MSI MAGB850MMORTARWIFI

MSI MAG B850M Mortar WiFi Motherboard User Manual

Model: **MAGB850MMORTARWIFI** | Brand: **MSI**

Product Overview

The MSI MAG B850M Mortar WiFi motherboard is engineered for high-performance gaming and computing, supporting the latest AMD Ryzen 9000, 8000, and 7000 series processors on the AM5 platform. It features robust power delivery, advanced cooling solutions, and cutting-edge connectivity options to ensure a stable and efficient system.

Key Features

- **ULTRA POWER:** Employs a 12 Duet Rail Power System (60A, SPS) VRM with Core Boost architecture for AMD B850 chipset (AM5, Ryzen 9000 / 8000 / 7000).
- **FROZR GUARD:** Premium cooling features including 7W/mK MOSFET thermal pads, extra choke thermal pads, an Extended Heatsink, chipset heatsink, EZ M.2 Shield Frozr II, and a Combo-fan header (3A).
- **DDR5 MEMORY, PCIe 5.0 x16 SLOT:** 4 x DDR5 DIMM SMT slots support extreme memory overclocking speeds (1DPC 1R, 8200+ MT/s). 1 x PCIe 5.0 x16 SMT slot (128GB/s) with Steel Armor II supports cutting-edge graphics cards.
- **TRIPLE M.2 CONNECTORS:** Storage options include 2 x M.2 Gen5 x4 128Gbps slots and 1 x M.2 Gen4 x2 32Gbps slot. Features EZ M.2 Shield Frozr II to prevent thermal throttling and EZ M.2 Clip II for easy DIY experience.
- **CONNECTIVITY:** Network hardware includes a full-speed Wi-Fi 7 module with Bluetooth 5.4 & 5Gbps LAN. Rear ports include USB 20G Type-C and 7.1 USB High Performance Audio with Audio Boost 5 (supports S/PDIF output).



Figure 1: The MSI MAG B850M Mortar WiFi Motherboard, its retail packaging, and included Wi-Fi antenna.

Setup Guide

Before You Begin

Ensure you have all necessary components and tools before starting the installation process. Always handle components with care and consider using an anti-static wrist strap to prevent electrostatic discharge (ESD) damage.

- **Compatible CPU:** AMD Ryzen 9000/8000/7000 Series Processor (AM5 Socket)
- **RAM:** DDR5 Memory Modules
- **Graphics Card:** PCIe 5.0 or 4.0 compatible
- **Storage:** M.2 NVMe SSDs (Gen5/Gen4) or SATA SSDs/HDDs
- **Power Supply Unit (PSU):** Compatible with ATX standard
- **Tools:** Phillips head screwdriver, anti-static wrist strap (recommended)



Figure 2: A detailed top-down view of the MSI MAG B850M Mortar WiFi Motherboard, highlighting component placement.

Installing the CPU

1. Locate the AM5 CPU socket on the motherboard.
2. Gently push down the retention lever and swing it open.
3. Align the triangular marker on the CPU with the corresponding marker on the socket. Carefully place the CPU into the socket without forcing it.
4. Close the retention lever until it clicks into place, securing the CPU.
5. Apply thermal paste to the CPU (if not pre-applied on your cooler) and install the CPU cooler according to its instructions.

Installing RAM

1. Open the clips on both ends of the DDR5 DIMM slots.
2. Align the notch on the DDR5 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, securing the RAM. For optimal performance, install memory modules in the recommended slots (refer to your CPU cooler clearance and motherboard manual for specific dual-channel configurations).

Installing Storage Devices

The motherboard supports M.2 NVMe SSDs (Gen5 and Gen4) and SATA drives.

M.2 SSD Installation:

1. Locate the M.2 slots (M.2_1, M.2_2, M.2_3) and remove the EZ M.2 Shield Frozr II heatsinks if present.
2. Insert the M.2 SSD into the slot at a slight angle.
3. Secure the SSD using the EZ M.2 Clip II or a screw, depending on the slot design.
4. Reattach the EZ M.2 Shield Frozr II heatsink to ensure proper cooling.



Figure 3: Close-up view of the M.2 slots and their associated heatsinks on the motherboard, designed for efficient thermal management.

SATA Drive Installation:

1. Connect one end of a SATA data cable to a SATA port on the motherboard and the other end to your SATA SSD/HDD.
2. Connect a SATA power cable from your PSU to the SATA SSD/HDD.

Installing Graphics Card

1. Locate the PCIe 5.0 x16 slot (the top reinforced slot).
2. Open the retention clip at the end of the slot.
3. Align your graphics card with the slot and press down firmly until it is fully seated and the retention clip snaps into place.
4. Secure the graphics card to your PC case with screws.
5. Connect any necessary PCIe power cables from your PSU to the graphics card.

