMM.

---

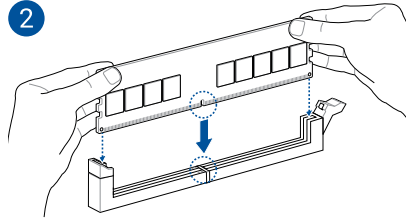
**CAUTION!** Always insert the DIMM into the socket vertically to prevent DIMM notch damage.

---

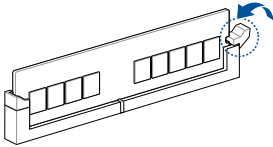
1



2



3



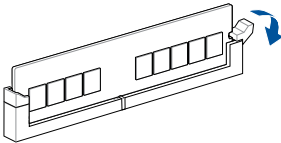
## 2.4.2 Removing a DIMM

---

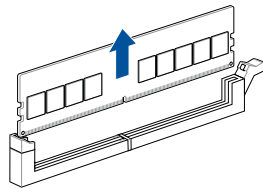
**NOTE:** Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

---

1



2



## 2.5 Storage Devices

The server system supports four (4) 3.5-inch Serial ATA hard disk drives or four (4) 2.5-inch HDD/SSD drives via the hard disk drive bays.

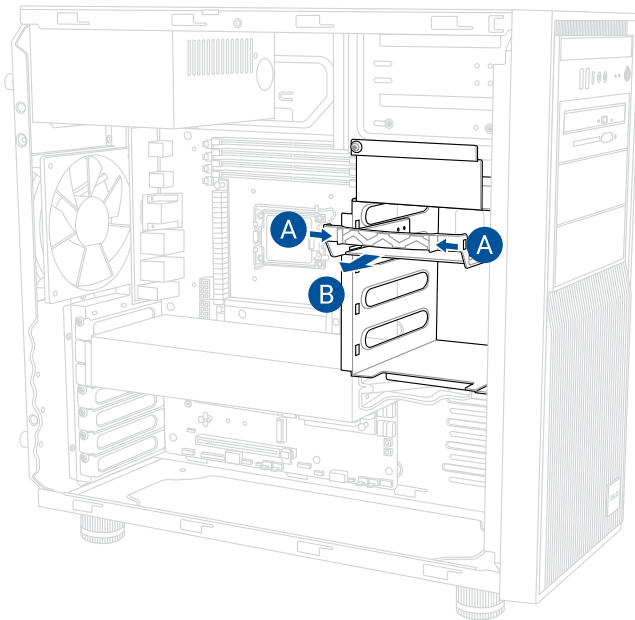
---

**NOTE:** To remove this component, follow the instructions in reverse order.

---

To install storage drives:

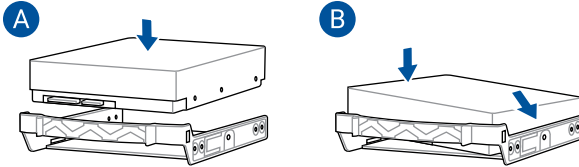
1. Remove the storage device tray by pushing down on the latches (A) then pulling the storage device tray out of the storage bay (B).



2. Install the storage device to the storage device tray, the steps to install a 3.5" and a 2.5" storage device will differ. Please refer to the steps below for the steps to install the different storage devices.

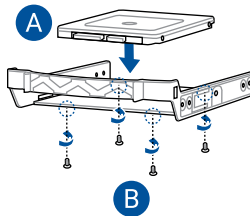
### **3.5" Storage device**

- A. Align the 3.5" storage device to the storage device tray.
- B. Place the 3.5" storage device into the storage device tray by first sliding one side of the 3.5" storage device into the storage device tray, then pushing the other side of the 3.5" storage device into the storage device tray.

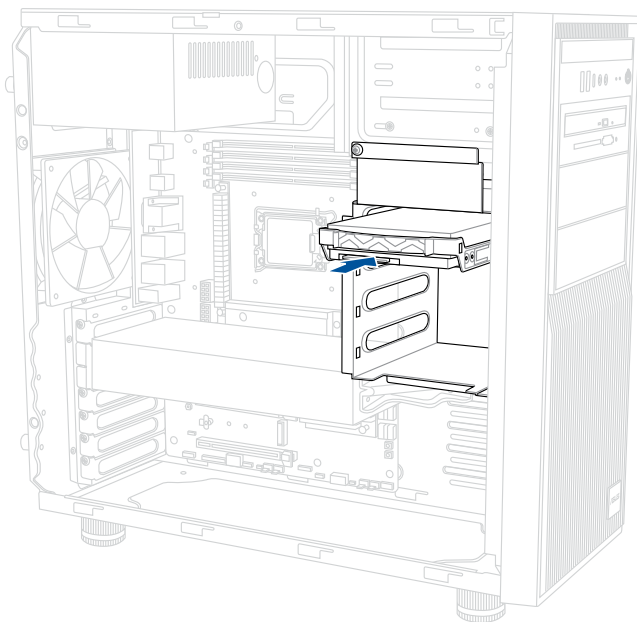


### **2.5" Storage device**

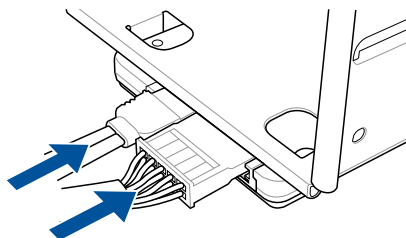
- A. Place the 2.5" storage device in to the storage device tray.
- B. Secure the 2.5" storage device to the storage device tray using four (4) screws.



3. Align and insert the storage device tray and storage device into the storage bay. Push the storage device tray all the way into the storage bay until a click is heard.



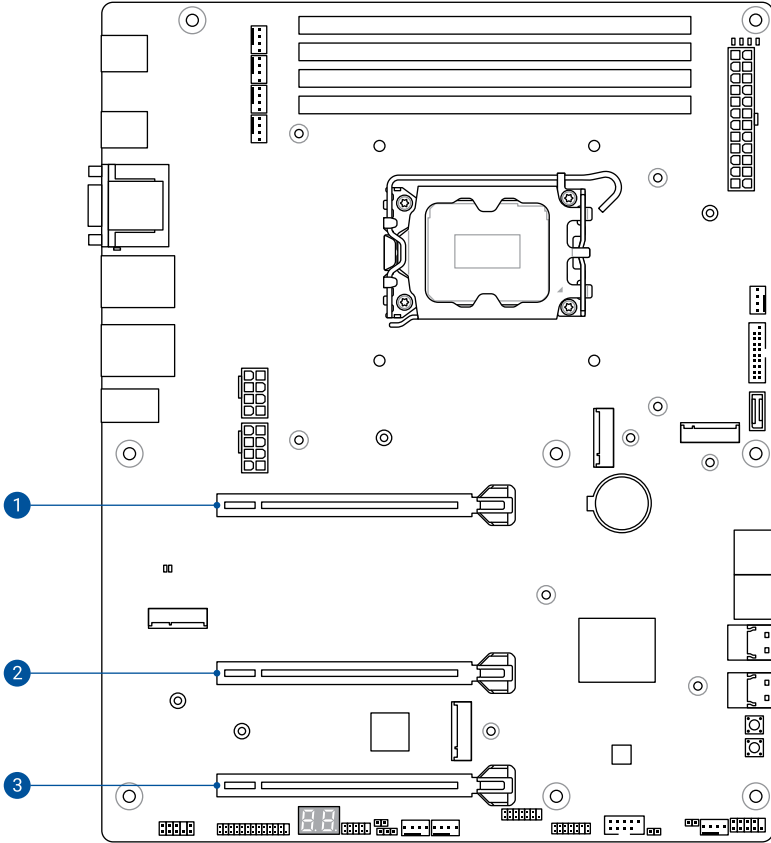
4. Connect a SATA cable and a SATA power cable to the storage device.



5. Follow the steps above to install another storage device.

## 2.6 Expansion slots

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



Slot No.	Slot Description
1	PCIEX16(G5)_1 slot
2	PCIEX16(G5)_2 slot
3	PCIEX16(G4)slot

## 2.6.1 Installing an expansion card

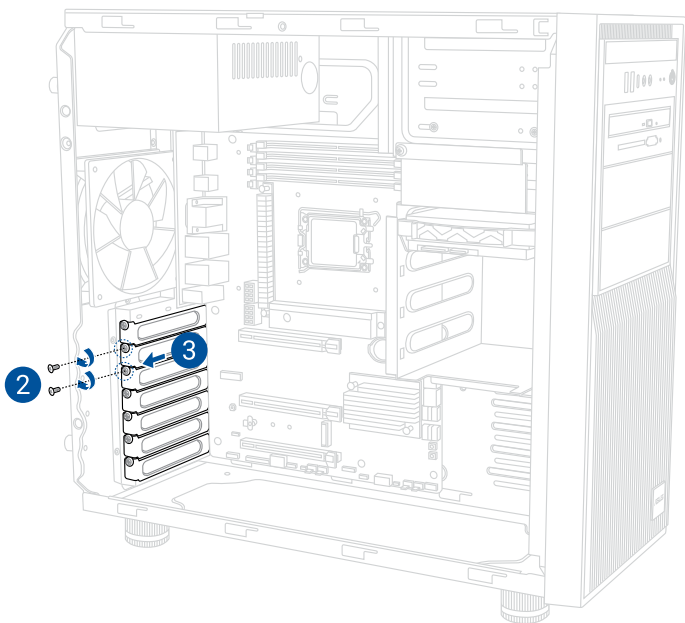
---

**NOTE:** To remove this component, follow the instructions in reverse order.

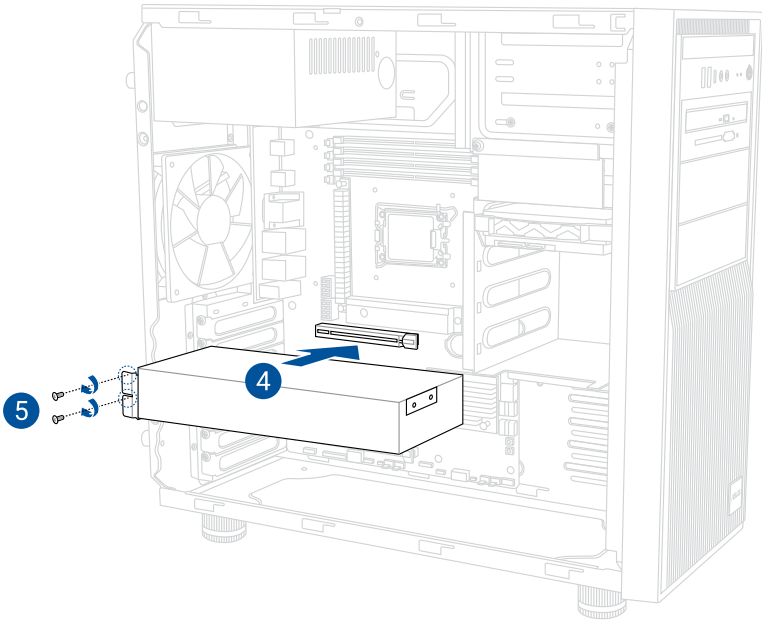
---

To install an expansion card:

1. Lay the system on its side on a flat, stable surface.
2. Remove the screw(s) from the metal bracket(s).
3. Remove the metal bracket(s).



