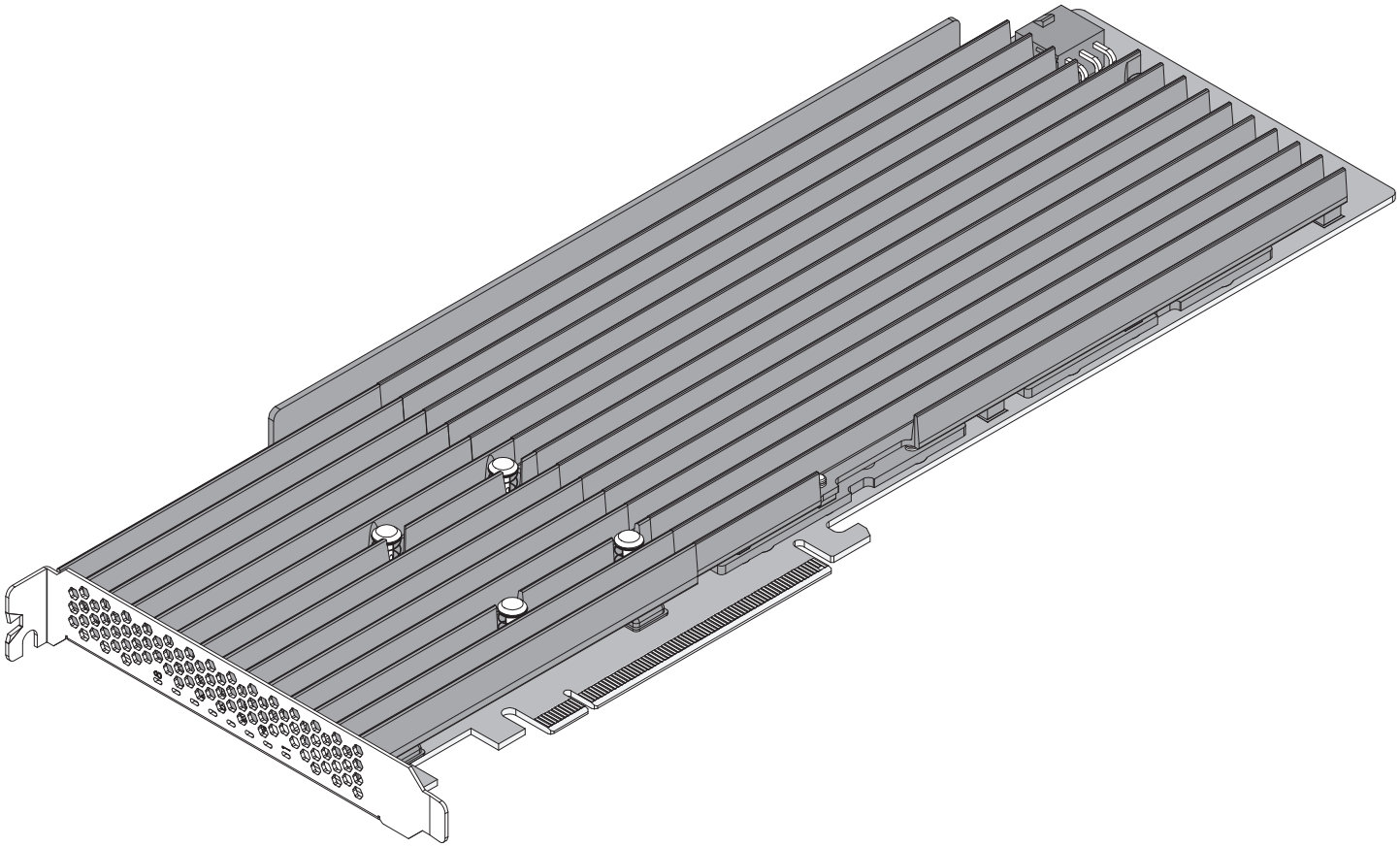
Sonnet M.2 8x4 Silent Gen4 PCIe® Card

Quick Start Guide



Support Note: This document was up to date at the time of printing. 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 Sonnet M.2 8x4 Silent Gen4 PCIe Card link.
3. Click the Manual link.
4. Click the Sonnet M.2 8x4 Silent Gen4 PCIe Card Quick Start Guide [English] link, and then check the Document Version information. If the version listed is later than this document (**revision G**), click the Download Now button for the latest version.

