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Argon Forty Argon ONE V3 M.2 NVME Expansion Board

Argon ONE V3 M.2 NVME Expansion Board for Raspberry Pi 5 User Manual

Model: Argon ONE V3 M.2 NVME Expansion Board

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of the Argon ONE V3 M.2 NVME Expansion Board. This board is designed to expand the storage capabilities of your Raspberry Pi 5 when used in conjunction with the Argon ONE V3 case, allowing for the integration of M.2 NVME drives.

2. Safety Information

- Ensure the Raspberry Pi 5 and any connected peripherals are powered off and disconnected from the power source before installation.
- Handle the expansion board and M.2 NVME drive with care to avoid electrostatic discharge. Consider using an anti-static wrist strap.
- Do not apply excessive force when connecting components.
- Keep the device away from moisture, extreme temperatures, and direct sunlight.
- This product contains small parts and is not suitable for children.

3. Package Contents

Verify that all items are present in your package:

- Argon ONE V3 M.2 NVME Expansion Board
- FPC Impedance Controlled Cable
- Aluminum Heatsink for M.2 NVME Drive
- Instruction Manual (this document)
- *(Additional screws or standoffs may be included for M.2 drive installation)*

4. Setup and Installation

This section details the steps to install the Argon ONE V3 M.2 NVME Expansion Board into your Argon ONE V3 case with

a Raspberry Pi 5.

4.1 Preparing the Argon ONE V3 Case (Illustrative)

The Argon ONE V3 case provides the housing for your Raspberry Pi 5 and the expansion board. The following image shows the interior of the case where the Raspberry Pi and expansion board will be seated.



Figure 1: Interior view of the Argon ONE V3 case, showing the layout for Raspberry Pi 5 and expansion board integration. Note the pin headers and mounting points.

4.2 Installing the M.2 NVME Drive

1. Carefully insert your M.2 NVME drive (M-Key, up to 2280 size) into the M.2 slot on the Argon ONE V3 M.2 NVME Expansion Board.
2. Secure the M.2 NVME drive with the provided screw or standoff, ensuring it is firmly seated.
3. Apply the included aluminum heatsink to the M.2 NVME drive for optimal thermal management. Ensure good contact for efficient heat dissipation.

4.3 Connecting the Expansion Board to Raspberry Pi 5

1. With the Raspberry Pi 5 already installed in the Argon ONE V3 case (refer to the Argon ONE V3 case manual for Pi installation), align the Argon ONE V3 M.2 NVME Expansion Board with the designated slot in the case.
2. Connect the FPC impedance controlled cable from the expansion board to the appropriate PCIe connector on the Raspberry Pi 5. Ensure the cable is inserted correctly and securely on both ends.
3. Gently press the expansion board into place, ensuring all connections are secure and the board is properly seated within the case.
4. Close the Argon ONE V3 case, ensuring no cables are pinched.

The underside of the Argon ONE V3 case, once assembled, will provide access to ports and ventilation.



Figure 2: Underside view of the Argon ONE V3 case, illustrating the ventilation and access points after assembly.

5. Operating Instructions

1. After physical installation, connect the power supply to your Argon ONE V3 case.
2. Boot your Raspberry Pi 5.
3. Access the Raspberry Pi OS (or your chosen operating system) and verify that the M.2 NVME drive is detected. You may need to initialize and format the drive if it's new. Refer to your operating system's documentation for specific instructions on managing storage devices.
4. For optimal performance, ensure your Raspberry Pi OS is up to date.

6. Maintenance

- Keep the Argon ONE V3 case and expansion board free from dust. Use a soft, dry cloth for cleaning.
- Do not use liquid cleaners or solvents.
- Ensure adequate ventilation around the case to prevent overheating, especially during prolonged use or heavy workloads.

7. Troubleshooting

- **NVME Drive Not Detected:**
  - Ensure the FPC cable is securely connected to both the expansion board and the Raspberry Pi 5's PCIe slot.
  - Verify that the M.2 NVME drive is correctly seated in its slot on the expansion board.
  - Check if the M.2 NVME drive is compatible (M-Key, up to 2280 size).
  - Ensure your Raspberry Pi 5 firmware and operating system are up to date.
- **Overheating:**
  - Confirm the M.2 NVME heatsink is properly installed and making good contact with the drive.
  - Ensure the Argon ONE V3 case has sufficient airflow and is not obstructed.
- **Slow Performance:**

- Verify the FPC cable is not damaged and is correctly installed.
- Check the health of your M.2 NVME drive using appropriate software tools.

8. Specifications

Feature	Detail
Product Name	Argon ONE V3 M.2 NVME Expansion Board
Compatibility	Raspberry Pi 5, Argon ONE V3 Case
M.2 NVME Support	M-Key, up to 2280 size
Connectivity	PCIe via FPC cable
Thermal Management	Integrated M.2 NVME heatsink
Item Weight	Approximately 3.52 ounces (board only)
Dimensions	Designed to fit within Argon ONE V3 case (approx. 4.33 x 3.82 x 0.94 inches for package)

9. Warranty and Support

For warranty information and technical support, please visit the official Argon Forty website or contact their customer service. Keep your proof of purchase for warranty claims.
Online Resources: www.argon40.com

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