

2-Port PCI Express 2.0 SATA III 6Gbps RAID Controller Card with 2 mSATA Slots and HyperDuo SSD Tiering

StarTech ID: PEXMSATA3422



The PEXMSATA3422 PCI Express SATA Card helps you improve the overall speed and storage capacity of your computer by giving you multiple 6 Gbps SATA connections for connecting high-performance SSDs (Solid State Drives) and hard drives in a HyperDuo RAID array. Now, you can easily add two mSATA slots and two SATA III ports to your computer through a single PCIe x4 slot.

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.)

This versatile RAID controller card helps to relieve the internal space constraints often associated with multi-drive configurations by letting you install two mSATA SSDs directly to the card via convenient, latching slots. With dual mSATA slots, as well as two internal SATA ports, the card offers an effective hardware RAID solution, with native RAID (0, 1) support.

The PCIe SATA controller also offers Port Multiplier (PM) support, so you can connect multiple SATA drives to just one port, for a total of 7 drives (up to 4 drives through PM on one port, plus a single drive to the other SATA port and two mSATA slots).

For added versatility, the controller card is equipped with a standard profile bracket and includes a low-profile/half-height bracket for installation in small form-factor computers.

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

Backed by a StarTech.com 2-year warranty and free lifetime technical support.

Applications

- Use SSD tiering to optimize your system for I/O intensive applications such as office suites, photo/video editing and media players
- Install 2 internal SSDs directly to the card, for a simple and discreet solution that improves overall system performance
- Upgrade an older PCIe-based system to SATA 6Gbps capability, to better utilize faster SATA drives
- Add more internal SATA ports to your computer, for connecting 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, merging SSD performance with HDD capacity
- 2 mSATA SSD slots and 2 AHCI SATA III (6 Gbps) ports through PCI Express
- Supports hardware RAID 0 and 1 modes
- Fully compliant with SATA 3.0 specifications and backward compatible with SATA I/II (1.5/3.0Gbps) drives
- Port Multiplier FIS-based and Command-based switching supported
- Compliant with PCI Express 2.0 standards
- Simple HyperDuo configuration via card BIOS or intuitive GUI console (Windows® only)
- Supports TRIM command with compatible SSD and Operating System
- Supports Native Command Queuing (NCQ) and ATA/ATAPI commands
- On-board latching mSATA slots - SSD installation with no screws required
- Configured with standard profile bracket, low-profile/half-height bracket included
- Supports HDDs/SSDs/Optical/Blu-Ray drives

Technical Specifications

Warranty	2 Years
Bus Type	PCI Express
Card Type	Standard Profile (LP bracket incl.)
Chipset ID	Marvell - 88SE9230
Industry Standards	Serial ATA 3.0 specification
Industry Standards	PCI Express 2.0
Interface	Mini SATA
Interface	SATA
Port Style	Integrated on Card
Ports	2
LBA support	48-bit
Max Drive Capacity	Currently tested up to 4TB per drive
Port Multiplier	Yes
RAID	Yes
Supported RAID Modes	JBOD - (Just a Bunch of Disks)
Supported RAID Modes	RAID 1 (Mirrored Disks)
Supported RAID Modes	RAID 0 (Striped Disks)
Type and Rate	SATA III (6 Gbps)
Connector Type(s)	1 - PCI Express x4 Male
Internal Ports	2 - mSATA (52 pin; Mini SATA) Slot Receptacle
Internal Ports	2 - SATA (7 pin; Data) Plug
OS Compatibility	Windows® 10 (32/64), 8 / 8.1 (32/64), 7 (32/64), Vista (32/64), XP (32/64) Windows Server® 2012, 2008 R2, 2003 Mac OS® 10.6 and later (tested up to 10.11) Linux 3.5

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.

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

Humidity

20~80% RH

Operating Temperature

5°C to 50°C (41°F to 122°F)

Storage Temperature

-25°C to 70°C (-13°F to 158°F)

Product Height

4.7 in [120 mm]

Product Length

4.9 in [125 mm]

Product Weight

2.1 oz [60 g]

Product Width

0.8 in [20 mm]

Shipping (Package) Weight

5.6 oz [160 g]

Included in Package

1 - PCIe mSATA/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