PCI EXPRESS®

Mac For Windows

SONNETTECH

Introduction, Compatibility Information, and Card Description

Mac® Compatibility

- Mac Pro® 14,8 (2023): Use x16 slot 1 or 2: macOS 13 – macOS 14.1+
- Mac Pro 7,1 (2019) – Use x16 PCIe slot (3, 4, or 5): macOS 10.15 – macOS 12; macOS 14.4.1+ (*not compatible with macOS 13*)
- Mac Pro 5,1 – Use slot 2: macOS 10.13 – macOS 14

Windows® Compatibility

- Computer with available full-length, full-height x16 PCIe slot (PCIe 4.0 slot preferred; PCIe bifurcation not required)
- Windows 11, 10
- Windows Server 2022, 2019

Linux® Compatibility

- Computer with available full-length, full-height x16 PCIe slot (PCIe 4.0 slot preferred; PCIe bifurcation not required)
- Linux Kernel 5.0+

Thunderbolt™ Compatibility

- With card installed in a Thunderbolt expansion system with full-length x16 PCIe slot
- Any Mac*, Windows, or Linux computer with Thunderbolt ports

M.2 SSD Compatibilty

Both single- and double-sided (components on both sides) SSDs are supported. To view a list of known compatible SSDs, visit https://sonnettech.com/support/downloads/manuals/M2_compatibility.pdf **Note that Western Digital PCIe Gen4 SSDs are NOT compatible.**

Power Requirements

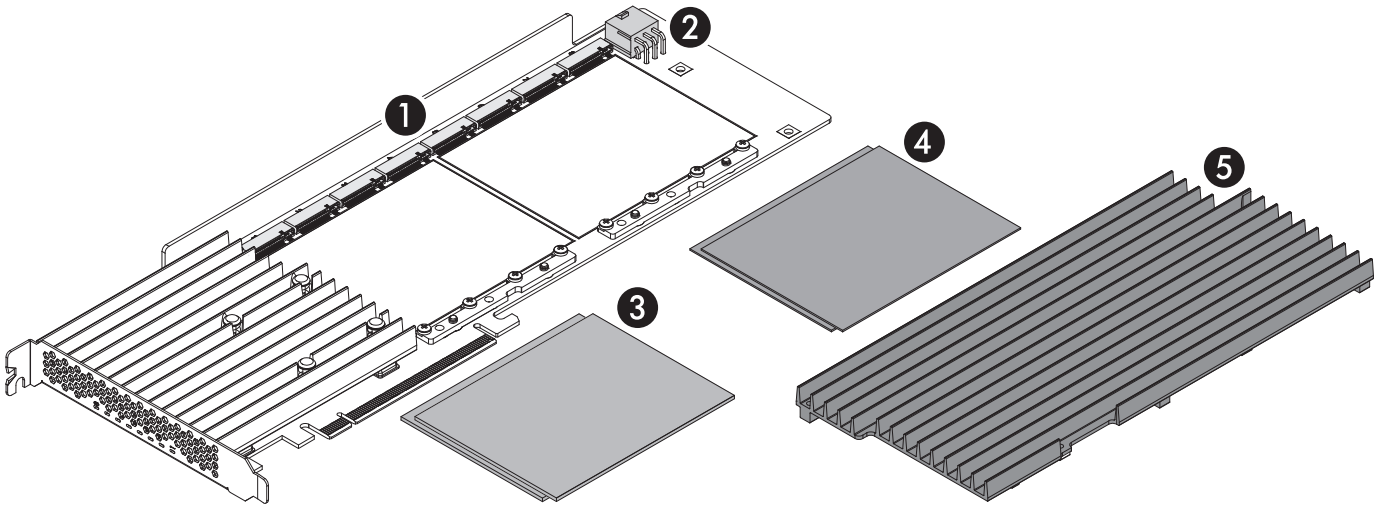
When you install seven or eight SSDs on the M.2 8x4 Silent Gen4 PCIe Card, you must connect auxiliary power to the card's 6-pin power connector (optional when up to six SSDs installed). Instructions follow.

