ACASIS M002Pro

ACASIS 40Gbps Mac mini M4 Dock User Manual

Model: M002Pro | Brand: ACASIS

1. INTRODUCTION

The ACASIS Mac mini M4 Dock is an advanced expansion workstation designed to enhance the capabilities of your Mac mini M4 and M4 Pro. This dock provides high-speed connectivity, extensive display support, and integrated storage solutions, making it an ideal all-in-one solution for demanding workflows. It features 40Gbps host connectivity, dual 4K display outputs, multiple USB-A 10Gbps ports, dual M.2 NVMe SSD slots, and SD/TF 4.0 card readers. Additionally, it offers 30W Power Delivery for stable operation.

Figure 1: ACASIS 40Gbps Mac mini M4 Dock, a compact and powerful expansion unit.

2. PACKAGE CONTENTS

Please verify that all items listed below are present in your package:

- Mac mini M4 dock/hub

- 40Gbps cable

- Electric power source

- PD power cable

- Screwdrivers

- SSD snap

- Thermal pad for SSD

- User manual

- Packing box

Note: SSDs are not included and must be purchased separately.

Q3: My dock disconnected during use, and my SSD isn't being detected.

"If your dock disconnects or your SSD isn't detected during use, here's why that might happen:
① The M.2 SSD or HOST connection may be loose.
② Your SSD may require more power—make sure the dock is connected to a power source.
Here's what you can do:
① Turn off the dock and unplug it. Remove the SSD and gently clean the gold connectors with an eraser before reinserting it.
② Always use the power adapter when connecting high-power devices like SSDs to ensure stable performance.
Note: When using multiple devices at once, always keep the dock plugged into power for best results."

Q4: Do I need to connect the dock to a power source during use?

Think of the external power adapter as your dock's "gas station." It makes sure every connected device gets enough "fuel" to run at full speed, reliably, without draining your Mac's battery.

Q5: The indicator lights on the device are too bright. Why are they there?

The power light shows whether your Mac Mini M4 is on, and the SSD light tells you if your SSD is installed correctly. These lights help you understand what's happening—like whether the device is powered on, transferring data, or experiencing an error—without needing to check your computer.
If the lights are too bright, you can place a small piece of tape over them to soften the glow.

Figure 2: All components included in the ACASIS Mac mini M4 Dock package.

---

3. PRODUCT FEATURES AND PORT LAYOUT

3.1 Port Layout

The ACASIS Mac mini M4 Dock provides a comprehensive set of ports for enhanced connectivity and functionality.

11-1 Mac mini M4 dock

Power
Mac mini M4

HOST 40Gbps
For host PC connection

DP(x2)
Single Display 4K @ 144HZ
Dual Display: 4K @ 60HZ

PD
30W PD input

Power
Dock

3*USB-A
10Gbps

2*M2 Port
(20Gbps)

SD/TF 4.0
Up to 312MB/s

**SSD1/SSD2
Indicator Light**

Figure 3: Detailed view of the ACASIS Mac mini M4 Dock, highlighting its various ports and features.

- **HOST (40Gbps):** Connects to your Mac mini M4/M4 Pro for high-speed data transfer.
- **DP (x2):** Dual DisplayPort outputs supporting up to 4K@144Hz for a single display or 4K@60Hz for dual displays.
- **PD (30W):** Power Delivery input for stable power to the dock and connected devices.
- **3*USB-A (10Gbps):** Three USB-A 3.1 ports for connecting peripherals and external storage.
- **2*M.2 Port (20Gbps):** Dual M.2 NVMe SSD slots for expandable storage.
- **SD/TF 4.0:** High-speed card readers supporting up to 312MB/s.
- **SSD1/SSD2 Indicator Light:** Provides status indication for installed SSDs.

3.2 High-Speed Data Transfer

The dock features a 40Gbps HOST interface, ensuring ultra-responsive performance. The dual M.2 slots support 20Gbps each, and when configured in RAID 0 with two identical SSDs, speeds can combine to a screaming-fast 40Gbps, ideal for 4K video editing and data-intensive tasks.

