

Mac[®] User's Guide

for Qio[™] Professional Universal Media Reader & Writer



SxS P2

ExpressCard 34

CardBus



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Chapter 1 – Introduction and Package Contents

Introduction

Qio is a universal media reader & writer, eSATA host controller, and expansion chassis for ExpressCard/34 and CardBus adapter cards. Included with Qio is either the Sonnet Express Bus Extender PCIe adapter card (for desktop computers) or the Sonnet PCIe Bus Extender ExpressCard®/34 adapter (for notebook computers). Both adapter cards are available separately for purchase.

Featuring two slots each for SxS™, P2, and CompactFlash® memory cards, Qio enables you to transfer data between cards, between cards and computer, and between cards and attached drives; you can even transfer data from two or more cards at the same time. With an ExpressCard/34 adapter (sold separately) the Qio reads from and writes to Memory Stick™, MMC, SD, and xD-Picture Card™, and works in either of the SxS slots*.

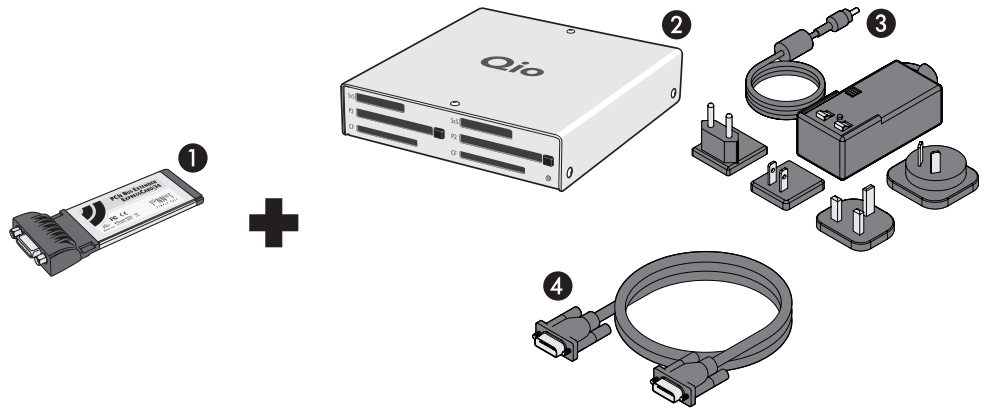
Qio's eSATA controller is based on Sonnet's Tempo™ SATA E4P host controller, sharing the same functionality and drivers. Support for port multipliers and hardware RAID controllers enable Qio to control up to 16 drives (in four drive enclosures).

Qio's SxS slots support ExpressCard/34 adapter cards, while the P2 slots support CardBus adapters. Compatible adapter types include eSATA, FireWire®, Gigabit Ethernet, SmartCard reader, TV tuner, USB, WiFi, and WWAN modem, and others. You may use adapter cards at the same time as memory cards, however, performance may be limited by the total bandwidth available from your computer's PCI Express® bus.

Please take a few minutes to read this user's guide before using your Qio; you will save time in the long run.

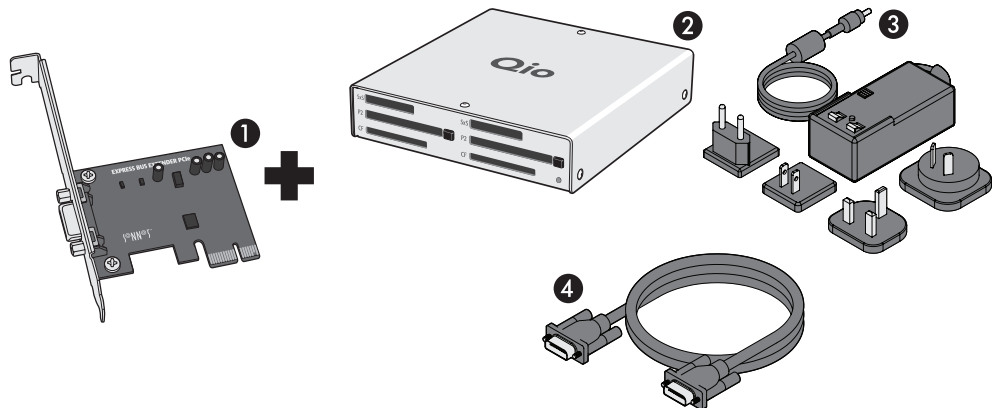
Package Contents—QIO-E34

- 1 – Sonnet PCIe Bus Extender ExpressCard/34 adapter
- 2 – Qio universal professional media reader/writer (enclosure)
- 3 – Universal 12V power supply with 10-foot cable
- 4 – 1-meter external PCIe x1 interface cable



