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MSI PRO B650-A WiFi

MSI PRO B650-A WiFi Motherboard User Manual

Model: PRO B650-A WiFi | Brand: MSI

1. Introduction

The MSI PRO B650-A WiFi ProSeries Motherboard is designed for professionals, offering impressive performance and high quality for multitasking and efficiency with AMD Ryzen 9000/8000/7000 Series Processors. This manual provides essential information for setting up, operating, maintaining, and troubleshooting your motherboard.

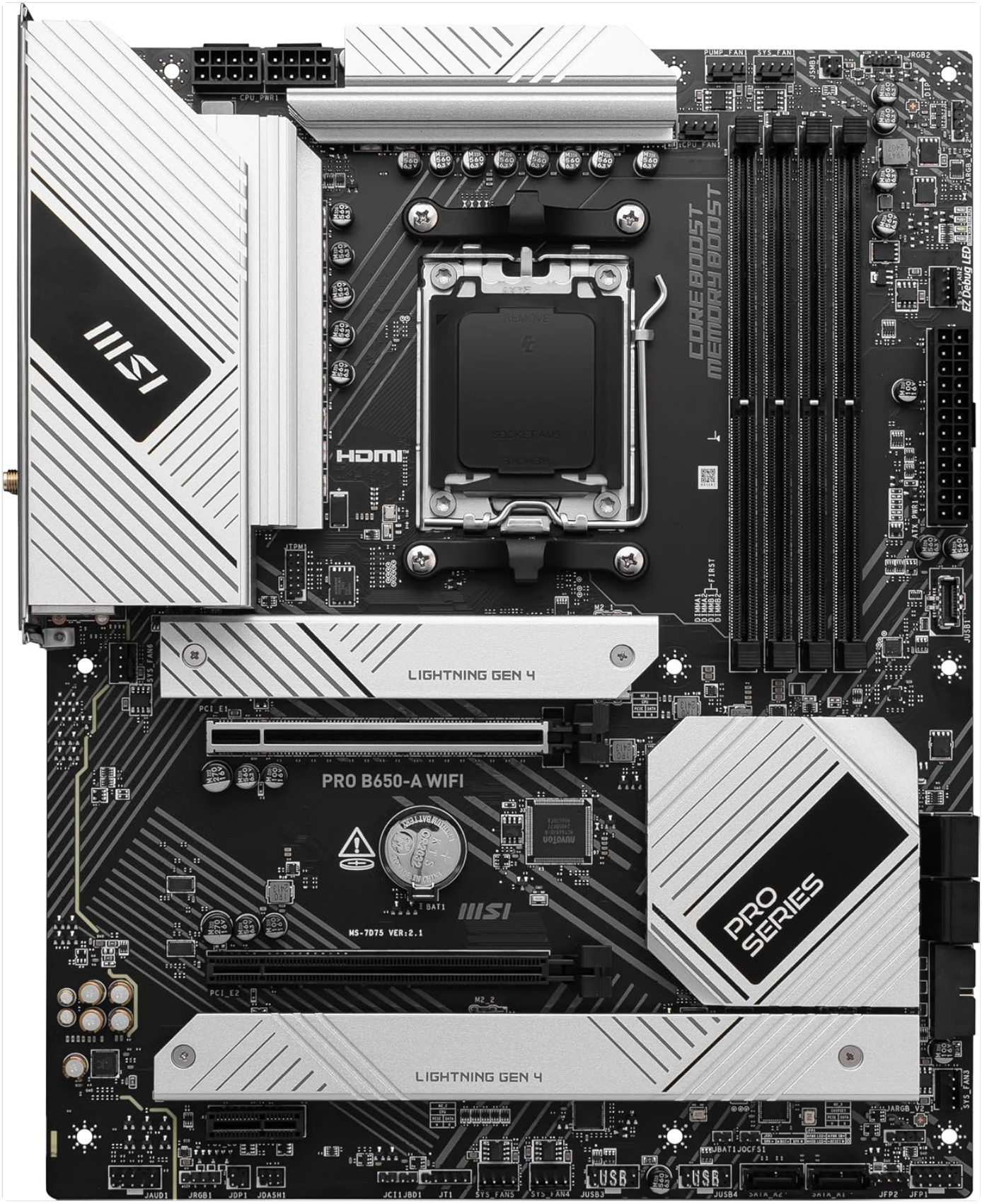


Figure 1: Top-down view of the MSI PRO B650-A WiFi Motherboard, showcasing the CPU socket, RAM slots, and various heatsinks.

2. Setup and Installation

This section guides you through the physical installation of components onto your ATX form factor motherboard.

