

ASUS B650E MAX GAMING WIFI

ASUS B650E MAX Gaming WiFi AMD B650 ATX Motherboard User Manual

Model: B650E MAX GAMING WIFI

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your ASUS B650E MAX Gaming WiFi AMD B650 ATX Motherboard. Designed for AMD Socket AM5 processors, this motherboard offers advanced features for high-performance computing and gaming. Please read this manual thoroughly before proceeding with installation or usage.

2. PRODUCT FEATURES

- **Ready for Advanced AI PCs:** 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 phase power design, 6-layer PCB, alloy chokes and durable capacitors for stable power delivery.
- **Ultrafast Connectivity:** Wi-Fi 6E, PCIe 5.0 x16 slot, PCIe 5.0 M.2 slots, Realtek 2.5Gb Ethernet, rear USB 10Gbps Type-A & Type-C ports, and front USB 5Gbps Type-C support.
- **Comprehensive Cooling:** VRM and M.2 heatsinks, PCH heatsink, hybrid fan headers and Fan Xpert 2+.

3. PACKAGE CONTENTS

Verify that all items are present in your motherboard package:

- ASUS B650E MAX Gaming WiFi Motherboard
- ASUS WiFi Q-Antenna

- SATA cables (2x)
- M.2 screw packages
- M.2 rubber standoffs
- Quick Start Guide and other documentation

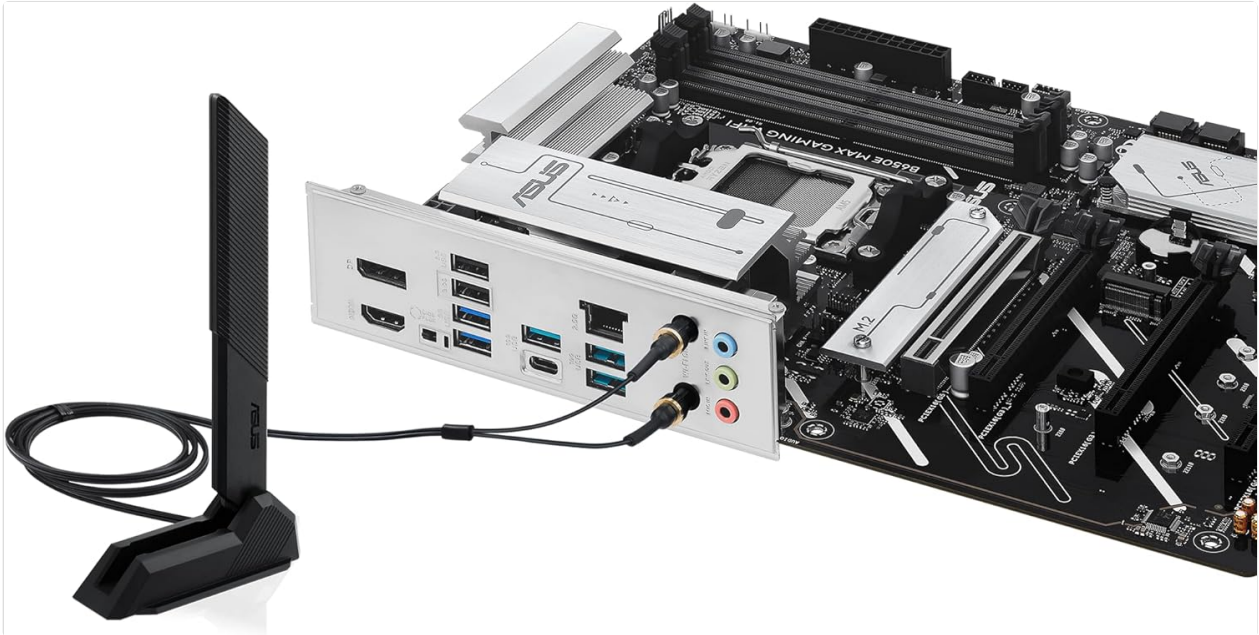


Image: The ASUS B650E MAX Gaming WiFi Motherboard shown with its retail box and included accessories such as SATA cables, M.2 mounting hardware, and the WiFi antenna.

