It's All About Your Data

VTrak™ M-Class iSCSI

**Dual 1Gb iSCSI-to-SATA 3Gb/s RAID 6 Storage System
IP-SAN Simplicity, Proven RAID Architecture**

▲ **VTM610i**

▲ **VTM310i**

▲ **VTM210i**

IP-SAN flexibility and value

Promise VTrak M-Class iSCSI products are a new generation of our technology that provides wide interoperability with rich iSCSI features including immediate data, CHAP, VLAN, Link Aggregation, Jumbo Frame, iSNS for network device discovery and near wire speed performance. These functions give network administrators the flexibility to solve tough storage problems with minimum disruption to clients. The VTrak M610i/M310i/M210i builds on Promise's success of rock-solid iSCSI technology at an affordable price.

High storage density

VTrak M-Class Products support up to 16/12/8 off-the-shelf 3.5" SATA 3Gb/s or 1.5Gb/s drives per system in a standard 3U/2U 19" rack space. By taking advantage of unsurpassed capacity of SATA drives, the VTrak system delivers the highest capacity levels available. Deliver massive storage to capacity-hungry applications such as disk-to-disk backup, media serving, video surveillance and compliance storage.

RAID 6 reliability

RAID 6 (double-parity) 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 errors. RAID 6 has two sets of parity from which the array can be rebuilt; it also remains available through up to two drive failures. This improves overall data protection, without adversely affecting performance and dramatically reduces the risk of catastrophic data loss during RAID rebuilds.

Easy to install and manage

The entire VTrak line features embedded management software, WebPAM PROe, which eliminates the need to install additional software on the network. All VTrak 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.

Highlights

:: 16/12/8 hot-swappable SATA drive bays in a robust 3U/2U chassis

:: RAID 0, 1, 1E, 5, 6, 10,and 50 support.

:: 256MB ECC shared cache (up to 1GB), with 72-hour battery backup included.

:: iSCSI CHAP, ERL 0, immediate data, iSNS client, VLAN, Link Aggregation (Trunking) and Jumbo Frames with up to 64 concurrent sessions.

:: Hardware based TCP/IP and iSCSI Offload engine

:: Supports iSCSI Boot from SAN

:: Comprehensive embedded web-based management via Ethernet – WebPAM PROe

:: 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.

Specifications	VTrak M610i	VTrak M310i	VTrak M210i
System and Controller Features			
Drive Support	16 Drives (3.5" x 1" only)	12 Drives (3.5" x 1" only)	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		
External I/O Ports	Dual full-duplex 1Gb iSCSI ports over copper cabling		
Data Cache	Shared 256MB predictive data cache (max. to 1GB/Optional); Automatic write cache destaging; 72-hour battery backup included (2 cell battery for 256/512MB, 4 cell battery for 1GB)		
iSCSI Features	Full hardware-based TCP/IP offload (TOE)		
	Full hardware-based iSCSI Offload w/ header/data digest		
	Immediate Data, Error Recovery Level 0		
	Up to 64 concurrent sessions		
	CHAP (one-way or mutual) for authentication		
	iSNS and DHCP for device discovery		
	iSCSI VLAN 802.1 q, Link Aggregation(Trunking 802.3 ad) , Jumbo Frame 9k		
	Microsoft iSCSI MPIO support		
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 & Masking	Dynamically change LUN ID & initiator access control		
Disk Data Formats	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)		
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 error 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 Vista, Windows 2003, Windows XP, Windows 2000, Linux (Red Hat, SuSE), Netware		
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), visible (LEDs) alarms, and LCD (optional)		
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, dual hot swap and redundant with PFC, N+1 design	Dual 300W, 100-240 Vac auto-ranging, 50-60 Hz, dual hot swap and redundant with PFC, N+1 design	Dual 300W, 100-240 Vac auto-ranging, 50-60 Hz, dual hot swap and redundant with PFC, N+1 design
Power Consumption	116.29Watts (under load w/o HDD), 426.74Watts (under load with SATA HDD)	114.88Watts (under load w/o HDD), 347.72Watts (under load with SATA HDD)	
Temperature/ Humidity	5° ~ 40°C (-40° ~ 60°C storage temperature); Maximum relative humidity = 95%		
Dimensions (H x W x D)	13.1 x 44.6 x 56.1 cm (5.2 x 17.6 x 22.1 in)	8.9 x 44.6 x 56.1 cm (3.5 x 17.6 x 22.1 in)	8.9 x 44.6 x 56.1 cm (3.5 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*	21 kg (46.26 lbs) without drives, 27.0 kg (59.47 lbs) with 12 drives*	20.5 kg (45.2 lbs) without drives, 24.5 kg (54 lbs) with 8 drives*
Safety/EMI	CE, FCC Class B, VCCI, BSMI, CB, MIC, C-Tick, UL, TUV		
Warranty and Support	3 years complete system; 24x7 worldwide email and phone support with highly experienced technical support technicians (English only)		

* Assume each hard drive = 0.5 kg
Check www.promise.com for the latest operating system, HBA, and hard disk drive compatibility.
Specifications subject to change without notice.

The Leader in SAS/SATA RAID

Promise Technology, with over 19 years of storage products development, provides a comprehensive SAS/SATA RAID storage product line including rack mount RAID enclosures for SAN and DAS applications, PCIe RAID controllers for servers and workstations, NAS systems for SOHO and SATA RAID ASICs for embedded applications.