

FUSION™ R400P

4-Bay Serial ATA Rackmount Drive Enclosure with Port Multiplier

User's Guide



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Fusion R400P Specifications and Features

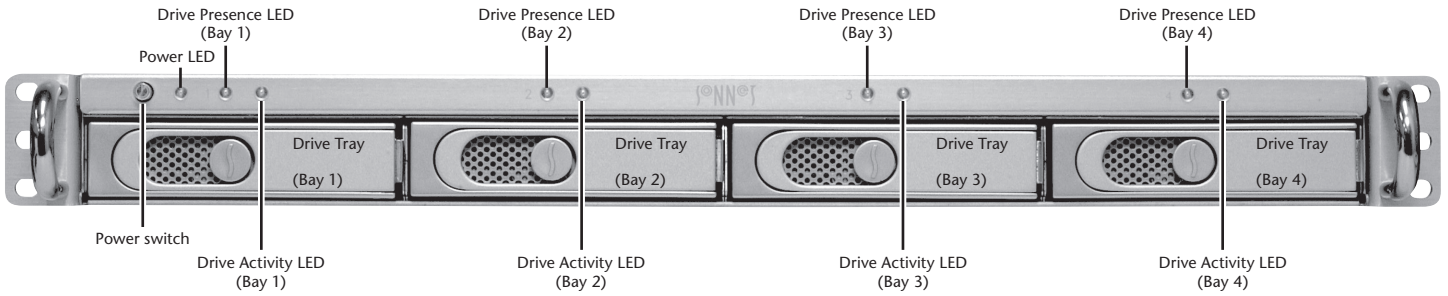


Figure 1



Figure 2

Enclosure Specifications

Compatibility	Compatible with Mac, Windows, and Linux computers with eSATA host controller
Interface Connectors	eSATA
Drives Supported	3 & 1.5 Gb/s Serial ATA
Data Transfer Speed	Up to 220MB/s, depending on drives used and configuration
OS Support	Platform independent
Power Supply	100–240V, 50–60Hz
Operating Temperature	32° C to 95° F (0° C to 35° C)
Dimensions (WxDxH)	17 x 16.5 x 1.75 in. (43,8 x 41,9 x 4,4cm)
Weight	14.6 lbs. (6,6 kg)
Package Contents	Disk enclosure, four 3.5" drive trays, drive mounting screws, four adhesive-backed feet, tube of threadlocker, power cord, 2-meter locking eSATA cable, User's Guide

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 your reseller or local distributor.
- Do not drop the enclosure 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 your reseller or local distributor for additional advice not covered in this User's Guide.

DISCLAIMERS

Creating RAID Volumes Using Windows:

Creating RAID volumes under Windows requires dynamic disk storage, a formatting option available with Windows Server 2008 R2, Windows Server 2003 SP1, Windows 7 Professional, Enterprise, or Ultimate (32- and 64-bit versions), Windows Vista Enterprise or Ultimate (32- and 64-bit versions), or Windows XP Professional (32- and 64-bit versions).

In order to create RAID volumes larger than 2TB, you must do one of the following:

- Span (link together in a virtual chain) the volumes, and then format them as NTFS.
- Use GPT formatting. Note that drives and volumes with GPT formatting are not visible to any version of Windows XP Professional, nor to the 32-bit version of Windows Server 2003 SP1.

DISCLAIMERS (continued)

Drive Usage:

Sonnet Technologies has qualified the hard drives listed below for use in Fusion R400P 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.**

500GB Models

- Hitachi Deskstar E7K500, # HDS725050KLA360
- Hitachi Ultrastar A7K1000, # HUA721050KLA330
- Maxtor MaXLine Pro 500, # 7H500FO
- Samsung Spinpoint F RAID, # HE502IJ
- Seagate Barracuda ES, # ST3500630NS
- Seagate Barracuda ES.2, # ST3500320NS⁽¹⁾
- Western Digital RE3 Enterprise, # WD5002ABYS

750GB Models

- Hitachi Ultrastar A7K1000, # HUA721075KLA330
- Samsung Spinpoint F RAID, # HE753LJ
- Seagate Barracuda ES, # ST3750640NS
- Seagate Barracuda ES.2, # ST3750330NS⁽¹⁾
- Western Digital, RE3 Enterprise, # WD7502ABYS

1TB Models

- Hitachi Ultrastar A7K1000, # HUA721010KLA330
- Samsung Spinpoint F RAID, # HE103UJ
- Seagate Barracuda ES.2, # ST31000340NS⁽¹⁾
- Western Digital, RE3 Enterprise, # WD1002FBYS

1.5TB Models

- Seagate Barracuda 7200.11, # ST31500341AS⁽²⁾

2TB Models


- Hitachi Ultrastar DK7SAA200, # HUA722020ALA330
- Western Digital RE4-GP, # WD2002FYPS

(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.

