MSI PRO B650M-P

MSI PRO B650M-P ProSeries Motherboard User Manual

Model: PRO B650M-P

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the MSI PRO B650M-P ProSeries Motherboard. This motherboard is designed to support AMD Ryzen 8000/7000 Series Desktop Processors and DDR5 memory, offering a stable and efficient platform for various computing needs.

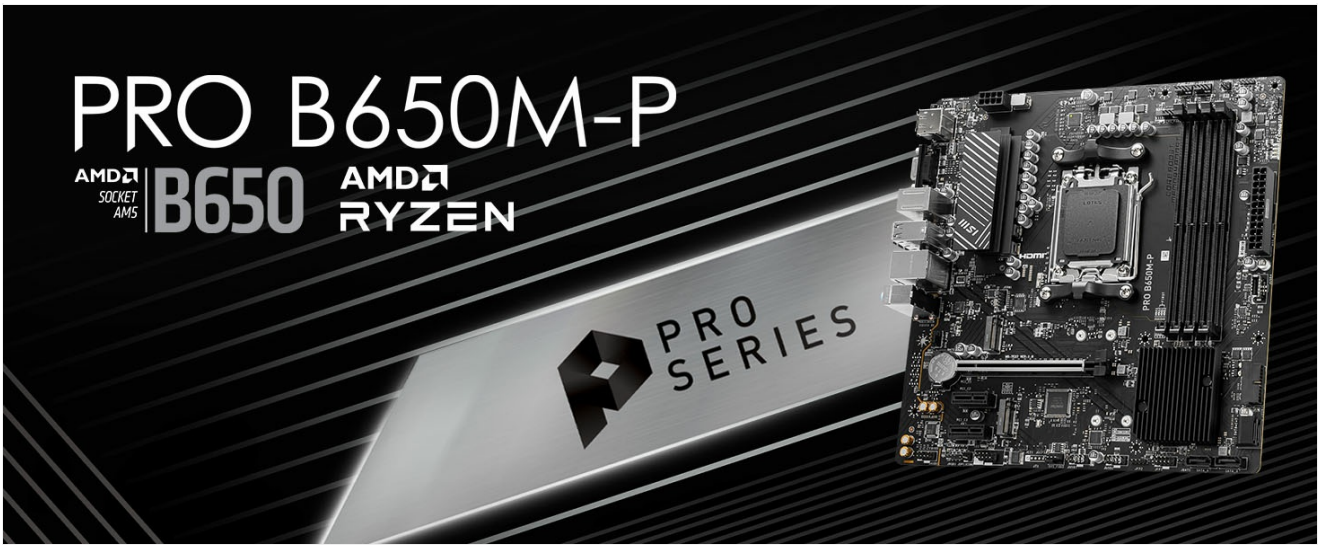


Image 1.1: MSI PRO B650M-P Motherboard overview with branding.

2. Safety Information

Please read and follow these safety guidelines to prevent damage to the motherboard and ensure personal safety:

- Always disconnect the power supply from the wall outlet before installing or removing any components.
- Wear an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity before handling the motherboard or components.
- Handle the motherboard by its edges to avoid touching sensitive components.
- Keep the motherboard away from moisture and extreme temperatures.

- Ensure proper ventilation within the computer case to prevent overheating.

3. Package Contents

Verify that all items are present in the package. If any item is damaged or missing, contact your retailer.

- MSI PRO B650M-P Motherboard
- SATA Data Cables
- I/O Shield
- M.2 Screw/Standoff Set
- Quick Installation Guide
- Driver CD/USB (may vary by region)

