

# FUSION™ D800RAID

8-Bay Serial ATA Disk Array Storage System

## Drive Enclosure User's Guide



Mac

For  
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# Fusion D800RAID Enclosure Specs and Features

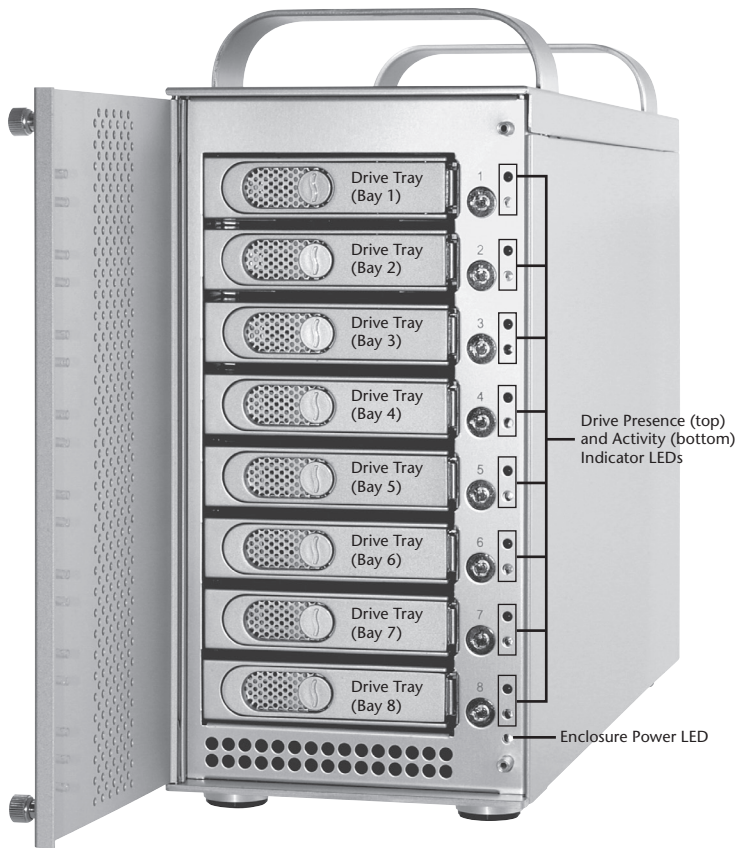


Figure 1

## Specifications

|                         |   |
|-------------------------|---|
| Compatibility           | Compatible with Mac®, Windows®, and Linux® computers with compatible host adapter installed |
| Interface Connectors    | 2 x Infiniband multilane  |
| Drives Supported        | 3 & 1.5 Gb/s Serial ATA; 7,200 RPM  |
| Power Supply            | 100–240V AC, 50/60Hz  |
| Operating Temperature   | 32 to 95° F (0° C to 35° C)   |
| Dimensions (WxDxH)      | 5.9 x 17.9 x 12.9 in (14,9 x 45,4 x 32,7 cm)  |
| Weight (without drives) | 15 lbs (6,8 kg)   |

