

# **FUSION™ R800RAID**

8-Bay Serial ATA Disk Array Storage System

## **Drive Enclosure User's Guide**

# Fusion R800RAID Enclosure Specs and Features

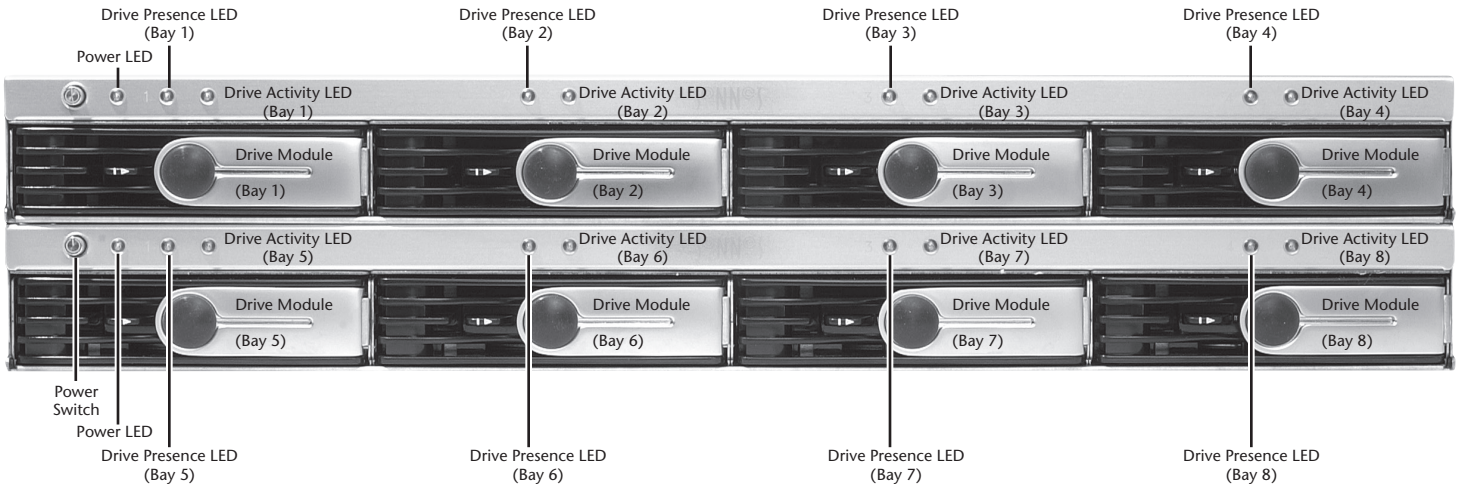


Figure 1

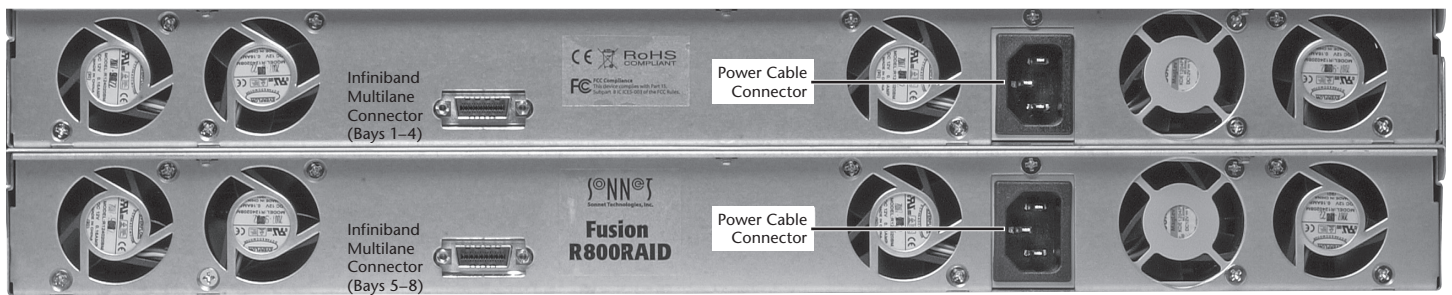


Figure 2

## Specifications

Compatibility	Compatible with Mac®, Windows®, and Linux® computers with Sonnet RAID controller installed
Interface Connectors	2 x Infiniband multilane
Drives Supported	3 & 1.5 Gb/s Serial ATA; 7,200 RPM
Power Supply	2 x 180W, 100–240V AC, 50/60Hz
Operating Temperature	32 to 95° F (0° C to 35° C)
Dimensions (WxDxH)	17.0 x 16.5 x 3.5 in (43.8 x 41.9 x 8.8 cm)
Weight (with drives)	29 lbs (13,2 kg)

## 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 R800RAID 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 R800RAID from its packaging, and place it on a flat, level surface.
2. Carefully pull out each of the transport shims securing the drive modules in the enclosure. (Figure 3).



