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› [ASUS TUF GAMING Z890-PLUS WIFI Motherboard Instruction Manual](#)

ASUS Z890-PLUS WIFI

ASUS TUF GAMING Z890-PLUS WIFI Motherboard Instruction Manual

Model: Z890-PLUS WIFI

INTRODUCTION

This manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of your ASUS TUF GAMING Z890-PLUS WIFI motherboard. Designed for Intel Core Ultra 200S Plus and 200S Series processors, this ATX motherboard features DDR5 memory support, PCIe 5.0, Wi-Fi 7, and Intel 2.5 Gb Ethernet, offering a robust foundation for high-performance computing.



Figure 1: ASUS TUF GAMING Z890-PLUS WIFI Motherboard with its retail packaging and included Wi-Fi antenna.

SETUP AND INSTALLATION

Follow these steps for proper installation of your motherboard and its components.

1. Unpacking and Initial Inspection

Carefully remove all components from the packaging. Verify that all items listed in the 'What's in the Box' section are present and inspect the motherboard for any visible damage.

What's in the Box

Exclusive TUF Gaming Z890-Plus WiFi Bundle



Figure 2: Contents typically found in the ASUS TUF GAMING Z890-PLUS WIFI retail box.

2. CPU Installation (LGA 1851)

Open the CPU socket retention lever. Align the triangular mark on your Intel processor with the corresponding mark on the socket. Gently place the CPU into the socket, ensuring it sits flush. Close the retention lever to secure the CPU.



Figure 3: Overview of the motherboard layout, showing the LGA 1851 CPU socket.

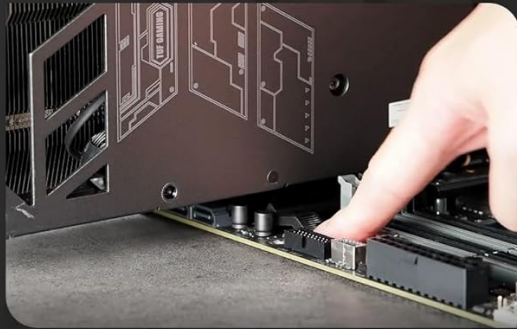
3. Memory (RAM) Installation

This motherboard supports DDR5 memory modules. Open the clips on the DIMM slots. Align the notch on the DDR5 memory module with the key in the DIMM slot. Press down firmly on both ends of the memory module until the clips snap into place. The motherboard supports up to 256GB of DDR5 RAM across its four slots.

4. Storage (M.2 SSD) Installation

The motherboard features multiple M.2 slots for high-speed NVMe SSDs. Utilize the ASUS M.2 Q-Latch and M.2 Q-Release features for tool-less installation. To install, remove the M.2 heatsink (if present) by tapping the M.2 Q-Release button. Insert the M.2 SSD into the slot, then secure it with the M.2 Q-Latch mechanism. The M.2 Q-Slide design accommodates various SSD sizes.

EZ PC DIY



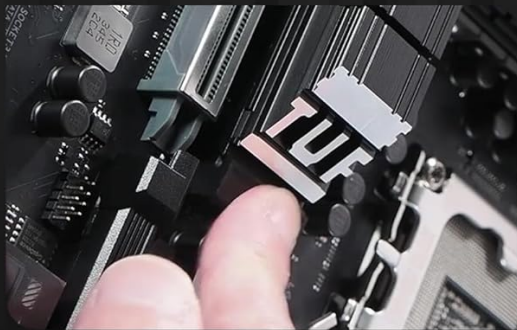
PCIe SLOT Q-RELEASE

A physical button unlocks the first PCIe slot's security latch with one tap.



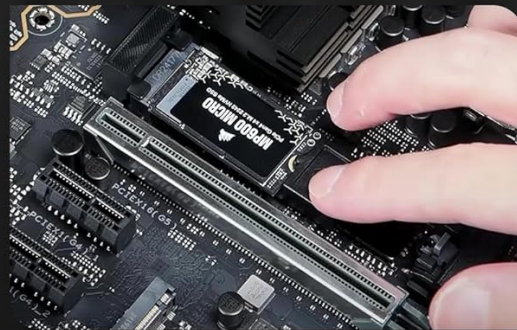
M.2 Q-LATCH

Secure the drive and neatly detach it with one tap.



M.2 Q-RELEASE

Tap to unlock the M.2 Heatsink for easy, tool-free SSD installation.



M.2 Q-SLIDE

The new sliding M.2 latch design supports different sizes for easy device installation.

