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› Waveshare PCIe to M.2 Adapter Board (C) for Raspberry Pi 5 - NVMe SSD Adapter Manual

Waveshare PCIe TO M.2 Board (C)

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USER MANUAL FOR RASPBERRY PI 5

Model: PCIe TO M.2 Board (C)

1. Introduction

The Waveshare PCIe to M.2 Adapter Board (C) is designed for the Raspberry Pi 5, enabling the use of NVMe protocol M.2 solid state drives for enhanced storage and high-speed data transfer. This adapter improves the working efficiency of your Raspberry Pi 5 by providing faster reading and writing capabilities.

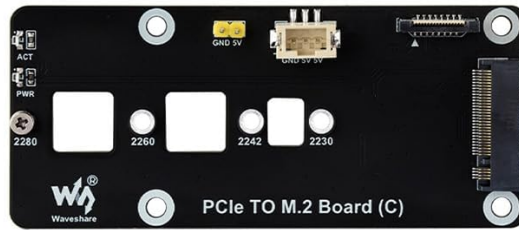
2. Package Contents

Verify that all items listed below are included in your package. If any items are missing or damaged, please contact customer support.

- PCIe TO M.2 Board (C) x1
- PCIe-Cable-50mm x1
- PH2.0 3PIN cable (~5cm) x1
- Transparent acrylic mounting plate x1
- Standoff pack x1

Package Content

PCIe TO M.2 Board (C) x1



Transparent acrylic mounting plate x1

PCIe-Cable-50mm x1



PH2.0 3PIN cable
~5cm x1



Standoff pack x1

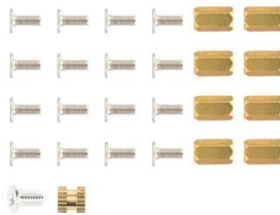


Image 2.1: Contents of the Waveshare PCIe to M.2 Adapter Board (C) package, including the adapter board, PCIe cable, 3PIN cable, acrylic mounting plate, and standoff pack.

3. Features

- Designed specifically for Raspberry Pi 5.
- Supports NVMe Protocol M.2 Solid State Drives for high-speed reading and writing.
- Compatible with 2230, 2242, 2260, and 2280 size M.2 Solid State Drives.
- Supports PCIe Gen2 and Gen3 modes.
- Enables booting Raspberry Pi 5 directly from the Solid State Drive.
- Supports power supply via PCIe cable or 3PIN cable.

4. Setup and Installation

Follow these steps to properly install the PCIe to M.2 Adapter Board (C) with your Raspberry Pi 5.

4.1 Connecting the Adapter Board

The adapter board connects to the Raspberry Pi 5 via a 16PIN PCIe interface cable.

Connecting To Pi5 Via 16PIN Cable

Based On 16PIN PCIe Interface Of Raspberry Pi 5



Connect to the PCIe interface of the
PCIe TO M.2 Board (C)



Connect to the PCIe interface of the
Raspberry Pi 5

*** for reference only, please refer to the Package Content for detailed part list**

Image 4.1: Illustration of connecting the PCIe to M.2 Adapter Board (C) to the Raspberry Pi 5 using the 16PIN PCIe cable. Ensure the cable is securely connected to both the adapter board and the Raspberry Pi's PCIe interface.

4.2 Mounting with Acrylic Plate

The adapter board comes with a transparent acrylic mounting plate that adopts a side-mounting solution. This design helps save space above the Raspberry Pi 5, allowing for better airflow or additional components.

Comes With Transparent Acrylic Mounting Plate

Adopts Side-Mounting Solution To Save Space Above The Raspberry Pi 5



* for reference only, please refer to the Package Content for detailed part list

Image 4.2: The Raspberry Pi 5 with the PCIe to M.2 Adapter Board (C) attached using the transparent acrylic mounting plate, showcasing the side-mounting configuration.

4.3 NVMe Drive Installation

The adapter supports M.2 NVMe SSDs of various sizes: 2230, 2242, 2260, and 2280. Ensure your SSD is compatible and install it into the appropriate slot on the adapter board.

