msi B450M PRO-VDH Max

MSI B450M PRO-VDH Max Micro-ATX Motherboard User Manual

Model: B450M PRO-VDH Max

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the MSI B450M PRO-VDH Max Micro-ATX Motherboard. This motherboard is designed to support 1st, 2nd, and 3rd Generation AMD Ryzen processors, including those with Radeon Vega Graphics, for the AM4 socket. It features DDR4 memory support, a Turbo M.2 slot for NVMe SSDs, and various connectivity options.
For optimal performance and stability, please read this manual thoroughly before proceeding with installation.

2. Package Contents

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



Image 2.1: Contents of the MSI B450M PRO-VDH Max motherboard package. This image displays the motherboard box, the MSI B450M PRO-VDH Max motherboard itself, a Quick Installation Guide, a Product Registration Card, an MSI Case Badge, two SATA cables, an MSI Product Catalog, a Drive CD, and an I/O Shielding plate.

- MSI B450M PRO-VDH Max Motherboard
- Quick Installation Guide
- Product Registration Card
- MSI Case Badge
- 2 x SATA Cables
- MSI Product Catalog
- Drive CD (for drivers and utilities)
- I/O Shielding Plate

3. Motherboard Layout and Components

Familiarize yourself with the key components and connectors on your MSI B450M PRO-VDH Max motherboard.