Figure 4: EZ PC DIY features for simplified component installation, including M.2 Q-Latch and Q-Release.

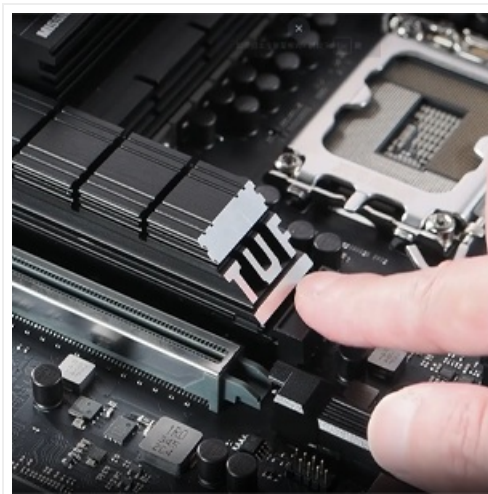


Figure 5: Demonstrating the M.2 heatsink removal process.

5. Expansion Card Installation (PCIe)

Insert your graphics card or other PCIe expansion cards into the appropriate PCIe slots. The primary PCIe 5.0 x16 slot is designed for next-generation GPUs. Use the PCIe Slot Q-Release button to easily unlock the security latch for card removal.

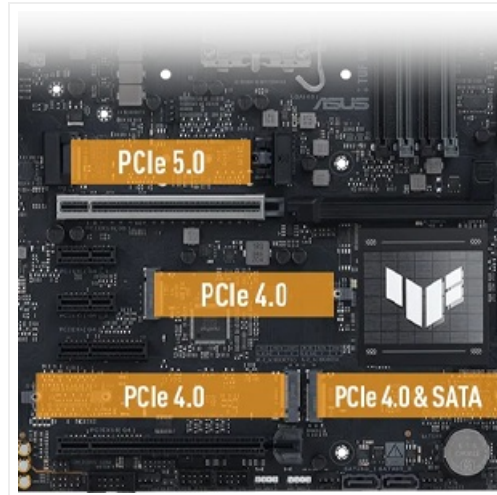


Figure 6: Layout of PCIe slots, indicating PCIe 5.0 and PCIe 4.0 compatibility.

6. Connecting Peripherals and Power

Connect your power supply unit (PSU) cables to the motherboard's 24-pin ATX power connector and CPU power connectors. Attach front panel connectors (USB, audio, power/reset switches) to their respective headers. Install the included Wi-Fi antenna to the rear I/O panel for Wi-Fi 7 connectivity. Connect USB devices, Ethernet cables, and display outputs as needed.



Figure 7: Detail of a USB header for connecting front panel USB ports.



Figure 8: The rear input/output panel, showing various ports and the Wi-Fi antenna connection.

OPERATING YOUR MOTHERBOARD

Once assembled, power on your system and configure the BIOS/UEFI settings.

1. BIOS/UEFI Configuration

Access the BIOS/UEFI setup utility by pressing the 'Delete' or 'F2' key during system startup. The intuitive interface allows for easy navigation and configuration of system settings, boot order, and hardware parameters.

2. AI Intelligence Features

The ASUS TUF GAMING Z890-PLUS WIFI motherboard integrates several AI-powered features to enhance user experience and system performance:

- **AI Advisor:** Utilizes AI technology to understand natural-language questions, helping users explore motherboard functionality and BIOS settings.
- **AI Cooling II:** Optimizes thermal performance and reduces noise through dynamic adjustment of fan speeds based on CPU temperatures.
- **AI Networking II:** Optimizes network performance for seamless connectivity and maximized Wi-Fi 7 speeds.

AI Intelligence



AI ADVISOR

Using AI technology to understand natural-language questions, ASUS AI Advisor allows users to explore the functionality of ASUS motherboards in a simple way.

AI COOLING II

Optimized thermals, and reduced noise via dynamic adjustment of fan speeds, based on CPU temperatures.

AI NETWORKING II

Optimized network performance, helping to ensure seamless connectivity and maximized WiFi 7 speeds.