RAID Configuration Support Information

Sonnet M.2 8x4 Silent Gen4 PCIe Card supports RAID 0 (Stripe), RAID 1 (Mirror), RAID 5 (Parity) and RAID 1+0 configurations of SSDs under macOS**, Windows, and Linux. **Note that Mac Pro 7.1 (2019) does not currently support RAID or more than one PCIe card with SSDs.**

*As of this writing, there is a known issue when using this Sonnet card in a Thunderbolt expansion system when the host computer is running macOS 15 (Sequoia). Check for the latest information at www.sonnettech.com.

**RAID 5 support under macOS requires the use of third-party software such as SoftRAID, sold separately.



Card Description

Support Note: Your card may appear different from what is illustrated here.

1 – M.2 SSD Sockets
The Sonnet M.2 8x4 Silent Gen4 PCIe Card supports the installation of eight M.2 2280 NVMe PCIe SSDs with "M" key connectors. When configuring them as RAID volumes, Sonnet recommends using identical SSDs. Note that the sockets are numbered, and there are corresponding activity LED indicators on the edge of the card visible through the PCIe bracket.

2 – 6-Pin Auxiliary Power Connector
Connect a 6-pin PCIe power connector to this when seven or eight SSDs are installed on the card (instructions follow).

3 – Thermal Transfer Pads (Thick)
Apply these to the card when you install single-sided SSDs; instructions follow.

4 – Thermal Transfer Pads (Thin)
Apply these to the card when you install double-sided SSDs; instructions follow.

5 – SSD Heatsink (attached)
Backed with thermal transfer pads that contact the SSDs' components, the heatsink conducts heat away from the SSDs.

SSD and Card Installation Steps

Support Note: 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. Handling the card by its edges, remove the Sonnet M.2 8x4 Silent Gen4 PCIe Card from its packaging.

2. Place the card upside-down on a flat, level surface **(Figure 1)**.

3. Using a Phillips screwdriver, remove the five indicated Phillips head screws securing the heatsink to the bottom edge of the card **(Figure 1)**. Set aside the screws. Note that these screws must be reinstalled in the same areas as originally installed.

4. Using a Phillips screwdriver, remove the two indicated Phillips head screws (one short screw with washer, one flat head screw) securing the heatsink to the upper portion of the card **(Figure 1)**. Set aside the screws and heatsink. Note that these screws are different from the ones removed in step 3.

5. Flip the card over, and then remove and set aside the same number of retainer screws as SSDs you will install **(Figure 2)**. Note that when installing two or more SSDs, you should install them side-by-side, starting on an outside edge.

