

ASRock B850M-X WiFi R2.0

ASRock B850M-X WiFi R2.0 AM5 Micro-ATX Motherboard User Manual

Model: B850M-X WiFi R2.0

INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your ASRock B850M-X WiFi R2.0 AM5 Micro-ATX Motherboard. Please read this manual thoroughly before proceeding with installation to ensure proper setup and functionality. This motherboard supports AMD Ryzen 9000, 8000, and 7000 series CPUs, DDR5 memory, PCIe 5.0, Wi-Fi 6E, and 2.5G LAN.

SETUP INSTRUCTIONS

Follow these steps for the initial setup of your ASRock B850M-X WiFi R2.0 motherboard.

1. CPU Installation

Carefully align your AMD Ryzen processor with the Socket AM5 on the motherboard. Ensure the triangular mark on the CPU matches the mark on the socket. Gently lower the CPU into the socket without forcing it, then secure it with the retention lever.



Image: The ASRock B850M-X WiFi R2.0 Micro-ATX motherboard alongside its retail packaging and two Wi-Fi antennas. This image provides a general overview of the product and its included accessories.

2. RAM Installation

This motherboard features two DDR5 DIMM slots, supporting dual-channel memory configurations up to 8200+ (OC). Open the clips on both ends of the DIMM slot, align the memory module with the slot key, and press down firmly until the clips snap into place.

3. Storage Device Installation

- **M.2 SSDs:** The motherboard includes one Blazing M.2 slot (PCIe Gen5x4) and one Hyper M.2 slot (PCIe Gen4x4). Install your M.2 SSDs into the appropriate slots and secure them with the provided screws or retention mechanisms.
- **SATA Drives:** Four SATA3 6Gb/s ports are available for traditional hard drives or SSDs. Connect your SATA devices using SATA data cables and ensure power is supplied from your power supply unit.

4. Expansion Card Installation

The motherboard provides one PCIe 5.0 x16 slot, one PCIe 4.0 x16 slot, and one PCIe 4.0 x1 slot. Install your graphics card or other expansion cards into the corresponding PCIe slots and secure them to your chassis.

5. Power Connections

Connect the 24-pin ATX power connector and the 8-pin 12V power connector from your power supply unit to the respective ports on the motherboard. Ensure all connections are secure.

6. Front Panel and Rear I/O Connections

Connect your chassis's front panel connectors (power button, reset button, USB ports, audio jacks) to the corresponding headers on the motherboard. Utilize the rear I/O panel for external peripherals such as monitors

(HDMI, DisplayPort), USB devices, and network cables.

