MSI A320M PRO-VH

MSI A320M PRO-VH ProSeries Motherboard User Manual

Model: A320M PRO-VH (P/N: 9B13-144-457)

Introduction

This manual provides comprehensive instructions for the installation, operation, maintenance, and troubleshooting of your MSI A320M PRO-VH ProSeries Motherboard. Please read this manual thoroughly before beginning installation to ensure proper setup and optimal performance.

The MSI PRO series motherboards are designed to support the latest storage standards, enabling connection of ultra-fast storage devices for enhanced efficiency. These motherboards are built for stable functionality and high-quality assembly, providing optimized professional workflows, reduced troubleshooting, and extended longevity.

Product Overview

The MSI A320M PRO-VH is a Micro-ATX motherboard designed for AMD AM4 processors. It supports DDR4 memory, PCIe 3.0, SATA 6Gb/s, USB 3.2 Gen 2, and features an M.2 slot, DVI, and HDMI outputs.

Figure 1: Top-down view of the MSI A320M PRO-VH motherboard, showing the CPU socket, RAM slots, PCIe slots, and various connectors.

Figure 2: Detailed diagram of the MSI A320M PRO-VH motherboard, highlighting key components such as the CPU socket, DDR4 memory slots, PCIe slots, SATA ports, M.2 slot, and various I/O connectors including USB, HDMI, DVI, and audio jacks.

Setup and Installation

Before installing the motherboard, ensure your system case is compatible with the Micro-ATX form factor. Always handle the motherboard by its edges to prevent electrostatic discharge (ESD) damage.

1. Preparing the Case

1. Install the I/O shield into the rear opening of your computer case.

2. Install standoffs in the case that align with the motherboard's mounting holes.

2. Installing the CPU

This motherboard supports AMD AM4 socket processors.

1. Locate the CPU socket on the motherboard.
2. Lift the load lever on the socket.
3. Carefully align the triangular mark on the CPU with the mark on the socket.
4. Gently place the CPU into the socket without forcing it.
5. Lower the load lever to secure the CPU.
6. Apply thermal paste and install the CPU cooler according to the cooler's instructions.

3. Installing Memory (RAM)

The motherboard features two DDR4 DIMM slots, supporting up to 3200(OC) MHz.

1. Open the clips at both ends of the DIMM slot.
2. Align the notch on the DDR4 memory module with the key in the DIMM slot.
3. Insert the memory module firmly into the slot until the clips snap into place.

4. Connecting Power

- Connect the 24-pin ATX main power connector from your power supply to the motherboard.
- Connect the 4-pin ATX 12V power connector (CPU power) to the motherboard.

5. Installing Storage Devices

- **SATA Devices:** Connect SATA data cables from your hard drives or SSDs to the SATA 6Gb/s ports on the motherboard. Connect power cables from your power supply to the devices.
- **M.2 SSD:** Insert your M.2 NVMe SSD into the Turbo M.2 slot and secure it with the provided screw.

6. Installing Expansion Cards

The motherboard includes PCIe 3.0 x16 and PCIe 2.0 x1 slots.

- Insert your graphics card into the PCI Express 3.0 x16 slot.
- Insert other expansion cards (e.g., network cards, sound cards) into the PCI Express 2.0 x1 slots.

7. Connecting Front Panel Cables

Connect the power switch, reset switch, HDD LED, and power LED cables from your case to the corresponding headers on the motherboard (JFP1).
Connect front panel USB and audio cables to their respective headers.

Operating Instructions

Once all components are installed and connected, you can proceed with the initial boot-up and operating system installation.

1. Initial Boot-Up

1. Connect a monitor to the DVI or HDMI port on the motherboard's I/O panel.
2. Connect a keyboard and mouse to the USB ports.

3. Power on your system.
4. Access the BIOS/UEFI setup by pressing the `DEL` key during startup.

2. BIOS/UEFI Configuration

The BIOS (Basic Input/Output System) or UEFI (Unified Extensible Firmware Interface) is firmware that initializes hardware during the booting process and provides runtime services for operating systems. Key configurations include:

- **Boot Order:** Set the boot priority for your operating system installation media (USB drive, DVD-ROM).
- **XMP Profile:** Enable A-XMP OC Mode for optimal DDR4 memory performance (up to 3200 MHz).
- **SATA Mode:** Configure SATA mode (AHCI is recommended for SSDs).
- **Fan Control:** Adjust fan speeds for optimal cooling and noise levels.

