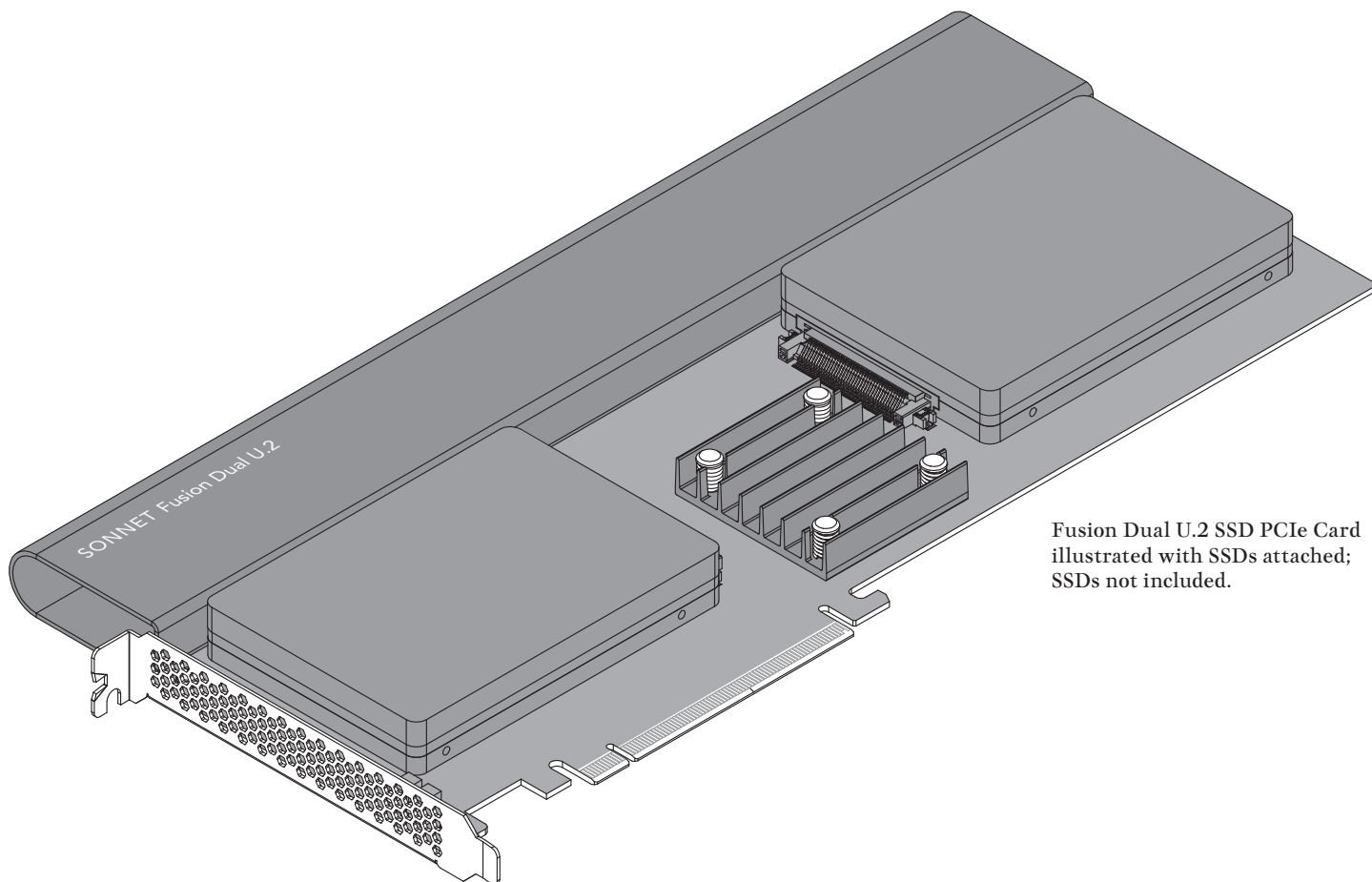


Quick Start Guide

for Fusion™ Dual U.2 SSD PCIe Card



Fusion Dual U.2 SSD PCIe Card
illustrated with SSDs attached;
SSDs not included.

