MSI PRO B650-A WIFI

MSI PRO B650-A WIFI Motherboard User Manual

Model: PRO B650-A WIFI

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your MSI PRO B650-A WIFI ATX Motherboard. This motherboard is designed to support AMD Ryzen 7000, 8000, and 9000 Series Desktop Processors, featuring the AM5 socket and DDR5 memory support up to 7600+MHz (OC).
Key features include:

- Supports AMD Ryzen 8000 / 7000 Series Desktop Processors
- Supports DDR5 Memory, Dual Channel DDR5 7200+MHz (OC)
- Enhanced Power Design: 8+2+1 Duet Rail Power System, 8 pin + 4 pin CPU power connectors, Core Boost, Memory Boost
- Premium Thermal Solution: 7W/mK pad, additional choke thermal pad and M.2 Shield Frozr for high performance and stability
- High Quality PCB: 6-layer PCB made by 2oz thickened copper
- 2 x PCIe 4.0 x16 slots
- 3 x M.2 Gen4 slots
- Integrated Wi-Fi 6E

Image 1.1: The MSI PRO B650-A WIFI Motherboard and its retail packaging, showcasing the product's design and branding.

2. Setup and Installation

Before beginning installation, ensure your system is powered off and disconnected from the power source. Handle the motherboard by its edges to avoid static discharge.

2.1. Package Contents

Verify that all components are present in the package:

- MSI PRO B650-A WIFI Motherboard
- SATA Cables
- EZ M.2 Clips
- Wi-Fi Antenna
- User Manual (this document)

Image 2.1: Included accessories: SATA cables, EZ M.2 clips, and the Wi-Fi antenna, essential for system assembly.

2.2. Motherboard Layout

Familiarize yourself with the various components and connectors on the motherboard.

Image 2.2: Top-down view of the MSI PRO B650-A WIFI Motherboard, highlighting the CPU socket, RAM slots, and various headers.

2.3. CPU Installation

1. Open the CPU socket lever.
2. Carefully align the AMD Ryzen processor with the socket, ensuring the golden triangle on the CPU matches the triangle on the socket.
3. Gently place the CPU into the socket without applying force.
4. Close the socket lever to secure the CPU.

2.4. Memory (RAM) Installation

This motherboard supports DDR5 memory in dual-channel configuration.

1. Open the clips on both ends of the 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.
4. For optimal performance, install memory modules in the recommended slots (refer to the motherboard diagram for specific slot numbering).

Image 2.3: Angled view of the motherboard highlighting DDR5 memory slots and the 'Memory Boost' feature, indicating optimized memory performance.

2.5. M.2 SSD Installation

The motherboard features three M.2 Gen4 slots for high-speed storage.

1. Locate the M.2 slots and remove the M.2 Shield Frozr heatsink if present.
2. Insert the M.2 SSD into the slot at a 30-degree angle.
3. Secure the M.2 SSD using the EZ M.2 clip or screw.
4. Reinstall the M.2 Shield Frozr heatsink for optimal thermal performance.

2.6. Graphics Card (PCIe) Installation

This motherboard includes PCIe 4.0 x16 slots.

1. Open the retention clip on the PCIe x16 slot.
2. Align your graphics card with the slot and press down firmly until it is fully seated and the retention clip locks.

3. Secure the graphics card to the case with screws.

2.7. Power Connections

Connect the 24-pin ATX power connector and the 8-pin + 4-pin CPU power connectors from your power supply to the motherboard.

2.8. Front Panel and I/O Connections

Connect the front panel headers (power button, reset button, USB ports, audio jacks) and other peripheral cables to their respective headers on the motherboard. Refer to the motherboard manual for detailed header locations.

