StudioRAID™ Manual

Tabletop FireWire 800, USB 3.0 and eSATA enclosure with RAID 1 and RAID 0

Contacting Glyph

Please use the following contact information to contact Glyph and its distributors.
Glyph USA offers phone support Monday through Friday, 8:00 am to 5:00 PM Eastern
Time.
Note: DO NOT ship any return goods to the mailing addresses below unless you have a valid RMA number.
All goods will be refused delivery unless a valid RMA number is displayed on the outside of the package.

United States of America

Glyph Technologies
3726 Kellogg Rd.
Cortland, NY 13045
USA
Phone: +1 607-275-0345
Fax: +1 607-275-9464
www.glyphtech.com

Sales Contact
sales@glyphtech.com

Technical Support:
tech@glyphtech.com

Unpacking Your StudioRAID

Your Glyph StudioRAID and accessories are packaged in a sturdy shipping container. Please inspect the con-tainer for evidence of shipping damage and mishandling. If the container is damaged, file a report with the carrier or dealer immediately. Do not attempt to unpack and operate your StudioRAID until the carrier or dealer confirms the damage. If the container is in good condition, proceed with unpacking the StudioRAID. Verify that all of the items described in the next section are present and in good condition. If any of the items you expect to find in your container is missing or damaged, contact the dealer before proceeding any further.
In any case, do keep the shipping container and all packing materials in a safe place.

The StudioRAID package includes:

StudioRAID Enclosure
FireWire 800 Cable
USB 3.0 Cable
IEC Power Cable

About the StudioRAID and Drive Modes

The StudioRAID enclosure contains two hard disk drives, which function as one single volume. It supports two drive modes: RAID 1 (mirroring) and RAID 0 (striping). Each drive mode has its own advantages, depending upon the application.

RAID 1 (mirroring) offers data redundancy and real-time backup by writing the same data to the two hard drives at the same time. Should a drive failure happen, data is still available on the remaining drive. In RAID 1 mode, the two drives are seen by the computer as one volume, but with half the capacity. For example, a 1TB StudioRAID will be seen as a 500GB drive. Reading and writing occurs on both drives simultaneously so that each of the drives contains exactly the same data, mirroring each other. If either of the drives should fail the other is there to seamlessly continue to provide operation.

RAID 0 (striping) increases the performance of the drive system by spreading the data across two drives. RAID 0 is a proven technology for editing video, working with huge graphics files, sound libraries, and streaming instruments that play hundreds of samples simultaneously. RAID 0 is the default shipping drive mode. In RAID 0 (striping) mode, the two drives are seen by the computer as one large drive, and reading and writing occurs on both drives simultaneously. It is designed to increase the performance and data throughput of the drive system. The StudioRAID's built-in RAID controller splits each piece of data across both of the drives in segments and distributes the I/O burden. Since data is written without any form of parity data-checking, it allows for the fastest data transfer of all other RAID levels. However, if one drive becomes damaged, the data on both drives can become cor-rupted. RAID 0 is not redundant or fault tolerant like RAID level 1, but the trade off is that it's the fastest of all RAID levels. MAKE SURE TO BACKUP YOUR DATA OFTEN!

Using the StudioRAID with Windows 7, 8, & Above / XP

Older versions of Windows, such as XP 32-bit, use Master Boot Record which doesn't support volumes larger than 2TB. When the total capacity of the RAID is 2TB or higher, you must format the array using GPT in Windows. GPT format is only supported by Windows XP 64-bit Edition, Windows 2003 Server, Windows Vista, Windows 7, 8, 8.1, and Mac OS X. GPT format will not work with XP 32-bit or older Windows operating systems. If you want to use Windows XP 32-bit, your total capacity must be less than 2TB in RAID 0 or less than 4TB in RAID 1.

StudioRAID Ports

The fastest interface on the StudioRAID is eSATA and there is one eSATA port on the rear panel. In RAID 0 mode, the StudioRAID can sustain over 200MB/sec (read speed) when connected via eSATA to a fast eSATA card such as the Glyph/Highpoint 2642. FireWire 800 is another option and there are two FW800 ports on the rear panel alongside USB 3.0. Officially, these IEEE 1394b ports run at up to 800Mbits/sec. If using FW800, one of these ports should be connected to your computer, and the other should be connected to other downstream FireWire devices. It doesn't matter which port you connect to the computer, they are functionally identical. If your computer has a FireWire 400 port only, you can use a FW400 to FW800 adapter cable, which is available from Glyph. If your computer doesn't have any FireWire ports you can either purchase an eSATA or FireWire adapter card (recommended), or use the USB 3.0 port on the back of the StudioRAID.

