

ASUS PRIME B840M-A

ASUS PRIME B840M-A WIFI Motherboard User Manual

Model: PRIME B840M-A WIFI

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of your ASUS PRIME B840M-A WIFI motherboard. Designed for AMD Ryzen 9000, 8000, and 7000 series desktop processors, this mATX motherboard offers robust performance and connectivity for your computing needs.



Image 1.1: The ASUS PRIME B840M-A WIFI motherboard alongside its retail packaging, showcasing the product's design and branding.

2. KEY FEATURES

- **Robust Power Delivery:** Features a 14+2+2 power solution with 80A stages and 8+8 pin ProCool power connectors, utilizing high-quality alloy chokes and durable capacitors for stable power delivery to multi-core AMD Ryzen processors.
- **AI Computing Readiness:** Engineered to support future artificial intelligence computing demands with optimized power and connectivity features.
- **AMD AM5 Socket Compatibility:** Supports AMD Ryzen 9000, 8000, and 7000 series desktop processors.
- **User-Friendly Design Features:** Includes PCIe Slot Q-Release Slim, M.2 Q-Latch, M.2 Q-Release, M.2 Q-Slide, Q-Antenna for easy WiFi setup, Q-Dashboard, Q-LED indicators, a BIOS FlashBack button for convenient firmware updates, a Clear CMOS button, and a pre-assembled I/O shield for simplified installation.
- **Advanced Connectivity:** Equipped with WiFi 6E, 2.5Gbit LAN, USB 3.2 Gen 2 (20Gbps) Type-C, and multiple M.2 slots for high-speed data transfer and networking.
- **Included Software and Utilities:** Access to ASUS DriverHub, TurboV Core, ASUS GlideX, HWiNFO, and a user-friendly UEFI BIOS interface. Trial subscriptions for Norton 360 (60-day) and AIDA64 Extreme (60-day) are also provided.

