

## F5402E 4Gb FC-SAS/SATA RAID



**The F5402E combines Fibre Channel connectivity with Serial Attached SCSI (SAS) and Serial ATA (SATA) drive technology for cost effective, high performance storage solutions.**

Today's data-rich business environment presents a unique challenge for the storage manager. Prioritizing the demands of applications, performance requirements, capacity, management tools and cost can be an impossible task, and often results in an inefficient and expensive solution that is out of date before being fully implemented.

Xyratex's F5402E storage solution solves these complex and ever-changing storage challenges. Combining Fibre Channel (FC) connectivity with Serial Attached SCSI (SAS) and Serial ATA (SATA) drive technology, the F5402E provides maximum flexibility to our customer, resulting in a cost-effective, ultra-high performance solution with the scalability and functionality necessary to meet the demands of today's most rigorous applications.

Businesses can choose the appropriate storage to support their specific applications, resulting in an economical solution with both functionality and reliability. SAS drives in the F5402E storage system deliver the exceptional performance required in primary storage. By leveraging the SAS full duplex, point-to-point architecture with dedicated connections, the F5402E delivers maximum data throughput, thereby providing faster, more responsive applications. In addition, the F5402E sustains maximum throughput (MB/s) for high bandwidth applications ranging from video editing to database-intensive online transaction processing.

SATA-II drives in the F5402E provide the combination of high-capacity and cost-effective data storage normally found in near-line storage. Using SATA disks with their low cost-per-gigabyte design, the F5402E provides a cost-effective online repository for non-business-critical data, and offers the many advantages of tiered storage to the Small and Medium Business (SMB) market.

All models in the Xyratex 5000 RAID series come with Snapshot. Four snapshots are available to start implementing point-in-time recovery capabilities. An optional Snapshot upgrade allows for up to 24 snapshots per Logical Drive and up to 8 Logical Drives in snapshot mode.

Xyratex's StorView software configures and administers the F5402E storage system, and distinguishes it from other entry-level systems on the market today. Automated control of individual controller's cache, arrays and devices via a web-based interface simplifies storage administration, while StorView's full-function Command Line Interface (CLI) allows integration of array management into existing operational procedures. Xyratex's entire 5000 Series of RAID systems comes standard with StorView management software, allowing for intuitive administration and performance monitoring. An optional upgrade to StorView Global Manager enables for configuration, monitoring and management of 5000 Series RAID controllers from any location, anywhere on the network.

### Features

- Single (2) or Dual (4) 4Gb/s high speed Fibre Channel host connections per system
- Mix up to 60 high performance SAS and cost effective SATA-II drives
- Snapshot support for up to 192 snaps
- StorView™ controller based management software
- Full RAID 6 and Snapshot support
- Dual active high availability and low cost single controller configurations
- Host based dynamic multi-pathing for high availability
- Exceptional expandability with 30TB of total capacity
- Online capacity growth through dynamic array and LUN expansion
- Redundant modular design with hot-swappable components
- Fully customizable fascia and management

## Technical Specification

### General Information

<b>Product Code</b>	RS-1220-F4-5402
<b>External Interface</b>	4Gb FC, point-to-point, loop and fabric (switched) topologies
<b>Supported Operating Platforms</b>	Windows 2003 (32 bit); RedHat Linux AS3/AS4 (32 bit); SuSE Linux 8/9 (32 bit)
<b>Supported Hosts</b>	256, 512 LUNs, LUN Masking, >2TB LUNs
<b>Total Capacity per Unit</b>	6TB
<b>Expansion Chassis</b>	RS-1220-E3-XPn (4 maximum), SAS connected (SFF-8470), single & dual IO Module configurations
<b>Total Expansion Capacity</b>	30TB, 512MB and 1GB Cache per controller (selectable by volume – read, adaptive read-ahead, write through, write-back), battery backup

### Disk Drives

<b>Disk Drives Supported</b>	Seagate SAS (15K/73GB/146GB/300GB), Seagate SATA (7.2K/250GB/500GB/750GB)
<b>Interface Types</b>	SAS (3Gb/s), SATA-I, SATA-II (3Gb/s) dedicated bandwidth to each drive
<b>Max Drives per Enclosure</b>	12, 512 Logical Drives/system, automatic bad sector assignment

### RAID Controllers

<b>No. of RAID Controllers</b>	1 (single) or 2 (dual – HA)
<b>RAID Levels Supported</b>	Up to 60 disk arrays with independent RAID level 0, 1, 5, 6, 10, and 50 support, selectable strip sizes (64K, 128K, and 256K)
<b>RAID Protection Features</b>	Background initialization, background parity checking, and automatic drive rebuild with redundant RAID arrays

### System Management

<b>Software</b>	StorView, StorView Global, StorView Path Manager, Snapshot
<b>Interfaces supported</b>	Ethernet (out-of-band), FC host based (in-band)

### System Availability

<b>Hot Swappable Components</b>	Disk Drives, RAID Controllers, Power Supplies and Cooling Module
<b>Additional Reliability Features</b>	StorView Path Manager – Windows host based dynamic multi-path failover Snapshot - Up to 24 snapshots per Logical Drive, Up to 8 Logical Drives

### Dimensions

<b>Height</b>	87.9mm (3.46") 2 EIA Units
<b>Width</b>	443.7mm (17.49") 1EC Rack Compliant
<b>Depth</b>	550mm (21.65")
<b>Weight</b>	32.21Kg (71 lbs.) dual controller configuration with drives

### Electrical: AC Input

<b>Voltage</b>	100-240 VAC @ 50/60 Hz. Single Phase
<b>Input Current</b>	6.0A (115 VAC), 3.0A (230 VAC)
<b>Input Power</b>	300W Typical

### Electrical: DC Input

<b>Voltage</b>	-40 to -60 VDC
<b>Input Current</b>	
<b>Input Power</b>	

### Environmental: Operating

<b>Temperature</b>	5° to 40°C (41° to 104° F)
<b>Humidity</b>	8% to 80% (non-condensing)
<b>Altitude</b>	2,133m (7,000 ft)
<b>Shock</b>	5g 10ms ½ sine
<b>Vibration</b>	Random .21 grms 5-500Hz
<b>Acoustics</b>	<58 dB LpA @20° C

### Environmental: Non-Operating

<b>Temperature</b>	1° to 50°C (33.8° to 122° F)
<b>Humidity</b>	8% to 80% (non-condensing)
<b>Altitude</b>	12,192m (40,000 ft)
<b>Shock</b>	30g 10ms ½ sine
<b>Vibration</b>	Random 1.04 grms 2-200Hz

### Environmental: Storage

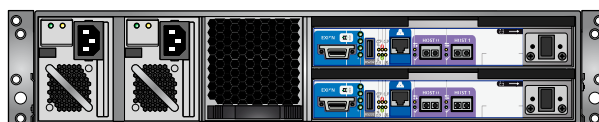
<b>Temperature</b>	1° to 60°C (33.8° to 140° F)
<b>Humidity</b>	8% to 80% (non-condensing)
<b>Altitude</b>	12,192m (40,000 ft)
<b>Shock</b>	30g 10ms ½ sine
<b>Vibration</b>	Random 1.04 grms 2-200Hz

### Approvals

CCC, BSMI, CE, UL, cUL, RoHS (R5), Microsoft WHQL, Microsoft RAID System Submission – w/MPIO (Single Host)

### Warranty Information

**Enclosures with drives** Up to 3 years  
Please contact Xyratex for detailed warranty information.



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