NVMe Drive Protocol Support

Compatible With 2230 / 2242 / 2260 / 2280 Size M.2 Solid State Drive
Supports Gen2 And Gen3 Modes, Supports Booting PI5 From Solid State Drive

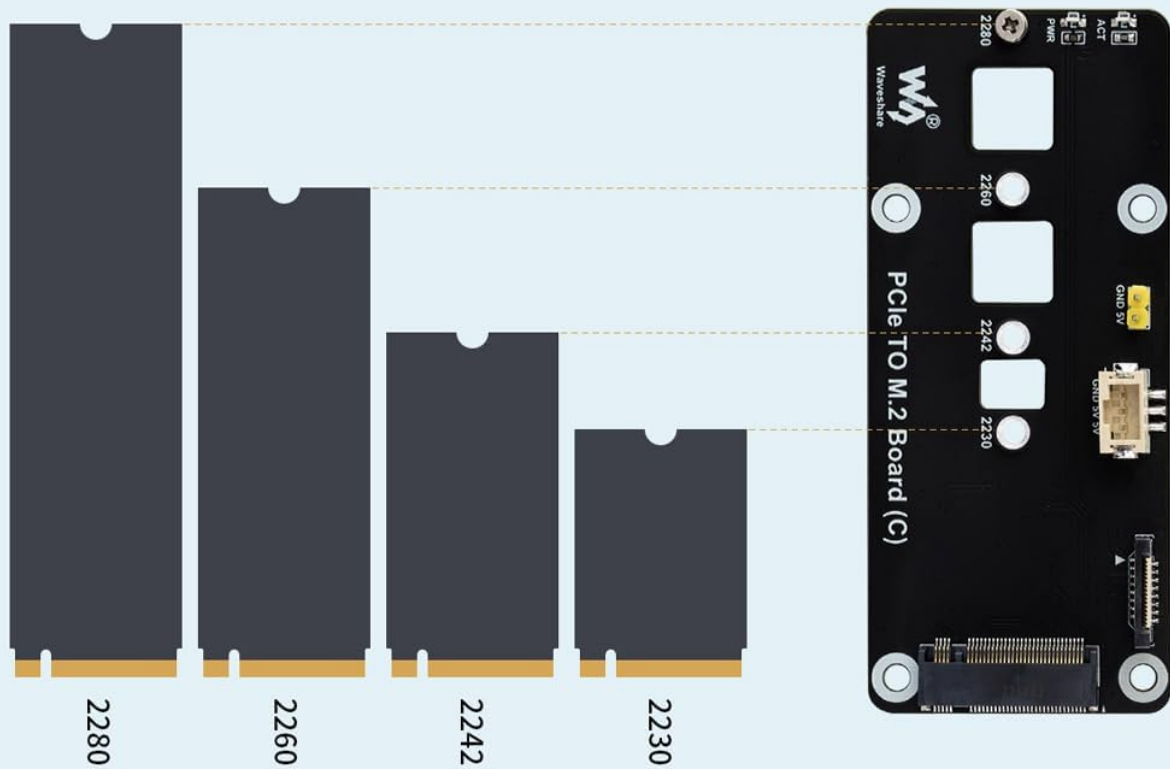


Image 4.3: Diagram illustrating the compatibility of the adapter board with different M.2 SSD sizes (2230, 2242, 2260, 2280) and the NVMe drive protocol support.

5. Operating Instructions

5.1 Power Supply Methods

The adapter board can be powered via the PCIe cable by default. In cases of insufficient power, you can add a 3PIN cable for additional power supply.

