Pro WS B850M-ACE SE

Motherboard

E26769
First Edition
August 2025

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Safety information

Electrical safety

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

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, ensure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.
- Your motherboard should only be used in environments with ambient temperatures between 10°C and 35°C.
- When removing motherboard components or installing other devices, be sure to handle with care. We recommend wearing gloves or other protective gear to prevent injuries to yourself.

Button/Coin Batteries Safety Information

1. Remove and immediately recycle or dispose of used batteries according to local regulations and keep out of reach of children. Do not incinerate or dispose of batteries in household trash.
2. If ingested or inserted inside any part of the body, call a local poison control center for treatment information. Even used batteries may cause serious injury or death.
3. This product uses CR2032 type batteries with a nominal voltage of 3V.
4. Do not attempt to recharge non-rechargeable batteries.
5. Do not forcibly discharge, recharge, disassemble, heat above the battery manufacturer's specified temperature rating, or incinerate. Doing so may result in injury or chemical burns caused by venting, leakage, or explosion.
6. This product contains non-replaceable batteries.

⚠ WARNING

- **INGESTION HAZARD**: This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH of CHILDREN**.
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.



About this guide

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

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product Introduction**

  This chapter describes the features of the motherboard and includes descriptions for each part of the motherboard.

- **Chapter 2: Basic Setup**

  This chapter lists the basic setup procedures for setting up your motherboard.

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

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

Where to find more information

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

1. **ASUS website**

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

2. **Optional documentation**

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

3. **Motherboard Installation Guide**

   Please visit https://www.asus.com/support for more information on the Motherboard Installation Guide.

4. **Driver and Utilities FAQ**

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

5. **RAID Configuration Guide**

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

6. **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 user guide.

CAUTION	Information to prevent damage to the components and injuries to yourself when trying to complete a task.
IMPORTANT	Instructions that you MUST follow to complete a task.
NOTE	Tips and additional information to help you complete a task.

Pro WS B850M-ACE SE specifications summary

CPU	AMD Socket AM5 for AMD Ryzen™ 9000 & 8000 & 7000 Series Desktop Processors and AMD EPYC™ 4005 Series Processors* *** Refer to https://www.asus.com/support/download-center/ for CPU support list.**
Chipset	AMD B850 Chipset
Memory	4 x DIMM slots, max. 256GB, DDR5 Supports up to 8000+MT/s(OC) with Ryzen™ 9000 & 8000 & 7000 Series Processors, ECC and Non-ECC Un-buffered DIMM* Supports up to 5600MT/s with AMD EPYC™ 4005 Series Processors, ECC and Non-ECC Un-buffered DIMM* Dual channel memory architecture Supports AMD Extended Profiles for Overclocking (EXPO™) *** Supported memory types, data rate (speed), and number of DRAM modules vary depending on the CPU and memory configuration, for more information please refer to CPU/Memory Support list under the Support tab of product information site or visit https://www.asus.com/support/download-center. Adjustments will be made based on the specifications of mass-produced memory products available on the market.** *** Non-ECC, Un-buffered DDR5 Memory supports On-Die ECC function.**
Graphics	1 x DisplayPort** 1 x VGA port from AST2600 1 x HDMI™ port*** 1 x USB 10Gbps port (USB Type-C®) supports DisplayPort video output** *** Graphics specifications may vary between CPU types. Please refer to AMD CPU specifications.** **** Supports max. 8K@30Hz as specified in DisplayPort 1.4.** ***** Supports 4K@60Hz as specified in HDMI 2.1.**
Expansion Slots	**AMD Ryzen™ 9000 & 7000 Series Desktop Processors and AMD EPYC™ 4005 Series Processors*** 1 x PCIe 5.0 x16 slot (supports x16 mode) **AMD Ryzen™ 8000 Series Desktop Processors** 1 x PCIe 4.0 x16 slot (supports x8/x4 mode)** **AMD B850 Chipset** 1 x PCIe 4.0 x16 slot (supports x4 mode) *** Please check PCIe bifurcation table on support site (https://www.asus.com/support/FAQ/1037507/).** **** Specifications vary by CPU types.** ***** To ensure compatibility of the device installed, please refer to https://www.asus.com/support/download-center for the list of supported peripherals.**
Storage	**Total supports 2 x M.2 slots, 1 x MCIO connector, 1 x U.2 connector and 4 x SATA 6Gb/s ports** **AMD Ryzen™ 9000 & 7000 Series Desktop Processors and AMD EPYC™ 4005 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 5.0 x4 mode) - MCIO connector (supports PCIe 5.0 x4 mode)**

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Pro WS B850M-ACE SE specifications summary

Storage	**AMD Ryzen™ 8000 Series Desktop Processors** - M.2_1 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode) - M.2_2 slot (Key M), type 2280 (supports PCIe 4.0 x4/x2 mode) - MCIO connector (supports PCIe 4.0 x4/x2 mode)** **AMD B850 Chipset** - U.2_1 connector supports PCIe 3.0 x4 mode via an SFF-8643 adapter cable. The cable is purchased separately. - 4 x SATA 6Gb/s ports*** * **Specifications vary by CPU types.** ** **MCIO connector shares bandwidth with M.2_2 slot. When MCIO connector is operating, M.2_2 slot will be disabled.** *** **U.2 shares bandwidth with SATA ports; enable U.2 in BIOS menu to support a NVMe storage device, SATA ports will be disabled.**
RAID Support	**AMD RAIDXpert2 Technology** - Ryzen™ 9000 Series Processors: RAID 0/1/5/10 - Ryzen™ 8000 Series Processors: RAID 0/1 - Ryzen™ 7000 Series Processors: RAID 0/1/10 * **Specifications vary by CPU types.**
Ethernet	1 x Realtek 10Gb Ethernet 1 x Intel® 2.5Gb Ethernet 1 x Realtek 1Gb Ethernet* ASUS LANGuard * **This dedicated LAN port is for BMC and IPMI connections only; internet access is not supported.**
USB	**Rear USB (Total 7 ports)** 5 x USB 10Gbps ports (3 x Type-A + 2 x USB Type-C®) 2 x USB 2.0 ports (2 x Type-A) **Front USB (Total 7 ports)** 1 x USB 20Gbps connector (supports USB Type-C®) 1 x USB 5Gbps header supports 2 additional USB 5Gbps ports 2 x USB 2.0 headers support 4 additional USB 2.0 ports **Onboard USB port(s)** 1 x USB 2.0 port (1 x Type-A) for BIOS FlashBack™ *** USB Type-C® power delivery output: max. 5V/3A**
Audio	**Realtek 7.1 Surround Sound High Definition Audio CODEC*** - Supports: Jack-detection, Multi-streaming, Front Panel Jack-retasking - Supports up to 24-Bit/192 kHz playback **Audio Features** - Audio Shielding - Premium audio capacitors - Dedicated audio PCB layers * **Due to limitations in HDA bandwidth, 32-Bit/192 kHz is not supported for 7.1 Surround Sound audio.**

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Pro WS B850M-ACE SE specifications summary

Back Panel I/O Ports	3 x USB 10Gbps ports (3 x Type-A) 1 x USB 10Gbps port (USB Type-C®) 1 x USB 10Gbps port (USB Type-C®) supports DisplayPort video output 2 x USB 2.0 ports (2 x Type-A) 1 x DisplayPort 1 x VGA port 1 x HDMI™ port 1 x Realtek 10Gb Ethernet port 1 x Intel® 2.5Gb Ethernet port 1 x Realtek 1Gb Ethernet port (Dedicated management LAN for AST2600) 2 x Audio jacks 1 x Clear CMOS button
Internal I/O Connectors	**Fan and Cooling Related** 1 x 4-pin CPU Fan header 1 x 4-pin CPU OPT Fan header 3 x 4-pin Chassis Fan headers 1 x W_PUMP+ header **Power Related** 1 x 24-pin Main Power connector 1 x 8-pin +12V CPU Power connector 1 x 4-pin +12V CPU Power connector **Storage Related** 2 x M.2 slots (Key M) 4 x SATA 6Gb/s ports 1 x U.2 connector 1 x MCIO connector **USB** 1 x USB 20Gbps connector (supports USB Type-C®) 1 x USB 5Gbps header supports 2 additional USB 5Gbps ports 2 x USB 2.0 headers support 4 additional USB 2.0 ports 1 x USB 2.0 port (1 x Type-A) **Miscellaneous** 1 x BIOS FlashBack™ button 1 x Chassis Intrusion header 1 x COM Port header 1 x Reset button 1 x Front Panel Audio header (F_AUDIO) 1 x 10-1 pin Front Panel System header 1 x SPI TPM header (14-1 pin) 1 x Start button 1 x RTC Battery header 1 x Thermal Sensor header 1 x Thunderbolt™ (USB4®) header