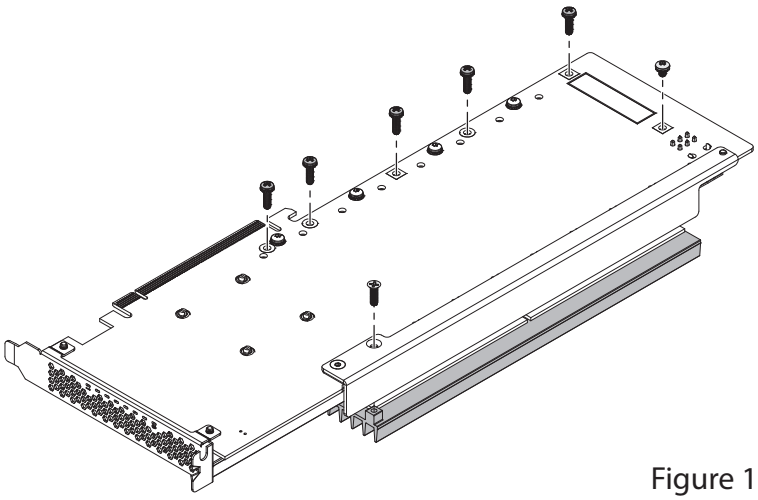


Figure 1

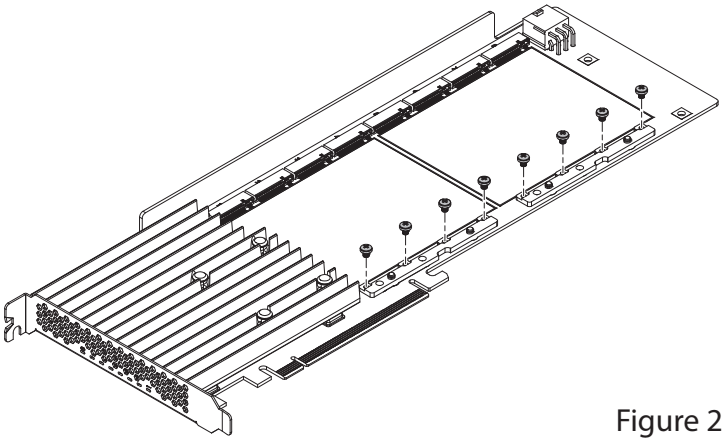


Figure 2

WARNING: You are required to install included thermal transfer pad(s) on the card before installing SSDs. It is critical that you use the correct pad, which is determined by the type of SSDs you install. Installing the wrong pad may result in poor performance, or may possibly damage the card.

6. Determine whether you are installing single- or double-sided SSDs (larger components on one or both sides, respectively). If you are installing single-sided SSDs, remove the thick thermal transfer pad(s) from the packaging; otherwise, remove the thin thermal pad(s) from the packaging.

Support Note: When installing four or fewer SSDs — and they are all either single- or double-sided — install them into sockets 1–4 or 5–8, and apply only one thermal transfer pad to the side of the card where the SSDs will be installed; instructions follow.

7. Carefully peel off the backing material from *one* side of the pad(s).

8. Starting with one edge, carefully apply each pad(s) to the card between the SSD sockets and the screw holes for retainer screws; be sure to avoid trapping air bubbles **(Figure 3)**.

9. Rub the pad(s) all over to ensure good contact with the card **(Figure 3)**.

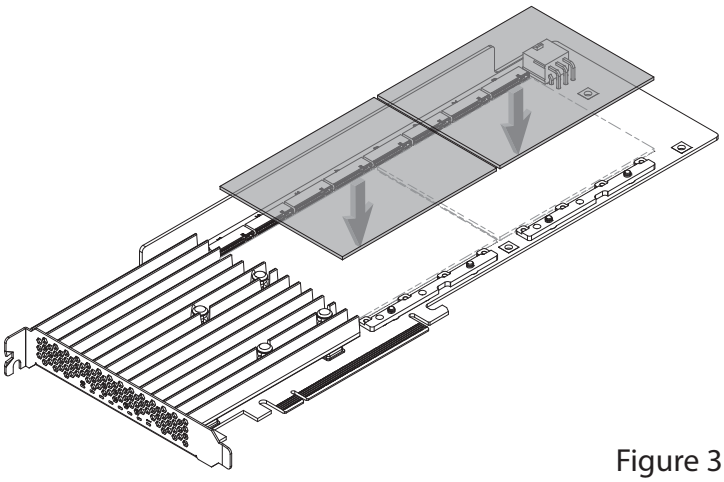


Figure 3

SSD and Card Installation Steps

10. Peel off and set aside the backing material from the top(s) of the pad(s) you just installed **(Figure 4)**.

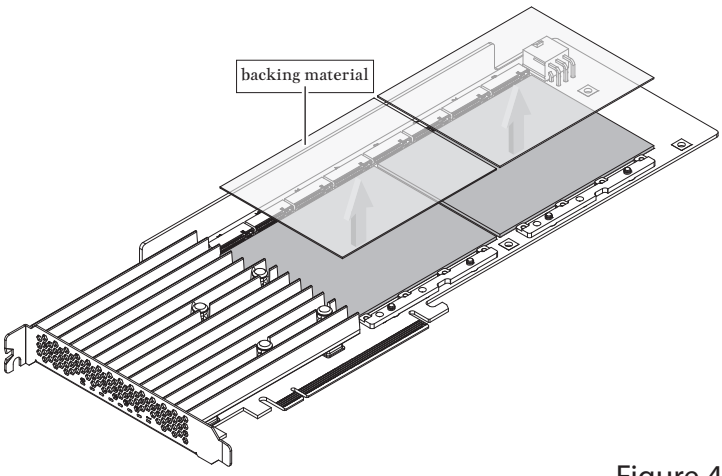


Figure 4

11. If you are installing four or eight SSDs now, skip to step 13. Otherwise, take one sheet of the backing material and cut it as shown, removing 1/4 of the sheet when installing one or three SSDs in slots 1–4 or 5–8, or 1/2 of the sheet when installing two SSDs **(Figure 5)**. Repeat with the second sheet if necessary.

