GIGABYTE Z790 EAGLE AX

GIGABYTE Z790 Eagle AX Motherboard User Manual

Model: Z790 EAGLE AX

1. INTRODUCTION

This user manual provides essential information for the installation, operation, and maintenance of your GIGABYTE Z790 Eagle AX ATX Motherboard. The Z790 Eagle AX is designed to support 14th and 13th Generation Intel Core Processors, offering advanced features such as DDR5 memory support, multiple M.2 slots, PCIe 5.0 connectivity, USB 3.2 Gen2X2 Type-C, Intel Wi-Fi 6E, and 2.5GbE LAN. Please read this manual thoroughly before proceeding with installation and usage.

2. SAFETY INFORMATION

- Always disconnect the power cord from the wall outlet before touching any components inside the computer case.
- Use an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity before handling motherboard components.
- Handle the motherboard by its edges to avoid damaging sensitive components.
- Ensure all cables are connected correctly and securely before powering on the system.
- Keep the motherboard and components away from moisture and extreme temperatures.

3. PACKAGE CONTENTS

Verify that all items listed below are present in your motherboard package. If any item is missing or damaged, contact your retailer.

- GIGABYTE Z790 Eagle AX Motherboard
- SATA Data Cables
- M.2 Screw Package
- Wi-Fi Antenna
- User Manual / Quick Installation Guide
- Driver CD/USB (may vary by region)

Image: The GIGABYTE Z790 Eagle AX motherboard shown alongside its retail packaging.