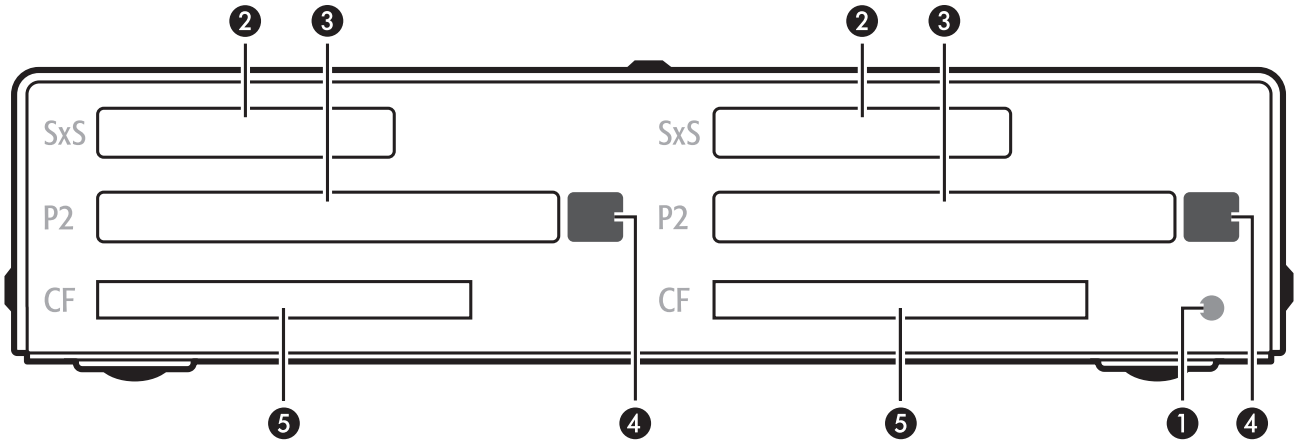
Package Contents—QIO-PCIE

- 1 – Sonnet Express Bus Extender PCIe adapter card
- 2 – Qio universal professional media reader/writer (enclosure)
- 3 – Universal 12V power supply with 10-foot cable
- 4 – 1-meter external PCIe x1 interface cable



* ExpressCard/34 memory card adapters supported through OS X 10.8.5, not supported with OS X 10.9 or later.

Chapter 2 – Qio Enclosure Description



1 – Power Indicator LED

This indicator lights when Qio is powered, the Sonnet adapter card is installed properly in its slot, the PCIe cable between the two is plugged in properly, and the computer powered on.

2 – SxS Media Slots

These slots accept both SxS memory cards and ExpressCard/34 adapter cards. Use an ExpressCard/34 memory card adapter (sold separately) in these slots to work with Memory Stick, SDXC, SDHC, SD, MMC, and xD-Picture memory cards.

3 – P2 Media Slots

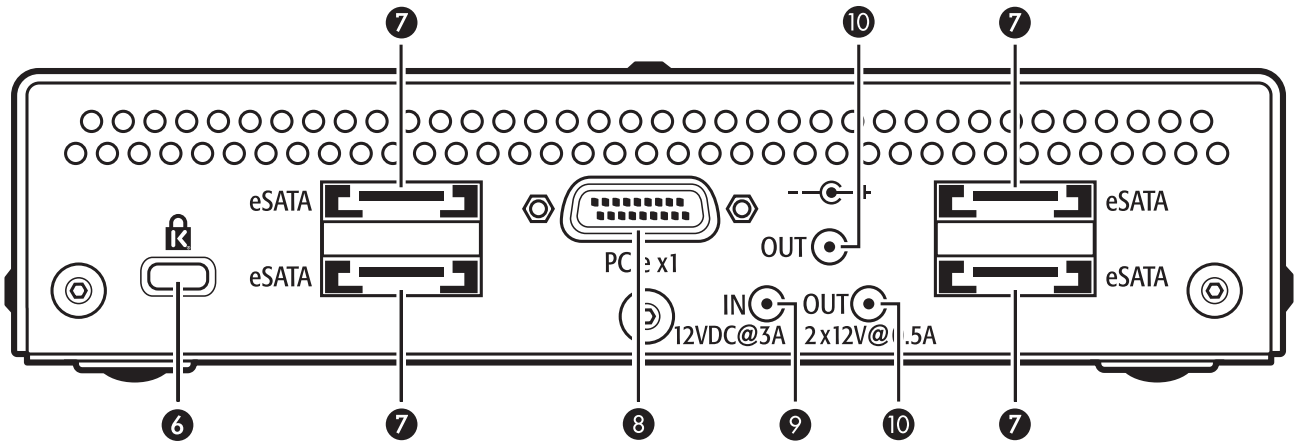
These slots accept both P2 memory cards and CardBus adapter cards.

4 – Eject Buttons for P2 Media Slots

Press these buttons to eject cards from the P2 slots.

5 – CF (CompactFlash) Card Slots

These slots accept Type I CF memory cards. *Qio is not compatible with Type II (Microdrive, etc.; 5mm thick) CF cards.*



6 – Security Slot

This slot works with Kensington® brand and similar security locks to secure the Qio enclosure and deter theft.

7 – eSATA Ports

These connect eSATA data cables. Each port supports individual drives, or up to four SATA hard disk drives (or SSDs) in enclosures with an eSATA interface, and a built-in hardware RAID controller or port multiplier.

8 – PCIe x1 Connector

This connects the included interface cable between the Qio enclosure and the PCIe bus extender card in your computer.

9 – 12VDC Input Socket

Connect either the included AC power adapter cable, or the optional XLR power adapter cable (connected to an external battery or other power source) to power the Qio enclosure.

