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› GIGABYTE /

› GIGABYTE Z890 AORUS Master AI TOP Intel Core Ultra (Series 2) LGA 1851 Motherboard User Manual

GIGABYTE Z890 AORUS MASTER AI TOP

GIGABYTE Z890 AORUS Master AI TOP Motherboard User Manual

Model: Z890 AORUS MASTER AI TOP

INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your GIGABYTE Z890 AORUS Master AI TOP Motherboard. Designed to support Intel AI Core Ultra Processors (Series 2), this E-ATX motherboard features DDR5 memory compatibility, multiple M.2 slots, PCIe 5.0 support, Thunderbolt 4, WIFI7, and 10GbE LAN for optimal performance and connectivity. Please read this manual thoroughly before proceeding with installation to ensure proper setup and functionality.



Figure 1: GIGABYTE Z890 AORUS Master AI TOP Motherboard overview.

KEY FEATURES

- **Processor Support:** Compatible with Intel Core Ultra Processors (Series 2) for enhanced computing power.
- **Memory:** Four DDR5 DIMM slots with XMP Memory Module Support for high-speed memory configurations.
- **Power Design:** Robust 20+1+2, 110A Smart Power Stage for stable power delivery.
- **Thermal Management:** Features VRM Thermal Armor Advanced and M.2 Thermal Guard for efficient heat dissipation.
- **Connectivity:** Includes PCIe 5.0 slots, four M.2 slots, dual Thunderbolt 4 ports, and a front USB-C port.
- **User-Friendly Design:** Incorporates M.2 EZ-Latch, PCIe EZ-Latch, WIFI EZ-Plug, and EZ-Debug Zone for simplified installation and troubleshooting.
- **Networking:** Equipped with WIFI7 and 10GbE LAN for high-speed wireless and wired network connections.



Figure 2: GIGABYTE Z890 Motherboards are fully compatible with Intel Core Ultra 200S Plus Processors.

SETUP AND INSTALLATION

Follow these steps for proper installation of your GIGABYTE Z890 AORUS Master AI TOP Motherboard and its components.

1. Processor 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. Gently lower the CPU into the socket and secure it with the retention arm.



Figure 3: Detailed view of the LGA 1851 processor socket.

2. Memory (RAM) Installation

Open the clips on both ends of the DDR5 DIMM slots. Align the notch on your DDR5 memory module with the key in the slot. Press down firmly on both ends of the memory module until the clips snap into place, securing the RAM.



Figure 4: DDR5 memory slots for RAM installation.

3. Storage (M.2 SSDs) Installation

The motherboard features four M.2 slots. Remove the M.2 Thermal Guard heatsink. Insert your M.2 SSD into the slot, ensuring it is fully seated. Secure the SSD with the EZ-Latch mechanism, then reattach the Thermal Guard heatsink.



Figure 5: M.2 slots with heatsinks for high-speed storage.

4. Graphics Card (PCIe) Installation

Open the PCIe EZ-Latch on the desired PCIe 5.0 x16 slot. Insert your graphics card firmly into the slot until it clicks into place. Ensure any necessary power connectors from your power supply are attached to the graphics card.



Figure 6: PCIe 5.0 slots for graphics cards and expansion.

5. Connecting Peripherals and Power

Connect all necessary power cables from your power supply to the motherboard (24-pin ATX and 8-pin CPU power connectors). Connect your case's front panel connectors, USB ports, and audio jacks. Utilize the various USB, Thunderbolt 4, and LAN ports on the rear I/O panel for external devices.