4. Align and insert the golden fingers of the PCIe card into the PCIe slot.
5. Secure the expansion card using the screw(s) removed earlier.



## 2.6.2 Configuring an expansion card

VGA configuration	PCI Express operating mode		
	PCIe 5.0 x16_1 (gray)	PCIe 5.0 x16_2	PCIe 4.0 x16_3
Single VGA/PCIe card	x16 (Recommended for single VGA card)	N/A	N/A
Dual VGA/PCIe cards	x8	x8	N/A
Triple VGA/PCIe cards	x8	x8	x4

---

**IMPORTANT!** In single VGA card mode, use the PCIe 5.0 x16\_1 slot for a PCI Express x16 graphics card to get better performance.

---

## 2.6.3 Installing M.2 (NGFF) cards

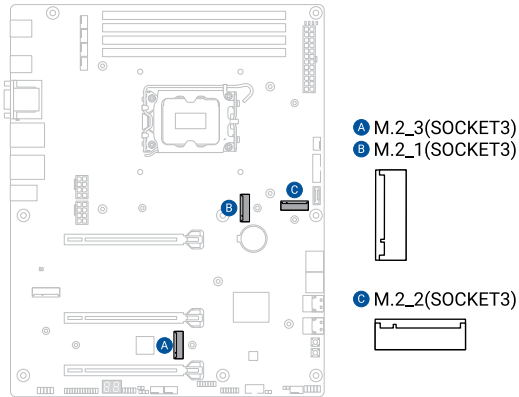
---

**NOTE:** To remove this component, follow the instructions in reverse order.

---

To install an M.2 card:

1. Locate the M.2 slots on the motherboard.

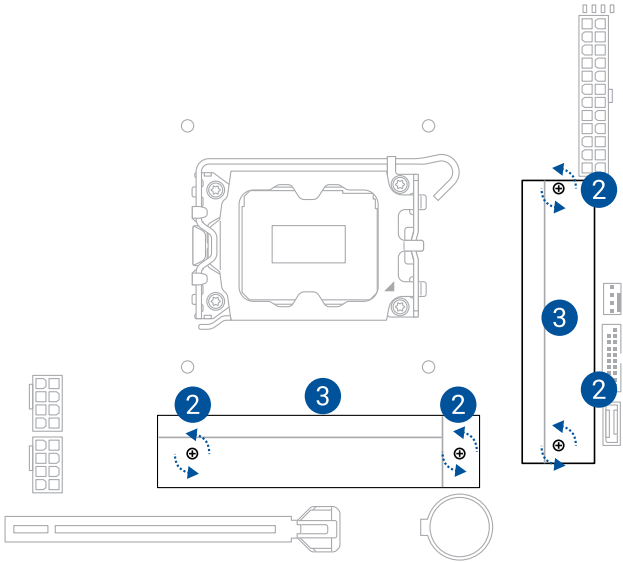


- (optional) Completely loosen the screws on the heatsink.
- (optional) Remove the heatsinks.

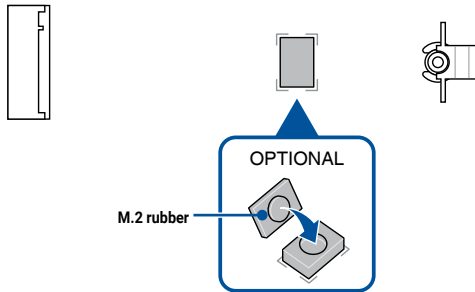
---

**NOTE:** Only follow steps 2 and 3 if you wish to install an M.2 module to the M.2\_1(SOCKET3) or M.2\_2(SOCKET3) slots

---



- (optional) Install the bundled M.2 rubber if you are installing a single sided M.2 module. DO NOT install the bundled M.2 rubber when installing a double-sided M.2 module. The rubber installed by default is compatible with double sided M.2 modules.



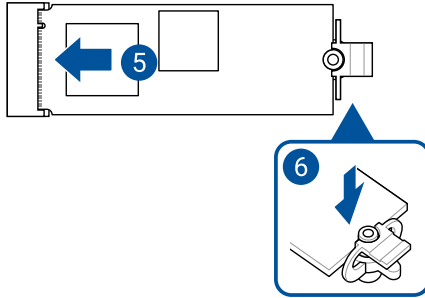
5. Install your M.2 module to the M.2 slot.

---

**IMPORTANT!** Ensure that there is nothing obstructing your M.2 module when installing the M.2 module to the M.2 slot.

---

6. Push the M.2 module down until it is secured by the M.2 Q-Latch.



## 2.7 System fan

This section describes how to remove the system fan in the event that you need to install or remove previously installed or new system components, or when the system fan needs to be replaced because it was damaged or became defective.

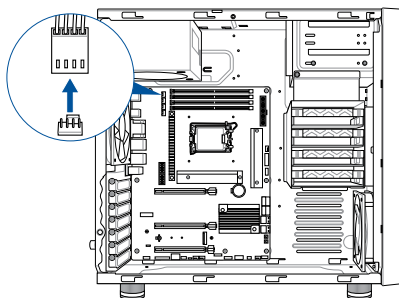
---

**NOTE:** Follow the instructions in reverse order if you want to reinstall the system fan.

---

### 2.7.1 Removing the rear system fan

1. Disconnect the system fan cable from the **CHA\_FAN1** connector on the motherboard.

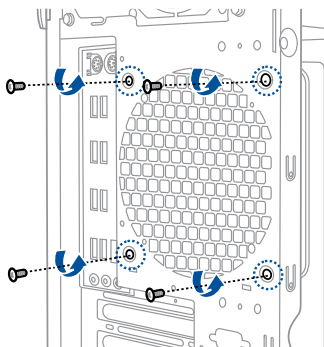


2. Remove the four system fan screws at the rear panel. Keep the screws for later use.

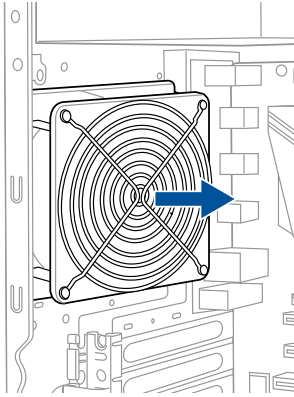
---

**NOTE:** Hold the system fan with one hand while removing the system fan screws.

---

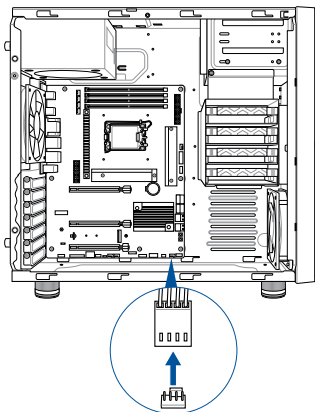


3. Remove the system fan.

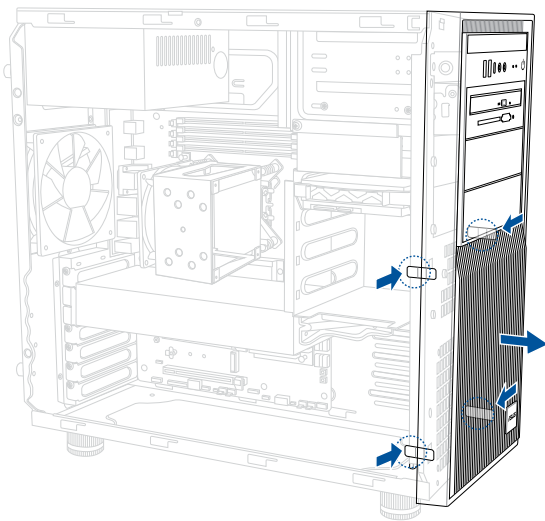


## 2.7.2 Removing the front system fan

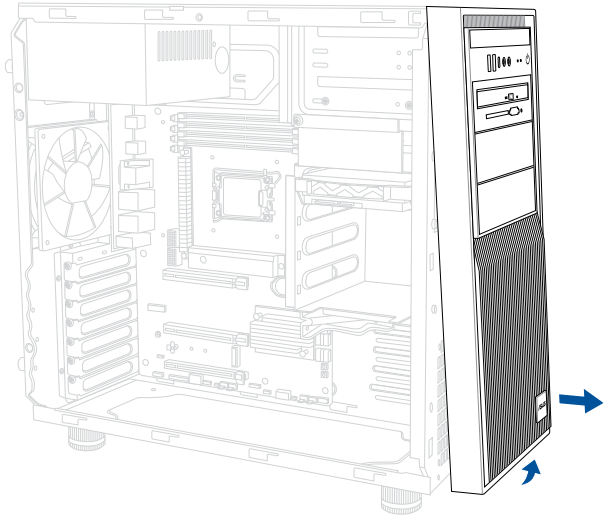
1. Disconnect the system fan cable from the **CHA\_FAN5** connector on the motherboard.



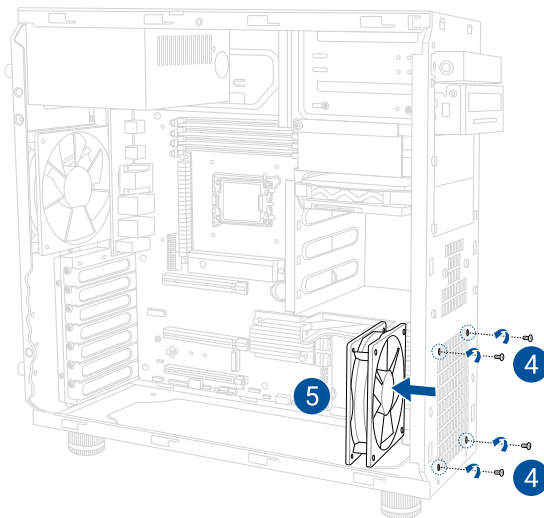
2. Push down on the two (2) tabs on both sides of the front cover to release the front cover and slightly detach the front cover from the chassis.



3. Once the tabs are fully released, pull the front cover of the system open by holding onto the bottom of the front cover and pulling it outwards.