4. Motherboard Layout

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

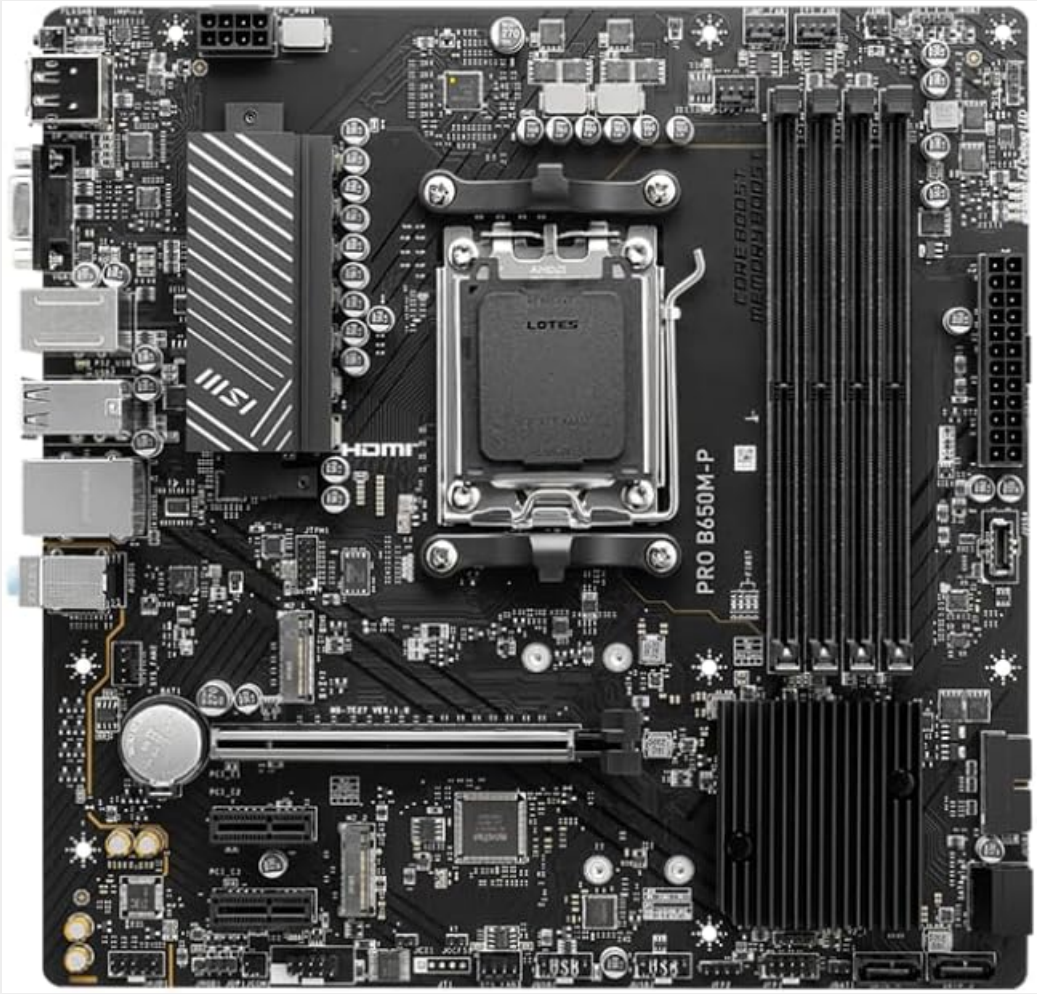


Image 4.1: Top-down view of the MSI PRO B650M-P Motherboard.

4.1 Key Components

- **CPU Socket (AM5):** Supports AMD Ryzen 8000/7000 Series Desktop Processors.
- **DDR5 DIMM Slots:** Four slots supporting dual-channel DDR5 memory up to 6000+MHz (OC).
- **PCIe Slots:** Includes a PCIe 4.0 x16 slot for graphics cards and additional PCIe x1 slots for expansion cards.

- **M.2 Slots:** Multiple M.2 slots for high-speed NVMe SSDs.
- **SATA 6Gb/s Ports:** For connecting SATA storage devices.
- **Front Panel Connectors:** Headers for USB ports, audio, and case controls.
- **Power Connectors:** 24-pin ATX power connector and 8-pin CPU power connector.

4.2 Rear I/O Panel

The rear I/O panel provides various ports for external devices.



Image 4.2: Rear I/O Panel.

- **USB Ports:** Various USB 2.0, USB 3.2 Gen 1, and USB 3.2 Gen 2 ports.
- **Video Outputs:** HDMI and DisplayPort for integrated graphics.
- **LAN Port:** 2.5Gbps Ethernet port for network connectivity.
- **Audio Jacks:** For connecting speakers, headphones, and microphones.
- **PS/2 Port:** For legacy keyboard or mouse.

5. Hardware Installation

Follow these steps to install the necessary components onto your motherboard.

5.1 CPU Installation

1. Open the CPU socket lever.
2. Align the CPU with the socket, ensuring the golden triangle on the CPU matches the mark on the socket.
3. Gently place the CPU into the socket without forcing it.
4. Close the socket lever to secure the CPU.