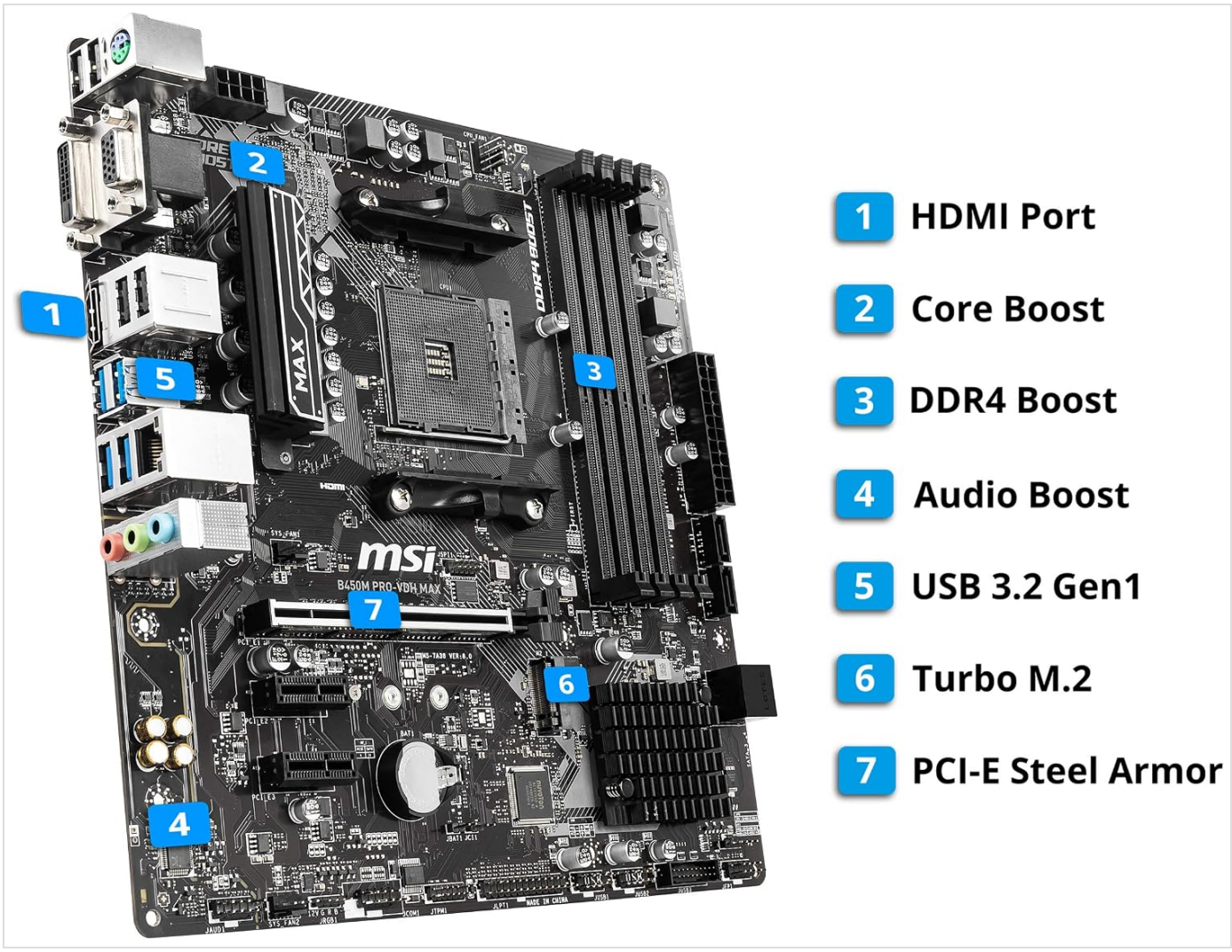


Image 3.1: Key features and component locations on the MSI B450M PRO-VDH Max motherboard. This image highlights several key areas: 1. HDMI Port, 2. Core Boost area, 3. DDR4 Boost memory slots, 4. Audio Boost section, 5. USB 3.2 Gen1 ports, 6. Turbo M.2 slot, and 7. PCI-E Steel Armor slot.

1. **HDMI Port:** For video output.
2. **Core Boost:** Enhanced power delivery design for CPU stability.
3. **DDR4 Boost:** Optimized memory circuit design for stable and high-performance DDR4 RAM.
4. **Audio Boost:** Dedicated audio hardware for high-quality sound.
5. **USB 3.2 Gen1:** High-speed USB ports for peripherals.
6. **Turbo M.2:** High-speed M.2 slot for NVMe SSDs, utilizing PCIe Gen3 x4.
7. **PCI-E Steel Armor:** Reinforced PCIe slot for heavy graphics cards.