4. Remove the four system fan screws. Keep the screws for later use.
5. Remove the system fan.



## 2.8 Motherboard

### 2.8.1 Removing the motherboard

To remove the system motherboard:

1. Disconnect the cables from the motherboard and remove any installed components on the motherboard.

---

**NOTE:** Take a photo or make a note of which components are removed, which cables are disconnected, and which connectors the cables were connected to.

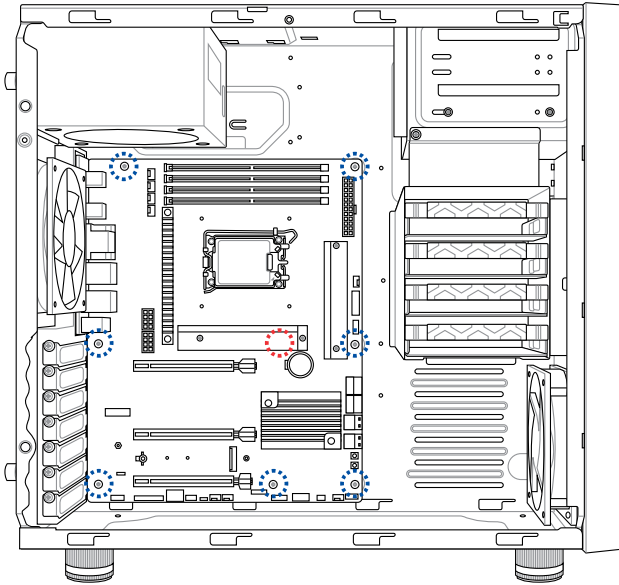
---

2. Remove the screws, then remove the motherboard.

---

**IMPORTANT!** Ensure to remove the M.2 heatsink and M.2 module before attempting to remove the motherboard screws, as one of the motherboard screws is located under the M.2 and M.2 heatsink.

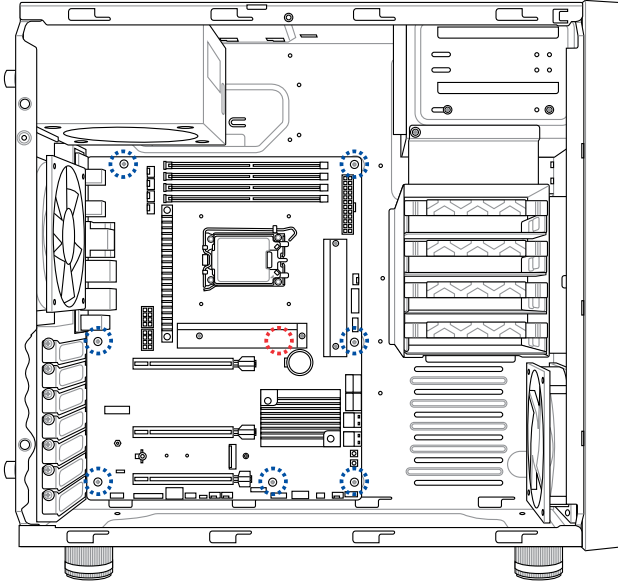
---



## 2.8.2 Installing the motherboard

To install the system motherboard:

1. Place the motherboard into the chassis and ensure the screw holes on the motherboard are aligned with the screw holes in the chassis, then secure the motherboard to the chassis using the screws removed previously.

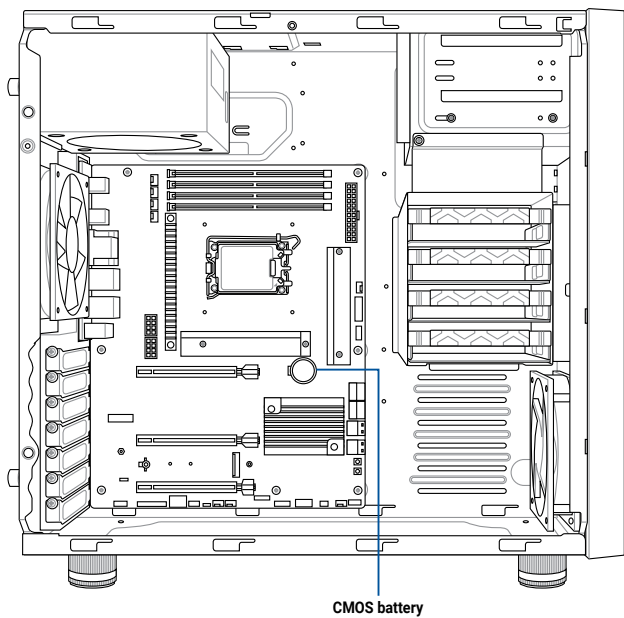


2. Reinstall any removed components and reconnect the cables to the motherboard.

## 2.9 CMOS battery

To replace a CMOS battery:

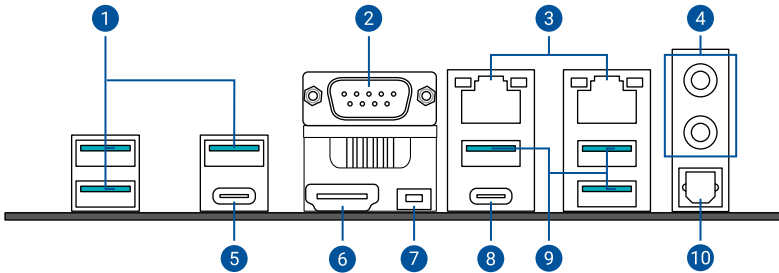
1. Locate and remove the CMOS battery.



2. Place the replacement CMOS battery into the battery compartment.

## 2.10 Motherboard rear and audio connection

### 2.10.1 Rear I/O connection



Rear panel connectors	
1.	USB 10Gbps ports
2.	Serial COM port
3.	Intel® 2.5Gb Ethernet ports
4.	Audio jacks
5.	Thunderbolt™ 4 port (1 x USB Type-C®) from CPU iTB
6.	HDMI™ port
7.	BIOS FlashBack™ button
8.	USB 20Gbps port (1 x Type-C®) from CPU iTB
9.	USB 10Gbps port
10.	SPDIF OUT

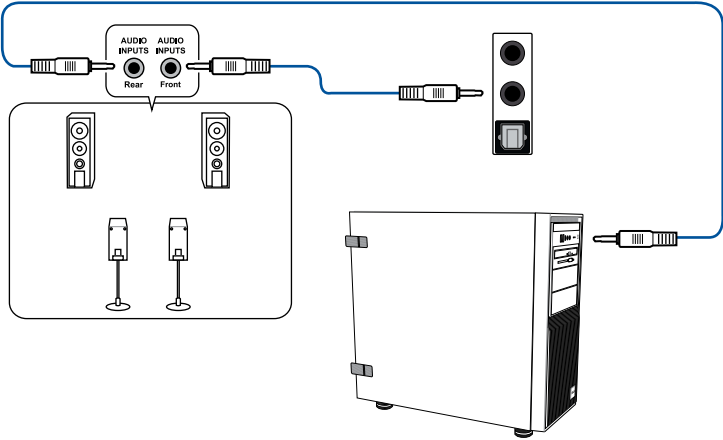
\*: Refer to the table below for audio port definitions.

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

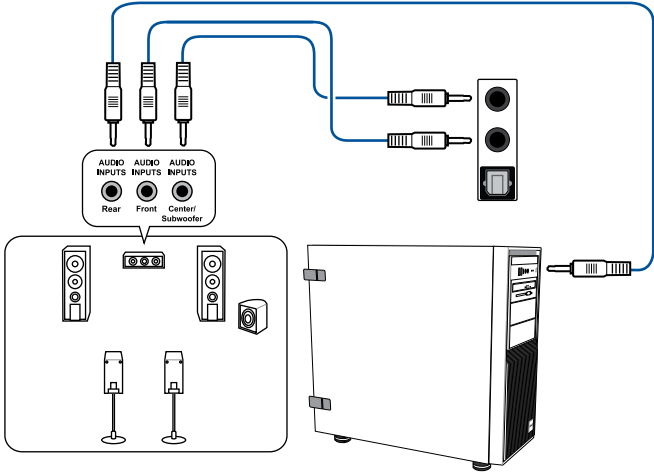
Port	2-channel	4-channel	5.1-channel	7.1-channel
<b>Rear panel</b>				
LINE OUT	Front Speaker Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
MIC IN	-	-	Center/ Subwoofer	Center/ Subwoofer
<b>Front panel</b>				
HEADPHONE (Lime)	-	-	-	Side Speaker Out
MIC IN (Pink)	-	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out



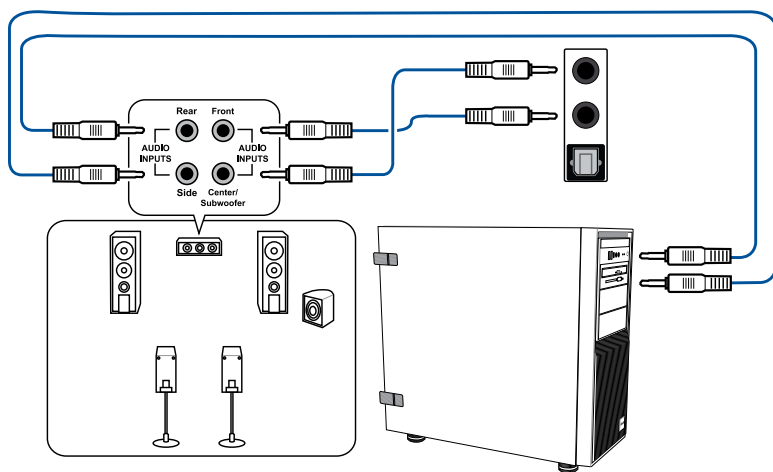
Connect to 4-channel Speakers



Connect to 5.1-channel Speakers



## Connect to 7.1-channel Speakers

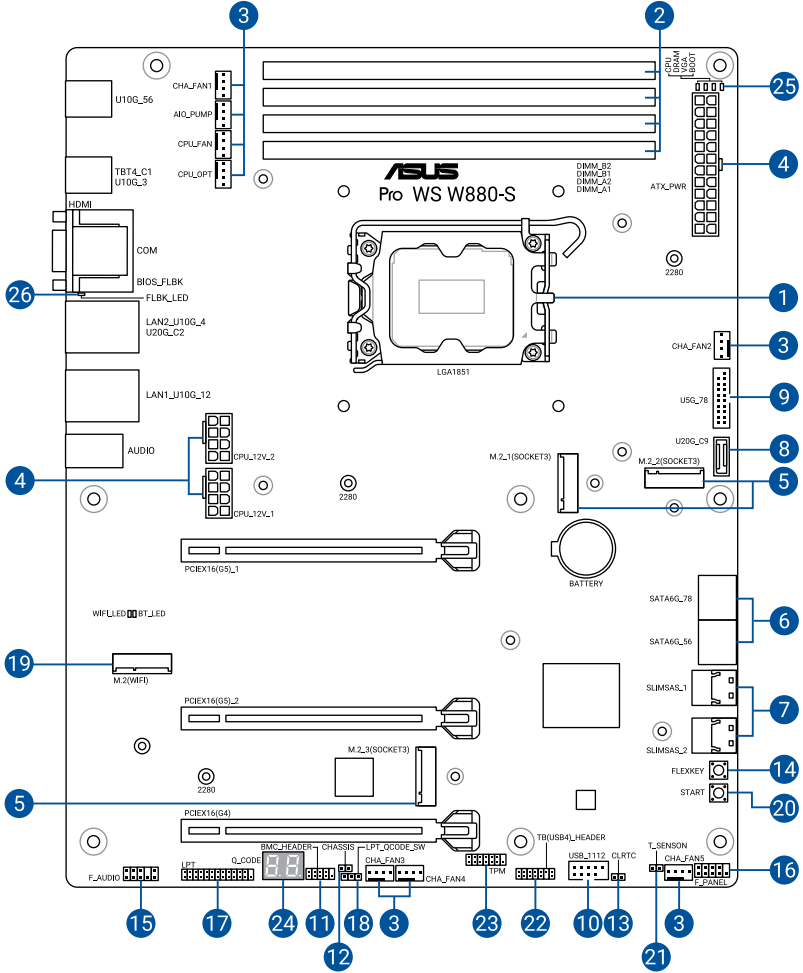


# Motherboard Information

# 3

This chapter includes the motherboard layout and brief descriptions of the jumpers and internal connectors.