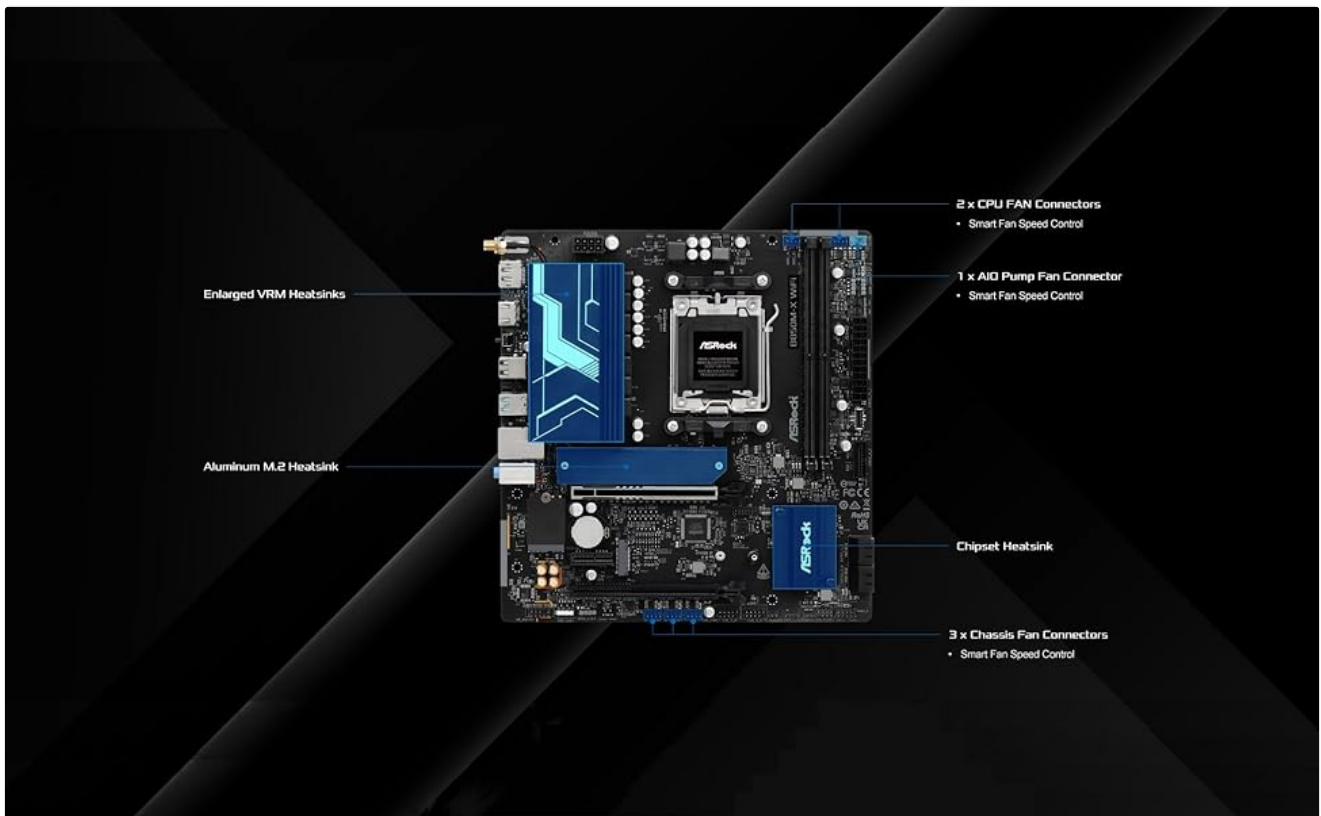


Image: A diagram illustrating the rear I/O ports of the ASRock B850M-X WiFi R2.0 motherboard, including 802.11ax Wi-Fi 6E antenna connectors, HDMI and DisplayPort outputs, a BIOS Flashback button, 2.5Gbps LAN port, and various USB ports.