10 – 12VDC Output Sockets

Use these sockets to power connected Sonnet Fusion™ F2 2-drive RAID SATA storage systems. **DO NOT CONNECT POWER INPUT CABLES HERE.**

Chapter 3 – Software/Hardware Installation Steps

A – Software Download Steps



WARNING: Install the software for Qio **FIRST**. If you connect the Qio to your computer before its software is installed, your computer will crash.

Before connecting the Qio enclosure, you must run the driver installer. In addition to installing drivers to support Qio and its SATA controller, this software installs drivers for CompactFlash, P2 and SxS memory card support.

1. Log onto the Internet.
2. Go to <http://www.sonnettech.com/support/kb/kb.php>, click on the Pro Media Readers link, and then click on the Qio for Mac link.
3. Locate and click the Driver link, then click the Qio System Installer link, and then click the Download Now button; the file will be downloaded.
4. Locate and double-click the .dmg file you downloaded; a *QIO System x.x.x Installer* window will open

B – Software Installation Steps

1. Double-click the Qio System Installer x.x.x.pkg file inside the *QIO System x.x.x Installer* window to launch the installer; when the *Welcome to the Qio System Installer* window appears, click Continue.
2. When the *Important Information* window appears, click Continue.
3. When the *Software License Agreement* window appears, read the license, click Continue, and then click Agree.
4. When the *Standard Install* window appears, accept the default install destination or choose a new destination. Either click Install to perform the standard installation, or click Customize, select the packages to install, and then click Install.
5. When prompted for a password, enter your password, and then click OK.
6. While the drivers are being installed, a progress bar appears. When the Installation Completed Successfully screen appears, click Restart.
7. After your computer finishes restarting, shut it down. If you purchased the QIO-PCIE, go to Express Bus Extender PCIe Installation Steps. Otherwise, skip to the next page.

C – Express Bus Extender PCIe Installation Steps

If you purchased the QIO-PCIE, install the PCIe adapter card into your computer after installing the software.



Support Notes: We recommend that you make a backup of important information on your system's current hard drive prior to installing new hardware or software.

When handling computer products, you must take care to prevent components from being damaged by static electricity. Before opening your computer or removing parts from their packages, always ground yourself first by touching a metal part of the computer, such as a port access cover, and work in an area free of static electricity; avoid carpeted areas. Handle all electronic components only by their edges, and avoid touching connector traces and component pins. Also, avoid touching the logic board and any of its components.

1. If you haven't already done so, shut down your computer, and then open it to access the expansion card area (PCI Express slots); refer to your computer's user manual for specific information.
2. Locate an available PCI Express slot and remove its access cover:
 - Mac Pro (Mid 2010), Mac Pro (Early 2009), and Mac Pro (Early 2008) users may install the card into any available slot
 - Mac Pro (Early 2008) users must only use slot 3 or 4
3. Remove the Sonnet card from its packaging, and then install it into the slot; **make sure the card is firmly seated and secured.**
4. Close your computer.
5. If you installed the card into a Mac Pro (Mid 2012), Mac Pro (Mid 2010), Mac Pro (Early 2009), or Mac Pro (Early 2008), proceed to "Connecting Qio" on the next page.

If you installed the card into a pre-2008 Mac Pro, turn it on. Depending on which version of Mac OS X your computer is running, Expansion Slot Utility will open. If it does not open by itself, you must do so manually (Expansion Slot Utility is located in the /System/Library/CoreServices folder). Select the appropriate configuration (your Sonnet card is an x1 card), and then click Quit if the default configuration was appropriate, or click Save and Restart if you changed the configuration. Shut down your computer, and then proceed to "Connecting Qio" on the next page.

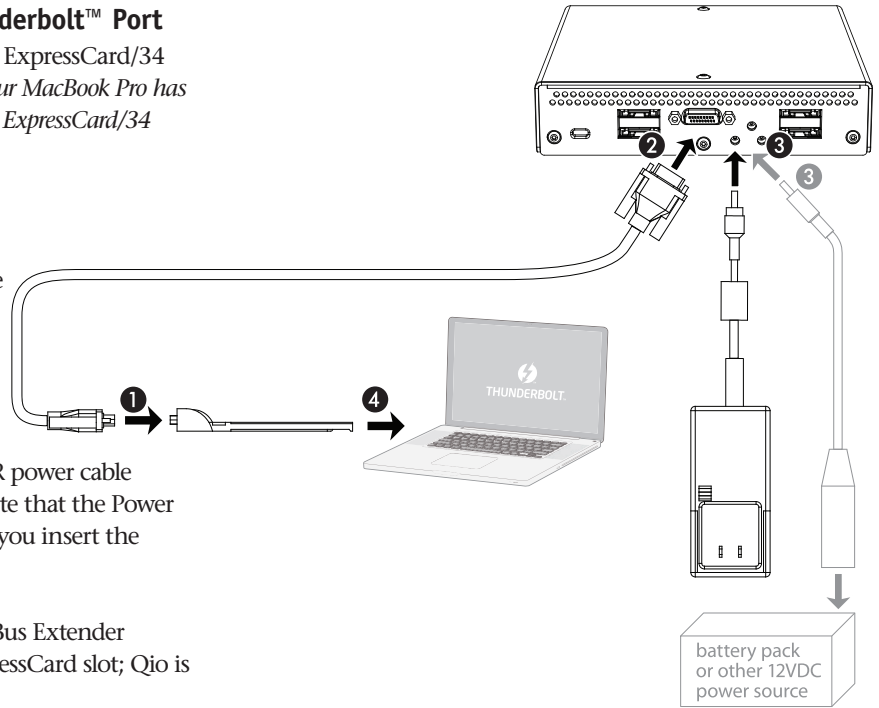
Chapter 4 – Connecting Qio

Connecting Qio to a MacBook Pro WITH a Thunderbolt™ Port

It is important that you connect the PCIe Bus Extender ExpressCard/34 adapter and the Qio enclosure in the proper order; *if your MacBook Pro has a Thunderbolt port, you must plug in the PCIe Bus Extender ExpressCard/34 adapter after turning on your computer.*

