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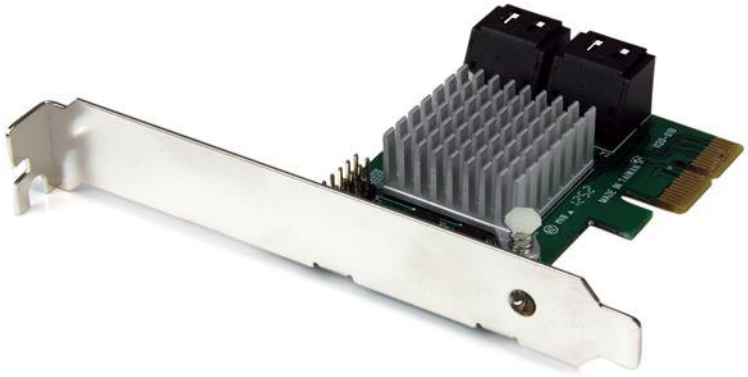
Data Sheet

4 Port PCI Express 2.0 SATA III 6Gbps RAID Controller Card with HyperDuo SSD Tiering

Product ID: PEXSAT34RH



The PEXSAT34RH 4-Port PCI Express 2.0 SATA Controller Card with HyperDuo adds 4 AHCI SATA III ports to a computer through a PCIe slot (x2), delivering multiple internal 6Gbps connections for high-performance hard drives and Solid State Drives (SSDs).

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.)

The PCIe SATA controller card supports Port Multiplier (PM), enabling multiple SATA drives to be connected to one port over a single cable, for a total of 7 drives (Up to 4 drives through PM on one port, and a single drive to the remaining 3 ports). Plus, the SATA 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)	**489.28 MB/s**	2 TB
1 x HDD + 2 x SSD HyperDuo (Safe Mode)	**715.13 MB/s**	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

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

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Certifications, Reports and Compatibility

RoHS Compliant Available

Applications

- Use SSD tiering to optimize your system for I/O intensive applications such as Office Suites, Photo/Video Editing and Media Players
- Upgrade an older PCIe-based system to SATA 6Gbps capability, to better utilize faster SATA drives
- Add more internal SATA ports to a computer system, to connect additional storage drives and/or optical drives
- Provide optimized off-site back-ups/vaulting, through built-in RAID 1 capability
- Perfect for multi-drive internal RAID storage solutions

Features

- Supports HyperDuo SSD auto-tiering
- 4 AHCI SATA III (6Gbps) ports through PCI Express x2
- 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

	Warranty	2 Years
Hardware	Bus Type	PCI Express
	Card Type	Standard Profile (LP bracket incl.)
	Chipset ID	Marvell - 88SE9230
	Industry Standards	PCI Express 2.0
		Serial ATA 3.0 specification
	Interface	SATA
	Port Style	Integrated on Card
	Ports	4
Performance	ATAPI Support	Yes
	Bootable	Yes
	Hot Swap Capability	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	4 (can only use 1 PM at a time)
	Port Multiplier	Yes
	RAID	Yes
	Supported RAID Modes	JBOD - (Just a Bunch of Disks)
		RAID 1 (Mirrored Disks)
		RAID 0 (Striped Disks)
		RAID 10 (1+0, Striped set of Mirrored Subset)
	Type and Rate	SATA III (6 Gbps)
Connector(s)	Connector Type(s)	1 - PCI Express x2 Male
	Internal Ports	4 - SATA (7 pin, Data) Plug
Software	OS Compatibility	Windows® XP, Vista, 7, 8, 8.1, 10 Windows Server® 2003, 2008 R2, 2012, 2012 R2, 2016 Mac OS® 10.6 to 10.14 Linux 3.5.x to 4.11.x *LTS versions only*

Special Notes / Requirements	**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, 7 drives total. Port Multiplier not supported in Mac OS. Note: Connected drives cannot be used as System / Primary drive in Windows Server 2012, 2012 R2, 2016
	System and Cable Requirements	Available PCI Express x2 slot (backward compatible with x4, x8, and x16 slots)
Environmental	Humidity	20% ~ 80% RH
	Operating Temperature	5°C ~ 50°C (41°F ~ 122°F)
	Storage Temperature	-25°C ~ 70°C (-13°F ~ 158°F)
Physical Characteristics	Product Height	0.8 in [20 mm]
	Product Length	2.8 in [70 mm]
	Product Weight	1.7 oz [49 g]
	Product Width	4.7 in [120 mm]
Packaging Information	Package Quantity	1
	Shipping (Package) Weight	5 oz [141 g]
What's in the Box	Included in Package	1 - PCIe SATA Controller Card 1 - Low Profile Bracket 1 - Driver CD 1 - Instruction Manual

Product appearance and specifications are subject to change without notice.