PCI 
EXPRESS®



For
Windows



SONNETTECH™

Introduction, Package Contents, Compatibility Information

Congratulations on your purchase! Fusion™ Dual U.2 SSD PCIe Card provides a convenient way to install one or two U.2 NVMe SSDs into a single PCIe card slot.

You Should Have

The following items should be included in your product package:

- One Fusion Dual U.2 SSD PCIe Card
- Eight SSD mounting screws
- Quick Start Guide

The following items are required for installation:

- Medium Phillips screwdriver
- Torx T8 screwdriver or key (only needed when removing the top extension bracket)

Mac® Compatibility

- Mac Pro® 14,8 (2023): macOS 13 – macOS 14
- Mac Pro 7,1 (2019): macOS 10.15 – macOS 12*
- Mac Pro 5,1 (Mid 2010 & Mid 2012): macOS 10.13 – 10.14
- *Many Gen 4 U.2 SSDs and some Gen 3 U.2 SSDs are not currently compatible with macOS.* To view a list of compatible SSDs, please visit the Sonnet website at: https://www.sonnettech.com/support/downloads/manuals/U2_SSDs.pdf

Windows® Compatibility

- Computer with available full-length, full-height x16 PCIe slot (PCIe bifurcation not required)
- Windows 11, 10
- Windows Server 2019, 2016, 2012 R2

Linux® Compatibility

- Computer with available full-length, full-height x16 PCIe slot (PCIe bifurcation not required)
- Linux Kernel 5.4+
- Red Hat Enterprise Linux 8
- SUSE Linux Enterprise Server 15 SP2
- Ubuntu 20.04 LTS, 21.10

VMWare® Compatibility

- Computer with available full-length, full-height x16 PCIe slot (PCIe bifurcation not required)
- ESXi7

* NVMe SSDs installed in a PCIe card slot are not currently compatible in Mac Pro 7,1 with macOS 13 or macOS 14. Sonnet is working with Apple to resolve this issue.

Thunderbolt Compatibility

- Mac (M series or Intel®) computer via a Thunderbolt to PCIe card expansion system with available full-length x16 PCIe slot
- Windows computer via a Thunderbolt to PCIe card expansion system with available full-length x16 PCIe slot
- Linux computer via a Thunderbolt to PCIe card expansion system with available full-length x16 PCIe slot

Intel® VROC Compatibility

- Switch is compatible with Intel VMD controllers

U.2 SSD Compatibility

- U.2 (2.5-inch) NVMe PCIe SSDs**
- 2.5-inch SATA and SAS SSDs NOT supported
- Solidigm (formerly Intel) P5xxx Series, or Western Digital SN650 (but not the SN655) recommended.

