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GIGABYTE B850M A ELT WF6E ICE

GIGABYTE B850M AORUS Elite WIFI6E ICE Motherboard User Manual

Model: B850M A ELT WF6E ICE

1. Introduction

This manual provides detailed instructions for the installation, configuration, and operation of your GIGABYTE B850M AORUS Elite WIFI6E ICE Motherboard. Designed for AMD Ryzen 9000 Series CPUs, this motherboard offers advanced features including a 12+2+1 Phases Digital VRM, support for up to 8200MHz DDR5 (OC), PCIe 5.0 and 4.0 M.2 slots, 2.5GbE LAN, and WiFi 7 connectivity. Please read this manual thoroughly before beginning installation to ensure proper setup and to maximize the performance and longevity of your system.

2. Safety Information

Always observe the following safety precautions when handling and installing the motherboard:

- **Static Electricity:** Always wear an anti-static wrist strap or frequently touch a grounded metal object (e.g., the metal case of your PC) before handling components to prevent electrostatic discharge (ESD).
- **Power Off:** Ensure the power supply is disconnected from the wall outlet before installing or removing any components.
- **Component Compatibility:** Verify that all components (CPU, RAM, GPU, etc.) are compatible with this motherboard model. Refer to the specifications section.
- **Ventilation:** Ensure adequate airflow within your PC case to prevent overheating.
- **Handling:** Hold the motherboard by its edges and avoid touching sensitive components or circuits.

3. Package Contents

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

- GIGABYTE B850M AORUS Elite WIFI6E ICE Motherboard
- User Manual / Quick Start Guide
- SATA Data Cables
- Wi-Fi Antenna
- M.2 Screws and Standoffs
- Driver CD/USB (or download instructions)



Image: The GIGABYTE B850M AORUS Elite WIFI6E ICE Motherboard shown alongside its retail packaging and included Wi-Fi antenna.