After installing the software, do the following:

1. Connect the external PCIe x1 interface cable to the PCIe Bus Extender ExpressCard/34 adapter.
2. Connect the other end of the interface cable to the Qio enclosure.
3. Connect either the AC adapter or the optional XLR power cable (connected to a battery or other power source). Note that the Power Indicator LED on the Qio will not light until after you insert the ExpressCard/34 adapter into the ExpressCard slot.
4. Turn on your computer, and then insert the PCIe Bus Extender ExpressCard/34 adapter into your computer's ExpressCard slot; Qio is ready for use.

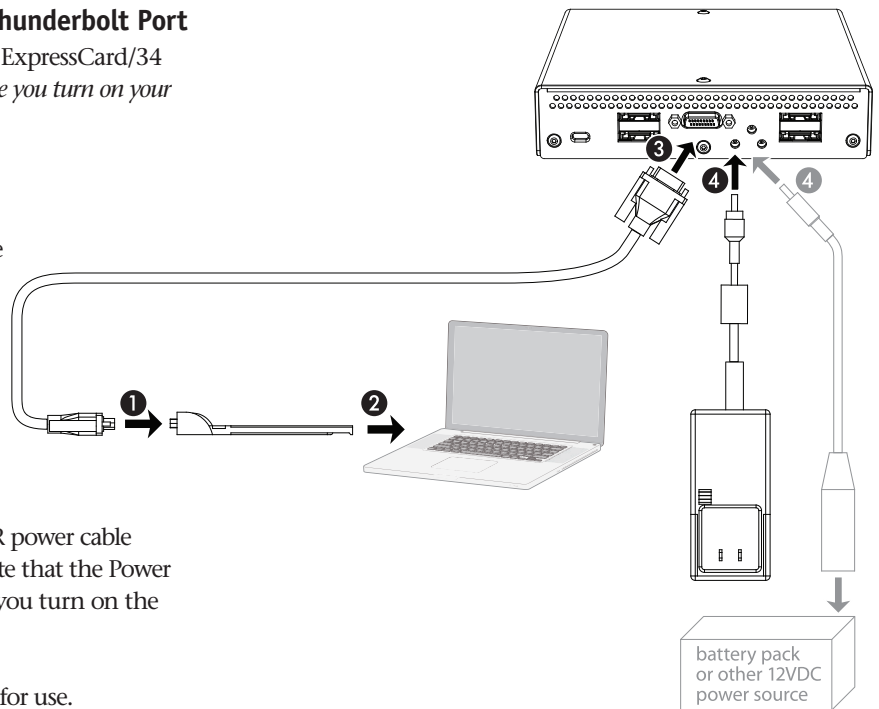


Connecting Qio to a MacBook Pro WITHOUT a Thunderbolt Port

It is important that you connect the PCIe Bus Extender ExpressCard/34 adapter and the Qio enclosure in the proper order, *before you turn on your computer.*

After installing the software, do the following:

1. Connect the external PCIe x1 interface cable to the PCIe Bus Extender ExpressCard/34 adapter.
2. Insert the PCIe Bus Extender ExpressCard/34 adapter into your computer's ExpressCard slot.
3. Connect the other end of the interface cable to the Qio enclosure.
4. Connect either the AC adapter or the optional XLR power cable (connected to a battery or other power source). Note that the Power Indicator LED on the Qio will not light until after you turn on the computer.
5. Turn on your computer; after a pause, Qio is ready for use.



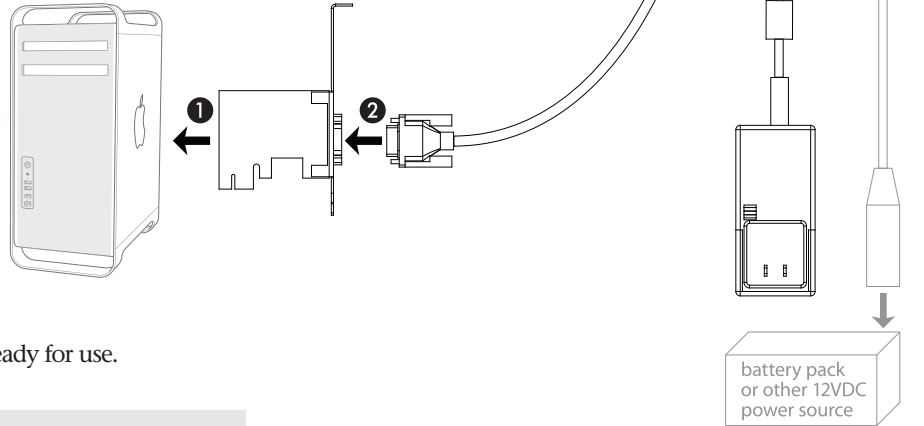
Support Note: When you first turn on your computer after installing the drivers and the adapter, and connecting the Qio enclosure, you may experience a very long pause (around 4–6 minutes) at the blue screen before the desktop appears and the OS becomes usable. This only occurs on the first boot with the adapter card installed; consecutive boots should not exhibit the pause.

