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## GIGABYTE Z890 AORUS ELITE X ICE

# GIGABYTE Z890 AORUS Elite X ICE Motherboard User Manual

Model: Z890 AORUS ELITE X ICE | Brand: GIGABYTE

## 1. INTRODUCTION

The GIGABYTE Z890 AORUS Elite X ICE motherboard is designed to support Intel Core Ultra Processors (Series 2) with an LGA 1851 socket. This ATX motherboard features advanced power delivery, high-speed storage options, and comprehensive connectivity to optimize system performance. Key features include DDR5 memory support, multiple M.2 slots, PCIe 5.0, Thunderbolt 4, WiFi7, and 2.5GbE LAN.

This manual provides essential information for the proper installation, operation, maintenance, and troubleshooting of your motherboard.



Figure 1: Top-down view of the GIGABYTE Z890 AORUS Elite X ICE motherboard.

## 2. SETUP AND INSTALLATION

### 2.1 CPU Installation

This motherboard supports Intel Core Ultra Processors (Series 2) with an LGA 1851 socket. Ensure the CPU is correctly oriented before placing it into the socket. Refer to the CPU manufacturer's instructions for specific installation steps.



Figure 2: Close-up view of the LGA 1851 CPU socket.

## 2.2 Memory (RAM) Installation

The motherboard features four DDR5 DIMM slots. Install DDR5 memory modules by aligning the notch on the module with the key in the DIMM slot. Press firmly until the clips on both ends lock the module into place. For optimal performance, refer to the motherboard's qualified vendor list (QVL) for compatible memory and install modules in the recommended slots for dual-channel operation.



Figure 3: Illustration of DDR5 memory installation.

## 2.3 Storage Device Installation

The Z890 AORUS Elite X ICE includes five M.2 slots for high-speed NVMe SSDs, with one supporting PCIe 5.0. Utilize the M.2 EZ-Latch mechanism for tool-less installation of M.2 drives. Additionally, there are SATA 6Gb/s ports for traditional hard drives and SSDs.



Figure 4: PCIe 5.0 and M.2 slots with EZ-Latch feature.

## 2.4 Expansion Card Installation

The motherboard features a PCIe 5.0 x16 slot for graphics cards and other expansion cards. The PCIe EZ-Latch simplifies the removal of expansion cards. Ensure cards are securely seated in their respective slots and fastened with screws.

## 2.5 Power Connections

Connect the 24-pin ATX main power connector and the 8-pin CPU power connector from your power supply unit (PSU) to the corresponding ports on the motherboard. Ensure all power cables are firmly connected.

## 2.6 Front Panel and Rear I/O Connections

Connect your case's front panel connectors (power button, reset button, USB ports, audio jacks) to the appropriate headers on the motherboard. The rear I/O panel provides various ports including USB 2.0, USB 3.2 Gen 1, USB 3.2 Gen 2, Thunderbolt 4 with DP-Alt, 2.5GbE LAN, Wi-Fi 7 antenna connectors, and audio jacks.

