

OWC Accelsior 4M2

Support Manual



Introduction

1.1 System Requirements

Operating System

- Mac
 - : macOS 10.13.6 or later
- PC
 - : Windows 10 or later

Hardware

- Any Mac or PC with a compatible PCIe slot
 - PCIe 3.0 or greater strongly recommended
 - Lanes: x8 or greater strongly recommended
 - Physical: x8 or greater required

Drivers

- No driver is required for the Accelsior 4M2 itself but some M.2 drives may require one. Please review the drive manufacturer's requirements before installing.

Supported Drives

- Any PCIe based M.2 SSD with an M-key connector
- 2280 form factor required

1.2 Package Contents

- (1)
OWC Accelsior 4M2
- (1)
3 Years of SoftRAID Premium Access (With select purchases)
 - License located on back of device

1.3 Side View

A. **Status LEDs** - **Power On** = Solid Green / **Disk Activity** = Flashing Green

B **PCIe Slot Cover**

C. **PCIe Connector** – align this part of the device with a compatible PCIe slot on the host computer or enclosure.



Getting Started

2.1 Device Setup

- This section describes the process of setting up the OWC Accelsior 4M2 if purchased with pre-installed drives. The OWC Accelsior 4M2 is available assembled with (4) NVMe M.2 SSDs configured as an OWC SoftRAID RAID 0.

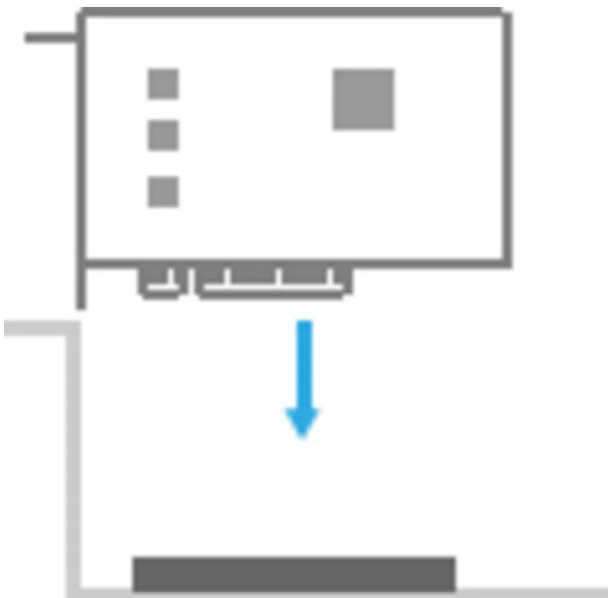
1. Disconnect all power and powered devices from your host or PCIe enclosure. Open the host or enclosure so the compatible PCIe slot(s) are visible and accessible.

NOTE : The OWC Accelsior 4M2 will only physically fit into a 8x | 16x PCIe slot.

Consult your host or enclosure manual to determine the PCIe slot location and physical size.



2. Align the PCIe connector of the OWC Accelsior 4M2 SSD with the compatible slot on your host as highlighted. Carefully seat the drive into the slot. If there is resistance, do not force the drive into the slot. Remove the drive, re-align the connector, and try again.



3. Once the drive is fully seated affix the included screw to the bracket.



4. The OWC Accelsior 4M2 is configured as an OWC SoftRAID RAID 0. Downloading and installing the latest version of SoftRAID is recommended to experience the best performance.

- NOTE

: OWC Accelsior 4M2 devices come bundled with "

3 Years of SoftRAID Premium Access

". Please visit

[OWC SoftRAID Product Details](#)

for more information regarding SoftRAID and the bundled Premium Access.

- NOTE

: The OWC SoftRAID license is located on the back of the OWC Accelsior 4M2.

Mac OWC SoftRAID Setup

- Download
OWC SoftRAID for Mac
 - Please review and follow the steps outlined in
OWC SoftRAID Installation for Mac

Windows OWC SoftRAID Setup

- If you are using the OWC Accelsior 4M2 with the Windows operating system, the pre-installed drives need to be reconfigured before they can be used. The following options will allow the Mac formatted OWC Accelsior 4M2 to work as a Windows formatted device.
- Download
OWC SoftRAID for Windows
 - Please review and follow the steps outlined in
OWC SoftRAID Installation for Windows
 - Please consult the support article "
Mac to Windows – SoftRAID Volume Conversation
" for instructions to convert the Mac formatted OWC SoftRAID RAID 0 to a Windows formatted device through OWC SoftRAID.
 - The Mac formatted OWC SoftRAID RAID 0 OWC Accelsior 4M2 can be used in Windows through the purchase and installation of OWC MacDrive11 Pro. OWC MacDrive11 Pro allows access to software RAID Mac-formatted drives in Windows without performing a conversion process. Please visit
OWC MacDrive Product Details
or
OWC MacDrive Support
for more information.

