GIGABYTE B860 GAMING X WIFI6E

GIGABYTE B860 Gaming X WIFI6E Motherboard User Manual

Model: B860 GAMING X WIFI6E

1. INTRODUCTION

This manual provides detailed instructions for the installation, configuration, and operation of the GIGABYTE B860 Gaming X WIFI6E Motherboard. Designed to support Intel Core Ultra Processors (Series 2) with an LGA 1851 socket, this ATX motherboard features DDR5 memory support, multiple M.2 slots, PCIe 5.0 connectivity, USB-C, WIFI6E, and 2.5GbE LAN. Adherence to these instructions will ensure proper setup and optimal performance of your system.

2. SAFETY INFORMATION

- Always disconnect the power cord from the electrical outlet before installing or removing any components.
- Wear an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity before handling components.
- Handle components by their edges to avoid touching sensitive parts.
- Ensure proper ventilation within your PC case to prevent overheating.
- Keep the motherboard away from moisture and extreme temperatures.

3. PACKAGE CONTENTS

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

- GIGABYTE B860 Gaming X WIFI6E Motherboard
- User Manual / Quick Installation Guide
- SATA Data Cables
- Wi-Fi Antenna
- M.2 Screws and Standoffs
- Driver CD/USB (or download instructions)

4. MOTHERBOARD LAYOUT

Familiarize yourself with the various components and connectors on the motherboard before installation.

Figure 4.1: Top-down view of the GIGABYTE B860 Gaming X WIFI6E Motherboard, showing the CPU socket, DDR5 DIMM slots, PCIe slots, and M.2 slots with heatsinks.

Figure 4.2: Angled view of the GIGABYTE B860 Gaming X WIFI6E Motherboard, highlighting the VRM heatsinks, I/O shroud, and overall board design.

4.1 Rear I/O Panel Overview

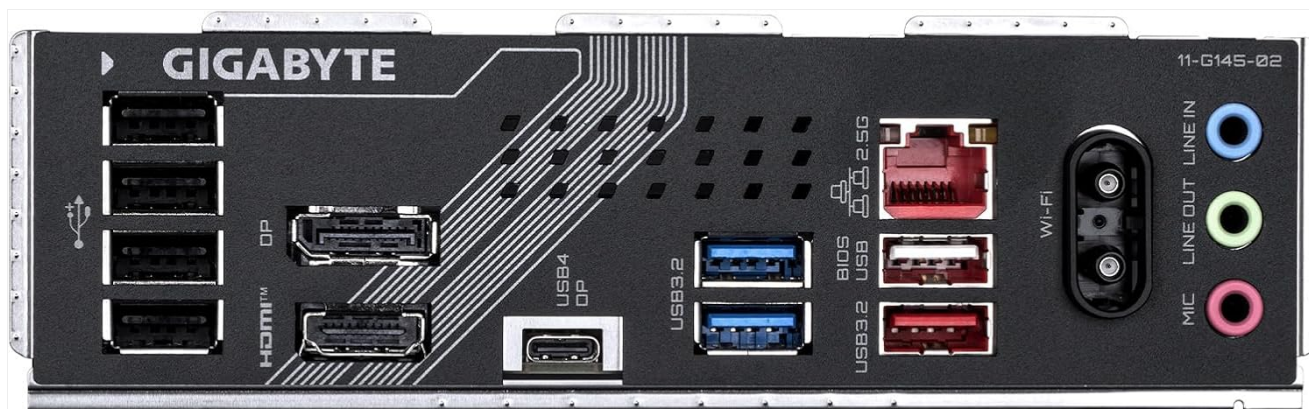The rear I/O panel provides various ports for connecting external devices.

Figure 4.3: Rear I/O panel featuring USB ports, HDMI, DisplayPort, 2.5GbE LAN, Wi-Fi antenna connectors, and audio jacks.

- **USB Ports:** Various USB 2.0, USB 3.2 Gen1, USB 3.2 Gen2, and USB4 Type-C ports for peripheral connectivity.

- **Video Outputs:** HDMI and DisplayPort for integrated graphics output.

- **LAN Port:** 2.5 Gigabit Ethernet for high-speed wired network connections.

- **Wi-Fi Antenna Connectors:** For attaching the included Wi-Fi antenna.

- **Audio Jacks:** For connecting speakers, headphones, and microphones.

- **BIOS Flash Button:** For updating BIOS without a CPU or RAM installed.

5. INSTALLATION GUIDE

5.1 CPU Installation

1. Open the CPU socket lever and remove the protective cover.

2. Carefully align the CPU with the socket, ensuring the triangular mark on the CPU matches the mark on the socket.

3. Gently place the CPU into the socket without forcing it.

4. Close the socket lever to secure the CPU.

5.2 Memory (RAM) Installation

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

2. Align the notch on the DDR5 memory module with the key on the DIMM slot.

3. Insert the memory module firmly into the slot until the clips snap into place.

4. For dual-channel operation, install modules in matching color slots (e.g., A2 and B2).

5.3 Storage (M.2 SSDs, SATA Drives) Installation

- **M.2 SSD:** Remove the M.2 Thermal Guard. Insert the M.2 SSD into the slot at an angle, then push it down and secure it with the EZ-Latch mechanism or screw. Reattach the Thermal Guard.