4. Setup and Installation

4.1 Motherboard Layout

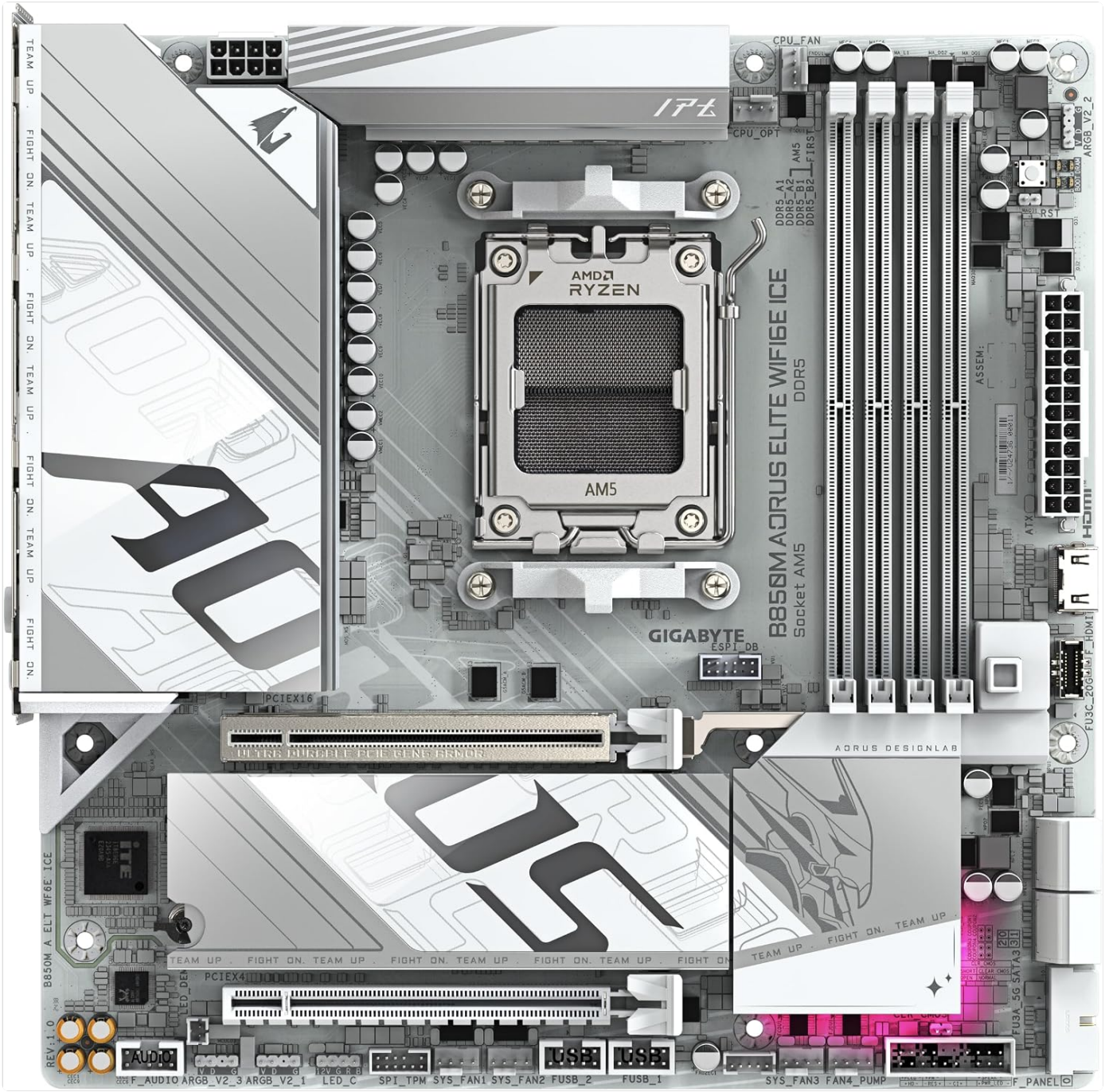


Image: A top-down view of the motherboard, highlighting the CPU socket (AM5), DDR5 DIMM slots, PCIe slots, and M.2 slots. This view is crucial for identifying component placement.

