BiTMICRO® Networks, Inc.

Data Sheet

E-Disk®SAN S2F-J
2Gbit Fibre Channel JBOD
Solid State Storage System

Decrease data access times and increase data transfer rates with the most innovative and reliable all-electronic flash drive solid state disk Fibre Channel JBOD solutions for information retrieval and storage.

Designed to be the most flexible 2Gbit Fibre Channel solid state data storage system available on the market, the E-Disk®SAN S2F-J provides performance, scalability, and the ability to upgrade to RAID within the same 2U, 12-bay technology.

The S2F-J is the foundation of BiTMICRO's E-Disk®SAN 2U rackmount Fibre Channel product line. With dual power supplies redundant cooling fans, and embedded loop resiliency circuits on the disk I/O cards, the S2F-J has complete enclosure redundancy. Four optical transceivers leading to four independent connections provide the S2F-J with high-speed data throughput over 2Gbit Fibre Channel links. Each unit is backward compatible to 1Gbit for existing SAN installations and pre-installed host bus adapters, allowing you to move to 2Gbit Fibre Channel at your convenience. The E-Disk®SAN S2F-J is perfect for environments that have expanding data storage requirements and can be upgraded to RAID or utilized as an expansion drive shelf behind another E-Disk®SAN Fibre Channel RAID system.

Growing in modular 2U (3.5-inch) increments, the S2F-J provides trouble-free expansion to scale up to 12.4TB in a standard 63-inch data center cabinet, perfect for maintaining massive amounts of disk-to-disk storage. Simply add one or two RAID controller upgrade kits to the rear of the S2F-J and it is easily converted into a high-availability storage solution, conveniently maintaining its investment value without losing any additional data center cabinet space.

Keep your data on-line, grow your storage in modular increments, and have fault notification through BiTMICRO's StorView™ storage management software. Maximize your storage possibilities with the E-Disk®SAN S2F-J as BiTMICRO continues toward its goal to provide *Ultimate Storage Solutions™*.

Features & Benefits:

AVAILABILITY

- Field-upgrade path from JBOD to RAID for active/active 2Gbit RAID controller support
- Redundant, hot-swap cooling fans, disk drives, and load sharing power supplies to ensure data protection
- Redundant disk I/O cards with built-in port bypass circuitry
- Redundant internal Fibre Channel loops for multiple paths to dual ported drives
- Cableless design for increased reliability and hot-swappability
- Global monitoring through SCSI Enclosure Services (SES) and optional StorView™ storage management software

PERFORMANCE

- 2Gbit (200 MB/s) Fibre Channel host and drive interface
- Up to 800 MB/s in a quad loop mode
- Supports the Industry's fastest and largest solid state disks

SCALABILITY

- Expand up to 12.4TB in a single 63-inch data center cabinet
- Support any combination of twelve 1" hard disk or solid state drives in a 2U rackmount system
- Multi-host connectivity with four Fibre Channel ports
- Grow on-line capacity or throughput with E-Disk® Fibre Channel solid state disks (capacities range from 1024MB to 57.3 GB)
- Single, dual, or quad loop configurations
- Direct-connect or SAN attachment as JBOD system in RAID capacity expansion module

BiTMICRO®
ULTIMATE STORAGE SOLUTIONS™

SPECIFICATIONS FOR E-DISK®SAN 2U FIBRE-TO-FIBRE JBOD SERIES
Flash Disk and Solid State Disk Storage Solutions

TECHNICAL SYSTEM SPECIFICATIONS:

Host Interface	Four 2Gbit (200 MB/s) Fibre Channel, SFP (Small Form Factor Pluggable) connectors
System Architecture	1 or 2Gbit Fibre Channel
Fibre Loop Configuration	Quad, dual, or single loop connectivity
Hot-Swap Components	E-Disk® SSDs, power supplies, cooling fans and drive I/O cards with Loop Resiliency Circuits (LRCs)
Redundant Components	E-Disk® SSDs, power supplies, cooling fans and drive I/O cards with Loop Resiliency Circuits (LRCs)
Error Notification (SES/SEI)	Audible alarm, status LEDs, in-band SES, and network messaging
SES Compliance	Yes

Fibre Channel E-Disk® SSD Supported Capacities	1024MB - 57344MB
Max. No. of Drives	12
Maximum Cap/Enclosure	688GB (12 x 57.3GB)

RAID SOLUTION UPGRADE PART NUMBERS:

E-Disk®SAN MODEL NUMBER(S)	REQUIRED PART NUMBER(S)	DESCRIPTION
S2F-Q	OH NC2 CTRL-45F-U C	2Gbit, single controller, Fabric or FC-AL host connections, 1GB cache, two processors
S2F-R	OH NC2 CTRL-45F-U C OH NC2 CTRL-45F C	2Gbit, dual controller, Fabric or FC-AL host connections, 2GB cache, two processors per controller

STORAGE MANAGEMENT:

- E-Disk®SAN StorView Local Manager for local in-band GUI configuration only
- E-Disk®SAN StorView Global Manager (optional) for local and remote in-band GUI management and alert notification
- VT-100 Command Line Interface for local out of band CLI configuration only

PHYSICAL SPECIFICATIONS:

		2U	Deskside Tower
Form Factor		2U	Deskside Tower
Storage Capacity		1024MB – 688GB	1024MB – 688GB
Weight (excluding drives)		38.55 lbs (17.5 kg)	48.05 lbs (21.8 kg)
Weight (including 12 drives)		61 lbs (27.7 kg)	70.5 lbs (32 kg)
Dimensions	Width	17.65 in. (44.8 cm)	8.00 in. (20.32 cm)
	Length	20.25 in. (51.4 cm)	21.50 in. (51.4 cm)
	Height	3.47 in. (8.8 cm)	20.00 in. (50.8 cm)

POWER REQUIREMENTS:

Input Voltage	85 – 240 VAC (auto-sensing, load balancing)
Input Frequency	50 – 60Hz
Maximum Input Current	3 Amperes at 110v, 1.5 Amperes at 220v
Power Supply Rating	Redundant 350 watt (425 watt peak) hot-swappable power supply units with Power Factor Correction (PFC)
Maximum BTUs per Hour	1,194 BTUs per system
Power Source	2 US standard independent power cords

PERFORMANCE SPECIFICATIONS:

Sustained Random Reads	> 100,000 IOPS
Sustained Reads	> 570 MB/s
Sustained Writes	> 320 MB/s

SPECIFICATIONS FOR E-DISK®SAN 2U FIBRE-TO-FIBRE JBOD SERIES
Flash Disk and Solid State Disk Storage Solutions

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature		+5 to +35 °C
Non-Operating Temperature		-20 to +70 °C
Relative Humidity	Operating	5% - 98% (non-condensing)
	Non-Operating	5% - 98% (non-condensing)
Shock	Operating	1.0 G, 2 - 50 ms
	Non-Operating	20.0 G, 2 - 20ms
Vibration	Operating	5 - 500 Hz, 0.25 G (peak-to-peak)
	Non-Operating	5 - 500 Hz, 1.0 G (peak-to-peak)
Altitude		-200 to 10,000 feet
Electromagnetic Emissions Requirements (EMI)		FCC Part 15 Class A, CISPR 22, EN55022-A, BSMI, VCCI, C-TICK, NOM

USER INTERFACE:

Host Interface	Fibre Channel Arbitrated Loop (FC-AL)
Drive Interface	40-pin SCA 1 Gbps/2 Gbps FC-AL
I/O Interface (SES)	RS-232
Agency Certification	CAN/CSA C22.22 #60950-00, UL 60950 3rd Edition, CB IEC 60950 Edition 3, NOM
CE Compliance (EMC)	89/336/EEC EMC Directive, EN 55024

PRODUCT PART NUMBER:

Part Number	OB + Model Number + Capacity + Options
	OB + PFIS + CCCCCC + T
Example	OB S2FJ 000688 C
Model Number	PFI-S
P: Product Type	S: E-Disk®SAN
F: Form Factor	2: 2U rackmount
I: Interface	F: Fibre-to-Fibre
S: Sub-product Type	J: JBOD
Capacity	XXXXXX
X: Capacity (GB)	1024 MB – 688128 MB
Options	T
T: Temperature (Operating)	C: Commercial (+5 to +35 °C)

BiTMICRO's engineering development objectives and product specifications indicated are subject to change at anytime without prior notice.

All product specification and performance information represents engineering objectives and are provided for design comparison and reference. The claims are accurate as of the date of the first production of this data sheet.

All product specifications are provided without any warranty, express, implied or otherwise, regarding its accuracy or performance. BiTMICRO or any of its authorized representatives can address any inquiries regarding warranty terms, methodology or the parameters used in providing the specification.

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