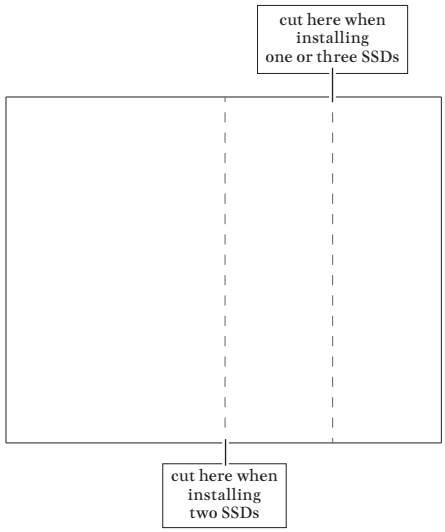


Figure 5

12. Reapply the cut backing material to the thermal transfer pad(s) as shown where no SSD(s) will be installed **(Figure 6)**. By reapplying the backing plastic, you are protecting the sticky thermal pad(s) from collecting dust, leaving the pad clean for when you are ready to install additional SSDs. Note that this example shows preparation for installing six SSDs.

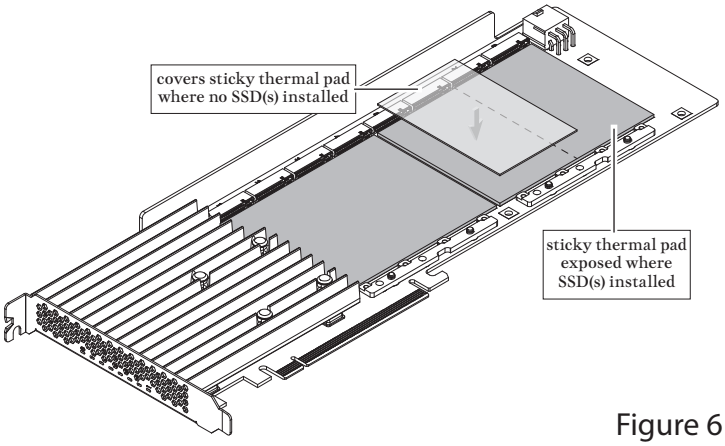


Figure 6

SSD and Card Installation Steps

13. Handling it by its edges, remove an SSD from its packaging.

14. Fully insert the SSD at an angle into one of the SSD sockets where the sticky side of the thermal transfer pad is expose) **(Figure 7)**.

15. Repeat steps 13 and 14 with any remaining SSDs left to install **(Figure 7)**.

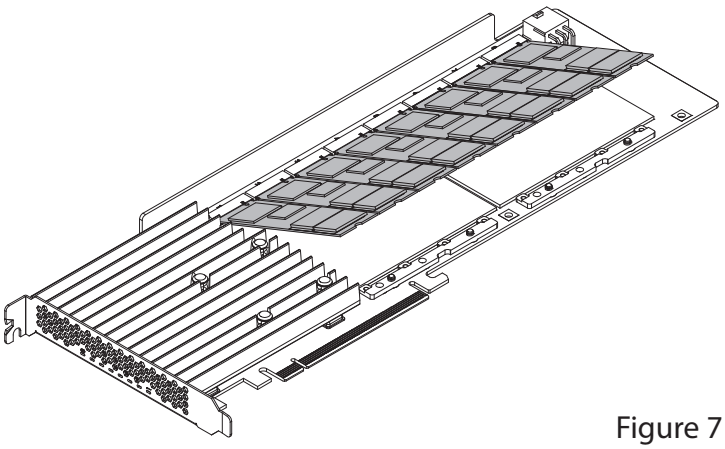


Figure 7

16. Using the screws you removed previously, secure the SSD(s) to the card **(Figure 8); do not overtighten the screws.**