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Pro WS B850M-ACE SE specifications summary

Special Features	**ASUS 5X PROTECTION III** - DIGI+ VRM (Digital power design with DrMOS) - ESD Guards - LANGuard - Overvoltage protection - SafeSlot - Stainless-steel back I/O **ASUS Q-Design** - M.2 Q-Latch - Q-Code - Q-Connector - Q-LED (CPU [red], DRAM [yellow], VGA [white], Boot Device [yellow green]) - Q-Slot **ASUS Thermal Solution** - M.2 heatsink - Aluminum heatsink design **ASUS EZ DIY** - BIOS FlashBack™ button - BIOS FlashBack™ LED - Clear CMOS button - Dual DIMM clips - ProCool II - SafeSlot - SafeDIMM **Bespoke Motherboard Design & Business Focused Features** - 24/7 reliability - Overcurrent protection
Software Features	**ASUS Exclusive Software** Armoury Crate - Fan Xpert 4 ASUS DriverHub - ASUS CPU-Z TurboV Core Adobe Creative Cloud (Free Trial)** Norton 360 Deluxe (60 Days Free Trial) WinRAR (40 Days Free Trial) **UEFI BIOS** ASUS EZ DIY - ASUS CrashFree BIOS 3 - ASUSTeK. EzFlash Utility * **For more software features, please visit the asus support site or refer to www.asus.com/support for additional information.** ** **For detailed information on the supported models and restricted regions for this redemption offer, please refer to https://www.asus.com/content/asus-offers-adobe-creative-cloud/.**

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Pro WS B850M-ACE SE specifications summary

Remote Management Features	**IT Management software supported** - ASUS Control Center Express(ACCE) **BMC Related** 1 x BMC switch 1 x BMC LAN fixed IP switch 1 x Message LED header 1 x microSD card socket 1 x Location LED header 1 x Location button header 1 x PSU_SMB header 1 x SMART_PSU switch 1 x VGA switch 1 x VPP_I2C header **BMC LED Design** 1 x BMC LED 1 x Message LED 1 x Location LED
BIOS	512 Mb Flash ROM, UEFI AMI BIOS (text-based)
BIOS CAP Filename	**Pro WS B850M-ACE SE:** A5720.CAP
Manageability	WOL by PME, PXE
Operating System	Windows 11 Windows 10 64-bit (with AMD Ryzen™ Desktop Processors)
Form Factor	micro-ATX Form Factor 9.6 inch x 9.6 inch (24.4 cm x 24.4 cm)

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

Package contents

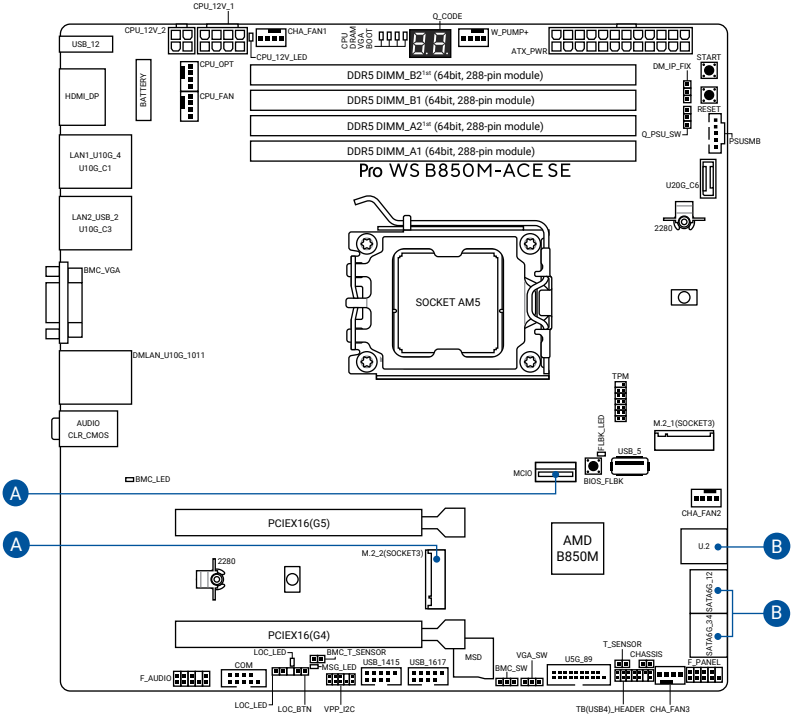
Check your motherboard package for the following items.

Motherboard	1 x Pro WS B850M-ACE SE motherboard
Cables	2 x SATA 6Gb/s cables
Miscellaneous	1 x I/O shield 1 x Q-connector 1 x M.2 rubber package
Documentation	1 x ACC Express activation key card 1 x Quick start guide

NOTE:

- If any of the above items is damaged or missing, contact your retailer.
- Items not listed in the Package contents list above are purchased separately and do not come bundled with your motherboard package.

Connectors with shared bandwidth



Configuration		1 (default)	2
A	M.2_2	PCIe 5.0 x4	-
	MCIO	-	PCIe 5.0 x4
Configuration		**1 (default)**	**2**
B	SATA	SATA mode	-
	U.2	-	PCIe 3.0 x4

Product Introduction

1.1 Before you proceed

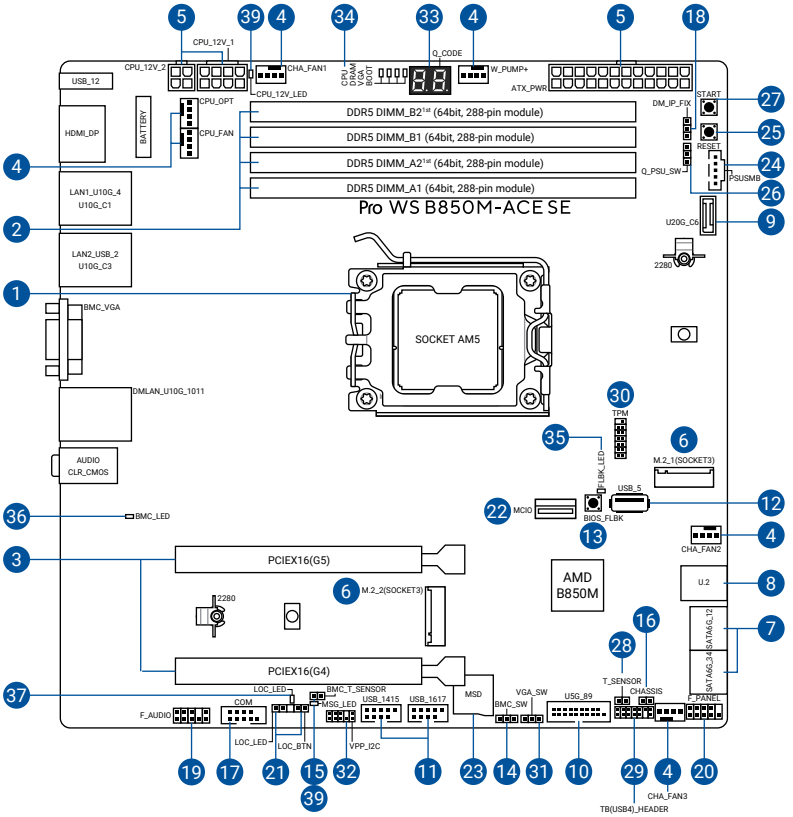
Take note of the following precautions before you install motherboard components or change any motherboard settings.

