



## RocketRAID 3540

High-Performance PCI-Express to Serial ATA II  
Hardware RAID Controller with Intel IOP341(800MHz)



### Highlights

- Intel IOP341(800MHz) RAID Engine with hardware RAID (XOR) and RAID 6 (P+Q)
- 780MB/s sequential reads and 685MB/s write RAID 6 performance.
- PCI-Express x8 bus technology for fast data transfers
- TerabyteStream™ - leverages Intel ADMA (Application DMA) Technology to deliver Hardware-Embedded Acceleration for XOR (RAID 5) and RAID 6 (P+Q).
- TerabyteSaver™ with write journaling optimizes data protection
- TerabyteGuard™ with bad sector repair and remapping, disk scrubbing and (SHI) - Storage Health Inspector
- Supports advanced SATA II features including 3Gb/s and NCQ
- RAID levels 0, 1, 3, 5, 6, 10, 50, and JBOD

HighPoint's industry-leading professional RAID storage host bus adapters for Enterprise level Server and Workstation applications, provide unparalleled levels of performance and 24/7 reliability. The RocketRAID 3000 series are true hardware RAID controllers; integrating state of the art I/O processors, onboard cache and powered by HighPoint's powerful Terabyte RAID technology.

### Intel IOP341 (800MHz) - RAID I/O Processor

The Intel IOP341(800MHz) is one of the industry's highest performing RAID I/O processor engines for multi-channel SATA hardware RAID 5/6 controllers.

The RocketRAID 35xx series of PCI-Express hardware RAID controllers leverage the ADMA architecture in the Intel IOP341(800MHz) to deliver the industry's leading RAID 6 performance with sustained transfer rates over 780MB/s Read and over 685MB/s Write.

The RocketRAID 3500's series are available in 4, 8, 16 port configurations and have internal mini-SAS connectors. All RocketRAID 3500 series controllers support RAID level 0,1,3,5,6, 10, and JBOD.

### RAID 6 and Terabyte (Stream, Saver and Guard)

The ADMA architecture in the Intel IOP341(800MHz) with hardware RAID 6 provides the protection and prevents the chances of losing data when rebuilding occurs significantly improving fault tolerance.

TerabyteStream™ leverages the power of the Intel IOP341(800MHz) to deliver unprecedented RAID 5 and 6 performance with an intelligent algorithm to manage multiple data streams of data concurrently and utilize adaptive readahead by anticipating if data blocks that will be requested in the future and read into controller cache.

TerabyteGuard™ prevents data lose and increase data reliability with advanced hard drive inspection features utilizing bad sector repair and remapping.

TerabyteSaver™ optimizes data protection with a battery backup and with write journaling prevent data loss.

### Intelli-VRM™ (Virtualize RAID Management)

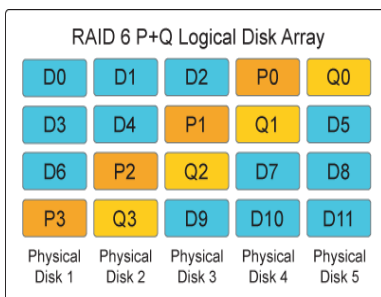
RocketRAID Intelli-VRM™ (Intelligent Virtualized RAID Management) is a virtualized RAID management solution. It combines an early warning system for detection of problems with alerts, information and warnings.

Intelli-VRM™ helps reduce support related travel costs by having virtual presence at the customers site to help troubleshoot. The customer will benefit since resellers do not need to pass the cost of training support engineers as troubleshooting and support is shifted to (SMB) Small to Medium Sized Business.

### Vertical Application Tuning

Vertical applications like NAS storage, clusterservers, supercomputing, backup and archival, security systems and pro audio and video applications often require I/O tuning to meet the sustained Read/Write performance and protection mode needs.

Advance features in the RocketRAID 3500 series of controllers allow users the flexibility to tune the RAID I/O settings to optimal mode for the best sustained Read/Write performance or protection mode for applications that require the highest level of data protection and reliability.



RAID 6: The P+Q RAID 6 algorithm processes a stripe in the same manner and with nearly the same performance as RAID 5 solutions.

1. All data to be written to disk is first transferred to onboard memory.
2. Check values (P and Q) are the computed based on write data parameters within the RAID algorithm.
3. The write data and both P and Q check values are written to the disk stripe.



