

# EonStor<sup>®</sup> Fibre-to-SAS/SATA Series RAID Subsystem

High Performance & Flexible 4G SAN Connectivity  
SCSI Reliability with the Ease of SAS Expansion



## HIGHLIGHTS

- Dual-active RAID controller configurations
- Fault-tolerant enclosure design
- Infotrend's fifth-generation ASIC400 RAID engine
- Two (2) 4G FC host channels per controller
- Four (4) host ports per controller with onboard hub
- SAS or SATA II disk drives in the sixteen (16) drive bays
- Hardware RAID5 and RAID6
- SAS 4x wide links (SFP-8470) to expansion enclosures
- S.M.A.R.T. and NCQ support
- Expansion enclosures:
  - S16S-J1000-R and S16S-J1000-S
- Supports expansion (1 RAID + 3 JBODs)
- Intelligent load-balancing internally and externally between host links by the EonPath™ multi-path software
- Embedded, browser-based RAIDWatch management tool
- Windows Logo Certificated

## OVERVIEW

Fibre-to-SAS/SATA RAID Subsystem provides 4Gbps Fibre Channel interface for high-speed data transfer. It is fully compatible with cost-effective SATA II hard drives to offer tremendous storage capacity. Enterprise-class SAS drives are also supported for high performance and availability. The storage capacity can be further expanded by connecting the SAS 4x wide port to expansion enclosures.

The subsystem is equipped with redundant and hot-swappable components to ensure continuous and reliable operation. Advanced monitoring mechanisms are interfaced through firmware utility, RAIDWatch management software, and status LEDs etc. to ensure data security and subsystem protection.

## APPLICATIONS

Infotrend products are widely applied in disk-to-disk backup, server-attached and network data storage and in major industries such as data-mining, medical imaging, security/CCTV, and digital media including video-on-demand, stream editing and more.

### High Availability

- \* Hot-swappable enclosure modules
- \* Component redundancy
- \* Intelligent reactive & preventive mechanisms
  - Automated cache flush
  - Automated Media Scan
  - Auto rebuild on hot spares
  - Automated caching mode switch

### Advanced RAID Features

- \* RAID levels 0, 1 (0+1), 3, 5, 6, 10, 30, 50, 60
- \* RAID Parity regeneration
- \* 64-bit LBA support
- \* 3 spare disk types: dedicated, global, enclosure-specific
- \* Instant array availability
- \* Stripe size and caching mode configurable per logical drive
- \* Online array expansion by adding drives or copying & replacing drives
- \* Online disk cloning

### Management

- \* Browser-based RAIDWatch manager
- \* Java-based RAIDWatch manager
- \* LCD keypad panel
- \* Terminal console via RS-232 port
- \* Telnet

### Monitoring

- \* S.M.A.R.T. status pooling
- \* Voltage, module presence, temperature monitoring
- \* Automated FRU status pooling

### Operation Robustness

- \* Intelligent read algorithms
- \* Write cache threshold purge
- \* Bad sector reassignment
- \* Configurable task priority
- \* Multiple, co-existing RAID arrays w/stripe sizes ranging from 4K to 1MB
- \* Power-saving Drive Spin-down options
- \* RAID level migration
- \* RAID configuration on drives (drive roaming)

### JBOD Characteristics

- \* Single controller (S16S-J1000-S)
- \* Redundant controller (S16S-J1000-R)
- \* 2 SAS 4x wide ports per controller (SFP-8470)
- \* Separate SAS domains to dual-ported SAS drives
- \* Fault-tolerant hardware
- \* Diagnostic LED panel
- \* SAS-to-SATA MUX kit for access from dual-controller RAID



## AVAILABLE MODELS

Model	Controller	Host Port	Host Channel	Drive Bay	Expansion Port	JBOD Expansion
S16F-R1430	Redundant	8	4	16	2	3 (48 HDD)



