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ASUS 90MB1IY0-M0EAY0

ASUS TUF Gaming B850M-Plus WiFi Motherboard User Manual

Model: 90MB1IY0-M0EAY0

INTRODUCTION

The ASUS TUF Gaming B850M-Plus WiFi is a robust mATX motherboard designed for AMD Ryzen 9000, 8000, and 7000 series processors, featuring the Socket AM5 platform. It offers advanced connectivity, efficient cooling solutions, and user-friendly DIY features, making it suitable for high-performance gaming and computing builds.



Image: The ASUS TUF Gaming B850M-Plus WiFi motherboard alongside its retail packaging and included WiFi antenna.

KEY FEATURES

AI Intelligence

This motherboard is designed to support future AI processing, providing the necessary power and connectivity for demanding AI applications. ASUS AI Advisor utilizes AI technology to help users understand motherboard functionalities.



Image: A close-up view of the motherboard with an overlay indicating 'AI Intelligence' and 'AI Advisor' capabilities.

Performance & Cooling

The motherboard features a 14 + 2 + 1-stage power supply (80A each) for stable power delivery. It includes enlarged VRM heatsinks for improved thermal performance by covering MOSFETs and chokes. Three M.2 slots are equipped with dedicated heatsinks to maintain optimal operating temperatures for M.2 SSDs.

Performance & Cooling



14(80A) + 2(80A) + 1(80A) power stages

ENLARGED VRM HEATSINKS

The extensive surface area of this heatsink covers the MOSFETs and chokes to improve thermal performance.

M.2 HEATSINKS

Three M.2 slots have dedicated heatsinks to help keep M.2 SSDs at optimal operating temperatures.

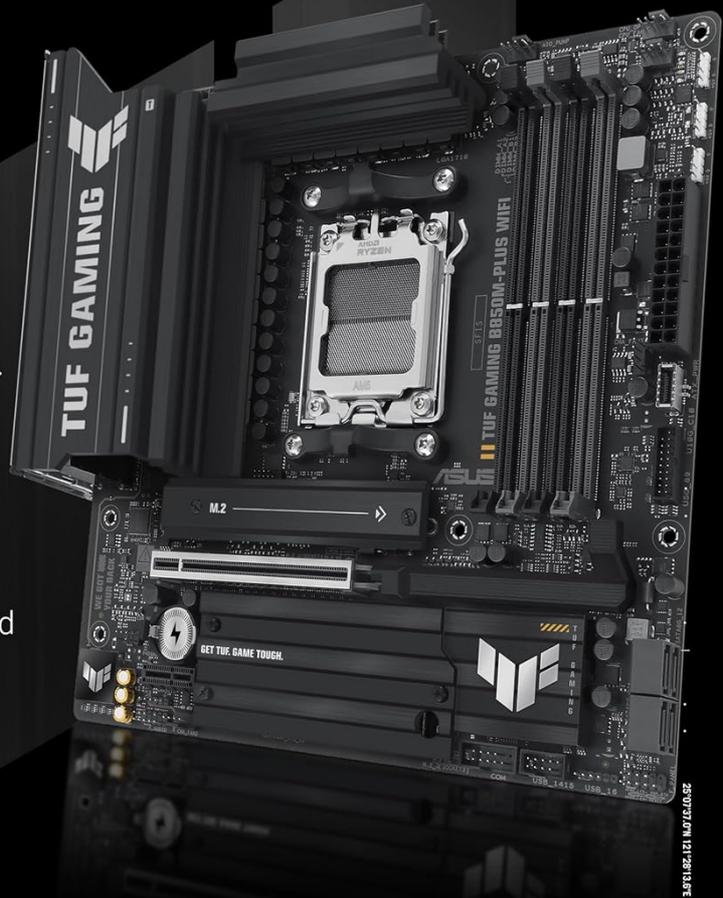


Image: A detailed view of the motherboard emphasizing the enlarged VRM heatsinks and M.2 heatsinks for enhanced cooling.

EZ PC DIY Features

- **PCIe Slot Q-Release:** A physical lever allows for easy unlocking and removal of the graphics card from the first PCIe slot with a single tap.
- **M.2 Q-Latch:** Simplifies the installation and removal of M.2 drives without the need for screws.
- **BIOS Flashback:** Enables updating the BIOS without installing a CPU or memory, providing a safe and simple update method.
- **Q-Antenna:** Facilitates quick and easy attachment of the WiFi antenna to your PC.