### APPLICATIONS FOR HIGHPOINT RAID CONTROLLERS



# RocketRAID 3540

## RocketRAID 3540 Features

- HighPoint TerabyteStream leverages Intel ADMA to deliver Hardware Embedded Acceleration for RAID 5 XOR and RAID 6 (P+Q)
- Intel IOP341 (800MHz) processor and RAID offload provides true hardware RAID
  - SCSI device driver model to take advantage of the benefits of SCSI using inexpensive Serial ATA drives
- Bootable array support for greater fault tolerance of your OS
- Variable stripe size for performance tuning by application
- 64-bit LBA support (greater than 2TB volume)
- ATA pass-through mode support
- Up to 256MB DDR2 memory with ECC protection
- RAID Management suite
  - RocketRAID 3000 series BIOS/Firmware configuration tool
  - RocketRAID web GUI - browser-based management tool
  - Command Line Interface (CLI) – scriptable configuration tool
- SNMP (Simple Network Transport Protocol)
- SMTP - for email notification of RAID events
- Intelli-VRM™ (Virtual RAID Management) - remote management and troubleshooting of RAID array
- Variable Sector Size (VSS) for auto address over 2TB of storage
- Battery Backup Unit (BBU) support up to 48hours
- Multiple logical unit sizes and RAID levels on one card
- Multiple card support within a system for large storage requirements
- Hot-swap and hot-spare support for data availability
- Dynamic sector repair and remapping to reduce dropped drives
- S.M.A.R.T. disk drive monitoring for reliability
- Auto Rebuild with new drive insertion
- Drive activity LED and Failed LED support
- Online Capacity Expansion and Online RAID Level Migration
- Write journaling for improved performance and data protection
- Automatic drive insertion and removal notification
- Chassis Control Unit for enclosure management via I2C and SGPIO
- RoHS compliant

## Operating System Support

- Microsoft® Windows® 2008/2003/XP/2000, Vista 32 and 64 bit
- Red Hat Enterprise Linux, Open SuSE, Fedora Core, Debian, FreeBSD and Mac OS X.
- Linux driver embedded into kernel 2.6.25 and higher.

## RocketRAID 3000 Series Specifications

- Low profile form factor (4 and 8-port configurations)
- Full-height form factor (16-port configurations)
- PCI Express x8 configurations, PCI Express 1.1 compliant
- Serial ATA 2.6 Specification support
- BIOS PnP (plug and play) and BBS (BIOS boot specification) support
- Operating Temperature Without BBU: 0°C to 50°C  
With BBU: 10°C to 40°C
- Power Requirements 18W maximum
- Dimensions
  - RocketRAID 3540 7.95"L x 3.77"H (202.0mm L x 96.0mm H)
  - RocketRAID 3522 6.75"L x 2.63"H (167.0mm L x 67.0mm H)
  - RocketRAID 3520 6.75"L x 2.63"H (167.0mm L x 67.0mm H)
  - RocketRAID 3510 6.75"L x 2.63"H (167.0mm L x 67.0mm H)
  - RocketRAID 3320 6.45"L x 2.59"H (164.0mm L x 66.0mm H)
  - RocketRAID 3220 6.57"L x 2.55"H (167.0mm L x 64.4mm H)

## Service and Support

- 3-year warranty
- Support via email at support@highpoint-tech.com
- For latest motherboard and hard drive compatibility lists go to: [www.highpoint-tech.com](http://www.highpoint-tech.com)

## Accessories

- BBU-03 Battery Backup Unit
- Int-MS-1M4S (1m (3ft) SFF-8087 to SATA)
- Ext-MS-1M4ES (1m (3ft) SFF-8088 to eSATA)
- Ext-MS-1M1B (Latch) (1m (3ft) SFF-8088 to SFF-8470)
- Ext-MS-1MSB (Screw) (1m (3ft) SFF-8088 to SFF-8470)

## RocketRAID 3000 Series Selection Guide

	RocketRAID 3220	RocketRAID 3320	RocketRAID 3510	RocketRAID 3520	RocketRAID 3522	RocketRAID 3540
Form Factor	Low profile	Low profile	Low profile	Low profile	Low profile / full height	Full height
Port Count	8	8	4	8	8	16
I/O Processor	Intel 331 (500MHz)	Intel 333 (500MHz)	Intel 341 (800MHz)	Intel 341 (800MHz)	Intel 341 (800MHz)	Intel 341 (800MHz)
Onboard Memory	128 MB DDR2	256 MB DDR2	256 MB DDR2	256 MB DDR2	256 MB DDR2	256 MB DDR2
PCI Express Lanes	PCI-X 64bit/133MHz	8	8	8	8	8
RAID Levels	0,1,3,5,6,10,50 and JBOD	0,1,3,5,6,10,50 and JBOD	0,1,3,5,6,10,and JBOD	0,1,3,5,6,10,50 and JBOD	0,1,3,5,6,10,50 and JBOD	0,1,3,5,6,10,50 and JBOD
Ethernet Port	No	No	No	No	Yes	Yes
Connector Type	Internal mini-SAS	SATA	Internal mini-SAS	Internal mini-SAS	External mini-SAS	Internal mini-SAS
BBU Support	No	Yes	Yes	Yes	Yes	Yes



[www.highpoint-tech.com](http://www.highpoint-tech.com)  
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