4. MOTHERBOARD LAYOUT AND COMPONENTS

Familiarize yourself with the various components and connectors on the motherboard before installation.
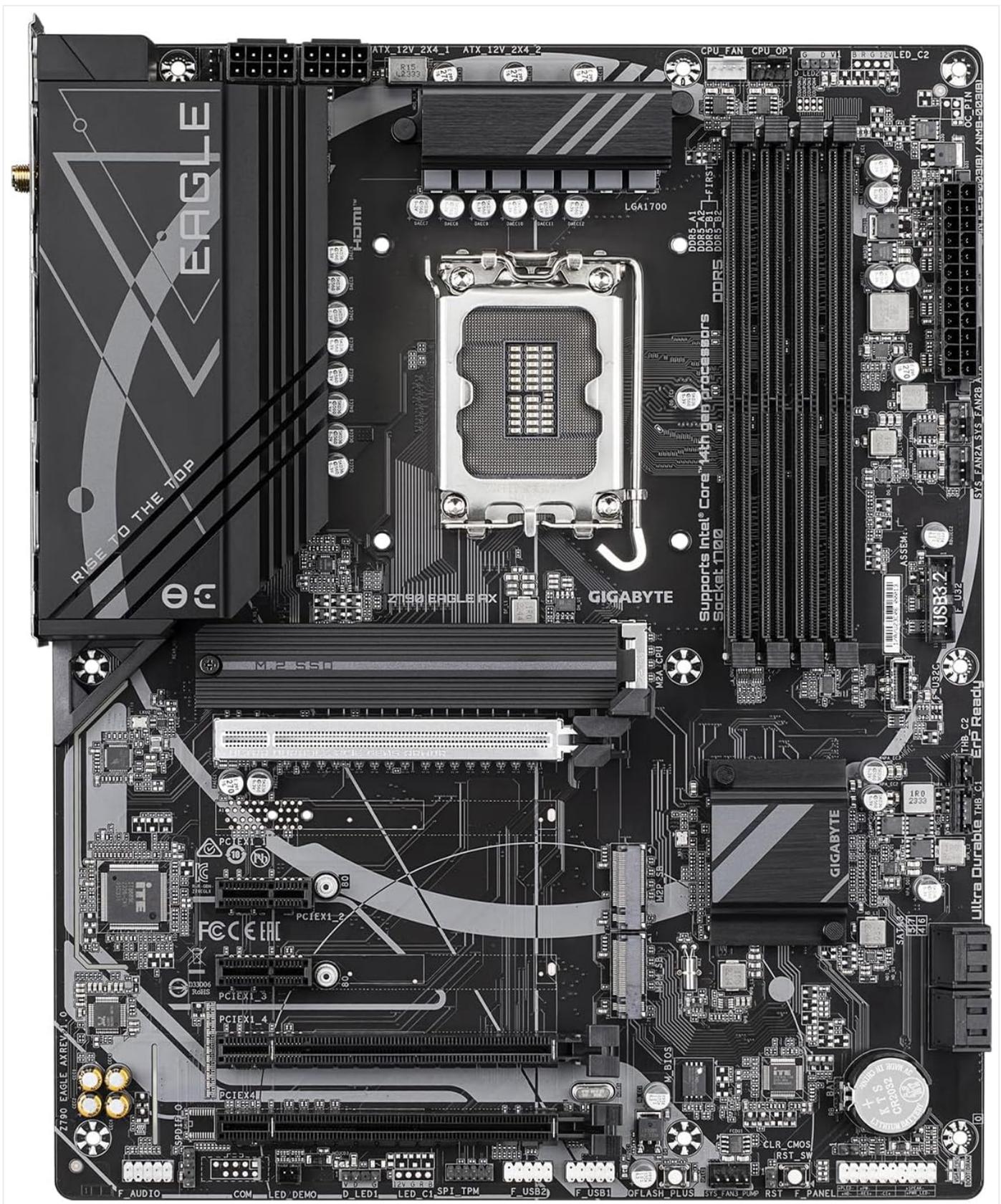
Image: A top-down view of the GIGABYTE Z790 Eagle AX motherboard, highlighting the CPU socket, DIMM slots, and various headers.
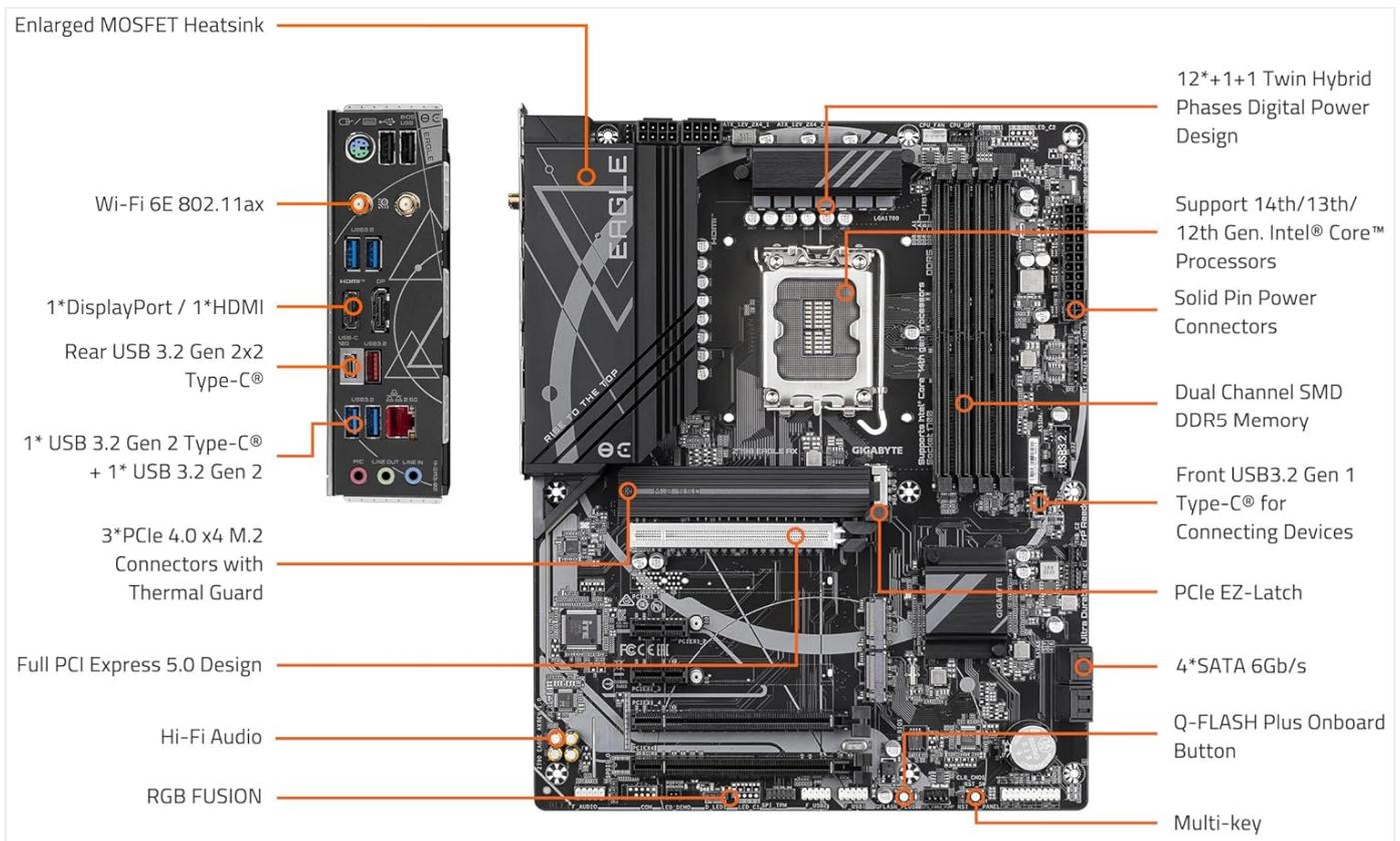
Image: A detailed diagram illustrating the key features and connectors of the GIGABYTE Z790 Eagle AX motherboard, including power design, thermal solutions, and connectivity options.