4. MOTHERBOARD LAYOUT

4.1 Internal Connectors and Components

Familiarize yourself with the key components and connectors on the motherboard:

- **AMD AM5 Socket:** Central socket for your Ryzen processor.
- **DDR5 DIMM Slots:** Four slots for DDR5 memory modules.
- **PCIe 5.0 x16 Slot:** Primary slot for your graphics card.
- **PCIe 5.0 M.2 Slots:** Multiple slots for high-speed NVMe SSDs.
- **SATA 6Gb/s Ports:** For connecting traditional SATA storage devices.
- **USB Headers:** Various headers for front panel USB ports (USB 10Gbps Type-C, USB 5Gbps Type-C, USB 2.0).
- **Fan Headers:** Multiple headers for CPU, chassis, and AIO pump fans.
- **Power Connectors:** 24-pin ATX power connector and 8-pin CPU power connectors.



Image: A top-down view of the ASUS B650E MAX Gaming WiFi Motherboard, highlighting the CPU socket, DDR5 DIMM slots, PCIe slots, and M.2 slots.



Image: An angled view of the ASUS B650E MAX Gaming WiFi Motherboard, showing the heatsinks over the VRM and M.2 areas, and the general layout of components.

4.2 Rear I/O Panel

The rear I/O panel provides various ports for external device connectivity:

- **DisplayPort (DP):** For video output.
- **HDMI™:** For video and audio output.
- **USB 10Gbps Type-A & Type-C:** High-speed USB ports.
- **USB 5Gbps Type-A:** Standard USB ports.
- **Realtek 2.5Gb Ethernet:** For wired network connection.
- **Wi-Fi 6E Antenna Connectors:** For wireless network connectivity.
- **Audio Jacks:** For connecting speakers, headphones, and microphones.
- **BIOS Flashback™ Button:** For updating BIOS without a CPU or RAM installed.



Image: A close-up view of the rear I/O panel of the ASUS B650E MAX Gaming WiFi Motherboard, showing various USB ports, video outputs, Ethernet, Wi-Fi antenna connectors, and audio jacks.



Image: The ASUS B650E MAX Gaming WiFi Motherboard with the included WiFi antenna connected to the rear I/O panel, illustrating wireless connectivity setup.

5. SETUP

Follow these general steps to set up your motherboard and components:

1. **Install CPU:** Carefully align your AMD Ryzen processor with the AM5 socket and secure it.
2. **Install CPU Cooler:** Attach your CPU cooler (air or AIO liquid cooler) according to its instructions.
3. **Install RAM:** Insert DDR5 memory modules into the DIMM slots. For dual-channel operation, refer to your motherboard's specific manual for recommended slot configurations.
4. **Install M.2 SSDs:** Secure your NVMe M.2 SSDs into the PCIe 5.0 M.2 slots, using the provided screws/standoffs and heatsinks if applicable.
5. **Install Graphics Card:** Insert your PCIe 5.0 x16 graphics card into the primary PCIe slot and secure it.
6. **Connect Power:** Connect the 24-pin ATX power cable and the 8-pin CPU power cables from your power supply to the motherboard.
7. **Connect Peripherals:** Connect SATA devices, front panel connectors (USB, audio, power/reset buttons), and case fans.

6. OPERATING INSTRUCTIONS

6.1 BIOS Configuration

Upon first boot, enter the BIOS (usually by pressing DEL or F2 during startup) to configure essential settings such as boot order, date/time, and enable XMP/EXPO profiles for your RAM.

6.2 Driver and Software Installation

After installing your operating system, install the necessary drivers for your motherboard components (chipset, audio, LAN, Wi-Fi, etc.). ASUS provides the Armoury Crate software, which can assist with driver installation, RGB lighting control (Aura Sync), and system monitoring.

Video: An official ASUS video showcasing the TUF GAMING B860M-PLUS WIFI E-tail motherboard. While a different model, it provides a general overview of ASUS motherboard features and design.

