ASUS Prime B450M-A

ASUS Prime B450M-A Motherboard User Manual

Model: Prime B450M-A

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of your ASUS Prime B450M-A motherboard. The ASUS Prime B450 Series motherboards offer a robust foundation for your PC build, designed to support AMD Ryzen processors with flexibility for future upgrades.

Key features include comprehensive cooling solutions, ultra-fast connectivity options, and multiple hardware safeguards for system protection.



Figure 1: ASUS Prime B450M-A Motherboard and Retail Box. This image displays the motherboard alongside its packaging, highlighting the model name and key features.

2. Setup and Installation

Follow these steps for proper installation of your motherboard and its components.

2.1. CPU Installation

The ASUS Prime B450M-A motherboard supports AMD AM4 socket processors. Carefully align your AMD Ryzen CPU with the socket, ensuring the golden triangle on the CPU matches the triangle on the socket. Gently lower the CPU into place and secure it with the retention lever.

2.2. RAM Installation

This motherboard features two DIMM slots, supporting up to 32GB of DDR4 memory. Supported speeds range from 2133 MHz up to 3466 MHz (O.C.). Ensure the memory modules are correctly oriented and firmly seated in the slots until the clips lock into place.

2.3. Storage Installation

The motherboard includes an M.2 socket 3 with M Key, supporting Type 2242/2260/2280 storage devices. This M.2 slot supports both PCIe 3.0 x4 mode (up to 32Gb/s data transfer speeds) and SATA mode storage devices. Additionally, there are four Serial ATA 6.0 Gb/s connectors with RAID 0, RAID 1, and RAID 10 support for traditional hard drives and SSDs.

2.4. Expansion Cards

The board provides one PCI Express 3.0 x16 slot and two PCI Express 2.0 x1 slots for graphics cards and other expansion cards. The SafeSlot Core design fortifies the PCIe slot with solid soldering for enhanced durability.