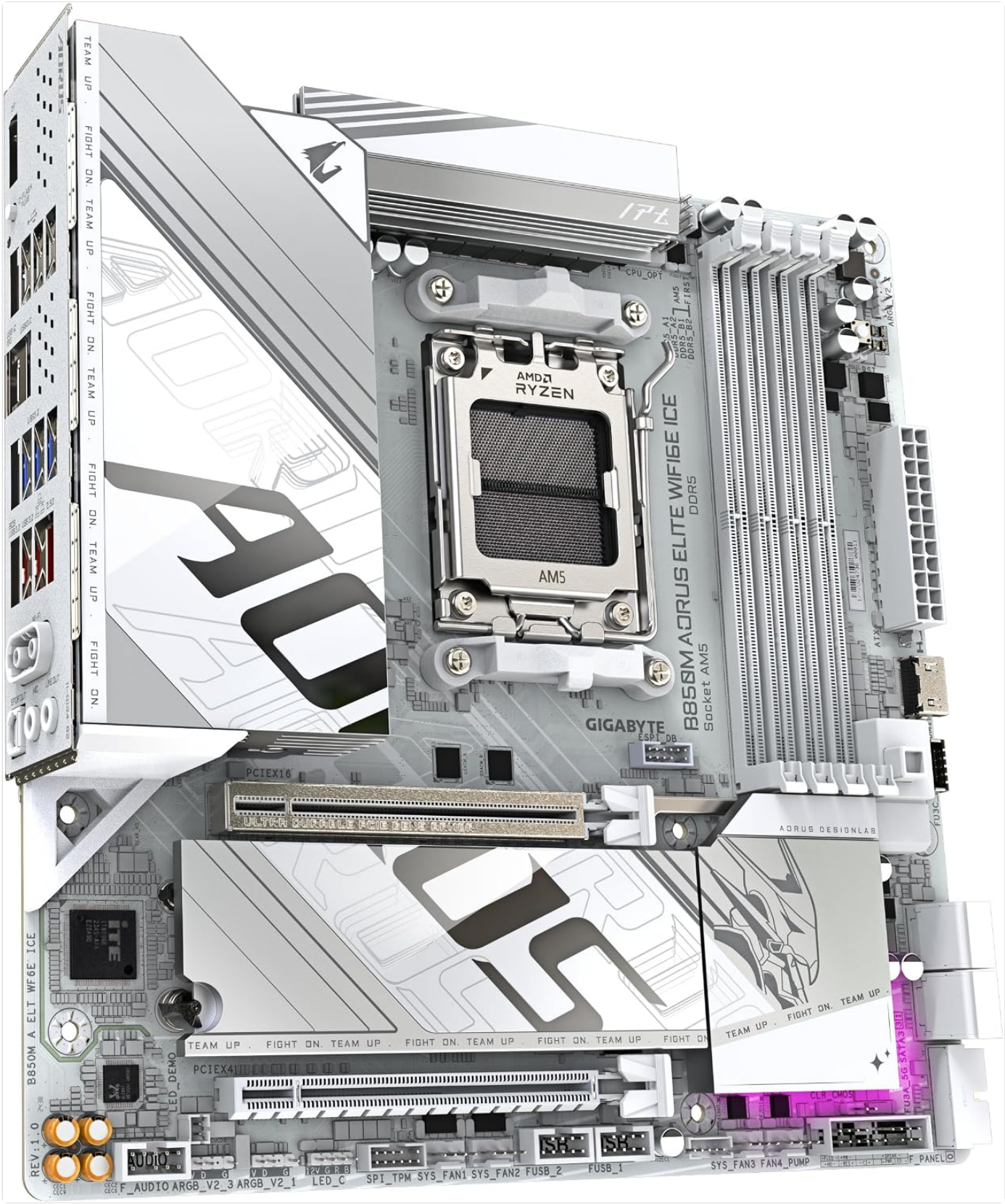


Image: An angled perspective of the motherboard, showcasing the VRM heatsinks, chipset heatsink, and the overall aesthetic design, including the AORUS branding.