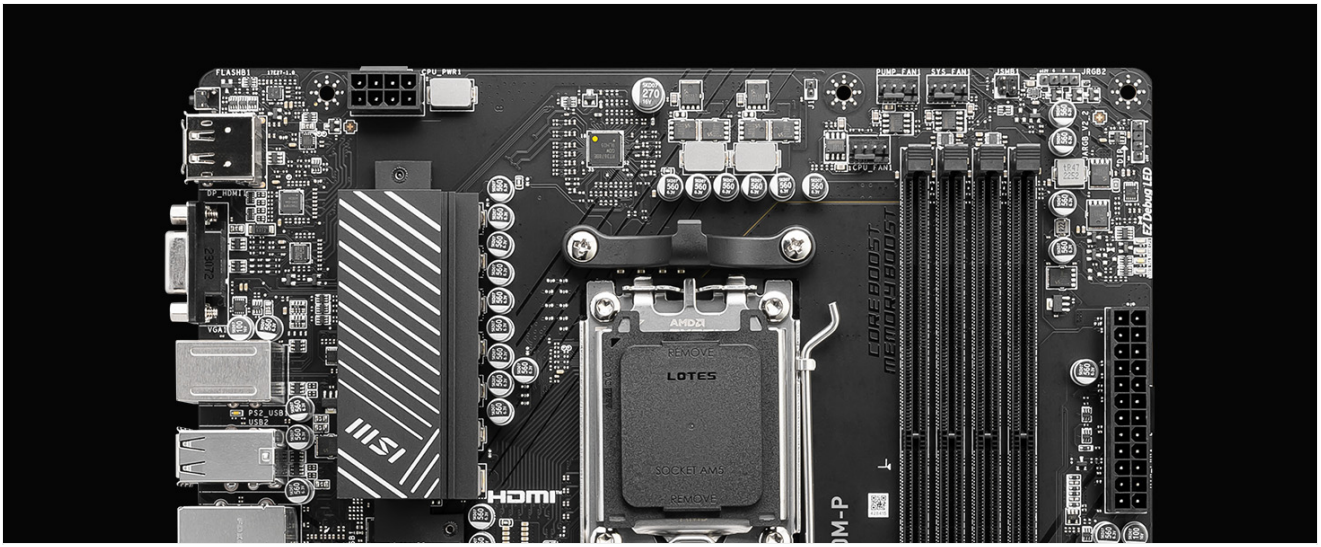


Image 5.1: AM5 CPU Socket area.

5.2 CPU Cooler Installation

Install your CPU cooler according to its manufacturer's instructions. Ensure proper thermal paste application and secure mounting for optimal cooling performance.

5.3 Memory (RAM) Installation

1. Open the clips at both ends of the DDR5 DIMM slots.
2. Align the memory module with the slot, matching the notch on the module with the key in the slot.
3. Press down firmly on both ends of the memory module until the clips snap into place.
4. For dual-channel performance, install memory modules in the recommended slots (refer to the motherboard manual for specific slot pairing).

5.4 M.2 SSD Installation

1. Locate an available M.2 slot.
2. Remove the M.2 standoff and screw from the motherboard.
3. Insert the M.2 SSD into the slot at an angle.
4. Push the SSD down and secure it with the standoff and screw.

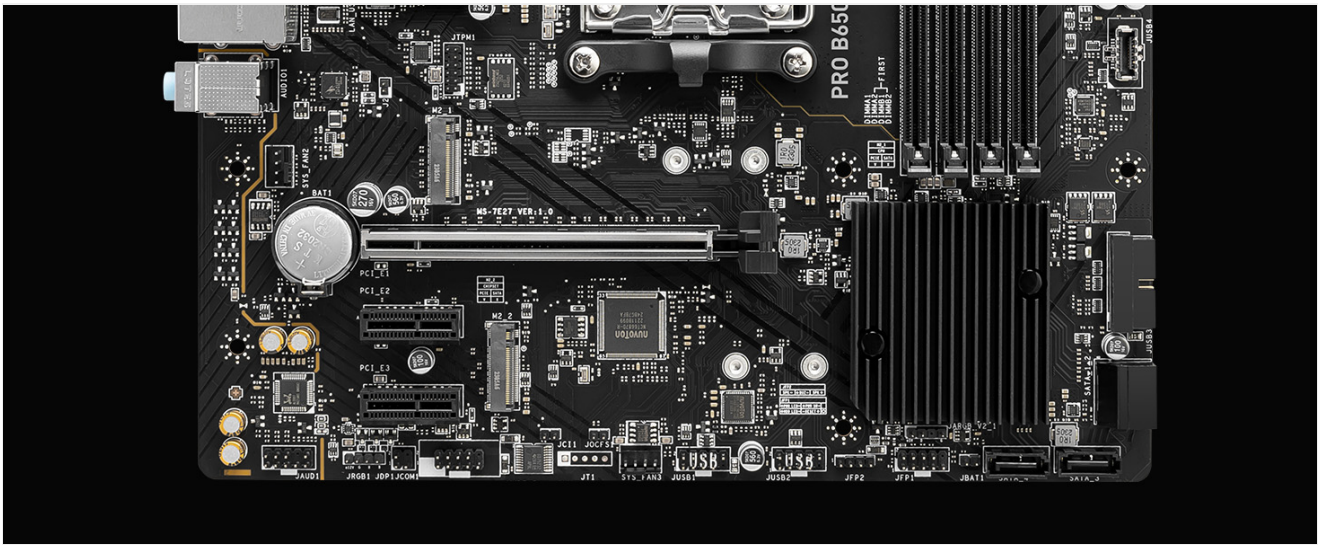


Image 5.2: M.2 Slots and Chipset Heatsink area.