Connecting Peripherals

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

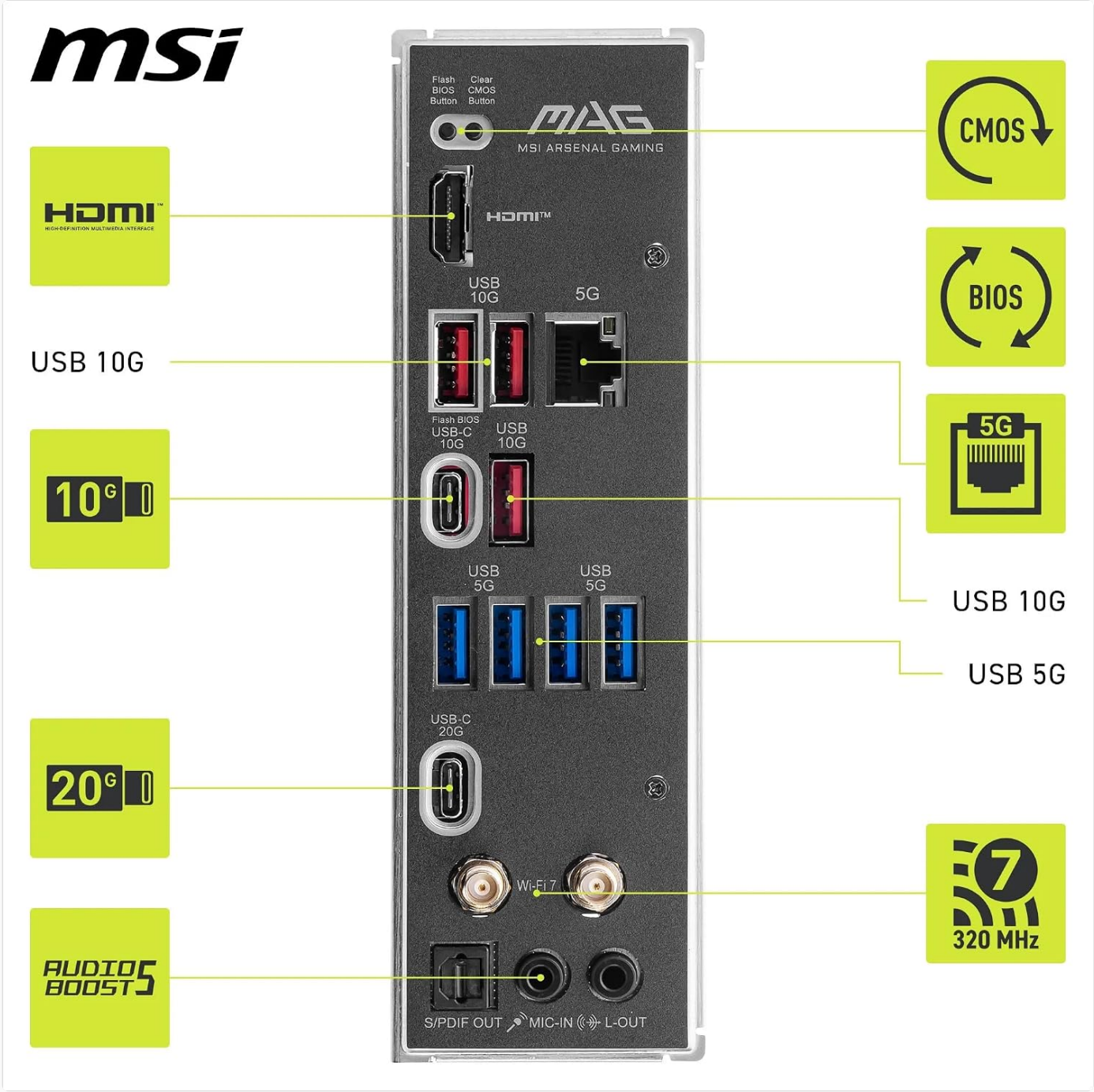


Figure 4: The rear I/O panel of the motherboard, showing various ports including USB, HDMI, LAN, and Wi-Fi antenna connectors.

- **Display:** Use the HDMI port for integrated graphics (if your CPU supports it) or connect to your dedicated graphics card.
- **USB Devices:** Connect keyboards, mice, and other USB devices to the available USB ports (USB 20G Type-C, USB 10G, USB 5G).
- **Network:** Connect an Ethernet cable to the 5Gbps LAN port or attach the included Wi-Fi antenna for Wi-Fi 7 connectivity.
- **Audio:** Connect speakers or headphones to the audio jacks.

Operating Instructions

First Boot

After assembling your system, connect the power cable and press the power button on your PC case. The system should

power on, and you should see a display output. If not, refer to the Troubleshooting section.
During startup, repeatedly press the **Delete** key to enter the BIOS/UEFI setup utility. This allows you to configure system settings, boot order, and monitor hardware status.