### 3.1 Motherboard layout



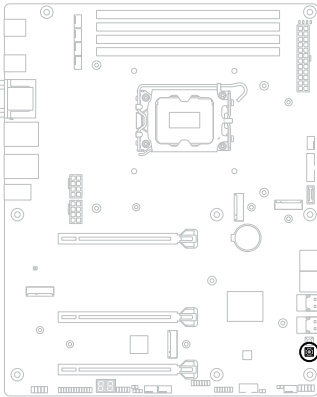
Layout contents		Page
1.	CPU socket	2-3
2.	DIMM slots	2-9
3.	Fan and Pump headers	3-9
4.	Power connectors	3-10
5.	M.2 slot	3-11
6.	SATA 6Gb/s port	3-12
7.	SlimSAS connector	3-12
8.	USB 20Gbps Type-C® Front Panel connector	3-13
9.	USB 5Gbps header	3-13
10.	USB 2.0 header	3-14
11.	BMC header	3-14
12.	Chassis Intrusion header	3-15
13.	Clear CMOS header	3-5
14.	FlexKey button	3-4
15.	Front Panel Audio header	3-15
16.	Front Panel System header	3-16
17.	LPT header	3-17
18.	LPT and Q-Code Switch header	3-6
19.	M.2 slot (Key E)	3-17
20.	Start button	3-4
21.	Thermal Sensor header	3-18
22.	Thunderbolt™ (USB4®) header	3-18
23.	TPM header	3-19
24.	Q-Code LED	3-7
25.	Q-LEDs	3-8
26.	BIOS FlashBack™ LED	3-8

## 3.2 Onboard buttons and switches

Onboard buttons and switches allow you to fine-tune performance when working on a bare or open-case system.

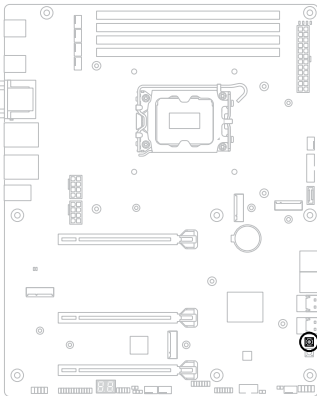
### 1. Start button

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).



### 2. FlexKey button (Reset)

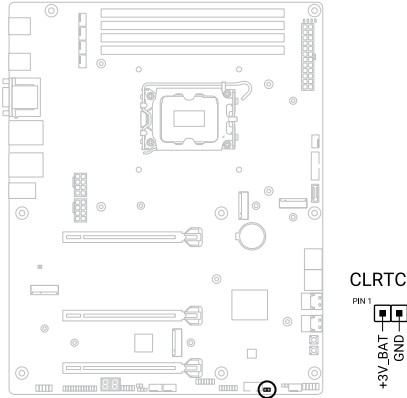
Press the FlexKey button to reboot the system. You may also configure the button and assign a quick access feature such as activating Safe Boot or turning Aura lighting on or off to the button.



## 3.3 Jumpers

### 1. Clear CMOS header

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



To erase the RTC RAM:

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

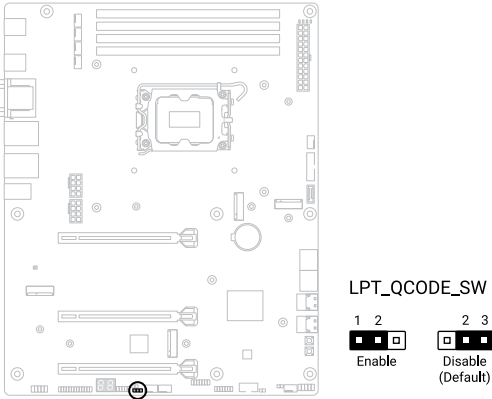
---

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

---

**2. LPT and Q-Code Switch header**

The LPT and Q-Code Switch header allows you to enable either LPT (Line Printing Thermal) connector or Q-Code.



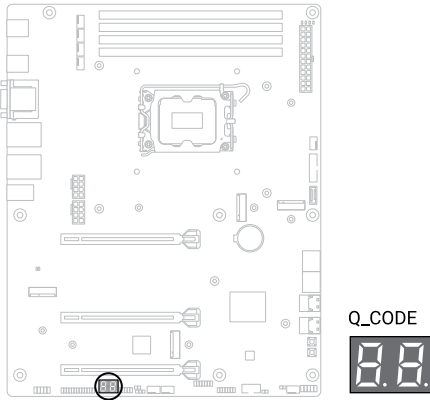
To switch between LPT and Q-Code:

1. Turn OFF the computer and unplug the power cord.
2. Move the jumper cap to switch between LPT and Q-Code.
3. Plug the power cord and turn ON the computer.

## 3.4 Onboard LEDs

### 1. Q-Code LED

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



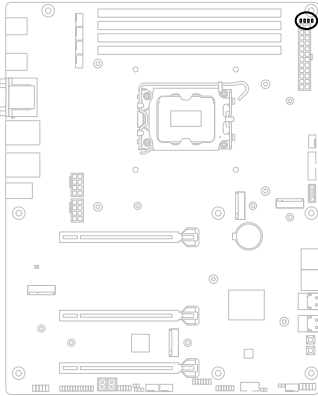
---

**NOTE:**

- 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.
-

## 2. 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.



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

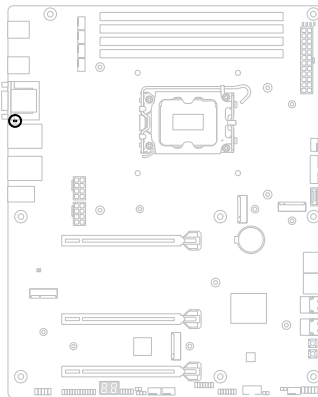
---

**NOTE:** 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.

---

## 3. BIOS FlashBack™ LED

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



- FLBK\_LED

---

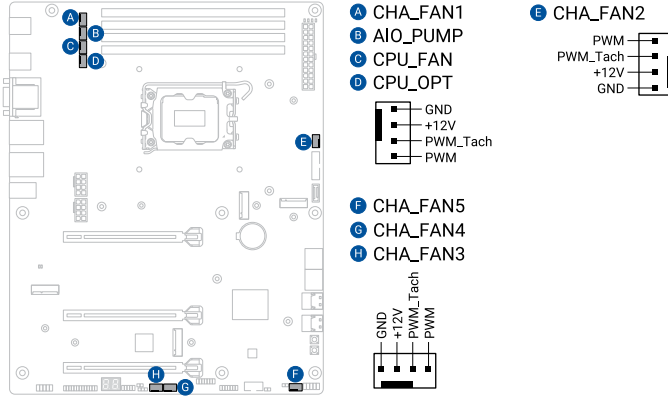
**NOTE:** Refer to the **BIOS FlashBack™** section for more information on using the BIOS FlashBack™ feature.

---

## 3.5 Internal connectors

### 1. Fan and Pump headers

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



#### CAUTION!

- 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.

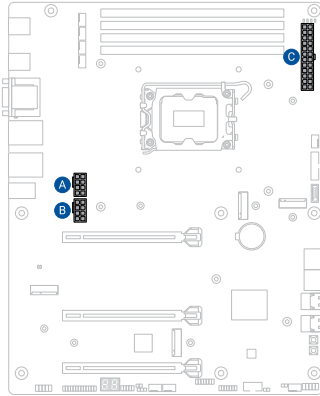
**IMPORTANT!** For water cooling kits, connect the pump connector to the **AIO\_PUMP** header.

#### NOTE:

- When connecting a single CPU fan, you may connect it to either the **CPU\_FAN** or **CPU\_OPT** header.
- When connecting two CPU fans, ensure to connect the fans to the **CPU\_FAN** and the **CPU\_OPT** header, and make sure both fans are the same brand and model.

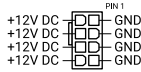
## 2. Power connectors

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

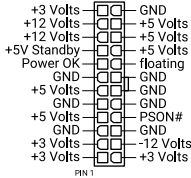


**A** CPU\_12V\_2

**B** CPU\_12V\_1



**C** ATX\_PWR



---

**CAUTION!** Ensure to connect the 8-pin power plug, or connect both 8-pin power plugs.

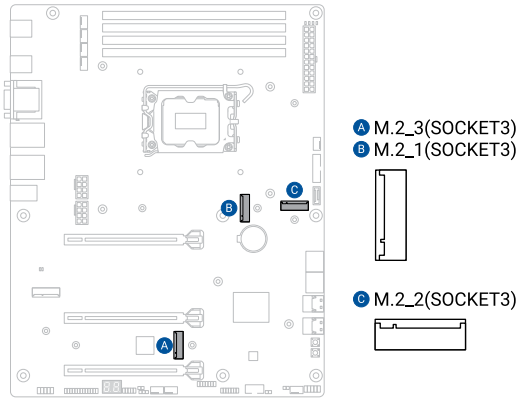
---

### NOTE:

- For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12V Specification 2.0 (or later version) and provides a minimum power of 350 W.
  - 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 PCI Express x16 cards, we recommend using a PSU with 900W~1200W power or above to ensure the system stability.
  - PSU input: AC 100~240V, 6A/3A, 50/60Hz.
-

### 3. M.2 slot

The M.2 slot allows you to install M.2 devices such as M.2 SSD modules.