5.5 Expansion Card (GPU) Installation

1. Open the latch on the PCIe x16 slot.
2. Align your graphics card with the slot and press down firmly until it is fully seated and the latch closes.
3. Secure the graphics card to the case with a screw.
4. Connect any necessary PCIe power cables from the power supply to the graphics card.

5.6 Power Supply Connections

- Connect the 24-pin ATX power cable from your power supply to the main power connector on the motherboard.
- Connect the 8-pin CPU power cable to the CPU power connector near the CPU socket.

5.7 Front Panel Connections

Connect the cables from your computer case (USB, audio, power button, reset button, LED indicators) to the corresponding headers on the motherboard. Refer to the motherboard's printed manual for exact pin layouts.

6. Operating Instructions

6.1 Initial Boot and BIOS Setup

1. After assembling your system, connect a monitor, keyboard, and mouse.
2. Power on your system. Press the `Del` key repeatedly during startup to enter the BIOS/UEFI setup utility.
3. In the BIOS, you can configure system settings such as boot order, memory profiles (XMP), and fan speeds.
4. Save changes and exit the BIOS to continue booting.

6.2 Operating System Installation

Insert your operating system installation media (USB drive or DVD) and follow the on-screen instructions to install your preferred OS (e.g., Windows 10, Windows 11).

6.3 Driver Installation

After OS installation, install the necessary drivers for your motherboard components. These can typically be found on the included driver CD/USB or downloaded from the official MSI website for your specific motherboard model. Key drivers include chipset, LAN, audio, and any integrated graphics drivers.

7. Maintenance

7.1 BIOS Updates

Regularly check the MSI website for BIOS updates. BIOS updates can improve system stability, add support for new CPUs or memory, and fix bugs. The MSI PRO B650M-P supports BIOS Flashback, allowing you to update the BIOS without a CPU or memory installed.

7.2 Cleaning

Periodically 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.

8. Troubleshooting

This section addresses common issues you might encounter.

8.1 No Display Output

- Ensure the monitor is connected to the correct video output (either the graphics card or the motherboard's integrated graphics port).
- Verify that the graphics card is properly seated in its PCIe slot and any necessary power cables are connected.
- Check that RAM modules are correctly installed in their slots.
- If using a newer CPU, a BIOS update may be required for compatibility. The motherboard features EZ Debug LEDs which can indicate issues with CPU, DRAM, VGA, or BOOT.

8.2 System Fails to Boot

- Confirm all power cables (24-pin ATX, 8-pin CPU, PCIe power) are securely connected.
- Reseat the CPU, RAM, and any expansion cards.
- Clear the CMOS by removing the CMOS battery for a few minutes or using the clear CMOS jumper (refer to the motherboard's printed manual).

8.3 No Wi-Fi or Bluetooth Connectivity

The MSI PRO B650M-P motherboard does not include integrated Wi-Fi or Bluetooth. For wireless connectivity, a separate Wi-Fi adapter (PCIe or USB) and/or a Bluetooth dongle must be purchased and installed.

8.4 BIOS Update Required for Newer CPUs

Some users have reported that the motherboard may ship with an older BIOS version that does not fully support the latest AMD Ryzen 8000/9000 series processors out of the box. If your system does not POST with a newer CPU, consider performing a BIOS update using the BIOS Flashback feature. This allows updating the BIOS without needing a compatible CPU installed.

9. Specifications

Feature	Specification
Brand	MSI
Model Name	PRO B650M-P
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen™ 8000/ 7000 Series Desktop Processors
Chipset Type	AMD B650
RAM Memory Technology	DDR5
Memory Slots	4x DDR5 DIMM, Dual Channel
Max Memory Speed	Up to 7200+ MHz (OC)
PCIe Slots	1x PCIe 4.0 x16, 2x PCIe 3.0 x1
M.2 Slots	2x M.2 slots (PCIe 4.0 x4)
SATA Ports	4x SATA 6Gb/s
LAN	Realtek 2.5Gbps LAN
USB Ports (Rear)	USB 3.2 Gen 2, USB 3.2 Gen 1, USB 2.0
Video Outputs	HDMI, DisplayPort
Form Factor	Micro-ATX (9.6 in. x 9.6 in.)

Feature	Specification
Operating System Support	Windows 10, Windows 11

10. Warranty and Support

For warranty information, technical support, and driver downloads, please visit the official MSI website. You can also find FAQs and community forums for additional assistance.
MSI Official Website: www.msi.com

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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.

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