Driver Installation

For optimal performance and stability, it is crucial to install the latest drivers for your motherboard and components. You can find these drivers on the official MSI website for your specific motherboard model.

- Chipset Drivers
- LAN Drivers
- Wi-Fi/Bluetooth Drivers
- Audio Drivers
- Graphics Drivers (for integrated or dedicated GPU)

BIOS/UEFI Configuration

The BIOS/UEFI interface provides advanced settings for your system. Key areas to consider:

- **Boot Order:** Set the priority for your storage devices to boot from your operating system drive.
- **Memory Settings:** Enable EXPO (for AMD Ryzen) or XMP (for Intel) profiles to run your DDR5 memory at its advertised speeds (e.g., 8200+ MT/s).
- **Fan Control:** Adjust fan curves to optimize cooling and noise levels.
- **Overclocking:** Advanced users can fine-tune CPU and memory settings for increased performance. Exercise caution when overclocking.

Maintenance and Care

Cleaning

Regular cleaning helps maintain optimal performance and extends the lifespan of your motherboard and components.

- **Dust Removal:** Use compressed air to gently blow dust out of heatsinks, fans, and other components. Do this in a well-ventilated area.
- **Surface Cleaning:** For stubborn grime, use a soft, lint-free cloth lightly dampened with isopropyl alcohol (90% or higher). Avoid direct spraying.
- **Power Off:** Always power down and unplug your system before performing any cleaning.

Firmware Updates (BIOS)

MSI periodically releases BIOS updates to improve compatibility, stability, and performance. It is recommended to keep your BIOS updated, especially when installing new CPUs or experiencing issues.

- Download the latest BIOS version from the official MSI website for your specific model.
- Follow the instructions provided by MSI for updating the BIOS, typically using a USB flash drive and the M-Flash utility in the BIOS.
- Do not interrupt the BIOS update process, as this can brick the motherboard.

Thermal Management

Proper airflow within your PC case is vital for maintaining low temperatures and preventing thermal throttling.

- Ensure your case has adequate intake and exhaust fans.

- Keep cables tidy to avoid obstructing airflow.
- Monitor CPU and GPU temperatures using software utilities.

Troubleshooting

Common Issues and Solutions

- **No Power / No Boot:**
  - Check all power connections (24-pin ATX, 8-pin CPU, GPU power).
  - Ensure the PSU is switched on.
  - Verify front panel header connections (power button).
  - Try booting with minimal components (CPU, one RAM stick, GPU).
- **No Display Output:**
  - Ensure monitor is connected to the correct port (dedicated GPU or motherboard HDMI).
  - Reseat the graphics card and RAM modules.
  - Check monitor input source.
- **Memory Errors (System instability, BSODs):**
  - Ensure RAM is fully seated in the correct slots.
  - Try one RAM stick at a time to identify a faulty module.
  - Disable EXPO/XMP profiles in BIOS and test at default speeds.
- **Storage Not Detected:**
  - Check SATA data and power cables for SATA drives.
  - Reseat M.2 SSDs.
  - Ensure M.2 slots are enabled in BIOS (if applicable).
- **Network Connectivity Problems:**
  - Ensure LAN cable is properly connected or Wi-Fi antenna is attached.
  - Install or update LAN/Wi-Fi drivers.
  - Check network settings in your operating system.

If issues persist, consult the full motherboard manual available on the MSI website or contact MSI technical support.

Technical Specifications

Feature	Specification
Brand	MSI
Model Name	MSI MAG B850M MORTAR WIFI
CPU Socket	Socket AM5

Compatible Processors	Supports AMD Ryzen 9000/8000/7000 Series Desktop Processor
Chipset Type	AMD B850
RAM Memory Technology	DDR5
Memory Speed (OC)	8200 MT/s
PCIe Slot	1 x PCIe 5.0 x16
M.2 Slots	2 x M.2 Gen5 x4, 1 x M.2 Gen4 x2
LAN	5Gbps Realtek LAN
Wireless Connectivity	Wi-Fi 7, Bluetooth 5.4
USB Ports (Rear)	USB 20G Type-C, USB 10G, USB 5G
Audio	7.1 USB High Performance Audio with Audio Boost 5
Form Factor	mATX
Item Weight	3.97 pounds
Product Dimensions	11.2 x 11 x 3 inches

Warranty and Support

Warranty Information

This MSI MAG B850M Mortar WiFi Motherboard is covered by a manufacturer's limited warranty. Please refer to the warranty card included with your product or visit the official MSI website for detailed terms and conditions, including warranty duration and coverage.

Technical Support

For technical assistance, driver downloads, BIOS updates, and frequently asked questions, please visit the official MSI support website:

www.msi.com/support

You may also find helpful resources and community forums by searching for "MSI MAG B850M Mortar WiFi support" online.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question