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- › [ASUS](#) /
- › [ASUS ROG MAXIMUS Z890 HERO BTF Motherboard User Manual](#)

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ASUS ROG MAXIMUS Z890 HERO BTF Motherboard User Manual

MODEL: ROG MAXIMUS Z890 HERO BTF

1. Product Overview

The ASUS ROG MAXIMUS Z890 HERO BTF is an ATX motherboard designed for Intel® Core™ Ultra Processors (Series 2) with an LGA 1851 socket. It features an innovative hidden-connector design for an ultra-clean PC build, advanced AI-enhanced tuning, PCIe® 5.0 support, and DDR5 slots with NitroPath DRAM Technology for superior memory overclocking.



Figure 1: ASUS ROG MAXIMUS Z890 HERO BTF Motherboard and retail packaging.

Key Features:

- **Ready for Advanced AI PCs:** Designed for the future of AI computing, with the power and connectivity needed for demanding AI applications.
- **Intel LGA 1851 Socket:** Ready for Intel Core Ultra Processors (Series 2).
- **Hidden-Connector Design:** Delivers an unprecedented level of cable management to PC DIY enthusiasts.
- **Graphics Card High-Power Slot:** Compatible with the graphics card high-power gold finger on the ASUS BTF graphics card, delivering up to 600 watts through the motherboard.
- **Exclusive AI Technologies:** ASUS AI Advisor, AI Overclocking, AI Cooling II and AI Networking II to simplify setup and improve performance.

2. What's in the Box

Verify that all components listed below are included in your package. If any items are missing or damaged, contact your retailer.

What's in the box



Figure 2: Contents of the ASUS ROG MAXIMUS Z890 HERO BTF retail package.

- ASUS ROG MAXIMUS Z890 HERO BTF Motherboard
- ASUS WiFi Q-Antenna
- Quick Start Guide
- ROG Stickers
- ROG VIP Card
- ROG Bottle Opener
- SATA Cables

3. Setup Guide

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

3.1 Hidden-Connector Design

The BTF (Back-To-Future) design features connectors on the rear of the motherboard, allowing for a cleaner cable management and aesthetic build. Ensure your PC case supports this design.