Chapter 4 – Connecting Qio

Connecting Qio to a Mac Pro

It is important that you connect and power Qio in the proper order, *before you turn on your computer*:

1. Install the software and Bus Extender PCIe adapter card as described in the previous chapter.
2. Connect the external PCIe x1 interface cable to the Bus Extender PCIe adapter card in your computer.
3. Connect the other end of the interface cable to the Qio enclosure.
4. Connect either the AC adapter or the optional XLR power cable (connected to a battery or other power source). Note that the Power Indicator LED on the Qio will not light until after you turn on the computer.
5. Turn on your computer; after a pause, Qio is ready for use.



Support Note: When you first turn on your computer after installing the drivers and the adapter, and connecting the Qio enclosure, you may experience a very long pause (around 4–6 minutes) at the blue screen before the desktop appears and the OS becomes usable. This only occurs on the first boot with the adapter card installed; consecutive boots will not exhibit the pause.

Chapter 5 – Memory Card and Adapter Card Use

Inserting and Removing Cards

All Card Types

- Insert cards straight into the slots, parallel to the top cover of the Qio enclosure.
- Do not force a card into the slot, as you may damage the card or the slot connector.
- Before removing any memory card, be sure to eject (unmount) its mounted volume(s) by dragging its icon to the Eject icon in the Dock, or clicking its Eject button in a Finder window; otherwise, data on the memory card may be corrupted.

Inserting/Removing SxS Media and ExpressCard/34 Adapters

- If you are using an ExpressCard adapter to which you connect cables, always connect the cables to the adapter card before inserting it into the Qio enclosure's slot.
- To insert a card, push it into the slot until it “clicks” into place.
- To remove a card, push it further into the slot until it “clicks” again; the card will be ejected.
- Do not pull out a card without first pushing it in; the next card you insert into the slot will be ejected immediately and may cause a problem.

Inserting/Removing P2 Media and CardBus Adapters

- To insert a card, push it into the slot until it stops; the eject button next to the slot will pop out.
- To remove a card, push in the eject button next to the card slot.

Inserting/Removing CF (CompactFlash) Cards

- To insert a card, push it into the slot until it stops.
- To remove a card, pull it straight out of the slot.

Using the Sonnet PCIe Bus Extender ExpressCard/34 Adapter

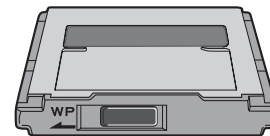
- Always connect the external PCIe x1 interface cable to the PCIe Bus Extender ExpressCard/34 adapter before inserting it into your computer's ExpressCard slot.
- Do not eject the PCIe Bus Extender ExpressCard/34 adapter from your computer unless the computer is shut off.
- **If Your MacBook Pro does NOT have a Thunderbolt port, hot-plugging the PCIe Bus Extender ExpressCard/34 adapter is not supported.** Insert the adapter into your computer with the Qio enclosure attached and powered *before* you turn on your computer.

- **If Your MacBook Pro DOES have a Thunderbolt port, you MUST hot-plug the PCIe Bus Extender ExpressCard/34 adapter**

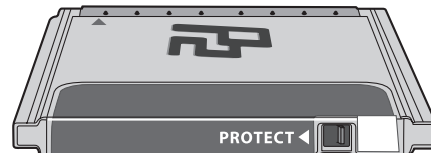
Insert the adapter into your computer with the Qio enclosure attached and powered *after* you turn on your computer; otherwise, Qio will not be recognized in if you boot or restart your computer with the Qio plugged in

SxS and P2 Memory Card Write Protect Switches

SxS and P2 memory cards have write protect switches. When set to the “WP” or “PROTECT” position, saving, editing and deleting data are disabled. Do not change the switch positions on SxS or P2 cards when they are in the Qio. If you need to change the switch position, follow the instructions on card removal as previously described, pull the card out of its slot, change the card's switch position, and then reinsert the card into its slot.



Only change the write protect switch position when the card is not inserted into the Qio



Chapter 6 – Formatting Drives Connected via eSATA

Mac OS X Drive Formatting—RAID Sets

This section describes the process of formatting (initializing) multiple hard drives (or volumes) connected to the Qio enclosure's eSATA ports using Disk Utility under Mac OS X Version 10.5; the process is nearly identical under Mac OS X Version 10.6. If you choose to do so, you may format your drives using SoftRAID 3.1 or later; refer to that product's documentation for instructions.



Support Note: Depending on how you set it up, a drive enclosure with a built-in hardware RAID controller like Sonnet's Fusion D400QR5 may not present its drives separately to the operating system. For instance, if you chose RAID 0 or RAID 5 configuration, only one "drive" will appear in Disk Utility. If this is the case, skip to "Mac OS X Drive Formatting—Individual Drives" on the next page for drive formatting instructions.