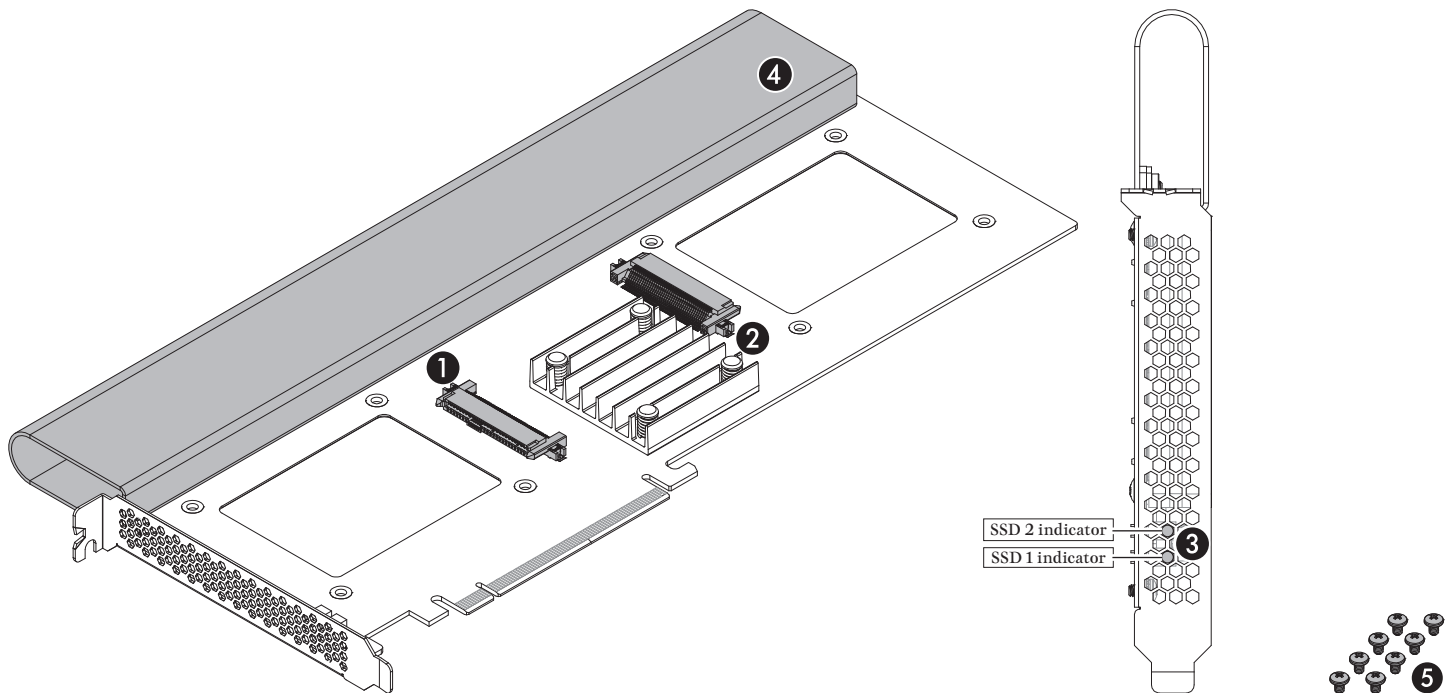


Support Note: This document was up to date at the time of printing. However, changes to the hardware or software may have occurred since then. Please check the Sonnet website for the latest documentation.

1. Go to www.sonnettech.com/support/kb/kb.php
2. Navigate to and click the Fusion Dual U.2 SSD PCIe Card link.
3. Click the Manual link.
4. Click the Fusion Dual U.2 SSD PCIe Card Quick Start Guide [English] link, and then check the Document Version information. If the version listed is later than this document (**revision E**), click the Download Now button for the latest version.

** As of 2023, the current maximum capacity of U.2 SSDs is 30.72TB. The current maximum capacity supported by macOS is 15.36TB. This product will support higher-capacity SSDs as they become available.

Card Description and Package Contents



1 – SSD Connector 1

Plug in a U.2 SSD to this connector.

2 – SSD Connector 2

Plug in a U.2 SSD to this connector.

3 – SSD Presence and Activity LEDs

The LEDs light steadily to indicate drives are attached and recognized, flash to indicate read and write activity, and remain off when no drive is attached. The top indicator is linked to SSD connector 2, while the bottom indicator is linked to SSD connector 1.

4 – Top Extension Bracket

Grasping this bracket enables easier installation of the card in a Mac Pro (2019). In computers where there isn't enough room to install the card with it attached, the bracket may be removed; Torx T8 screwdriver or key required.

5 – SSD Mounting Screws

Eight screws are provided to secure U.2 SSDs to the card.

SSD Installation and Card Installation Steps



Support Notes: When handling computer products, you must take care to prevent components from being damaged by static electricity. Before opening your computer or removing parts from their packages, always ground yourself first by touching a metal part of the computer, such as a port access cover, and work in an area free of static electricity; avoid carpeted areas. Handle all electronic components by their edges, and avoid touching connector traces and component pins.