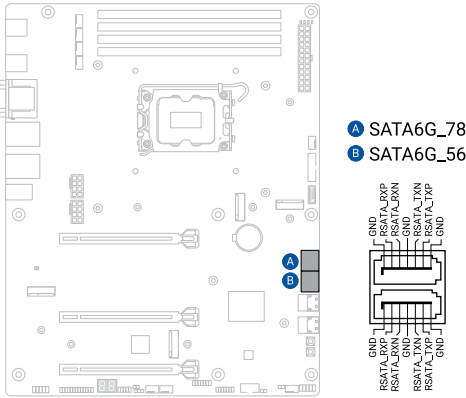
---

#### NOTE:

- **Intel® Arrow Lake-S Series Processors:**
    - M.2\_1 slot (Key M), type 2280 (supports PCIe 5.0 x4 mode)
    - M.2\_2 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode)
  - **Intel® W880 Chipset:**
    - M.2\_3 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode).
-

#### 4. SATA 6Gb/s port

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

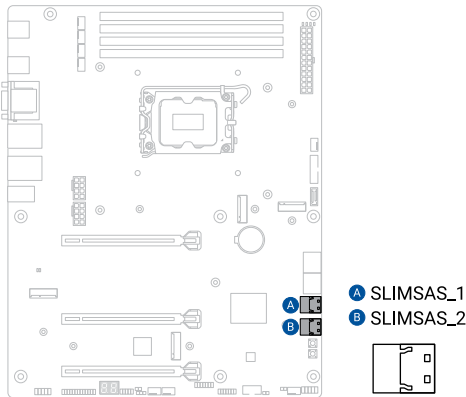


**NOTE:**

- If you installed SATA storage devices to the **SATA6G\_1-4** ports, you can create RAID configurations with the Intel® Rapid Storage Technology through the onboard Intel® W880 chipset.
- Before creating a RAID set, refer to the **RAID Configuration** section of this manual.

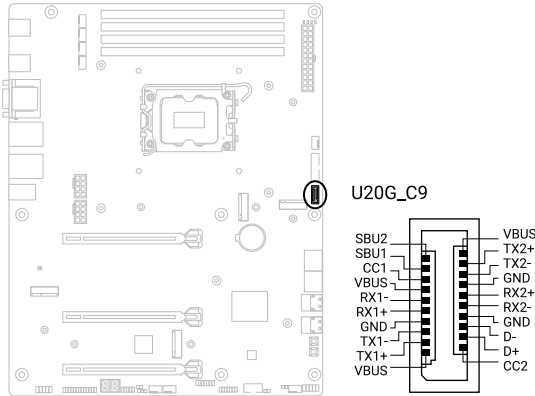
#### 5. SlimSAS connector

The SlimSAS connector allows you to connect PCIe and/or SATA storage devices.



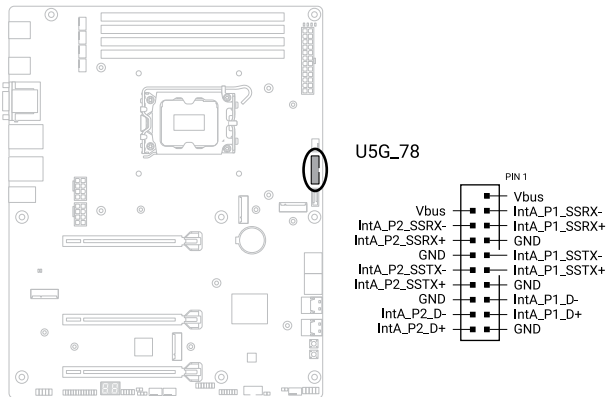
## 6. USB 20Gbps Type-C® Front Panel connector

The USB 20Gbps Type-C® connector allows you to connect a USB 20Gbps Type-C® module for additional USB 20Gbps ports on the front panel.



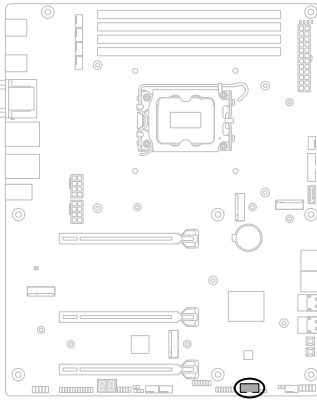
## 7. USB 5Gbps header

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

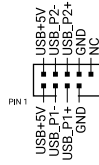


## 8. USB 2.0 header

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.



USB\_1112



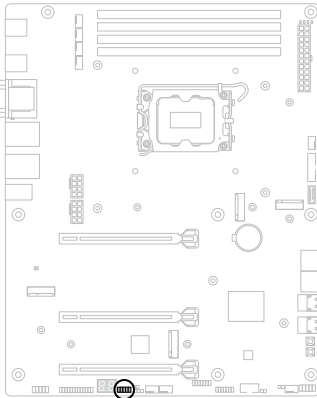
---

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

---

## 9. BMC header

The BMC header allows you to connect and support an IPMI card.



BMC\_HEADER



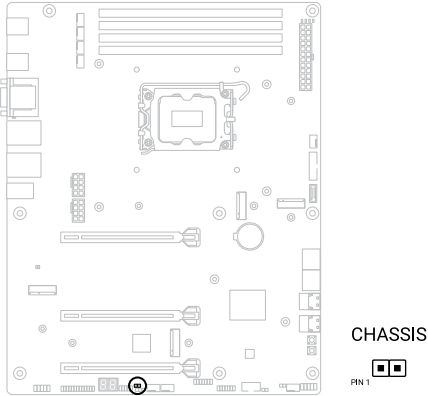
---

**NOTE:** For more information on the installation and information regarding the IPMI card, please visit <https://www.asus.com/supportonly/ipmi%20expansion%20card/helpdesk/>.

---

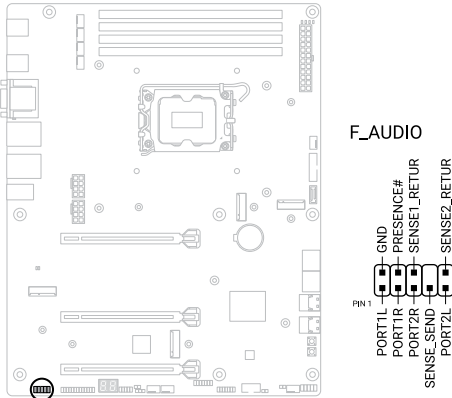
### 10. Chassis Intrusion header

The Chassis Intrusion header allows you to connect an intrusion sensor or microswitch for the chassis intrusion detection feature. When you remove any chassis component, the sensor or microswitch triggers and sends a high level signal and records a chassis intrusion event.



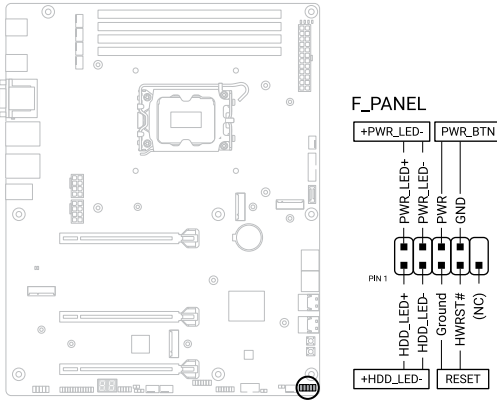
### 11. Front Panel Audio header

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.



## 12. Front Panel System header

The Front Panel System header supports several chassis-mounted functions.



- **System Power LED header (+PWR\_LED-)**  
The 2-pin header allows you to connect the System Power LED. The System Power LED lights up when the system is connected to a power source, or when you turn on the system power, and blinks when the system is in sleep mode.
- **Storage Device Activity LED header (+HDD\_LED-)**  
The 2-pin header allows you to connect the Storage Device Activity LED. The Storage Device Activity LED lights up or blinks when data is read from or written to the storage device or storage device add-on card.
- **Power Button/Soft-off Button header (PWR\_BTN)**  
The 3-1 pin header allows you to connect the system power button. Press the power button to power up the system, or put the system into sleep or soft-off mode (depending on the operating system settings).
- **Reset button header (RESET)**  
The 2-pin header allows you to connect the chassis-mounted reset button. Press the reset button to reboot the system.

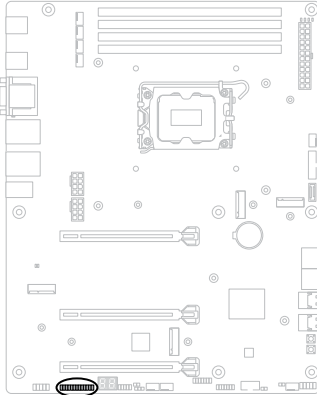
---

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

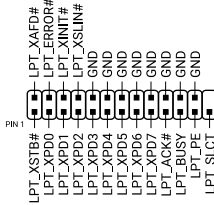
---

### 13. LPT header

The LPT (Line Printing Terminal) header supports devices such as a printer. LPT standardizes as IEEE 1284, which is the parallel port interface on IBM PC-compatible computers.

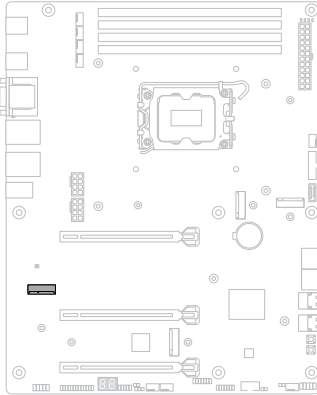


LPT



### 14. M.2 slot (Key E) (only for <WiFi model name>)

The M.2 Wi-Fi slot allows you to install an M.2 Wi-Fi module (E-key, type 2230; PCIe interface).

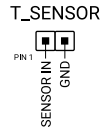
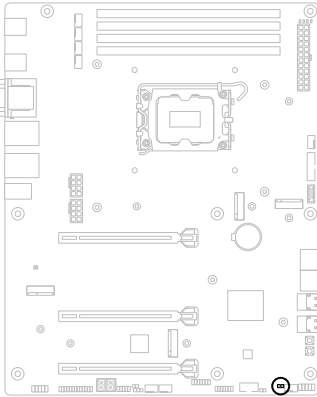


M.2(WIFI)



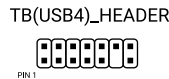
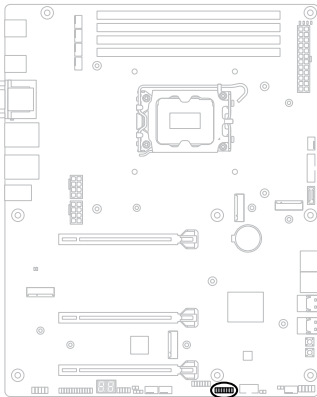
## 15. Thermal Sensor header

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.