Key Components:

- **LGA 1700 CPU Socket:** Supports Intel 14th and 13th Gen Core Processors.
- **DDR5 DIMM Slots:** Four slots for dual-channel DDR5 memory.
- **PCIe 5.0 x16 Slot:** For high-performance graphics cards.
- **M.2 Connectors:** Multiple slots for NVMe SSDs, some with Thermal Guards.
- **SATA 6Gb/s Ports:** For traditional SATA storage devices.
- **Rear I/O Panel:** USB ports, LAN port, Wi-Fi antenna connectors, audio jacks, display outputs.

5. INSTALLATION

Follow these steps carefully to install your motherboard and its components.

5.1 CPU Installation

1. Locate the LGA 1700 CPU socket on the motherboard.
2. Open the CPU socket lever and lift the load plate.
3. Carefully align the CPU with the socket, ensuring the triangular mark on the CPU matches the mark on the socket. Do not force the CPU into place.
4. Lower the load plate and press down the lever until it clicks into place.

5.2 CPU Cooler Installation

Install your LGA 1700 compatible CPU cooler according to its manufacturer's instructions. Ensure proper thermal paste application for optimal cooling.

5.3 Memory (RAM) Installation

1. Open the clips at both ends of the DDR5 DIMM slots.

2. Align the memory module with the slot, ensuring the notch on the module matches the key in the slot.

3. Press down firmly on both ends of the memory module until the clips snap into place. For dual-channel operation, refer to your motherboard's specific manual for recommended slot population.

5.4 Storage Device Installation

M.2 SSD Installation:

1. Locate the M.2 slots on the motherboard. Some slots may have pre-installed thermal guards.

2. Remove the thermal guard (if present) and the M.2 standoff/screw.

3. Insert the M.2 SSD into the slot at a 30-degree angle.

4. Gently push the SSD down and secure it with the M.2 screw or EZ-Latch mechanism.

5. Reinstall the thermal guard if applicable.

SATA Drive Installation:

- Connect one end of the SATA data cable to a SATA 6Gb/s port on the motherboard and the other end to your SATA HDD/SSD.
- Connect a SATA power cable from your power supply to the SATA HDD/SSD.

5.5 Expansion Card Installation

1. Locate the desired PCIe slot (e.g., PCIe 5.0 x16 for a graphics card).

2. Remove the corresponding expansion slot cover from your computer case.

3. Insert the expansion card firmly into the slot until it is seated correctly.

4. Secure the card with a screw to the computer case.

5. Connect any necessary power cables from the power supply to the graphics card.

5.6 Power Supply Connection

- Connect the 24-pin ATX main power connector from your power supply to the motherboard.
- Connect the 8-pin and/or 4-pin CPU power connectors from your power supply to the motherboard.

5.7 Front Panel Connections

Connect the cables from your computer case's front panel to the corresponding headers on the motherboard. These include USB ports, audio jacks, power button, reset button, and LED indicators. Refer to the motherboard diagram for header locations.