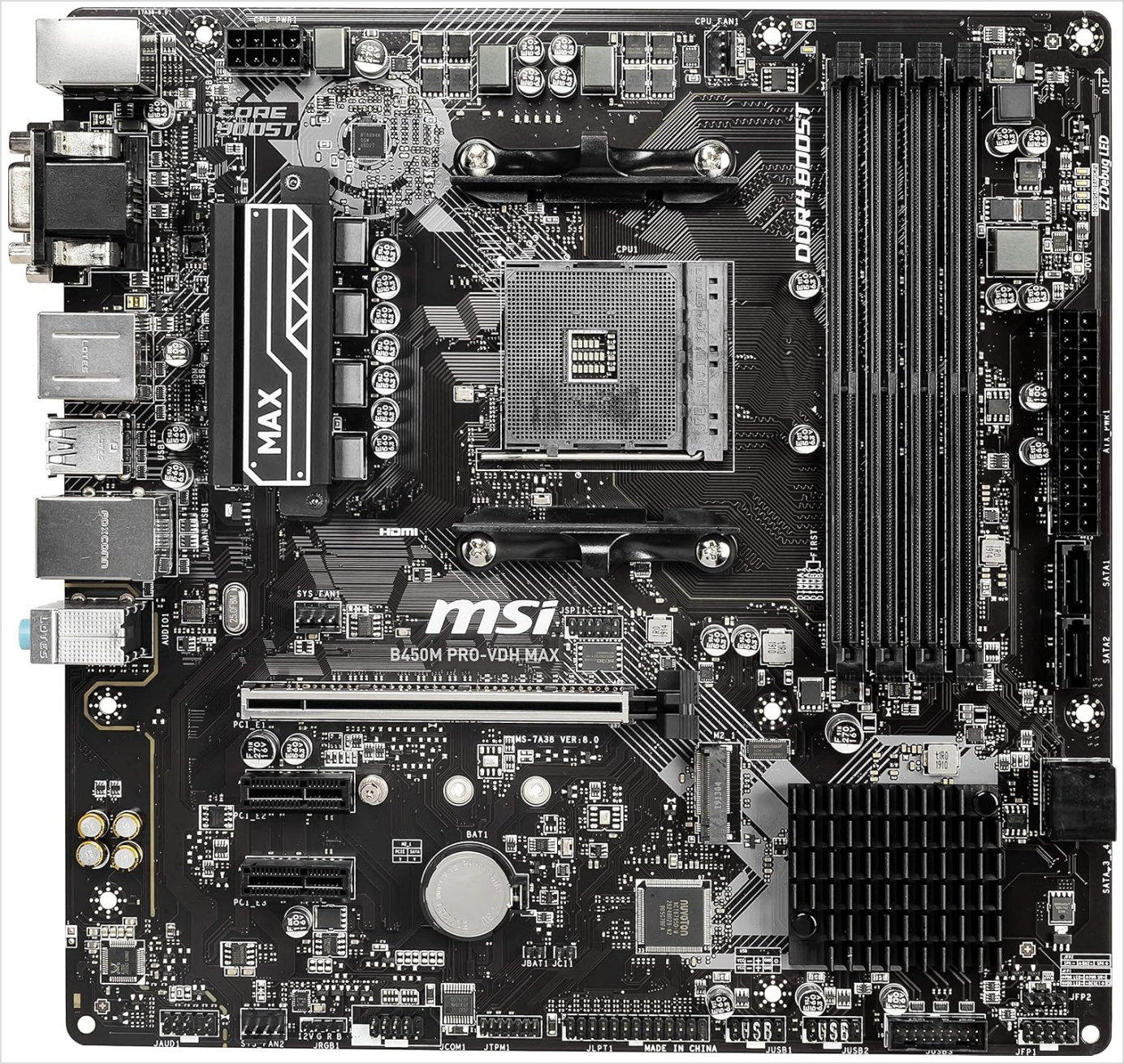


Image 3.2: Top-down view of the MSI B450M PRO-VDH Max motherboard. This image provides a comprehensive overhead view, showing the CPU socket, four DDR4 DIMM slots, PCIe slots, M.2 slot, SATA ports, and various headers and connectors.

4. Rear I/O Panel

The rear input/output (I/O) panel provides external connectivity for your system.