10GB capacity transfer only takes 4 seconds

Two identical M.2 SSDs in RAID 0 can double the speed from 20Gbps (single drive) to 40Gbps

Note: Test data from ACASIS; actual performance may vary by hardware configuration.

Figure 4: Illustrates the rapid data transfer capabilities of the dock, showing a 10GB transfer completed in approximately 4 seconds.

3.3 Triple Display Support

Achieve enhanced productivity with triple display support. The dock's dual DisplayPort outputs, combined with your Mac Mini's native HDMI/Thunderbolt port, enable seamless MST expansion. This setup is perfect for video editors, multi-screen office environments, creative design, and live streaming.

- Single screen (DP * 1): Up to 4K@144Hz
- Dual screen (DP * 2): Up to 4K@60Hz
- Three screens (DP * 2 + HDMI or Thunderbolt port): Up to 4K@144Hz + 5K@60Hz + 4K@60Hz

Triple Dispaly

MST(ABC)

Single screen (DP * 1)	up to 4K144Hz
Dual screen (DP * 2)	up to 4K60Hz
Three screens (DP * 2+HDMI or Thunderbolt port)	up to 4K144Hz+5K60Hz+4K60Hz

PS: The above data is obtained from testing conducted by Acasis Laboratory and is subject to actual use

Figure 5: Diagram showing a triple display configuration using the dock's DisplayPort outputs and the Mac mini's native video output.

3.4 Dual-Bay NVMe SSD Enclosure with RAID Functionality

The integrated dual M.2 SSD enclosure supports up to 16TB of storage and various RAID modes for flexibility and data security.

RAID Functionality Overview

Mode	Number of SSD	Display SSD quantity	Capacity	Max capacity	Speed	Security Rating
Default mode	1/2	1/2	SSD1/SSD2	8TB/8TB	20Gbps	★★★☆☆
RAID 0	2	1	2 x Min(SSD1/SSD2)	16TB	40Gbps	★★★★☆
RAID 1	2	1	Min(SSD1/SSD2)	8TB	20Gbps	★★★★★
JBOD	2	1	SSD 1 + SSD 2	16TB	20Gbps	★★★☆☆

The enclosure supports M-Key and M&B Key NVMe/PCIe SSDs in 2230, 2242, 2260, and 2280 sizes. It does not support M&B Key NGFF/SATA or B Key NGFF/SATA SSDs.
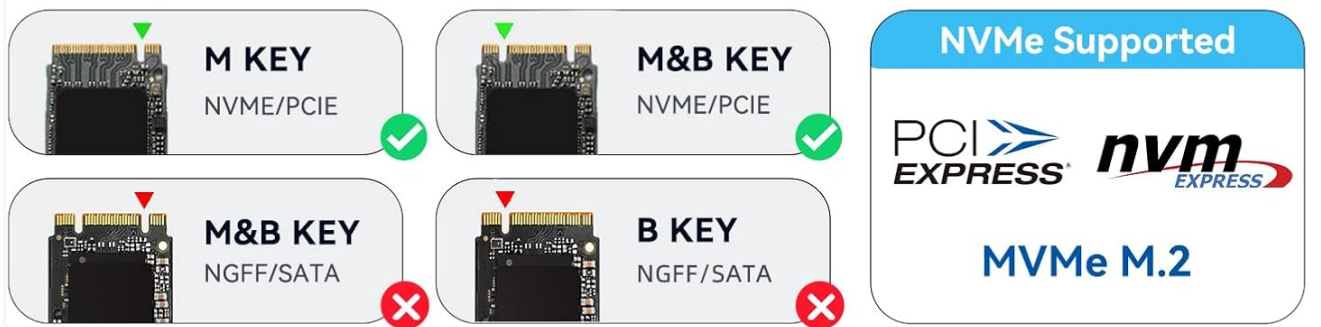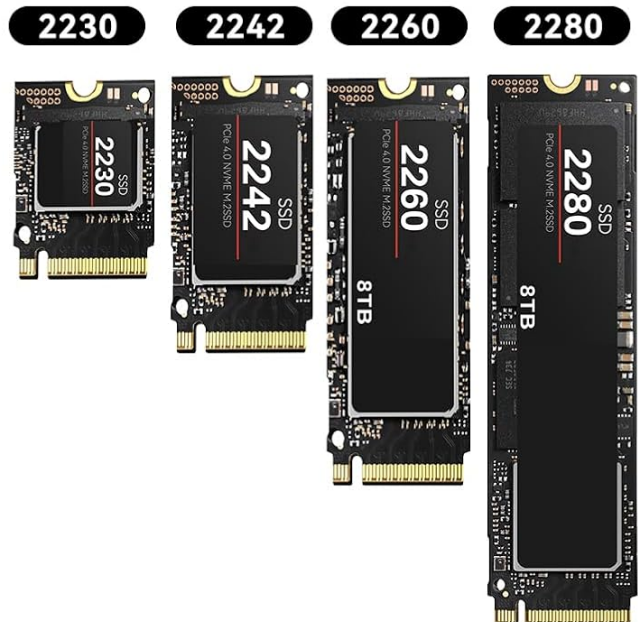
Compatible sizes with 2230/2242/2260/2280