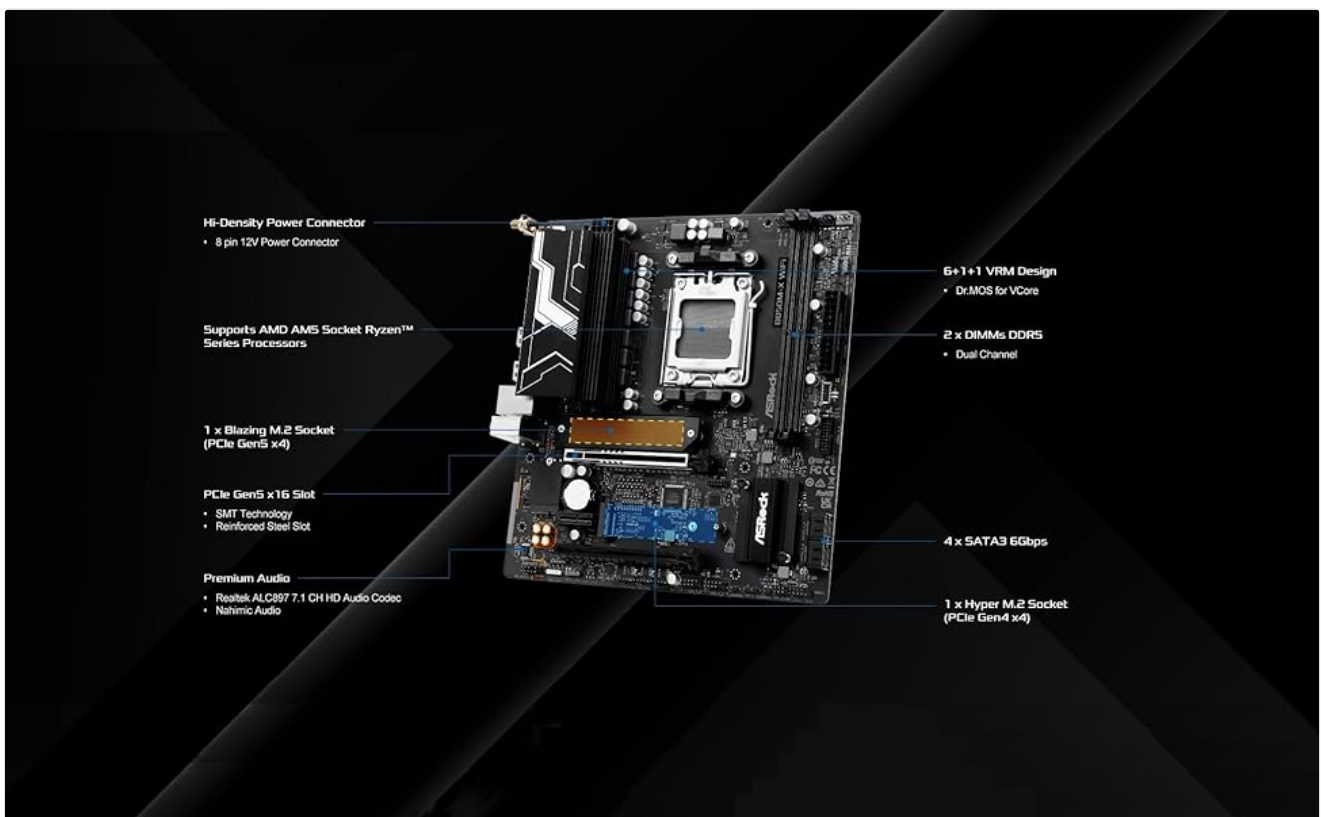


Image: A diagram highlighting key internal components of the ASRock B850M-X WiFi R2.0 motherboard, such as enlarged VRM heatsinks, aluminum M.2 heatsink, chipset heatsink, CPU fan connectors, AIO pump fan connector, and chassis fan connectors.

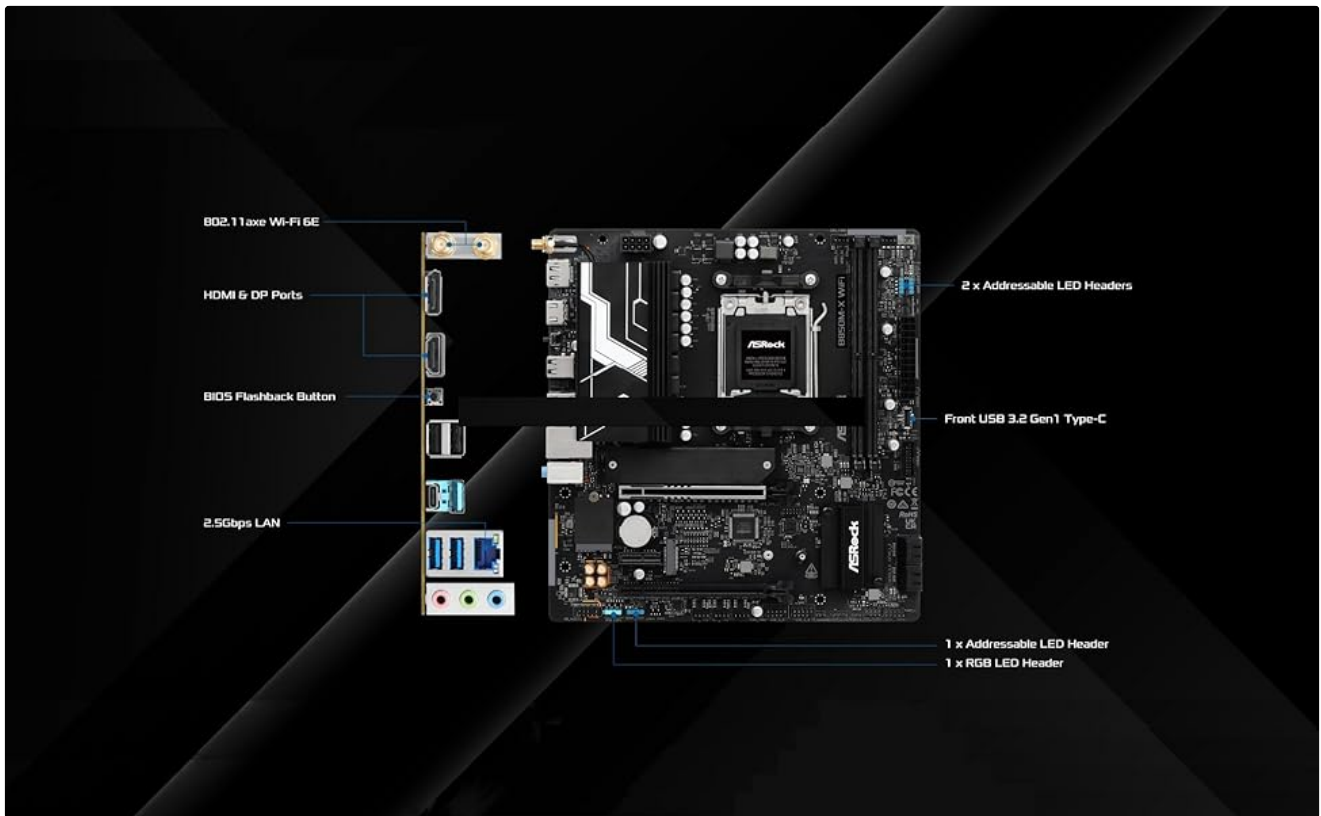


Image: A diagram detailing power and storage connections on the ASRock B850M-X WiFi R2.0 motherboard, including the Hi-Density Power Connector, 8-pin 12V Power Connector, Blazing M.2 Socket (PCIe Gen5x4), Hyper M.2 Socket (PCIe Gen4x4), and SATA3 6Gbps ports.