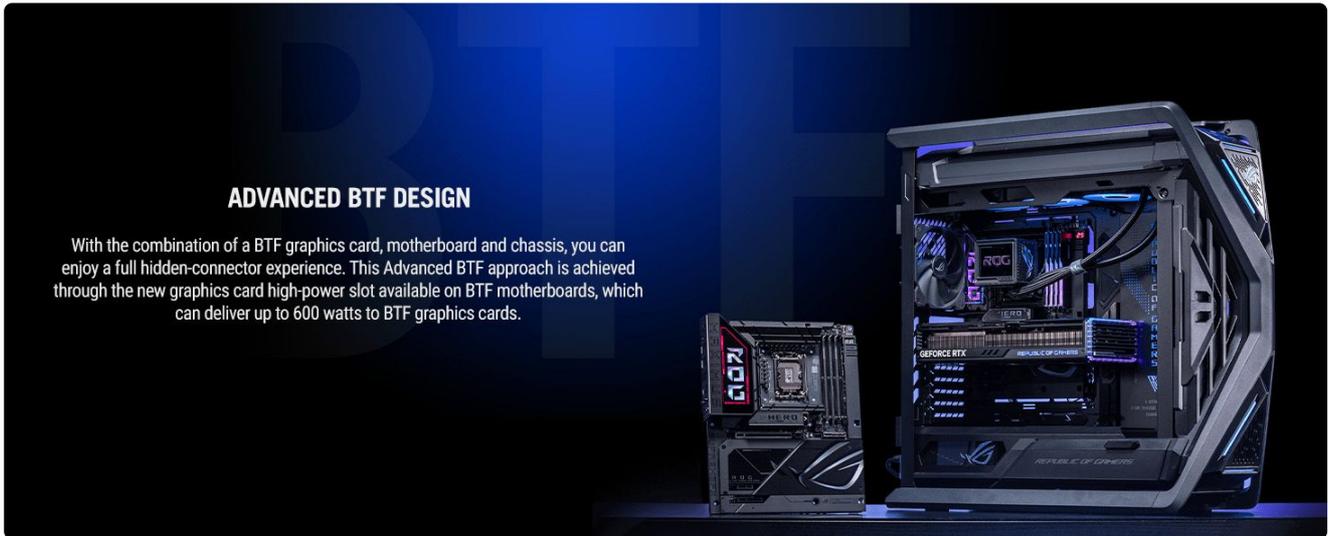


Figure 3: Illustration of the Advanced BTF Design with hidden connectors for a clean build.

3.2 Graphics Card High-Power Slot

This motherboard includes a dedicated high-power slot for compatible ASUS BTF graphics cards, delivering up to 600 watts directly through the motherboard, eliminating the need for external GPU power cables.

3.3 EZ PC DIY Features

The ROG MAXIMUS Z890 HERO BTF incorporates several features to simplify the PC building process:



Figure 4: Overview of EZ PC DIY features for simplified installation and maintenance.

- **PCIe® Slot Q-Release Slim:** Simply tilt the card toward the latching mechanism to automatically unlock it from the PCIe slot, making graphics card removal effortless.
- **M.2 Q-Release:** Features a convenient switch to quickly remove M.2 drives, eliminating the need for tiny screws.
- **New M.2 Q-Latch:** Tool-free installation or removal of M.2 SSDs with just one press.
- **M.2 Q-Slide:** The new sliding M.2 latch design supports sizes 2242, 2260, and 2280 for easy device installation.
- **Q-LED:** Provides quick diagnostic indicators during boot-up.
- **Start Button:** Onboard button for convenient system power-on during testing or open-bench setups.

- **Q-Antenna:** Simplifies WiFi antenna connection.
- **Q-Code:** Displays diagnostic codes for advanced troubleshooting.
- **Clear CMOS & BIOS Flashback:** Buttons for easy BIOS reset and updating without a CPU or RAM.

4. Operating Your Motherboard

Once your system is assembled, you can configure and optimize its performance using the motherboard's advanced features.

4.1 ASUS AI Intelligence

Leverage ASUS's exclusive AI technologies for enhanced system performance and stability.



Figure 5: Overview of ASUS AI Intelligence features for system optimization.

- **AI Overclocking:** Intelligently profiles the CPU and cooling to predict optimal voltage and frequency settings, simplifying performance tuning.
- **AI Cooling II:** Balances the thermals and acoustics of your build with a single click, ensuring efficient cooling with minimal noise.
- **AI Networking II:** Continuously optimizes network performance, provides trustworthy and seamless connectivity, and unleashes the full speed of WiFi 7.
- **ASUS AI Advisor:** Uses AI technology to understand natural-language questions or scenario descriptions, allowing users to explore the functionality and advanced features of ASUS motherboards in a simple and straightforward way.

4.2 Memory and Storage

The motherboard supports DDR5 memory and multiple M.2 storage devices.

- **DDR5 Support:** Features NitroPath DRAM Technology, DIMM Fit, DIMM Flex, and AEMP III for advanced memory overclocking and stability. Supports up to 192GB of DDR5 RAM.
- **M.2 Slots:** Equipped with 6x M.2 slots, including PCIe 5.0 M.2 slots, ensuring high-speed storage options.

4.3 Connectivity

The ROG MAXIMUS Z890 HERO BTF offers extensive connectivity options:

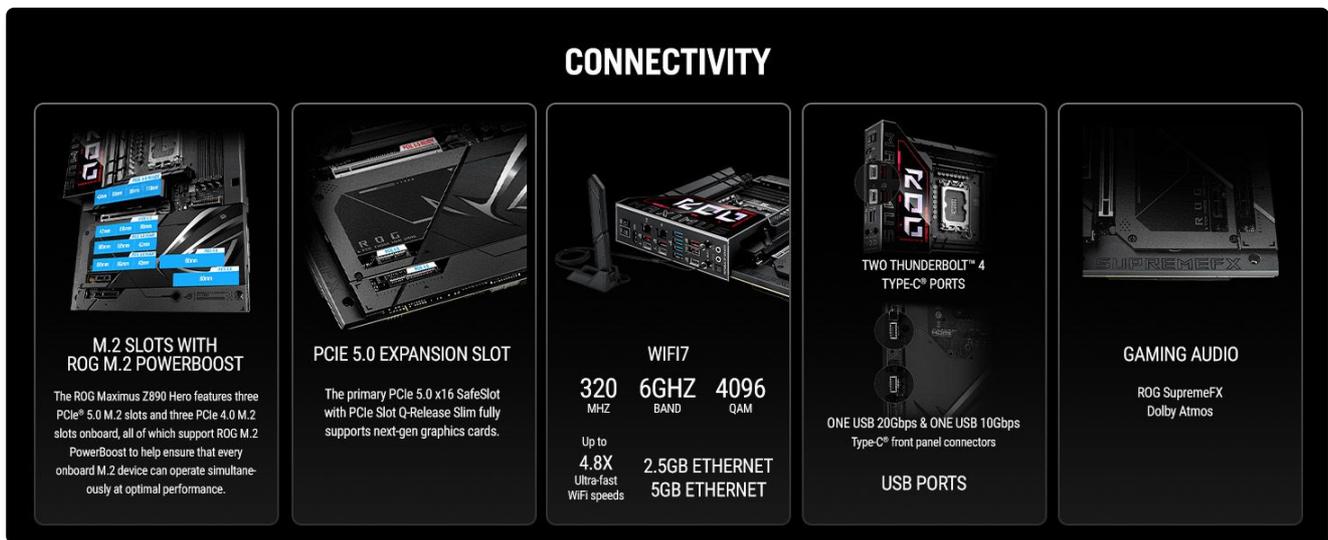


Figure 6: Comprehensive connectivity options including high-speed networking and versatile USB ports.

- **WiFi 7:** Next-generation wireless connectivity for ultra-fast speeds and low latency.
- **2.5G LAN & 5G Ethernet:** Dual high-speed wired networking options.
- **Thunderbolt™ 4:** Two USB Type-C® ports offering high-bandwidth connectivity.
- **USB Ports:** A variety of USB 3.0 and USB Type-C ports for peripheral connectivity.
- **Gaming Audio:** Integrated ROG SupremeFX audio with Dolby Atmos support for immersive sound.

5. Maintenance

Proper maintenance ensures the longevity and optimal performance of your motherboard.

- **Dust Removal:** Regularly clean dust from the motherboard and case fans using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS Updates:** Keep your BIOS updated to the latest version from the ASUS support website to ensure compatibility and performance improvements. Use the BIOS Flashback feature for safe updates.
- **Driver Updates:** Install the latest drivers for all components, especially chipset, graphics, and network drivers, from the ASUS support website or component manufacturer's website.
- **Physical Inspection:** Periodically inspect the motherboard for any loose connections, damaged components, or signs of corrosion.

6. Troubleshooting

If you encounter issues with your motherboard, refer to the following common troubleshooting steps.

- **No Power/No Boot:**
 - Ensure all power cables (24-pin ATX, 8-pin CPU, GPU power if applicable) are securely connected.
 - Check the power supply unit (PSU) switch and wall outlet.
 - Use the Q-LED indicators on the motherboard to diagnose boot issues (CPU, DRAM, VGA, Boot device).

- **System Instability/Crashes:**

- Verify RAM modules are properly seated in their slots. Try booting with one RAM stick at a time.
- Check CPU and GPU temperatures using monitoring software. Ensure cooling solutions are properly installed.
- Update BIOS and drivers to the latest versions.

- **No Display:**

- Ensure the monitor cable is securely connected to the graphics card or motherboard (if using integrated graphics).
- Reseat the graphics card in its PCIe slot.
- Test with a different monitor or display cable.

- **Peripheral Issues:**

- Try connecting the peripheral to a different USB port.
- Install or update drivers for the peripheral.
- Check BIOS settings for USB port configuration.