1. Turn on your computer. During startup, your computer will display one or more messages referring to unreadable volumes; click Initialize... to launch Disk Utility. After Disk Utility launches, click the Initialize button in each remaining message window.
2. If it is not already open, launch Disk Utility (**Figure 1**). Note that all attached drives appear in the information window, regardless of being formatted or not.
3. Select one of the drives you want to format in a RAID set by clicking the drive icon or the "name" of the drive. At the bottom of the window, drive capacity, connection type, and connection ID information are listed.



Support Notes: The remaining steps in this section describe the creation of a RAID 0 (striped) set. If you intend to create a RAID 1 (mirrored) or RAID 10 (striped/mirrored) set, the procedure is similar to the remaining steps. Please refer to Disk Utility help for further information.

All hard drives connected to the Qio enclosure's eSATA ports will be described by Disk Utility as having an internal connection.

4. Click the RAID tab in the *Disk Utility* window, select all the drives you will use to create your striped RAID set, and drag them into the disk field (**Figure 2**). **Be careful NOT to accidentally drag in a drive you don't want included in the RAID set.**
5. From the drop-down menus, select the volume format and the RAID scheme (Striped RAID Set), and then type in the name for your RAID volume (**Figure 2**). Click the Create button.
6. When the *Creating RAID* window appears, click the Create button; all of the selected drives will be formatted and the RAID volume created (**Figure 3**). Close Disk Utility; your drives are now ready for use and your installation is complete.

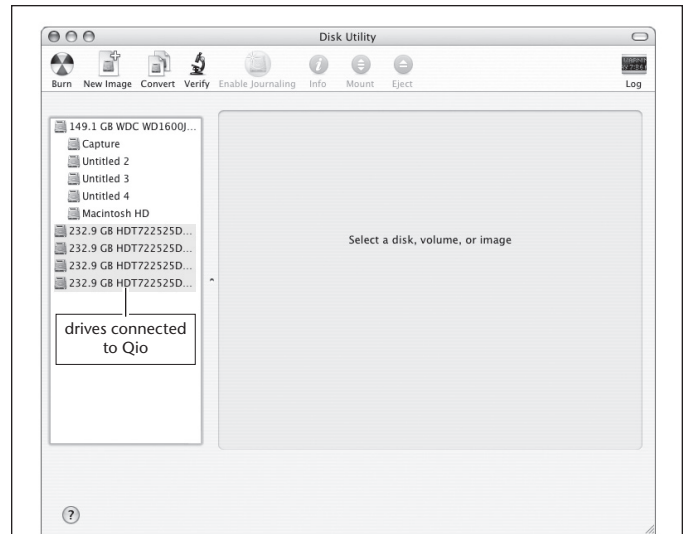


Figure 1

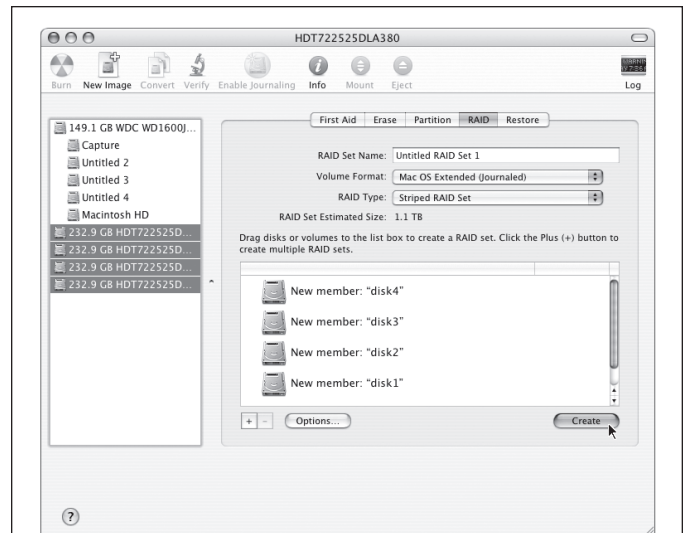


Figure 2

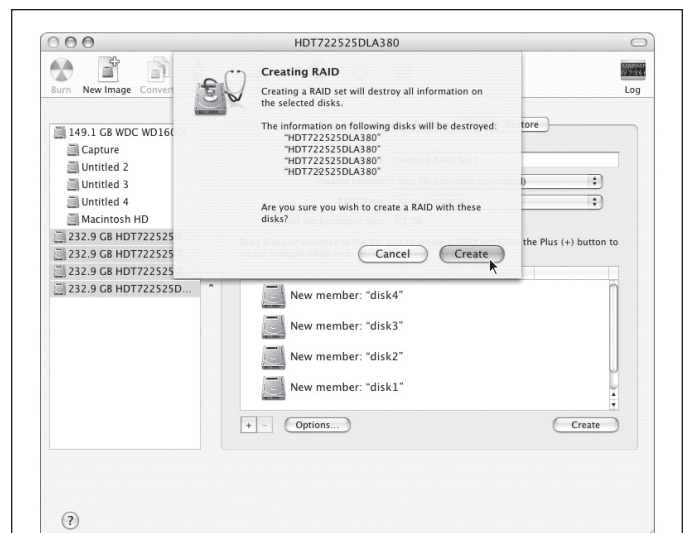


Figure 3

Chapter 6 – Formatting Drives Connected via eSATA

Mac OS X Drive Formatting—Individual Drives (Not in a RAID Set)

This section describes the process of formatting (initializing) individual hard drives connected to the Qio enclosure's eSATA ports using Disk Utility under Mac OS X Version 10.5; the process is nearly identical under Mac OS X Version 10.6. If you intend to create a Mac OS-formatted RAID set, go back to "Mac OS X Drive Formatting—RAID Sets" on the previous page.