**Support Note:** Save the shims! If you intend to transport the Fusion enclosure in such a way that it will be subject to vibration, you must reinsert the shims under the bottom of the drive modules in order to prevent them from moving during transport.

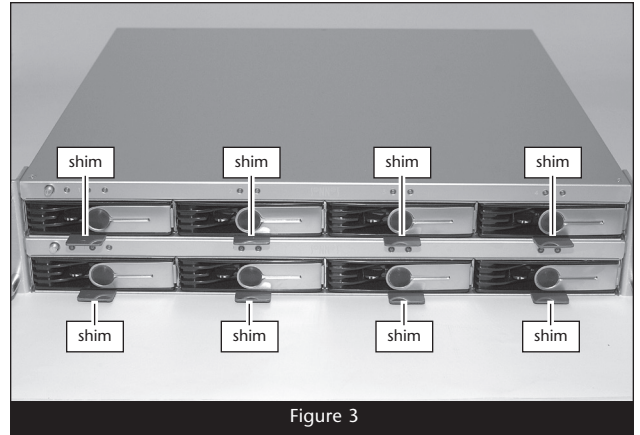


Figure 3

3. If you intend to place the Fusion enclosure on a desktop or other flat surface, attach the included adhesive-backed feet to the bottom of the enclosure. (Figure 4).

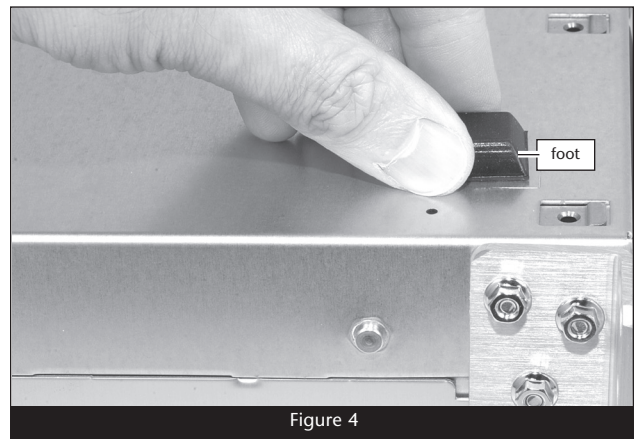


Figure 4



**Support Note:** It is possible that the drive modules may have shifted during shipping. To ensure good connections between the drives and their connectors, remove and reinstall each drive module before powering on the enclosure.

4. Push a lever release button toward the right until the lever pops out, and then pull the lever toward you to slide out and remove a drive module (Figure 5).

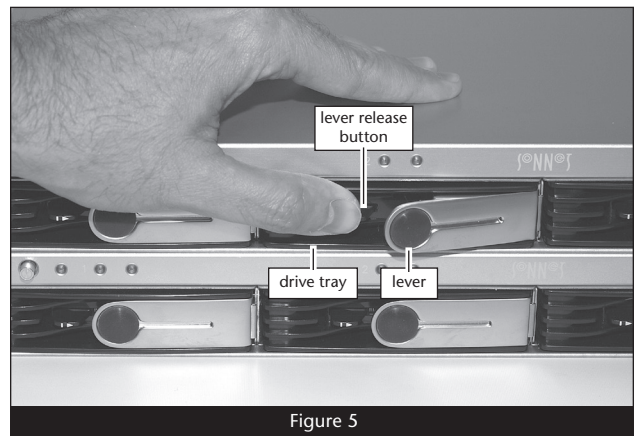


Figure 5



**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.

5. 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 to each of the four screw holes on the bottom of the drive (Figure 6).