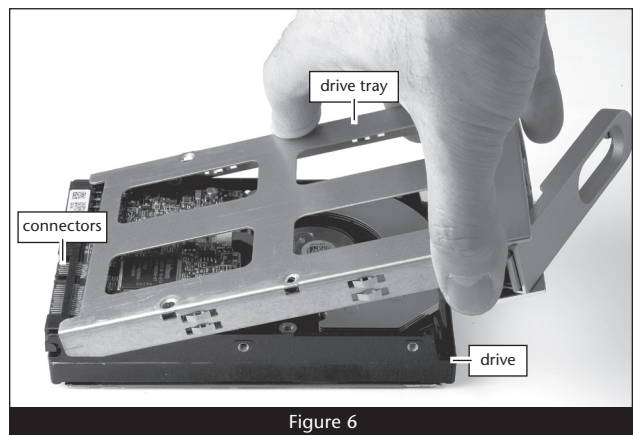
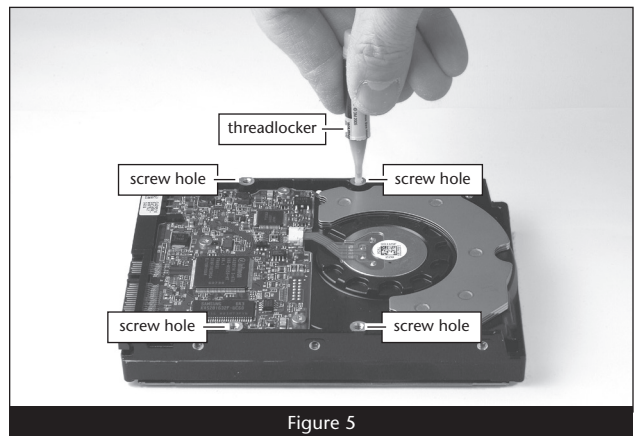
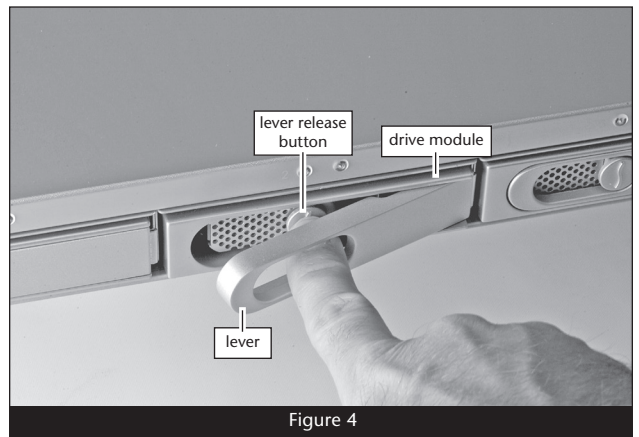
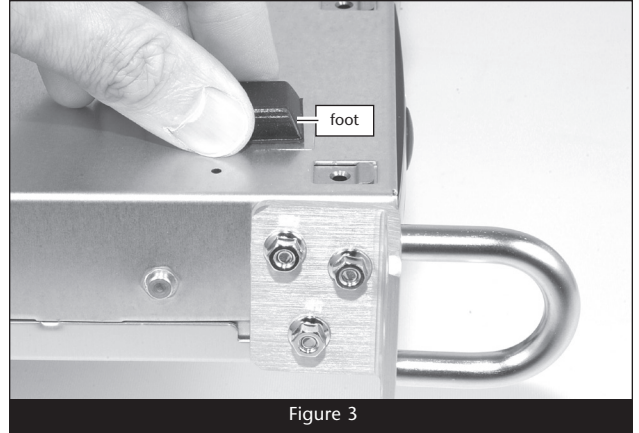
Drive Installation and Enclosure Setup

1. Remove the Fusion R400P from its packaging, and place it on a flat, level surface.
2. 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 3**).
3. If you intend to use the Fusion enclosure in a rack, install the Sonnet rack slide set (or equivalent), sold separately:
 - FUS-RSS-P for 17–21.5" deep racks
 - FUS-RSS-S for 23–26.5" deep racks
 - FUS-RSS for 27–30.5" deep racks
 - FUS-RSS-L for 29–32.5" deep racks
4. Push a lever release button in until the lever pops out, and then pull the lever toward you to slide out and remove the drive tray (**Figure 4**).