Onboard Dual LED Indicators

Easy To Monitor The Working Status



Outline Dimensions

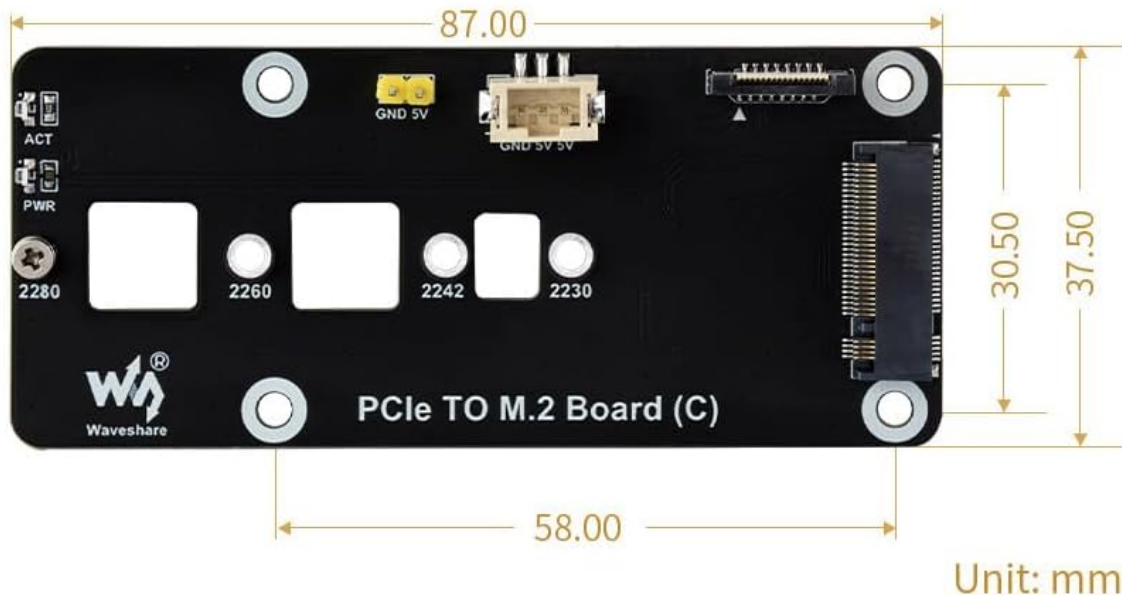


Image 5.1: Depiction of the two power supply methods: via the PCIe cable (default) and via an optional 3PIN cable for supplementary power.

5.2 Booting from NVMe SSD

The adapter board supports booting the Raspberry Pi 5 directly from the installed NVMe SSD. Refer to the Raspberry Pi documentation for specific steps on configuring your Raspberry Pi OS to boot from an NVMe drive.

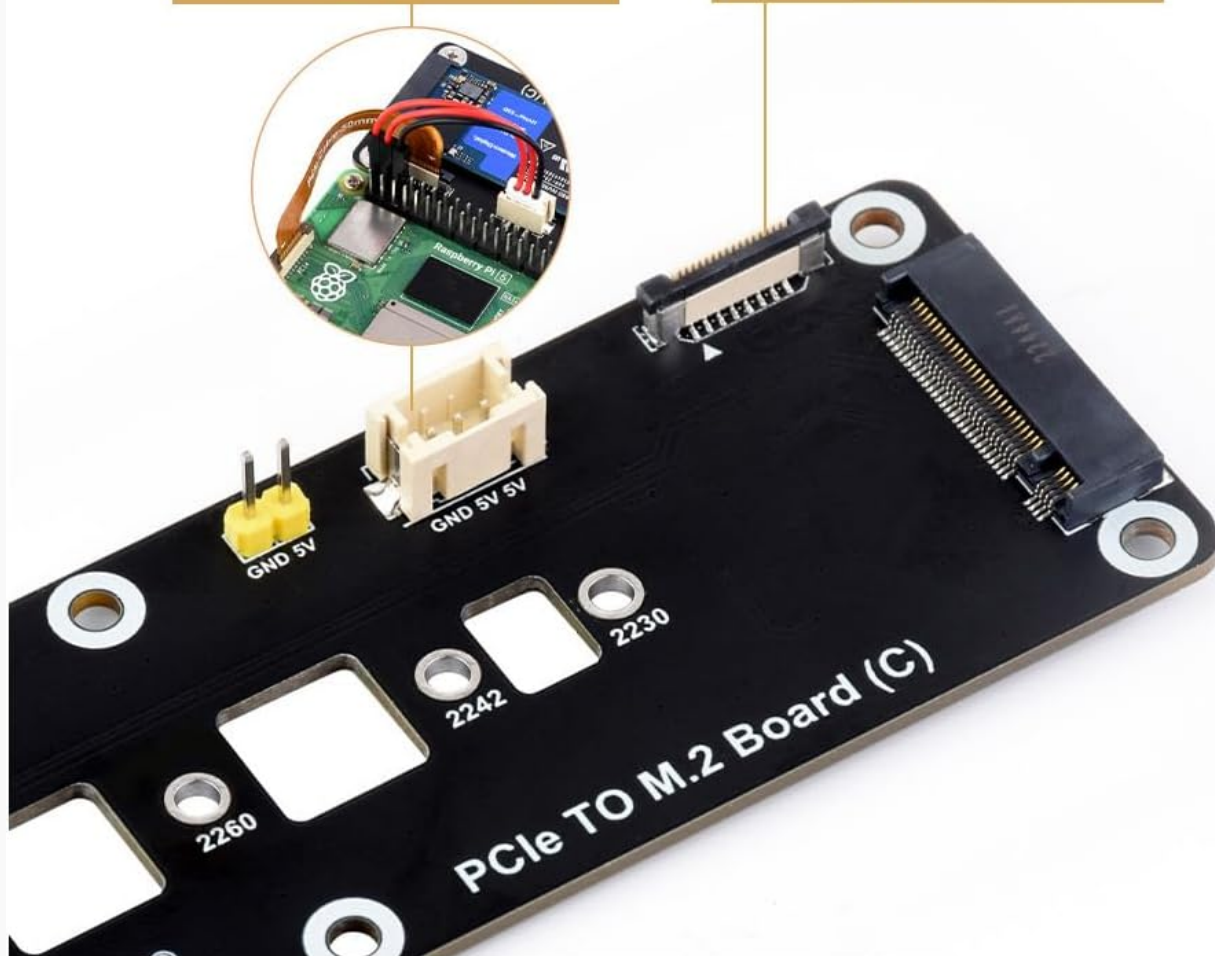
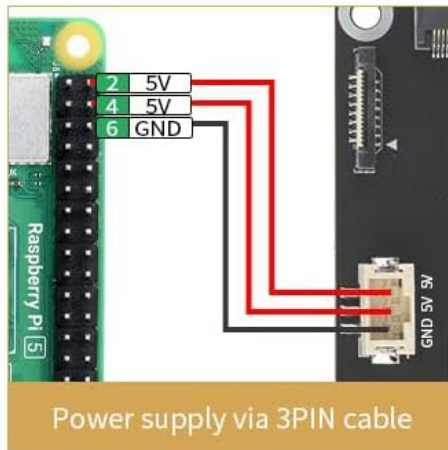
5.3 Onboard LED Indicators