Front panel LED

The StudioRAID front panel has a single bi-color LED. The LED will display solid blue when power is on. The LED will flash blue when there is disk activity. The LED will flash or display a solid red color when error conditions exits with the drives inside the array. Those error conditions are discussed in greater detail below.
NOTE: It is normal for the LED to flash red when the unit is powered on. Since the drives inside the StudioRAID take a few seconds to spin up, they are "offline" for a moment when the controller looks for them, and the red warning LED comes on. When they fully spin up the controller sees that everything is normal, and turns the red LED off.

Setting up the StudioRAID

1. Position the StudioRAID by placing the unit on a flat, level surface, or install the unit into a rack with one of Glyph's rack kits. Caution: Speakers are magnetic devices; they can harm your data if they're too close to your hard drives or tapes.

2. Connect the power cable. Make sure that the power is off on all of your computer equipment and the StudioRAID. Connect the power cable to the back of the StudioRAID. Plug the three-prong plug into an appropriate power receptacle, preferably with surge and spike protection.

3. Connect the FireWire 800, USB, or eSATA cable. Plug one end of the cable into your computer's port, and the other into the back of the StudioRAID. Both FireWire 800 ports are functionally identical, so it doesn't matter which one you use.

4. Power up the StudioRAID and power up your computer.

5. If you're using Mac OS X, the icon should mount on your desktop. If you're using Windows, please follow the formatting instructions for Windows later in this manual.

StudioRAID Quickstart

Here are instructions for changing the RAID mode of your StudioRAID.

Note: By following these instructions you will be erasing any data previously stored on the StudioRAID. Please back up before proceeding.

-If connected, safely **eject** StudioRAID from your desktop.
-**Power off** StudioRAID and disconnect all FireWire, USB, and eSATA cables from the unit.
-Move the **recessed switch** to your desired setting on the rear of the device, either a RAID 0 or RAID 1. You may need to use a paper clip or similar tool as the switch is recessed.
-Next, **connect** the power adapter only. *Do not power on the StudioRAID yet.*
-Using a paper clip or other tool, **press and hold the "SET" button** on the back panel.
-While continuing to hold the "SET" button, **power on** your StudioRAID and slowly count from 1 to 10.
-**Release** the "SET" button and **reconnect** your USB 3.0, FireWire, or eSATA cable to the StudioRAID.

That's it! Your StudioRAID should now show up in Disk Utility (on Mac) or Disk Management (on Windows) and be ready to format. You can always call us at 800-335-0345.

Formatting Instructions

Windows XP / Vista / Windows 7 Formatting Instructions

*For most cases, you'll want to be sure to initialize your device in GUID Partition Table (GPT).

1. Right-click My Computer and click Manage.

2. In the Computer Management window, under Storage, click Disk Management.

3. In Disk Management, right click the Unallocated partition. Click "New Simple Volume" and the Write Signature Wizard pops up.

4. Use the wizard to write a signature to the new drive. If you want only one partition we suggest using a primary partition and selecting the maximum size. In most cases you'll want to use NTFS volumes, this is the default for Windows XP and Vista. Ensure "Perform a Quick Format" is checked. Choose FAT32 if you want to use the drives with older versions of Windows, or if you want to use the drive with Windows and Mac OS.

5. Formatting will take a few minutes, after which your drive will be ready to use.

*Note - Formatting for Windows 8 and above is the same once you are in Disk Management.

Mac OS X Formatting Instructions

Since your StudioRAID comes pre-formatted for Macintosh you don't need to format them on installation. If you decide to reformat or partition your drive at a later date, use Disk Utility (supplied with the Mac OS X operating system).

Caution: This procedure will destroy any data currently on the drive. Before formatting a drive, save any important data it contains.

1. Open Disk Utility:
    -Double click on your internal hard drive mounted on the desktop
    -Open Applications Folder > Utilities Folder > double click on Disk Utility

2. Select your StudioRAID drive from the list on the left. The top entry represents the device and the entry underneath it represents the volume associated with that device. Click on the top device which will say something like "XXXGB Glyph Technologies".

