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ASUS TUF GAMING B650-E WIFI

ASUS TUF GAMING B650-E WIFI Motherboard User Manual

Model: TUF GAMING B650-E WIFI | Brand: ASUS

PRODUCT OVERVIEW

The ASUS TUF GAMING B650-E WIFI is an AMD B650 AM5 ATX motherboard designed for high-performance computing. It features robust power delivery with 8+2 teamed power stages, support for DDR5 memory, and advanced connectivity options including PCIe 5.0 for both graphics cards and M.2 storage. This motherboard is built for stability and durability, making it ideal for gaming and demanding applications.

Key Features

- **AMD AM5 Socket:** Ready for AMD Ryzen 8000/7000 Series desktop processors, ensuring compatibility with the latest CPUs.
- **Enhanced Power Solution:** Features 8+2 teamed power stages, 8+4 ProCool sockets, alloy chokes, and durable capacitors for stable and efficient power delivery to critical components.
- **Comprehensive Cooling:** Equipped with enlarged VRM and PCH heatsinks, dedicated M.2 heatsinks, hybrid fan headers, and the Fan Xpert 4 utility in Armoury Crate for optimal thermal management.
- **Latest Connectivity:** Includes a PCIe 5.0 slot for next-gen graphics cards, a PCIe 5.0 M.2 slot for ultra-fast storage, USB 10Gbps Type-C, and a front USB 20Gbps Type-C port for versatile peripheral connections.
- **Made for Online Gaming:** Integrates Intel Wi-Fi 6E for high-speed wireless networking, Realtek 2.5Gb Ethernet for reliable wired connections, and TUF LANGuard for enhanced network protection.

PRODUCT VISUALS



This image displays the ASUS TUF GAMING B650-E WIFI motherboard alongside its retail packaging. The motherboard features a black PCB with prominent heatsinks and the AM5 CPU socket. The packaging highlights the TUF Gaming branding and key specifications like B650 chipset and Wi-Fi capability.

SETUP GUIDE

Before You Begin

- Ensure you have all necessary components: CPU, RAM (DDR5), CPU Cooler, Storage (M.2 NVMe or SATA), Graphics Card, Power Supply Unit (PSU), and PC Case.
- Read through the entire manual before starting installation.
- Work on a clean, static-free surface. Use an anti-static wrist strap if available.
- Unplug the power cord from the wall outlet before handling any components.

Installation Steps

1. **Prepare the Case:** Install the I/O shield (if not pre-attached) and standoffs in your PC case according to your motherboard's form factor (ATX).
2. **Install CPU:** Open the CPU socket lever, align the AMD Ryzen processor with the triangle marker on the socket, gently place it in, and close the lever to secure.
3. **Install CPU Cooler:** Apply thermal paste (if not pre-applied) and install your chosen CPU cooler (e.g., Be Quiet Pure Rock 2 or similar) following its specific instructions. Connect the cooler's fan cable to the CPU_FAN header.
4. **Install RAM:** Open the clips on the DDR5 DIMM slots. Align the RAM modules with the notch in the slot and press firmly until the clips snap into place. Refer to the motherboard manual for optimal dual-channel configuration.
5. **Install M.2 SSDs:** Locate the M.2 slots. Remove the heatsink and screw, insert the M.2 SSD at an angle, then push it down and secure with the screw. Reattach the heatsink.
6. **Mount Motherboard:** Carefully place the motherboard into the case, aligning it with the standoffs and I/O shield. Secure it with screws.
7. **Install Graphics Card:** Open the PCIe slot latch, insert your graphics card into the PCIe 5.0 x16 slot, and push down until it clicks. Secure with a screw to the case.
8. **Connect Power Supply:** Connect the 24-pin ATX power connector and the 8-pin + 4-pin (or 8-pin) CPU power

connectors from your PSU to the motherboard. Connect power to the graphics card if required.

- 9. Connect Case Cables:** Connect front panel headers (power button, reset, USB, audio), fan headers, and SATA data cables (if using SATA drives).
- 10. Initial Boot and BIOS Setup:** Connect a monitor, keyboard, and mouse. Power on the system. Enter the BIOS/UEFI setup (usually by pressing DEL or F2 during boot) to configure settings, enable XMP/EXPO for RAM, and set boot order.
- 11. Install Operating System and Drivers:** Install your preferred operating system (e.g., Windows 11). Visit the ASUS support website for your motherboard model to download and install the latest chipset drivers, LAN drivers, Wi-Fi/Bluetooth drivers, and audio drivers for optimal performance.

OPERATING INSTRUCTIONS

- BIOS/UEFI Navigation:** Access the BIOS/UEFI during boot-up to adjust system settings, monitor temperatures, and update firmware.
- Armoury Crate:** Utilize ASUS Armoury Crate software for driver updates, system monitoring, fan control (Fan Xpert 4), and Aura Sync RGB lighting customization.
- Network Connectivity:** Ensure proper installation of Wi-Fi antennas for optimal wireless performance. For wired connections, connect an Ethernet cable to the Realtek 2.5Gb Ethernet port.
- USB Ports:** Use the various USB ports, including the high-speed USB 20Gbps Type-C, for connecting peripherals and external storage.
- Audio:** Connect your audio devices to the integrated audio jacks. Install the latest audio drivers for the best sound experience.