3. Operating System Installation

Follow the instructions provided with your operating system (e.g., Windows 10) to complete the installation process. Ensure all necessary drivers are installed after the OS is set up. Drivers can be found on the MSI website for your specific motherboard model.

4. Core Boost Technology

The motherboard features Core Boost technology with a premium layout and digital power design, supporting more CPU cores and providing enhanced performance. This is an automatic feature that optimizes power delivery.

5. DDR4 Boost

DDR4 Boost is an advanced technology designed to deliver pure data signals for the best memory performance and stability. This feature helps ensure reliable operation of your DDR4 memory modules.

Maintenance

Proper maintenance ensures the longevity and stable operation of your motherboard and connected components.

- **Dust Removal:** Regularly clean dust from inside your computer case, especially around fans, heatsinks, and the motherboard surface. Use compressed air for best results. Ensure the system is powered off and unplugged before cleaning.
- **BIOS Updates:** Periodically check the MSI website for BIOS/UEFI updates. Updates can improve compatibility, stability, and performance. Follow the update instructions carefully to avoid damaging the motherboard.
- **Driver Updates:** Keep your device drivers (chipset, graphics, audio, network) updated to the latest versions from the MSI website or component manufacturers.
- **Cable Management:** Ensure internal cables are neatly managed to improve airflow and prevent obstruction of components.
- **Temperature Monitoring:** Use monitoring software to keep an eye on CPU and chipset temperatures to prevent overheating.

Troubleshooting

This section provides solutions to common issues you might encounter.

No Power / System Does Not Boot

- Verify that the 24-pin ATX main power connector and the 4-pin ATX 12V power connector are securely plugged into the motherboard.

- Ensure the power supply is switched on and connected to a working power outlet.
- Check if the front panel power switch cable is correctly connected to the JFP1 header.
- Try reseating the RAM modules.
- Remove all unnecessary peripherals and expansion cards to isolate the issue.

No Display Output

- Ensure the monitor is connected to the correct video output (DVI or HDMI on the motherboard, or your dedicated graphics card).
- Verify that the graphics card (if installed) is properly seated in its PCIe slot and has sufficient power connected.
- Try reseating the RAM modules.
- If using an integrated GPU, ensure your CPU has integrated graphics.

System Instability / Crashes

- Check for overheating. Ensure CPU cooler is properly installed and fans are working.
- Run memory diagnostic tools to check for faulty RAM.
- Update BIOS/UEFI to the latest version.
- Ensure all drivers (chipset, graphics, etc.) are up to date.
- Verify power supply wattage is sufficient for all components.

BIOS Update Issues

- Always use the correct BIOS file for your specific motherboard model.
- Do not interrupt the BIOS update process.
- If a BIOS update fails, refer to the motherboard's manual for BIOS recovery procedures (e.g., using a USB flashback feature if available, though this model might not have it).

Specifications

Feature	Specification
Model Name	MSI A320M PRO-VH
CPU Support	Supports 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 and A-series / Athlon X4 Desktop Processors for Socket AM4
Chipset	AMD A320 Chipset
Memory	2x DDR4 DIMM slots, Supports DDR4 1866/ 2133/ 2400/ 2667/ 2800/ 2933/ 3000/ 3066/ 3200 MHz (by JEDEC/A-XMP OC Mode), Max. 32GB
Expansion Slots	1x PCIe 3.0 x16 slot, 2x PCIe 2.0 x1 slots
Storage	4x SATA 6Gb/s ports, 1x Turbo M.2 slot (PCI-E Gen3 x4)
USB Ports	6x USB 2.0 (2 rear, 4 internal), 4x USB 3.2 Gen1 (2 rear, 2 internal), 2x USB 3.2 Gen2 (rear)

Feature	Specification
Video Output	1x DVI-D, 1x HDMI
LAN	Realtek RTL8111H Gigabit LAN controller
Audio	Realtek ALC887 Codec, 7.1-Channel High Definition Audio
Form Factor	Micro-ATX (9.3 in. x 7.9 in.)

Support and Warranty

For further assistance, driver downloads, BIOS updates, and detailed product information, please visit the official MSI website.
You can also refer to the official user manual PDF for more in-depth instructions and diagrams:
Download User Manual (PDF)
Information regarding product warranty can typically be found on the MSI official website or within the product packaging. Please retain your proof of purchase for warranty claims.

© 2024 MSI. All rights reserved.

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