## SPECIFICATIONS

### S16F-R1430 (RAID Subsystem)

#### CHARACTERISTICS

- . 800MHz PowerPC GL RISC CPU, 1MB L2
- . ASIC400 RAID engine
- . Default DDR cache memory (per controller) 512MB
- . 4G FC host channels (per controller) 2
- . SAS 4x wide link expansion (per controller) 1
- . BBU (per controller, optional on S model) 1
- . COM ports (per controller) 2
- . 10/100 Ethernet port (per controller) 1
- . LCD keypad panel 1
- . PSUs 2
- . Cooling module 2
- . Diagnostic LEDs on all FRUs

#### DRIVE INTERFACES

- . SAS/ SATA II
- . Number of disk trays 16
- . Total number of hard drives with expansion 64
- . SAS domains to dual-ported SAS drives

#### HOST CONNECTION PORTS

- . SFP ports per controller 4
- . Data single channel bandwidth 4Gb
- . Tag command queuing 256
- . Multiple target IDs

#### RAID CONFIGURATIONS

- . RAID levels 0, 1(0+1), 3, 5, 6, 10, 30, 50, 60
- . Up to 32 logical drives (varies by memory size)
- . Up to 1024 LUNs (varies by memory size)
- . Up to 2GB cache per controller

#### HIGH AVAILABILITY

- . Redundant, hot-swappable FRUs
- . Subsystem self-diagnostics
- . Li-Ion battery backup unit
- . UPS status detection
- . Multiple local, global, and enclosure-specific hot-spares

#### MANAGEMENT SOFTWARE

- . Browser-based and Java-based RAIDWatch software
- . Terminal via RS-232C
- . Telnet over Ethernet
- . Event notification methods:
  - E-mail/ Fax/ LAN broadcast/ SNMP traps/ SMS/ MSN

#### APPROVALS

- . RoHS
- . Microsoft WHQL-Windows Server 2003
- . EMC
  - CE
  - EN 55022: 1998/A1: 2000/A2: 2003
  - EN 61000-3-2: 2000/A1: 2001
  - EN 61000-3-3: 1995/A1: 2001
  - EN 55024: 1998/A1: 2001/A2: 2003
- . FCC (FCC Part 15, subpart B)
- . BSMI (CNS 13438)

#### Safety

- . UL (60950-1: 2003)
- . BSMI
  - CNS 14336: 1993
  - IEC 60950-1, First Edition

#### OS SUPPORT

- . Microsoft Windows 2000 Server
- . Microsoft Windows 2003 Server
- . Sun Solaris ver. 9/10
- . RedHat Linux ver. 8/9, 64-bit, Enterprise ver.3
- . SuSE: Linux ver. 8/9, 64-bit
- . Fedora 64-bit
- . Mac OS X version 10.4

#### REQUIREMENTS

- . AC Input: 100VAC ~ 240VAC 530W with PFC
- . DC Output: 12V-32A; 5V-32A; 3.3V-30A
- . Relative Humidity: 5% to 95% non-condensing
- . Operating Temperature:
  - 0°C to 40°C (without BBU)
  - 0°C to 35°C (with BBU)

#### DIMENSIONS

- . 3U, 19-inch rackmount chassis
- . Without handles:
  - 445(W) x 130(H) x 488.2(D) mm
  - (17.5 x 5.1 x 19.2 inches)
- . With handles:
  - 482.6(W) x 131(H) x 504.3(D) mm
  - (19 x 5.1 x 19.9 inches)

### S16S-J1000-R/S (JBOD)

#### JBOD Characteristics

- . SAS 4x wide port per controller 2
- . PSUs 2
- . Cooling module 2

#### Drive Interface

- . SAS/ SATA II
- . Number of disk trays 16

#### Maximum Connection

- . To dual-controller RAID 3
- . To single-controller RAID 3

#### Requirements

- . AC Input:
  - 100VAC ~ 240VAC 530W with PFC
- . DC Output:
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- . Relative Humidity:
  - 5% to 95% non-condensing
- . Operating Temperature:
  - 0°C to 40°C

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