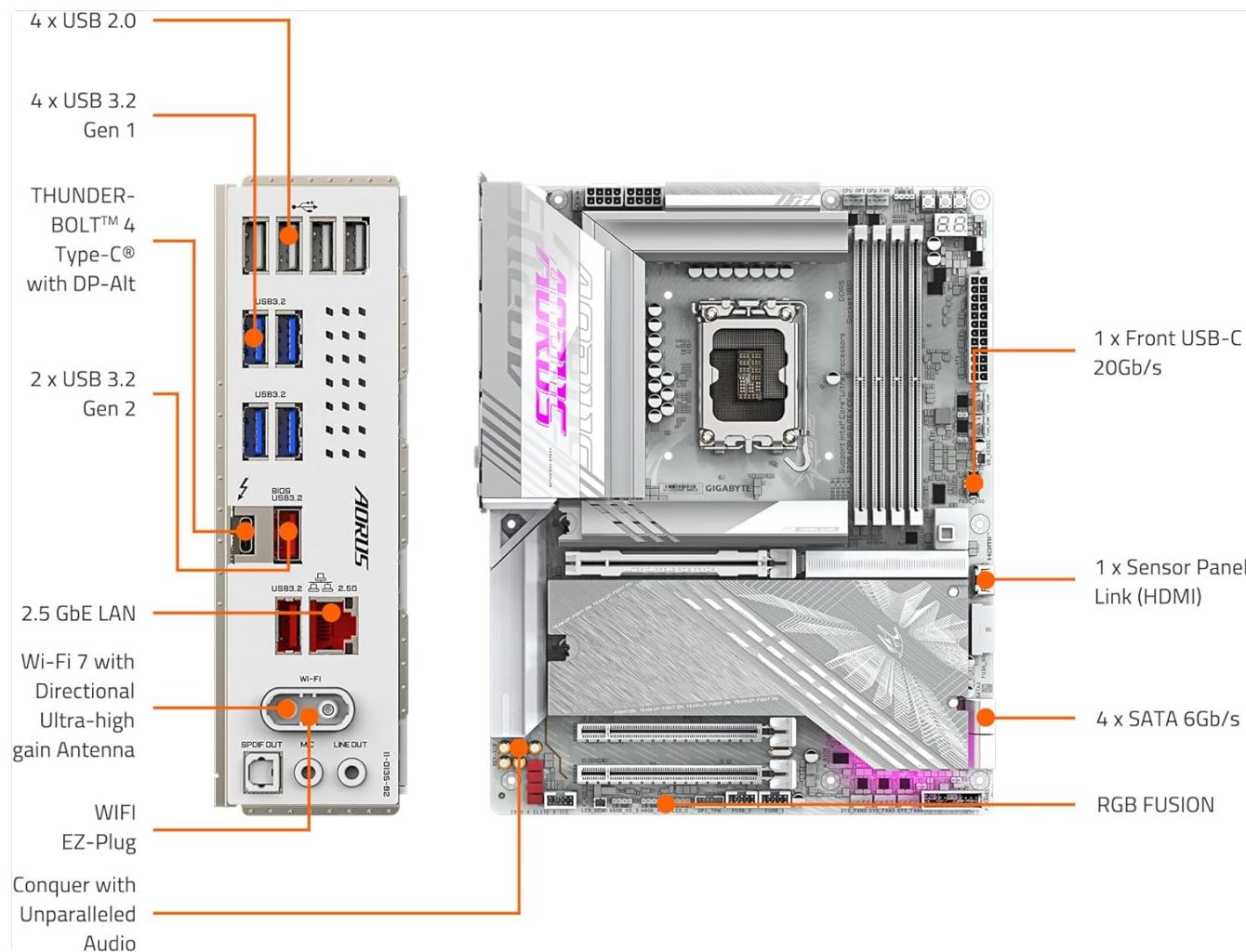


Figure 5: Labeled diagram of motherboard ports and features.

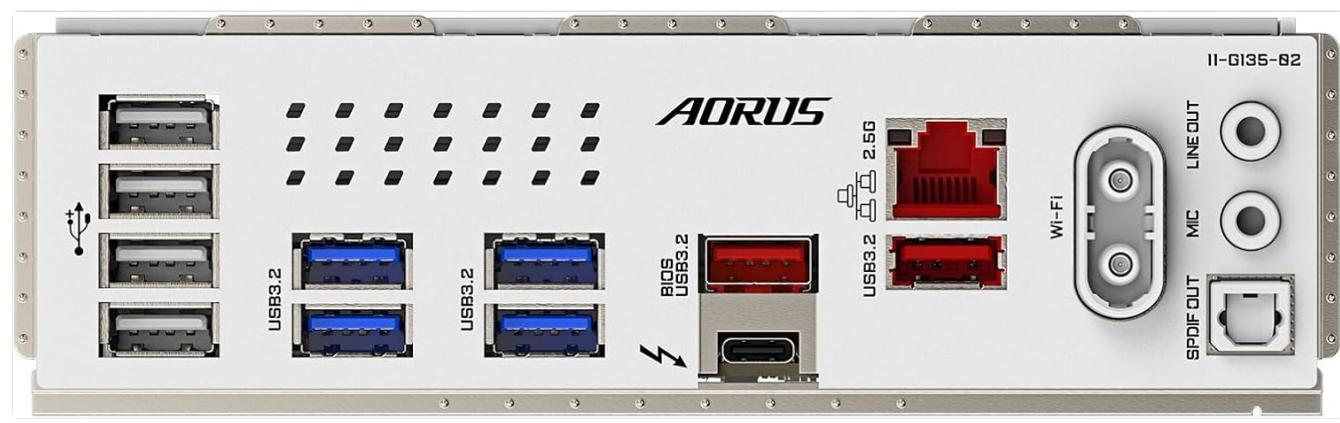


Figure 6: Rear I/O panel connections.