7. MAINTENANCE

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

- **Dust Removal:** Periodically clean dust from your PC case and motherboard components using compressed air.
- **Cable Management:** Ensure cables are neatly routed to improve airflow and prevent interference.
- **BIOS Updates:** Keep your BIOS updated to the latest version for improved compatibility, stability, and performance.
- **Driver Updates:** Regularly update your drivers for all components.

8. TROUBLESHOOTING

8.1 Common Issues

- **No Display:** Check all power connections, ensure the graphics card is seated correctly, and try reseating RAM modules.
- **System Instability:** This can often be related to RAM settings (XMP/EXPO profiles), outdated BIOS, or overheating. Ensure proper cooling and try loading BIOS defaults.
- **Device Not Recognized:** Verify connections, install/update drivers, and check BIOS settings for device detection.

8.2 BIOS Flashback™

The BIOS Flashback™ feature allows you to update the BIOS without a CPU, RAM, or graphics card installed. This is particularly useful for ensuring compatibility with newer CPUs that may not be supported by the motherboard's factory-installed BIOS version.

1. Download the latest BIOS file from the ASUS support website for your specific motherboard model.
2. Rename the BIOS file to B650EMAX.CAP (or as specified by ASUS for your model) and save it to the root directory of a FAT32-formatted USB drive.
3. Insert the USB drive into the designated BIOS Flashback USB port on the rear I/O panel.
4. With the system powered off but connected to the power supply, press and hold the BIOS Flashback button for approximately three seconds until the LED starts blinking.
5. The LED will stop blinking when the BIOS update is complete.

Video: A tutorial from ASRock USA on how to update motherboard BIOS. While the specific motherboard shown is ASRock, the general steps for USB BIOS Flashback are similar across brands like ASUS.

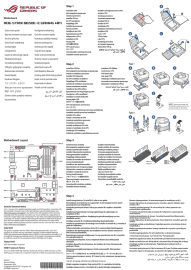


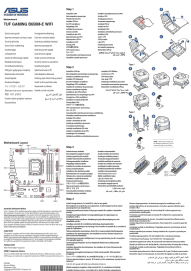
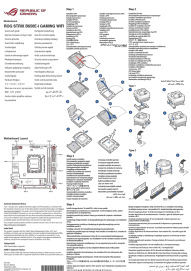

9. SPECIFICATIONS

Feature	Detail
Brand	ASUS
Model Name	B650E MAX GAMING WIFI
CPU Socket	Socket AM5
Compatible Processors	Ryzen™ 9000 & 8000 & 7000 Series Desktop Processors*
Chipset Type	AMD B650
RAM Memory Technology	DDR5
Memory Speed	4000 MHz (Supports higher via OC)
PCIe Support	PCIe 5.0 x16 slot, PCIe 5.0 M.2 slots
Ethernet	Realtek 2.5Gb Ethernet
Wireless Connectivity	Wi-Fi 6E
USB Ports (Rear)	USB 10Gbps Type-A & Type-C, USB 5Gbps Type-A, USB 2.0
Video Output	DisplayPort, HDMI™
Form Factor	ATX
Item Weight	3.58 pounds
Package Dimensions	13.86 x 10.79 x 2.8 inches

10. WARRANTY AND SUPPORT

For warranty information, please refer to the warranty card included in your product packaging or visit the official ASUS support website. ASUS provides comprehensive support resources, including FAQs, driver downloads, and contact information for technical assistance.

For further assistance, please visit the [ASUS Store](#).

	<p>ASUS ROG STRIX B650E-E GAMING WIFI Motherboard Quick Start Guide</p> <p>Concise guide to installing and setting up the ASUS ROG STRIX B650E-E GAMING WIFI motherboard, covering CPU, fan, memory, storage, expansion cards, and system connections.</p>
	<p>ASUS TUF GAMING B650-E WIFI</p> <p>ASUS TUF GAMING B650-E WIFI BIOS RAID /</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 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>
	<p>ASUS PRIME B650M-A WIFI Motherboard User Manual</p> <p>Comprehensive user manual for the ASUS PRIME B650M-A WIFI motherboard, detailing installation, configuration, BIOS, RAID support, specifications, and safety precautions.</p>