CAUTION!

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

NOTE: The pin definitions in this chapter are for reference only. The pin names depend on the location of the header/jumper/connector.

1.2 Motherboard layout

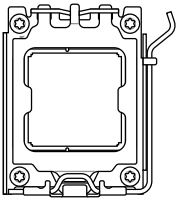


Layout contents	
1.	CPU socket
2.	DIMM slots
3.	Expansion slots
4.	Fan and Pump headers
5.	Power connectors
6.	M.2 slot
7.	SATA 6Gb/s port
8.	U.2 connector
9.	USB 20Gbps Type-C® Front Panel connector
10.	USB 5Gbps header
11.	USB 2.0 header
12.	USB 2.0 Type-A port
13.	BIOS FlashBack™ button
14.	BMC Switch header
15.	BMC Thermal Sensor header
16.	Chassis Intrusion header
17.	COM Port header
18.	Fixed Dedicated BMC LAN IP Switch header
19.	Front Panel Audio header
20.	Front Panel System header
21.	Location button and LED headers
22.	MCIO connector
23.	microSD Card slot
24.	Power Supply SMBus connector
25.	Reset button
26.	SMART PSU switch header
27.	Start button
28.	Thermal Sensor header
29.	Thunderbolt™ (USB4®) header
30.	TPM header
31.	VGA switch
32.	VPP_I2C header
33.	Q-Code LED
34.	Q-LEDs
35.	BIOS FlashBack™ LED
36.	BMC LED
37.	Location LED
38.	Message LED
39.	8-pin CPU Power Plug LED

1. CPU socket

The motherboard comes with a Socket AM5 designed for AMD Ryzen™ 9000 & 8000 & 7000 Series Desktop Processors and AMD EPYC™ 4005 Series Processors.

Socket AM5



CAUTION!

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

2. DIMM slots

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



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

Recommended memory configurations

Memory configurations				
	DIMM			
	A1	A2 1st	B1	B2 1st
1 DIMM		✓		
2 DIMMs		✓		✓
4 DIMMs	✓	✓	✓	✓

Memory configurations

You may install ECC or Non-ECC DDR5 DIMMs into the DIMM sockets.

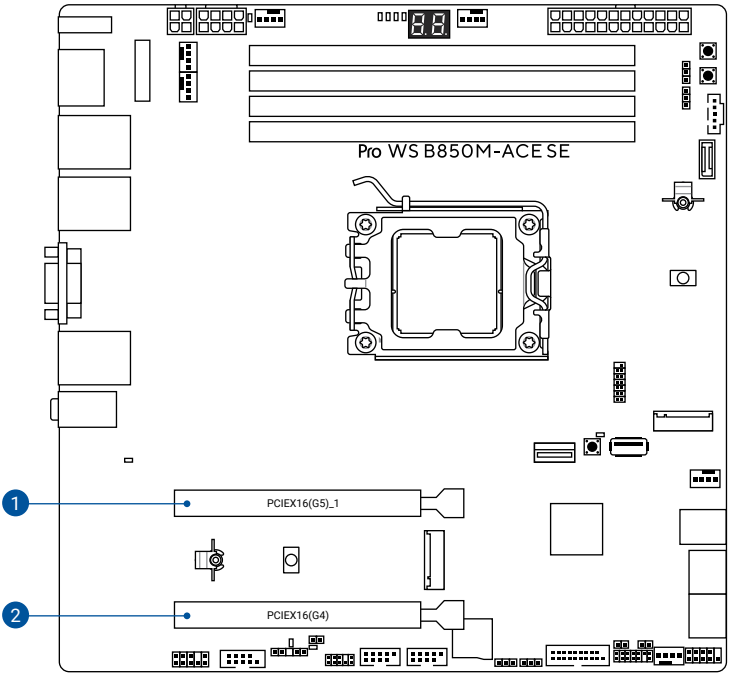
NOTE:

- AMD Ryzen™ and EPYC™ 4005 processors support ECC and non-ECC un-buffered memory.
- 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.

3. 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.

NOTE: To install a PCIe expansion card, please refer to the **Motherboard Installation Guide** on the ASUS support site.



Please refer to the following table for PCIe bifurcation configuration.

PCIe bifurcation in PCIe x16 slots with AMD Ryzen™ 9000 & 7000 Series and AMD EPYC™ 4005 Series Desktop Processors

Slot Description		Quantity of identifiable M.2 SSD (pcs)	
		Situation 1	Situation 2
1	PCIEX16(G5)_1	1 (x16)	4 (x4+x4+x4+x4)

NOTE:

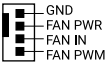
- Hyper M.2 X16 series card sold separately.
- Additional PCIe bifurcation and M.2 settings for RAID function are also supported when a Hyper M.2 x16 series card is installed.
- For more details on the PCIe bifurcation, you may visit the support site at https://www.asus.com/support/FAQ/1037507/.
- Adjust the PCIe bifurcation under BIOS settings.
- Enable the Hyper M.2 X16 series card under BIOS settings.
- Creating RAID with the Hyper M.2 X16 series card is limited to a maximum of 10 SSDs.

4. Fan and Pump headers

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

CPU_FAN
CPU_OPT
W_PUMP+

CHA_FAN1
CHA_FAN2
CHA_FAN3



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 **W_PUMP+** header.

NOTE:

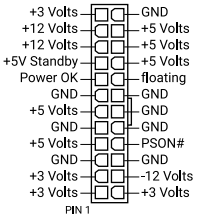
- When connecting a single CPU fan, you may connect it to either the **CPU_FAN** or **CPU_OPT** header.
- When connecting two CPU fans, ensure to connect the fans to the **CPU_FAN** and the **CPU_OPT** header, and make sure both fans are the same brand and model.

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

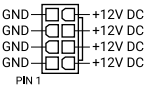
5. Power connectors

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.

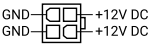
ATX_PWR



CPU_12V_1



CPU_12V_2



CAUTION! Ensure to connect the 8-pin power plug, or connect both the 8-pin and 4-pin power plugs.

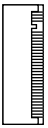
NOTE:

- 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.

6. M.2 slot

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

M.2_1(SOCKET3)
M.2_2(SOCKET3)



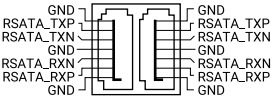
NOTE:

- **AMD Ryzen™ 9000 & 7000 Series Desktop 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 5.0 x4 mode)
- **AMD Ryzen™ 8000 Series Desktop Processors:**
  - M.2_1 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode)
  - M.2_2 slot (Key M), type 2280 (supports PCIe 4.0 x4/x2 mode)
- MCIO connector shares bandwidth with M.2_2 slot. When MCIO connector is operating, M.2_2 slot will be disabled.

7. 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.

SATA6G_1 SATA6G_3
SATA6G_2 SATA6G_4



NOTE:

- If you installed SATA storage devices to the **SATA6G_1-4** ports, you can create RAID configurations through the onboard AMD B850 chipset.
- To install a SATA device , please refer to the **Motherboard Installation Guide** on the ASUS support site.
- U.2 shares bandwidth with SATA ports; enable U.2 in BIOS menu to support a NVMe storage device, SATA ports will be disabled.
- Before creating a RAID set, refer to the **RAID Configuration Guide**. You can download the **RAID Configuration Guide** from the ASUS website.

8. U.2 connector

This motherboard comes with a U.2 connector which supports PCIe 3.0 x4 NVM Express storage.

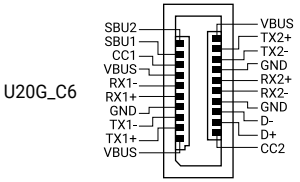


NOTE:

- U.2 shares bandwidth with SATA ports; enable U.2 in BIOS menu to support a NVMe storage device, SATA ports will be disabled.
- A SFF-8643 adapter cable is required to support PCIe 3.0 x4 mode. The cable is purchased separately.