The board features dual LED indicators to monitor its working status:

- **ACT Status Indicator:** This LED blinks when the SSD is actively reading or writing data.
- **PWR Indicator:** This LED lights up when the board is powered on.

Multiple Power Supply Methods

Supports Power Supply Via PCIe Cable Or 3PIN Cable



* Note: uses PCIe cable for power supply by default, you can add 3PIN cable in cases of insufficient power

Image 5.2: Close-up view of the adapter board highlighting the ACT (Activity) and PWR (Power) LED indicators for monitoring operational status.

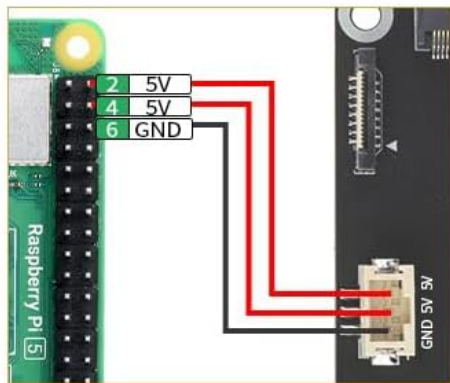
6. Specifications

Feature	Description
Brand	Waveshare
Model Number	PCIe TO M.2 Board (C)
Hardware Interface	Solid State Drive (NVMe M.2)
Compatible Devices	Raspberry Pi 5
Supported M.2 SSD Sizes	2230, 2242, 2260, 2280
PCIe Modes Supported	Gen2, Gen3
Operating System	Raspberry Pi OS
Item Weight	0.15 Pounds