3. Click the "Partition" tab on the right side of the screen.

4. Change "Current" to "One Partition" (recommended).

5. Choose the desired volume format from the drop-down list. Glyph recommends the default "Mac OS Extended (Journaled)".

6. Click in the "Name" field and type the desired name for the drive. This name will identify the drive on the desktop.

7. Click the "Install Mac OS 9 Disk Driver" button (if applicable) if you would like your drive to be compatible with OS 9.

8. Click the "Options" button. Select "GUID Partition Table". Click "OK".

9. Click the "Partition" button to partition your drive. Click "Partition" in the dialogue box that appears. Your new drive should automatically mount on the desktop as a Glyph volume.

More Information

StudioRAID Features

Brushed, stainless steel face plate 1/8" thick (3MM)
Scratch-resistant black powder-coated aluminum chassis
Engineered to support professional audio and video
Supports two software-selectable drive modes: RAID 1 and RAID 0.
Internal power supply, no wall wart, internal quiet fan
3 Year Warranty
2 Year Free Basic Data Recovery
Advance Replacement in 1st year of warranty within U.S. Continental 48 States only.

StudioRAID Specifications

Part Number	SRxxx (xxx is equal to total capacity)
Interfaces	(2) 9-pin FW800 rear ports
	(1) eSATA rear port
	(1) USB 3.0 Hi-speed rear port
Maximum Transfer	eSATA: 300MB/sec (3Gb/sec)
Rate Dimensions	H 1.7" x W 8.6" x D 9.5"
Configuration Weight	Desktop enclosure (rack mount optional) 5.9 lb. / 2.7 kg
Internal Power Supply	Universal 100-240v 50/60 Hz
OS Compatibility	Mac OS 10.4 and above
	Microsoft Windows XP, Vista, 7, Windows 8 and above, Modern Unix based, Linux, or BSD
Warranty	3 Years
	1 Year Overnight Advance Replacement
	2 Years Free Basic Data Recovery. Microsoft Windows XP, Vista, 7, Windows 8 and above, Modern Unix based, Linux, or BSD

Content Creation Applications

Qualified with Final Cut Pro, Avid Xpress, Adobe Premiere.
Qualified with all major audio production packages that support FireWire storage, including Digidesign Pro Tools, Steinberg Nuendo and Cubase, Apple Logic, MOTU Digital Performer, Cakewalk Sonar, Sony Vegas and more...

Configuration

The StudioRAID can be rack mounted in a standard 19-inch rack with Glyph's optional rack kits. There is a single kit (part# GPT-RACKMOUNT KIT v2) for mounting one drive, and a dual kit (part# GPT-RACKMOUNT KIT v2) for mounting two drives. The dual kit allows any two of Glyph's StudioRAID Series tabletop drives to be mounted in a double rack space.

About eSATA

• eSATA is an external interface technology that grew from the internal SATA I interface.
• The StudioRAID's eSATA port supports speeds up to 3 Gb/sec (300 MB/sec), much faster than FireWire 400 or FireWire 800.
• Shielded eSATA cables up to 2 meters in length are available.
• eSATA cables are different than SATA I cables, they are shielded and cannot be used with internal SATA I connectors.
• eSATA uses a "point-to-point" connection, therefore each eSATA drive needs to be connected to its own eSATA port.
• Most computers do not have built-in eSATA, so you'll need a PCI card to connect your drive with eSATA. Glyph sells various eSATA cards.

About FireWire 800

• FireWire 800 supports speeds up to 800 Mb/sec, twice as fast as FireWire 400.
• If your computer does not have built-in FireWire 800, you'll need a PCI card to achieve a true FireWire 800 connection.
• Most 800 ports are Bi-Lingual, which means they speak both FireWire 400 and FireWire 800.
• If you connect a 400 device to an 800 device, you will be running at 400 speed maximum.
• FireWire is forward-compatible and back-compatible, but the bus always runs at the speed of the slowest link.
• Cables are used to connect 800 devices to 800 devices.
• Bi-Lingual cables are available to connect 400 devices to 800 devices.
• Bi-Lingual cables have a 9-pin Bi-Lingual connector at one end and a 4-pin or 6-pin FireWire 400 connector at the other end