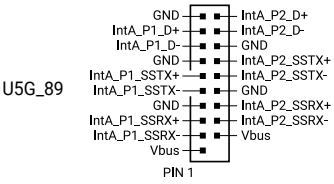
9. USB 20Gbps Type-C® Front Panel connector

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. The USB 20Gbps Type-C® connector provides data transfer speeds of up to 20 Gb/s.



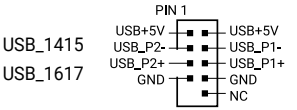
10. USB 5Gbps header

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.



11. USB 2.0 header

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



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

12. USB 2.0 Type-A port

The USB 2.0 Type-A port allows you to connect a USB device for the BIOS FlashBack™ function.



13. BIOS FlashBack™ button

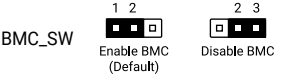
Press the BIOS FlashBack™ button to use the BIOS FlashBack™ function.



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

14. BMC Switch header

The BMC Switch header allows you to enable or disable the BMC.



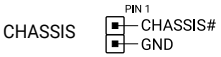
15. BMC Thermal Sensor header

The BMC Thermal Sensor header allows you to connect a sensor to monitor the temperature of the devices and the critical components inside the motherboard through BMC. Connecting the T sensor cables and setting **BMC_SW** to enabled will allow you to view the sensor readings in both the BIOS and on the web UI.



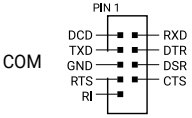
16. Chassis Intrusion header

The Chassis Intrusion header allows you to connect a 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.



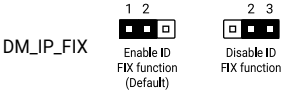
17. COM Port header

The COM (Serial) Port header allows you to connect a COM port module. Connect the COM port module cable to this header, then install the module to a slot opening on the system chassis.



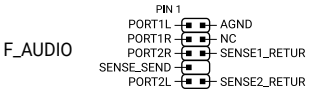
18. Fixed Dedicated BMC LAN IP Switch header

The Fixed Dedicated BMC LAN IP switch header allows you to set a fixed IP (10.10.10.10) when set to enabled.



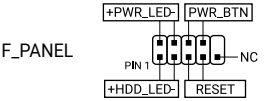
19. Front Panel Audio header

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.



20. 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)**

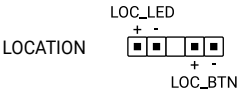
  The 3-1 pin header allows you to connect the system power button. Press the power button to power up the system, or put the system into sleep or soft-off mode (depending on the operating system settings).

- **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.

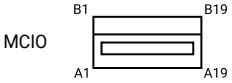
21. Location button and LED headers

The Location button and LED headers allow you to connect a locator button and locator LED on the front panel. This button queries the state of the system locator, and the LEDs will light up when the Locator button is pressed.



22. MCIO connector

The MCIO connector allows you to connect a PCIe signal to a MCIO port and supports PCIe 4.0 x4/x2 mode.



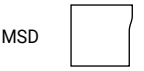
Pin definition			
Pin	Signal	Signal	Pin
A1	GND	GND	B1
A2	PERp0	PETp0	B2
A3	PERn0	PETn0	B3
A4	GND	GND	B4
A5	PERp1	PETp1	B5
A6	PERn1	PETn1	B6
A7	GND	GND	B7
A8	Activity	SMSCL	B8
A9	Wake	SMSDA	B9
A10	GND	GND	B10
A11	RCLK_p	PERST	B11
A12	RCLK_n	PRSNT	B12
A13	GND	GND	B13
A14	PERp2	PETp2	B14
A15	PERn2	PETn2	B15
A16	GND	GND	B16
A17	PERp3	PETp3	B17
A18	PERn3	PETn3	B18
A19	GND	GND	B19

NOTE:

- MCIO connector shares bandwidth with M.2_2 slot. When MCIO connector is operating, M.2_2 slot will be disabled.
- Please ensure to check that the pin definition of the MCIO cable matches the pin definition above before connecting the MCIO cable.

23. microSD Card slot

The microSD Card slot allows you to install a microSD memory card v2.00 (SDHC) / v3.00 (SDXC) to log BMC events.



CAUTION!

- Disconnect all power (including redundant PSUs) from the existing system before you add or remove a memory card, then reboot the system to access the memory card.
- Some memory cards may not be compatible with your motherboard. Ensure that you use only compatible memory cards to prevent loss of data, damage to your device, or memory card, or both.

NOTE:

- The microSD Slot is only supported with BMC Function and not supported for normal use under the OS.
- microSD card slot supports ext2, ext3, ext4, and FAT32 formats.

24. Power Supply SMBus header

The Power Supply SMBus header allows you to connect the SMBus (System Management Bus) to the PSU (power supply unit) to read the PSU information. Devices communicate with an SMBus host and/or other SMBus devices using the SMBus interface.



NOTE: Power supply is required to meet PMBus specification and customized BMC FW may be needed. Please contact ASUS if your need further support

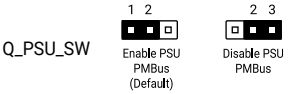
25. Reset button

The Reset button allows you to reboot the system when pressed.



26. SMART PSU Switch header

The SMART PSU Switch header allows you to select PSU PMBus version.



27. Start button

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



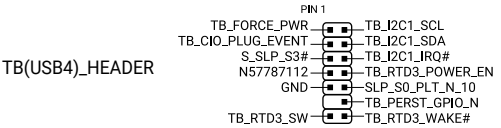
28. Thermal Sensor header

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.



29. Thunderbolt™ (USB4®) header

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

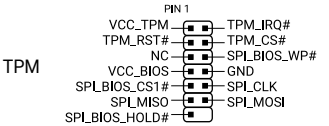


NOTE: Please visit the official website of your purchased add-on card for more details on compatibility.

IMPORTANT! The add-on card can only be used when installed to the PCIEX16(G4) slot. Ensure to install your add-on card to the PCIEX16(G4) slot.

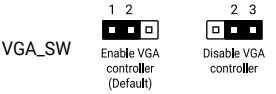
30. TPM header

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.



31. VGA switch header

The VGA switch header allows you to enable or disable the onboard VGA controller.



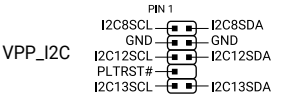
NOTE:

- If a VGA Card is installed into a PCI Express x16 Slot, the onboard VGA function will still be enabled.
- BMC Remote Management Function will still be available when VGA controller settings is set to disabled, but the display will be disabled on the client device.

IMPORTANT! Ensure the power supply is switched off or the power cord is detached from the power supply when enabling or disabling the VGA controller settings using this switch.

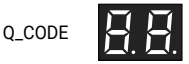
32. VPP_I2C header

The VPP_I2C header is used for the storage backplane with sensor readings.



33. Q-Code LED

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

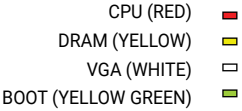


NOTE:

- 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.

34. 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.



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.

35. BIOS FlashBack™ LED

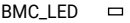
The BIOS FlashBack™ LED lights up or blinks to indicate the status of the BIOS FlashBack™.



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

36. BMC LED

The BMC LED works with the ASUS ASMB management device and indicates its initiation status. When the PSU is plugged and the system is OFF, ASUS ASMB management device starts system initiation for about one (1) minute. The BMC LED blinks after system initiation finishes.



37. Location LED

The Location LED lights up when the Location button on the server is pressed or when triggered by a system management software. The Location LED helps visually locate and quickly identify the server in error on a server rack.

LOC_LED

38. Message LED

The message LED is controlled by the BMC to indicate an abnormal event occurrence.