2230 **2242** **2260** **2280**

M KEY	M&B KEY
NVME/PCIE ✓	NVME/PCIE ✓
M&B KEY	B KEY
NGFF/SATA ✗	NGFF/SATA ✗

NVMe Supported

PCI EXPRESS® nvm EXPRESS®

MVMe M.2

Figure 6: Illustrates the compatible M.2 SSD sizes (2230, 2242, 2260, 2280) and supported key types (M Key, M&B Key NVMe/PCIe).

3.5 USB-A 3.1 Ports

Three ultra-fast 10Gbps USB-A 3.1 ports provide ample connectivity for your peripherals, backward compatible with USB 3.0/2.0. These ports are suitable for connecting keyboards, mice, portable hard drives, printers, and audio interfaces. Each USB interface supports up to 4.5W (5V/0.9A) power supply for external devices.

Figure 7: Shows the dock connected to a monitor, keyboard, and mouse, demonstrating the utility of the USB-A ports.

3.6 SD/TF 4.0 Card Readers

Pro-grade SD/TF 4.0 card speeds (up to 312MB/s) allow for instant transfer of RAW photos and 4K videos, streamlining workflows for drone and DSLR users.

Figure 8: The dock's SD and TF card slots are shown alongside a camera, indicating their use for media transfer.

3.7 Aluminum Shell and Heat Dissipation

The dock features an all-aluminum shell designed for excellent heat dissipation, ensuring stable performance even under heavy loads. This helps maintain optimal operating temperatures for both the dock and the integrated Mac mini.

All Aluminum shell
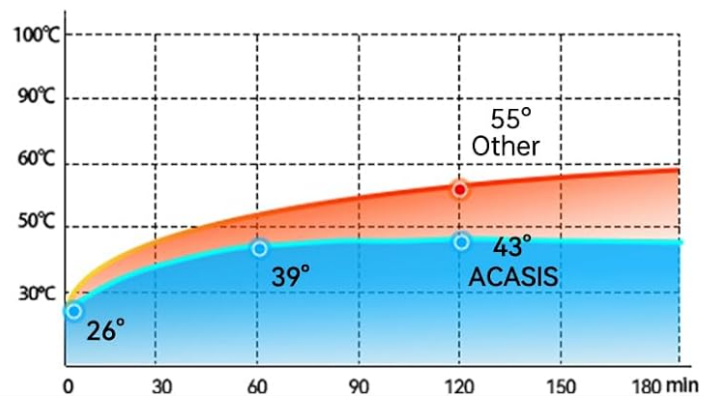# Excellent heat dissipation

Temperature test

Data from ACASIS laboratory

Figure 9: Illustrates the cooling design of the aluminum shell and a temperature test graph showing lower temperatures compared to other solutions.