- **BIOS Reset:** If system settings become problematic, use the Clear CMOS button on the rear I/O panel or motherboard to reset BIOS to default settings.

7. Technical Specifications

Feature	Specification
Brand	ASUS
Model Name	ROG MAXIMUS Z890 HERO BTF
CPU Socket	LGA 1851
Compatible Processors	Intel® Core™ Ultra Processors (Series 2)
Chipset Type	INTEL Z890
RAM Memory Technology	DDR5
Max RAM Capacity	192 GB
Memory Clock Speed	6 GHz (OC support)
Graphics Coprocessor	NVIDIA GeForce RTX 4050 (<i>Note: This refers to a system specification, not integrated GPU. Motherboard supports discrete GPUs.</i>)
PCIe Slots	PCIe 5.0 x16, PCIe 5.0 M.2, PCIe 4.0 M.2

Feature	Specification
M.2 Slots	6x M.2 (PCIe 5.0, PCIe 4.0)
Wireless Type	WiFi 7 (802.11ax)
LAN	2.5G LAN, 5G Ethernet
USB Ports	Thunderbolt 4, USB Type-C, USB 3.0
Audio	ROG SupremeFX, Dolby Atmos
Form Factor	ATX
Item Weight	9.31 pounds
Product Dimensions	13.94 x 9.88 x 0.98 inches
Operating System	Windows 11 Pro (<i>Compatible with</i>)
Country of Origin	China
Date First Available	April 26, 2024

8. Warranty and Support

For warranty information, technical support, and driver downloads, please visit the official ASUS support website.

- **ASUS Support Website:** <https://www.asus.com/support/>
- **Product Page:** [ASUS ROG MAXIMUS Z890 HERO BTF on Amazon](#)

Please retain your proof of purchase for warranty claims.

 <p>ROG STRIX Z890-E GAMING WIFI</p>	<p>ASUS ROG STRIX Z890-E GAMING WIFI Motherboard User Manual</p> <p>Explore the comprehensive user manual for the ASUS ROG STRIX Z890-E GAMING WIFI motherboard, featuring Intel Z890 chipset, LGA1851 socket, DDR5 memory support, Wi-Fi 7, and Thunderbolt 4. This guide covers installation, setup, BIOS configuration, and detailed specifications for optimal performance.</p>
	<p>ASUS ROG STRIX B760-G GAMING WIFI Motherboard Quick Start Guide</p> <p>A concise guide for installing and setting up the ASUS ROG STRIX B760-G GAMING WIFI motherboard, covering essential steps from CPU installation to system power-up.</p>
 <p>ROG STRIX B650-A GAMING WIFI</p>	<p>ROG STRIX B650-A GAMING WIFI Motherboard User Manual</p> <p>This official user manual provides comprehensive guidance for the ASUS ROG STRIX B650-A GAMING WIFI motherboard. It covers essential information for installation, configuration, and operation, ensuring users can effectively set up and utilize their PC components. Explore detailed specifications, step-by-step installation procedures, BIOS settings, and troubleshooting tips designed for PC enthusiasts and builders. For the latest product information and support, visit the official ASUS website.</p>
 <p>PRIME Z790-P WIFI</p>	<p>ASUS PRIME Z790-P WIFI Motherboard User Guide</p> <p>Comprehensive user guide for the ASUS PRIME Z790-P WIFI motherboard, covering installation, specifications, safety information, and BIOS setup. Learn about its features for building a high-performance PC.</p>
	<p>ASUS ROG STRIX B650E-E GAMING WIFI Motherboard Quick Start Guide</p> <p>Concise guide to installing and setting up the ASUS ROG STRIX B650E-E GAMING WIFI motherboard, covering CPU, fan, memory, storage, expansion cards, and system connections.</p>
	<p>ASUS TUF GAMING B650M-E WIFI Quick Start Guide</p> <p>A concise guide for installing and setting up the ASUS TUF GAMING B650M-E WIFI motherboard, covering CPU, memory, storage, expansion cards, and system connections.</p>