MSG_LED

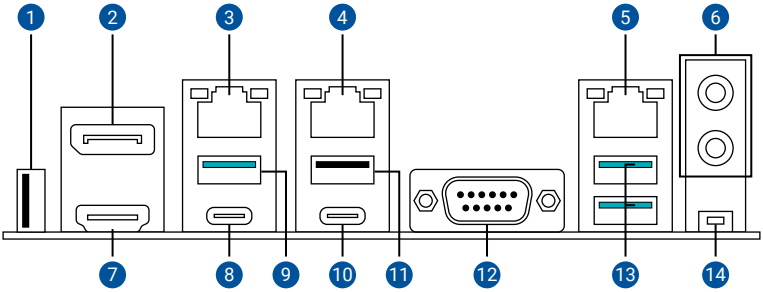
39. 8-pin CPU Power Plug LED

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

CPU_12V_LED

1.3 Motherboard rear and audio connections

1.3.1 Rear I/O connection



Rear panel connectors	
1.	USB 2.0 port 12
2.	DisplayPort
3.	Intel® 2.5Gb Ethernet port
4.	Realtek 10Gb Ethernet port*
5.	Realtek 1Gb Ethernet port (Dedicated management LAN for AST2600)
6.	Audio jacks
7.	HDMI™ port
8.	USB 10Gbps Type-C® port C1 with DP alt mode
9.	USB 10Gbps (Teal blue) Type-A port 4
10.	USB 10Gbps Type-C® port C3
11.	USB 2.0 port 2
12.	VGA port from AST2600
13.	USB 10Gbps (Teal blue) Type-A ports 10 and 11
14.	Clear CMOS button

NOTE:

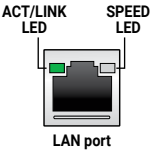
- We strongly recommend that you connect your devices to ports with matching data transfer rate. For example connecting your USB 5Gbps devices to USB 5Gbps ports for faster and better performance for your devices.
- Refer to the tables under LAN port LEDs, and Audio I/O connections sections for more information on the LAN port LEDs and Audio I/O connections.
- * Connect to this LAN port for the ASUS DriverHub installation prompt.

1.3.2 LAN port LEDs

Intel® 2.5Gb Ethernet port LED indications

Activity Link LED	
Status	Description
OFF	No link
GREEN	Linked
BLINKING	Data activity

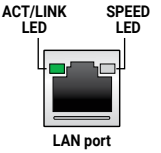
Speed LED	
Status	Description
OFF	No link
OFF	100 Mbps / 10 Mbps connection
GREEN	2.5 Gbps connection
ORANGE	1 Gbps connection



Realtek 10Gb Ethernet port LED indications

Activity Link LED	
Status	Description
OFF	No link
GREEN	Linked
BLINKING	Data activity

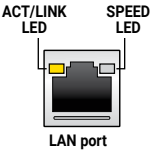
Speed LED	
Status	Description
OFF	No link
GREEN	10 Gbps
ORANGE	5 Gbps/ 2.5 Gbps/ 1 Gbps/ 100 Mbps / 10 Mbps connection



Realtek 1Gb Ethernet port LED indications

Activity Link LED	
Status	Description
OFF	No link
ORANGE	Linked
BLINKING	Data activity

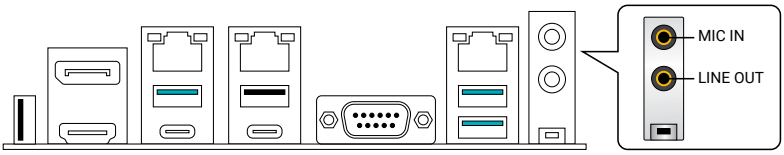
Speed LED	
Status	Description
OFF	10 Mbps connection
ORANGE	100 Mbps connection
GREEN	1 Gbps connection



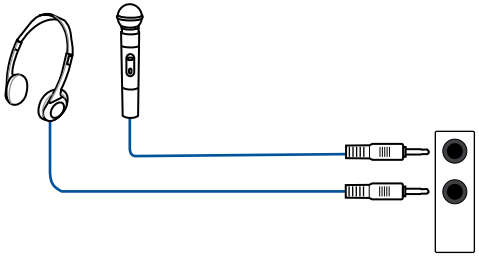
1.3.3 Audio I/O connections

Audio 2, 4, 5.1 or 7.1-channel configuration

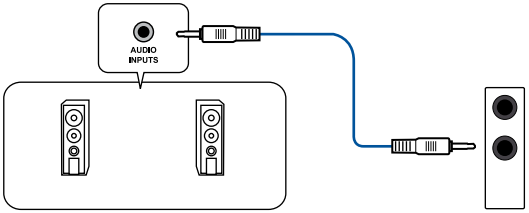
Port	2-channel	4-channel	5.1-channel	7.1-channel
Rear panel				
LINE OUT	Front Speaker Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
MIC IN	-	-	Center/ Subwoofer	Center/ Subwoofer
Front panel				
HEADPHONE (Lime)	-	-	-	Side Speaker Out
MIC IN (Pink)	-	Rear Speaker Out	Rear Speaker Out	Rear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