5.8 Rear I/O Panel Connections

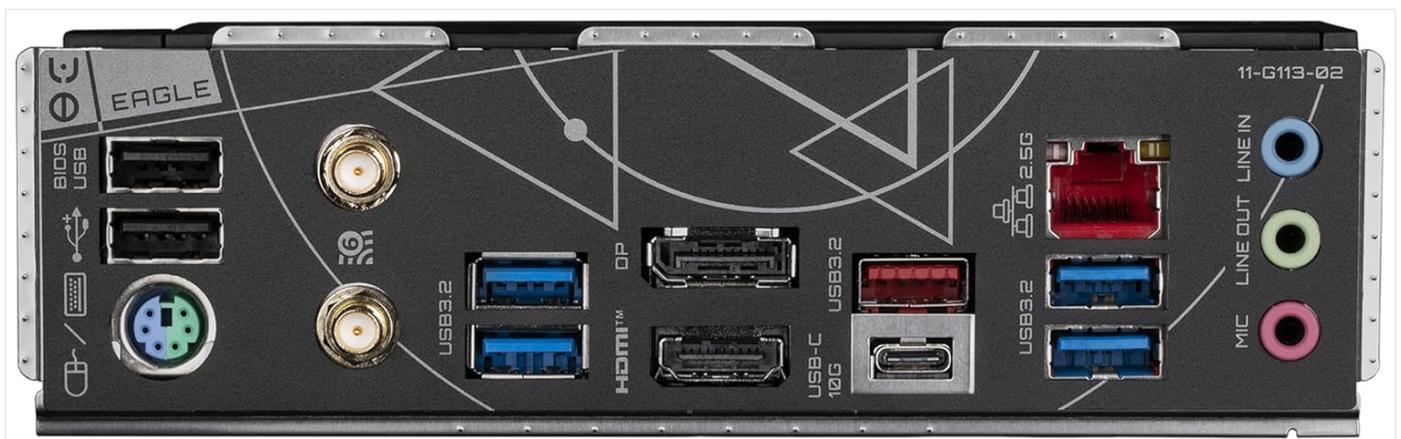Connect your peripherals to the rear I/O panel ports.

Image: The rear input/output panel of the GIGABYTE Z790 Eagle AX motherboard, showing various USB ports, LAN, Wi-Fi antenna connectors, and audio jacks.

- **USB Ports:** Connect keyboards, mice, and other USB devices.

- **LAN Port:** Connect an Ethernet cable for wired network access.

- **Wi-Fi Antenna Connectors:** Attach the included Wi-Fi antennas for wireless connectivity.

- **Audio Jacks:** Connect speakers, headphones, or microphones.

- **Display Outputs (HDMI/DisplayPort):** For integrated graphics (requires compatible CPU).

6. OPERATING INSTRUCTIONS

6.1 First Boot and BIOS/UEFI Setup

1. After completing all hardware installations, connect your monitor, keyboard, and mouse.

2. Power on your system. During the Power-On Self-Test (POST), repeatedly press the `DEL` key to enter the BIOS/UEFI setup utility.

3. In the BIOS/UEFI, you can configure system settings such as boot order, date/time, and enable/disable various features. Save changes and exit to proceed with operating system installation.

6.2 Driver Installation

After installing your operating system, install the necessary drivers for optimal performance and functionality. Drivers can typically be found on the included driver CD/USB or downloaded from the official GIGABYTE website. Key drivers include:

- Chipset Drivers

- LAN Drivers (2.5GbE)

- Wi-Fi 6E Drivers

- Audio Drivers

- Intel Management Engine (ME) Drivers

GIGABYTE also provides utility software, such as GIGABYTE Control Center, to manage system settings, monitor hardware, and update drivers/BIOS.

7. MAINTENANCE

7.1 BIOS/UEFI Updates

Regularly updating your BIOS/UEFI can improve system stability, compatibility, and performance. The GIGABYTE Z790 Eagle AX features **Q-Flash Plus**, allowing you to update the BIOS without installing the CPU, memory, or graphics card.

1. Download the latest BIOS file from the GIGABYTE website for your specific motherboard model.

2. Rename the downloaded BIOS file to GIGABYTE.bin and save it to the root directory of a FAT32 formatted USB flash drive.

3. Insert the USB flash drive into the designated Q-Flash Plus USB port on the rear I/O panel (usually marked with a white border or specific label).

4. Ensure the motherboard is connected to the power supply (24-pin and 8-pin CPU power), but do not power on the system.

5. Press the Q-Flash Plus button on the motherboard or rear I/O panel. The Q-Flash Plus LED will start blinking.

6. Wait for the LED to stop blinking, indicating the BIOS update is complete. This process may take several minutes.

7.2 Cleaning

To ensure longevity and optimal performance, regularly clean your computer's interior. Use compressed air to remove dust from fans, heatsinks, and other components. Ensure the system is powered off and unplugged before cleaning.

8. TROUBLESHOOTING

This section addresses common issues you might encounter.

- **No Power:** Verify all power cables (24-pin ATX, 8-pin CPU) are securely connected to the motherboard and power supply. Ensure the power supply switch is in the 'ON' position and the wall outlet is functional.

