

It's All About Your Data

VTrak™ M210p/M310p RAID 6 Storage System

VTrak™ M210p/M310p U320 SCSI-to-SATA 3Gb/s RAID 6 Storage System

 **Robust, high-availability, high-performance dual channel Ultra 320 SCSI to 8/12-bay Serial ATA (SATA) 3Gb/s RAID 6 system**

Low-cost, feature-rich storage for outstanding productivity

The Promise VTrak M210p/M310p 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 M210p/M310p 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 M210p/M310p supports up to 8/12 off-the-shelf 3.5" SATA 3Gb/s or 1.5Gb/s drives per system in a standard 2U 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. And such errors always result in data loss during a RAID 5 rebuild. For this reason, RAID 6 can handle double drive failures and thereby provide greater protection against data loss. This dramatically reduces the risk of catastrophic data loss during RAID rebuilds.

WebPAM PROe™

The VTrak M210p/M310p features an embedded management software, WebPAM PROe, that eliminates the need to install additional software on the network. All VTrak M-Class systems in your 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

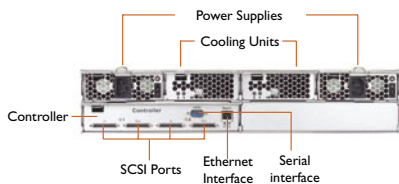
The VTrak M210p/M310p incorporates advanced cluster support features such as advanced LUN Mapping and Masking. With support for up to 256 Logical Drives (LUNs) per array and 32 LUNs per physical drive, the M210p/M310p delivers a robust, flexible platform for storage and server consolidation and advanced 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 M210p****VTrak M310p**

VTrak M210p/M310p Highlights

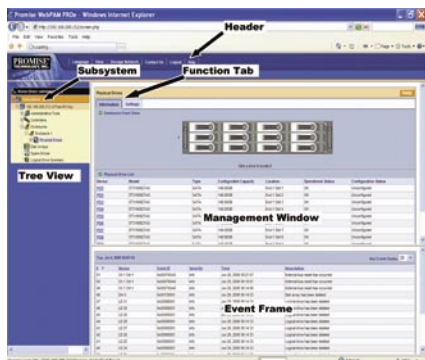
- :: 8/12 hot-swappable SATA drive bays in a robust 2U chassis
- :: RAID 6 support
- :: Supports 3Gb/s and 1.5Gb/s Serial ATA drives – NCQ and TCQ
- :: 256MB ECC shared cache (up to 1GB), with battery backup included
- :: Dual Ultra 320 SCSI channels with four VHDCI ports – supports daisy-chaining
- :: Supports Windows and Linux Cluster Services
- :: Redundant, hot-swappable power and cooling
- :: Comprehensive embedded web-based management via Ethernet – WebPAM PROe
- :: Command Line Interface/Utility via RS232 Serial Port
- :: LUN Mapping and Masking
- :: Multiple global or dedicated hot-spare drives
- :: PerfectRAID™ and Predictive Data Migration™ technology for robust error handling and recovery





Back View of VTrak M210p/M310p

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 SATA RAID

Promise Technology is the originator of ATA RAID and worldwide leader in SATA RAID with over 14 million controllers shipped. Using Serial ATA and SCSI (SAS) technology to design and manufacture fast, reliable cost-effective data protection, Promise is the preferred choice for SATA host bus adapters, RAID controllers and SAS/SATA external storage systems.

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Specifications	VTrak M210p	VTrak M310p
System and Controller Features		
Drive Support	8 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	12 Drives (3.5" x 1" only)
External I/O Ports	Dual Ultra 320 SCSI channels with four VHDCI ports	
Data Cache	Shared 256MB predictive data cache (max. to 1GB); Automatic write cache destaging; 72-hour battery backup included (for 256MB)	
Command Queue Depth	512 commands per VTrak system (up to 1024 commands with 512MB memory)	
Operational Features		
RAID Levels	RAID 0, 1, 1E, 5, 6, 10, and 50 - Any combination of these RAID levels can exist at the same time ; Configurable RAID stripe size: 8K, 16K, 32K, 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 designated dedicated hot-spare drives with revert options	
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; Supports out of order logical drive deletion and re-creation	
LUN Masking and Mapping	Supports multiple hosts	
Disk data formats	Supports Disk Data Format (DDF) for industry wide standardization and drive roaming between VTrak systems	
Background Activities	Media Patrol; Background synchronizing; Foreground initialization; Rebuild; Redundancy Check; SMART condition pooling; OCE (Online Capacity Expansion); RLM (RAID Level Migration); Priority Control, Throttle Rate Control and watermarking per BGA in Disk and NVRAM	
RAID Robustness	Physical Drive Error Recovery: PDM (Predictive Data Migration): Replace unhealthy 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 to recover HD from bad status, HD Power-control to recover HD from hung 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), Macintosh OS X, Solaris	
Management Tools	Operating System independent; Localized in multiple languages; SSL Security support; WebPAM PROe via out-of-band Ethernet; Command Line Interface via RS232 Serial Port or Ethernet (Telnet); Command Line Utility via RS232 Serial Port or Ethernet (Telnet); Standard Management Protocols: SNMP; Auto, Express and Advanced configuration support for novice and skilled users	
Management Interfaces/Protocols	Ethernet, RS232 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 260W, 100-240 Vac auto-ranging, 50-60 Hz, dual hot swap and redundant with PFC, N+1 design	Dual 360W, 100-240 Vac auto-ranging, 50-60 Hz, dual hot swap and redundant with PFC, N+1 design
Temperature/ Humidity	5° ~ 40° C (-40° ~ 60° C non operational); Maximum relative humidity = 95%	
Dimensions (H x W x D)	8.9 x 44.6 x 56.1 cm (3.5 x 17.6 x 22.1 in)	
Weight	20.5 kg (45.2 lbs) without drives, 24.5 kg (54 lbs) with 8 drives*	21 kg (46.26 lbs) without drives, 27.0 kg (59.47 lbs) with 12 drives*
Safety	CE, FCC Class B, VCCI, BSMI, CB, MIC, C-Tick, UL, TUV	
Warranty and Support	3 years complete system limited warranty; 24x7 worldwide telephone and email support	

* Assume each HDD is 0.5kg
Check www.promise.com for the latest operating system, HBA, and hard disk drive compatibility
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Promise USA
Milpitas, CA
Tel: 1-408-228-1400
E-mail: sales@promise.com

Promise China
Beijing, China
Tel: 86-10-8857-8085 or 8095
E-mail: sales-china@promise.com

Promise Japan
Tokyo, Japan
Tel: 81-03-5823-1021
E-mail: sales-jp@promise.com

Promise Taiwan
Hsin-Chu, Taiwan
Tel: 886-3-578-2395
E-mail: sales@promise.com.tw

Promise EMEA
Son, The Netherlands
Tel: 31-40-235-2600
E-mail: sales@promise-emea.com

Promise Germany
Dortmund, Germany
Tel: 49-02-31-56-76-48-0
E-mail: sales-de@promise-emea.com

Promise Italy
Rome, Italy
Tel: 0039-06-3671-2626
E-mail: sales-it@promise-emea.com

Promise UK
Workingham United Kingdom
Tel: 44-0-870-112-59-77
E-mail: sales@promise-emea.com