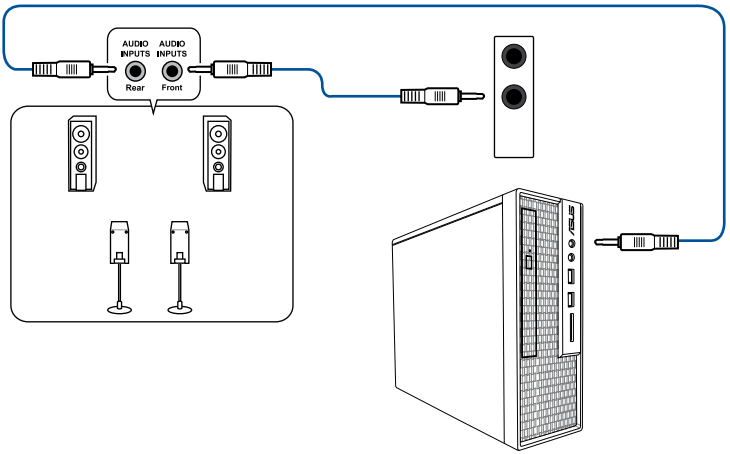
Connect to Headphone and Mic



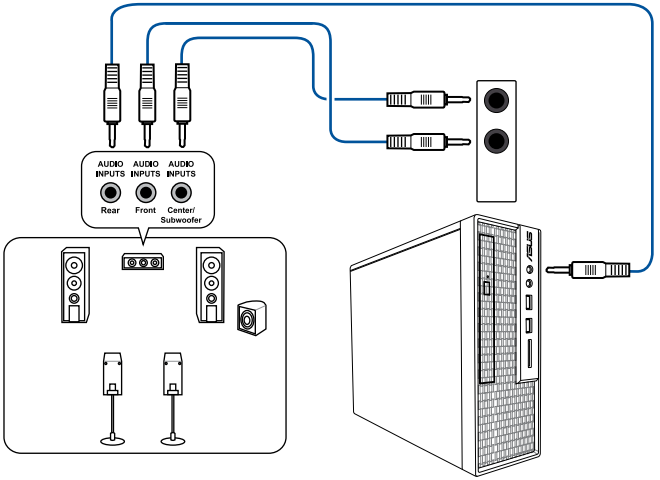
Connect to 2-channel Speakers



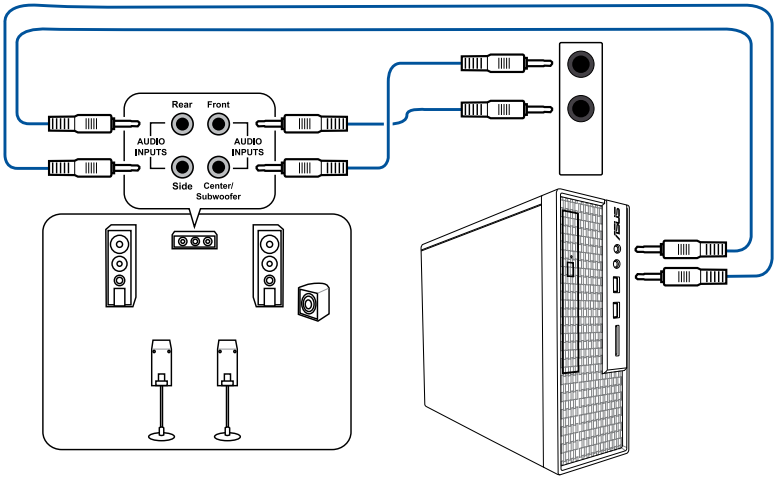
Connect to 4-channel Speakers



Connect to 5.1-channel Speakers



Connect to 7.1-channel Speakers



Basic Setup

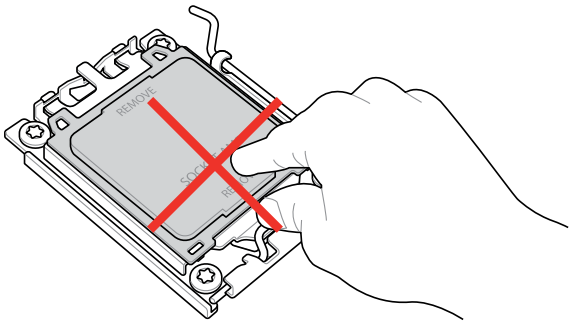
NOTE: The installation diagrams in this section are for reference only. The motherboard layout may vary with models, but the installation steps are the same for all models.

2.1 CPU installation

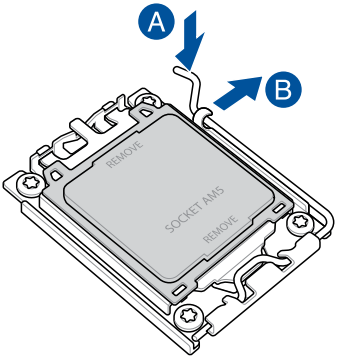
CAUTION!

- Ensure that you use a CPU designed for the AM5 socket. The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the pins and damaging the CPU
- 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.

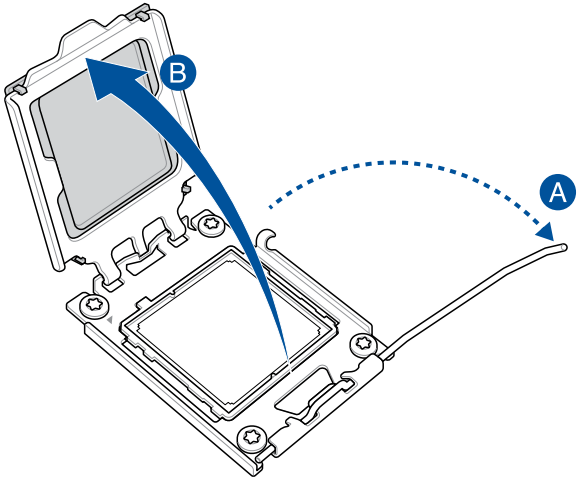
IMPORTANT! Install a heatsink or AIO cooler after installing the CPU. Please refer to the **Motherboard Installation Guide** on the ASUS support site, or to the user manual of the heatsink/AIO cooler for steps on installing the heatsink/AIO cooler.



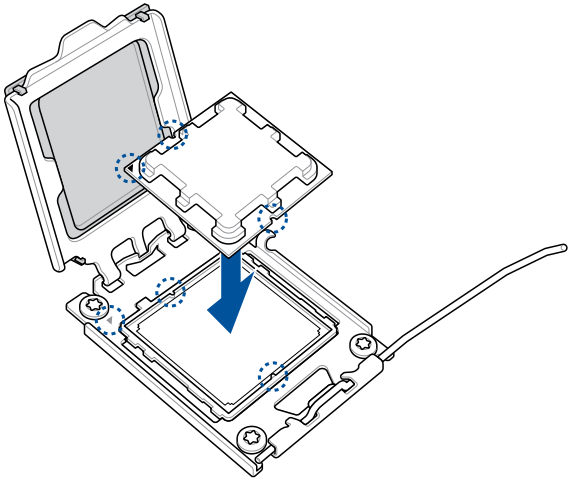
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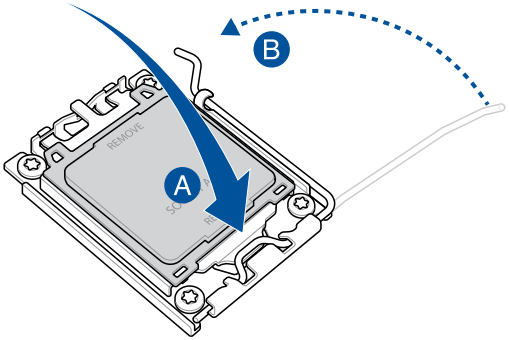
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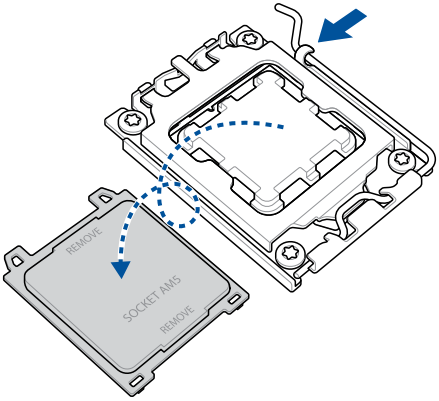
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4

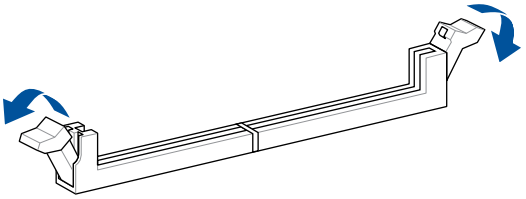


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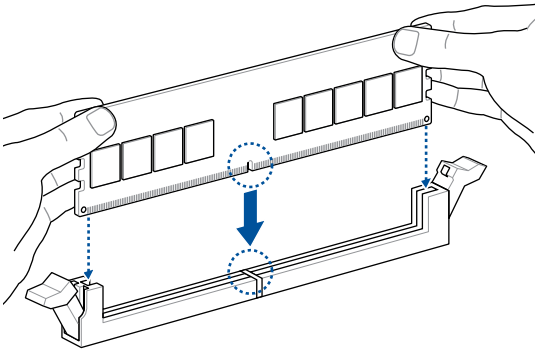


2.2 DIMM installation

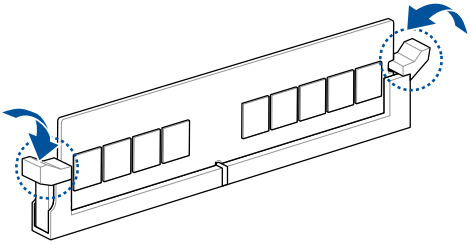
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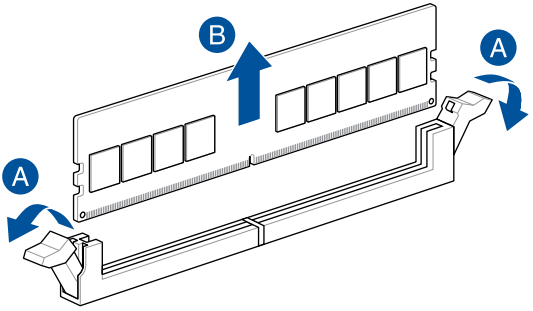
2



