



# USB4 M.2 PCIe NVMe SSD ENCLOSURE



EC-U4TN USER MANUAL

## FEATURES

- Adapts an M.2 PCIe NVMe SSD to USB4/Thunderbolt™ for external use
- Connection speeds up to 40Gbps with backward compatibility for USB 3.2 Gen 2x2 (20Gbps), USB 3.2 Gen 2x1 (10Gbps), and USB 3.2 Gen 1x1 (5Gbps)
- Transfer speeds up to 3,900 MB/s with USB4, 2,700 MB/s with Thunderbolt™, and 2,000 MB/s with USB 3.2
- Designed to accept M.2 2230/2242/2260/2280 form factor SSDs
- Built for maximum heat dissipation with aluminum casing, thermal padding, and an integrated cooling fan
- Plug and play, bus-powered, with tool-free installation

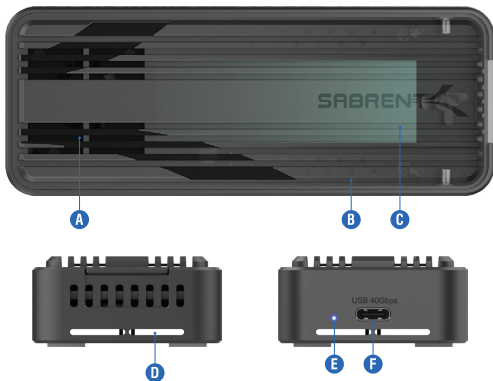
## SUPPORTED OPERATING SYSTEMS

- Windows 10+
- macOS 14.5+
- Linux

## PACKAGE CONTENTS

- M.2 PCIe NVMe SSD to USB4 Enclosure
- USB4 Type-C to Type-C cable (0.3m / 12")
- Thermal pads (2)

## PRODUCT OVERVIEW



**A.** Integrated cooling fan

**B.** Exterior casing

**C.** Thermal pads (2)

**D.** Ventilation

**E.** LED power and status indicator

**F.** USB4 Type-C upstream port

### LED Status

The LED, located next to the USB Type-C port, indicates power and input/output transfer status. It will be solid white when the enclosure and drive are powered and will flash white to indicate I/O activity.

## GETTING STARTED

1



**Step 1.** Prepare your M.2 PCIe NVMe SSD for installation and then remove the top casing from the enclosure.

2



**Step 2.** Place the keyed edge of the SSD into the waiting M.2 slot at ~35-degree angle and apply force until seated.

3



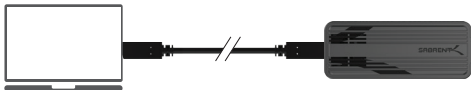
**Step 3.** Press the drive down flat until it is horizontal, securing it with the embedded latch.

4



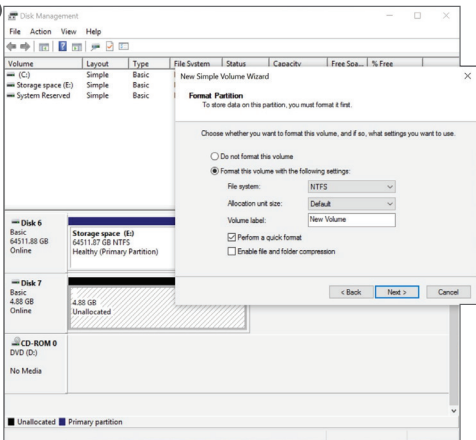
**Step 4.** Select and install the appropriate thermal pad. We recommend the 2.0mm pad for double-sided SSDs and the 2.3mm pad for single-sided SSDs, but always test fit to ensure proper contact. Remove the protective film from the pad and adhere the pad to the enclosure cover.

5

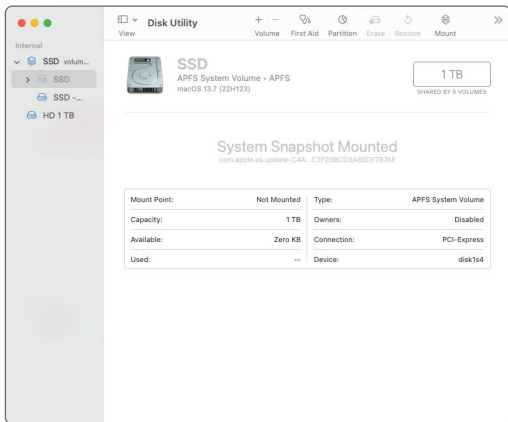


**Step 5.** Replace the cover and connect the enclosure to the host system with the provided USB Type-C to Type-C cable.

6



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**Step 6.** For new drives, prepare the drive by formatting through Explorer, Disk Management, Disk Utility, or similar application. For drives with existing data, access as normal through the applicable drive letter or designation.

**Note:** File system and file type support is dependent on the host operating system.

## PERFORMANCE TABLE

Connection/Port	Mode	Raw Speed	Actual Speed
USB4	USB4	40Gbps (40)	Up to ~3,900 MB/s
Thunderbolt™ 3/4	Thunderbolt™	40Gbps (32)	Up to ~2,700 MB/s
USB 20Gbps (3.2 Gen 2x2)	USB 20Gbps fallback	20Gbps (10)	~2,000 MB/s
USB 10Gbps (3.2 Gen 2x1)	USB 10Gbps native	10Gbps (10)	~1,000 MB/s
USB 5Gbps (3.2 Gen 1x1)	USB 5Gbps legacy	5Gbps (4Gbps)	~450 MB/s
USB 480Mbps (USB 2.0)	USB 2.0 legacy	480Mbps (384Mbps)	30-40 MB/s

## FREQUENTLY ASKED QUESTIONS

### **Q. What are the maximum speeds attainable with this enclosure?**

A. With the proper host port this enclosure can reach transfer speeds up to 3,900 MB/s with USB4 or 2,700 MB/s with Thunderbolt™. For USB connections, 20Gbps (USB 3.2 Gen 2x2) ports offer transfer rates up to approximately 2,000 MB/s, 10Gbps (USB 3.2 Gen 2x1) ports reach up to ~1,000 MB/s, and 5Gbps (USB 3.2 Gen 1x1) ports deliver speeds up to ~500 MB/s. 480 Mbps (USB 2.0) interfaces are also supported but not recommended, with speeds up to ~40 MB/s. See table for clarity.

### **Q. What type of SSDs are supported?**

A. This enclosure is intended for M.2 PCIe NVMe SSDs using an M key connector. M.2 SATA SSDs should never be installed in this enclosure. NVMe SSDs with heatsinks are normally not designed for installation into enclosures.

### **Q. What operating systems and devices are supported?**

A. Officially, the enclosure is designed for Windows and macOS based PCs. This includes portable gaming devices. Unofficially, the enclosure should work with a wide range of devices that conform to USB, USB4, or Thunderbolt™ specifications, as it is plug and play. Some systems, including those built on Linux, may require additional configuration depending on the intended use.

### **Q. What bridge chip does this enclosure use?**

A. The enclosure uses the ASMedia ASM2464PD controller for maximum performance. Check with your device manufacturer for compatibility, if necessary.

### **Q. What are the best practices for using the included thermal padding?**

A. Not all SSDs are the same thickness, so two thermal pads of differing thickness are included. For proper heat dissipation, the thermal pad must be in contact with the SSD and its components. Use the appropriate thermal pad or, if necessary, both pads together, to ensure a tight fit.



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