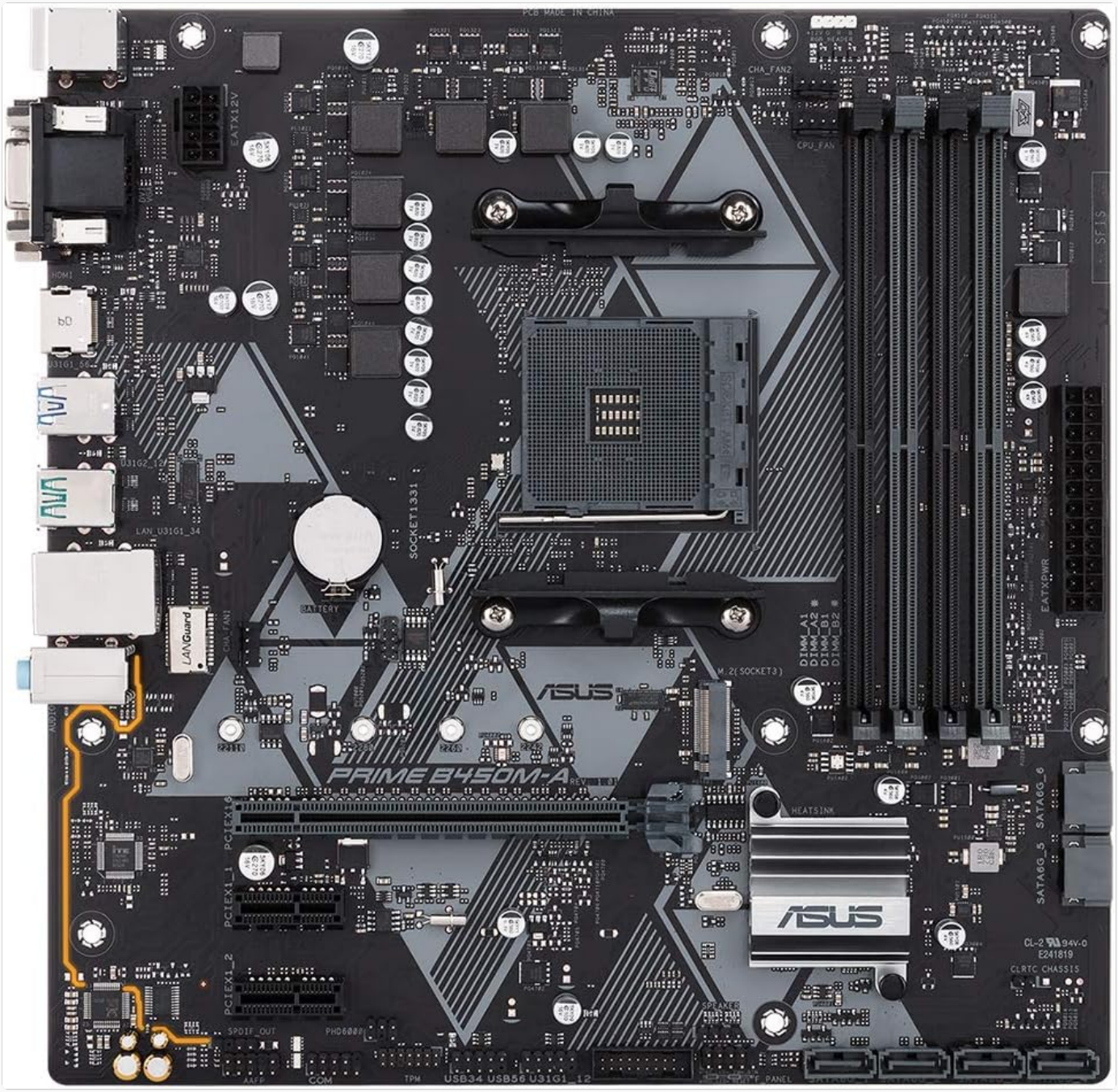


Figure 2: Top-down view of the ASUS Prime B450M-A Motherboard. This image provides a clear layout of the CPU socket, RAM slots, and expansion slots.

2.5. Rear I/O Panel Connectivity

The rear I/O panel offers a variety of ports for external devices:

- **Video Outputs:** D-Sub Port, DVI-D Port.
- **USB Ports:** USB 3.1 Gen 1 Ports (blue), USB 3.1 Gen 2 Ports (teal).
- **Network:** LAN (RJ-45) port.
- **Audio:** 8-Channel High Definition Audio ports.
- **Legacy Ports:** PS/2 keyboard/mouse combo ports.

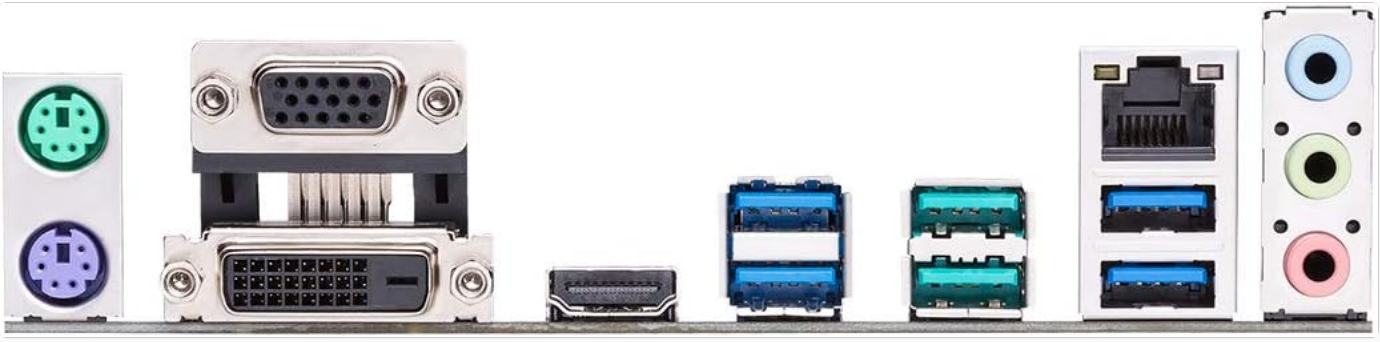


Figure 3: Rear I/O ports of the ASUS Prime B450M-A Motherboard. This image details the available external connectivity options.