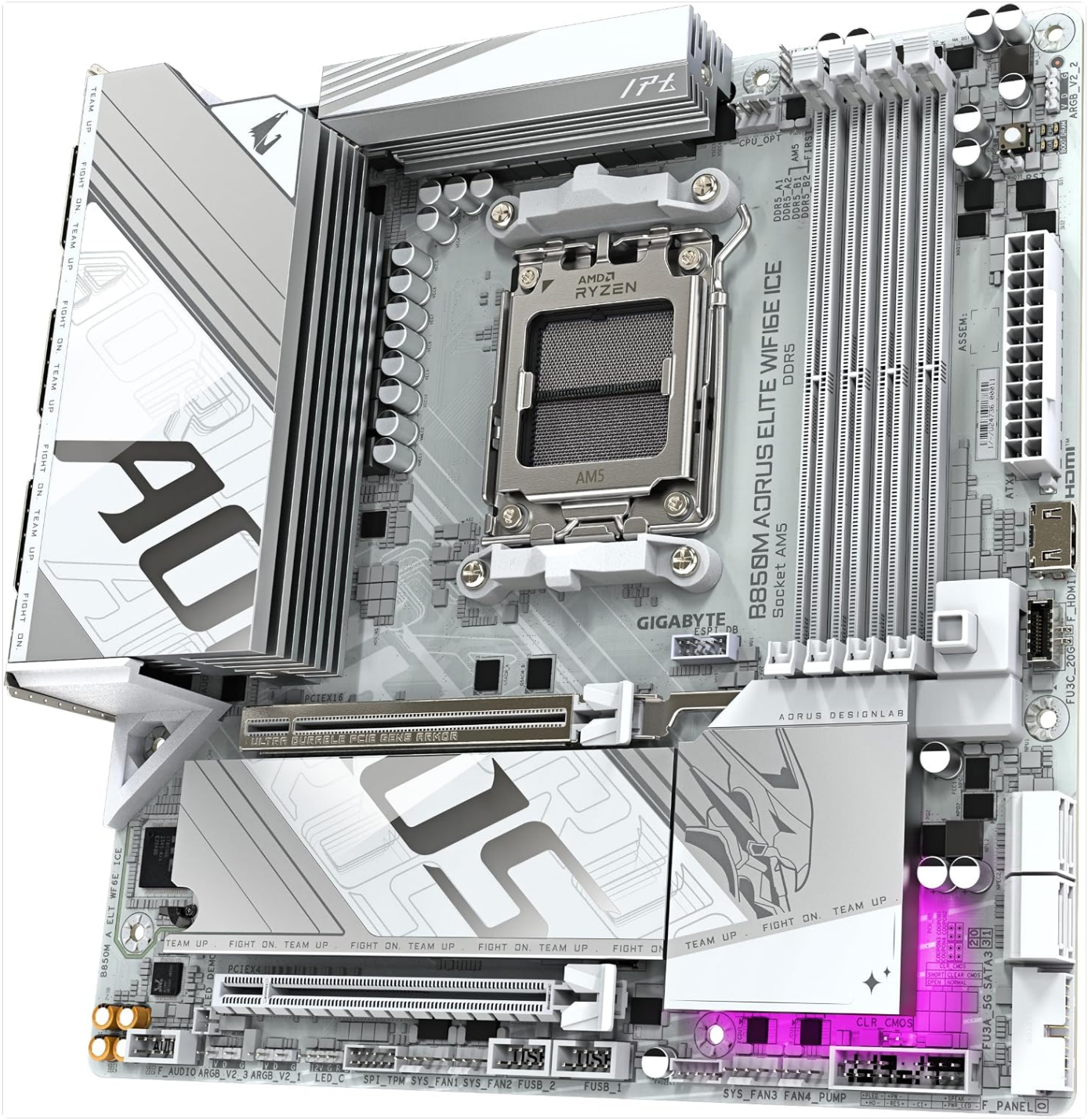


Image: A different angled view, providing a clearer look at the PCIe Gen5 x16 slot with EZ-Latch Plus and the M.2 Gen5 slot, emphasizing the board's expansion capabilities.

4.2 Component Installation

1. **CPU Installation:**
    - Open the CPU socket lever.
    - Carefully align the CPU (AMD Ryzen 9000 Series) with the socket, ensuring the triangle mark on the CPU matches the mark on the socket.
    - Gently place the CPU into the socket. Do not force it.
    - Close the CPU socket lever to secure the CPU.
    - Apply thermal paste and install the CPU cooler according to its manufacturer's instructions.
2. **DDR5 Memory Installation:**
    - Open the clips on both ends of the DIMM slots.

- Align the memory module with the slot, ensuring the notch on the module matches the key in the slot.
- Press down firmly on both ends of the memory module until the clips snap into place. For dual-channel operation, refer to the motherboard's specific slot recommendations (typically A2 and B2 first).

3. **M.2 SSD Installation:**
    - Locate the M.2 slots (PCIe 5.0 and PCIe 4.0 supported).
    - Remove the M.2 heatsink if present.
    - Insert the M.2 SSD into the slot at a 30-degree angle.
    - Push the SSD down and secure it with the EZ-Latch Plus mechanism or a screw.
    - Reattach the M.2 heatsink for optimal thermal performance.
4. **PCIe Expansion Card Installation:**
    - Locate the desired PCIe slot (e.g., PCIe Gen5 x16 for graphics card).
    - Remove the corresponding expansion slot cover from your PC case.
    - Align the expansion card with the slot and press down firmly until it is fully seated.
    - Secure the card with a screw to the PC case.

4.3 Connecting Peripherals and Power

- **Power Connectors:** Connect the 24-pin ATX main power connector and the 8-pin (or 4+4-pin) CPU power connector from your power supply to the motherboard.
- **Front Panel Connectors:** Connect the power button, reset button, HDD LED, and power LED cables from your PC case to the corresponding pins on the motherboard's front panel header. Refer to the motherboard diagram for exact pinouts.
- **USB Headers:** Connect front panel USB 2.0, USB 3.2 Gen 1, and USB 3.2 Gen 2 Type-C headers.
- **Audio Headers:** Connect front panel audio cables.
- **SATA Devices:** Connect SATA data cables from your storage drives (HDDs/SSDs) to the SATA ports on the motherboard. Connect power cables from the PSU to the drives.
- **Case Fans:** Connect case fans to the available fan headers (SYS_FAN1, SYS_FAN2, etc.) on the motherboard.
- **Wi-Fi Antenna:** Screw the included Wi-Fi antenna onto the rear I/O panel's antenna connectors.