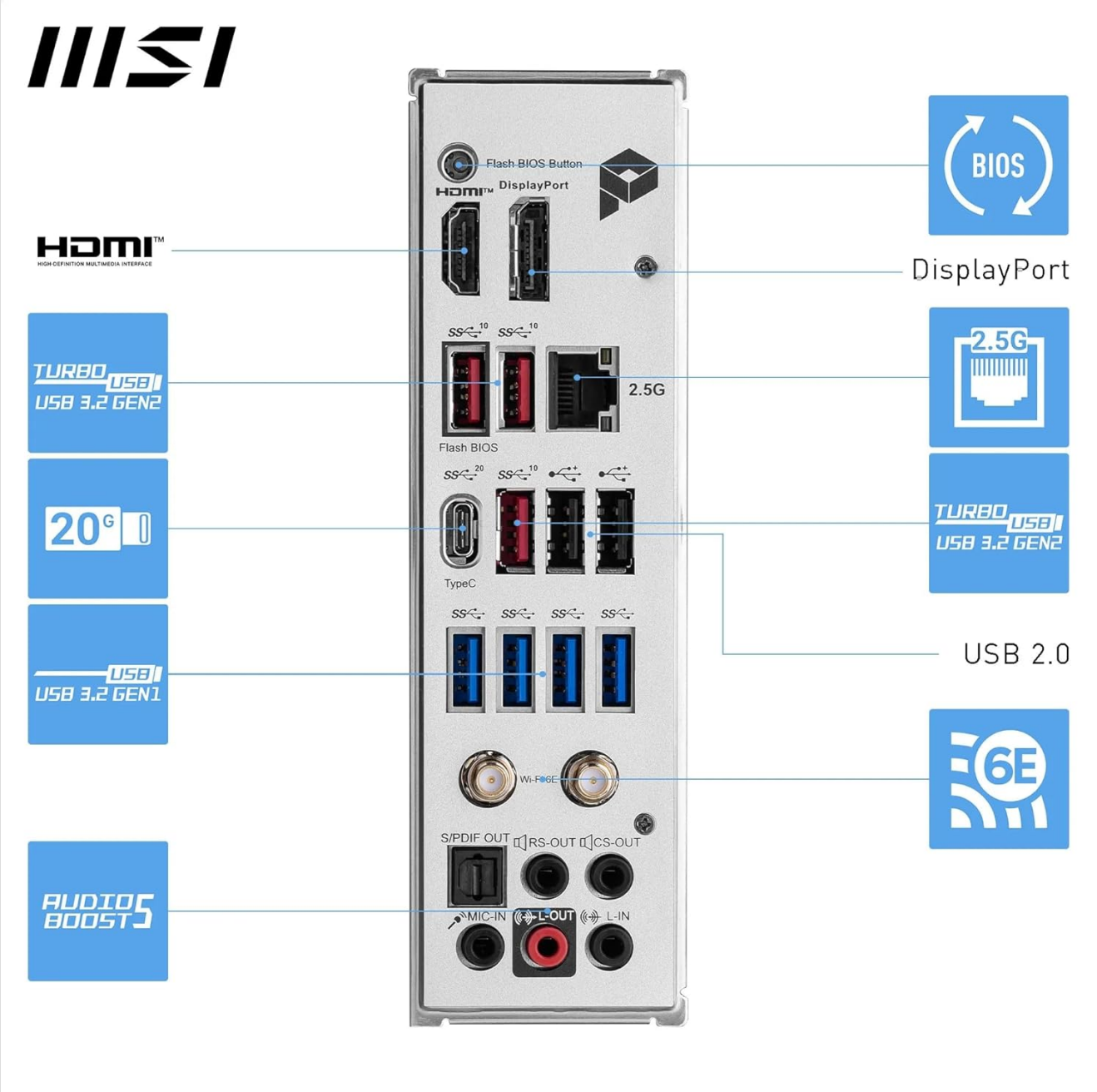

Image 2.4: Detailed view of the rear I/O panel, showing ports for HDMI, DisplayPort, USB 2.0, USB 3.2 Gen2, 2.5G LAN, Wi-Fi 6E antenna connectors, and audio jacks.

3. Operating Instructions

3.1. Initial Boot and BIOS/UEFI Setup

Upon first power-on, the system will enter the BIOS/UEFI setup utility. Press the **Del** key during startup to access the BIOS. Here you can configure system settings such as boot order, date/time, and enable features like XMP/EXPO for memory overclocking.

3.2. Driver Installation

After installing your operating system (e.g., Windows 11), install the necessary drivers for the motherboard components. These include chipset drivers, LAN drivers, Wi-Fi drivers, and audio drivers. Drivers can be found on the MSI support website for your specific motherboard model.

3.3. Wi-Fi 6E Connectivity

Attach the included Wi-Fi antenna to the connectors on the rear I/O panel. Ensure Wi-Fi drivers are installed for optimal wireless performance.

4. Maintenance

4.1. Cleaning

Regularly clean your computer's interior to prevent dust buildup, which can lead to overheating. Use compressed air to remove dust from fans, heatsinks, and other components. Ensure the system is powered off and unplugged before cleaning.

4.2. BIOS Updates

Periodically check the MSI support website for BIOS updates. BIOS updates can improve system stability, add support for new hardware, or fix bugs. Follow the instructions provided by MSI carefully when updating the BIOS to avoid system damage.

5. Troubleshooting

This section addresses common issues you might encounter.

5.1. No Display Output

- Ensure the monitor cable is securely connected to the graphics card or motherboard (if using integrated graphics).
- Verify that the graphics card is properly seated in its PCIe slot and has adequate power connections.
- Try reseating RAM modules.
- If your CPU has integrated graphics, try removing the discrete GPU and connecting the display directly to the motherboard's video output.

5.2. System Fails to Boot

- Check all power connections to the motherboard (24-pin ATX, 8-pin + 4-pin CPU).
- Ensure CPU and RAM are correctly installed.
- Clear CMOS by removing the CMOS battery for a few minutes or using the dedicated Clear CMOS jumper (refer to motherboard diagram).
- Listen for POST (Power-On Self-Test) beeps, which can indicate specific hardware issues.

5.3. Wi-Fi Connectivity Issues

- Ensure the Wi-Fi antenna is securely attached.

- Verify that Wi-Fi drivers are correctly installed and up to date.
- Check your router and network settings.

6. Specifications

Feature	Specification
Model Name	PRO B650-A WIFI
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 7000/8000/9000 Series Desktop Processors
Chipset	AMD B650
Memory	4x DDR5 DIMM slots, Dual Channel, up to 7600+MHz (OC)
Expansion Slots	2x PCIe 4.0 x16 slots
Storage	3x M.2 Gen4 slots, SATA ports
LAN	2.5G LAN
Wireless Connectivity	Wi-Fi 6E, Bluetooth 5.2
USB Ports	USB 2.0, USB 3.2 Gen1, USB 3.2 Gen2, Type-C
Audio	Audio Boost
Form Factor	ATX
Dimensions (LxWxH)	12 x 9.57 x 1.97 inches

7. Warranty and Support

7.1. Warranty Information

MSI provides a limited warranty for its products. The duration and terms of the warranty may vary by region and product type. Please refer to the warranty card included with your product or visit the official MSI website for detailed warranty information.

7.2. Technical Support

For technical assistance, driver downloads, BIOS updates, and further product information, please visit the official MSI support website:
MSI PRO B650-A WIFI Support Page
You can also contact MSI customer service through their website for direct support.