1. Remove and set aside the SSD connector covers (Figure 1).

2. Remove your SSDs from their packaging.

3. Place an SSD on top of the Fusion Dual U.2 SSD PCIe Card with the SSD's and card's connectors aligned with each other (Figure 2).

4. Push the SSD's connector into the Fusion card's connector until the SSD is completely seated (Figure 2).

5. Holding the SSD firmly against the card, flip the Fusion card over again.

6. Using four of the eight screws provided with the card, secure the SSD to the Fusion card; do not overtighten the screws (Figure 3).

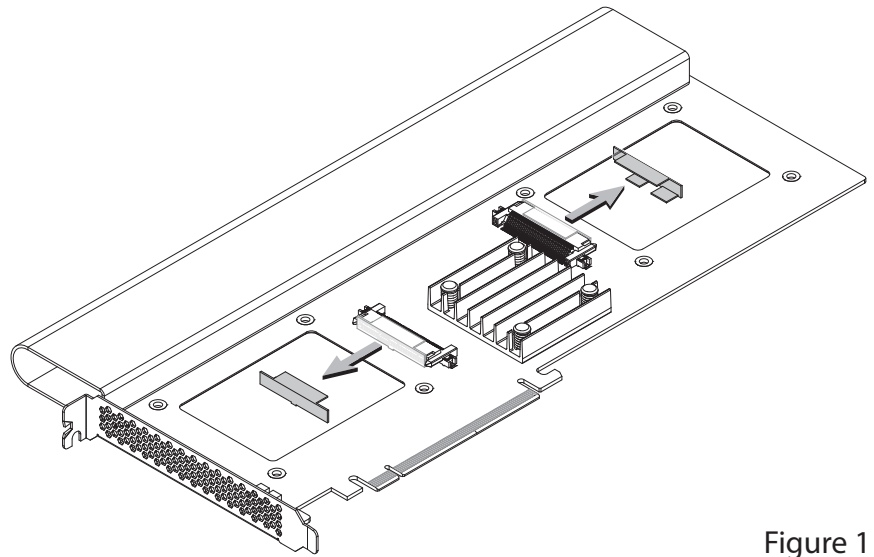


Figure 1

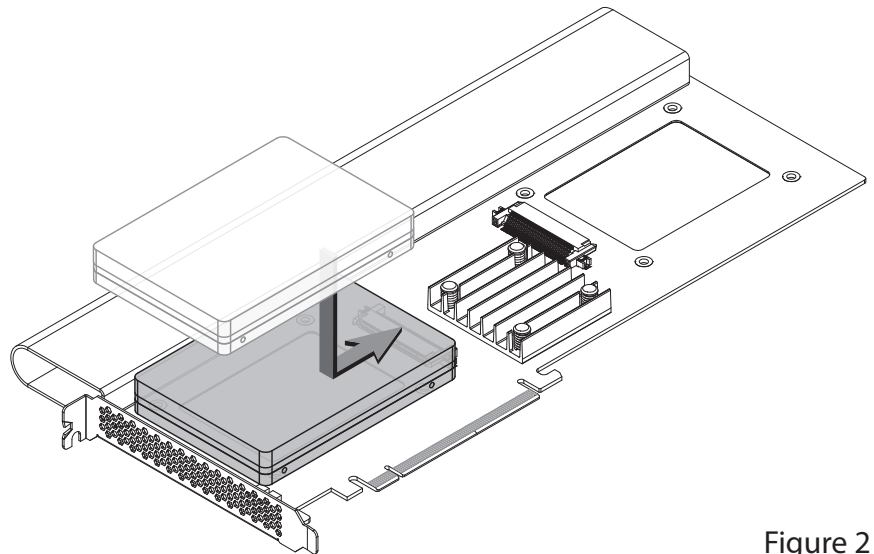


Figure 2