2.2 Assembly Steps

- This section describes the process of installing drives into the OWC Accelsior 4M2 if purchased as a bare card. For maximum performance install four identical SSDs, then configure them as a RAID 0 using a Software RAID.

- NOTE

: Select OWC Accelsior 4M2 devices purchased as a bare enclosure come bundled with "

3 Years of SoftRAID Premium Access

". Please visit the

[OWC SoftRAID Product Details](#)

for more information regarding SoftRAID and the bundled Premium Access.

- NOTE

: Before installing the assembled OWC Accelsior 4M2 in a host, write down the SoftRAID license listed on the back of the OWC Accelsior 8M2. The license is required for installing and operating SoftRAID.

1. Remove the OWC Accelsior 4M2 from the packaging and set it on a flat work surface with the bracket facing forwards. Remove the highlighted screw using a Torx T8 driver (not included).



2. Carefully flip the OWC Accelsior 4M2 over and remove the four highlighted T8 screws to loosen the connection from the heat sink. Set the screws aside securing the OWC Accelsior 4M2 later during assembly.

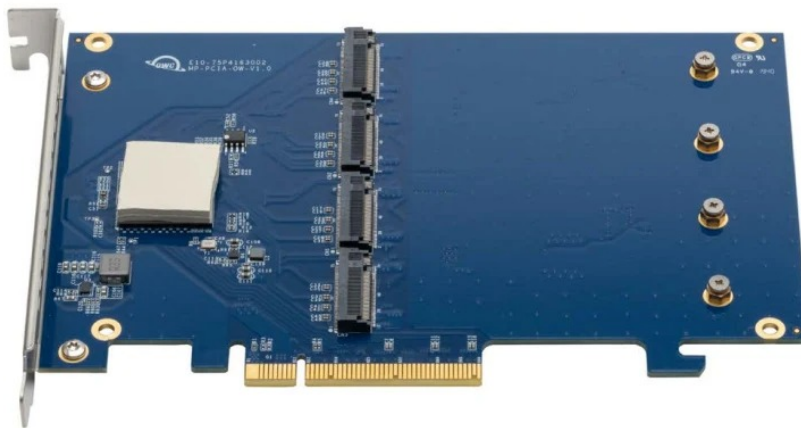


3. Carefully separate the PCIe card from the black heat sink like opening a book. Don't apply extra force to separate the card and heat sink if resistance is experienced. Keep being patient and the card will separate from the heat sink.



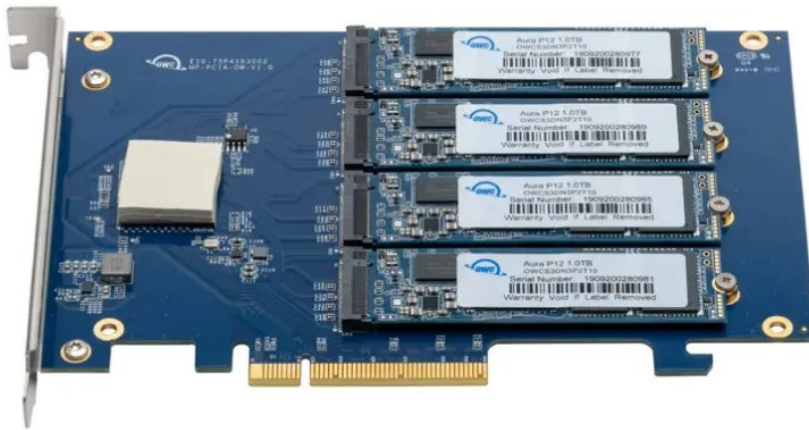


4. Flip the OWC Accelsior 4M2 over to reveal and position the M.2 connectors upwards. Remove the four highlighted screws with a Phillips 00 driver (not included). Set the screws aside securing the OWC Accelsior 4M2 later during assembly.



