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ACASIS TB501Pro

ACASIS TB501 Pro 80Gbps M.2 NVMe SSD Enclosure

Model: TB501Pro | Brand: ACASIS

PRODUCT OVERVIEW

The ACASIS TB501 Pro is a high-performance M.2 NVMe SSD enclosure designed for users requiring ultra-fast data transfer speeds and robust thermal management. Powered by the advanced JHL9480 chip, it supports up to 80Gbps, making it compatible with Thunderbolt 5 and USB4 V2.0, while also offering backward compatibility with Thunderbolt 4/3 and various USB standards (3.2, 3.1, 3.0).

This enclosure is ideal for professionals and enthusiasts who handle large files, perform data-intensive tasks, or require high-speed external storage for gaming and content creation. Its built-in cooling fan ensures stable performance and extends SSD lifespan by automatically activating based on temperature, with an option for manual control.

PACKAGE CONTENTS

- 80Gbps M.2 NVMe SSD Enclosure (x1)
- 80Gbps Cable (19.68 in) (x1)
- Silicone Stoppers (x2)
- SSD Size Adapter (x1)
- Thermal Pads (x2)
- User Manual (x1)

SETUP AND INSTALLATION

The ACASIS TB501 Pro features a tool-free design for easy SSD installation. Follow these steps to set up your enclosure:

1. **Open the Bottom Plate:** Gently slide the bottom plate of the enclosure to open it.
2. **Insert SSD:** Carefully insert your M.2 NVMe SSD into the slot. Use the provided silicone stoppers to secure the SSD in place, preventing it from falling off.
3. **Apply Thermal Pads:** Place the thermal pads onto the SSD to ensure efficient heat transfer to the enclosure's aluminum shell.
4. **Close the Cover:** Slide the bottom plate back into position until it clicks securely.
5. **Connect to Computer:** Use the included 80Gbps cable to connect the enclosure to your computer or

tablet. The device is plug-and-play and does not require additional drivers.



Figure 1: Step-by-step guide for tool-free SSD installation.

This image illustrates the simple three-step process for installing an M.2 NVMe SSD into the enclosure. It shows opening the bottom plate, inserting the SSD with a rubber stopper, and then closing the cover before connecting to a computer.

Full NVMe Compatibility

M.2 form factor compatible with sizes: 2230/2242/2260/2280



Figure 2: NVMe SSD compatibility and supported sizes.

This image details the compatibility of the enclosure with M.2 NVMe SSDs, specifically supporting M Key and B+M Key (NVMe/PCIe) form factors. It also shows supported sizes: 2230, 2242, 2260, and 2280. Note: Not compatible with M.2 PCIe 5.0 or NGFF/SATA B Key SSDs.

KEY FEATURES

- **Next-Generation Chip: JHL9480**

Powered by the advanced JHL9480 chip, this enclosure delivers high performance, stability, and future-proof capabilities. It ensures fast data transfer and compatibility with various Thunderbolt interfaces.

- **Read & Write Speeds Up to 6000 MB/s**

Achieve blazing-fast read and write speeds up to 6000 MB/s, perfect for content creators, gamers, IT professionals, and developers who need fast, reliable storage for large files, data-intensive tasks, and high-speed transfers. (To achieve speeds exceeding 3000MB/s, please use an SSD with PCIe 4.0 x4 and NVMe 1.4 or above, and avoid M.2 PCIe 5.0.)

- **Universal Compatibility**

Compatible with Thunderbolt 5 and USB4 V2.0 for top speeds, and is backward compatible with Thunderbolt 4/3, USB4 V1.0, and older USB standards like 3.2, 3.1, and 3.0, ensuring broad device compatibility. (Not compatible with M.2 NVMe key to PCIe adapter to connect PCIe devices.)

- **Adjustable Cooling Fan for Optimal Performance**

The built-in cooling fan automatically activates at 55°C and stops at 40°C to maintain stable performance and extend SSD lifespan. It also supports manual control—press and hold the switch for 1 second to force the fan on. Once turned off, the system will resume automatic temperature detection.