 **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 5**).

6. 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 6**).



Drive Installation and Enclosure Setup



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 7).**

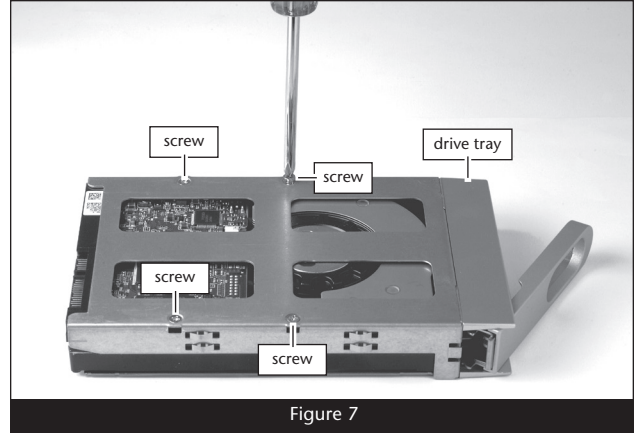


Figure 7

- 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 8).



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.

- Repeat steps 4-8 for additional drives.
- Install the Fusion R400P into the rack or onto the desktop on which it will reside.

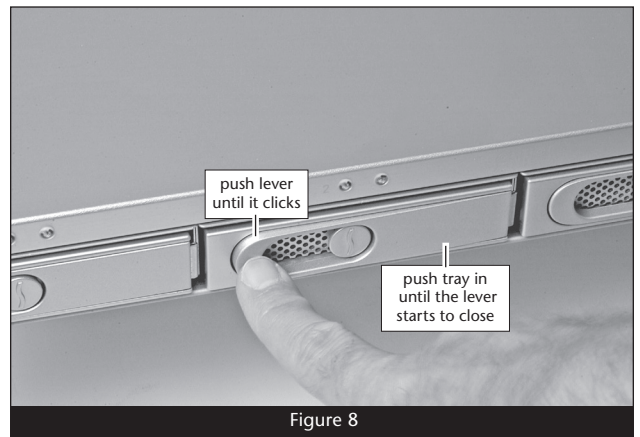


Figure 8

Connect Fusion R400P to SATA Host Controller

- Connect the supplied locking eSATA data cable between the eSATA ports on the enclosure and the SATA host controller in your computer; **verify the connectors are plugged in securely (Figure 9).**
- Connect the supplied power cable between the Fusion R400P and a grounded wall outlet or power strip; **verify the cable is plugged in securely.**
- Push the power switch on the front of the enclosure to the on position, and then power on your computer.
- Format the drives installed in the Fusion R400P according to your needs; refer to your operating system software's guide or help section for more information.

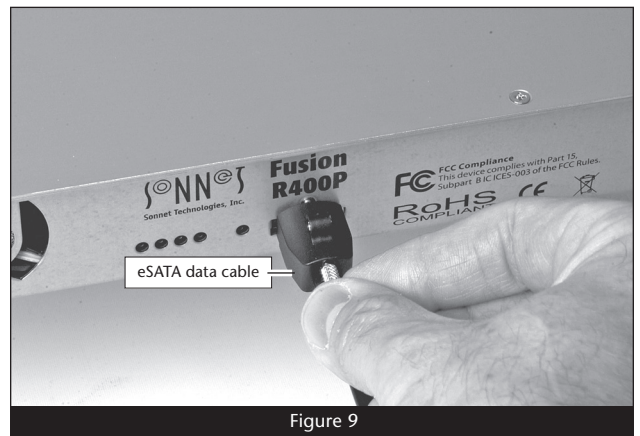


Figure 9

Tips and Additional Information

This section covers some common sense tips for using the Fusion R400P enclosure.

Hot-swapping drives:

When connected to a Mac running Mac OS X, Fusion R400P supports drive hot-swapping*, 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 tray, 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 R400P with a module that was part of a RAID set, 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 set will mount properly.

* Windows does 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.

- If you do experience any trouble, disconnect the data cables and reconnect them one at a time, making sure each one “clicks” in place.
- 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 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

For Customers Outside the USA

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

Visit Our Web Site

For the most current product information and online support files, visit the Sonnet Web site at www.sonnettech.com/support/. Remember to register your product online at <http://registration.sonnettech.com> to be informed of future upgrades and product releases.