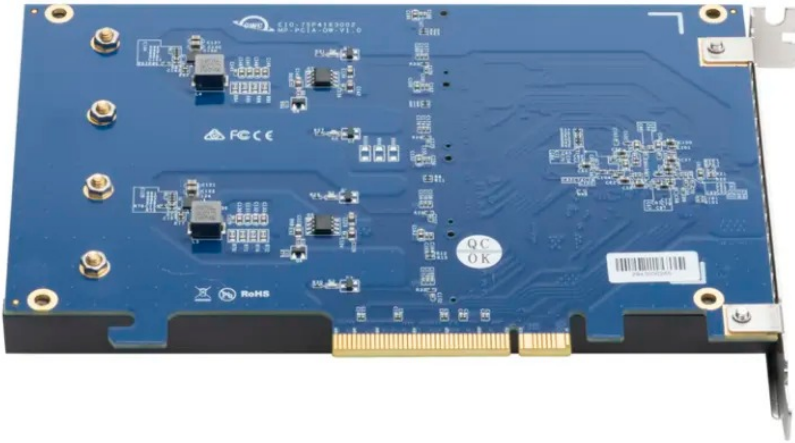
5. Carefully align the first M.2 drive to the PCIe board connector (5a) and slide it forward until it snaps into place. Only a modest amount of force is required; do not force the drive if it does not snap into place. Re-align it and try again. Once the drive is seated use one of the screws from Step 4 to secure the drive (5b); you may need to hold the drive down initially until you thread the screw onto the post. Repeat this process for each M.2 drive you intend to install. (5c) shows all four drives installed.





6. Set the heat sink in front of you, then rotate the PCIe card so that the drives will align with the thermal pad (6a). Next carefully set the PCIe card down on the heat sink so that the four screw holes on the PCIe card are over the corresponding holes on the heat sink (6b). You may need to apply light downward pressure to the PCBa to ensure the pieces fit flush.





7. Re-affix the four T8 screws that you removed in Step 2. If one or more of the screws does not fasten or does so at a slight angle, don't apply extra force; the two components may not be fully aligned. Remove the screw(s) then re-check the applicable screw hole(s) on the PCBA to make sure you can see through to the corresponding holes on the heat sink then try again

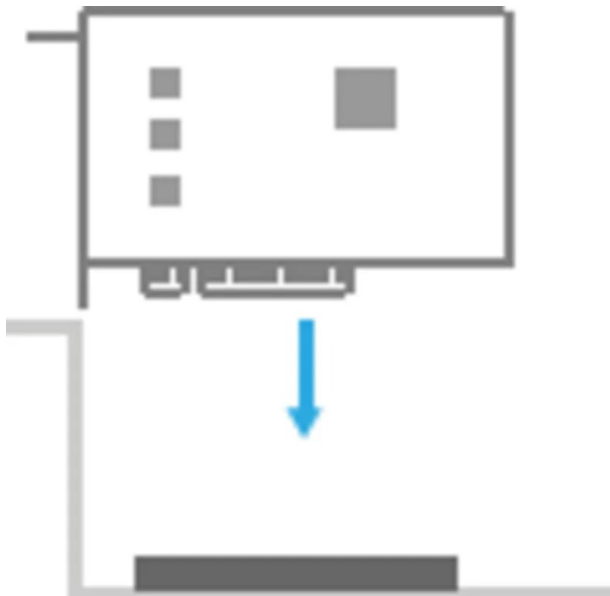


8. Turn the card over with the PCIe bracket facing you and re-affix the T8 screw that was removed in Step 1. Once complete the card is ready to install into the host computer (see below)



- x16  ✓
- x8  ✓
- x4  ✗
- x1  ✗

9. Align the PCIe connector of the OWC Accelsior 4M2 SSD with the compatible slot on your host as highlighted. Carefully seat the drive into the slot. If there is resistance, do not force the drive into the slot. Remove the drive, re-align the connector, and try again.



10. Once the drive is fully seated affix the included screw to the bracket.



11. The installed drives are ready to be formatted. Move onto **Section 2.3 “RAID Configuration Options”** for instructions on how to format and configure the OWC Accelsior 4M2.

2.3 RAID Configuration Options

OWC SoftRAID RAID Configuration

- Select OWC Accelsior 4M2 cards come with 3 Years of SoftRAID Premium Access. Downloading and installing the latest version of OWC SoftRAID is recommended to experience the best performance from the OWC Accelsior 4M2.

- NOTE

: Select OWC Accelsior 4M2 cards come bundled with "

3 Years of SoftRAID Premium Access

". Please visit

[OWC SoftRAID Product Details](#)

for more information regarding SoftRAID and the bundled Premium Access.

