

# It's All About Your Data

VTrak™ M610p RAID 6 Storage System

## VTrak™ M610p

### U320 SCSI-to-SATA 3Gb/s RAID 6 Storage System



**Robust, high-availability, high-performance dual channel Ultra 320 SCSI to 16-bay Serial ATA (SATA) 3Gb/s RAID 6 system**

#### Low-cost, feature-rich storage for outstanding productivity

The Promise VTrak M610p is optimized for organizations deploying small to medium application servers, disk-to-disk backup and direct-attach storage solutions. Dual Ultra 320 SCSI host interface channels offer the ease of management and performance required by companies running popular departmental and back-office applications. The VTrak M610p combines advanced connectivity and storage features – sophisticated functionality, exceptional performance, rock-solid reliability, and high availability – with intelligent system design for a very affordable solution.

#### High storage density for flexibility and economy

The VTrak M610p supports up to 16 off-the-shelf 3.5" SATA 3Gb/s or 1.5Gb/s drives per system in a standard 3U 19" rack space. By taking advantage of unsurpassed capacity of SATA drives, the VTrak system delivers the highest capacity levels available. Multiple VTrak systems can also be daisy chained to deliver massive storage to capacity-hungry applications such as disk-to-disk backup, media serving, video surveillance and compliance storage.

#### RAID 6 Support

RAID 6 is an emerging technology for shared storage systems and high-capacity SATA disk arrays in servers. With double parity coding, intelligent RAID 6 delivers the highest level of reliability and data protection in a cost-effective solution. As the capacity of storage arrays increases, so does the risk of encountering unrecoverable read errors. RAID 6 can handle double drive failures and thereby provide greater protection against data loss. This dramatically reduces the risk of catastrophic data loss caused by drives failure.

#### WebPAM PROe™

The VTrak M610p features an embedded management software, WebPAM PROe, that eliminates the need to install additional software on the network. All VTrak M-Class systems in the network can be configured and monitored through a single, easy-to-manage web-based graphic user interface. The software works through the VTrak system's Ethernet port – locally, across a LAN, or across an internet connection – to configure and monitor one or multiple VTrak system(s) and provide error reporting through pop-up messages, event logging, or email notification. The VTrak family also simplifies integration with third-party management applications using industry-standard SNMP protocols.

#### Storage and server consolidation delivers cost savings

VTrak M610p incorporates advanced features such as advanced LUN Mapping. With support for up to 256 Logical Drives (LUNs) per subsystem and 32 LUNs per array, the M610p delivers a robust, flexible platform for storage and server consolidation and advanced costs savings. By sharing storage resources among multiple servers, users can take advantage of high availability configurations and employ resource sharing for cost effective storage solutions that maximize capacity utilization.

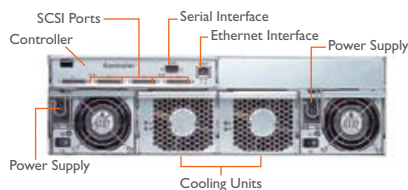


VTrak M610p

#### VTrak M610p Highlights

- :: 16 hot-swappable SATA drive bays in a robust 3U chassis
- :: RAID 0, 1, 1E, 5, 6, 10, and 50 support
- :: Supports 3Gb/s and 1.5Gb/s Serial ATA drives – NCQ and TCQ
- :: 256MB ECC shared cache (up to 1GB), with battery backup included
- :: Dual Ultra 320 SCSI channels with four VHDCI ports – supports daisy-chaining with auto termination
- :: Redundant, hot-swappable power supply unit and cooling module
- :: Comprehensive embedded web-based management via Ethernet – WebPAM PROe
- :: Command Line Interface/Utility via RS-232 and Telnet
- :: LUN Mapping
- :: Multiple global or dedicated hot-spare drives
- :: PerfectRAID™ and Predictive Data Migration™ technology for robust error handling and recovery
- :: LCD Panel support (optional)
- :: Intelligent enclosure management, including thermal, voltage, and fan speed monitor and adjustment automation
- :: Individual HDD power on/off control circuit to enhance system reliability
- :: Supports multiple targets up to 16 SCSI ID





**Back View of VTrak M610p**

## Sophisticated Array Management Tools



Promise Array Management monitoring software offers professional management tools in a simple-to-use, straightforward format. The software works locally or via network TCP/IP connection to monitor arrays. Information windows appear during critical and user-specified events. The software can even be configured to send e-mail notification should an error occur.