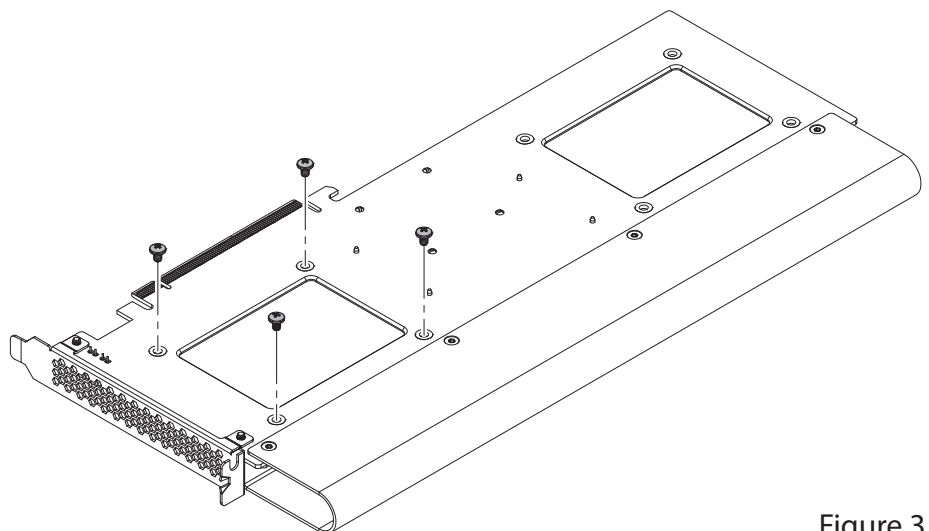


Figure 3

SSD Installation and Card Installation Steps

7. If you are installing only one SSD, skip to step 11. Otherwise, flip the Fusion card over again, and then place the second SSD on top of the card with the SSD's and card's connectors aligned with each other (Figure 4).
8. Push the SSD's connector into the Fusion card's connector until the SSD is completely seated (Figure 4).

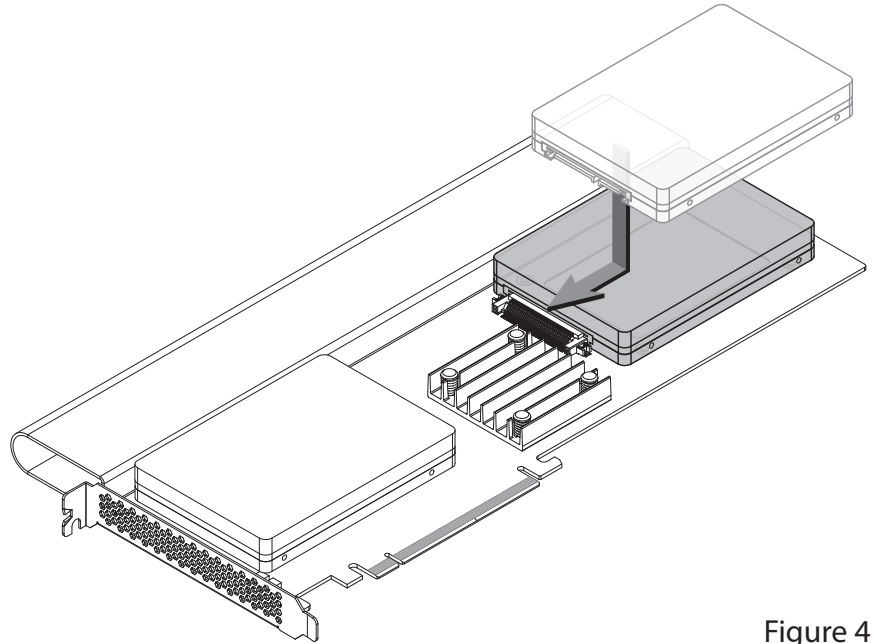


Figure 4

9. Holding the SSD firmly against the card, flip the Fusion card over again.
10. Using the remaining four screws, secure the SSD to the card; do not overtighten the screws (Figure 5).