1. Turn on your computer. During startup, your computer will display one or more messages referring to unreadable volumes; click Initialize... to launch Disk Utility. After Disk Utility launches, click the Initialize button in each remaining message window.
2. If it is not already open, launch Disk Utility (**Figure 4**). Note that all attached drives appear in the information window, regardless of being formatted or not.
3. Select a drive you want to format by clicking the drive icon or the "name" of the drive (**Figure 5**). At the bottom of the window, drive capacity, connection type, and connection ID information are listed.
4. Click on the Partition button (**Figure 5**). Click on the drop down menu beneath "Volume Scheme:" and select a number of partitions for the volume; you may optionally choose to partition each drive to create two or more smaller "virtual" drives.
5. Click to highlight a partition, and then type a name in the Name field; repeat for each partition (**Figure 5**). After formatting, each partition will appear in the Finder window as a drive*.
6. Click Partition (**Figure 5**).
7. When the *Partition Disk* window appears, click the Partition button (**Figure 6**). If necessary, repeat steps 3–6 to partition any other drives connected to Qio. When partitioning and formatting are complete, close the Disk Utility application; you can now use your drive(s).

* If you changed the Finder preferences setting to not show hard drives on the desktop, newly-formatted drives won't appear on the desktop after you've formatted them.

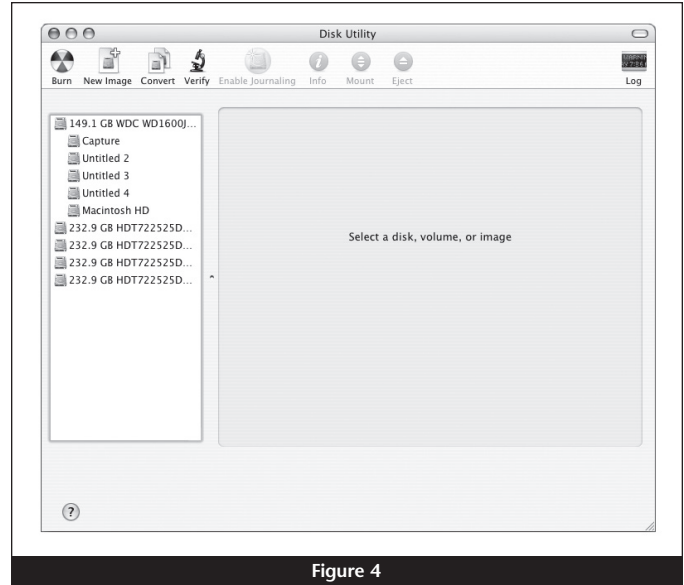


Figure 4

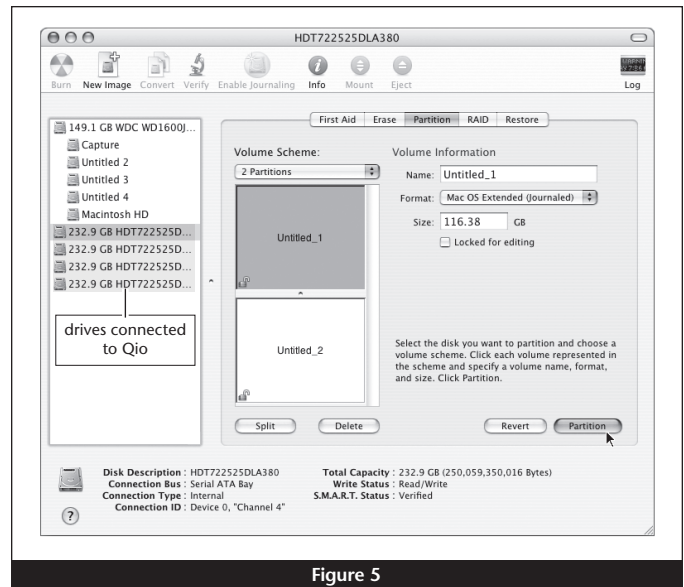


Figure 5

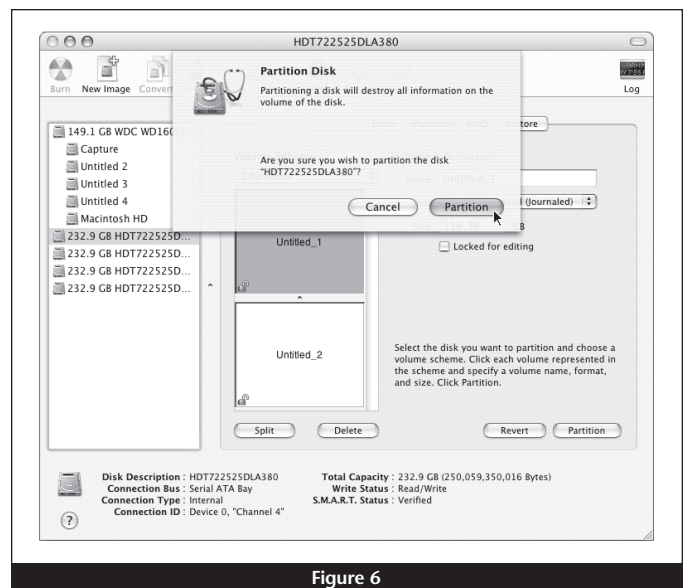


Figure 6

Chapter 7 – Tips and Known Issues

Tips

Hot-Plugging Cards

You may hot-plug and hot-swap memory cards in and out of the Qio enclosure. However, you must follow proper procedures for ejecting volumes or else you may lose data on the card or cause your computer to behave unexpectedly. Do not insert cards into the Qio enclosure while your computer is sleeping.

Hot-Plugging the Qio Enclosure

Hot-plugging the Qio enclosure is not supported. You must connect a power source to the Qio enclosure, and connect the Qio to its adapter card in the order described on pages 4 and 5 of this guide. Memory cards and adapter cards may already be plugged into Qio when you turn on the computer.

Selecting Power Off Card from the Finder Menu

Do not select Power Off Card from the Finder menu.

Drives Connected to Qio are Identified as SCSI Devices

Drives connected to the Qio enclosure's eSATA ports appear as SCSI drives in Disk Utility, regardless their actual interface. This is normal and is a function of the driver implementation.

Memory Card Formatting

For best compatibility, format memory cards in the cameras in which you use them. In some cases, a card formatted in Qio will not be recognized and must be reformatted in the camera.

Device Drivers

When using adapter cards, some of them require additional drivers and application software to operate or have full functionality. Software should be included with the device, or available to download from the manufacturer's web site. Check the peripheral's user's manual for information about necessary software.

Powering Devices Connected to Adapter Cards

Although many peripherals may draw power directly through adapter cards plugged into the Qio enclosure, other devices may draw more power than Qio can provide and require an external power source. Remember to use external power supplies when necessary.

Known Issues