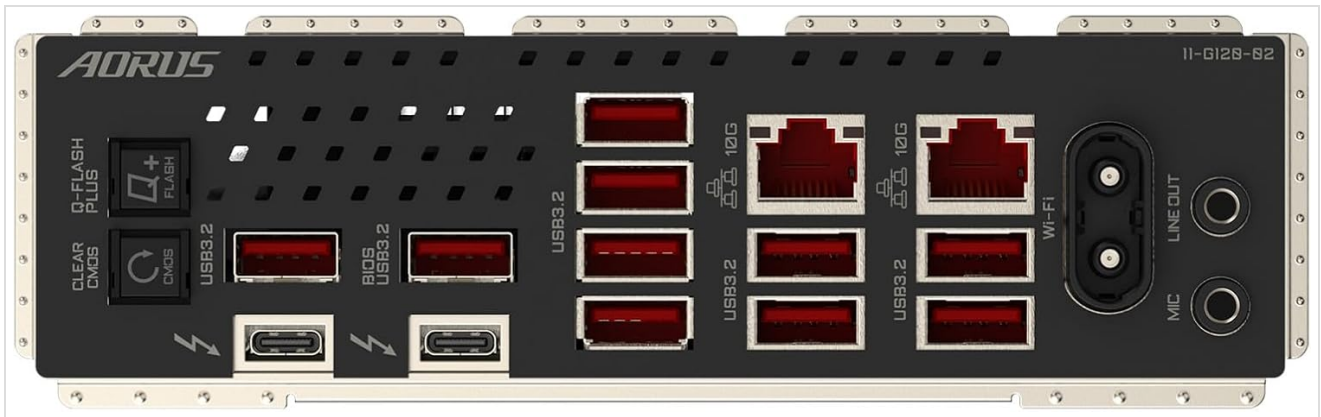


Figure 7: Rear I/O panel with USB, LAN, and audio ports.