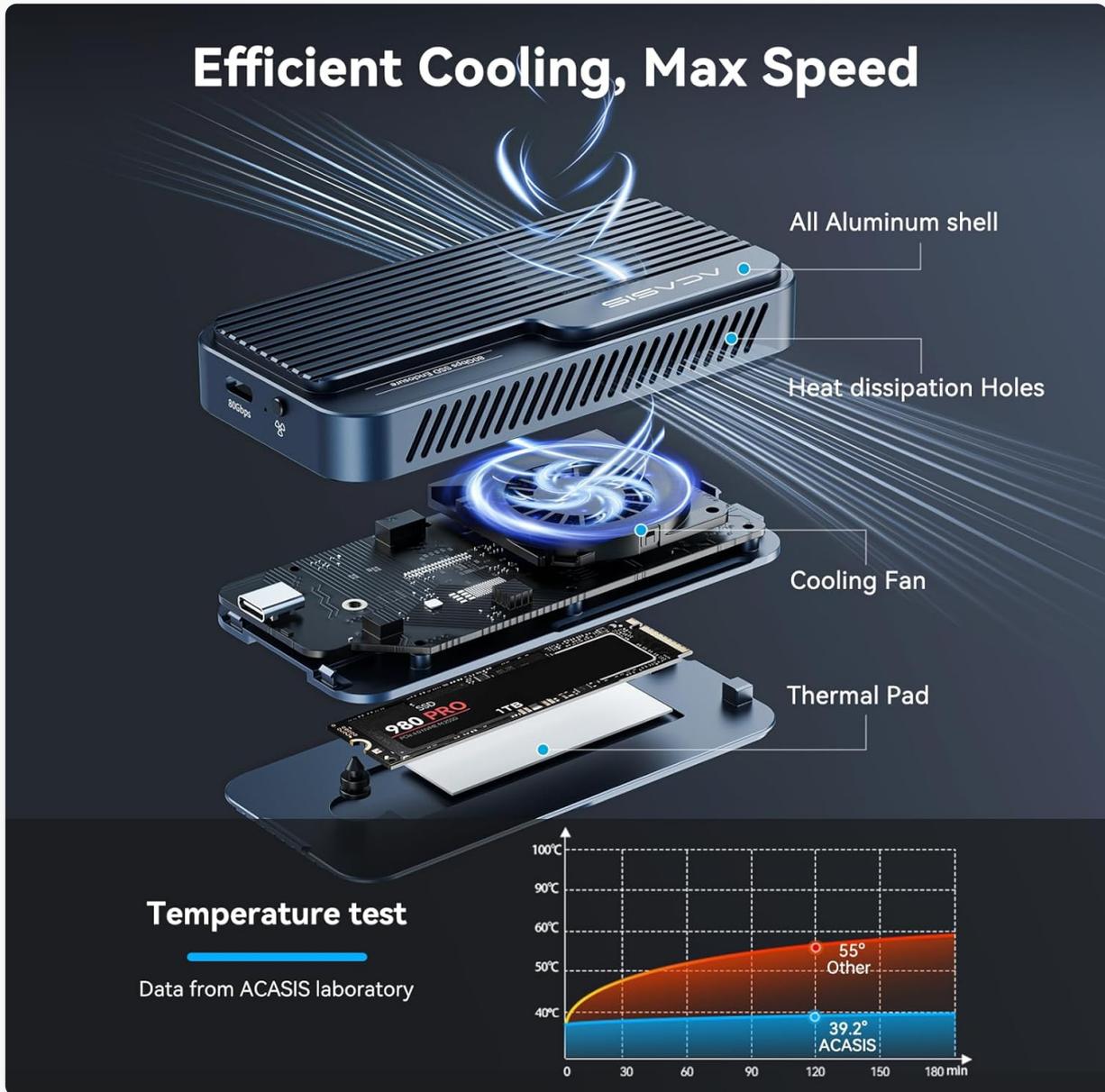


Figure 3: Exploded view of the efficient cooling system.

This image shows the internal components of the enclosure, highlighting the all-aluminum shell, heat dissipation holes, cooling fan, and thermal pad, all working together to ensure efficient cooling and maximum speed.

Video 1: The Details Of TB501Pro

This official seller video provides a detailed overview of the TB501Pro's features, including its dual-chip solution, cooling system, and tool-free installation, demonstrating its capabilities and design.

COMPATIBILITY

The ACASIS TB501 Pro is designed for broad compatibility across various devices and operating systems. It supports both computers and tablets, but is not compatible with phones.

- **Compatible Devices:** MacBook Pro, MacBook Air, Mac Mini, Surface Pro 8, Dell XPS 13/15, Dell Latitude 5540, HP ENVY x360, ASUS Zenbook 14X, Acer Swift Go 14, iPad Pro.
- **Compatible Interfaces:** Thunderbolt 5, USB4 V2.0, Thunderbolt 4/3, USB4 V1.0, USB 3.2/3.1/3.0.
- **Supported Systems:** Windows (7 and above), macOS (10.2 and above), Linux (5.6 and above).

Important Note for Thunderbolt 3 Users: Thunderbolt 3 systems may not fully compatible with Thunderbolt 5 and could default to USB speeds, limiting performance to 10Gbps. For Thunderbolt 3 users, it is recommended to use a Thunderbolt 3/4 SSD enclosure instead of this 80Gbps SSD enclosure, as it will offer faster speeds than a USB connection.

PERFORMANCE

The ACASIS TB501 Pro delivers exceptional performance, particularly when paired with compatible hardware. It can achieve read and write speeds up to 6000 MB/s, making it one of the fastest external SSD enclosures available.