4. Setup Guide

4.1 Preparing the Enclosure and Installing Your Computer

1. **Step 1: Prepare the Enclosure.** Use the provided screwdriver to remove the four screws on the bottom panel of the dock. Gently remove the bottom cover.

2. **Step 2: Install Your Computer.** Align the product's power button with your computer's auxiliary power button. Securely install the Mac mini unit into the dock. Replace the bottom cover and tighten all four screws.

- Supports capacities up to 16TB
- Delivers blazing-fast 20Gbps speeds (single M.2 SSD)
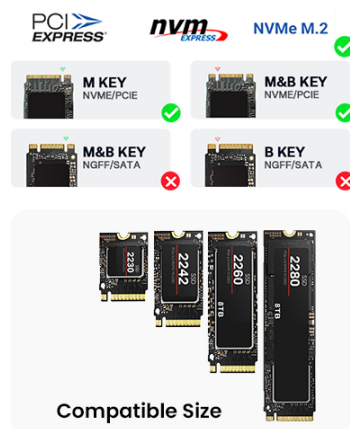- Achieves full 40Gbps throughput in RAID 0 configuration

Figure 10: Visual guide for preparing the enclosure and installing the Mac mini into the dock.

4.2 Installing Your Hard Drive and Making Connections

3. **Step 3: Install Your Hard Drive.** Remove the screws from the hard drive cover. Insert the M.2 SSD drive at a 45-degree angle into the slot. Apply the thermal paste and secure the SSD with the rubber plug. Replace the cover and tighten the screws.

4. **Step 4: Make Connections.** Connect the PD power cable to the dock's PD port. Connect the 40Gbps host cable from the dock's HOST port to your computer's Thunderbolt port. Turn on the power switch on the dock to begin use.

Installation Guide

Step 1: Prepare the Enclosure

Use a screwdriver to remove the four screws on the bottom panel

Gently remove the bottom cover

Step 2: Install in Your Computer

Align the product's power button with your computer's auxiliary power button

Securely install the unit, replace the bottom cover, and tighten all four screws

Figure 11: Visual guide for installing M.2 SSDs and connecting power and data cables to the dock.

5. OPERATION

5.1 Powering On

After connecting all necessary cables, press the power button on the dock to turn it on. The blue LED indicator light will illuminate.

5.2 Using Display Outputs

Connect your monitors to the DisplayPort outputs on the dock. For triple display setup, utilize your Mac mini's native HDMI or Thunderbolt port in addition to the two DisplayPorts on the dock. Ensure your monitor input source is set correctly to

DisplayPort.

5.3 Managing Storage (RAID Modes)

The dock supports Default, RAID 0, RAID 1, and JBOD modes for the dual M.2 SSDs. Refer to the RAID Functionality Overview table in Section 3.4 for details on capacity, speed, and security ratings for each mode. Configuration of RAID modes is typically done via software or specific hardware settings, which may vary based on your operating system and SSDs.

5.4 Using USB Ports and Card Readers

Connect your USB-A devices (keyboard, mouse, external drives, etc.) to the 10Gbps USB-A ports. Insert SD or TF cards into the respective slots for high-speed data transfer. The dock provides sufficient power for most USB peripherals, but for high-power devices, ensure the dock is connected to its external power source.

6. MAINTENANCE

To ensure the longevity and optimal performance of your ACASIS Mac mini M4 Dock, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to wipe the exterior of the dock. Avoid using liquid cleaners or abrasive materials.
- **Ventilation:** Ensure that the ventilation openings are not obstructed to allow for proper airflow and heat dissipation.
- **Storage:** When not in use for extended periods, store the dock in a cool, dry place away from direct sunlight and extreme temperatures.
- **Cable Management:** Keep cables organized and free from kinks or excessive bending to prevent damage.

7. TROUBLESHOOTING

This section addresses common issues you might encounter and provides solutions.

Q1: My DisplayPort isn't detecting the monitor. Is this a product defect?