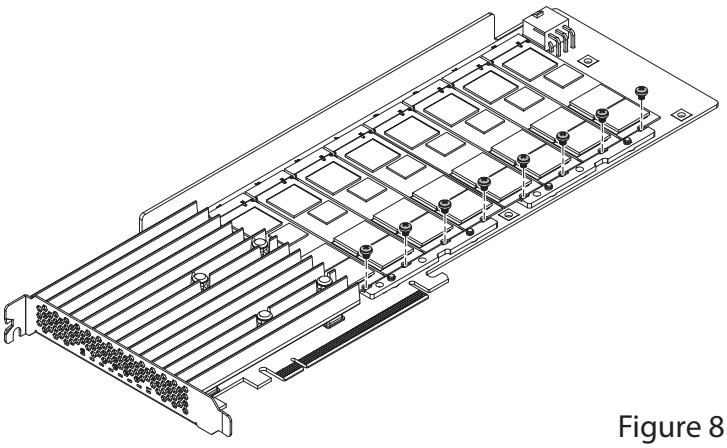


Figure 8

17. Peel off and set aside the backing material to expose the sticky side on the thermal transfer pad(s) attached to the heat sink **(Figure 9)**. Note that if you installed SSDs only on one side of the card (slots 1–4 or 5–8), remove the backing material from the thermal transfer pad corresponding side of the heat sink only.

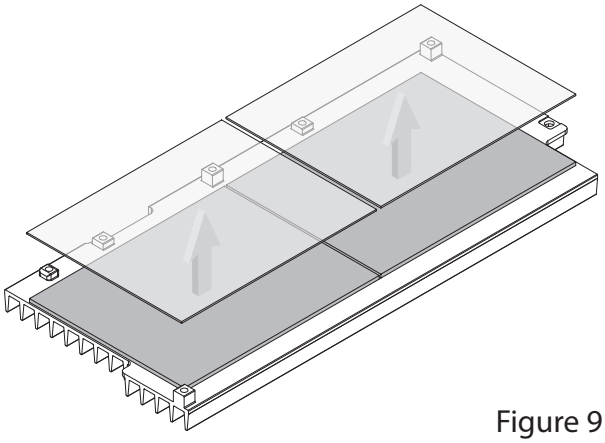


Figure 9

SSD and Card Installation Steps

18. If you installed four or eight SSDs, skip to step 20. Otherwise, take one sheet of the backing material and cut it as shown, removing 1/4 of the sheet when one or three SSDs were installed in slots 1–4 or 5–8, or 1/2 of the sheet when two SSDs were installed **(Figure 10)**. Repeat as necessary with the second sheet.

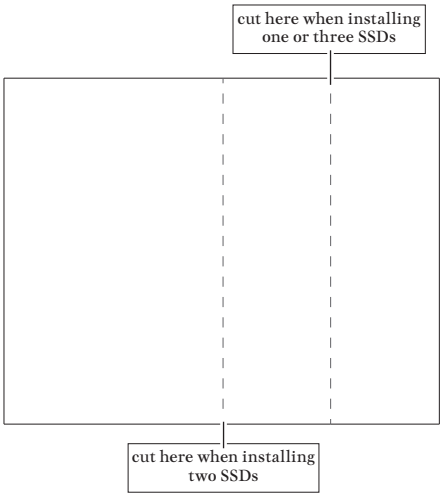


Figure 10

19. Reapply the cut backing material to the heatsink's thermal transfer pad(s) corresponding to where no SSD(s) were installed on the card **(Figure 11)**. By reapplying the backing plastic, you are protecting the sticky thermal transfer pad(s) from collecting dust, and the pad(s) will be clean when you are ready to install additional SSDs. This example illustrates reapplying the backing material when six SSDs are installed on the card.