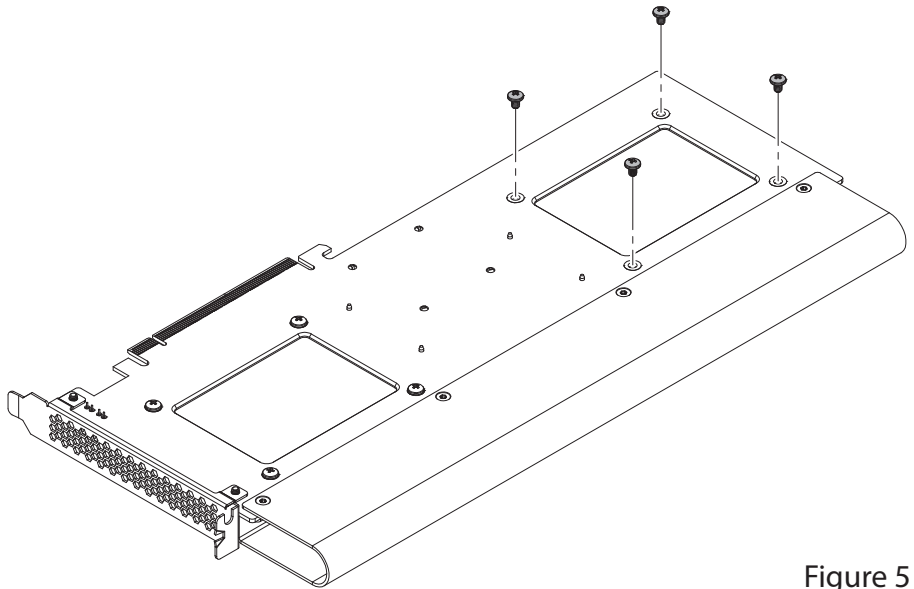


Figure 5

11. If the Fusion Dual U.2 SSD PCIe Card is too tall to fit in your computer or PCIe card expansion system without removing the top extension bracket, go to the next step. Otherwise, go to the next page; the card is ready for installation.
12. **Optional Step:** Using a Torx T8 screwdriver or key, remove and set aside the four screws securing the top extension bracket to the card. Remove the bracket from the card and set it aside (Figure 6); the card is ready for installation.

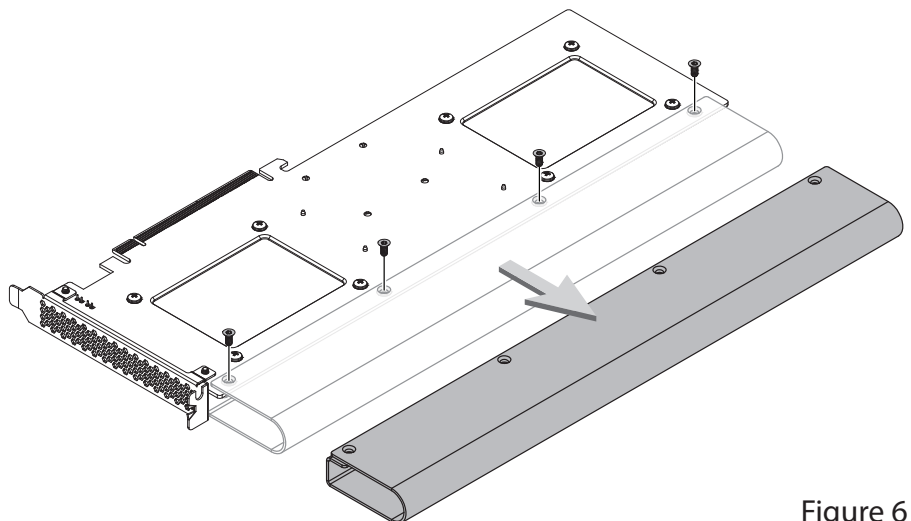


Figure 6

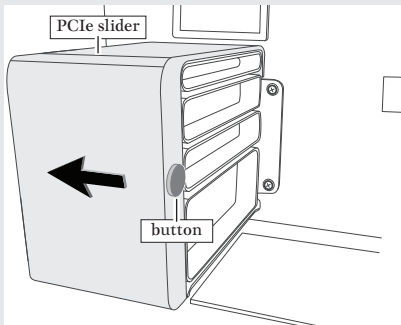
Card Installation Steps, SSD Formatting, and Support Information