If your monitor shows 'No Signal', here are a few possible reasons and steps to try:

- You might be using a DP to HDMI cable, which can cause compatibility issues. We recommend using a direct DP to DP cable without any adapters.
- The monitor's input source may be set incorrectly. Make sure to set the monitor input to DP.
- The HOST cable must be connected to a Thunderbolt port on your Mac Mini M4 for the dock to work.

Q2: My USB port isn't recognizing devices. Is this a product defect?

If your USB devices aren't working, here's what might be happening:

- The HOST connection might be unstable.
- The dock may not be powered on.

Try the following:

1. Use the original USB-C to USB-C cable to connect the HOST port to your computer's Thunderbolt port. Make sure the dock is turned on.
2. Connect the original power adapter to the dock's PD power port.

3. Plug your USB device (flash drive, mouse, keyboard, etc.) into the dock and check if it works.

Note: If the device still doesn't work, try plugging it into another computer to see if the issue is with the device itself.

Q3: My dock disconnected during use, and my SSD isn't being detected.

If your dock disconnects or your SSD isn't detected during use, here's why that might happen:

- The M.2 SSD or HOST connection may be loose.
- Your SSD may require more power—make sure the dock is connected to a power source.

Here's what you can do:

1. Turn off the dock and unplug it. Remove the SSD and gently clean the gold connectors with an eraser before reinserting it.
2. Always use the power adapter when connecting high-power devices like SSDs to ensure stable performance.

Note: When using multiple devices at once, always keep the dock plugged into power for best results.

Q4: Do I need to connect the dock to a power source during use?

Yes, it is highly recommended to connect the dock to its external power adapter during use. This ensures that every connected device receives enough power to run at full speed reliably, without draining your Mac's battery or causing performance issues.

Q5: The indicator lights on the device are too bright. Why are they there?

The power light shows whether your Mac Mini M4 is on, and the SSD light tells you if your SSD is installed correctly. These lights help you understand what's happening—like whether the device is powered on, transferring data, or experiencing an error—without needing to check your computer. If the lights are too bright, you can place a small piece of tape over them to soften the glow.
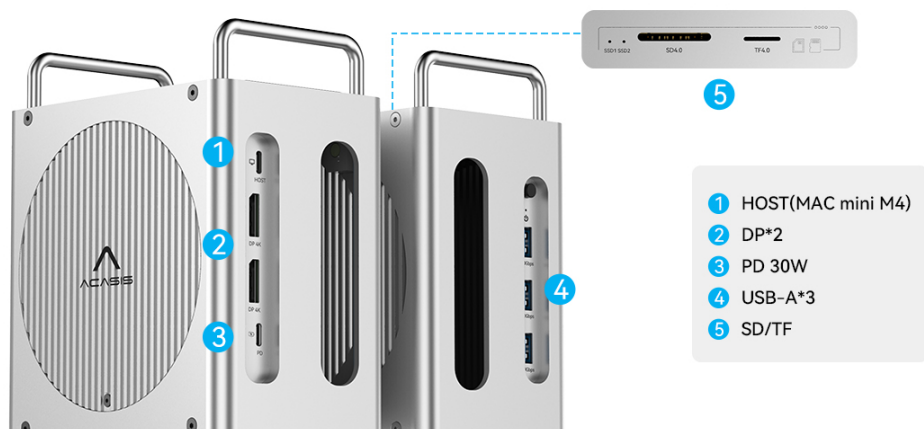