MAINTENANCE

- Dust Removal:** Regularly clean dust from inside your PC case, especially from fans, heatsinks, and motherboard components, using compressed air.
- Driver Updates:** Periodically check the ASUS support website for updated drivers and BIOS versions to ensure system stability and performance.
- BIOS Updates:** Update the BIOS only when necessary and follow ASUS's recommended procedures carefully to avoid system instability.
- Cable Management:** Ensure cables are neatly routed to promote better airflow and prevent interference.

TROUBLESHOOTING

Issue	Possible Cause	Solution
System does not power on.	Loose power cables, faulty PSU, incorrect front panel connections.	Check all power connections (24-pin, CPU, GPU). Verify front panel header connections. Test PSU if possible.
No display output.	Graphics card not seated correctly, monitor cable issue, incorrect display output selected.	Reseat graphics card. Try a different display cable or port. Ensure monitor input is correct.
System unstable or crashes.	Overheating, unstable RAM, outdated drivers, faulty component.	Check CPU/GPU temperatures. Reseat RAM or test one stick at a time. Update all drivers. Run memory diagnostic.

Issue	Possible Cause	Solution
Wi-Fi/Bluetooth not working.	Missing drivers, antennas not connected, disabled in BIOS.	Install latest Wi-Fi/Bluetooth drivers from ASUS website. Ensure antennas are securely connected. Check BIOS settings.

TECHNICAL SPECIFICATIONS

Feature	Detail
Brand	ASUS
Model Name	TUF GAMING B650-E WIFI
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 7000 Series, AMD Ryzen 8000 Series
Chipset Type	B650
RAM Memory Technology	DDR5
Memory Clock Speed	5200 MHz (and higher via OC)
Compatible Devices	Personal Computer
Platform	Windows 11
Connectivity	PCIe 5.0, M.2 PCIe 5.0, USB 10Gbps Type-C, Front USB 20Gbps Type-C, Intel Wi-Fi 6E, Realtek 2.5Gb Ethernet, HDMI, DisplayPort

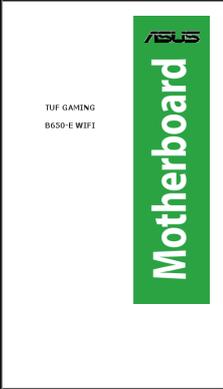
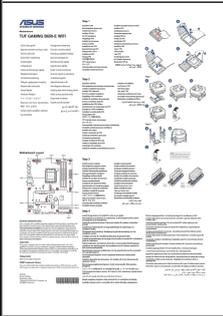
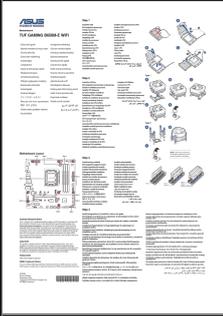
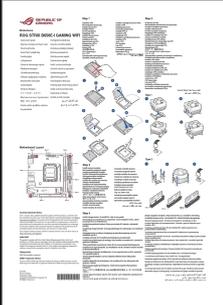
WARRANTY AND SUPPORT

For detailed warranty information, technical support, and the latest drivers and utilities, please visit the official ASUS support website. You can find product-specific support by searching for "TUF GAMING B650-E WIFI" on their support page. Keep your proof of purchase for warranty claims.

ASUS Support Website: www.asus.com/support/

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Related Documents - TUF GAMING B650-E WIFI

	<p>ASUS TUF GAMING B650-E WIFI Motherboard Benutzerhandbuch</p> <p>Umfassendes Benutzerhandbuch für das ASUS TUF GAMING B650-E WIFI Motherboard, das Installationsanleitungen, Spezifikationen und Sicherheitshinweise enthält.</p>
	<p>ROG STRIX B650-A GAMING WIFI Motherboard User Manual</p> <p>This official user manual provides comprehensive guidance for the ASUS ROG STRIX B650-A GAMING WIFI motherboard. It covers essential information for installation, configuration, and operation, ensuring users can effectively set up and utilize their PC components. Explore detailed specifications, step-by-step installation procedures, BIOS settings, and troubleshooting tips designed for PC enthusiasts and builders. For the latest product information and support, visit the official ASUS website.</p>
	<p>ASUS ROG STRIX B650-A GAMING WIFI Motherboard Quick Start Guide</p> <p>A concise guide to installing and setting up the ASUS ROG STRIX B650-A GAMING WIFI motherboard, covering CPU, fan, memory, storage, expansion cards, and system connections.</p>
	<p>ASUS TUF GAMING B650-E WIFI Motherboard Quick Start Guide</p> <p>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.</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>
	<p>ASUS ROG STRIX B650E-I GAMING WIFI Motherboard Quick Start Guide</p> <p>A concise guide for installing the ASUS ROG STRIX B650E-I GAMING WIFI motherboard, covering CPU, RAM, storage, expansion cards, and system connections for a smooth setup.</p>