## The Leader in SAS/SATA RAID

Promise Technology, with a track record of over 18 years of storage products development is recognized as a premier dominant RAID storage supplier in the industry with a comprehensive product line offering of Serial Attached SCSI (SAS) and Serial ATA (SATA) PCIe RAID HBAs, rackmount storage systems with FC/SAS/iSCSI/SCSI SAN and DAS connectivity and NAS systems.

[www.promise.com](http://www.promise.com)

VTrak M610p Specifications	
System and Controller Features	
Drive Support	16 Drives (3.5" x 1" only) Supports 3Gb/s and 1.5Gb/s SATA drives; Supports Native Command Queuing (NCQ) and Tagged Command Queuing (TCQ); Staggered physical drive spin-up; Supports 48-bit LBA SATA drives
External I/O Ports	Dual Ultra 320 SCSI channels with four VHDCI ports
Data Cache	Shared 256MB predictive data cache (max. to 1GB - must purchase through Promise); Automatic write cache destaging; 72-hour battery backup included (for 256MB)
Command Queue Depth of RAID Controller	1024 commands
Operational Features	
RAID Levels	RAID 0, 1, 1E, 5, 6, 10, 50 - Any combination of these RAID levels can exist at the same time ; Configurable RAID stripe size: 64K, 128K, 256K, 512K and 1MB stripe size per disk; Background task priority tuning: adjustment of minimum I/O reserved for server use during all background tasks
Hot Spares	Multiple global or dedicated hot-spare drives with revertible option
Max LUNs per Subsystem	256 in any combination of RAID levels and array types
Max LUNs per Array	32 logical drives (LUNs); Supports LUN Carving by allowing an array to be divided into multiple logical drives; RAID level, stripe size, sector size and cache policy can be configured per LUN
LUN Mapping	Dynamically change LUN ID and enabled target ID
Disk Data Format	Supports Disk Data Format (DDF) for drive roaming between VTrak systems
Background Activities	Media Patrol; Background synchronizing; Initialization; Rebuild; Redundancy Check; SMART condition pooling; OCE (Online Capacity Expansion); RLM (RAID Level Migration); Priority Control, Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM
RAID Robustness	Physical Drive Error Recovery: PDM (Predictive Data Migration): Replace un-healthy disk member in array, and keep array on normal status during the data transition between healthy HD and replaced HD, Bad Sector Mapping, Media Patrol, SMART, Hard/Soft Reset , HD Power on/off control to recover HD from erroneous status. Array Error Recovery: Data recovery from bad sector or failed HD for redundant RAID, RAID 5/6 inconsistent data Prevent (Write Hole Table), Data content Error Prevent (Read/Write Check Table) NVRAM event logging
SCSI Commands	Supports extensive SCSI command set equivalent to SCSI/FC hard disk drives; Variable sector size (512Byte to 4kB) to break OS 2TB limitation; 16Byte CDB support for 64-bit LBA address
System Management	
Supported Operating Systems	Windows 2000, Windows 2003, Windows XP, Linux (Red Hat, SuSE) visit <a href="http://www.promise.com">www.promise.com</a> for the latest OS support list
Management Tools	Operating System independent; Localized in multiple languages; SSL Security support; WebPAM PROe via out-of-band Ethernet; Command Line Interface via RS-232 Serial Port or Ethernet (Telnet); Command Line Utility via RS-232 Serial Port or Ethernet (Telnet); Standard Management Protocols: SNMP; Auto, Express and Advanced configuration support for novice and skilled users
Management Interfaces/Protocols	Ethernet, RS-232 Serial Port; SNMP, SSL, Telnet; Email, audible (buzzer), and visible (LEDs) alarms
Mechanical Specifications	
Current (Maximum)	8 A @ 100 Vac; 4 A @ 200 Vac (current rating with two power cords)
Power Supply	Dual 400W, 100-240 Vac auto-ranging, 50-60 Hz, hot swappable and redundant with PFC, N+1 design
Temperature/ Humidity	5° - 40° C (-40° - 60° C storage temperature); Maximum relative humidity = 95%
Dimensions (H x W x D)	131 x 446 x 561 mm (5.2 x 17.6 x 22.1 in)
Weight	26.7 kg (58.7 lbs) without drives, 34.7 kg (76.3 lbs) with 16 drives*
Safety/EMI	CE, FCC Class A, VCCI, BSMI, CB, MIC, C-Tick, UL, TUV
Warranty and Support	3 year complete system; 24 x 7 email and phone support with highly experienced technical support technicians (English only)

\* Assume each hard drive = 0.5 kg  
Check [www.promise.com](http://www.promise.com) for the latest operating system, HBA, and hard disk drive compatibility  
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P/N: G6130V610P000000-1 03/08/2007

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