2.6. Internal Connectors

The motherboard includes internal headers for additional connectivity, such as 2 x Front USB 3.1 Gen 1 ports, and various fan headers including a 4-pin PWM/DC Fan header.

2.7. Motherboard Unboxing and Overview (Similar Model)

This video provides an unboxing and overview of a similar ASUS B450M series motherboard, demonstrating the components and layout. While the model shown is B450M-K, many aspects are applicable to the B450M-A.

Video 1: ASUS PRIME B450M-K Motherboard Unbox. This video showcases the unboxing and initial look at an ASUS B450M series motherboard, providing visual guidance for component identification.

3. Operating Your System

After successful hardware installation, you can proceed with operating your system.

3.1. BIOS/UEFI Setup

The motherboard features an intuitive UEFI BIOS for system configuration. Access the BIOS during startup by pressing the designated key (usually DEL or F2). Here, you can configure boot options, monitor system status, adjust fan speeds with FAN Xpert software, and enable features like XMP for memory optimization.

3.2. Driver Installation

Install the necessary drivers for your operating system from the provided support DVD or by downloading the latest versions from the ASUS official website. This includes chipset drivers, audio drivers, LAN drivers, and any other utility software like ASUS AI Suite 3 for system management.

4. Maintenance

Regular maintenance ensures the longevity and optimal performance of your motherboard.

4.1. Cleaning

Periodically clean dust from the motherboard and components using compressed air. Ensure the system is powered off and unplugged before cleaning.

4.2. BIOS Updates

Check the ASUS support website for the latest BIOS updates. Updating the BIOS can improve system stability, add support for new CPUs, and enhance performance. Follow the instructions provided by ASUS carefully during the update process.

4.3. ASUS 5X Protection III

The ASUS Prime B450M-A is built with 5X Protection III, employing high-quality components and circuit design for

enhanced durability and reliability. This includes:

- **SafeSlot Core:** Fortified PCIe slot with solid soldering.
- **LANGuard:** Hardware-level networking protection against surges and static electricity.
- **Overvoltage Protection:** Circuit-protecting power design.
- **DIGI+ VRM:** Precision control for stable power delivery.
- **Stainless-Steel Back I/O:** 3X corrosion-resistance for greater durability.

5. Troubleshooting

If you encounter issues, refer to the following common troubleshooting steps:

- **No Power:** Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected. Check power supply functionality.
- **No Display:** Verify that the graphics card is properly seated and connected to the monitor. If using integrated graphics, ensure your CPU supports it and the monitor is connected to the motherboard's video output.
- **System Instability:** Check RAM seating and compatibility. Ensure CPU cooler is properly installed. Update BIOS and drivers to the latest versions.
- **Component Not Detected:** Re-seat the component (RAM, GPU, M.2 SSD, SATA drives). Check cable connections. Verify BIOS settings for component detection.

For more detailed troubleshooting, consult the comprehensive user manual available on the ASUS support website.

6. Specifications

Category	Specification
Brand	ASUS
Series	Prime B450M-A
Item Model Number	90MB0YR0-M0EAY0
CPU Socket	Socket AM4
Compatible Processors	AMD AM4
Chipset Type	AMD B450
RAM Memory Technology	DDR4
RAM (Max)	32 GB DDR4
Memory Speed	3200 MHz (up to 3466 O.C.)
Number of USB 2.0 Ports	2 (internal headers)
Item Weight	15.8 ounces
Product Dimensions	9.61 x 9.61 x 1.18 inches
Color	Black
Platform	Windows 10, Windows 7

7. Warranty and Support

For warranty information, technical support, and driver downloads, please visit the official ASUS support website. You can find detailed warranty terms and conditions, as well as contact information for customer service.

ASUS Support Website: www.asus.com/support/

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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