Faster, Cooler & More

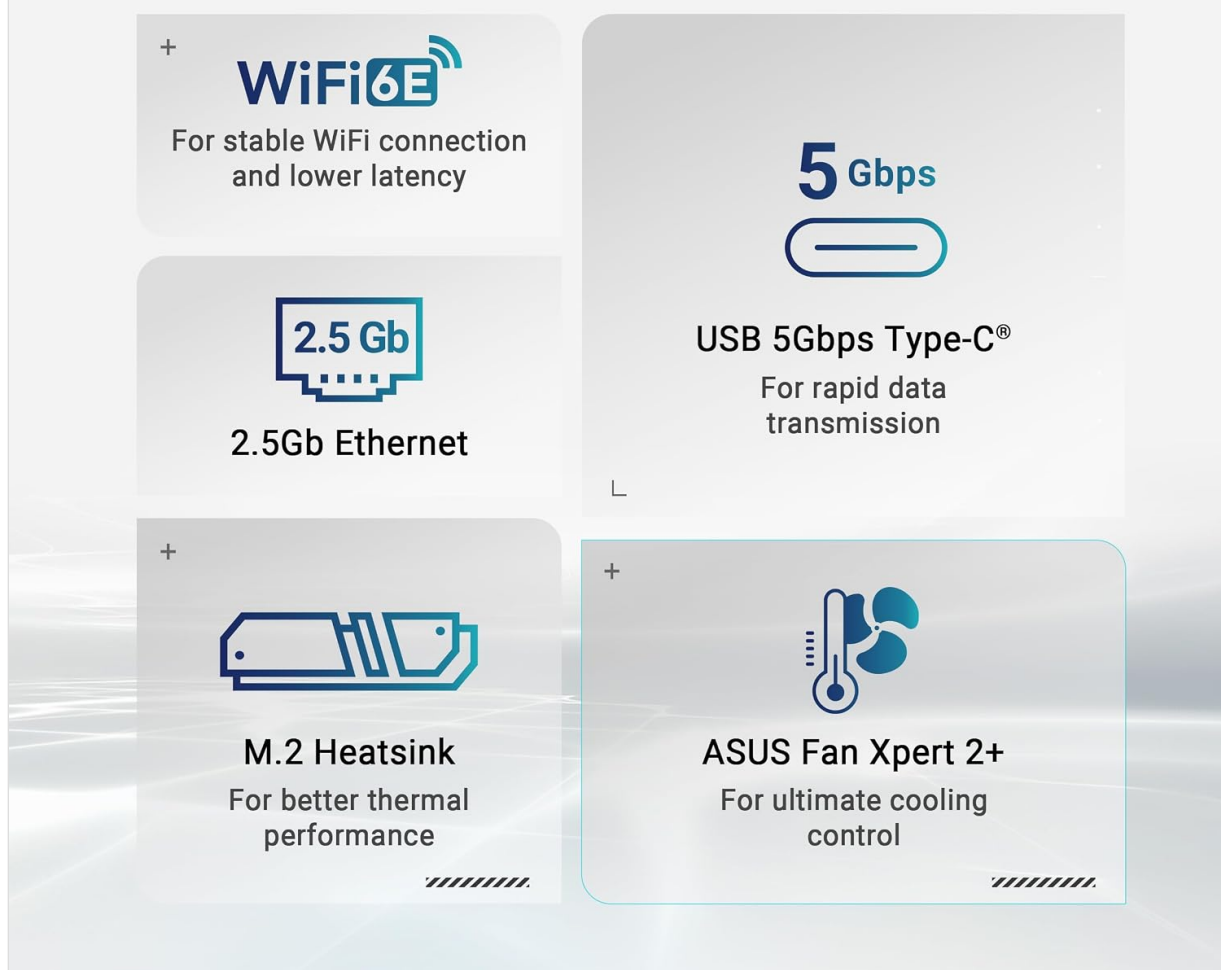


Image 2.1: Visual representation of key features including WiFi 6E, 2.5Gb Ethernet, M.2 Heatsink, ASUS Fan Xpert 2+, and USB 5Gbps Type-C connectivity.

3. SETUP AND INSTALLATION

Before beginning installation, ensure your system is powered off and unplugged. Always handle components with care and use anti-static precautions.

3.1. Package Contents

Verify that all components are present in your motherboard package:

- ASUS PRIME B840M-A WIFI Motherboard
- ASUS WiFi Q-Antenna
- SATA cables
- M.2 screw packages and rubber standoffs
- User Manual and Quick Start Guide

What's in the Box



Image 3.1: An illustration of the items typically found inside the ASUS PRIME B840M-A WIFI motherboard packaging.

3.2. Motherboard Installation

1. **Prepare the Chassis:** Install the motherboard standoffs in your PC case according to the mATX form factor.
2. **Install CPU:** Open the CPU socket lever, align the AMD Ryzen processor with the triangle marker on the socket, gently place it, and close the lever.
3. **Install CPU Cooler:** Mount your compatible CPU cooler following its specific instructions.
4. **Install Memory (RAM):** Open the DIMM slot clips, align the DDR5 memory modules with the notch, and press firmly until the clips lock into place.
5. **Install M.2 SSDs:** Insert M.2 SSDs into the M.2 slots. Utilize the M.2 Q-Latch or M.2 screw packages for secure installation. The motherboard features an M.2 heatsink for optimal thermal performance.
6. **Mount Motherboard:** Carefully place the motherboard into the chassis, aligning it with the standoffs and the pre-assembled I/O shield. Secure it with screws.
7. **Install Graphics Card:** Insert your PCIe graphics card into the primary PCIe x16 slot. The PCIe Slot Q-Release Slim feature assists in easy removal.
8. **Connect Power:** Connect the 24-pin ATX power connector and the 8+8 pin ProCool CPU power connectors from your power supply to the motherboard.

9. **Connect Peripherals:** Connect SATA drives, front panel connectors (USB, audio, power/reset buttons), and case fans.
10. **Install WiFi Q-Antenna:** Screw the provided Q-Antenna onto the designated connectors on the I/O panel for wireless connectivity.

EZ PC DIY innovations



Q-ANTENNA

For quick, hassle-free WiFi setup.



SAFESLOT CORE+

For providing a secure foundation for heavyweight graphics cards.



BIOS FLASHBACK™

For simply BIOS update, no CPU or memory needed.



PRE-MOUNTED I/O SHIELD

For protecting ports and enhancing both functionality and aesthetics.

Image 3.2: Overview of user-friendly DIY innovations such as the Q-Antenna, SafeSlot Core+, BIOS FlashBack button, and pre-mounted I/O shield.

4. OPERATING INSTRUCTIONS

4.1. First Boot-Up

After completing all hardware installations, connect your monitor, keyboard, and mouse. Power on your system. The motherboard's Q-LED indicators can provide diagnostic feedback during the boot process.

4.2. UEFI BIOS Access

To enter the UEFI BIOS utility, press the **Delete** or **F2** key during the Power-On Self-Test (POST) sequence. The UEFI BIOS provides a graphical interface for configuring system settings, boot order, and hardware parameters.

4.3. Driver Installation

After installing your operating system, install the necessary drivers for your motherboard components. You can use the included ASUS DriverHub utility or download the latest drivers from the official ASUS support website (www.asus.com/support/).

5. MAINTENANCE

5.1. BIOS Updates

Regularly updating your BIOS can improve system stability, compatibility, and performance. The ASUS PRIME B840M-A WIFI features a BIOS FlashBack button, allowing you to update the BIOS without a CPU or memory installed. Refer to the ASUS support website for detailed instructions on using BIOS FlashBack.

5.2. Driver and Software Updates

Keep your system drivers and ASUS utilities updated to ensure optimal performance and security. Use ASUS DriverHub or visit the ASUS support website for the latest versions.

