

## PCI Express SATA III RAID Controller Card with Mini-SAS Connector (SFF-8087) - HyperDuo SSD Tiering

StarTech ID: PEXSAT34SFF



The PEXSAT34SFF PCI Express 2.0 SATA Controller Card enables 4 AHCI SATA III connections to be added to a computer through a single internal Mini-SAS (SFF-8087) connector.

The Mini-SAS connector with Port Multiplier support allows for multiple SATA drives (up to 7) to be connected using a single cable. When used with our [Mini-SAS to 4x SATA breakout cable](#) or [Mini-SAS SFF-8087 backplane](#) (accessories not included, SAS drives not supported), you have a complete internal 6Gbps connectivity solution, all from a single card.

Featuring HyperDuo technology, the SATA card offers SSD auto-tiering which lets you balance the performance advantages of SSD storage with the cost-effectiveness and large capacity of standard hard drives. By combining SSD and HDD drives into a single volume (up to 3 SSD + 1 HDD), HyperDuo discreetly works in the background to identify and move frequently accessed files to the faster SSD drive(s) for improved data throughput - up to 80% of SSD performance! (Note: The HyperDuo automatic storage tiering feature is compatible with computers that use a BIOS.)

Compliant with SATA revision 3.0, this PCI Express SATA RAID card delivers up to 6Gbps of data bandwidth; ideal for high performance hard drives and solid state drives (SSD). Plus, the controller card offers an effective hardware RAID solution, with native RAID (0, 1, 1+0) support.

### Throughput Benchmark

Drive configuration	Throughput	Drive size
1 x HDD	112.81 MB/s	2 TB
1 x SSD	490.28 MB/S	120 GB
1 x HDD + 1 x SSD HyperDuo (Safe Mode)	<b>489.28 MB/s</b>	2 TB
1 x HDD + 2 x SSD HyperDuo (Safe Mode)	<b>715.13 MB/s</b>	2 TB

**Drives Used:**

SSD: OCZ Vertex 3 Series 2.5" 120 GB (VTX3-25SAT3-120G)

HDD: Western Digital Caviar Green 3.5" 2 TB (WD20EARS)

**Software Used:**

IO Meter, 256KB Sequential Read, queue depth = 10

The PEXSAT34SFF PCIe SATA 6G card is backed by a 2-year StarTech.com warranty and free lifetime technical support.

**Note:** The PEXSAT34SFF does not support SAS hard drives. You can connect multiple SATA hard drives to the card's SAS connector using a breakout cable such as the [Mini-SAS to 4x SATA breakout cable](#).

**Applications**

- Use SSD tiering to optimize your system for I/O intensive applications such as Office Suites, Photo/Video Editing and Media Players
- Upgrade a PCIe-based system with SATA 6Gbps connectivity (through a Mini SAS connector), to better utilize faster SATA drives
- Add more internal SATA ports to a computer system to connect additional storage drives and/or optical drives through an appropriate Mini-SAS adapter (listed under Accessories)
- Optimized for off-site backups, this RAID controller can be configured in RAID 1 (Mirrored) so that all information on the primary drive is copied to the secondary drive
- Perfect for multi-drive internal RAID storage solutions

## Features

- Supports HyperDuo SSD auto-tiering
- 1x Mini-SAS (SFF-8087) port, expandable to 4 SATA III (6Gbps) ports through a breakout cable (purchased separately)
- Fully compliant with SATA 3.0 specifications and backward compatible with SATA I/II (1.5/3.0Gbps) drives
- Supports hardware RAID 0, 1, and 1+0 modes configured through BIOS
- Compliant with PCI Express 2.0 standards
- Port Multiplier FIS-based and Command-based switching supported
- Natively supported single chipset design
- Simple HyperDuo configuration via card-BIOS level or intuitive GUI console (Windows® only)
- Supports Native Command Queuing (NCQ) and ATA/ATAPI commands
- Includes Low Profile/Half-Height installation bracket
- Supports HDDs/SSDs/Optical/Blu-Ray drives
- LED headers for HDD activity LED indicators

Technical Specifications

Warranty	2 Years
Bus Type	PCI Express
Card Type	Standard Profile (LP bracket incl.)
Chipset ID	Marvell 88SE9230
Industry Standards	PCI Express 2.0
Industry Standards	Serial ATA 3.0 specification
Interface	Mini-SAS
Port Style	Integrated on Card
Ports	1
ATAPI Support	Yes
Bootable	Yes
LBA support	48-bit
Max Drive Capacity	Currently tested up to 4TB per drive
Number of Drives Supported Through Port Multiplier	1 to 4
Number of Ports That Support Port Multiplier	1
Port Multiplier	Yes
RAID	Yes
Supported RAID Modes	JBOD - (Just a Bunch of Disks)
Supported RAID Modes	RAID 0 (Striped Disks)
Supported RAID Modes	RAID 1 (Mirrored Disks)
Supported RAID Modes	RAID 10 (1+0; Striped set of Mirrored Subset)
Type and Rate	SATA III (6 Gbps)
Connector Type(s)	1 - PCI Express x2 Male

Internal Ports	1 - SFF-8087 (36 Pin; Internal Mini-SAS) Plug
OS Compatibility	Windows® XP, Vista, 7, 8, 8.1, 10 Windows Server® 2003, 2008 R2, 2012, 2012 R2 Mac OS X® 10.6 to 10.11 Linux 3.5.x to 4.4.x <i>LTS versions only</i>

**Note** The maximum throughput of this card is limited by the bus interface. If used with PCI Express Gen 1.0 enabled computers, the max throughput is 2.5 Gbps per lane. If used with PCI Express Gen 2.0 enabled computers, the max throughput is 5 Gbps per lane.

Only one port can use the Port Multiplier feature at a time. Supports up to 4 drives connected via Port Multiplier.

Port Multiplier not supported in Mac OS.

Not compatible with SAS drives, only SATA drives are supported.

System and Cable Available PCI Express x2 slot (backward compatible with x4, x8, and x16 slots)  
Requirements

System and Cable Mini-SAS SFF-8087 to SATA cable (not included)  
Requirements

Humidity	20% ~ 80% RH
Operating Temperature	5°C ~ 50°C (41°F ~ 122°F)
Storage Temperature	-25°C ~ 70°C (-13°F ~ 158°F)
Product Height	0.8 in [20 mm]
Product Length	2.8 in [70 mm]
Product Weight	1.4 oz [40 g]
Product Width	4.7 in [120 mm]
Package Quantity	1
Shipping (Package) Weight	4.6 oz [131 g]
Included in Package	1 - PCIe SATA Controller Card
Included in Package	1 - Low Profile Bracket
Included in Package	1 - Driver CD
Included in Package	1 - Instruction Manual

Certifications, Reports and Compatibility