Based on the tests, we recommend PCIe 4.0 x4 and NVMe 1.4+, as other SSDs may be speed-limited by their protocol versions.
For full SSD model test speeds, c0nt ct us for the complete test report

Computer Mode	Mode	Nvme SSD	Disk Speed Test	
			Write (MB/s)	Read (MB/s)
Razer Blade 18 Model: RZ09-0509 Version: Windows 11 Home 23H2	USB4 2.0	SAMSUNG 970 EVO Plus 1TB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.3]</small>	1289.17	3374.83
		SAMSUNG SSD 990 PRO 2TB <small>[Transfer mode: PCIe 4.0x4] [Standard: NVM Express 2.0]</small>	5921.77	6204.67
		SAMSUNG SSD 980 PRO 1TB <small>[Transfer mode: PCIe 4.0x4] [Standard: NVM Express 1.3]</small>	4917.69	6148.9
		WD BLACK SN750 2TB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.3]</small>	1236.78	3162.89
		WD BLACK SN850 2TB <small>[Transfer mode: PCIe 4.0x4] [Standard: NVM Express 1.4]</small>	4871.23	6209.32
		Crucial P3 Plus 4TB <small>[Transfer mode: PCIe 4.0x4] [Standard: NVM Express 1.4]</small>	4406.82	4999.34
		SABRENT 2TB <small>[Transfer mode: PCIe 4.0x4] [Standard: NVM Express 1.4]</small>	5123.59	6063.65
		Kingston 500GB <small>[Transfer mode: PCIe 4.0x4] [Standard: NVM Express 1.3]</small>	1926.34	2540.98

Figure 4: Performance test results with MacBook M4 Pro.

This chart displays various SSDs tested with the ACASIS TB501 Pro on a MacBook M4 Pro, showing impressive read/write speeds. For example, the Samsung 990 Pro 2TB achieved 3215.2 MB/s write and 5050.1 MB/s read.

Based on the tests, we recommend PCIe 4.0 x4 and NVMe 1.4+, as other SSDs may be speed-limited by their protocol versions.
For full SSD model test speeds, c0nt ct us for the complete test report

Computer Mode	Mode	Nvme SSD	Disk Speed Test	
			Write (MB/s)	Read (MB/s)
MacBook M4 Pro (16-inch, 2024, version: macOS Sequoia 15.1.1, model: A3403)	USB4 V2	Corsair MP400 4TB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.3]</small>	1724.63	3352.47
		SK Hynix Gold P31 SSD 1TB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.3]</small>	1987.39	3479.81
		KIOXIA EXCERIA PLUS G2 500GB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.3]</small>	1698.02	3318.99
		Crucial P5 M.2 2280 1000GB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.3]</small>	1016.68	1127.09
Razer Blade 18 Model: RZ09-0509 Version: Windows 11 Home 23H2	USB4 V2	ADATA_IM2P33F3 512GB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.3]</small>	1223.73	2083.15
		Pioneer APS SE20 120GB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.3]</small>	559.87	1819.8
		Lexar SSD NM800PRO 1TB <small>[Transfer mode: PCIe 4.0x4] [Standard: NVM Express 1.4]</small>	730.01	850.05
		INTEL SSD 670p SERIES 1TB <small>[Transfer mode: PCIe 3.0x4] [Standard: NVM Express 1.4]</small>	1975.72	3156.67

Figure 5: Performance test results with Razer Blade 18.

This chart shows performance results with the ACASIS TB501 Pro on a Razer Blade 18, demonstrating consistent high speeds across different NVMe SSDs. For instance, the Samsung 990 Pro 2TB achieved 5921.77 MB/s write and 6204.67 MB/s read.

SPECIFICATIONS

Attribute	Value
Product Dimensions	4.58 x 2.22 x 0.76 inches

Item Weight	10.7 ounces
Model Number	TB501Pro
Manufacturer	ACASIS
Hardware Interface	Thunderbolt
Total USB Ports	1
UPC	781108279825

TROUBLESHOOTING

If your ACASIS TB501 Pro is not performing as expected, consider the following common issues:

- **Enclosure recognized as USB device on Thunderbolt 3:** Some Thunderbolt 3 systems may not fully support Thunderbolt 5 speeds and could default to USB speeds (10Gbps). For optimal performance, use a Thunderbolt 3/4 SSD enclosure with Thunderbolt 3 systems.
- **Slow speeds with PCIe 5.0 SSDs:** The enclosure is designed for PCIe 4.0 x4 and NVMe 1.4 or above. M.2 PCIe 5.0 SSDs are not fully compatible and may result in slower speeds.
- **Overheating:** Ensure the enclosure is placed in a well-ventilated area. The built-in fan should activate automatically at 55°C. You can also manually activate the fan by pressing and holding the switch for 1 second.
- **Compatibility with tablets:** For tablets, a direct Thunderbolt cable connection is required. Note that Lenovo and Samsung tablets typically support up to 2TB SSDs, while only iPads can recognize drives up to 8TB.

MAINTENANCE

To ensure the longevity and optimal performance of your ACASIS TB501 Pro SSD enclosure, follow these maintenance tips:

- Keep the enclosure clean and free from dust. Use a soft, dry cloth for cleaning.
- Avoid exposing the device to extreme temperatures or direct sunlight.
- Ensure proper ventilation around the enclosure, especially during prolonged use, to allow the cooling fan to operate effectively.
- Always safely eject the device from your computer before disconnecting the cable to prevent data corruption.

WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the user manual included in the package or visit the official ACASIS website. Contact details and support resources are typically provided there.