- SoftRAID will assist with formatting the installed drives and setting up a RAID volume.
- NOTE
: The OWC SoftRAID license is located on the back of the OWC Accelsior 4M2.

Mac OWC SoftRAID Setup

- Download
OWC SoftRAID for Mac
 - Please review and follow the steps outlined in
OWC SoftRAID Installation for Mac
- Please review and follow the instructions outlined in
Creating a macOS OWC SoftRAID Volume

Windows OWC SoftRAID Setup

- Download
OWC SoftRAID for Windows
 - Please review and follow the steps outlined in
OWC SoftRAID Installation for Windows
- Please review and follow the instructions outlined in
Creating a Windows OWC SoftRAID Volume

Mac RAID Configurator

1. Open the “Disk Utility” application on your Mac.
2. Choose “File” and select “RAID Assistant”.
3. Select a set type:

- Striped (RAID 0) set:

A

striped RAID set

can speed up access to your data. You can't create a RAID set on your startup disk; you must first start up your computer from another disk.

- Mirrored (RAID 1) set:

Protect your data against hardware failure with a mirrored RAID set

When you create a mirrored RAID set, your data is written to multiple disks so the information is stored redundantly. You can't create a RAID set on your startup disk; you must first start up your computer from another disk.

- Concatenated (JBOD) set:

Increase storage space with a concatenated disk set

If you need one large disk, but you have several smaller disks, you can create a concatenated disk set to use as one large disk.

4. Select the checkboxes of the disks you want to include in the set.
5. For each disk, click the pop-up menu in the Role column and choose "RAID slice" or "Spare" to designate the disk as a standard member or spare in the set, then click Next.
6. Enter a name for the RAID set in the RAID Name field.
7. Click the Format pop-up menu, then choose a volume format that you want for all the disks in the set. (See

File system formats available in Disk Utility

.)

8. Click the "Chunk size" pop-up menu, then choose a disk chunk size that you want used for all the disks.

1. When you create a striped set, chunks of data from the same file are distributed across the drives. Ideally, you want data distributed across drives evenly and at an optimum size so that it can be efficiently accessed. If you want high data throughput from your set, choose a smaller chunk size so that data is spread across the drives and one drive can be accessing data while another is seeking the next chunk. With mirrored disk sets, choose a chunk size that matches the data you're accessing. For example, when working with video files, your Mac is accessing large chunks of data, whereas when using a database of many small records, your disks may be accessing smaller chunks of information.

9. If you are creating a mirrored RAID set, select the "Automatically rebuild" checkbox to allow the set to be automatically rebuilt when member disks are reconnected

10. Click "Create" and then click "Done".

Device Management

3.1 OWC Disk Performance

Windows users connecting the OWC Accelsior SE through an external PCIe enclosure may need to change the default Disk Removal Policy.

- As of Windows 10 v. 1809 the default Disk Removal Policy is 'Quick removal' instead of 'Better performance'.

- NOTE

: OWC storage solutions that are experiencing slow read/write speeds should consider checking and changing the Windows disk removal policy. Changing from "Quick removal" to "Better performance" can increase disk performance. OWC offers the application OWC Disk Performance to help change the Disk Removal Policy. Changing from "Quick removal" to "Better performance" can also be changed through OWC SoftRAID or manually through the operating system.

- Please review the support article

Storage Solutions: OWC Disk Performance

for additional details.

3.2 Manually Unmounting Volumes

To ensure no data is lost during normal use, always eject or unmount the corresponding volume(s) from the operating system before powering off and disconnecting the device. Unmounting options are provided below.

macOS

1. Drag the icon for the device you wish to unmount to the trash can; OR
2. Right-click the device icon on the desktop, then click "Eject"; OR
3. Highlight the device on your Desktop and press Command-E.

Windows

- Windows 10 build 1809 (October 2018) or later:

- Eject the drive by clicking the 'Show hidden items' menu in the Taskbar, then clicking 'Safely Remove Hardware and Eject Media', and last select the 'Eject' option for this volume.
- Windows 10 build 1803 and earlier:
- Go to the System Tray (located in the lower right corner of your screen). Click on the "Eject" icon (a small green arrow over a hardware image).
- A message will appear, detailing the devices that the "Eject" icon controls, i.e., "Safely remove..." Click on this prompt.
- You will then see a message that says, "Safe to Remove Hardware." It is now safe to disconnect the device from the computer.