11-1 Mac mini Docking

1. HOST(MAC mini M4)
2. DP*2
3. PD 30W
4. USB-A*3
5. SD/TF

Figure 12: Common troubleshooting steps for DisplayPort and USB connectivity issues.
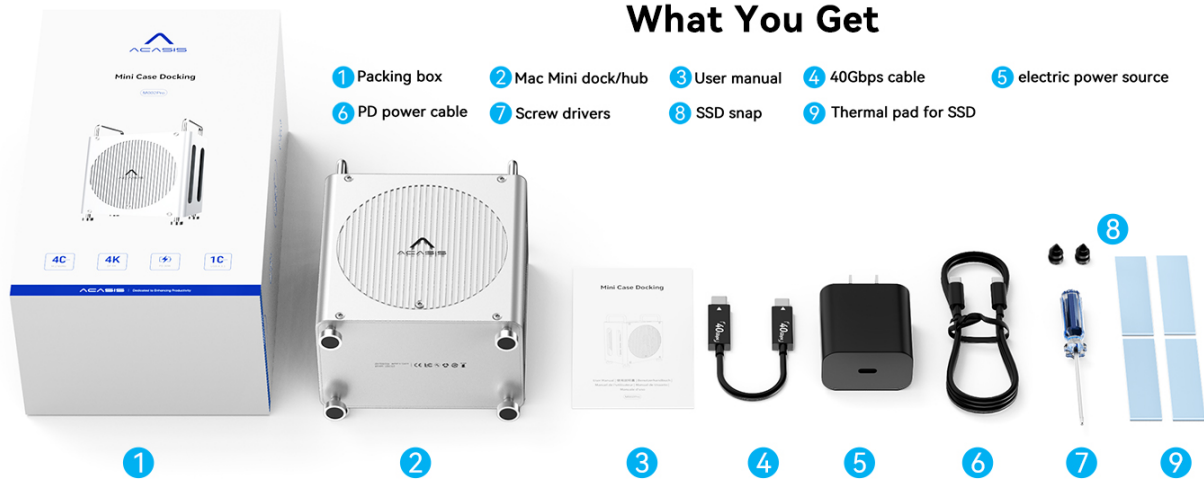
Figure 13: Solutions for dock disconnection, SSD detection problems, power requirements, and indicator light brightness.

8. SPECIFICATIONS

Feature	Detail
Model Number	M002Pro
ASIN	B0FF4D1282
UPC	686585053312
Manufacturer	ACASIS
Product Dimensions	6.22 x 4.44 x 10.24 inches
Item Weight	2.05 pounds (930 Grams)
Material	Aluminum
Compatible Devices	Mac mini M4, Mac mini M4 Pro (Laptop)
Host Connectivity	40Gbps (Thunderbolt compatible)
Display Outputs	2 x DisplayPort (4K@144Hz single, 4K@60Hz dual)
USB Ports	3 x USB-A 3.1 (10Gbps)
SSD Enclosure	Dual M.2 NVMe (20Gbps each, 40Gbps RAID 0)
Max SSD Capacity	16TB (total)
Card Readers	SD/TF 4.0 (up to 312MB/s)
Power Delivery	30W PD input

8.1 Performance Test Data

The following tables provide performance test data for the ACASIS dock with Mac mini M4 and M4 Pro configurations.

Mac mini M4 Speedometer

Q1: My DisplayPort isn't detecting the monitor. Is this a product defect?

"If your monitor shows 'No Signal', here are a few possible reasons:
① You might be using a DP to HDMI cable, which can cause compatibility issues. We recommend using a direct DP to DP cable without any adapters.
② The monitor's input source may be set incorrectly. Make sure to set the monitor input to DP.
③ The HOST cable must be connected to a Thunderbolt port on your Mac Mini M4 for the dock to work.

Try these steps:

① Connect the dock's HOST port to your computer's Thunderbolt port using the original USB-C to USB-C cable. Press the power button on the dock to turn it on.
② Plug the original power adapter into the dock's PD charging port.
③ Use a DP to DP cable to connect your monitor to the dock's DP port, and set your monitor's input source to DP.
Note: If the issue continues, try connecting your monitor to another device with a DP port to see if it works properly."

Q2: My USB port isn't recognizing devices. Is this a product defect?

(Regarding issue: USB port not working)
"If your USB devices aren't working, here's what might be happening:
① The HOST connection might be unstable.
② The dock may not be powered on.
Try the following:
① Use the original USB-C to USB-C cable to connect the HOST port to your computer's Thunderbolt port. Make sure the dock is turned on.
② Connect the original power adapter to the dock's PD power port.
③ Plug your USB device (flash drive, mouse, keyboard, etc.) into the dock and check if it works.
Note: If the device still doesn't work, try plugging it into another computer to see if the issue is with the device itself."