OPERATING INSTRUCTIONS

1. BIOS Setup

Upon first boot, or if you encounter issues, you may need to enter the BIOS/UEFI setup. Press the designated key (usually Del or F2) during startup to access the BIOS. Here you can configure boot order, system settings, and enable features like XMP for memory overclocking.

2. Driver Installation

After installing your operating system, install the necessary drivers for the motherboard chipset, audio, LAN, and Wi-Fi. These drivers are typically provided on a support CD or can be downloaded from the ASRock website.

3. Network Connectivity

- **Wi-Fi 6E:** Connect the included Wi-Fi antennas to the rear I/O panel. The integrated 802.11ax Wi-Fi 6E module provides high-speed wireless connectivity.
- **2.5G LAN:** For wired network connections, use the Realtek 2.5G LAN port for enhanced bandwidth and lower latency compared to standard Gigabit Ethernet.



Image: An illustration explaining Wi-Fi 6E 802.11ax technology, showing its operation across 6GHz, 5GHz, and 2.4GHz bands for faster and more efficient wireless communication.



Image: A graphic comparing the speed of Dragon 2.5 Gb/s LAN to standard 1 Gb/s LAN, indicating a 2.5X faster bandwidth for improved networking performance.

4. Audio Configuration

The motherboard features Realtek ALC897 7.1 CH HD Audio Codec with Nahimic Audio support. Install the audio drivers and software to configure your audio output and utilize Nahimic Audio enhancements.

5. RGB Lighting

The motherboard includes Polychrome RGB headers and addressable RGB headers. Connect compatible LED devices such as strips, CPU coolers, and chassis fans to these headers. Use the ASRock Polychrome Sync software to customize lighting effects.



Image: A collage showcasing various PC components illuminated with customizable RGB lighting, demonstrating the ASRock Polychrome Sync feature for synchronized lighting effects.

MAINTENANCE

1. BIOS Updates

Regularly check the ASRock website for the latest BIOS updates. The motherboard supports BIOS Flashback, allowing you to update the BIOS without a CPU, RAM, or graphics card installed. Refer to the ASRock website for detailed instructions on using BIOS Flashback.

2. Cleaning

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

3. CMOS Battery Replacement

The motherboard uses a CR2032 battery to retain BIOS settings. If your system consistently loses time or BIOS settings, the battery may need replacement. Power off the system, remove the old battery, and insert a new CR2032 battery with the positive side facing up.

TROUBLESHOOTING

- **No Display:** Ensure your monitor is connected to the correct graphics output (either integrated graphics or a dedicated graphics card). Verify that all power cables are securely connected and that RAM modules are properly seated.
- **System Fails to Boot:** Check all power connections, including the 24-pin ATX and 8-pin 12V CPU power connectors. Reseat RAM modules and expansion cards. If issues persist, try clearing the CMOS.
- **Clearing CMOS:** To reset BIOS settings to default, locate the CMOS clear jumper or button on the motherboard. With the system powered off and unplugged, short the jumper pins for a few seconds or press the button.
- **BIOS Flashback Issues:** Ensure the USB drive is formatted correctly (FAT32) and contains the correct BIOS file renamed as per ASRock's instructions.
- **Contact Support:** If you encounter persistent issues that cannot be resolved, refer to the ASRock support website or contact ASRock customer service for assistance.

SPECIFICATIONS

Feature	Specification
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 7000, 8000, 9000 Series
Chipset	AMD B850
Memory	2 x DDR5 DIMMs, Dual Channel, up to 8200+ (OC)
Expansion Slots	1 x PCIe 5.0 x16, 1 x PCIe 4.0 x16, 1 x PCIe 4.0 x1
Storage	1 x Blazing M.2 (PCIe Gen5x4), 1 x Hyper M.2 (PCIe Gen4x4), 4 x SATA3 6Gb/s
Graphics Output	1 x HDMI, 1 x DisplayPort
Audio	Realtek ALC897 7.1 CH HD Audio Codec, Nahimic Audio
LAN	Realtek 2.5G LAN
Wireless	802.11ax Wi-Fi 6E + Bluetooth
USB Ports	2 x USB 3.2 Gen1 Type-C (1 Rear, 1 Front), 5 x USB 3.2 Gen1 (3 Rear, 2 Front), 6 x USB 2.0 (2 Rear, 4 Front)
Form Factor	Micro-ATX
Dimensions	9.45 x 9.45 x 1.57 inches
Item Weight	2.2 pounds
Batteries	1 x CR2032 required
Platform Support	Windows 10, Windows 11

WARRANTY AND SUPPORT

ASRock provides a limited warranty for its products. For detailed warranty terms and conditions, please visit the official ASRock website. For technical support, driver downloads, and BIOS updates, please refer to the ASRock support page. If you have any questions about the product, you may also contact the seller on Amazon.

ASRock Official Website: www.asrock.com