3



DIMM removal

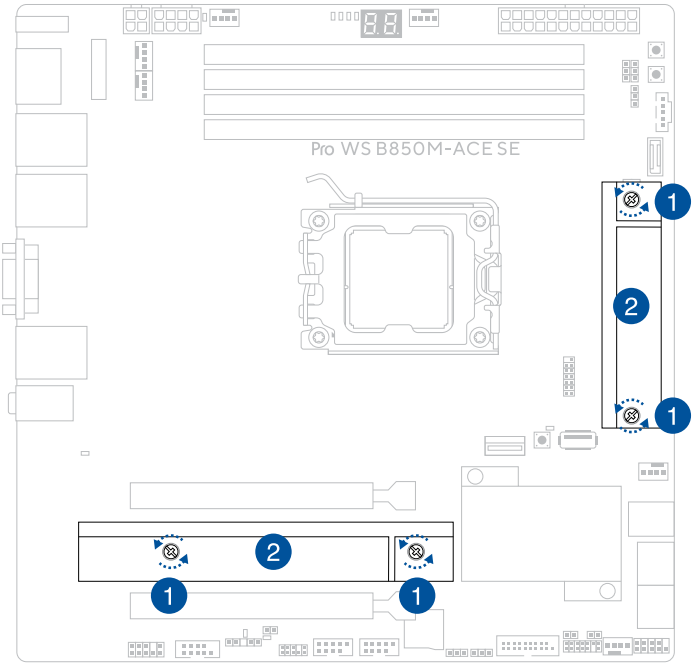


2.3 M.2 module installation

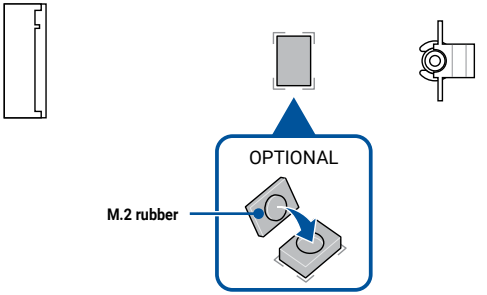
NOTE:

- The illustrations only show the installation steps for selected M.2 slots, the steps are the same for the other M.2 slots.
- Use a Phillips screwdriver when removing or installing the screws or screw stands mentioned in this section.
- If the thermal pad on the M.2 heatsink becomes damaged, we recommend replacing it with the bundled thermal pad or a thermal pad with a thickness of 1.25mm.
- Supported M.2 type varies per motherboard.

1. Loosen the screws from the M.2 heatsink(s).
2. Lift and remove the heatsink(s).



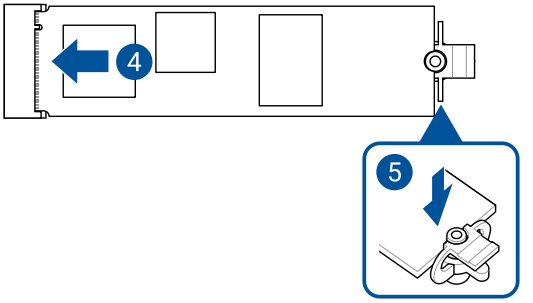
3. (optional) Install the bundled M.2 rubber if you are installing a single sided M.2 module. DO NOT install the bundled M.2 rubber when installing a double-sided M.2 module. The rubber installed by default is compatible with double sided M.2 modules.



4. 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.

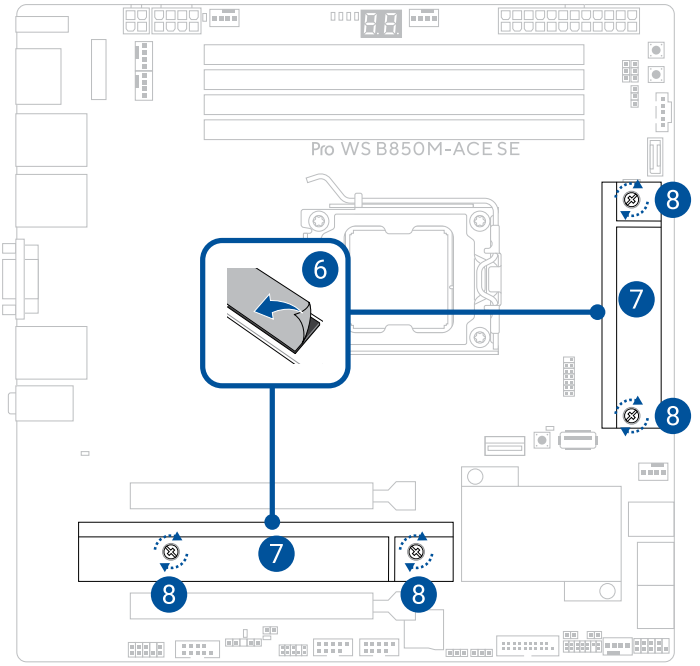
5. Push the M.2 module down until it is secured by the M.2 Q-Latch.



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

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

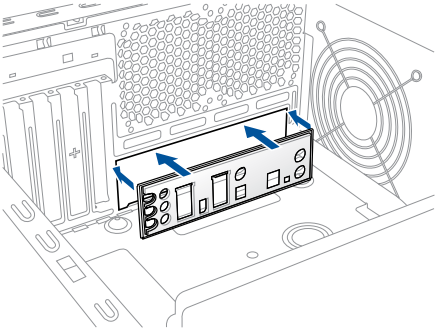
7. Replace the heatsink(s).
8. Secure the heatsink(s) using the screws on the heatsink(s).



2.4 Motherboard installation

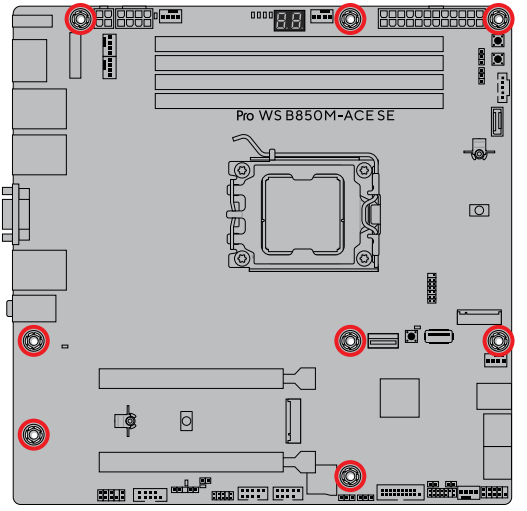
1. (on selected models) Install the bundled I/O Shield to the chassis rear I/O panel.

NOTE: Only install the I/O Shield if your motherboard does not have a pre-installed I/O shield.



2. Place the motherboard into the chassis, ensuring that its rear I/O ports are aligned to the chassis' rear I/O panel.
3. Place eight (8) screws into the holes indicated by circles to secure the motherboard to the chassis.

NOTE: This instruction is for reference only, please place the amount of screws according to your installation situation.



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

2.5 BIOS FlashBack™

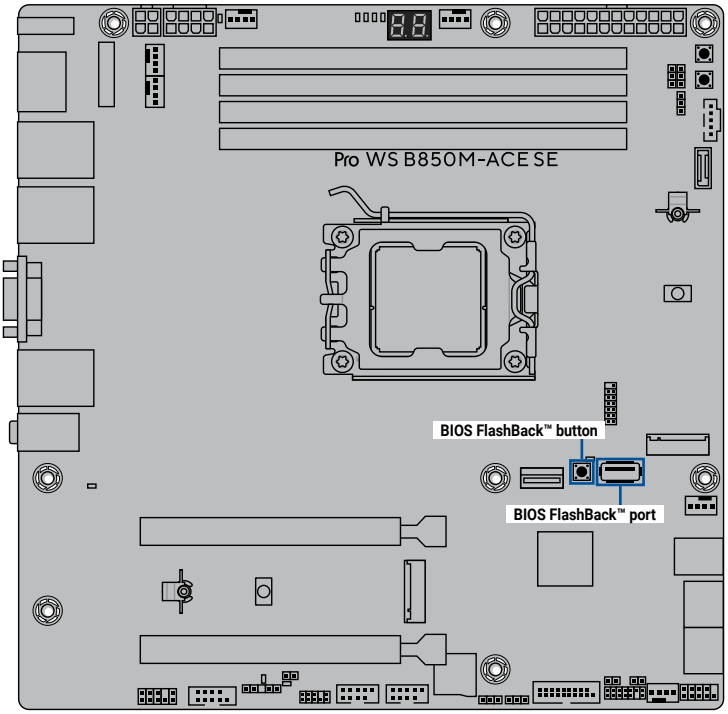
BIOS FlashBack™ allows you to easily update the BIOS without entering the existing BIOS or operating system.

