

ASUS TUF GAMING B850-E WIFI

ASUS TUF GAMING B850-E WIFI AMD AM5 Motherboard User Manual

Model: TUF GAMING B850-E WIFI

1. INTRODUCTION

The ASUS TUF GAMING B850-E WIFI motherboard is engineered for robust performance and reliability, supporting AMD AM5 processors. It integrates advanced features such as DDR5 memory, PCIe 5.0 connectivity, multiple M.2 slots, Wi-Fi 6E, and 2.5Gb Ethernet, providing a solid foundation for high-performance computing systems.

2. KEY FEATURES

- **Ready for Advanced AI PC:** Designed for the future of AI computing, with the power and connectivity needed for demanding AI applications.
- **AMD AM5 Socket:** Ready for AMD Socket AM5 for AMD Ryzen 9000 & 8000 & 7000 Series Desktop Processors.
- **Enhanced Power Solution:** 8+2+1 80A DrMOS power stages, 8-layer PCB, 8+4 pin ProCool power connectors, alloy chokes and durable capacitors for stable power delivery.
- **Latest M.2 Support:** One onboard PCIe 5.0 M.2 slot and two PCIe 4.0 M.2 slots.
- **Ultrafast Connectivity:** Wi-Fi 6E, PCIe 5.0 x16 slot, Realtek 2.5Gb Ethernet, front USB 20Gbps Type-C connector, and rear USB 10Gbps Type-C port support.
- **Comprehensive Cooling:** Enlarged VRM heatsink, flexible M.2 heatsink, PCH heatsink, hybrid fan headers and Fan Xpert 4.
- **DIY Friendly Design:** PCIe Slot Q-Release, M.2 Q-Latch, Q-Antenna, Q-Dashboard, Q-LED, BIOS FlashBack and Pre-mounted I/O shield.
- **Unmatched Personalization:** Three Addressable RGB Gen 2 headers, all configurable with ASUS-exclusive Aura Sync RGB lighting.

- **Renowned Software:** ASUS AI Advisor, TurboV Core, ASUS DriverHub, ASUS GlideX.

3. PACKAGE CONTENTS

Verify that all items are present in your motherboard package:

- ASUS TUF GAMING B850-E WIFI Motherboard
- Wi-Fi Antenna
- SATA Cables
- M.2 Screws and Standoffs
- User Manual and Documentation
- TUF Gaming Stickers



Figure 3.1: Package contents including the ASUS TUF GAMING B850-E WIFI motherboard, Wi-Fi antenna, SATA cables, and documentation.

4. COMPONENT OVERVIEW

Familiarize yourself with the layout and key components of your ASUS TUF GAMING B850-E WIFI motherboard.