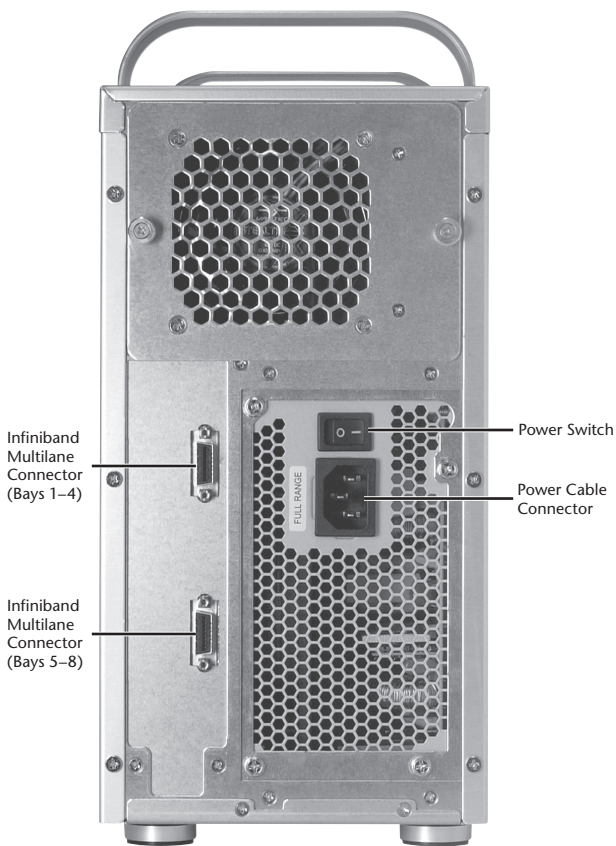


Figure 2

## Safety Precautions and Disclaimers

### SAFETY PRECAUTIONS

Please read this section carefully before proceeding. These precautions explain the correct and safe use of this device, thereby helping to prevent injury to you or others, and also help you to minimize the risk of damaging the device.

### Warnings

Always follow the basic warnings listed here to avoid the risk of serious injury or death from electrical shock, short-circuiting, fire, and other hazards. These warnings include, but are not limited to:

- With the exception of the user-swappable parts, do not attempt to disassemble or modify the enclosure. If this device appears to be malfunctioning, contact Sonnet Customer Service.
- Do not drop the enclosures or any of its drive modules; dropping or mishandling of the enclosure or drive modules may result in a malfunction.
- Do not insert your fingers or foreign objects inside the enclosure; take particular care when small children are present.
- Do not expose the device to rain, use it near water or containers that contain liquids which might spill into any openings, or in damp or wet conditions.
- If unusual smells, sounds, or smoke come from the device, or if liquids enter it, switch it off immediately and unplug it from the electrical outlet.
- Follow the instructions in this manual carefully; contact Sonnet Customer Service for additional advice not covered in this User's Guide.

### DISCLAIMERS

#### Drive Usage:

Sonnet Technologies has qualified the hard drives listed here for use in Fusion D800RAID storage systems. These drives were chosen for their superior performance, error handling, and reliability characteristics, especially when used in RAID groups. One important difference between these drives and standard hard drives is how quickly each handles read errors—these qualified drives attempt to recover from errors for just a few seconds, while standard hard drives may take minutes. Because RAID controller cards and software-based RAID schemes allow only a very short time for drives to recover before dropping them from the RAID group, hard drive manufacturers recommend against using standard hard drives in RAID storage systems. The hard drives qualified by Sonnet also feature improved vibration characteristics that influence and support storage reliability. We recommend the use of these Enterprise/RAID edition hard drives and select, Sonnet certified desktop hard drives in your Fusion storage system to ensure system reliability and performance. **STANDARD DRIVES MAY NOT BE SUPPORTED AND MAY DEGRADE SYSTEM RELIABILITY AND PERFORMANCE. Check the Sonnet Web site for the latest list of qualified hard drives.**

#### Drive Usage (continued)

##### 500GB Models

- Hitachi Deskstar E7K500, # HDS725050KLA360
- Hitachi Deskstar E7K1000, # HDE721050SLA330
- Hitachi Ultrastar A7K1000, # HUA721050KLA330
- Seagate Barracuda ES, # ST3500630NS
- Seagate Barracuda ES.2, # ST3500320NS<sup>(1)</sup>
- Western Digital RE3 Enterprise, # WD5002ABYS

##### 750GB Models

- Hitachi Deskstar E7K1000, # HDE721075SLA300
- Hitachi Ultrastar A7K1000, # HUA721075KLA330
- Seagate Barracuda ES, # ST3750640NS
- Seagate Barracuda ES.2, # ST3750330NS<sup>(1)</sup>

##### 1TB Models

- Hitachi Deskstar E7K1000, # HDE721010SLA330
- Hitachi Ultrastar A7K1000, # HUA721010KLA330
- Seagate Barracuda ES.2, # ST31000340NS<sup>(1)</sup>
- Hitachi Deskstar E7K1000, # HDE721010SLA330

##### 1.5TB Models

- Seagate Barracuda 7200.11, # ST31500341AS<sup>(2)</sup>

##### 2TB Models

- Western Digital RE4-GP, # WD2002FYPS

*There are unresolved technical issues in the Fusion D800RAID with the following Enterprise/RAID edition drives, which are not recommended at this time:*

- 500GB Samsung Spinpoint F RAID, # E502IJ
- 750 GB Samsung Spinpoint F RAID, # HE753LJ
- 1TB Samsung Spinpoint F RAID, # HE103UJ

(1) Only Seagate ES.2 drives with firmware versions SN06 and newer compatible. Seagate ES.2 drives with firmware versions SN03, SN04, or SN05 are NOT compatible.

