GIGABYTE Z890 AORUS XTREME AI TOP

GIGABYTE Z890 AORUS Xtreme AI TOP Motherboard User Manual

This manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of your GIGABYTE Z890 AORUS Xtreme AI TOP Intel Core Ultra (Series 2) LGA 1851 Motherboard.



Image: The GIGABYTE Z890 AORUS Xtreme AI TOP Motherboard displayed alongside its retail packaging.

1. Setup and Installation

Before beginning installation, ensure your system is powered off and disconnected from the power source. Handle the motherboard by its edges to avoid static discharge.

1.1 Motherboard Overview



Image: A top-down view of the GIGABYTE Z890 AORUS Xtreme AI TOP Motherboard, highlighting the CPU socket, DDR5 DIMM slots, and M.2 slots.

Familiarize yourself with the layout of the motherboard, including the CPU socket, DDR5 DIMM slots, PCIe slots, and M.2 slots. The Z890 AORUS Xtreme AI TOP features an LGA 1851 socket for Intel Core Ultra (Series 2) Processors.

1.2 Component Installation

1. **CPU Installation:** Carefully align your Intel Core Ultra (Series 2) processor with the LGA 1851 socket. Ensure the triangular mark on the CPU matches the mark on the socket. Lower the CPU gently into place and secure it with the retention lever.
2. **DDR5 Memory Installation:** Insert DDR5 memory modules into the DIMM slots. Press down firmly on both ends of the module until the clips on the slots lock into place. This motherboard supports 4 DDR5 DIMMs with XMP.
3. **Storage Devices (M.2 & SATA):**

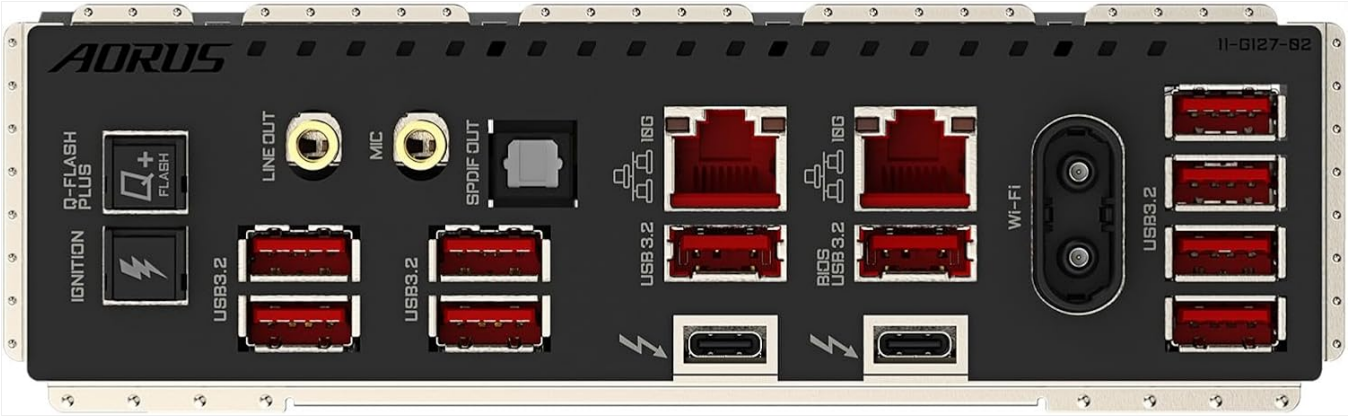


Image: An angled view of the GIGABYTE Z890 AORUS Xtreme AI TOP Motherboard, illustrating the PCIe 5.0 slot and covered M.2 slots.

Install M.2 SSDs into the four available M.2 slots. Utilize the M.2 EZ-Latch for tool-less installation. Connect SATA drives to the 4x SATA 6Gb/s ports.

4. **Expansion Cards (PCIe):** Insert graphics cards or other expansion cards into the PCIe 5.0 slot. The PCIe EZ-Latch simplifies removal.
5. **Power Supply Connections:** Connect the 24-pin ATX main power connector and the CPU power connectors (8-pin + 8-pin or 8-pin) from your power supply to the motherboard.

