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> ASRock AMD B850M Pro A WiFi 6E Motherboard User Manual

## ASRock B850M PRO-A WIFI

# ASRock AMD B850M Pro A WiFi 6E Motherboard User Manual

Brand: ASRock | Model: B850M PRO-A WIFI (90-MXBR90-A0UAYAZ)

## INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your ASRock AMD B850M Pro A WiFi 6E Motherboard. Designed for AMD Socket AM5 Ryzen 9000/8000/7000 Series Processors, this micro ATX motherboard offers advanced features for optimal performance and reliability.

## TECHNICAL SPECIFICATIONS

Feature	Detail
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 9000, 8000, and 7000 Series Processors
Chipset Type	AMD B850
RAM Memory Technology	DDR5 (4 x DIMMs, Dual Channel, up to 8000+ (OC) MHz)
Max Memory Capacity	256 GB
PCIe Slots	1 x PCIe 5.0 x16, 1 x PCIe 4.0 x4
Graphics Output	1 x HDMI, 1 x DisplayPort
Storage	1 x Blazing M.2 (PCIe Gen5x4), 2 x Hyper M.2 (PCIe Gen4x4), 4 x SATA3

USB Ports	1 x USB 3.2 Gen2 Type-C (Rear), 1 x USB 3.2 Gen2 Type-A (Rear), 1 x USB 3.2 Gen1 Type-C (Front), 6 x USB 3.2 Gen1 (2 Rear, 4 Front), 8 x USB 2.0 (4 Rear, 4 Front)
LAN	Realtek 2.5G LAN
Wireless Connectivity	802.11ax WiFi 6E + Bluetooth
Audio	Realtek ALC897 7.1 CH HD Audio Codec
Special Features	BIOS Flashback, 8+2+1 Phase Power Design, Dr.MOS for VCore+SOC+MISC

*Note: Not compatible with all built-in computers or systems. If any questions about the product, contact ASRock support.*

## SETUP AND INSTALLATION

Proper installation is crucial for the optimal performance and longevity of your motherboard. Please refer to the detailed [Installation Manual \(PDF\)](#) for step-by-step instructions on:

- Preparing your PC case and components.
- Installing the CPU onto the Socket AM5.
- Mounting the CPU cooler.
- Installing DDR5 memory modules.
- Connecting storage devices (M.2 SSDs, SATA drives).
- Installing graphics cards and other PCIe expansion cards.
- Connecting power supply cables.
- Connecting front panel headers and other internal cables.
- Connecting external peripherals to the rear I/O panel.



Figure 1: Top-down view of the ASRock B850M Pro A WiFi 6E motherboard, highlighting key component locations.



Figure 2: Detailed diagram of the motherboard's power delivery system, M.2 storage slots, and PCIe 5.0 x16 slot.

## OPERATING INSTRUCTIONS

Once the motherboard is correctly installed and all components are connected, you can proceed with operating your system. This includes:

- **First Boot:** Upon the first power-on, the system will perform initial hardware detection.
- **BIOS/UEFI Configuration:** Access the BIOS/UEFI setup utility by pressing the **Delete** or **F2** key during the Power-On Self-Test (POST). Here you can configure boot order, system time, fan speeds, and other advanced settings.
- **Operating System Installation:** Install your preferred operating system (e.g., Windows 11) from a bootable USB drive or optical media.
- **Driver Installation:** Install the necessary drivers for the chipset, LAN, audio, and other integrated components from the ASRock support website or the provided driver CD (if applicable) to ensure full functionality.
- **Network Connectivity:** Utilize the Realtek 2.5G LAN for wired internet or the 802.11ax WiFi 6E for wireless

connectivity.



Figure 3: Side view of the motherboard, illustrating the heatsink design and component placement.

## MAINTENANCE

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Regular maintenance helps ensure the stability and longevity of your motherboard and overall system:

- **Dust Removal:** Periodically clean dust from the motherboard and internal components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS Updates:** Keep your BIOS updated to the latest version to benefit from performance improvements, bug fixes, and support for new hardware. Refer to the "Troubleshooting" section for BIOS update instructions.
- **Driver Updates:** Regularly check the ASRock website for updated drivers for your motherboard's components.
- **Cable Management:** Ensure internal cables are neatly managed to improve airflow and prevent interference.
- **Temperature Monitoring:** Utilize system monitoring software to keep track of CPU and motherboard temperatures to prevent overheating.

## TROUBLESHOOTING

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This section provides general guidance for common issues. For detailed troubleshooting, consult the [User Manual \(PDF\)](#) or ASRock's official support resources.

- **No Power/No POST:**
  - Verify all power connections (24-pin ATX, 8-pin CPU, PCIe power for GPU).
  - Reseat RAM modules. Try one module at a time.
  - Check CPU installation and cooler connection.
  - Ensure the power supply is functioning correctly.
- **Display Issues:**
  - Ensure monitor cables are securely connected to the graphics card or motherboard (if using integrated graphics).
  - Test with a different monitor or cable.
  - Reseat the graphics card.
- **BIOS Update Issues:**
  - Ensure the USB drive is formatted to FAT32 and the BIOS file is correctly named and placed.
  - Use the designated BIOS Flashback USB port if utilizing that feature.

## BIOS Update Tutorial

For detailed instructions on updating your motherboard's BIOS, please watch the official tutorial video below. This video covers both USB BIOS Flashback and Instant Flash methods.

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Video 1: Official ASRock Motherboard BIOS Update Tutorial. This video demonstrates two methods for updating your motherboard's BIOS: USB BIOS Flashback and Instant Flash, ensuring your system has the latest firmware for optimal compatibility, security, and features.

## PRODUCT VISUALS

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## Product Images



Figure 4: The ASRock B850M Pro A WiFi 6E motherboard displayed with its retail box, showcasing the product and its packaging.



Figure 5: Close-up view of the motherboard's rear input/output (I/O) panel, detailing the available connectivity options.



Figure 6: Labeled diagram of the rear I/O panel, indicating the function of each port and button for easy identification.



Figure 7: Diagram showcasing the motherboard's cooling features, including heatsinks for VRM and M.2, and various fan headers.



Figure 8: Contents of the motherboard package, showing the motherboard, WiFi antennas, SATA cables, and included documentation.

## Official Product Videos

Explore more about the ASRock B850 Series Motherboards through this official video:

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Video 2: ASRock AMD B850 Series Motherboards Overview. This video provides a general overview of the ASRock B850 series motherboards, highlighting their key features and design elements.

## OFFICIAL DOCUMENTATION

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For more in-depth information and detailed instructions, please refer to the official PDF documents:

- [Installation Manual \(PDF\)](#): Contains detailed steps for hardware installation.
- [User Manual \(PDF\)](#): Provides comprehensive information on BIOS settings, software utilities, and advanced features.

## WARRANTY AND SUPPORT

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For warranty information, technical support, or service inquiries, please visit the official ASRock website or contact their customer support. Keep your purchase receipt for warranty claims.

You can visit the [ASRock Store on Amazon](#) for more product details and support options.