(2) Only Seagate Barracuda 7200.11 1.5TB drives with firmware versions SD1B and newer compatible.

## Drive Installation and Enclosure Setup

1. Remove the Fusion D800RAID and its drive trays from their packaging, and place them near the computer to which the enclosure will be connected.
2. Take one of the drive trays and push its lever release button in until the lever pops out (Figure 3).



**WARNING:** When handling computer products, take care to prevent components from being damaged by static electricity; avoid working in carpeted areas. Handle hard drives only by their edges and avoid touching connector traces and component pins.

3. Remove a SATA drive from its packaging and set it in on a flat, level surface with the label side down. Open the supplied tube of threadlocker and apply a *single* drop inside each of the four indicated screw holes on the bottom of the drive (Figure 4).

4. Turn the drive tray upside down and lay it on top of the drive, with the back of the tray facing toward the drive's connectors (Figure 5).



**WARNING:** When securing the trays to the hard drives, you must verify the screw heads are flush with the tray. Otherwise, a screw may catch on the tray below and prevent you from removing the tray from the enclosure.

5. Using four of the supplied screws, secure the drive tray to the drive; tighten each screw to secure the tray snugly to the drive; **do not overtighten the screws** (Figure 6).

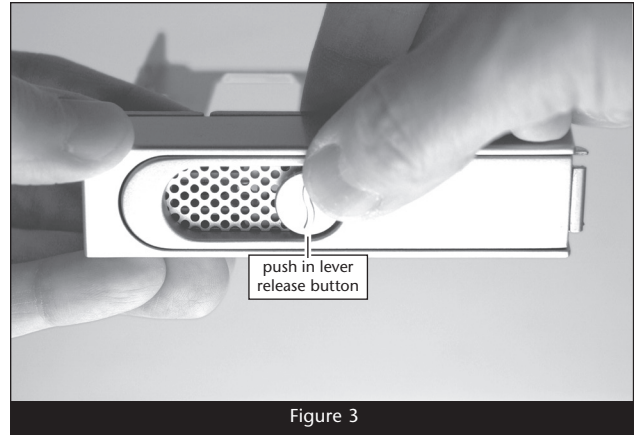


Figure 3

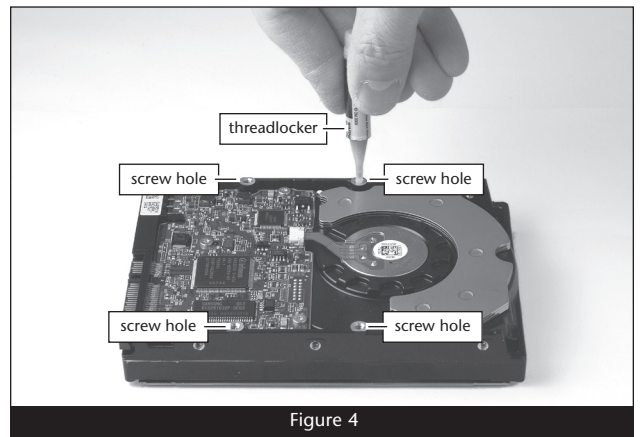


Figure 4

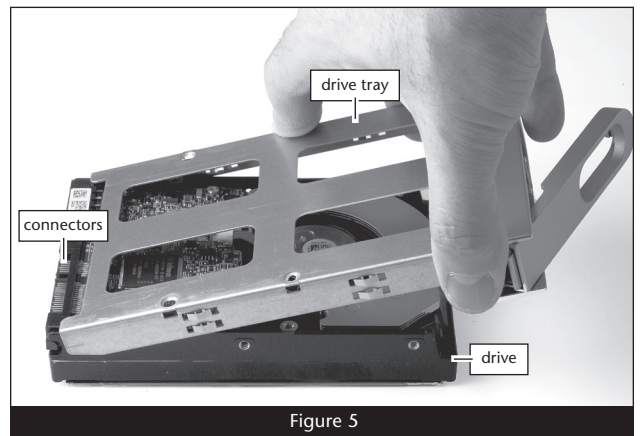


Figure 5

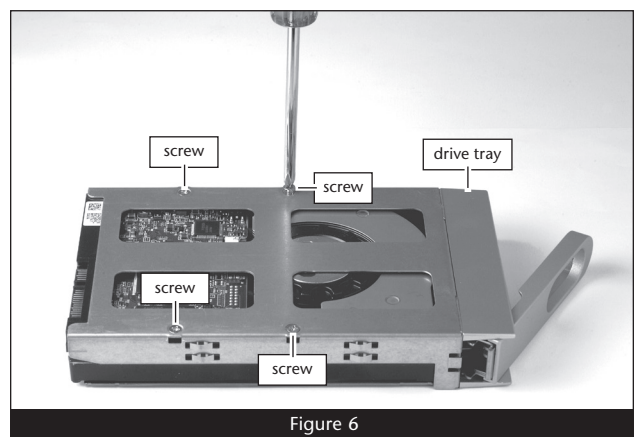


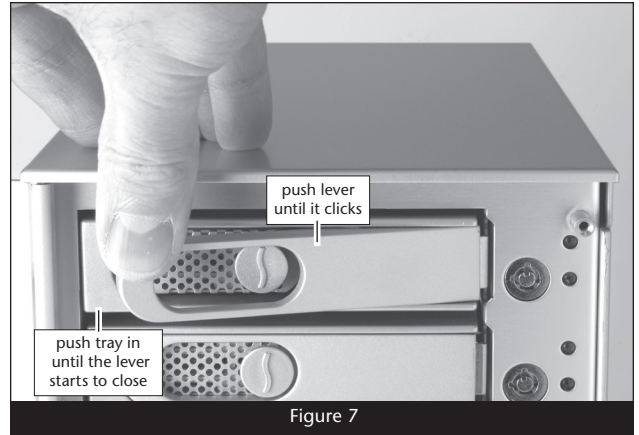
Figure 6

## Drive Installation and Enclosure Setup



**WARNING:** When inserting drive modules into the enclosure, **do not force the levers closed**. If a lever does not close easily, remove and reinsert the module, and then push the lever in again.

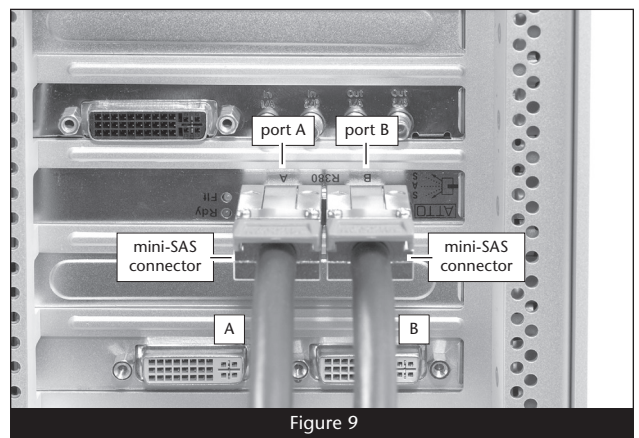
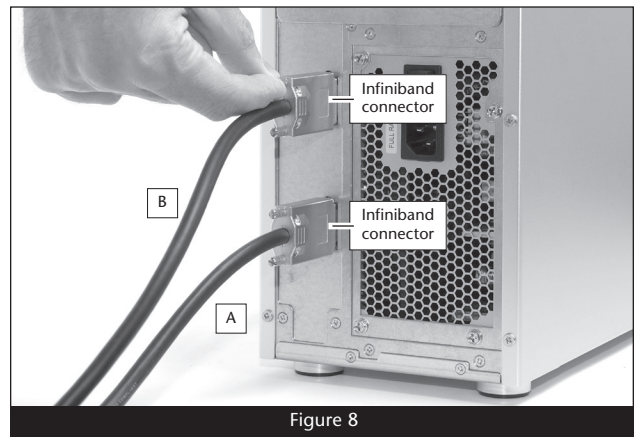
- Carefully slide the drive module into the enclosure until its lever starts to close, and then push the lever in until it clicks to secure the drive module inside the enclosure (Figure 7).
- Repeat steps 2-6 for additional drives.



