

REDPORT™ SAS 6G USER MANUAL

Revised October 31, 2011

Please visit <http://www.wiebetech.com/techsupport.php> for FAQs and downloads for this product.
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Forensic Device User Advisory

After installing the authorized software drivers on your computer, and installing the card itself, it's a good idea to verify the card's write-blocking function before using it to access sensitive data. This is easily done: attach a known good formatted drive or storage device, and verify that the volume mounts properly on your computer. Copy files to the drive. Due to the "spoof writing" style of write-blocking employed by this product, the files will appear to copy successfully. Next, unmount and remount the drive. The files that you copied should not appear after the drive is remounted. If they do appear, there is a problem with your forensic device, and you should contact our support department for further instructions.

CRU-WiebeTech support may be reached at 866-744-8722 (toll free) or support@wiebetech.com (email).

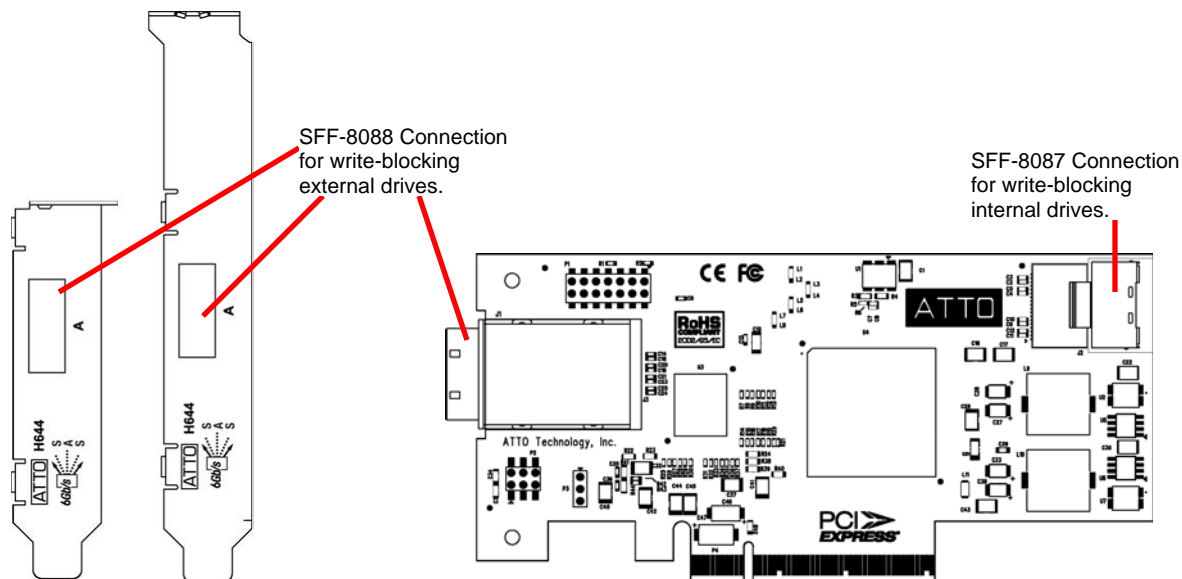


WARNING: You must install correct drivers before you install the RedPort card. Failure to do so may affect the write-blocking capabilities of the product.

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1. Identifying Parts



SFF-8087 and SFF-8088 are multi-lane connectors, capable of handling four drive connections each.

2. Installing Drivers

Before installing the RedPort host adapter, you must configure your system to recognize and use it by installing software drivers for your operating system. Only authorized drivers should be used.

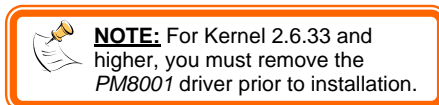
The CD you receive with your card contains current, authorized drivers. However, during the life of your product, you may wish to update your drivers to newer versions.

Visit the ATTO Technology web site, www.attotech.com, to download the latest drivers and flash bundle. You will need to register or log in if previously registered. WiebeTech's RedPort SAS 6G was designed in partnership with ATTO, and is based on ATTO's H644 hardware. It uses the standard H644 drivers for Windows and Linux (RedHat & SUSE).