3.3 Usage Notes

- Select OWC Accelsior 4M2 cards that come with SoftRAID should have the license written down before installing in a host. The SoftRAID license is on the back and required for installation and operation of SoftRAID.
- Data transfer rates will vary based on SSDs used, CPU speed, RAID setting, and PCIe version.
- NVMe SSDs with a heatsink will not fit and are not supported.
- Backward compatible with PCIe 2.0 slots with reduced speeds.
- Performance in a Thunderbolt 3 PCIe expansion chassis limited by maximum Thunderbolt 3 PCIe bandwidth of 2800MB/s.
- Bootable using a single, independent M.2 startup disk, with the other three M.2 SSDs configured as independent volumes or as a software RAID (SoftRAID or Apple RAID). Mac Pro (2010-2012) requires macOS 10.14.6. Mac Pro (2019) requires macOS 10.15.1 or later.
- When installed, the following SSDs will only be compatible with Windows 10 systems: Hynix Gold P31, Samsung PM981a.
- The LED function of this product will be disabled and not function if used with an 8TB OWC Aura Ultra IV MVMme M.2 SSD (OWCP4U8T1PT08).

Support Resources

4.1 Troubleshooting

- Many problems can be traced back to an improperly seated M.2 drive (0GB models only) or PCIe card, or host compatibility issues (e.g. installing the card in a slower PCIe 2.0 slot or a PCIe 3.x slot with too few data lanes to support the desired performance, or installed in a computer running an older version of Windows or macOS). Make sure that the M.2 drives (0GB only) and/or the PCIe card is seated properly and that the computer is configured to meet the system requirements. If everything is installed normally and you're still having trouble, please contact technical support.
- Depending on date of purchase, certain GPU-related limitations may apply when installing the Accelsior 4M2 into the 2010–2012 Mac Pro.

4.2 About Data Backup

To ensure that your files are protected and to prevent data loss, we strongly suggest that you keep two copies of your data: one copy on your OWC Accelsior 4M2 and a second copy on another storage medium, such as an optical backup, or on an external storage unit. Any data loss or corruption while using the enclosure is the sole responsibility of the user, and under no circumstances may OWC, its parent, partners, affiliates, officers, employees, or agents be held liable for loss of the use of data including compensation of any kind or recovery of the data.

4.3 Contacting Support

- Phone, Chat, and Email support is available by visiting (owc.com/support)

4.4 About This Manual

The images and descriptions may vary slightly between this manual and the unit shipped. Functions and features may change depending on the firmware version. The latest product details and warranty information can be found on the product web page. OWC's Limited Warranty is not transferable and

General Use Precautions

- To avoid damage, do not expose the device to temperatures outside the following ranges:
 - Environmental (Operating)
 - Temperature (°F): 41° — 95°

- Temperature (°C): 5° — 35°
- Environmental (Non-Operating)
 - Temperature (°F): -4° — 140°
 - Temperature (°C): -20° — 60°
- Always unplug the device from the electrical outlet if there is a risk of lightning or if it will be unused for an extended period-of-time. Otherwise, there is an increased risk of electrical shock, short-circuiting, or fire.
- Protect your device from excessive exposure to dust during use or storage. Dust can build up inside the device, increasing the risk of electrical shock, short-circuiting, or fire.
- Do not block any ventilation openings on the device. These help to keep the device cool during operation. Blocking the ventilation openings may increase the risk of electrical shock, short-circuiting, or fire.

Safety Precautions

- Use proper anti-static precautions when handling this device. Failure to do so can increase the risk of electrical shock or short-circuiting.
- Never expose your device to rain, or use it near water, or in damp wet conditions. Never place objects containing liquids on the device, as they may spill everywhere and into the openings. This will increase the risk of electrical shock, short-circuiting, fire, or personal injury.
- To avoid any risk of electrical shock, short-circuiting, fire, or dangerous emissions, never insert any metallic object into the device.
- Please cease use of the device and contact

OWC Support

if it appears to be malfunctioning.

Terms and Conditions of Sale

Warranty

The OWC Accelsior 4M2 has a [5 Year OWC Limited Warranty](#) if it was bundled with drives. OWC Accelsior 4M2's that do not ship with drives have a [3 Year OWC Limited Warranty](#) For up-to-date product and warranty information, please visit the product web page.

Changes

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FCC Statement

Warning ! Modifications not authorized by the manufacturer may void the user's authority to operate this device.

NOTE : This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

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