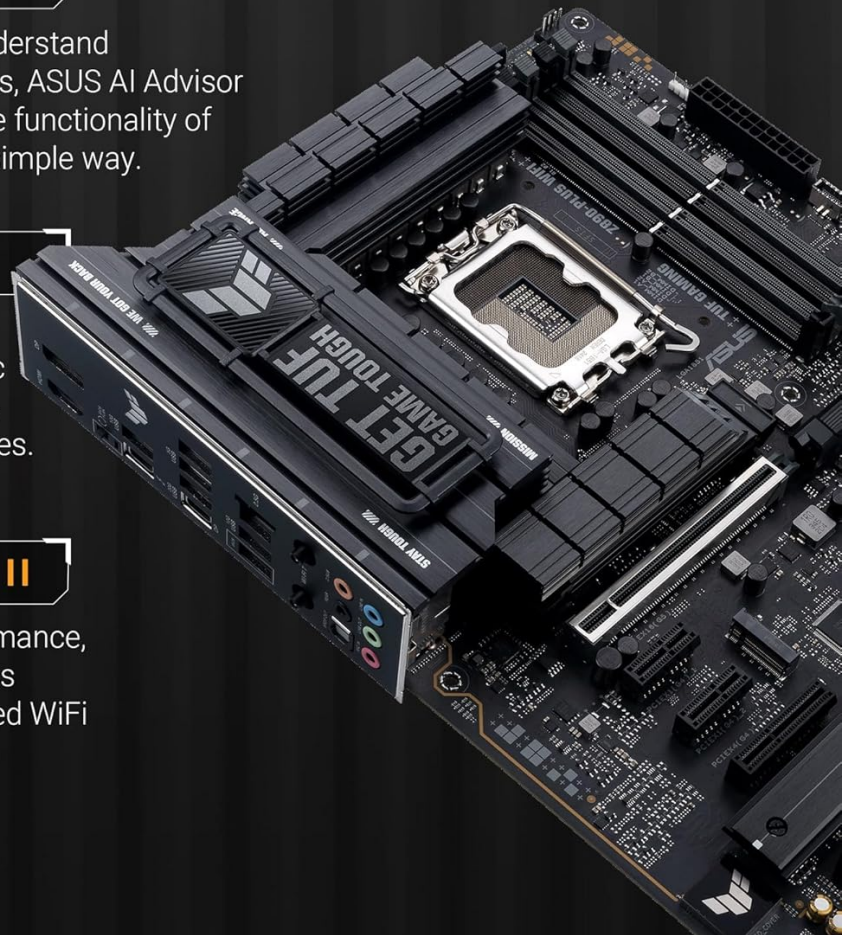


Figure 9: Overview of the motherboard's AI Intelligence features.



Figure 10: The AI Advisor interface, providing assistance with motherboard functions.

3. Performance Optimization

Leverage advanced features for optimal system performance:

- **AEMP III:** Advanced firmware for unparalleled memory performance with cutting-edge DDR5 modules.
- **DIMM FIT:** An ASUS-exclusive BIOS feature that precisely analyzes individual memory modules to optimize performance and pinpoint potential issues.
- **NPU BOOST:** This BIOS feature overclocks the NPU with one click, increasing performance by up to 24%.

Performance



16(80A) + 1(80A) + 2(80A) + 1(80A) Power Stages

AEMP III

An advanced firmware feature empowers users to achieve unparalleled memory performance with cutting-edge CUDIMM memory.

DIMM FIT

ASUS-exclusive BIOS feature that precisely analyzes individual memory modules to optimize performance and pinpoint potential issues.

NPU BOOST

This BIOS feature overclocks the NPU with just one click, increasing performance by up to 24%.



1.07.182.121.1407.01.052

Figure 11: Key performance enhancement features of the motherboard.

MAINTENANCE

Proper maintenance ensures the longevity and stable operation of your motherboard.

1. Thermal Management

The motherboard features an optimized thermal design, including large VRM heatsinks, M.2 heatsinks, and PCH heatsinks, along with hybrid fan headers and Fan Xpert 4 with AI Cooling II. Ensure proper airflow within your PC case and regularly clean dust from fans and heatsinks to maintain optimal temperatures.



Figure 12: The motherboard designed for efficient cooling, compatible with advanced cooling solutions.

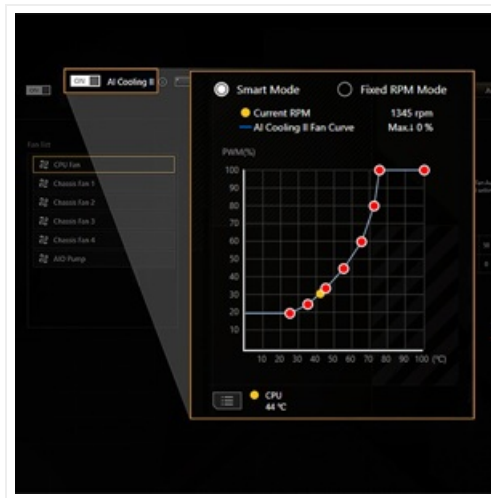


Figure 13: AI Cooling II dynamically adjusts fan speeds for optimal thermal performance.

