

INTRODUCTION

Designed with the latest 3Gbits/sec ASIC from Silicon Image and eSATA connector, this 4-port controller incorporates many advanced features that are only found in some of the more expensive RAID controllers. With the onboard RAID firmware, the 4 eSATA ports can be easily configured as 4 individual ports with no RAID or with RAID 5, RAID 0, RAID 1, RAID 10, RAID 1+S, or JBOD (a feature of combining all 4 drives into one large capacity hard drive)

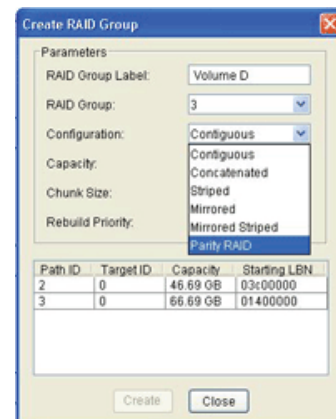


When installed into the fast PCI-Express BUS, this controller ensures maximum data throughput of 3 Gbits/sec per port. In addition, the latest External SATA (eSATA) connector also provides more secured cable connection, improved durability, increased EMI protection and 2 meters in cable length. (For more detail on this new SATA external connector, please review the following white paper posted on SATA-IO.org)

Throughput exceeding 240 MBytes/sec sustained data transfer can be achieved using standard 7,200 RPM SATAII hard drives by setting up 4 drives in a RAID 0 configuration. Together with the Addonics Storage Tower, Disk Array systems and various Addonics Mobile Racks, you can add external high performance storage system that rivals the traditional SCSI storage at less than half of the cost.

FEATURES

- SATA I and SATA II compliant
- PCI-Express 8 lane compatible (also fits into PCI-Express 16 Lane or the graphic card slot)
- Up to 300 Bytes/sec (3 Gbits/sec) per port
- 4 External SATA (eSATA) ports
- Works with any Serial ATA drive Built-in RAID 0, RAID 1, RAID 1+0, RAID5 and JBOD support (illustration on the left is the bundled RAID utility for Windows OS)
- Can be used as a non-RAID controller for 4 individual drives
- Support large hard drives of 137 GB or greater
- Silicon Image chip set Sil 3124
- Port Multiplier compatible
- Fits standard height Desktop case
- Hot swap support - drive can be removed and added without system shut down or restart*
- Simple plug and play
- Compatible with Windows 2000, Windows XP, Windows 2003 Server, Vista



*Note: It is common in RAID5 configuration that the WRITE speed performs slower than READ. Depending on system hardware, the WRITE performance can be to 25% of the READ speed. This performance difference does not affect general database application where majority of the transactions are READ commands. For applications that require large files transfer or continuous writing of data on the the hard drive such as video editing, RAID5 configuration may not be desirable.

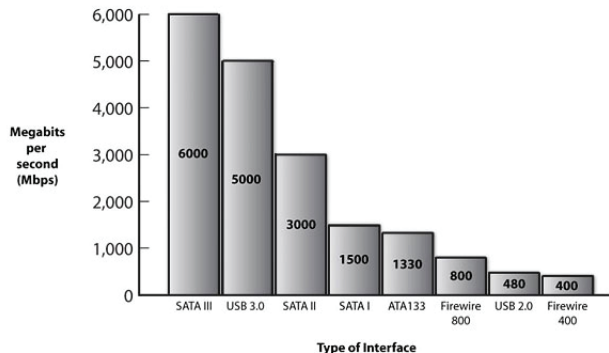
* Hot swapping hard drive has been tested on Windows OS only. When drives are configured as RAID 0 and certain RAID combination, the removal of the hard drive will result in breaking the RAID set and result in data loss.

SPECIFICATIONS

- 48 bits LBA, support HDD partition larger than 137GB
- Fully compliant with Serial ATA 1.0a and Serial ATA II Extensions to Serial ATA 1.0a Specifications revision 1.1
- Hot-plug capability
- Supports Serial ATA Generation 2 transfer rate of 3.0 Gbps
- Supports Serial ATA II Port Multiplier 1.0 Specifications revision 1.1
- Supports First-party DMA commands for Native Command Queuing (NCQ)
- Plesiochronous, Single PLL architecture, 1 PLL for 4 ports
- Output Swing Control
- Supports four independent Serial ATA channels
- Independent Link, Transport, data FIFO, command fetch, scatter/gather, and command execution
- 31 Commands and Scatter/Gather Tables per Port
- Four Pin header on board for Device LED connection

- Protocol Override per Command
 - Staggered Spin-up Control
 - Temperature: Operating 0 to 70 degree C.
 - Storage: -25 to 90 degree C.
 - Humidity: Operating 20% to 80%
 - Non Operating 15% to 90%
 - RAID 0, 1, 0 + 1, RAID 5 and JBOD firmware on board
 - Completely with drivers for Windows 2000 , XP, and 2003 Server, Vista
 - RoHS compliant
 - PCI-Express 8 lane
 - x8 PCI Express Bus
 - PCI Express Specification, Revision 1.0a
 - Maximum realized bandwidth on PCI Express 8x interface is 2 GB/s in each direction simultaneously, for an aggregate of 4 GB/s
 - Fan info:
 - Maximum air flow: 4.53 CFM
 - Sound level: 19.7 dBA (Max: 22.2dBA)
- SATA data transfer rate is calculated at 10 bits=1 byte

Data Transfer Rate comparisons on various interface standards



System Requirement

- PC/AT or Compatible System
- One free PCI-Express 8 lanes slot or 16 lanes slot (same as the PCI-Express graphic card slot)
- Pentium or greater
- Minimum 32 MB RAM
- 10 MB minimum free hard disk space
- One of the following operating systems: Windows 2000, XP, 2003 Server, Vista

Single drive (Pass-Through)	4 drive RAID 0 (Striped)	4 drive RAID 10 (Mirrored Striped)	4 drive RAID 5 (Parity)
Sequential Read Speed: 80MB/s Burst Speed: 190MB/s Random Access: 5.8ms CPU Utilization: 1% Average Read Speed: 64.7MB/s	Sequential Read Speed: ~240MB/s Burst Speed: 542.6MB/s Random Access: 5.6ms CPU Utilization: 5% Average Read Speed: 246.9MB/s	Sequential Read Speed: 122MB/s to 126MB/s Burst Speed: 552.4MB/s Random Access: 5.3ms CPU Utilization: 3% Average Read Speed: 122.6MB/s	Sequential Read Speed: 117MB/s Burst Speed: 184.7MB/s Random Access: 5.9ms CPU Utilization: 4% Average Read Speed: 115.2MB/s