2.1 Installing Windows Drivers from the included CD

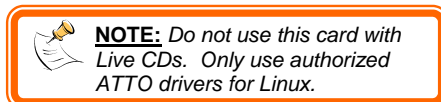
- a) Log on to Windows as the system administrator.
- b) Insert the CD into a CD or DVD drive.
- c) Navigate to the product folders, select **RedPort Cards**, and then **RedPort SAS 6G**.
- d) Select the appropriate CPU-based operating system from the operating system choices.
- e) Select and run the self-extracting executable (.exe) file.
- f) Click **Install**.
- g) Follow the on-screen instructions to complete the driver installation.

2.2 Installing Linux Drivers



- a) Log in as root.
- b) Verify that the kernel header files, usually included with the Linux kernel development package, are installed.
- c) If installing drivers from the CD, mount it to your chosen mount point such as `/mnt/cdrom`.
- d) Open your File Browser and browse to `/mnt/cdrom/Linux/Drivers`.
- e) Click on the driver: the driver filename appears as **lnx_drv_esashba2_XXX.tgz** where XXX is the driver's current version number.
- f) Copy the driver file to a directory such as `/usr/src`.
- g) Open a Terminal session.
- h) Remove any existing SAS drivers. Linux distributions based on kernel 2.6.33 or newer include generic SAS drivers that must be removed before installing drivers for RedPort.
- i) Change to the directory where you stored the driver.
- j) Extract the driver source: **tar xzf lnx_drv_esashba2_XXX.tgz**.
- k) The driver files are extracted to a directory called `lnx_drv_esashba2_XXX`. Navigate to that directory.
- l) Compile and install the driver using `./install.sh`. The driver is now installed and ready to use.
- m) Add the following line to `/etc/modprobe.conf` after installing the driver: **alias scsi_hostadapterX esashba** where **X** is the next available adapter number.

For troubleshooting and more information on Linux installation, see the readme file on the CD or in the extracted folder.



3. Installing Hardware

3.1 Install the RedPort Card

- a) Ensure that the drivers have been installed. Only current H644 drivers from ATTO should be used to ensure the card is write-blocked. Drivers must be installed before the hardware.
- b) Power down the computer system. Unplug the computer's power cable.
- c) Make sure the appropriate metal bracket is on the card. The card may be used with both low-profile and full-height slots. Both types of brackets are included with the product.
- d) Insert the card into an available PCIe slot (x8 or larger). Do not force it, but it will take firm pressure to fully seat the interface. It may help to gently rock the card back and forth as you apply pressure.
- e) Once the card is fully seated in the slot, secure it in place with a screw.

3.2 Connect to Storage

- f) Connect your SAS or SATA storage device to the RedPort 6G card.
 - External connectors: use SFF-8088 connectors.
 - Internal connectors: use SFF-8087 internal connectors.
 - For SATA, use cables which are no longer than 1 meter.
 - For SAS, use cables which are no longer than 7 meters.
- g) Plug in the computer and storage power cables. Turn on power to the computer and storage.

Your RedPort SAS 6G write-blocked host card is now ready to use!

4. Updating Hardware Flash

Your RedPort card was properly flashed before shipment, but the flash memory may need to be updated as new versions become available or if the factory-installed version becomes corrupt. Visit the ATTO website, www.attotech.com, to download the latest drivers and flash bundle.

- a) Download the most recent version of the Configuration Tool from the ATTO web site, www.attotech.com. Refer to the ATTO Utilities Installation and Operation Manual for additional information on downloading and using the Configuration Tool.
- b) Download the H644 flash bundle from the ATTO web site.
 - Click on **downloads**.
 - Register or log-in if previously registered.
 - Click on **SAS/SATA Host and RAID Adapters** in the left dialogue.
 - Click on **6Gb ExpressSAS SAS/SATA HBAs** in the right dialogue.
 - Scroll down to and click the desired flash bundle depending on the operating system.
 - A download system appears. Choose **Save**.
 - After the process has completed, process the downloaded file:
(On Windows, extract the .zip file. On Linux, expand the .tgz file.)
- c) Launch the **Configuration Tool**.
- d) In the **Device** window, select the adapter that needs to be updated.
- e) In the **Flash** window, click on the **Browse** button to find the flash bundle that you previously downloaded and extracted to your desktop.
- f) Click **Update** to update your flash ROM.
- g) Repeat for any additional adapters installed in the machine.
- h) Reboot your system for the changes to take effect.