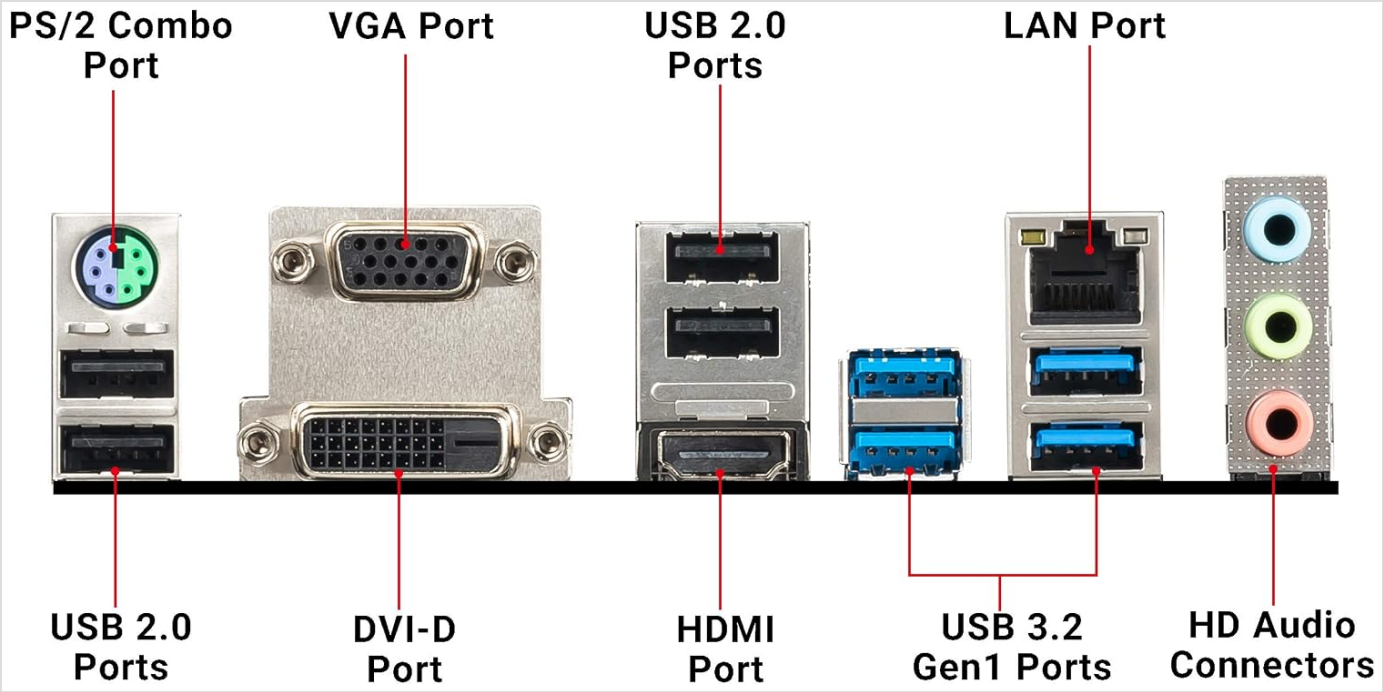


Image 4.1: Rear I/O panel of the MSI B450M PRO-VDH Max motherboard. This image details the various ports available on the rear panel, including a PS/2 Combo Port, USB 2.0 Ports, VGA Port, DVI-D Port, HDMI Port, USB 3.2 Gen1 Ports, LAN Port, and HD Audio Connectors.

Rear I/O Port Descriptions

Port	Description
PS/2 Combo Port	Connects PS/2 keyboard or mouse.
USB 2.0 Ports	Connects USB 2.0 devices.
VGA Port	Connects VGA display (requires CPU with integrated graphics).
DVI-D Port	Connects DVI-D display (requires CPU with integrated graphics).
HDMI Port	Connects HDMI display (requires CPU with integrated graphics).
USB 3.2 Gen1 Ports	Connects USB 3.2 Gen1 devices for high-speed data transfer.
LAN Port	Connects to a network via an Ethernet cable.
HD Audio Connectors	Connects audio devices such as speakers, headphones, and microphones.

5. Setup and Installation

Follow these steps for proper installation of your motherboard and components. Ensure your system is powered off and unplugged before handling any internal components.

1. **Prepare the Case:** Install the I/O shielding plate into the rear opening of your computer case.
2. **Install the CPU:**
    - Open the CPU socket lever.
    - Carefully align the CPU with the socket, ensuring the golden triangle on the CPU matches the triangle on the socket.
    - Gently place the CPU into the socket without forcing it.
    - Close the lever to secure the CPU.

- Apply thermal paste and install the CPU cooler.

3. **Install Memory (RAM):**
    - Open the clips on the DDR4 DIMM slots.
    - Align the notch on the memory module with the notch in the DIMM slot.
    - Press down firmly on both ends of the memory module until the clips snap into place.
    - For dual-channel configuration, refer to the motherboard manual for recommended slot pairing.
4. **Install M.2 SSD (Optional):**
    - Locate the Turbo M.2 slot.
    - Insert the M.2 SSD into the slot at an angle.
    - Gently push down the SSD and secure it with the provided screw.
5. **Install Graphics Card (Optional):**
    - Open the latch on the PCI-E Steel Armor slot.
    - Align the graphics card with the slot and press down firmly until it is seated.
    - Secure the card to the case with a screw.
6. **Connect Storage Devices:**
    - Connect SATA data cables from your storage drives (HDDs/SSDs) to the SATA ports on the motherboard.
    - Connect power cables from your power supply to the storage drives.
7. **Connect Power Supply:**
    - Connect the 24-pin ATX main power connector to the motherboard.
    - Connect the 8-pin (or 4+4-pin) CPU power connector to the motherboard.
    - Connect any additional power connectors required for your graphics card or other components.
8. **Connect Front Panel Headers:** Connect the power button, reset button, HDD LED, power LED, and front panel USB/audio headers to their respective pins on the motherboard. Refer to the motherboard manual for exact pin layouts.
9. **Mount Motherboard:** Carefully place the motherboard into the case, aligning it with the standoffs. Secure it with screws.