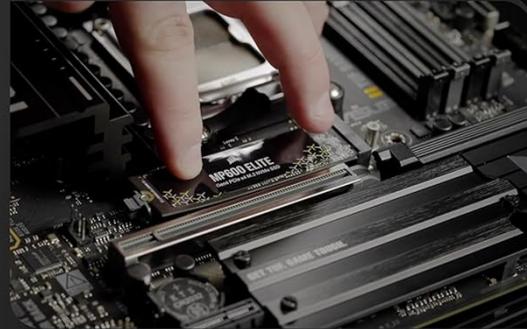
EZ PC DIY

TUF
GAMING
STAY TOUGH.



PCIe SLOT Q-RELEASE

A physical lever unlocks the first PCIe slot's security latch with one tap.



M.2 Q-LATCH

Secure the drive and neatly detach it with one tap.



BIOS FLASHBACK™

A safe and simple way to update BIOS without having memory or a CPU installed.



Q-ANTENNA

With Q-Antenna, attaching a WiFi antenna to your PC is now easy and fast.

Image: A composite image illustrating the PCIe Slot Q-Release, M.2 Q-Latch, BIOS Flashback button, and Q-Antenna connection points on the motherboard.

Connectivity and Performance Enhancements

- **DDR5 Support:** Supports up to 192GB of DDR5 memory with AEMP (ASUS Enhanced Memory Profile).
- **PCIe 5.0:** Features PCIe 5.0 x16 slot for graphics cards and M.2 support for high-speed storage.
- **USB 20Gbps:** Includes a USB 20Gbps Type-C® port for ultra-fast data transfer.
- **2.5 Gb Ethernet:** Equipped with Realtek 2.5 Gb Ethernet for high-speed wired network connections.
- **WiFi 6E:** Onboard Wi-Fi 6E (802.11ax) with ASUS WiFi Q-Antenna for enhanced wireless performance.
- **ASUS Fan Xpert 4:** Provides comprehensive fan control for optimal cooling and acoustics.

