

ASRock B860 LIGHTNING WIFI

ASRock Phantom Gaming B860 Lightning WiFi Motherboard User Manual

Model: B860 LIGHTNING WIFI

1. INTRODUCTION

This manual provides detailed instructions for the installation, configuration, and operation of your ASRock Phantom Gaming B860 Lightning WiFi motherboard. This ATX motherboard is designed for Intel Core Ultra Series 2 processors (LGA 1851 socket) and supports DDR5 memory. It features an advanced power design, multiple M.2 slots, Thunderbolt 4 Type-C connectivity, and Realtek 2.5G LAN with WiFi 6E.

2. KEY FEATURES

- **Power Design:** 14+1+1+1+1 Phase Power Design with 80A Dr.MOS for VCore+GT+SA.
- **Memory Support:** 4 x DDR5 DIMM slots supporting Dual Channel memory up to 8933+ MHz (OC).
- **Graphics Output:** 1 HDMI, 1 DisplayPort, 1 Thunderbolt 4 Type-C.
- **Storage:** Blazing M.2 (PCIe Gen5x4), 2 Hyper M.2 (PCIe Gen4x4), and 1 M.2 (PCIe Gen4x2) with Toolless Multi-Layer M.2 Heatsink.
- **Connectivity:** Thunderbolt 4 Type-C (rear), USB 3.2 Gen2x2 Type-C (front), Realtek 2.5G LAN, WiFi 6E (802.11axe) + Bluetooth.
- **Audio:** Realtek ALC1220 7.1 CH HD Audio Codec with Nahimic Audio.
- **Durability:** Military-grade components and 20K Cap with 1000uF Capacitance.

3. PRODUCT OVERVIEW



Figure 3.1: Top-down view of the ASRock Phantom Gaming B860 Lightning WiFi motherboard, highlighting the CPU socket, RAM slots, and M.2 heatsinks.



Figure 3.2: Front angled view of the motherboard, showcasing the VRM heatsinks and RGB lighting elements.