Card Installation Steps

1. Shut down your computer or Thunderbolt expansion system, disconnect its power cable, and then open it to access the expansion card area (PCI Express slots); refer to the users' manual for specific information.
2. Locate an available PCI Express card slot and remove its access cover if necessary. (If possible, leave open the slot next to the U.2 SSDs for better cooling):
 - Mac Pro (2023 and 2019) users may install the card into any available PCIe slot except slot 8.
 - Mac Pro (Mid 2012 and Mid 2010), Windows, and Linux computer users, and Thunderbolt expansion chassis users may install the card into an available PCIe slot. For Mac Pro users, better RAID performance will be achieved if you use the x16 slot just above the video card.



Support Note: If you have a Mac Pro 5,1 (Mid 2010 or 2012) computer, you will need to move what Apple refers to as the "PCIe slider" in order to install the Sonnet card. Simply press the indicated button and then move the slider to the left. After installing the card, move the slider back to the right.



3. Install the Fusion card with attached SSDs into the slot; make sure the card is firmly seated and secured (use the computer's PCIe card retaining latch if present).
4. Close your computer or expansion chassis, and then reconnect the computer's or expansion chassis' power cable and other cables if necessary.

Formatting SSDs

macOS:

Use Disk Utility (found in the Utilities folder within the Applications folder) to format installed SSDs.

Windows:

If you intend to format SSDs connected to the Sonnet card using Windows drive formatting tools (Disk Management), you may locate instructions by using "format volume", and "create striped volume" as search items in Windows Help.

Linux

Use the tools or utilities you would normally use to format internal drives.

RAID Configuration Support Information

Fusion Dual U.2 SSD PCIe Card supports RAID 0, RAID 1, and concatenated disk set configurations of SSDs under macOS, Windows, and Linux.

Booting From Attached SSDs

macOS:

Fusion Dual U.2 SSD PCIe Card supports booting from individual (non-RAIDed) SSDs when the card is installed in Mid 2010, Mid 2012, 2019 and 2023 Mac Pro computers, plus Thunderbolt-to-PCIe card expansion systems. Please note that in some cases it may be necessary for you to hold the *option* key during a start, and then select the startup disk attached to the Sonnet card.

If the Fusion card is installed in a Thunderbolt chassis, and you are using a Mac with the Apple T2 Security Chip, then you must enable External Boot in the Startup Security Utility.

Windows and Linux:

Fusion Dual U.2 SSD PCIe Card supports booting from a single, non-RAIDed SSD *only* in computers with UEFI.

Contacting Customer Service

The Sonnet Web site (www.sonnettech.com) has the most current support information and technical updates. Before contacting Customer Service, please check our Web site for the latest updates and online support files.

Email support requests generally receive the fastest responses, and are usually processed within a 24-hour period during normal business hours, excluding holidays. When you contact Customer Service, have the following information available:

- Product name
- SSD model(s)
- Computer model
- OS version
- A System Report (macOS), or a Microsoft System Information MSINFO32 (Windows) report (Windows), along with a description of the issue(s) you are encountering with your device

If further assistance is needed, please contact Sonnet Customer Service at:

E-mail: support@sonnettech.com

Tel: 1-949-472-2772

(Monday–Friday, 9 a.m.–5 p.m. Pacific Time, excluding holidays)

Japan Customers

Contact Sonnet Customer Service Japan at:

E-mail: jp.support@sonnettech.com