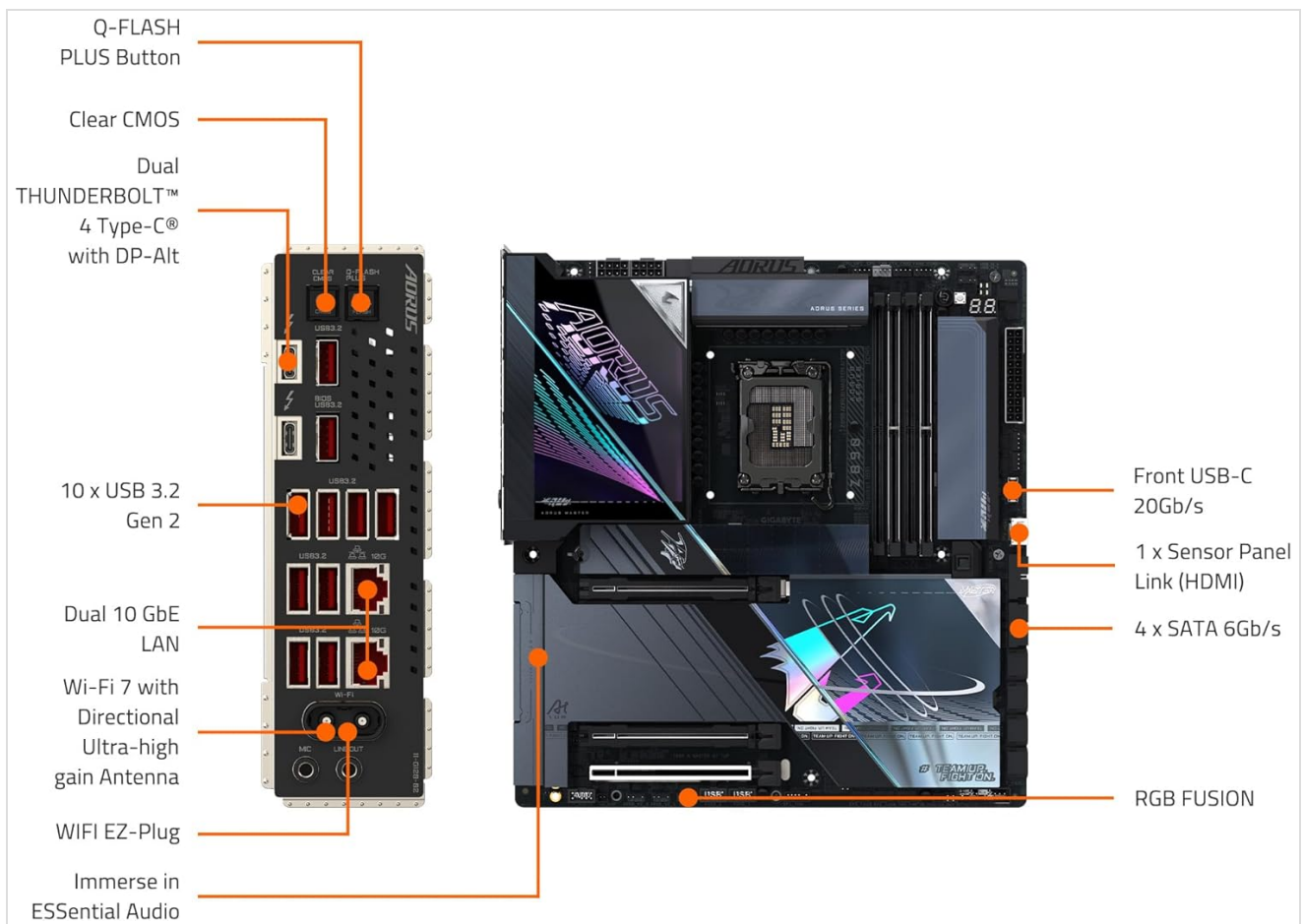


Figure 8: Detailed diagram illustrating various ports and features on the motherboard.

Installation Video Guide

For a visual guide on motherboard installation, refer to the video below. While the video may feature a slightly different model (Z790), the general installation steps for CPU, RAM, and other components are largely similar.

Your browser does not support the video tag.

Video 1: Motherboard installation overview. This video demonstrates the general process of installing a GIGABYTE AORUS Master motherboard, including CPU and RAM.

OPERATING INSTRUCTIONS

After successful hardware installation, connect your display, keyboard, and mouse. Power on your system. The motherboard will initiate the Power-On Self-Test (POST). You may need to access the BIOS/UEFI setup to configure boot order, enable XMP for memory, or adjust other system settings. Refer to the GIGABYTE website for the latest BIOS updates and driver downloads for your operating system (e.g., Windows 11).

- **BIOS/UEFI Access:** Typically accessed by pressing **DEL** or **F2** during system startup.
- **Driver Installation:** Install all necessary drivers for chipset, audio, LAN, and graphics from the GIGABYTE support website or the included driver disk.
- **Operating System:** Install your preferred operating system, such as Windows 11, following its installation prompts.

MAINTENANCE

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

- **Dust Removal:** Periodically clean dust from the motherboard and components using compressed air. Ensure the system is powered off and unplugged before cleaning.

- **BIOS Updates:** Check the GIGABYTE website for BIOS updates. Updates can improve stability, compatibility, and performance. Follow the provided instructions carefully when updating the BIOS.
- **Driver Updates:** Keep all system drivers updated to ensure compatibility and optimal performance with new software and hardware.
- **Cable Management:** Ensure all cables are neatly routed to improve airflow and prevent interference.

TROUBLESHOOTING

If you encounter issues, refer to these common troubleshooting steps.

- **No Power/No POST:**
 - Verify all power cables are securely connected to the motherboard and components.
 - Check the power supply unit (PSU) for proper function.
 - Ensure CPU and RAM are correctly seated.
 - Utilize the EZ-Debug Zone LEDs on the motherboard to identify the component causing the POST failure.
- **System Instability/Crashes:**
 - Check RAM for proper installation and run memory diagnostic tools.
 - Ensure CPU and GPU temperatures are within normal operating ranges.
 - Update BIOS and all drivers to the latest versions.
 - Test components individually if possible to isolate the faulty part.
- **Peripheral Detection Issues:**
 - Ensure USB devices are connected to the correct ports.
 - Check for updated drivers for the specific peripheral.
 - Verify BIOS settings for USB or other port configurations.

SPECIFICATIONS

Feature	Detail
Brand	GIGABYTE
Model Name	Z890 AORUS MASTER AI TOP
CPU Socket	Intel LGA 1851
Compatible Processors	Intel Core Ultra Processors (Series 2)
Chipset Type	Intel Z890
RAM Memory Technology	DDR5
Memory Clock Speed	5600 MHz
Memory Slots Available	4
Graphics Card Interface	PCI Express
Total PCIe Ports	4
Total M.2 Slots	4
Total SATA Ports	4
Total USB Ports	10 (including Thunderbolt 4 and Front USB-C)
Networking	WiFi7, 10GbE LAN
Platform	Windows 11
Form Factor	E-ATX

WARRANTY AND SUPPORT

The GIGABYTE Z890 AORUS Master AI TOP Motherboard comes with a **5-Year Manufacturer Warranty**. For technical support, driver downloads, BIOS updates, and further assistance, please visit the official GIGABYTE support website. You can also refer to the comprehensive online resources and FAQs available there.

For warranty claims, retain your proof of purchase. Contact GIGABYTE customer service for detailed instructions on warranty procedures.