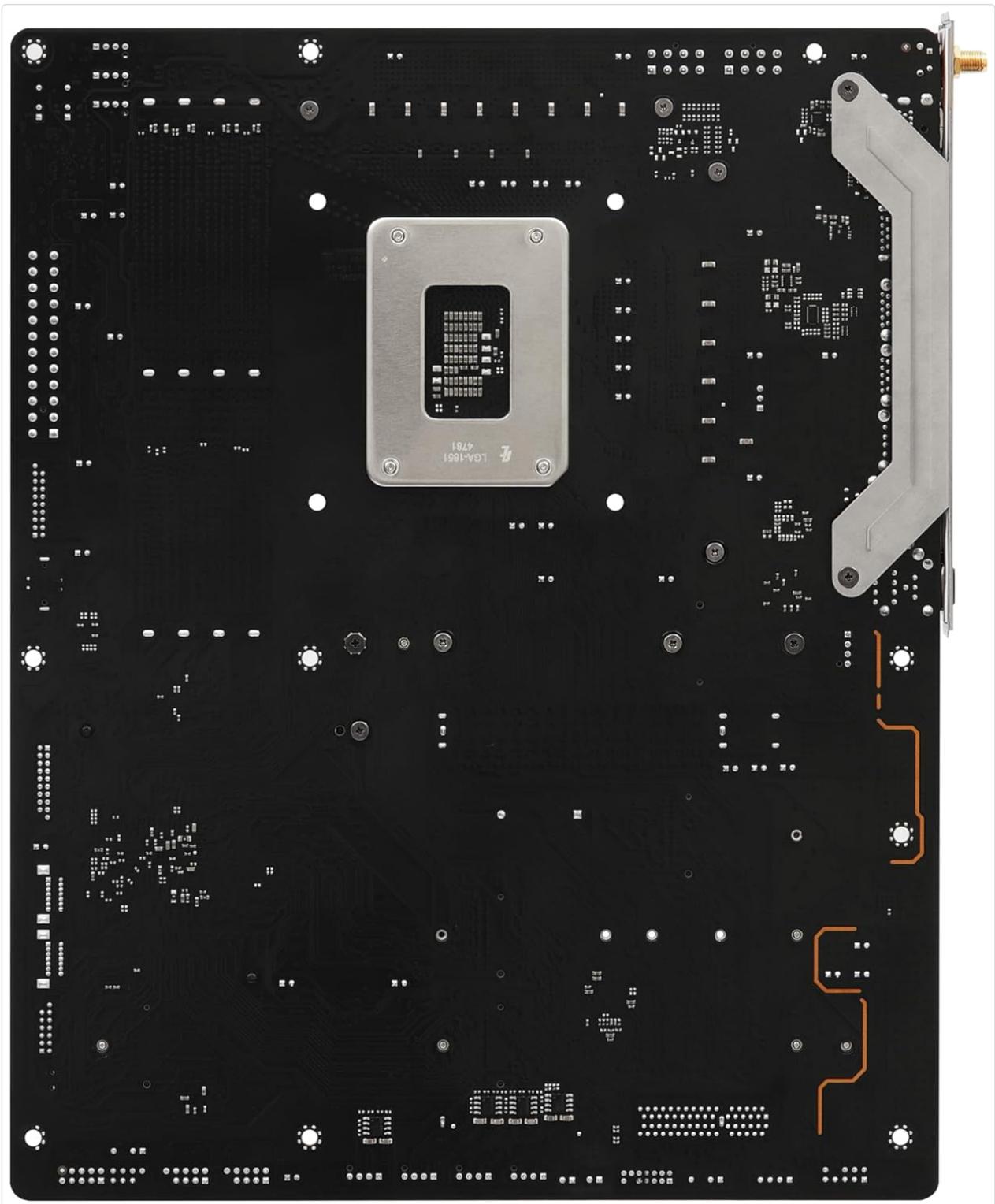


Figure 3.3: Rear I/O panel of the motherboard, featuring USB ports, HDMI, DisplayPort, Thunderbolt 4 Type-C, 2.5G LAN, and audio jacks.



Figure 3.4: The motherboard packaging and included accessories, such as Wi-Fi antennas and SATA cables.

4. SETUP AND INSTALLATION

4.1 Component Installation

1. **CPU Installation:** Carefully align your Intel Core Ultra Series 2 processor with the LGA 1851 socket. Ensure the CPU is seated correctly before closing the retention mechanism.
2. **RAM Installation:** Insert DDR5 memory modules into the DIMM slots. For dual-channel performance, refer to the motherboard's manual for recommended slot configurations.
3. **M.2 SSD Installation:** Install M.2 solid-state drives into the Blazing M.2 (PCIe Gen5x4) or Hyper M.2 (PCIe Gen4x4) slots. Utilize the Toolless Multi-Layer M.2 Heatsink for optimal thermal performance.
4. **Graphics Card Installation:** Insert your PCIe 5.0 x16 or PCIe 4.0 x16 graphics card into the appropriate slot.
5. **Power Connections:** Connect the 24-pin ATX power connector and the 8-pin/4-pin CPU power connectors from your power supply to the motherboard.

4.2 BIOS Update

Keeping your BIOS updated ensures optimal compatibility, security, and access to the latest features. ASRock

provides two primary methods for updating the BIOS: USB BIOS Flashback and Instant Flash.

4.2.1 USB BIOS Flashback Method

This method allows you to update the BIOS without a CPU, RAM, or graphics card installed. You will need a USB drive formatted to FAT32 with at least 32GB of space.

1. Prepare a USB drive (FAT32, at least 32GB).
2. Download the latest BIOS file from the official ASRock website for your specific motherboard model.
3. Extract the downloaded zip file and rename the BIOS ROM file to "CREATIVE.ROM".
4. Copy "CREATIVE.ROM" to the root directory of your FAT32 formatted USB drive.
5. Ensure the system is powered off. Connect the power supply to the motherboard but do not power on the system.
6. Insert the USB drive into the designated USB BIOS Flashback port on the rear I/O panel (refer to your motherboard manual for exact location).
7. Press and hold the USB BIOS Flashback button on the rear I/O for approximately 3 seconds until the LED light starts to blink.
8. Wait until the LED stops blinking, indicating the BIOS update is complete. This may take a few minutes.
9. Power on the system and enter the BIOS setup menu (usually by pressing F2 or Delete during POST) to verify the updated BIOS version.