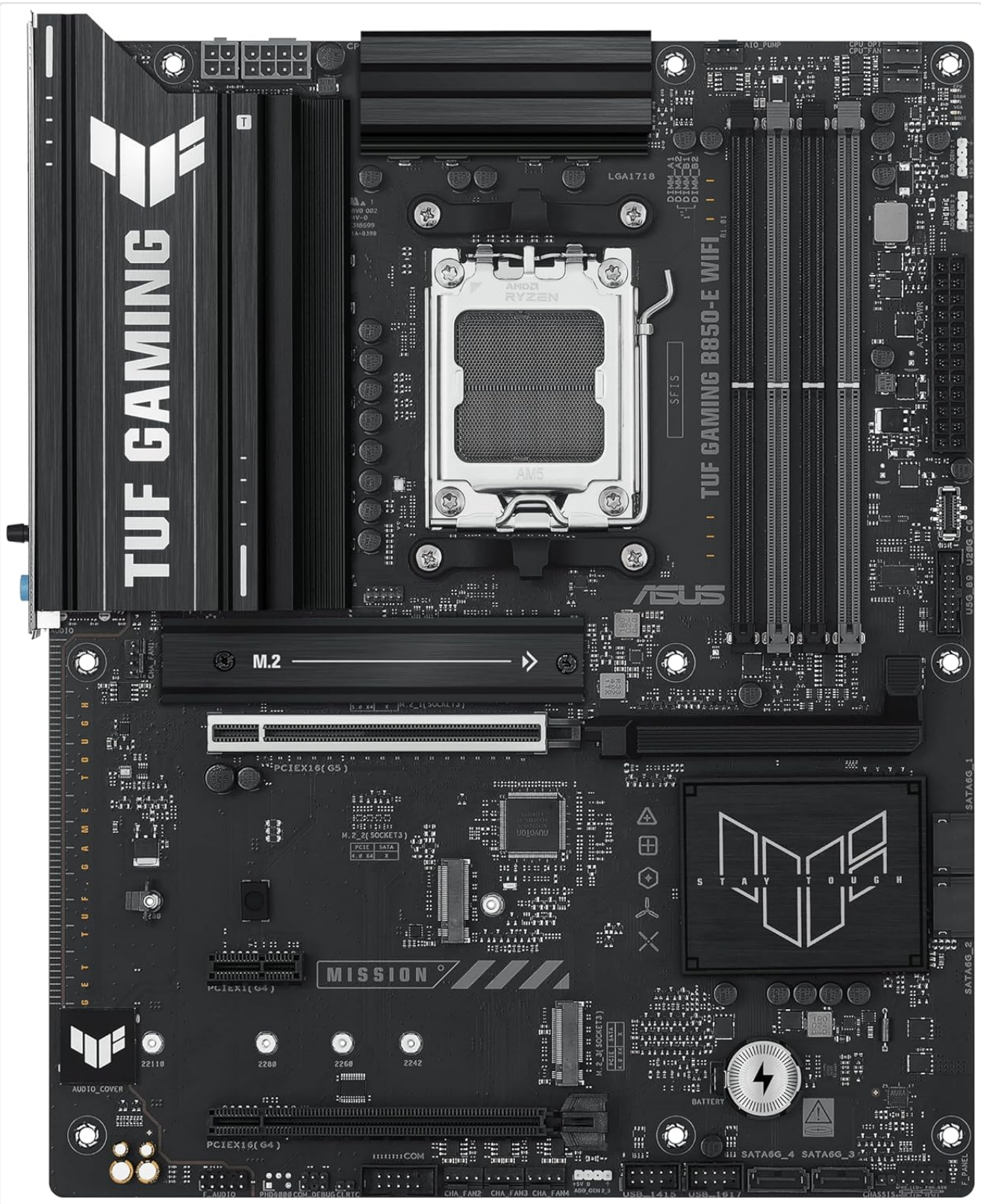


Figure 4.1: Top-down view of the motherboard, highlighting the CPU socket, DIMM slots, and M.2 slots.

- USB 10Gbps Type-C
- Multiple USB 5Gbps and 2.0 ports
- 2.5Gb Ethernet port
- Wi-Fi 6E antenna connectors
- Audio jacks
- BIOS FlashBack button

5. SETUP

5.1. Installing the CPU

1. Open the CPU socket lever.
2. Carefully align the CPU with the socket, ensuring the triangle mark on the CPU matches the mark on the socket.
3. Gently place the CPU into the socket. Do not force it.
4. Close the CPU socket lever to secure the CPU.

5.2. Installing Memory Modules (RAM)

1. Open the clips on both ends of the DIMM slot.
2. Align the notch on the memory module with the key in the DIMM slot.
3. Press down firmly on both ends of the memory module until the clips snap into place.
4. For dual-channel operation, refer to your motherboard manual for recommended slot configurations.

5.3. Installing M.2 Storage Devices

1. Locate the desired M.2 slot and remove any protective film or heatsink.
2. Insert the M.2 drive into the slot at an angle.
3. Secure the M.2 drive with the provided M.2 Q-Latch or screw.
4. If applicable, reattach the M.2 heatsink.

5.4. Installing the Graphics Card

1. Open the PCIe Slot Q-Release latch on the PCIe 5.0 x16 slot.
2. Align your graphics card with the slot and press down firmly until it is seated correctly and the latch snaps shut.
3. Secure the graphics card to your chassis with screws.

5.5. Connecting Power Supply

1. Connect the 24-pin ATX power connector from your power supply to the motherboard.
2. Connect the 8-pin and 4-pin (if applicable) CPU power connectors to the motherboard.

5.6. Connecting Peripherals

Connect your monitor, keyboard, mouse, and other peripherals to the appropriate ports on the rear I/O panel.

6. OPERATING

6.1. First Boot and BIOS Setup

1. After assembling your system, power it on.
2. Press the **DEL** key during startup to enter the BIOS/UEFI setup.
3. Configure essential settings such as boot order, date/time, and enable XMP/EXPO for memory.
4. Save changes and exit BIOS to boot into your operating system installer.

6.2. Driver Installation

After installing your operating system, install the latest drivers for your motherboard components (chipset, audio, LAN, Wi-Fi, Bluetooth) from the ASUS support website to ensure full functionality and performance.

7. MAINTENANCE

7.1. BIOS Updates

Regularly check the ASUS support website for BIOS updates. BIOS updates can improve system stability, compatibility, and performance. Use the BIOS FlashBack feature for convenient updates without a CPU or RAM installed.

7.2. 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 heatsinks, fans, and other components.

8. TROUBLESHOOTING

8.1. No Display Output

- Ensure your monitor is connected to the graphics card (if dedicated) or the motherboard's integrated graphics port (if your CPU supports it).
- Check that all power cables are securely connected to the motherboard and graphics card.
- Reseat your RAM modules.

8.2. System Instability/Crashes

- Ensure all drivers are up to date.
- Check CPU and GPU temperatures to rule out overheating.
- Test memory stability using diagnostic tools.

8.3. Wi-Fi/Ethernet Connectivity Issues

- Ensure Wi-Fi antennas are securely attached.
- Verify that Wi-Fi and Ethernet drivers are correctly installed.
- Check network cable connections and router status.

9. SPECIFICATIONS

Feature	Specification
Brand	ASUS
Model Name	TUF GAMING B850-E WIFI

CPU Socket	Socket AM5
Compatible Processors	Ryzen™ 9000 & 8000 & 7000 Series Desktop Processors
Chipset Type	AMD B850
RAM Memory Technology	DDR5
Memory Speed	6 GHz (Up to 8000+ MT/s OC)
M.2 Slots	1x PCIe 5.0, 2x PCIe 4.0
PCIe Slots	1x PCIe 5.0 x16, additional slots
Wireless Connectivity	Wi-Fi 6E, Bluetooth
Ethernet	Realtek 2.5Gb Ethernet
USB Ports (Rear)	USB 20Gbps Type-C, USB 10Gbps Type-C, multiple USB 5Gbps and 2.0
Video Outputs	DisplayPort, HDMI™
Form Factor	ATX
Item Weight	2.7 pounds
Product Dimensions	14 x 10.7 x 2.4 inches

10. WARRANTY AND SUPPORT

For detailed warranty information, technical support, and driver downloads, please visit the official ASUS support website. Keep your proof of purchase for warranty claims.

ASUS Support Website: <https://www.asus.com/support/>