5. Frequently Asked Questions

Q: What does SAS stand for?

A: SAS is an acronym for Serial Attached SCSI.

Q: What is SCSI?

A: SCSI is a type of data bus allowing for the transfer of data between a computer and peripheral devices. It was the first intelligent data bus relieving the CPU from the burden of processing I/Os between the computer and its peripherals.

Q: What is SAS?

A: SAS is a point-to-point serial architecture that is far simpler than its parallel predecessor SCSI, yet offers significantly higher throughput (up to 6 Gb/sec) as well as better scalability.

Q: What is the difference between Serial Attached SCSI and Parallel SCSI?

A: Serial Attached SCSI (SAS) is an evolutionary development of Parallel SCSI, a proven technology that's been the foundation of enterprise storage for over two decades. SAS leverages the rock-solid reliability of Parallel SCSI while offering dramatic improvements in performance, scalability and compatibility.

Q: What's the difference between Serial Attached SCSI and Serial ATA?

A: Serial Attached SCSI is an enterprise-class solution that goes beyond its interface to deliver the superior performance, reliability and scalability demanded in mission-critical applications. Serial ATA is primarily a desktop-class solution suitable for use in light-duty environments where low cost is the highest priority.

Q: Are SAS and Serial ATA compatible?

A: Yes, compatibility with Serial ATA is a core feature of Serial Attached SCSI. SAS backplanes and Host Bus Adapters (HBA) are fully compatible with Serial ATA, enabling connectivity for both types of drives on a common backplane.

6. Technical Specifications

Product Name	RedPort SAS 6G
Operating System	<ul style="list-style-type: none"> Windows 7, Vista, XP (32-bit and 64-bit) Linux Red Hat Enterprise 5 Linux SUSE Enterprise 10/10.3
Connectors	<ul style="list-style-type: none"> 1 Mini SAS (x4) SFF-8088 External 1 Mini SAS (x4) SFF-8087 Internal
Ports	4 External/4 Internal
Bus Characteristics	x8 PCIe 2.0
Data Rate	Up to 6Gbps
Form Factor	Low Profile
Dimensions	5.6" L x 2.73" H (142.24mm x 69.34mm)
Shipping Weight	1 pound
Compliance	CE, FCC, RoHS
Support	<p>We don't expect anything to go wrong with your product. But if it does, Tech Support is standing by and ready to help. Contact us through wiebetech.com/techsupport. Phone support also available at (866) 744-8722.</p>

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Limited Product Warranty

CRU-DataPort (CRU) warrants this product to be free of significant defects in material and workmanship for a period of two years from the original date of purchase. CRU's warranty is nontransferable and is limited to the original purchaser.

Limitation of Liability

The warranties set forth in this agreement replace all other warranties. CRU expressly disclaims all other warranties, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose and non-infringement of third-party rights with respect to the documentation and hardware. No CRU dealer, agent or employee is authorized to make any modification, extension, or addition to this warranty. In no event will CRU or its suppliers be liable for any costs of procurement of substitute products or services, lost profits, loss of information or data, computer malfunction, or any other special, indirect, consequential, or incidental damages arising in any way out of the sale of, use of, or inability to use any CRU product or service, even if CRU has been advised of the possibility of such damages. In no case shall CRU's liability exceed the actual money paid for the products at issue. CRU reserves the right to make modifications and additions to this product without notice or taking on additional liability.

FCC Compliance Statement: "This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation."

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at this own expense.

In the event that you experience Radio Frequency Interference, you should take the following steps to resolve the problem:

- 1) Ensure that the case of your attached drive is grounded.
- 2) Use a data cable with RFI reducing ferrites on each end.
- 3) Use a power supply with an RFI reducing ferrite approximately 5 inches from the DC plug.
- 4) Reorient or relocate the receiving antenna.