Better, Faster & More

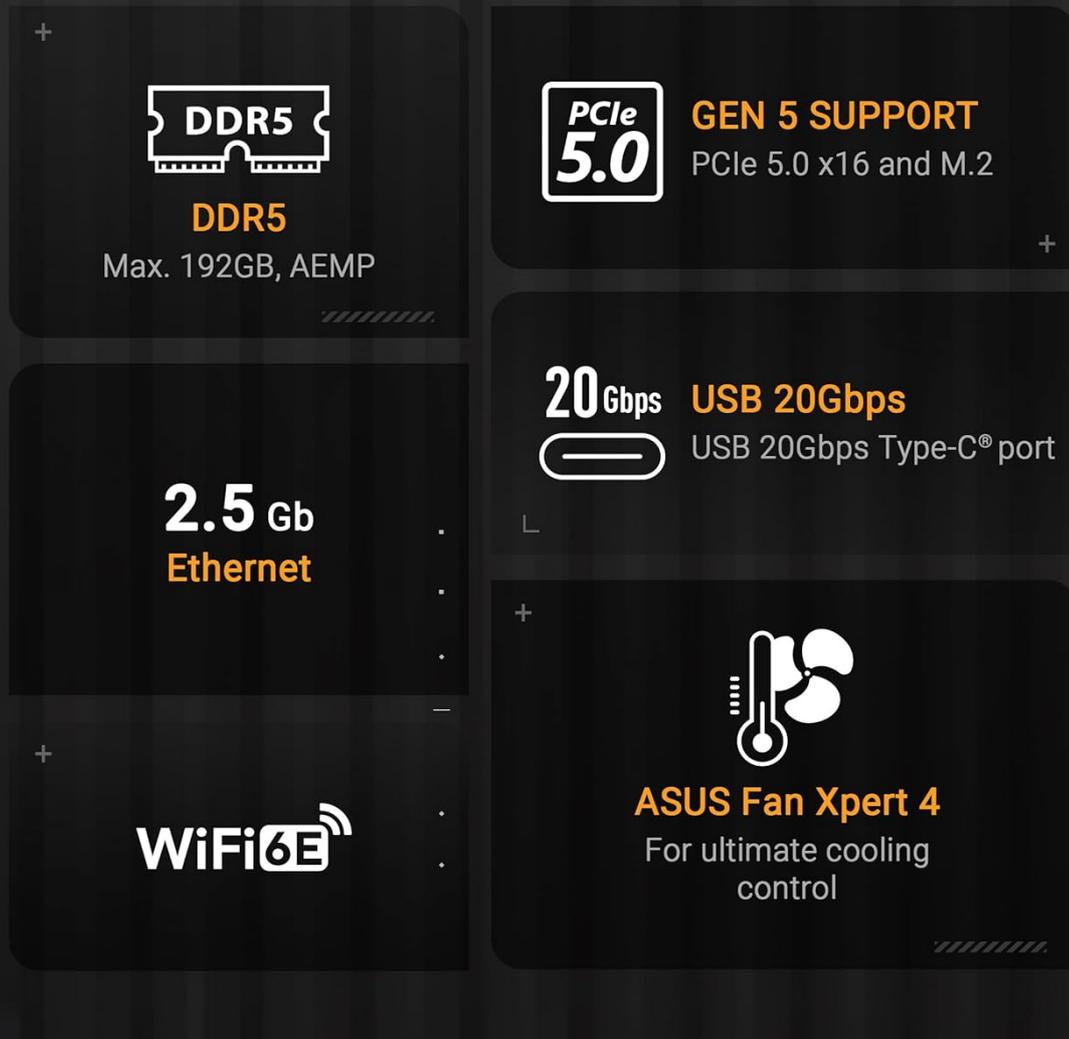


Image: A graphic showcasing the key connectivity and performance features: DDR5, PCIe 5.0, USB 20Gbps, 2.5 Gb Ethernet, WiFi 6E, and ASUS Fan Xpert 4.

WHAT'S IN THE BOX

The ASUS TUF Gaming B850M-Plus WiFi bundle typically includes the following components:

- ASUS TUF Gaming B850M-Plus WiFi Motherboard
- ASUS WiFi Q-Antenna
- SATA cables (quantity may vary)
- M.2 rubbers (for M.2 SSD installation)
- Screw for M.2 SSD
- User Manual / Quick Start Guide

