GIGABYTE B550 AORUS ELITE AX V2

GIGABYTE B550 AORUS ELITE AX V2 Motherboard User Manual

Model: B550 AORUS ELITE AX V2

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1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your GIGABYTE B550 AORUS ELITE AX V2 Motherboard. This motherboard is designed to support AMD AM4 Ryzen 5000 series processors and offers advanced features for high-performance computing.



Figure 1.1: GIGABYTE B550 AORUS ELITE AX V2 Motherboard and its retail packaging.

2. Key Features

The GIGABYTE B550 AORUS ELITE AX V2 Motherboard incorporates several advanced technologies to enhance system performance and user experience:

- **Processor Support:** Supports AMD Ryzen 5000 Series, Ryzen 5000 G-Series, Ryzen 4000 G-Series, Ryzen 3000, and Ryzen 3000 G-Series Processors.
- **Memory:** Dual Channel ECC/Non-ECC Unbuffered DDR4, featuring 4 DIMM slots for up to 128GB memory capacity.
- **Power Design:** Robust 12+2 Phases Digital Twin Power Design with 50A DrMOS for stable power delivery.
- **Thermal Management:** Advanced Thermal Design with Enlarged Surface Heatsinks for efficient heat dissipation.
- **PCIe 4.0:** Ultra Durable PCIe 4.0 x16 Slot for high-speed graphics cards and expansion cards.
- **Storage:** Dual Ultra-Fast NVMe PCIe 4.0/3.0 x4 M.2 slots with Dual Thermal Guards for high-speed storage solutions.
- **Networking:** Onboard Intel WiFi 6 802.11ax 2T2R & BT5 with AORUS Antenna, and Blazing Fast 2.5GbE LAN with Bandwidth Management.
- **Audio:** AMP-UP Audio with ALC1200 and WIMA Capacitors for high-fidelity sound.
- **Connectivity:** Front USB 3.2 Gen1 Type-C, DisplayPort, and HDMI for multiple display outputs.
- **RGB Lighting:** RGB FUSION 2.0 supports Addressable LED & RGB LED Strips for customizable lighting effects.
- **Cooling Control:** Smart Fan 5 features multiple temperature sensors and Hybrid Fan Headers with FAN STOP

functionality.

- **BIOS Update:** Q-Flash Plus allows BIOS updates without installing the CPU, memory, or graphics card.
- **Ease of Installation:** Pre-installed I/O Shield for simplified and quick installation.



Figure 2.1: Overview of motherboard features and connectivity.

3. Package Contents

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

- GIGABYTE B550 AORUS ELITE AX V2 Motherboard
- User Manual / Quick Installation Guide
- SATA Data Cables (typically 2-4)
- Wi-Fi Antenna
- Driver CD/USB Drive (for system drivers and utilities)
- M.2 Screw Package (for securing M.2 SSDs)

Note: The I/O shield is pre-installed on this motherboard.

4. Setup and Installation

Before beginning installation, ensure your workspace is clean, well-lit, and static-free. It is recommended to wear an anti-static wrist strap.

4.1. Motherboard Layout



Figure 4.1: Detailed top-down view of the motherboard, showing component placement.

4.2. Installing the CPU

1. Locate the AM4 CPU socket on the motherboard.
2. Lift the load lever on the side of the socket.
3. Carefully align the triangular mark on the CPU with the mark on the socket.

4. Gently place the CPU into the socket without forcing it.
5. Lower the load lever to secure the CPU in place.

4.3. Installing Memory (RAM)

1. Open the clips on both ends of the DIMM slots.
2. Align the notch on the DDR4 memory module with the key in the DIMM slot.
3. Insert the memory module firmly into the slot until the clips snap into place. For optimal performance, install memory modules in matching pairs into the designated dual-channel slots (refer to the motherboard's silkscreen or full manual for specific slot recommendations).

4.4. Installing M.2 SSDs

This motherboard features two M.2 slots. The top slot (nearest the CPU) supports PCIe 4.0, while the second slot supports PCIe 3.0.

1. Locate the M.2 slots and remove the thermal guard/heatsink if present.
2. Insert the M.2 SSD into the slot at a 30-degree angle.
3. Gently push the SSD down and secure it with the provided M.2 screw.
4. Reinstall the thermal guard/heatsink, ensuring proper contact with the SSD.

4.5. Connecting Power Supply

- Connect the 24-pin ATX main power connector from your power supply to the motherboard.
- Connect the 8-pin (or 4+4 pin) ATX 12V CPU power connector to the motherboard.

4.6. Installing Expansion Cards (e.g., Graphics Card)

1. Align your graphics card or other PCIe expansion card with the PCIe x16 slot (the top reinforced slot for graphics cards).
2. Press down firmly until the card is seated correctly and the retention clip at the end of the slot locks into place.
3. Secure the card to your PC case with a screw.