6. Operating Instructions

After successful hardware installation, proceed with initial boot-up and software setup.

1. **Initial Boot:**
    - Connect your monitor, keyboard, and mouse.
    - Plug in the power cord and turn on the power supply.
    - Press the power button on your computer case.
    - The system should power on and display the MSI logo.
2. **BIOS Setup:**
    - During boot-up, repeatedly press the `Del` key to enter the BIOS/UEFI setup utility.
    - Configure boot order, enable XMP for memory, and adjust other system settings as needed.
    - Save changes and exit the BIOS.

3. **Operating System Installation:**
    - Insert your operating system installation media (USB drive or DVD).
    - Follow the on-screen prompts to install your preferred operating system.
4. **Driver Installation:**
    - After OS installation, install the necessary drivers.
    - Use the provided Drive CD or download the latest drivers from the official MSI website (www.msi.com) for your specific motherboard model.
    - Install chipset drivers, audio drivers, LAN drivers, and any other relevant drivers.

7. Maintenance

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

- **Dust Removal:** Periodically clean dust from the motherboard and components using compressed air. Ensure the system is powered off and unplugged.
- **BIOS Updates:** Check the MSI website for the latest BIOS updates. BIOS updates can improve compatibility, stability, and performance. Follow MSI's official instructions carefully when updating the BIOS to avoid system damage.
- **Driver Updates:** Keep your drivers updated by regularly checking the MSI website.

8. Troubleshooting

This section addresses common issues you might encounter.

EZ Debug LED

The MSI B450M PRO-VDH Max motherboard features EZ Debug LEDs, which are indicators that help identify the source of a boot failure. These LEDs light up sequentially during the boot process for CPU, DRAM, VGA, and BOOT. If an LED remains lit, it indicates a problem with that specific component.

- **CPU LED:** If lit, indicates a CPU issue. Check CPU installation, power connections, and compatibility.
- **DRAM LED:** If lit, indicates a memory issue. Check RAM installation, try one stick at a time, or test with known good RAM.
- **VGA LED:** If lit, indicates a graphics card issue. Check graphics card installation, power connections, or try a different PCIe slot/card.
- **BOOT LED:** If lit, indicates a boot device issue. Check SATA/M.2 connections, boot order in BIOS, and OS installation.

For more complex issues, refer to the full motherboard manual available on the MSI website or contact MSI technical support.

9. Specifications

Detailed technical specifications for the MSI B450M PRO-VDH Max motherboard.

Feature	Specification
Brand	MSI

Feature	Specification
Model Name	B450PVDHMAX (B450M PRO-VDH Max)
CPU Socket	Socket AM4
Compatible Processors	1st, 2nd and 3rd Gen AMD Ryzen™/ Ryzen™ with Radeon™ Vega Graphics and 2nd Gen AMD Ryzen™ with Radeon™ Graphics/ Athlon™ with Radeon™ Vega Graphics
Chipset Type	AMD B450
RAM Memory Technology	DDR4
Memory Speed	Up to 3866 MHz (OC)
Number of USB 2.0 Ports	2 (Rear I/O)
Wireless Type	Bluetooth *(Note: This specification might refer to an optional add-on or integrated feature not standard on all models. Verify with MSI for exact configuration.)*
Platform	Windows 10, Windows 7
Product Dimensions (LxWxH)	9.6 x 9.6 x 2 inches (Micro-ATX Form Factor)
Item Weight	0.01 ounces *(Note: This value from source data is likely a placeholder or error; actual weight is higher.)*
Date First Available	September 5, 2019

10. Support and Warranty

For technical support, driver downloads, BIOS updates, and warranty information, please visit the official MSI website.

- **MSI Official Website:** www.msi.com
- **Product Support Page:** Navigate to the support section on the MSI website and search for "B450M PRO-VDH Max" to find specific resources for your motherboard.
- **Warranty:** Warranty terms and conditions are subject to the region of purchase. Please refer to the warranty card included in your package or the MSI website for detailed information.

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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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

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