2.1. Component Overview



Figure 2: Angled front view of the motherboard, highlighting the CPU socket, DDR5 RAM slots, and PCIe slots.

2.2. RAM Installation

For optimal performance and stability, especially with dual-channel memory configurations, ensure RAM modules are installed in the correct slots. For two RAM sticks, install them in the second and fourth slots from the CPU socket.

Video 1: Demonstrates the physical installation of components within a PC case, including the motherboard and RAM. Note the importance of installing RAM in specific slots for proper function.

2.3. M.2 SSD Installation

The motherboard features Lightning Gen 4 x4 M.2 slots with M.2 Shield Frozr for high-speed storage and thermal management. Ensure the M.2 SSD is properly seated and secured under the heatsink.

2.4. Graphics Card Installation

Install your graphics card into the primary PCIe 4.0 x16 slot. Ensure it is securely latched.

2.5. Power Connections

Connect the main 24-pin ATX power connector and the 8-pin (or dual 8-pin for high-power CPUs) CPU power connectors to the motherboard. Ensure all connections are firm.



Figure 3: Detailed view of the motherboard's rear I/O panel, showing various USB ports, HDMI, DisplayPort, LAN, and Wi-Fi 6E antenna connectors.

3. Operating the Motherboard

3.1. Initial Boot and BIOS Access

Upon the first boot, the system may take approximately one minute for memory training. To access the BIOS/UEFI interface, repeatedly tap the `Delete` key during startup.

Video 2: Demonstrates accessing the MSI Click BIOS 5 interface and navigating through basic settings for performance tweaks.

3.2. Enabling XMP Profile (RAM Overclocking)

To achieve the rated speeds of your DDR5 memory (e.g., 6000 MHz), enable the A-XMP Profile in the BIOS. This is a simple one-button click operation within the BIOS interface, typically found under 'Game Boost' or 'OC' settings.

3.3. Precision Boost Overdrive (CPU Overclocking)

For additional CPU performance, enable Precision Boost Overdrive (PBO) under the 'AMD Overclocking' settings in the BIOS. This proprietary AMD technology allows your CPU to dynamically boost clock speeds. Be aware that continuous high loads with PBO enabled can lead to higher temperatures and potentially reduce CPU lifespan.

3.4. Game Boost

The motherboard offers a 'Game Boost' feature for automatic CPU overclocking. However, for optimal efficiency and control, manual overclocking or enabling XMP/PBO is generally recommended over 'Game Boost'.

4. Maintenance

4.1. BIOS Updates

Regularly updating your BIOS is crucial for system stability, compatibility, and performance improvements. The MSI PRO B650-A WiFi features a BIOS Flash Button on the rear I/O panel, allowing you to update the BIOS even without a CPU or RAM installed. Download the latest BIOS file from the official MSI website.

Video 3: Provides a detailed guide on how to update the motherboard BIOS using a USB drive, even without a CPU or RAM installed.

4.2. Fan Control

Monitor and adjust fan curves within the BIOS under the 'Fan Info' section to optimize cooling performance and noise levels. Ensure CPU and motherboard temperatures remain within safe operating limits.

5. Troubleshooting

- **RAM Not Detected/Boot Issues:** Ensure RAM modules are correctly seated, especially in the recommended second and fourth slots for dual-channel configurations.
- **Coil Whine:** This motherboard is designed to minimize coil whine. If experienced, ensure all power connections are secure and components are properly installed.
- **Slow Boot Times:** While some AM5 boards may experience longer boot times, this motherboard generally performs well. Ensure XMP is correctly enabled and BIOS is up-to-date.
- **General Instability:** Many issues can be resolved by updating the BIOS to the latest version available on the MSI support website.

6. Specifications

Feature	Description
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 9000 / 8000 / 7000 Series Desktop Processors
RAM Memory Technology	DDR5
Memory Clock Speed	7200+ MHz (OC)
Memory Storage Capacity	128 GB
Chipset Type	AMD B650
PCIe Slots	PCIe 4.0 slots
M.2 Slots	Lightning Gen 4 x4 M.2 with M.2 Shield Frozr
LAN	2.5G LAN
Wireless Connectivity	Wi-Fi 6E
Dimensions	13.5 x 10.7 x 2.9 inches (ATX Form Factor)
Item Weight	4.09 pounds

7. Warranty and Support

This MSI motherboard comes with a manufacturer's warranty. For detailed warranty terms, technical support, driver downloads, and further assistance, please visit the official MSI website or contact their customer support.

Official MSI Website: www.msi.com

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