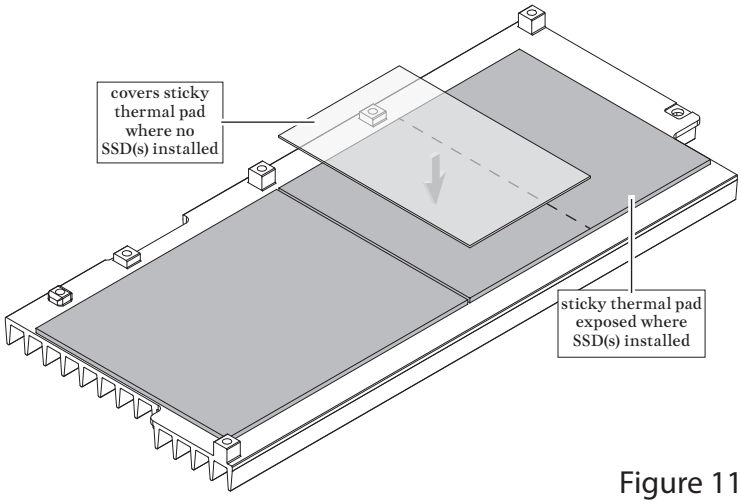


Figure 11

20. Aligning the threaded holes in the heatsink with the corresponding holes in the card, set the heatsink on top of the SSDs as shown **(Figure 12)**.

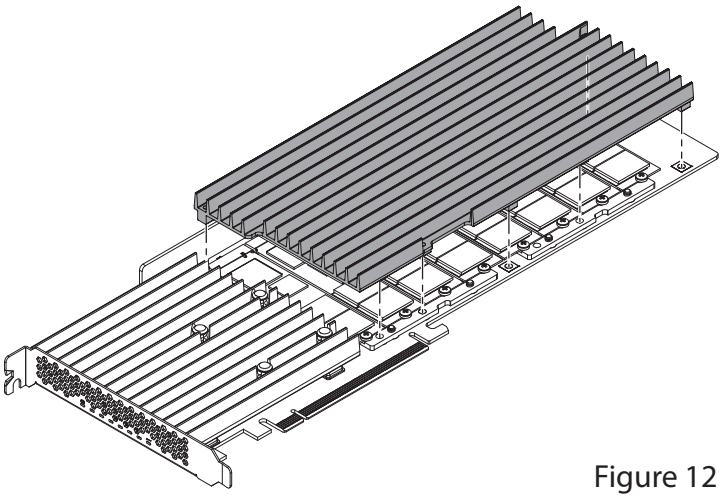


Figure 12

SSD and Card Installation Steps

21. Holding the heatsink firmly against the card, flip over the Sonnet M.2 8x4 Silent Gen4 PCIe Card **(Figure 13)**.

22. Secure the heatsink to the card with the seven screws you removed previously **(Figure 13); do not overtighten the screws**.

Support Note: After securing the heatsink to the card, it is normal and safe for the card to bend a small amount. This is normal and not a cause for concern.

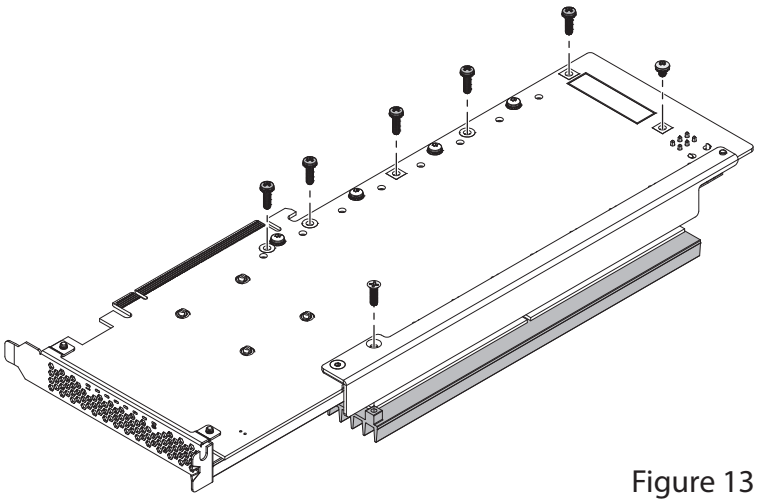


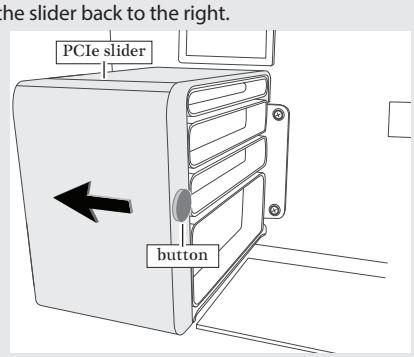
Figure 13

Card Installation Steps

1. Shut down your computer or expansion chassis, disconnect its power cable, and then open it to access the expansion card area (PCI Express slots); refer to the user manual for specific information