1.3 Connectivity and I/O Panel



Image: A detailed view of the rear I/O panel of the GIGABYTE Z890 AORUS Xtreme AI TOP Motherboard, showing various ports including USB, Thunderbolt 5, 10GbE LAN, and Wi-Fi 7 antenna connectors.

Connect your peripherals to the rear I/O panel. This includes USB 3.2 Gen 2 ports, Dual Thunderbolt 5 Type-C ports, Dual 10GbE LAN ports, and Wi-Fi 7 antenna connectors. Ensure all necessary front panel connectors (USB, audio, power, reset) are correctly attached to the motherboard headers.

2. Operating Instructions

2.1 BIOS/UEFI Setup

To enter the BIOS/UEFI setup utility, press the**DEL** key during the Power-On Self-Test (POST) process. The BIOS allows you to configure system settings, boot order, and enable features like XMP for memory optimization.

2.2 Operating System Installation

After configuring the BIOS, you can proceed with installing your preferred operating system (e.g., Windows 11). Ensure you have the necessary installation media (USB drive or DVD) and follow the on-screen prompts.

2.3 Driver Installation

For optimal performance and stability, install the latest drivers for your motherboard's chipset, LAN, Wi-Fi, audio, and other integrated components. These drivers are typically available on the GIGABYTE official website.

2.4 Networking

The motherboard supports WIFI7 and 10GbE LAN for high-speed network connectivity. Install the provided Wi-Fi antenna for wireless access. Ensure LAN cables are securely connected for wired networking.

3. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your motherboard.

- **Cleaning:** Periodically clean dust from the motherboard and components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **Thermal Management:** The motherboard features advanced thermal solutions like VRM Thermal Armor Advanced and M.2 Thermal Guard. Ensure proper airflow within your PC case to maintain optimal operating temperatures.
- **BIOS Updates:** Check the GIGABYTE website for the latest BIOS updates. Updating the BIOS can improve system stability, compatibility, and performance. Follow the instructions provided by GIGABYTE carefully when performing a BIOS update.

4. Troubleshooting

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

- **No Power/No Boot:**
  - Verify all power cables (24-pin ATX, 8-pin CPU) are securely connected.
  - Check if the power supply is functioning correctly.
  - Ensure the front panel power button is correctly connected to the motherboard.
- **No Display:**
  - Ensure your monitor is connected to the graphics card (if dedicated) or the motherboard's integrated graphics output.
  - Reseat the graphics card and memory modules.
  - Test with a single RAM stick in different slots.
- **EZ-Debug Zone:** The motherboard features an EZ-Debug Zone with LED indicators that can help diagnose issues during boot-up. Consult the motherboard's detailed manual for specific LED codes.

- **System Instability/Crashes:**
  - Check for overheating components.
  - Ensure all drivers are up to date.
  - Run memory diagnostic tools to check RAM integrity.

For more complex issues, refer to the comprehensive GIGABYTE user manual available on their official website or contact GIGABYTE technical support.

5. Specifications

Feature	Specification
Brand	GIGABYTE
Model Name	Z890 AORUS XTREME AI TOP
CPU Socket	Intel LGA 1851
Compatible Processors	Intel Core Ultra Processors (Series 2)
RAM Memory Technology	DDR5
Memory Slots	4 x DIMMs
Memory Clock Speed	5600 MHz (and higher via XMP)
Chipset Type	Intel Z890
PCIe Version	PCIe 5.0
M.2 Slots	4
Thunderbolt Ports	Dual Thunderbolt 5 (Rear), Front Thunderbolt 4
LAN	10GbE LAN
Wireless Connectivity	WIFI7
Form Factor	E-ATX
Power Design	22+1+2, 110A Smart Power Stage
Thermal Solutions	VRM Thermal Armor Advanced, M.2 Thermal Guard, DDR Wind Blade XTREME, UD Nanocarbon Backplate

6. Warranty and Support

This GIGABYTE motherboard is covered by a manufacturer's warranty. For detailed warranty terms and conditions, please refer to the warranty card included with your product or visit the official GIGABYTE website.
For technical support, driver downloads, BIOS updates, and additional product information, please visit the official GIGABYTE support page:
GIGABYTE Official Support

When contacting support, please have your motherboard model number (Z890 AORUS XTREME AI TOP) and serial number ready.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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