Image: A detailed view of the motherboard's rear I/O panel, showing various ports including USB 3.2 Gen 2, USB-C, 2.5GbE LAN, Wi-Fi antenna connectors, DisplayPort, and audio jacks. This panel is where external devices connect.

5. Operating Instructions

5.1 First Boot and BIOS/UEFI Setup

1. After all components are installed and connected, connect your monitor, keyboard, and mouse.
2. Connect the power supply to the wall outlet and turn on the power supply switch.
3. Press the power button on your PC case.
4. During the boot process, repeatedly press the**DEL** key to enter the BIOS/UEFI setup utility.
5. In the BIOS/UEFI, you can configure boot order, enable XMP/EXPO for memory, adjust fan curves, and set other system parameters.
6. Save changes and exit the BIOS/UEFI. The system will restart.

5.2 Driver Installation

After installing your operating system (Windows 10/11 recommended), install the necessary drivers for optimal performance. Drivers can be found on the included driver CD/USB or downloaded from the official GIGABYTE website for your specific motherboard model.

- Chipset Drivers
- LAN Drivers (2.5GbE)
- Wi-Fi Drivers (WiFi 7)
- Audio Drivers
- USB Drivers
- Graphics Drivers (for integrated graphics if applicable, or discrete GPU drivers)

6. Maintenance

- **Cleaning:** Regularly clean dust from inside your PC case and motherboard components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS/UEFI Updates:** Periodically check the GIGABYTE website for BIOS/UEFI updates. Updates can improve stability, add support for new CPUs/RAM, or fix bugs. Use the Q-Flash Plus feature for convenient BIOS updates without installing a CPU, memory, or graphics card.
- **Driver Updates:** Keep your drivers updated to ensure compatibility and optimal performance.

7. Troubleshooting

Problem	Possible Cause	Solution
System does not power on.	Loose power connections, faulty PSU, incorrect front panel wiring.	Check 24-pin and 8-pin CPU power connectors. Verify front panel power switch wiring. Test PSU.
No display on monitor.	Graphics card not seated, monitor cable loose, incorrect display output.	Reseat graphics card. Check monitor cable connections. Ensure monitor is connected to the discrete GPU if installed, or the motherboard's display output if using integrated graphics.
System powers on but no POST/boot.	RAM not seated correctly, incompatible RAM, CPU issue.	Reseat RAM modules. Try one RAM stick at a time. Verify RAM compatibility. Check CPU installation.

Problem	Possible Cause	Solution
Network connectivity issues.	Missing LAN/Wi-Fi drivers, faulty cable, incorrect settings.	Install/update LAN/Wi-Fi drivers. Check Ethernet cable. Verify Wi-Fi antenna connection.

8. Specifications

Feature	Detail
Brand	GIGABYTE
Model Name	B850M A ELT WF6E ICE
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 7000 Series, AMD Ryzen 8000 Series, AMD Ryzen 9000 Series
Chipset Type	AMD X670E
RAM Memory Technology	DDR5
Memory Speed	8200 MHz (OC)
RAM Memory Maximum Size	256 GB
PCIe Slots	1x PCIe 5.0 x16, 1x PCIe 4.0 x16 (likely x4 electrical)
M.2 Slots	1x M.2 Gen5, 1x M.2 Gen4
LAN	2.5GbE LAN
Wireless Connectivity	Wi-Fi 7
USB Ports	USB 3.2 Gen 2, USB-C
Dimensions (LxWxH)	9.61 x 9.61 x 1.38 inches
Item Weight	3.31 pounds
Platform Support	Windows 10, Windows 11

9. Warranty and Support

For warranty information, technical support, and the latest drivers and BIOS updates, please visit the official GIGABYTE website. Keep your proof of purchase for warranty claims.
GIGABYTE Official Website: www.gigabyte.com

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