4.7. Connecting Front Panel Cables and Peripherals

- Connect your case's front panel connectors (Power LED, HDD LED, Power Switch, Reset Switch) to the corresponding pins on the motherboard's front panel header. Refer to the motherboard's silkscreen for correct pin alignment.
- Connect USB 2.0, USB 3.0, and USB 3.2 Gen1 Type-C front panel headers if your case supports them.
- Connect the front panel audio cable.
- Connect SATA data cables to your storage drives (HDDs/SSDs) and the motherboard's SATA ports.
- Attach the Wi-Fi antenna to the rear I/O panel.



Figure 4.2: Rear I/O panel showing various ports including USB, LAN, DisplayPort, HDMI, and audio jacks.

4.8. BIOS Q-Flash Plus

The Q-Flash Plus feature allows you to update the BIOS without installing the CPU, memory, or graphics card. This is particularly useful for supporting newer CPUs that may not be compatible with the motherboard's factory-installed BIOS version.

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

2. Uncompress the downloaded BIOS file and save it to a USB flash drive (FAT32/16 format). Rename the BIOS file to **GIGABYTE.bin**.
3. Insert the USB flash drive into the designated white USB port (often labeled "BIOS Q Flash" or similar) on the motherboard's rear I/O panel.
4. Connect the 24-pin ATX main power connector and the 8-pin CPU power connector from your power supply to the motherboard.
5. Press the Q-Flash Plus button on the rear I/O panel. The QFLED and Q-Flash Plus button will flash during the update process.
6. Wait for 2-3 minutes until the QFLED stops flashing, indicating the BIOS update is complete.



Figure 4.3: Visual guide for the BIOS Q-Flash Plus process.

5. Operating Your Motherboard

5.1. First Boot and BIOS Access

After assembling your system, connect a monitor, keyboard, and mouse. Power on your system. During the boot process, repeatedly press the `DEL` key to enter the BIOS (Basic Input/Output System) setup. The BIOS allows you to configure system settings, boot order, and enable features like XMP for memory profiles.

5.2. Driver Installation

Once your operating system is installed, install the necessary drivers for your motherboard components. These include chipset drivers, LAN drivers, Wi-Fi/Bluetooth drivers, audio drivers, and any other utility software. Drivers can be found on the included driver CD/USB or downloaded from the official GIGABYTE website for the B550 AORUS ELITE AX V2 model.

6. Maintenance

6.1. Cleaning

Regularly clean your computer's interior to prevent dust buildup, which can lead to overheating and reduced performance. Use compressed air to remove dust from fans, heatsinks, and other components. Ensure the system is powered off and unplugged before cleaning.

6.2. BIOS Updates

Periodically check the GIGABYTE website for updated BIOS versions. BIOS updates can improve system stability, add support for new hardware, and fix bugs. Always follow the official update procedures carefully, such as using Q-Flash Plus, to avoid damaging the motherboard.

7. Troubleshooting

Problem	Possible Cause	Solution
System does not power on or POST.	Incorrect power connections, faulty PSU, improperly seated CPU/RAM/GPU.	Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected. Reseat CPU, RAM, and graphics card. Test with a known good power supply if available. Clear CMOS (refer to motherboard manual for jumper location).
No display output.	Graphics card not seated, monitor cable issue, integrated graphics conflict.	Ensure monitor cable is connected to the graphics card (not motherboard I/O if using a dedicated GPU). Reseat the graphics card. Test with a different monitor or cable.
M.2 SSD not detected or slow performance.	Incorrect M.2 slot used, driver issue, BIOS settings.	Ensure the M.2 SSD is properly seated and secured. Note that only the first M.2 slot (M2A_CPU) supports PCIe 4.0. The second slot (M2B_SB) is PCIe 3.0. Check BIOS settings for M.2 configuration. Install latest chipset drivers.
Wi-Fi or Bluetooth connectivity issues.	Antenna not connected, outdated drivers, interference.	Ensure the Wi-Fi antenna is securely attached to the rear I/O panel. Update Wi-Fi and Bluetooth drivers from the GIGABYTE website. Check for physical obstructions or sources of interference.

8. Technical Specifications

Feature	Specification
Brand	GIGABYTE
Series	B550 AORUS ELITE AX V2
Model Number	B550 AORUS ELITE AX V2
CPU Socket	Socket AM4
Compatible Processors	AMD Ryzen 5000 Series/ Ryzen 5000 G-Series/ Ryzen 4000 G-Series/ Ryzen 3000 and Ryzen 3000 G-Series Processors
Chipset Type	AMD B550
RAM Memory Technology	DDR4
Memory Speed	2133 MHz (Base, supports higher via XMP)
Memory Storage Capacity (Max)	128 GB
Wireless Type	802.11ax (Wi-Fi 6)
LAN	2.5GbE LAN
Product Dimensions (LxWxH)	10.62 x 3.14 x 13.18 inches
Item Weight	3.69 pounds
Platform	Windows

9. Warranty and Support

GIGABYTE products are backed by a limited 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 FAQs, please visit the official GIGABYTE support website:

GIGABYTE Support Website

Visit the GIGABYTE Store on Amazon

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