- **No Display:** Check that your monitor is connected to the graphics card (or motherboard if using integrated graphics) and is powered on. Reseat the graphics card and memory modules.

- **System Fails to Boot:** Check the boot order in BIOS/UEFI. Ensure your operating system drive is detected. Reseat all installed components (CPU, RAM, GPU, M.2 SSDs).

- **Component Not Detected:** If a specific component (e.g., M.2 SSD, PCIe card) is not detected, ensure it is properly seated and connected. Check for updated drivers.

- **Memory Training on First Boot:** After installing new RAM or updating BIOS, the system may take several minutes to POST. This is normal memory training. Do not power off the system during this process.

- **BIOS Corruption:** Utilize the Q-Flash Plus feature (Section 7.1) to recover or update the BIOS if the system fails to boot due to a corrupted BIOS.

9. SPECIFICATIONS

Detailed technical specifications for the GIGABYTE Z790 Eagle AX Motherboard.

Feature	Detail
Brand	GIGABYTE
Series	Z790 EAGLE AX
Model Name	Z790 EAGLE AX
CPU Socket	LGA 1700
Compatible Processors	Intel Core 14th Gen/Intel 13th Gen Core/Intel 12th Gen Core/Intel Pentium series/Intel Celeron series
Chipset Type	Z790 D5
RAM Memory Technology	DDR5
RAM Memory Maximum Size	256 GB
Number of USB 2.0 Ports	2
Platform	Windows
Item Weight	3.62 pounds
Product Dimensions	3.31 x 10.87 x 13.35 inches
Color	Black
Date First Available	January 31, 2024

10. WARRANTY AND SUPPORT

For detailed warranty information, technical support, driver downloads, and additional documentation, please visit the official GIGABYTE website. You can typically find support resources by navigating to the support section and searching for your specific motherboard model (Z790 Eagle AX).

Ensure you have your product's serial number ready when contacting support for faster assistance.
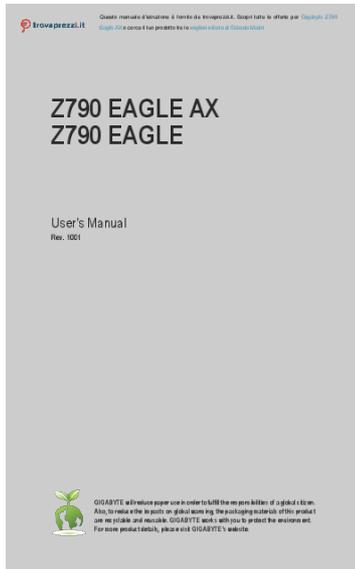
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B650 AORUS ELITE AX B650 AORUS ELITE User's Manual	[GIGABYTE B650 AORUS ELITE AX / B650 AORUS ELITE User's Manual](#) Comprehensive user's manual for the GIGABYTE B650 AORUS ELITE AX and B650 AORUS ELITE motherboards, detailing hardware installation, BIOS setup, driver installation, product specifications, and regulatory information.
Z790 AORUS XTREME X User's Manual	[GIGABYTE Z790 AORUS XTREME X Motherboard User's Manual](#) This user's manual provides detailed information for the GIGABYTE Z790 AORUS XTREME X motherboard, covering hardware installation, specifications, BIOS setup, operating system and driver installation, and regulatory compliance.
A620M H A620M S2H 사용자 설명서	[GIGABYTE A620M H / A620M S2H Motherboard User Manual](#) Detailed user manual for GIGABYTE A620M H and A620M S2H motherboards, covering specifications, installation, BIOS, software, and regulatory compliance.

The BIOS Setup menu described in this section may differ from the exact settings for your motherboard. This actual BIOS Setup menu option you will see shall depend on the motherboard specifications and the BIOS version.

GIGABYTE Intel 700 Series BIOS Setup Guide

Comprehensive guide to configuring the BIOS settings for GIGABYTE motherboards featuring Intel 700 Series chipsets. Covers Advanced Mode, Easy Mode, fan control, system settings, boot options, and more.

Z790 AORUS XTREME X

User's Manual
Rev. 1001

GIGABYTE Z790 AORUS XTREME X Motherboard User Manual

Comprehensive user manual for the GIGABYTE Z790 AORUS XTREME X motherboard. Covers hardware installation, CPU and memory setup, expansion card installation, BIOS configuration, operating system and driver installation, RAID setup, and detailed specifications. Includes troubleshooting information and regulatory compliance details.

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