5.3. Physical Cleaning

Periodically clean your computer's interior to prevent dust buildup, which can affect cooling and component lifespan. Use compressed air to remove dust from fans, heatsinks, and other components.

5.4. Thermal Management

Utilize ASUS Fan Xpert 2+ software to monitor and control your system's cooling fans, ensuring efficient thermal performance and quiet operation.

6. TROUBLESHOOTING

This section addresses common issues you might encounter.

6.1. Q-LED Indicators

The motherboard features Q-LEDs (CPU, DRAM, VGA, BOOT) that light up to indicate the status of key components during the boot process. If a specific LED remains lit, it points to a potential issue with that component.

- **CPU LED:** Indicates a CPU issue. Ensure the CPU is correctly seated and the power connector is attached.
- **DRAM LED:** Indicates a memory issue. Reseat RAM modules or try one module at a time.
- **VGA LED:** Indicates a graphics card issue. Ensure the graphics card is properly seated and power cables are connected.
- **BOOT LED:** Indicates an issue with the boot device. Check SATA/M.2 connections and boot order in BIOS.

6.2. No Display Output

If your monitor shows no signal:

- Verify monitor cables are securely connected to the graphics card or motherboard (if using integrated graphics).
- Ensure the graphics card has sufficient power.

- Test with a different monitor or cable if possible.

6.3. System Instability or Random Restarts

- Check CPU and GPU temperatures using monitoring software (e.g., HWiNFO). Overheating can cause instability.
- Ensure all power connections are secure.
- Run memory diagnostic tools to check for RAM errors.

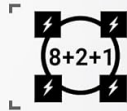
6.4. Clear CMOS

If your system fails to boot after making BIOS changes, use the Clear CMOS button on the I/O panel to reset BIOS settings to default. Refer to your motherboard's detailed manual for the exact location and procedure.

7. SPECIFICATIONS

Feature	Specification
Model Name	PRIME B840M-A
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 9000, AMD Ryzen 8000, AMD Ryzen 7000 Series
Chipset Type	AMD B840
RAM Memory Technology	DDR5
Memory Clock Speed	7600 MHz (Max)
Memory Storage Capacity (Max)	192 GB
Platform	Windows 11
Product Dimensions	9.61 x 9.61 x 1.97 inches
Item Weight	2.05 pounds
Item Model Number	90MB1J20-M0EAY0
Connectivity	WiFi 6E, 2.5Gbit LAN, USB 3.2 Gen 2 (20Gbps) Type-C
Video Output	2x DisplayPort, HDMI

Digital Power Design & Performance



8+2+1 Phase Digital Power Design

AMD EXPO™ & AEMP

For enhanced DDR5 performance

ONBOARD PCIe 4.0 M.2 SLOT

For faster data-transfer speed of up to 64 Gbps

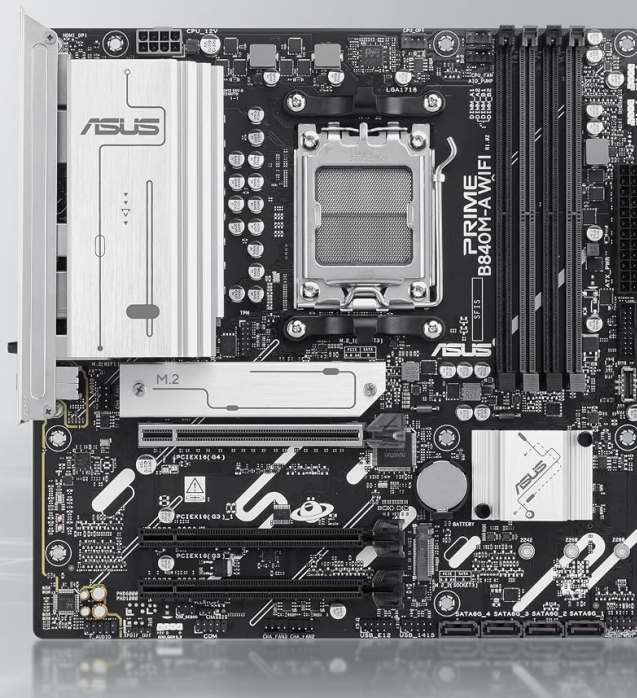


Image 7.1: Detailed view of the motherboard's digital power design, support for AMD EXPO & AEMP, and the high-speed PCIe 4.0 M.2 slot.

8. WARRANTY AND SUPPORT

ASUS products are manufactured to the highest quality standards. For detailed warranty information, including terms and conditions, please refer to the warranty card included with your product or visit the official ASUS support website.

For technical assistance, driver downloads, BIOS updates, and further product information, please visit the ASUS support portal:

[ASUS Official Support Website](https://www.asus.com/support)

When contacting support, please have your product model (PRIME B840M-A WIFI) and serial number ready.