## 16. Thunderbolt™ (USB4®) header

The Thunderbolt™ (USB4®) header allows you to connect an add-on card that supports Intel®'s Thunderbolt™ Technology or USB4® function.



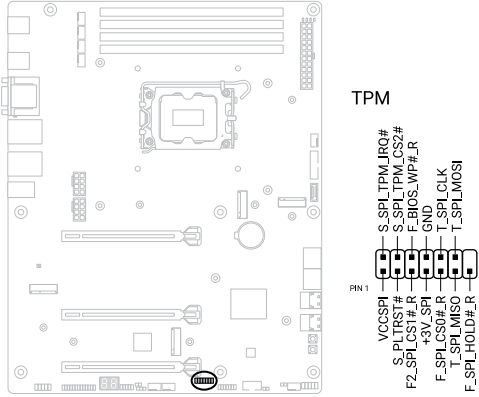
---

**NOTE:** Please visit the official website of your purchased add-on card for more details on compatibility.

---

# 17. TPM header

The TPM header allows you to connect a TPM module, which securely stores keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protect digital identities, and ensures platform integrity.





# Software Configuration

# 4

This chapter provides instructions for changing software configuration settings.

## 4.1 System recovery and removing personal files

You can restore your device to its original settings and optionally remove all personal files.

---

**NOTE:** Ensure all your files are backed up before recovering your device.

---

1. In Windows, go to **Settings > System > Recovery**.
2. Click **Reset PC** under **Recovery Options**, then select either **Keep my files** or **Remove everything**.
  - **Keep my files** - This option restores the device's original settings, removes installed applications, while keeping personal files such as documents, photos, music, and videos.
  - **Remove everything** - This option restores the device's original settings, removes installed applications, and deletes personal files.

## 4.2 Putting your device into the lowest power mode

For ErP requirements, you can put your device into the lowest power mode by following the below steps:

- Enter BIOS setup by pressing <Del> or <ESC> during the boot process, then go to **Advanced > APM Configuration > ErP Ready** and select **Enabled (S5)**.

---

**NOTE:** When set to enabled, all other PME options are switched off. RGB LEDs and RGB/Addressable RGB Headers will also be disabled.

---

- In Windows, go to **Settings > All Control Panel Items > Power Options > Choose what the power button does** and click **Change settings that are currently unavailable**, then uncheck **Turn on fast startup (recommended)** and click **Save changes**.
- Open the Start menu, select the power icon, then select **Shut down**.
- From the log-in screen, select the power icon, then select **Shut down**.
- Press <Alt>+<F4>, then select **Shut down** from the drop-down list and select **OK**.
- If your device is unresponsive, press and hold the power button for at least four seconds until your device turns off.

# **BIOS Setup**

# 5

This chapter provides information on BIOS and updating the BIOS.

## 5.1 About the UEFI BIOS

---

**NOTE:** For more details on BIOS configurations, please refer to Manual & Document under the Support tab of the product information site, or visit <https://www.asus.com/support>.

---

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.
- 

**CAUTION!** 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.**

---

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

---

### 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.

---

#### **NOTE:**

- 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.
-

## 5.2 BIOS FlashBack™

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

### To use BIOS FlashBack™:

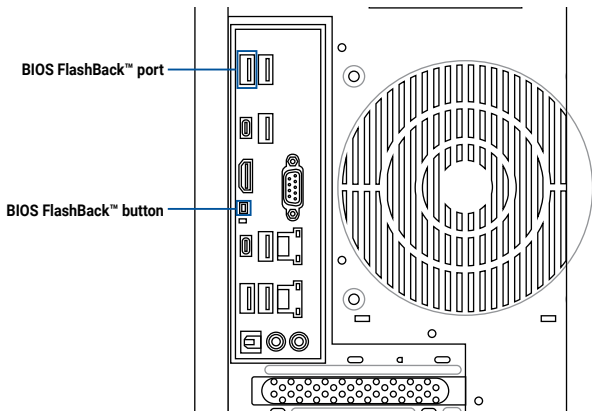
1. Visit <https://www.asus.com/support/> and download the latest BIOS version for this motherboard.
2. Launch the **BIOSRenamer.exe** application to automatically rename the file or manually rename the file to the BIOS CAP filename specified in the **Specifications summary** section, then copy it to your USB storage device.

---

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

---

3. Plug the 24-pin power connector to the motherboard and turn on the power supply (no need to power on the system).
4. Insert the USB storage device to the USB port with BIOS FlashBack™ function.
5. Press the BIOS FlashBack™ button for three (3) seconds until the BIOS FlashBack™ LED blinks three times, indicating that the BIOS FlashBack™ function is enabled.



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

---

**CAUTION!**

- Do not unplug portable disk, power system, press the Clear CMOS button, or short the CLRTC header 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.
-

## 5.3 ASUS EzFlash Utility

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

---

### IMPORTANT!

- 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>.
- Download the latest BIOS from the ASUS website at [www.asus.com](http://www.asus.com) before using this utility.

---

### To update the BIOS:

---

#### CAUTION!

- 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 BIOS setup program, then go to the **Tool** menu to select **Start ASUS EzFlash** and press <Enter>.
3. Press the Left arrow key to switch to the **Drive** field.
4. Press the Up/Down arrow keys to find the USB flash disk that contains the latest BIOS, and then press <Enter>.
5. Press the Right arrow key to switch to the **Folder** field.
6. Press the Up/Down arrow keys to find the BIOS file, and then press <Enter> to perform the BIOS update process. Reboot the system when the update process is done.

## 5.4 ASUS CrashFree BIOS 3

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

### Recovering the BIOS

1. Download the latest BIOS version for this motherboard from <https://www.asus.com/support/>.
2. Rename the file using one of the following methods:
  - Launch the **BIOSRenamer.exe** application to automatically rename the file.
  - Manually rename the file to the BIOS CAP filename **specified in the Specifications summary section**.
  - Manually rename the file to **ASUS.CAP**.
3. Copy the renamed file to your USB storage device.
4. Insert the USB flash drive containing the BIOS file to a USB port.
5. Turn on the system.
6. The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and enters ASUS EZ Flash Utility automatically.
7. 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.

---

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

---

# RAID Configuration



This chapter provides information on RAID configurations.

## 6.1 RAID configurations

This workstation supports RAID configurations.

---

### IMPORTANT!

- 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 code.
- Please visit the Intel website for the latest information on RAID configurations.



### 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.

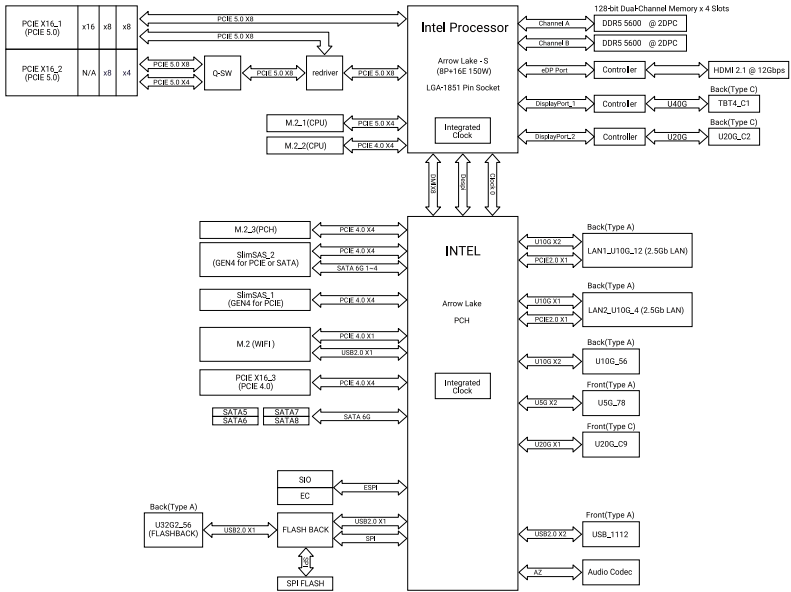
**RAID 1 (Data mirroring)** copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides 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.

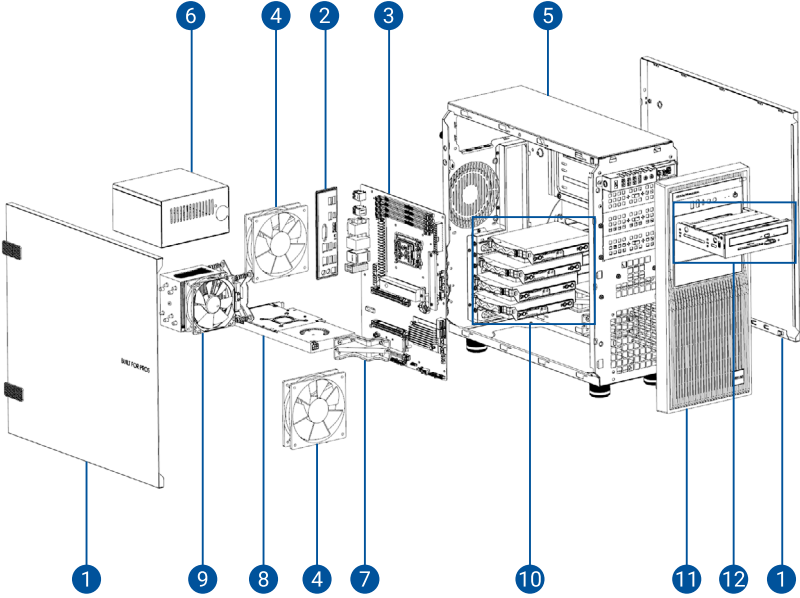
**RAID 10** is data striping and data mirroring combined without parity (redundancy data) having to be calculated and written. With the RAID 10 configuration you get all the benefits of both RAID 0 and RAID 1 configurations. Use four new hard disk drives or use an existing drive and three new drives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

# Appendix

# Pro WS W880-S block diagram



# Exploded view



- |                      |                                   |
|----------------------|-----------------------------------|
| 1. Side covers       | 7. GPU support bracket            |
| 2. I/O shield        | 8. GPUs*                          |
| 3. Motherboard       | 9. Heatsink                       |
| 4. System fans       | 10. Storage device bays           |
| 5. Chassis           | 11. Front cover                   |
| 6. Power supply unit | 12. Card reader or optical drive* |

\* May vary depending on different models; on selected models

## Q-Code table

Code	Description
00	Not used
02	microcode
03	CACHE_ENABLED
04	PCH initialization
06	CPU_EARLY_INIT
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
4F	DXE IPL is started
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
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

*(continued on the next page)*

Code	Description
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
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
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

*(continued on the next page)*

Code	Description
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
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

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.