Some ExpressCard Adapters are Not Properly Recognized When Hot-Plugged Into the Qio Enclosure

FireWire and combo FireWire/USB cards will not operate when plugged in while the computer is on. Cards inserted into the Qio enclosure at startup will work without issue.

Occasional Slow Wake from Sleep

When storage devices are attached to an adapter card inserted in the Qio enclosure, your computer may occasionally take several minutes to wake from sleep. Sonnet expects to resolve the issue in a future software update.

Slow Initial Startup After Software Install

When you first turn on your computer after installing the drivers and the adapter and connecting the Qio enclosure, you may experience a very long pause (around four to six minutes) at the blue screen before the desktop appears and the OS becomes usable. This issue only occurs on the first boot with the adapter card installed; consecutive boots will not exhibit the pause.

Chapter 8 – Specifications, Precautions, FCC Compliance, and Support Information

Specifications

External Connectors (Qio Enclosure)	Two CompactFlash Two CardBus (P2) Two ExpressCard/34 (SxS) Four eSATA External PCIe x1 - 18 Three power; one 12VDC @ 3A (20VDC MAX., rev. d and later) input, two 12VDC @ .5A output
External Connectors (Adapter Card)	External PCIe x1 - 18
Data Transfer Speed	Up to 200 MB/s aggregate
Bus Interface	PCI Express x1
Supported Media, CompactFlash Slots	Type I CompactFlash
Supported Media, CardBus Slots	P2, P2 E-series
Supported Media, ExpressCard/34 Slots	SxS; SxS Pro; SD, SDHC, SDXC, Memory Stick, MMC, and xD-Picture Card using adapter (sold separately)
Drives Supported	Up to 16*
Drive Types Supported	Serial ATA I, II, III
Firmware	Flash-ROM upgradeable to latest firmware version
Bootability	Not supported
Dimensions (Qio Enclosure)	WxDxH: 5.9 x 6.2 x 1.2 in. (14.9 x 15.7 x 3 cm)
Weight (Qio Enclosure)	1.1 lbs (0.5 kg)
RoHS Compliant	Yes

* Support for up to 16 drives requires the use of drive enclosures employing a hardware RAID controller (like Sonnet's Fusion QR).

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 adapter card; dropping or mishandling of the enclosure or adapter card may result in a malfunction leaving the product inoperable.

Warnings (continued)

- Do not insert your fingers or foreign objects inside the enclosure.
- 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.

FCC Compliance

Express Bus Extender PCIe, PCIe Bus Extender ExpressCard/34, and Qio comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: This device may not cause harmful interference, AND this device must accept any interference received, including interference that may cause undesired operation.

Contacting Customer Service

The Sonnet Web site located at www.sonnettech.com has the most current support information and technical updates. Before you call 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 Customer Service, have the following information available so the customer service staff can better assist you:

- Product name
- Date and place of purchase
- Computer model
- Operating system version
- Software/firmware versions

USA Customers

If further assistance is needed, please contact **Sonnet Customer Service** at:

Tel: 1-949-472-2772

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

E-mail: support@sonnettech.com

For Customers Outside the USA

For support on this product, 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/. Register your product online at <http://registration.sonnettech.com> to be informed of future upgrades and product releases.

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