Figure 14: Read/Write speeds for various hard disk modes and configurations with Mac mini M4.

Mac mini M4 Pro Speedometer

40Gbps Hard Drive Enclosure Docking Station + Mac mini M4 Pro Speedometer

Test scenario	Testing Hard Drives	Hard Disk Mode	Write(MB/S)	Read(MB/S)
Scenario 2: DP external 1*4K monitor + USB to keyboard and mouse + M.2 to SSD hard drive	Samsung 990 Pro 4T	Single disk read-write	1343	1594
	Samsung 990 Pro 4T	Dual disk read-write	1308	1487
	Samsung 990 Pro 4T		1302	1479
	Samsung 990 Pro 4T*2	RAID 0 (Same hard drive)	2472	2825
	Zenith 7100p 512 GB	RAID 0 (Different hard drives)	1647	2869
	Samsung 990 Pro 4T			
	Samsung 990 Pro 4T*2	RAID 1 (Same hard drive)	1297	2629
	Samsung 990 Pro 4T*2	JBOD (Dual Disk)	1379	1543

Figure 15: Read/Write speeds for various hard disk modes and configurations with Mac mini M4 Pro.
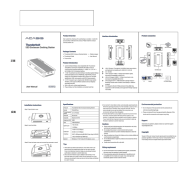
9. WARRANTY AND SUPPORT

ACASIS is committed to providing high-quality products and excellent customer service. For any inquiries, technical support, or warranty claims, please contact us through the following channels:

- **Email Support:** support@acasis.com
- **Online Service:** 7x24 hours online service is available.

Please have your product model number (M002Pro) and purchase information ready when contacting support to expedite the process.

Related Documents - M002Pro

	[ACASIS Thunderbolt SSD Enclosure Docking Station TBU405Plus User Manual](#) User manual for the ACASIS TBU405Plus Thunderbolt SSD Enclosure Docking Station. Learn about product features, specifications, interface connections, installation, and usage guidelines.
	[ACASIS Dual M.2 NVMe SATA SSD Enclosure with RAID Mode User Manual](#) Comprehensive user manual for the ACASIS Dual M.2 NVMe SATA SSD Enclosure with RAID Mode (Model EC-6604pro). Learn about package contents, product features, installation, RAID modes (RAID 0, RAID 1, JBOD, Clone), troubleshooting, and specifications.
	[ACASIS AC-M03 M.2 NVMe Enclosure & Duplicator: Offline Cloning Guide](#) Step-by-step instructions for using the ACASIS AC-M03 M.2 NVMe enclosure and duplicator for offline SSD cloning. Learn how to clone your data between M.2 NVMe drives.
	[ACASIS EC-1401 6-in-1 USB-C SSD Enclosure and Docking Station User Manual](#) User manual for the ACASIS EC-1401, a 6-in-1 USB-C Magnetic SSD Enclosure and Docking Station for Mobile Phones. Includes specifications, installation instructions, and troubleshooting FAQs in multiple languages.
	[ACASIS EC-DM201 Dual NVMe M.2 Enclosure User Manual and Cloning Guide](#) User manual and troubleshooting guide for the ACASIS EC-DM201 Dual NVMe M.2 Enclosure, covering installation, offline cloning, and usage as an enclosure or duplicator.
	[ACASIS HX-M001 USB-C Docking Station User Manual - Connectivity Guide](#) Comprehensive user manual for the ACASIS HX-M001 USB-C Docking Station. Learn about installation, features, system requirements, troubleshooting, and technical specifications for expanding your device's connectivity.

Documents - ACASIS – M002Pro

[ACASIS M002Pro TB1201 User Manual](#)
User manual for the ACASIS M002Pro TB1201, providing instructions and safety information.
lang: score:28 filesize: 2.79 M page_count: 1 document date: 2025-06-28