What's in the Box

Exclusive TUF Gaming B850M-Plus WiFi Bundle

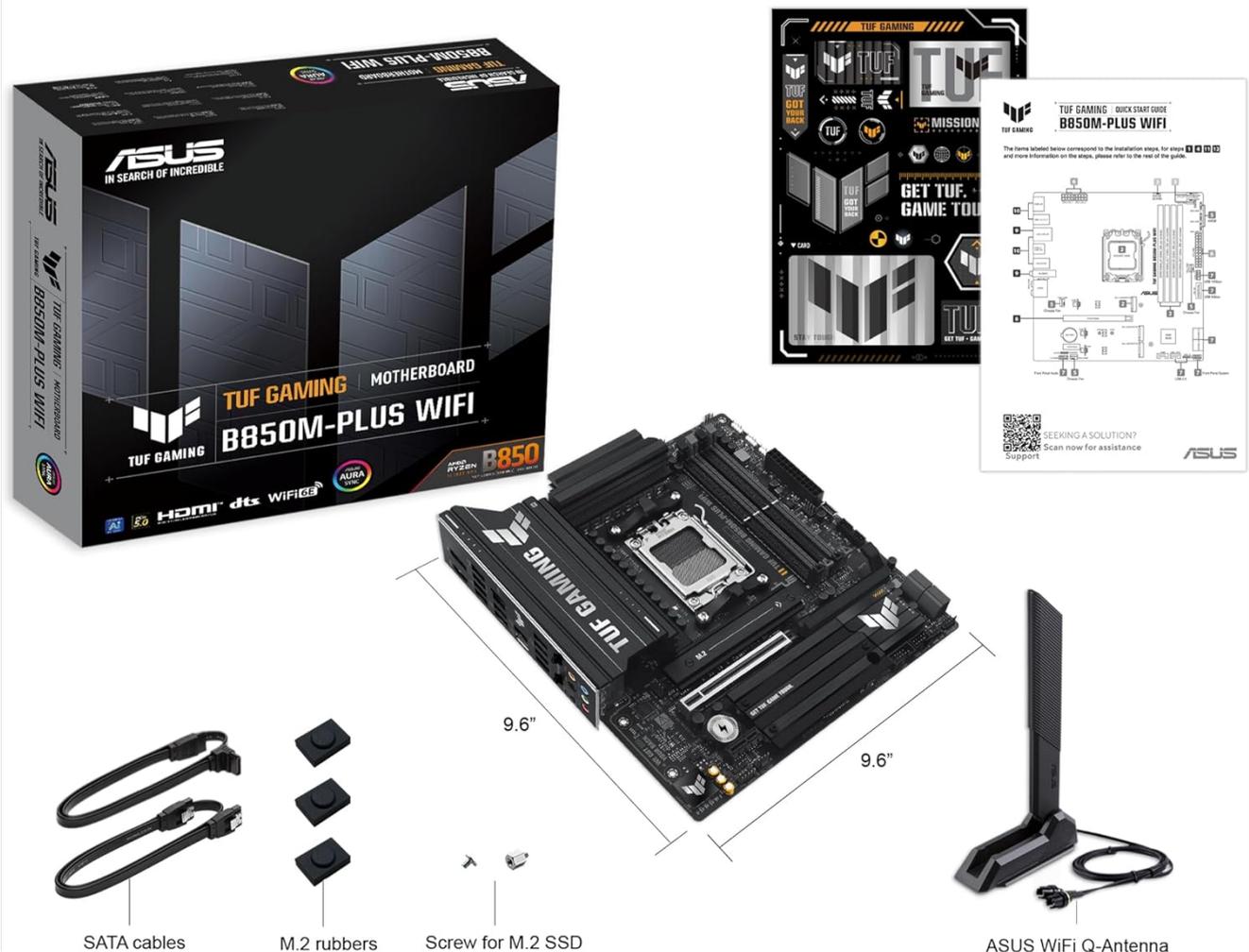


Image: An illustration of the motherboard, retail box, WiFi antenna, SATA cables, M.2 rubbers, and M.2 screw, representing the typical contents of the product package.

SETUP

Before beginning installation, ensure your system is powered off and unplugged from the wall outlet. Handle the motherboard by its edges to avoid static discharge.

1. **Prepare the Case:** Install standoffs in your PC case according to the mATX form factor.
2. **Install CPU:** Open the CPU socket lever, align the CPU with the triangle marker on the socket, gently place the CPU, and close the lever to secure it.
3. **Install CPU Cooler:** Mount your chosen CPU cooler according to its manufacturer's instructions.
4. **Install RAM:** Open the DIMM slot clips, align the memory modules with the notches, and press firmly until the clips snap into place.
5. **Install M.2 SSDs:** Insert M.2 SSDs into the designated slots. Use the M.2 Q-Latch or screw to secure them.
6. **Mount Motherboard:** Carefully place the motherboard into the case, aligning it with the standoffs. Secure it with

screws.

7. **Install Graphics Card:** Insert your graphics card into the primary PCIe 5.0 x16 slot. Ensure it clicks into place.
8. **Connect Power:** Connect the 24-pin ATX power connector and the 8-pin (or 4+4-pin) CPU power connector from your power supply to the motherboard.
9. **Connect Peripherals:** Connect front panel headers (power, reset, USB, audio), SATA drives, and case fans.
10. **Install WiFi Antenna:** Attach the ASUS WiFi Q-Antenna to the designated connectors on the rear I/O panel.

OPERATING

Once the hardware is assembled, connect your display, keyboard, and mouse. Power on your system.

- **BIOS/UEFI Setup:** Press the designated key (usually DEL or F2) during startup to enter the BIOS/UEFI setup utility. Here you can configure boot order, system time, fan curves (using Fan Xpert 4 settings), and other advanced settings.
- **Operating System Installation:** Install your preferred operating system (e.g., Windows 11).
- **Driver Installation:** After OS installation, install the latest drivers for the chipset, graphics, audio, LAN, and WiFi from the ASUS support website to ensure optimal performance and stability.
- **Aura Sync:** Utilize the ASUS Aura Sync software to customize the RGB illumination on compatible components connected to the motherboard.

MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your motherboard.

- **Dust Removal:** Periodically clean dust from inside your PC case, especially from heatsinks and fan blades, using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS Updates:** Check the ASUS support website for the latest BIOS updates. BIOS updates can improve compatibility, stability, and performance. Use the BIOS Flashback feature for convenient updates.
- **Driver Updates:** Keep your drivers updated to the latest versions available from the ASUS support website.
- **Cable Management:** Ensure cables are neatly routed to improve airflow and prevent interference.

TROUBLESHOOTING

If you encounter issues, consider the following common troubleshooting steps:

- **No Power/No Boot:** Double-check all power connections (24-pin ATX, 8-pin CPU). Ensure the power supply is switched on. Test with minimal components (CPU, one RAM stick, GPU) to isolate the issue.
- **No Display:** Ensure the monitor is connected to the graphics card (not the motherboard's integrated graphics ports unless using an APU). Reseat the graphics card and RAM modules.
- **System Instability/Crashes:** Check RAM compatibility and seating. Ensure CPU cooler is properly installed. Update BIOS and drivers. Monitor temperatures using software.
- **Network Issues:** Verify Ethernet cable connection or WiFi antenna connection. Ensure network drivers are installed. Check router/modem status.

- **BIOS Reset:** If system settings become problematic, you can clear the CMOS by removing the CMOS battery for a few minutes (with power unplugged) or using the Clear CMOS jumper (refer to the full manual for location).

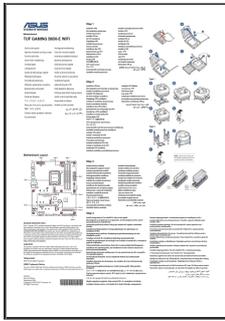
SPECIFICATIONS

Feature	Specification
Brand	ASUS
Model Name	90MB1IY0-M0EAY0
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 9000, 8000, 7000 Series
Chipset Type	AMD B850
RAM Memory Technology	DDR5
Memory Clock Speed	8000 MHz (Max)
Memory Storage Capacity	192 GB (Max)
Platform	Windows 11
Product Dimensions	9.61 x 9.61 x 1.97 inches
Item Weight	2.64 pounds
Batteries	1 AAAA battery required (included)
Date First Available	March 7, 2025

WARRANTY AND SUPPORT

ASUS products typically come with a manufacturer's warranty. For specific warranty 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, and further information, please visit www.asus.com/support/.

	<p>ASUS TUF GAMING A620M-PLUS WIFI Motherboard: Quick Start Guide</p> <p>Comprehensive guide for installing the ASUS TUF GAMING A620M-PLUS WIFI motherboard, covering CPU, RAM, expansion cards, storage, and system connections. Includes setup steps and component identification.</p>
	<p>ASUS PRIME X670-P WIFI Quick Start Guide</p> <p>A concise guide to installing and setting up the ASUS PRIME X670-P WIFI motherboard, covering CPU, memory, storage, expansion cards, and initial power-on procedures.</p>
	<p>ASUS TUF GAMING B650M-E WIFI Quick Start Guide</p> <p>A concise guide for installing and setting up the ASUS TUF GAMING B650M-E WIFI motherboard, covering CPU, memory, storage, expansion cards, and system connections.</p>
	<p>ASUS TUF GAMING B850-PLUS WIFI Motherboard User Manual</p> <p>Comprehensive user manual for the ASUS TUF GAMING B850-PLUS WIFI motherboard, detailing installation, specifications, BIOS/RAID support, and safety information.</p>
	<p>ASUS TUF GAMING B650M-E WIFI Motherboard Quick Start Guide</p> <p>This guide provides essential steps for installing the ASUS TUF GAMING B650M-E WIFI motherboard, including CPU, fan, memory, storage, and expansion card installation, along with system connections and initial setup.</p>



[ASUS TUF GAMING B650-E WIFI Motherboard Quick Start Guide](#)

A concise, step-by-step guide for installing the ASUS TUF GAMING B650-E WIFI motherboard, covering CPU, RAM, storage, expansion cards, power connections, and initial system setup.