- **SATA Drives:** Connect one end of the SATA data cable to a SATA port on the motherboard and the other end to your SATA storage device. Connect a SATA power cable from your power supply to the device.

5.4 Expansion Card (PCIe) Installation

1. Align your PCIe expansion card (e.g., graphics card) with the desired PCIe slot.

2. Press down firmly until the card is seated correctly and the retention clip locks.

3. Secure the card to the chassis with a screw.

5.5 Power Supply Connections

- 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.

5.6 Front Panel Connections

Connect the cables from your PC case's front panel (power button, reset button, USB ports, audio jacks, LED indicators) to the corresponding headers on the motherboard. Refer to the motherboard diagram for exact header locations.

6. FIRST BOOT AND BIOS SETUP

6.1 Initial Power-On

After assembling all components, connect your monitor, keyboard, and mouse. Power on your system. The system should display the GIGABYTE splash screen.

6.2 Accessing BIOS/UEFI

During the boot process, repeatedly press the **DEL** key to enter the BIOS/UEFI setup utility. Here you can configure system settings, boot order, and monitor hardware status.

6.3 Basic BIOS Settings

- **Boot Order:** Set the primary boot device (e.g., M.2 SSD with OS).
- **Date and Time:** Adjust system date and time.
- **Fan Control:** Configure fan speeds for optimal cooling and noise levels.
- **XMP Profile:** Enable XMP for your DDR5 memory to run at its rated speed.

7. DRIVER AND SOFTWARE INSTALLATION

For optimal system performance and stability, install the latest drivers and utilities for your motherboard.

- **Chipset Drivers:** Essential for proper communication between the CPU and other components.
- **LAN Drivers:** For the 2.5GbE wired network connection.
- **Wi-Fi/Bluetooth Drivers:** For wireless connectivity.
- **Audio Drivers:** For sound functionality.
- **Utility Software:** GIGABYTE provides various utilities for system monitoring, RGB control, and BIOS updates.

Drivers can be found on the included CD/USB or downloaded from the official GIGABYTE website.

8. MAINTENANCE

8.1 BIOS Updates

Regularly check the GIGABYTE website for the latest BIOS versions. BIOS updates can improve system stability, compatibility, and performance. Follow the instructions provided by GIGABYTE for safe BIOS flashing.

8.2 Driver Updates

Keep your drivers updated to ensure compatibility with new software and hardware, and to benefit from performance

improvements and bug fixes.

8.3 Cleaning

Periodically clean your PC to prevent dust buildup, which can lead to overheating. Use compressed air to clear dust from heatsinks, fans, and other components. Ensure the system is powered off and unplugged before cleaning.

9. TROUBLESHOOTING

- **No Power:** Check all power connections (24-pin ATX, 8-pin CPU, GPU power). Ensure the power supply is switched on.

- **No Display:** Verify monitor connection and input source. Reseat the graphics card and RAM modules. Try booting with only one RAM stick.

- **System Fails to Boot:** Check for POST (Power-On Self-Test) error codes or beeps. Reseat all components. Clear CMOS by removing the battery or using the clear CMOS jumper.

- **Component Not Detected:** Ensure the component is properly seated and connected. Check BIOS settings to confirm it is enabled. Update drivers.

- **Overheating:** Ensure CPU cooler is properly installed. Check fan connections and fan speeds in BIOS. Clean dust from heatsinks and fans.

10. SPECIFICATIONS

Feature	Specification
Brand	GIGABYTE
Series	B860 GAMING X WIFI6E
Item Model Number	B860 GAMING X WIFI6E
CPU Socket	Intel LGA 1851
Compatible Processors	Intel Ultra Core Series 2
RAM Memory Technology	DDR5
RAM Slots	4 DIMMs
Memory Speed	5600 MHz
Chipset Type	Intel B860
PCIe Slots	PCIe 5.0 (for graphics card)
M.2 Slots	3x M.2 Slots
USB Connectivity	USB-C and other USB ports
LAN	2.5GbE LAN
Wireless Connectivity	WIFI6E
Power Design	12+1+2+1, 50A PPAK VRM
Thermals	MOSFET Heatsink, M.2 Thermal Guard

Form Factor	ATX
Product Dimensions	12 x 9.6 x 1 inches
Item Weight	4.2 pounds
Platform	Windows 11

11. WARRANTY INFORMATION

GIGABYTE motherboards typically come with a limited manufacturer's warranty. The specific terms and duration of the warranty may vary by region and retailer. Please retain your proof of purchase for warranty claims. For detailed warranty information, refer to the official GIGABYTE website or contact your point of purchase.

12. TECHNICAL SUPPORT

If you encounter issues that cannot be resolved using this manual or the troubleshooting section, please contact GIGABYTE technical support.

- **GIGABYTE Official Website:** www.gigabyte.com
- Refer to the support section on the website for FAQs, driver downloads, and contact information for your region.