6.1 Outline Dimensions

Multiple Power Supply Methods

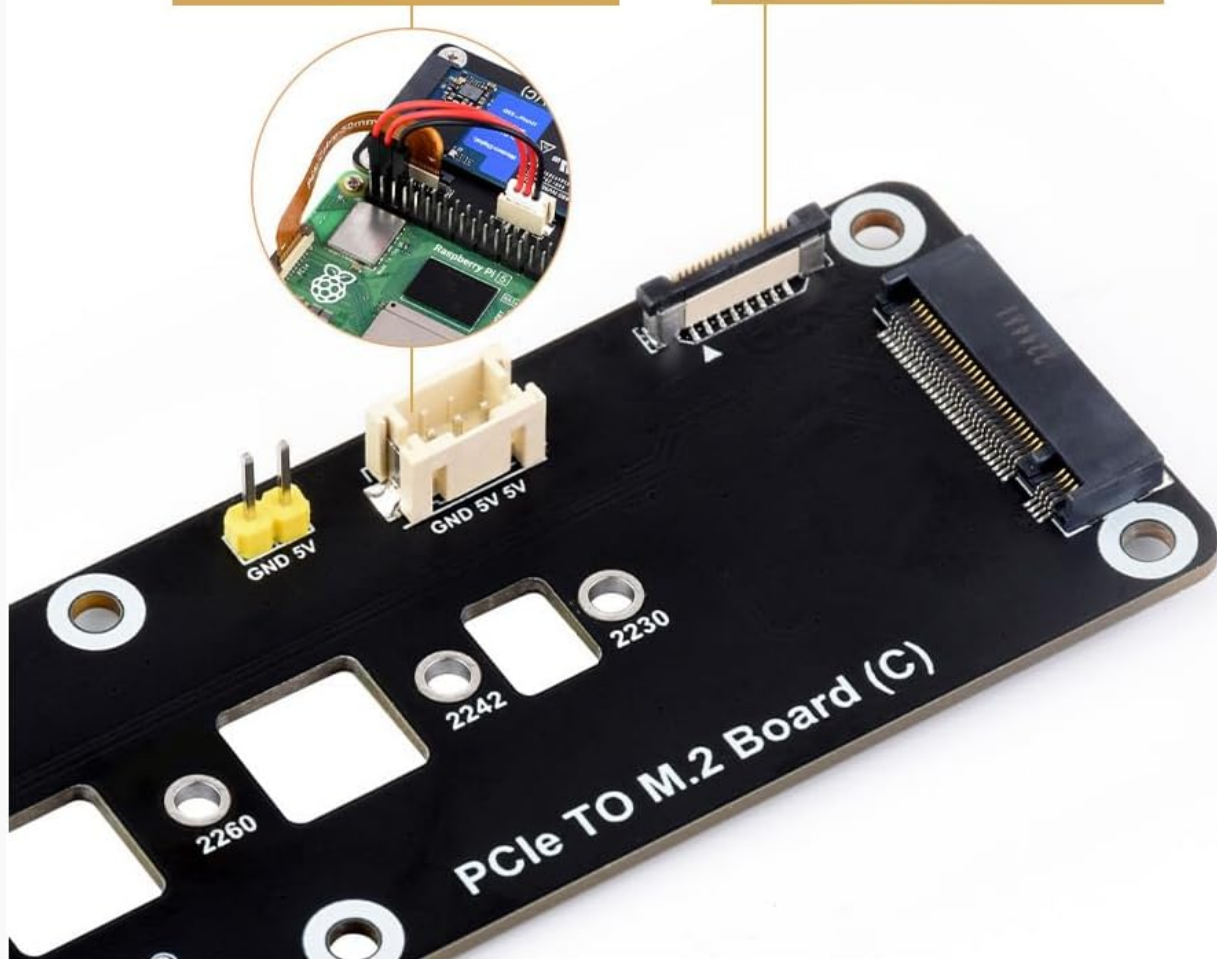
Supports Power Supply Via PCIe Cable Or 3PIN Cable



Power supply via 3PIN cable



Power supply via PCIe cable



* Note: uses PCIe cable for power supply by default, you can add 3PIN cable in cases of insufficient power

Image 6.1: Technical drawing showing the outline dimensions of the adapter board in millimeters.

7. Troubleshooting

- **SSD Not Detected:** Ensure the PCIe cable is securely connected to both the adapter board and the Raspberry Pi 5. Verify that the M.2 NVMe SSD is correctly seated in its slot. Check Raspberry Pi OS for proper NVMe driver installation and configuration.
- **Power Issues:** If the PWR LED does not light up, check all power connections. If using a high-power SSD,

consider connecting the optional 3PIN power cable to provide sufficient power.

- **Slow Performance:** Ensure your Raspberry Pi 5 firmware and OS are up to date. Verify that the adapter is operating in the expected PCIe Gen mode (Gen2 or Gen3) as supported by your setup.

8. Product Overview Video

Watch this official video for a visual overview of the Waveshare PCIe to M.2 adapter series, including connection and feature highlights.

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Video 8.1: An official Waveshare video providing an overview of the PCIe to M.2 adapter series, demonstrating various models and their features, including connection to Raspberry Pi 5 and NVMe SSD support.

9. Warranty and Support

This product comes with a standard manufacturer's warranty. For detailed warranty information, technical support, or service inquiries, please visit the official Waveshare website or contact their customer service department. Keep your purchase receipt for warranty claims.

Waveshare Official Website: www.waveshare.com