2. Locate an available x16 PCIe card slot and remove its access cover if necessary:
- 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 x16 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 Sonnet card with attached SSDs into the slot; **make sure the card is firmly seated and secured (use the PCIe card retaining latch on the slot if present)**.

4. If you installed seven or eight SSDs on the card, do one of the following:
- Connect the included auxiliary power cable between your computer's and the card's 6-pin connectors. (Note that the included power cable has two connectors at each end (one 6-pin and one 2-pin; only connect the 6-pin connectors.)

or

- Connect your computer's 6-pin PCIe auxiliary power connector directly to the card's 6-pin connector.

5. Close your computer or Thunderbolt expansion chassis.

6. Reconnect the computer's or expansion chassis' power cable.

SSD Formatting and Configuration, and Support Information

Formatting and Configuring SSDs—macOS

Use Disk Utility (found in the Utilities folder within the Applications folder) to format installed SSDs. For step-by-step instructions on how to create RAID 0, RAID 1, or RAID 10 sets with installed SSDs, open Disk Utility, click Help and then select Disk Utility Help. In the *Disk Utility User Guide* window, type "create a disk set" and then press return. Click "Create a disk set using Disk Utility on Mac" to read the directions.

Support Note for Mac Users: macOS 10.14.6+ supports both 512 and 4k block size SSDs, but macOS 10.13.6 supports only 4k block size SSDs. SSDs 1TB or larger are shipped from the factory programmed with a 4k block size. If you have smaller SSDs that are programmed with 512 block size, and you need to be compatible with macOS 10.13.6, you may need to reprogram your SSDs to a 4k block size. Go to www.sonnettech.com/support/kb/kb.php, navigate to the support page for Sonnet M.2 8x4 Silent Gen4 PCIe Card, and then open the FAQ about Programming SSDs to 4k Block Size for Compatibility With macOS 10.13.6 for more information.

Formatting and Configuring SSDs—Windows

If you intend to format SSDs connected to the Sonnet card using Windows drive formatting tools (as opposed to using third party software), you may use either Disk Management or Storage Spaces.

Basic RAID Configuration Steps for Windows

Assuming you have installed two or more SSDs, you may follow these instructions to format them into a RAID array (Storage Space).

1. Go to the taskbar, type Storage Spaces in the search box, and then select Storage Spaces from the search results list.

2. In the *Storage Spaces* window, click Create a new pool and storage space.

3. Click the check boxes next to each SSD you want to add to the new storage space (RAID volume), and then click Create pool. Be very careful not to select a drive you don't want to include, and note that all data on the SSDs you include in a Storage Space will be erased.

4. Give the "drive" a name and letter, and then choose a file system.

5. From the Resiliency type drop-down, select Simple (RAID 0), Two-way mirror (RAID 1) or Three-way mirror (also RAID 1, but on more drives).

6. Depending on the Resiliency type you chose, the wizard will set the maximum available disk capacity. If necessary, you can also enter the maximum size the storage space. Click Create storage space to complete the formatting and configuration; your SSDs are ready to use.

Formatting and Configuring SSDs—Linux

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

Booting From Attached SSDs

macOS:

Sonnet M.2 8x4 Silent Gen4 PCIe Card supports booting from individual (non-RAIDed) SSDs when the card is installed in 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 Sonnet 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:

Sonnet M.2 8x4 Silent Gen4 PCIe Card supports booting *only* in computers with UEFI.

Contacting Customer Service

The Sonnet Web site located at 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, and check this Quick Start Guide for helpful information.

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 so the customer service staff can better assist you:

- 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

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