2. Cleaning

Periodically clean the motherboard and internal components of your PC using compressed air to remove dust buildup. Ensure the system is powered off and unplugged before cleaning.

TROUBLESHOOTING

If you encounter issues, consider the following basic troubleshooting steps:

- **No Power:** Check all power connections from the PSU to the motherboard and components. Ensure the power supply is switched on.
- **No Display:** Verify that the graphics card is properly seated and connected to the monitor. Test with a different display cable or monitor if possible.
- **System Instability:** Ensure RAM modules are correctly installed. Check for proper CPU cooler installation. Update BIOS to the latest version.
- **Network Issues:** Confirm Wi-Fi antenna is securely attached. Check Ethernet cable connections. Utilize the AI Networking II feature for diagnostics.
- **Consult AI Advisor:** For specific issues, the AI Advisor can provide guidance based on natural language queries.

For more detailed troubleshooting, refer to the official ASUS support website or the comprehensive user manual PDF.

SPECIFICATIONS

Key technical specifications for the ASUS TUF GAMING Z890-PLUS WIFI motherboard:

The graphic features a dark background with the title "Better, Faster & More" at the top center. In the top right corner is the "TUF GAMING STAY TOUGH" logo. The features are presented in several dark rounded rectangular boxes with white and orange text and icons:

- DDR5:** Max. 192GB, AEMP III. Includes a DDR5 memory module icon.
- GEN 5 SUPPORT:** Full support for next-gen graphics card. Includes a PCIe 5.0 icon.
- Thunderbolt™ 4:** USB 40Gbps Type-C® Port. Includes a Thunderbolt 4 icon.
- USB 20Gbps:** USB 20Gbps Type-C® port. Includes a USB Type-C icon.
- Intel® 2.5 GB Ethernet:** Includes the Intel Ethernet logo.
- WiFi 7:** Includes the WiFi 7 logo.

Figure 14: Overview of advanced connectivity and memory features.

Feature	Detail
Brand	ASUS
Model Name	90MB1IQ0-M0EAY0
CPU Socket	LGA 1851
Compatible Processors	Intel Core Ultra 200S Plus and 200S Series
Chipset Type	Intel Z890
RAM Technology	DDR5
Memory Clock Speed	Up to 8600 MHz

Feature	Detail
Max RAM Capacity	256 GB
Memory Slots	4
Graphics Interface	PCI-Express x16 (PCIe 5.0 supported)
Total PCI Slots	4
Total SATA Ports	6
Total USB Ports	15 (various types including USB4, USB 20Gbps)
Ethernet	Intel 2.5 Gb Ethernet
Wireless Connectivity	Wi-Fi 7 (802.11be)
Dimensions (LxWxH)	24.4L x 24.4W x 1H cm
Weight	1.5 Kilograms



Figure 15: Highlighting the DDR5 memory speed support.

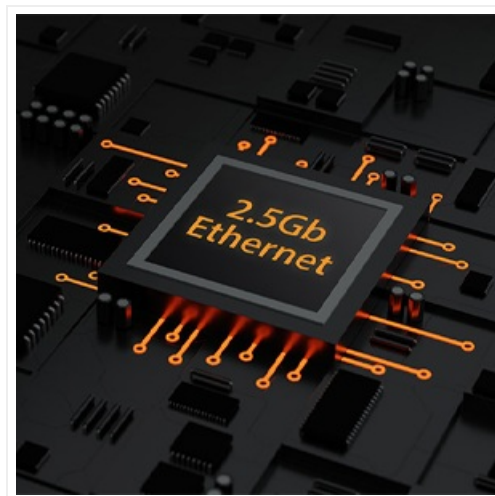


Figure 16: The integrated Intel 2.5 Gb Ethernet controller.

1. Product Warranty

This ASUS motherboard comes with a **2-year product warranty** from the date of purchase. Please retain your proof of purchase for warranty claims.

2. Manufacturer Contact Information

For technical support, warranty inquiries, or further assistance, please contact ASUS:

- **Manufacturer:** ASUS Computer GmbH
- **Email:** LegalCompliance@asus.com
- **Website:** <https://www.asus.com/it/>
- **Address:** Harkortstraße 21-23, Ratingen, 40880, Germany

3. Additional Documentation

Further detailed information can be found in the official PDF documents:

- [Safety Information \(PDF\)](#)
- [User Manual \(PDF\)](#)