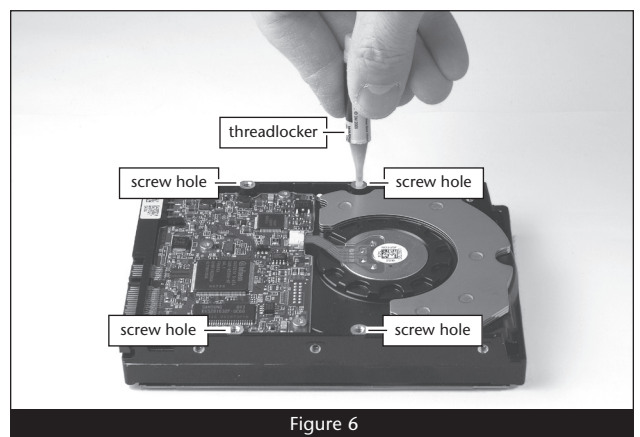


Figure 6

## Drive Installation and Enclosure Setup

- 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 7).

**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.

- 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 8).

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

- Carefully insert the drive module into the enclosure until it clicks, and then push the lever in to secure the module inside the enclosure (Figure 9).
- Repeat steps 4 and 5 for the remaining drives.
- Install the Fusion R800RAID into the rack or onto the desktop on which it will reside.