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Video 4.1: ASRock Motherboard BIOS Update Tutorial. This video demonstrates the USB BIOS Flashback and Instant Flash methods for updating your motherboard's firmware.

4.2.2 Instant Flash Method

This method requires the system to be operational and allows you to update the BIOS from within the UEFI BIOS utility.

1. Prepare a USB drive (FAT32, at least 32GB).
2. Download the latest BIOS file from the official ASRock website for your specific motherboard model.
3. Extract the downloaded zip file and copy the BIOS ROM file (e.g., B860LightningWiFi.ROM) to the root directory of your FAT32 formatted USB drive.
4. Insert the USB drive into any available USB port on the motherboard.
5. Power on the system and press F2 or Delete during POST to enter the BIOS setup menu.
6. Navigate to the 'Tool' menu and select 'Instant Flash'.
7. Confirm any notices (e.g., BitLocker suspension) and proceed.
8. Instant Flash will automatically detect suitable BIOS versions on your USB drive. Select the correct BIOS file and confirm the update.
9. Do not power off the system during the UEFI update. Once complete, the system will prompt you to reboot.
10. After rebooting, enter the BIOS setup menu again. Go to the 'Exit' menu, select 'Load UEFI Defaults', and press 'Yes' to continue. Then, 'Save Changes and Exit' to apply default settings and reboot.

5. OPERATING THE MOTHERBOARD

5.1 UEFI BIOS Settings

The UEFI (Unified Extensible Firmware Interface) BIOS allows you to configure various system settings, including boot order, CPU and memory parameters, fan speeds, and security options. To access the UEFI BIOS, press the **F2** or **Delete** key during the Power-On Self-Test (POST) phase when your computer starts.

5.2 Driver Installation

After installing your operating system, it is crucial to install the latest drivers for your motherboard's components. These include chipset drivers, LAN drivers, Wi-Fi/Bluetooth drivers, audio drivers, and any other peripheral drivers. You can find the latest drivers on the ASRock official website for your specific motherboard model.

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Video 5.1: Overview of Intel B860 Series Motherboards. This video provides a general overview of the features and capabilities across the ASRock B860 motherboard series.

6. MAINTENANCE

- **Keep Drivers Updated:** Regularly check the ASRock website for the latest drivers and BIOS updates to ensure system stability and performance.
- **Dust Removal:** Periodically clean dust from your computer case and motherboard components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **Cable Management:** Proper cable management improves airflow and prevents overheating.
- **BIOS Battery:** The CMOS battery (CR2032) typically lasts for several years. If you experience issues with time/date settings or BIOS configurations resetting, consider replacing it.

7. TROUBLESHOOTING

- **System Not Booting:** Check all power connections, ensure CPU and RAM are correctly seated, and verify that the graphics card is properly installed.
- **No Display:** Confirm that your monitor is connected to the correct display output on your graphics card or motherboard. Try reseating the graphics card and RAM.
- **BIOS Update Failure:** If a BIOS update fails, ensure the USB drive is correctly formatted (FAT32) and the BIOS file is renamed correctly (CREATIVE.ROM for USB BIOS Flashback). Do not interrupt the update process.
- **Overheating:** Ensure all fans are functioning correctly, thermal paste is properly applied to the CPU, and case airflow is adequate. Check M.2 heatsinks are properly installed.
- **Peripheral Issues:** If a USB device or other peripheral is not recognized, try different ports, update drivers, or check BIOS settings for USB configuration.

8. SPECIFICATIONS

Feature	Specification
Brand	ASRock
Model Name	B860 LIGHTNING WIFI
CPU Socket	LGA 1851
Compatible Processors	Intel Core Ultra

Feature	Specification
RAM Memory Technology	DDR5
Memory Clock Speed	8933 MHz
Memory Storage Capacity	256 GB (Max)
Chipset Type	Intel B860
Platform	Windows 11
Product Dimensions	7.87 x 5.91 x 3.94 inches
Item Weight	1.1 pounds
Manufacturer	ASRock

9. WARRANTY AND SUPPORT

For warranty information, technical support, and additional resources, please visit the official ASRock website or contact ASRock customer service. You can also visit the [ASRock Store on Amazon](#) for product details and support links.