### 3. OPERATING INSTRUCTIONS

#### 3.1 First Boot and BIOS Access

After assembling your system, power it on. To access the BIOS/UEFI setup, press the **DEL** key during the boot process. The BIOS allows you to configure system settings, boot order, and enable features like XMP for memory optimization.

#### 3.2 BIOS Updates (Q-Flash Plus)

The motherboard supports Q-Flash Plus, allowing you to update the BIOS without installing a CPU, memory, or graphics card. This is useful for ensuring compatibility with newer processors. Refer to the GIGABYTE website for detailed Q-Flash Plus instructions and the latest BIOS versions.

### 3.3 EZ-Debug Zone

The EZ-Debug Zone features LED indicators that provide diagnostic feedback during the boot process. These LEDs can help identify issues related to the CPU, DRAM, VGA, or Boot device, simplifying troubleshooting.

### 3.4 Network Connectivity

The motherboard includes an integrated WIFI7 module and a 2.5GbE LAN port. Connect the provided Wi-Fi antenna to the rear I/O panel for wireless connectivity. For wired connections, plug an Ethernet cable into the 2.5GbE LAN port.

## 4. MAINTENANCE

### 4.1 System Cleaning

Regularly clean your computer system to prevent dust buildup, which can lead to overheating. Use compressed air to clear dust from fans, heatsinks (including VRM Thermal Armor and M.2 Thermal Guard), and other components. Ensure the system is powered off and unplugged before cleaning.

### 4.2 Driver Updates

Keep your motherboard drivers updated for optimal performance and stability. Visit the official GIGABYTE website for the latest chipset, LAN, Wi-Fi, audio, and other relevant drivers for your Z890 AORUS Elite X ICE motherboard.

## 5. TROUBLESHOOTING

### 5.1 No Power or Boot Issues

- Verify all power connections (24-pin ATX, 8-pin CPU) are securely seated.
- Check the EZ-Debug Zone LEDs for diagnostic codes. The lit LED indicates the component causing the boot failure.
- Ensure the power supply unit (PSU) is functional and switched on.

### 5.2 Memory (RAM) Instability

- Ensure RAM modules are fully seated in their slots.
- If experiencing instability with XMP profiles, try disabling XMP in the BIOS or selecting a lower XMP profile. Some memory configurations may require manual tuning for stability at higher speeds.
- Test memory modules individually to identify a faulty stick.

### 5.3 Component Not Detected

- Reseat the component (CPU, GPU, M.2 SSD, SATA drive) and check its power and data cables.
- Ensure the component is compatible with the motherboard.

## 5.4 General System Instability

- Ensure all drivers are up to date.
- Check system temperatures to rule out overheating.
- Perform a clean installation of your operating system if software conflicts are suspected.

## 6. SPECIFICATIONS

Feature	Specification
Brand	GIGABYTE
Model Name	Z890 AORUS ELITE X ICE
CPU Socket	LGA1851
Compatible Processors	Intel Core Ultra 200 Processors (Series 2)
RAM Memory Technology	DDR5
RAM Memory Maximum Size	256 GB
Memory Clock Speed	5600 MHz (Supports XMP)
Chipset Type	Intel Z890
PCIe Slots	PCIe 5.0 x16
M.2 Slots	5x M.2 Slots (including PCIe 5.0)
LAN	2.5GbE LAN
Wireless Connectivity	WIFI7
USB Ports	Thunderbolt 4, Front USB-C, various USB 3.2 and 2.0
Form Factor	ATX
Dimensions (LxWxH)	10.87 x 13.3 x 3.31 inches
Item Weight	4.41 pounds

## 7. WARRANTY AND SUPPORT

### 7.1 Warranty Information

The GIGABYTE Z890 AORUS Elite X ICE motherboard comes with a 5-year warranty. Please retain your proof of purchase for warranty claims. For detailed warranty terms and conditions, refer to the official GIGABYTE website.

### 7.2 Technical Support

For further technical assistance, driver downloads, BIOS updates, or detailed product documentation, please visit the official GIGABYTE support website:

[GIGABYTE Support Website](#)

You can also find additional resources and product information on the GIGABYTE brand store:

[GIGABYTE Amazon Store](#)

## 8. PRODUCT VIDEOS

No official product videos from the seller were found in the provided data for this model.

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