### Connect Fusion D800RAID Drive Enclosure to Sonnet RAID Controller

This section describes the connection of the Fusion D800RAID drive enclosure to the Sonnet RAID controller card.

- Connect the Infiniband end (with thumbscrews) of the supplied data cables to the Infiniband ports on the enclosure; **use the thumbscrews to secure the connectors (Figure 8)**. For identification purposes, refer to the cable connected to the top port of the enclosure as “cable B”, and the cable connected to the bottom port as “cable A”.
- Connect the mini-SAS end of “cable A” to the mini-SAS port labeled “A” on the Sonnet RAID controller card; **verify the connectors are plugged in securely (Figure 9)**. Repeat with “cable B”.
- Connect the supplied power cable between the Fusion D800RAID enclosure and a grounded wall outlet or power strip; **verify the cable is plugged in securely**.
- Push the switch on the back of the enclosure to the on position, and then power on your computer.
- Format the drives installed in the Fusion enclosure according to your needs; refer to the Configuration Tool and Utilities Operation Manual for more information.



## Tips and Additional Information

### Tips

This section covers some common sense tips for using the Fusion D800RAID enclosure.

#### Connecting Fusion D800RAID enclosures to a Sonnet RAID controller other than the one with which it shipped:

Fusion D800RAID enclosures are matched with their included Sonnet RAID controller. When you connect a Fusion D800RAID enclosure to a different card, you may have to force them to pair up if the card has not been updated with the latest firmware.

1. Launch the ATTO Configuration Tool. Expand the device tree in the Device Listing section on the left side of the window until ExpressSAS R380 is displayed, and then click ExpressSAS R380.
2. Select RAID Management > Auto Map from the application menu.

#### Hot-swapping drives:

Fusion D800RAID supports drive hot-swapping\* for Mac users, enabling you to exchange a drive or a set of drives without having to shut down your computer. This does not mean you can simply pull out a drive at any time; you must follow the procedures below or you may lose data in the process.

- Before removing a drive module, you must put away (“eject”, “unmount”, “dismount”) the drive volume. Simply drag the drive icon associated with the drive(s) you wish to remove to the eject icon on the dock.
- If you remove a drive module from the Fusion D800RAID with a drive that was part of a RAID group, you should power off the enclosure before reinserting the module. Once the module is secured, power on the enclosure again; this will ensure that the RAID group will mount properly.

\* Windows and Linux do not provide hot swap support for drives (drive enclosures) connected to a SATA host controller card installed in a desktop PC or server.

#### Connections:

If you experience issues where a drive or volume does not appear on your computer, or you see an error message stating a drive is missing when you have the drives configured as a RAID set, the cause may be as simple as a loose connector, or a drive module that is not fully seated.

- Disconnect the data cables and reconnect them one at a time, making sure each one “clicks” in place at the RAID controller end, and is screwed in securely at the enclosure end.
- Check the drive presence indicator LEDs on the front of the enclosure. If the LEDs are not lit on one of the bays, remove and reinsert the drive module.

### Contacting Sonnet Customer Service

#### USA Customers

The Sonnet Web site located at [www.sonnettech.com](http://www.sonnettech.com) has the most current support information and technical updates. Before you call Sonnet Customer Service, please check our Web site for the latest updates and online support files, and check this User's Guide for helpful information. When you call Sonnet Customer Service, have the following information available so our customer service staff can better assist you:

- Product name
- Date and place of purchase
- Hard drive model(s)
- Computer model
- Operating system
- Software/firmware versions

If further assistance is needed, please contact us at:

#### Sonnet Customer Service:

**Online Service Form:** <http://serviceform.sonnettech.com>

**Tel:** 1-949-472-2772

(Monday–Friday, 7 a.m.–4 p.m. Pacific Time)

**Fax:** 1-949-457-6349

**E-mail:** [support@sonnettech.com](mailto:support@sonnettech.com)

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For support on this product outside the USA, contact your reseller or local distributor.

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