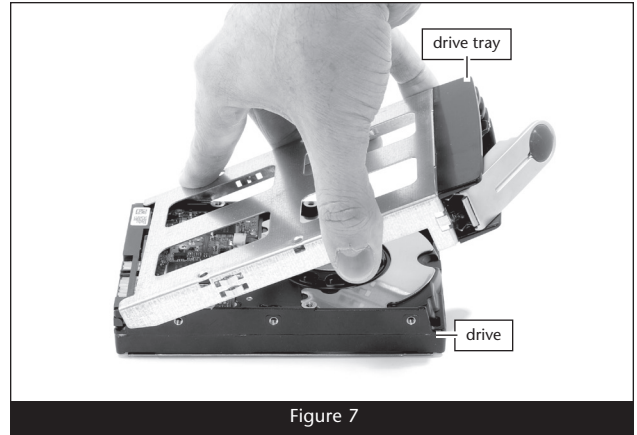


Figure 7

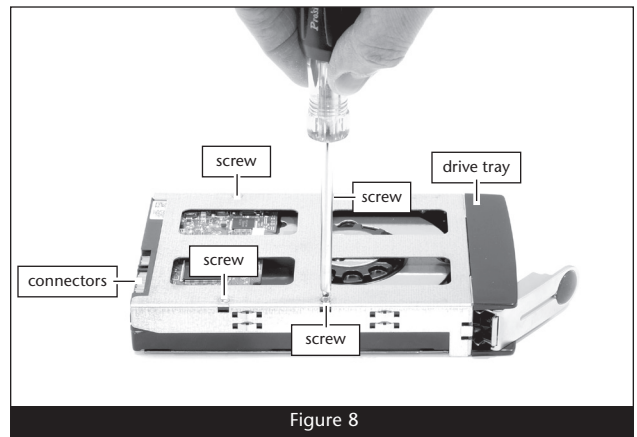


Figure 8

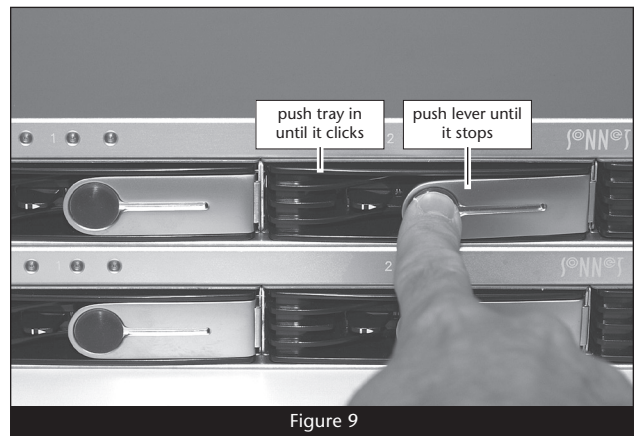


Figure 9

## Connect Fusion R800RAID Drive Enclosure Assembly to Sonnet RAID Controller

This section describes the connection of the Fusion R800RAID drive enclosure assembly to the Sonnet RAID controller card.

- Connect the Infiniband end (with thumbscrews) of the supplied data cables to the Infiniband ports on the enclosure assembly; **use the thumbscrews to secure the connectors** (Figure 10). For identification purposes, refer to the cable connected to the top port of the enclosure assembly as "cable A", and the cable connected to the bottom port as "cable B".

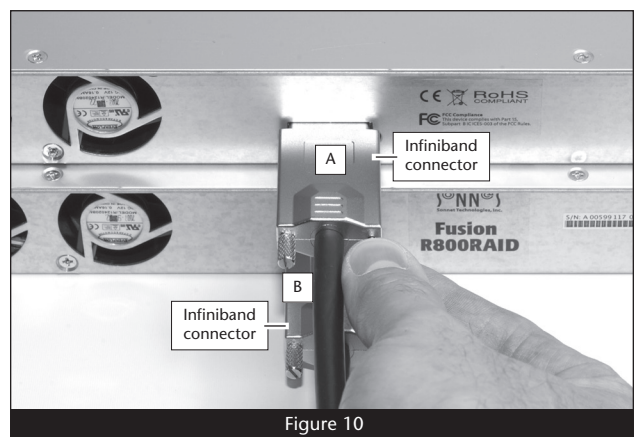


Figure 10

## Drive Installation and Enclosure Setup

2. 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 11). Repeat with “cable B”.
3. Connect the supplied power cables between the Fusion R800RAID enclosure assembly and a grounded wall outlet or power strip; **verify the cables are plugged in securely**.
4. Push the power switches on the front of the enclosure assembly to the on position, and then power on your computer.

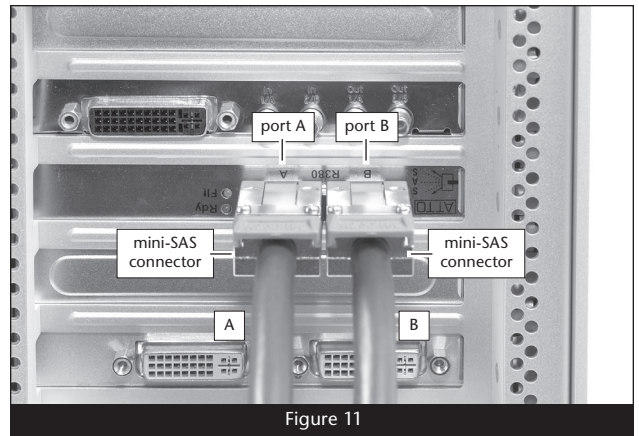


Figure 11

## Tips and Additional Information

This section covers some tips for using the Fusion R800RAID enclosure.

### Connecting Fusion R800RAID enclosures to another Sonnet RAID controller:

Fusion R800RAID enclosures are matched with their included Sonnet RAID controller(s). When you connect a Fusion R800RAID 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 R800RAID supports drive hot-swapping\* for Mac users, enabling you to exchange a drive or a set of drives without the need 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 R800RAID 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.

## Tips and Additional Information

### 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)

#### For Customers Outside the USA

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

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