### HDMI Trademark Notice

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



## 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 5150–5350 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

CAN ICES(B)/NMB(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 5150–5350 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(B)/NMB(B)

## Japan statement notice

This product cannot be directly connected to the Internet (including public wireless LAN) of a telecom carrier (mobile network companies, landline network companies, Internet providers, etc.). When connecting this product to the Internet, be sure to connect it through a router or switch.

## インターネット回線への接続に関するご注意

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

## Safety Precautions

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

## 安全上のご注意

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

## 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.

## Australia statement notice

From 1 January 2012 updated warranties apply to all ASUS products, consistent with the Australian Consumer Law. For the latest product warranty details please visit <https://www.asus.com/support/>. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

If you require assistance please call ASUS Customer Service 1300 2787 88 or visit us at <https://www.asus.com/support/>.

## Regional notice for Singapore

Complies with IMDA Standards DA106775
---

This ASUS product complies with IMDA Standards.

## 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 <https://esg.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, Authorization, and Restriction of Chemicals) regulatory framework, we publish the chemical substances in our products at ASUS REACH website at <https://esg.asus.com/Compliance.htm>.

### EU RoHS

This product complies with the EU RoHS Directive. For more details, see <https://esg.asus.com/Compliance.htm>

### Japan JIS-C-0950 Material Declarations

Information on Japan RoHS (JIS-C-0950) chemical disclosures is available on <https://esg.asus.com/Compliance.htm>

### India RoHS

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

### Vietnam RoHS

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

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

### Türkiye RoHS

AEEE Yönetmeliğine Uygundur

### ASUS Recycling/Takeback Services

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

## Ecodesign Directive

The European Union announced a framework for the setting of ecodesign requirements for energy-related products (2009/125/EC). Specific implementing measures are aimed at improving environmental performance of specific products or across multiple product types. ASUS provides product information on the CSR website. ASUS provides product information at <https://esg.asus.com/Compliance.htm>.



The Waste Electrical and Electronic Equipment (WEEE) Directive (Directive 2012/19/EU) is a European Union law that aims to reduce the environmental impact of electrical and electronic equipment. It mandates producers to take responsibility for the end-of-life management of their products, promoting collection, treatment, and recycling to minimize waste and encourage resource recovery.

Do not throw your electrical and electronic equipment in municipal waste.

The symbol of the crossed-out wheeled bin on the product or packaging indicates that this product (including any batteries it contains) must not be disposed of with your household waste.

To prevent potential harm to the environment and human health, a collection framework should be used to return, recycle, and recover waste electrical and electronic equipment (WEEE), and this product has been designed to enable the reuse of parts and facilitate the recycling of certain materials.

Improper disposal may involve risks due to the presence of hazardous substances within electrical and electronic equipment, such as lead and BFR and other harmful components.

Check your local recycling services for electronic products.

(<https://esg.asus.com/en/circular-economy/resource-regeneration/global-take-back-service>)



Do not throw the battery in municipal waste. The symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

Please see and scan below for multi-language update on the WEEE directive and battery disposal:



## ENERGY STAR® Qualified Product



ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices.

All ASUS products with the ENERGY STAR® logo comply with the ENERGY STAR® standard, and the power management feature is enabled by default. The monitor is automatically set to sleep within 10 minutes of user inactivity; the computer is automatically set to sleep within 30 minutes of user inactivity. To wake your computer, click the mouse, press any key on the keyboard, or press the power button.

Please visit <https://www.energystar.gov> for detailed information on the ENERGY STAR® joint program, power management, and the benefits to the environment.

---

**NOTE:** ENERGY STAR® is NOT supported on FreeDOS and Linux-based products.

---

## Simplified UKCA Declaration of Conformity

ASUSTeK Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Regulations. Full text of UKCA declaration of conformity is available at: [www.asus.com/support](http://www.asus.com/support)

## Simplified EU Declaration of Conformity

**English** ASUSTeK Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Directives. Full text of EU declaration of conformity is available at: [www.asus.com/support](http://www.asus.com/support)

**Français** ASUSTek Computer Inc. déclare par la présente que cet appareil est conforme aux critères essentiels et autres clauses pertinentes des directives concernées. La déclaration de conformité de l'UE peut être téléchargée à partir du site Internet suivant : [www.asus.com/support](http://www.asus.com/support)

**Deutsch** ASUSTeK Computer Inc. erklärt hiermit, dass dieses Gerät mit den wesentlichen Anforderungen und anderen relevanten Bestimmungen der zugehörigen Richtlinien übereinstimmt. Der gesamte Text der EU-Konformitätserklärung ist verfügbar unter: [www.asus.com/support](http://www.asus.com/support)

**Italiano** ASUSTeK Computer Inc. con la presente dichiara che questo dispositivo è conforme ai requisiti essenziali e alle altre disposizioni pertinenti con le direttive correlate. Il testo completo della dichiarazione di conformità UE è disponibile all'indirizzo: [www.asus.com/support](http://www.asus.com/support)

**Русский** Компания ASUS заявляет, что это устройство соответствует основным требованиям и другим соответствующим условиям соответствующих директив. Подробную информацию, пожалуйста, смотрите на [www.asus.com/support](http://www.asus.com/support)

**Български** С настоящото ASUSTeK Computer Inc. декларира, че това устройство е в съответствие със съществените изисквания и другите приложими постановления на свързаните директиви. Пълният текст на декларацията за съответствие на ЕС е достъпна на адрес: [www.asus.com/support](http://www.asus.com/support)

**Hrvatski** ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj sukladan s bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o sukladnosti dostupan je na: [www.asus.com/support](http://www.asus.com/support)

**Čeština** Společnost ASUSTeK Computer Inc. tímto prohlašuje, že toto zařízení splňuje základní požadavky a další příslušná ustanovení souvisejících směrnic. Plné znění prohlášení o shodě EU je k dispozici na adrese: [www.asus.com/support](http://www.asus.com/support)

**Dansk** ASUSTeK Computer Inc. erklærer hermed, at denne enhed er i overensstemmelse med hovedkravene og andre relevante bestemmelser i de relaterede direktiver. Hele EU-overensstemmelseserklæringen kan findes på: [www.asus.com/support](http://www.asus.com/support)

**Nederlands** ASUSTeK Computer Inc. verklaart hierbij dat dit apparaat voldoet aan de essentiële vereisten en andere relevante bepalingen van de verwante richtlijnen. De volledige tekst van de EU-verklaring van conformiteit is beschikbaar op: [www.asus.com/support](http://www.asus.com/support)

**Eesti** Käesolevaga kinnitab ASUSTeK Computer Inc, et see seade vastab asjakohaste direktiivide oluliste nõuetele ja teistele asjassepuutuvatele sätetele. EL vastavusdeklaratsiooni täielik tekst on saadaval järgmisel aadressil: [www.asus.com/support](http://www.asus.com/support)

**Suomi** ASUSTeK Computer Inc. ilmoittaa täten, että tämä laite on asiaankuuluvien direktiivien olennaisten vaatimusten ja muiden tätä koskevien säädösten mukainen. EU-yhdenmukaisuusilmoituksen koko teksti on luettavissa osoitteessa: [www.asus.com/support](http://www.asus.com/support)

**Ελληνικά** Με το παρόν, η AsusTek Computer Inc. δηλώνει ότι αυτή η συσκευή συμμορφώνεται με τις θεμελιώδεις απαιτήσεις και άλλες σχετικές διατάξεις των Οδηγιών της ΕΕ. Το πλήρες κείμενο της δήλωσης συμβατότητας είναι διαθέσιμο στη διεύθυνση: [www.asus.com/support](http://www.asus.com/support)

**Magyar** Az ASUSTeK Computer Inc. ezennel kijelenti, hogy ez az eszköz megfelel a kapcsolódó Irányelvek lényeges követelményeinek és egyéb vonatkozó rendelkezésének. Az EU megfelelőségi nyilatkozat teljes szövege innen letölthető: [www.asus.com/support](http://www.asus.com/support)

**Latviski** ASUSTeK Computer Inc. ar šo paziņo, ka šī ierīce atbilst saistīto Direktīvu būtiskajām prasībām un citiem citiem saistošajiem nosacījumiem. Pilns ES atbilstības paziņojuma teksts pieejams šeit: [www.asus.com/support](http://www.asus.com/support)

**Lietuvių** „ASUSTeK Computer Inc.“ šiuo tvirtina, kad šis įrenginys atitinka pagrindinius reikalavimus ir kitas svarbias susijusių direktyvų nuostatas. Visą ES atitikties deklaracijos tekstą galima rasti: [www.asus.com/support](http://www.asus.com/support)

**Norsk** ASUSTeK Computer Inc. erklærer herved at denne enheten er i samsvar med hovedsaklige krav og andre relevante forskrifter i relaterte direktiver. Fullstendig tekst for EU-samsvarserklæringen finnes på: [www.asus.com/support](http://www.asus.com/support)

**Polski** Firma ASUSTeK Computer Inc. niniejszym oświadcza, że urządzenie to jest zgodne z zasadniczymi wymogami i innymi właściwymi postanowieniami powiązanych dyrektyw. Pełny tekst deklaracji zgodności UE jest dostępny pod adresem: [www.asus.com/support](http://www.asus.com/support)

**Português** A ASUSTeK Computer Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e outras disposições relevantes das Diretivas relacionadas. Texto integral da declaração da UE disponível em: [www.asus.com/support](http://www.asus.com/support)

**Română** ASUSTeK Computer Inc. declară că acest dispozitiv se conformează cerințelor esențiale și altor prevederi relevante ale directivelor conexe. Textul complet al declarației de conformitate a Uniunii Europene se găsește la: [www.asus.com/support](http://www.asus.com/support)

**Srpski** ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj u saglasnosti sa osnovnim zahtevima i drugim relevantnim odredbama povezanih Direktiva. Pun tekst EU deklaracije o usaglašenosti je dostupan da adresi: [www.asus.com/support](http://www.asus.com/support)

**Slovensky** Spoločnosť ASUSTeK Computer Inc. týmto vyhlasuje, že toto zariadenie vyhovuje základným požiadavkám a ostatným príslušným ustanoveniam príslušných smerníc. Celý text vyhlásenia o zhode pre štáty EÚ je dostupný na adrese: [www.asus.com/support](http://www.asus.com/support)

**Slovenščina** ASUSTeK Computer Inc. izjavlja, da je ta naprava skladna z bistvenimi zahtevami in drugimi ustreznimi določbami povezanih direktiv. Celotno besedilo EU-izjave o skladnosti je na voljo na spletnem mestu: [www.asus.com/support](http://www.asus.com/support)