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). Insert the USB storage device to the USB port with BIOS FlashBack™ function.
4. 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.



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

NOTE: For more BIOS update utilities in BIOS setup, refer to **BIOS and RAID Support** section.

CAUTION!

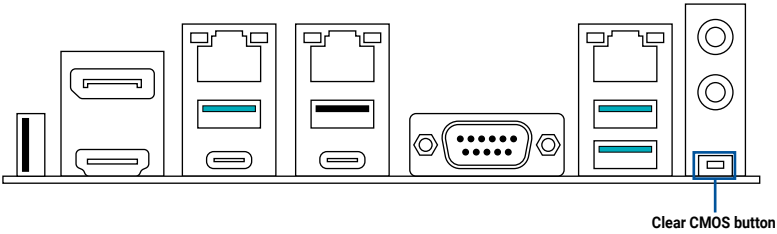
- Do not unplug portable disk, power system, press the Clear CMOS button, or short the CLRTC header while BIOS update is ongoing, otherwise update will be interrupted. In case of interruption, please follow the steps again.
- If the light flashes for five seconds and turns into a solid light, this means 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.

2.6 Clear CMOS button

The Clear CMOS button located on the rear I/O 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. Press the Clear CMOS button.



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 press the Clear CMOS button except when clearing the RTC RAM, doing so will cause system boot failure!

2.7 Starting up for the first time

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

   The system then runs the power-on self tests (POST). While the tests are running, additional messages appear on the screen. If you do not see anything within 30 seconds from the time you turned on the power, the system may have failed a power-on test. Check the jumper settings and connections or call your retailer for assistance.
7. At power on, hold down the <Delete> key to enter the BIOS Setup. Follow the instructions in Chapter 3.

2.8 Turning off the computer

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

BIOS and RAID Support

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

3.1 Knowing UEFI BIOS

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.

IMPORTANT!

- 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 the <F5> hotkey.
- 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.

3.2 ASUS EZ Flash 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>**.

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.

3.3 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!

3.4 RAID configurations

The motherboard supports RAID configurations.

RAID definitions

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

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

> **NOTE:** The ability to create RAIDABLE arrays may vary per system.

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

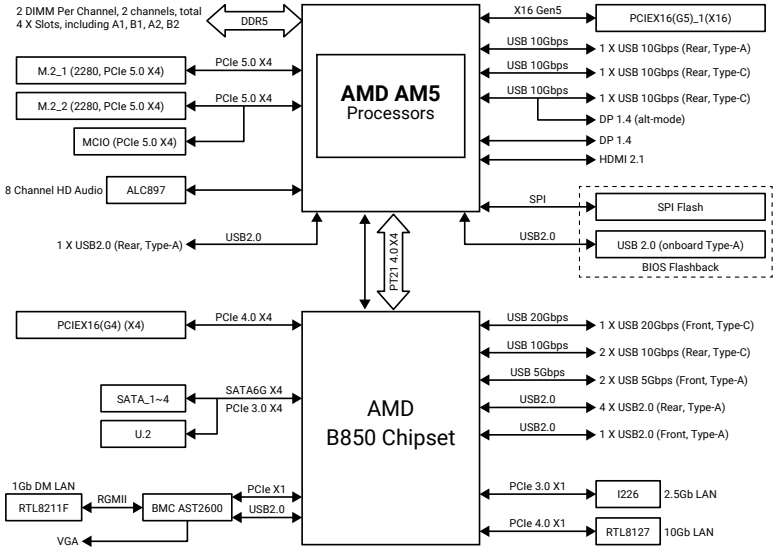
RAID 1 (Data mirroring) copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides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

RAID 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 B850M-ACE SE block diagram



Q-Code table

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

(continued on the next page)

Q-Code table

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

(continued on the next page)

Q-Code table

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

(continued on the next page)

Q-Code table

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

ACPI/ASL Checkpoints (under OS)

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

General 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.

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HIGH-DEFINITION MULTIMEDIA INTERFACE

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

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EU RoHS

This product complies with the EU RoHS Directive. For more details, see 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 năm2011 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.



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:

France sorting and recycling information



Notices for non Wi-Fi model

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.

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.

CAN ICES(B)/NMB(B)

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 UKCA Directives. Full text of UKCA declaration of conformity is available at: 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

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

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

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

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

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

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

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

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

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

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

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

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

Magyar Az ASUSTeK Computer Inc. ezennel kijelenti, hogy ez az eszköz megfelel a kapcsolódó Irányelvek lényeges követelményeinek és egyéb vonatkozó rendelkezéseinek. Az EU megfelelőségi nyilatkozat teljes szövege innen letölthető: 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

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

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

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

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

Română ASUSTeK Computer Inc. declară că acest dispozitiv se conformează cerinţelor esenţiale şi altor prevederi relevante ale directivelor conexe. Textul complet al declaraţiei de conformitate a Uniunii Europene se găseşte la: 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

Slovensky Spoločnosť ASUSTeK Computer Inc. týmto vyhlasuje, že toto zariadenie vyhovuje základným požiadavkám a ostatým príslušným ustanoveniam príslušných smerníc. Celý text vyhlásenia o zhode pre štáty EÚ je dostupný na adrese: 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

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

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

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

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

Bosnian ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj usklađen sa bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Kompletan tekst EU deklaracije o uskađenosti dostupan je na: www.asus.com/support

עברית ASUSTeK Computer Inc, בזאת, מצהירה כי מכשיר זה תואם לדרישות החיוניות ולתנאים הרלוונטיים האחרים של ההנחיות הקשורות. הטקסט המלא של הצהרת התאימות של האיחוד האירופי זמין בכתובת: 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 beeinträchtigt oder beschränkt in keiner Weise die Rechte aus der gesetzlichen Garantie.

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

I: 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 интерпретирование 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.
- Тази търговска гаранция на ASUS се предлага независимо от и в допълнение на законовата гаранция. Тя по никакъв начин не оказва влияние върху правата на потребителя в законовата 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

- SUS biedt een vrijwillige commerciële garantie van de fabrikant.
- ASUS behoudt zich het recht voor om de bepalingen van de commerciële garantie van ASUS uit te leggen.
- Deze commerciële garantie van ASUS wordt onafhankelijk en als aanvulling op de statutaire 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 garantiile ega mõjuta mingil määral seadusega kehtestatud garantiid ning seadusega kehtestatud garantii piiranguid.

Vaadake garantiiga seotud teavet veebisaidilt https://www.asus.com/ee/.

FI: ASUS-takuutiedot

- ASUS tarjoaa vapaaehtoisen 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 információkért látogasson el a https://www.asus.com/hu/support/ oldalra.

LT: Informacija apie ASUS garantiją

- ASUS siūlo savanorišką komercinę gamintojo garantiją.
- ASUS pasilieka teisę savo nuožiūra aiškinti šios komercinės ASUS garantijos nuostatas.
- Ši komercinė ASUS garantija suteikiama nepriklausoma, be įstatyminės teisinės garantijos, ir jokiu būdu nepaveikia ar neapriboja teisinės garantijos suteikiamų 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 nekādi neietekmē vai neierobežo juridiskajā garantijā 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

NW: 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 gis 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 legal 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 garantiinformation

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

För all garantiinformation, besök https://www.asus.com/se/support/.

TR: ASUS Garanti Bilgileri

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

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

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 Законною Гарантією і не обмежує їх.

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

Компанія ASUS не не се відповідальності за шкоду, заподіяну життю, 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 пошкоджень та/або закінчення терміну служби Виробу.

BP: Informações de garantia ASUS

Esta garantia 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: 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)

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)

HB: מידע על אחריות ASUS

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

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

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.