**Español** Por la presente, ASUSTeK Computer Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones pertinentes de las directivas relacionadas. El texto completo de la declaración de la UE de conformidad está disponible en: [www.asus.com/support](http://www.asus.com/support)

**Svenska** ASUSTeK Computer Inc. förklarar härmed att denna enhet överensstämmer med de grundläggande kraven och andra relevanta föreskrifter i relaterade direktiv. Fulltext av EU-försäkran om överensstämmelse finns på: [www.asus.com/support](http://www.asus.com/support)

**Українська** ASUSTeK Computer Inc. заявляє, що цей пристрій відповідає основним вимогам та іншим відповідним положенням відповідних Директив. Повний текст декларації відповідності стандартам ЄС доступний на: [www.asus.com/support](http://www.asus.com/support)

**Türkçe** AsusTek Computer Inc., bu aygıtın temel gereksinimlerle ve ilişkili Yönergelerin diğer ilgili koşullarıyla uyumlu olduğunu beyan eder. AB uygunluk bildiriminin tam metni şu adreste bulunabilir: [www.asus.com/support](http://www.asus.com/support)

**Bosanski** ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj usklađen sa bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o usklađenosti dostupan je na: [www.asus.com/support](http://www.asus.com/support)

# Warranty

## EN: ASUS Guarantee Information

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

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

## F: Garantie ASUS

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

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

## G: ASUS Garantieinformationen

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

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

## I: Informativa sulla Garanzia ASUS

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

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

## R: Информация о гарантии ASUS

- ASUS предлагает добровольную гарантию от производителя.
- ASUS оставляет за собой право интерпретирования положений гарантии ASUS.
- Настоящая гарантия ASUS никоим образом не ограничивает Ваши права, предусмотренные локальным законодательством.

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

## BG: Информация за гаранцията от ASUS

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

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

## CR: Informacije o ASUS jamstvu

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

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

## CZ: Informace o záruce společnosti ASUS

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

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

## DA: ASUS garantioplysninger

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

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

## DU: ASUS-garantie-informatie

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

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

## EE: Teave ASUS-e garantii kohta

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

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

## FI: ASUS-takuutiedot

- ASUS tarjoaa vapaaehtoisien valmistajan kaupallisen takuun.
- ASUS pidättää oikeuden tulkita ASUS-kaupallisen takuun ehdot.
- Tämä ASUS-kaupallinen takuu tarjotaan itsenäisesti lakisääteisen oikeudellisen takuun lisäksi eikä se vaikuta millään tavoin laillisen takuun oikeuksiin tai rajoita niitä.

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

## GK: Πληροφορίες εγγύησης ASUS

- Η ASUS προσφέρει μια εθελοντική Εμπορική εγγύηση κατασκευαστή.
- Η ASUS διατηρεί το δικαίωμα ερμηνείας των διατάξεων της Εμπορικής εγγύησης ASUS.
- Αυτή η Εμπορική εγγύηση ASUS παρέχεται ανεξάρτητα και επιπροσθέτως της θεσμικής Νομικής εγγύησης και σε καμία περίπτωση δεν επηρεάζει ή περιορίζει τα δικαιώματα βάσει της Νομικής εγγύησης.

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

## HUG: ASUS garanciális információk

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

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

## LT: Informacija apie ASUS garantiją

- ASUS siūlo savanorišką komercinę gamintojo garantiją.
- ASUS pasilieka teise savo nuožirią aiškinti šios komercinės ASUS garantijos nuostatas.
- Ši komercinė ASUS garantija suteikiama nepriklausoma, be įstatyminės teisinės garantijos, ir jokiu būdu nepaveikia ar nepriboja teisinės garantijos suteikiamą teisių.

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

## LV: ASUS garantijas informācija

- ASUS piedāvā brīvprātīgu ražotāja komerciālo garantiju.
- ASUS patur tiesības interpretēt ASUS komerciālās garantijas noteikumus.
- Šī ASUS komerciālā garantija tiek piedāvāta neatkarīgi un papildus likumā noteiktajai juridiskajai garantijai, un tā nekādā veidā neietekmē vai neierobežo juridiskajai garantijai noteiktās tiesības.

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

**MX: Garantía y Soporte**

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

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

**Información de contacto ASUS**

Esta garantía está respaldada por:  
ASUSTeK Computer Inc.  
Centro de Atención ASUS +52 (55) 1946-3663

**NV: Informasjon om ASUS-garanti**

- ASUS tilbyr som produsent en frivillig kommersiell garanti.
- ASUS forbeholder seg retten til å tolke bestemmelsene i ASUS sin kommersielle garanti.
- ASUS sin kommersielle garanti gir uavhengig og i tillegg til den lovbestemte juridiske garantien, og verken påvirker eller begrenser rettighetene under den juridiske garantien på noen måte.

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

**PG: Informações de Garantia ASUS**

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

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

**PL: Informacje o gwarancji firmy ASUS**

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

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

**RO: Informații despre garanția ASUS**

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

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

**S: Información de garantía de ASUS**

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

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

**SB: Informacije o ASUS garanciji**

- ASUS nudi dobrovoljnu proizvođačku komercijalnu garanciju.
- ASUS zadržava pravo da tumači odredbe svoje ASUS komercijalne garancije.
- Ova ASUS komercijalna garancija daje se nezavisno, kao dodatak zakonskoj pravnoj garanciji, i ni ka koji način ne utiče na i ne ograničava prava data pravnom garancijom.

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

**SK: Informácie o záruke ASUS**

- ASUS ponúka dobrovoľnú obchodnú záruku výrobcu.
- ASUS si vyhradzuje právo interpretovať ustanovenia obchodnej záruky ASUS.

- Táto obchodná záruka ASUS je poskytnutá nezávisle a navyše k zákonnej záruke a v žiadnom prípade neovplyvňuje ani neobmedzuje tieto práva podľa tejto zákonnej záruky.

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

**SL: Informacije o garanciji ASUS**

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

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

**SW: ASUS garantinformation**

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

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

**TR: ASUS Garanti Bilgileri**

- ASUS, gönüllü olarak Üretici Ticari Garantisini sunar.
- ASUS, ASUS Ticari Garantisinin hükümlerini yorumlama hakkını saklı tutar.
- Bu ASUS Ticari Garantisini, bağımsız olarak ve hukuki Yasal Garanti'ye ek olarak sağlarını ve hiçbir şekilde Yasal Garanti Kapsamındaki hakları etkilemez veya sınırlamaz.

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

**UA: Інформація про Гарантію ASUS**

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

Всю інформацію про гарантію подано тут: <https://www.asus.com/ua/support>.

Компанія ASUS не несе відповідальності за шкоду, заподіяну життя, здоров'ю чи майну користувача або інших осіб внаслідок використання несправного Виробу або такого Виробу, що не пройшов діагностику після закінчення терміну служби.

З метою перевірки технічного стану Виробу та визначення безпеки його подальшого використання після закінчення терміну служби користувачу необхідно припинити використання Виробу та передати його в авторизований сервісний центр компанії ASUS протягом одного місяця з моменту виявлення пошкодження та/або закінчення терміну служби Виробу.

**BP: Informações de garantia ASUS**

Esta garantía aplica-se ao período definido pela garantia legal (90 dias) mais o período de garantia comercial oferecido pela ASUS. Por exemplo: 12M significa 12 meses de garantia no total (3 meses de garantia legal mais 9 meses de garantia contratual), 24 meses significa 24 meses de garantia no total (3 meses de garantia legal mais 21 meses de garantia contratual) e 36 meses significa 36 meses de garantia no total (3 meses de garantia legal e 33 de garantia contratual) a contar da data da garantia declarada (Data de Início da Garantia).

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

**VN: Thông tin đảm bảo của ASUS**

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

**ID: Informasi Garansi ASUS**

Periode garansi untuk Mainboard adalah 0 bulan dan Mainboard Workstation adalah 72 bulan Masa ("Garansi") sejak tanggal produk pertama kali dibeli oleh pelanggan akhir ("Tanggal Pembelian"). \* Silakan kunjungi situs Dukungan ASUS di <https://www.asus.com/id/support/warranty-status-inquiry/> untuk detail lebih lanjut. Jika bukti pembelian tidak dapat diberikan, tanggal produksi yang dicatat oleh ASUS akan dianggap sebagai awal dari Masa Garansi. Silahkan pindai Kode QR di bagian bawah halaman terakhir untuk Kartu Garansi versi Web dalam format PDF untuk lebih informasi jelas mengenai jaminan garansi Produk ASUS. Layanan Call Center Nomor Telepon: 1500128 (Senin-Jumat 09.30-17.00, Sabtu 09.30-12.00)

**:HB מידע על אחריות ASUS**

- ASUS מציעה אחריות מסחרית של יצרן מרצון.
- ASUS שומרת לעצמה את הזכות לפרש את הראות הערבות המסחרית של ASUS.
- אחריות מסחרית זו של ASUS ניתנת באופן עצמאי ובנוסף לערבות המשפטית הטסטוטורית ואינה משפיעה או מגבילה בשום אופן את הזכויות במסגרת הערבות המשפטית.

למידע אודות האחריות, אנא בקר ב <https://www.asus.com/support>

No.	Kota	Provinsi	Alamat	Jam Kerja
1	Jakarta Pusat	Jakarta	Ruko Mangga Dua Mall No. RM-22, Jl. Mangga Dua Raya No.1, RT.1/RW.12, Mangga Dua Sel., Kecamatan Sawah Besar, Kota Jakarta Pusat, Daerah Khusus Ibukota Jakarta 10730	Senin-Jumat 09.30-17.00, Sabtu 09.30-12.00
2	Surabaya	Jawa Timur	Jl. Klampis Jaya No. 39, Surabaya, Jawa Timur, Indonesia, 60117	Senin-Jumat 09.30-17.00, Sabtu 09.30-12.00
3	Denpasar	Bali	Jl. Teuku Umar Barat No.888D, Denpasar, Bali, Indonesia, 80117	Senin-Jumat 09.30-17.00, Sabtu 09.30-12.00



Warranty Card (Online)

## ASUS contact information

### **ASUSTeK COMPUTER INC.**

Address: 1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112  
<https://qr.asus.com/ProductSafety>

### **ASUS COMPUTER INTERNATIONAL (America)**

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

### **ASUS COMPUTER GmbH (Germany and Austria)**

Address: Harkortstrasse 21-23, 40880 Ratingen, Germany

### **ASUSTeK (UK) LIMITED**

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

### **ASUS GLOBAL PTE. LTD.**

Address: 10 Changi Business Park Central 2 #02-01 Hansapoint Singapore 486030  
<https://qr.asus.com/ProductSafety>

## Service and support

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



## Product register

Log in and register your device for better product support.



