



Major Markets and Uses

Infortrend products are used in server-attached and networked data storage in major industries such as medical imaging, multi-media on demand (MOD), and digital media including video-on-demand, stream editing and more.



Spare Parts

Description	Part Number
Fibre-to-Fibre RAID controller module, 6 x FC-2Gb channels, for enhanced 3U enclosure	IFT-83F20RD6
Fibre Channel (FC-2G) I/O board, 2 SFP ports w/ on-board host hub	IFT-9273C-HIO-2
Fibre Channel (FC-2G) I/O board, 4 SFP ports w/ on-board hub, for DRV exp.	IFT-9273F-DIO-4
Drive tray, Type-III bezel and Type-II LED lightpipe	IFT-9273CDTray
Battery cell pack, Li-ION, enhanced EonStor 16-bay subsystems	IFT-9273CBT-C
Power supply module, enhanced EonStor 16-bay subsystems, 460W capacity	IFT-9273CPSU
Cooling fan module for enhanced EonStor 16-bay subsystems	IFT-9273CFanMod
Left-side forearm handle for 3U RAID subsystems, LCD panel included	IFT-9273HandLLCD
Right-side forearm handle for 3U subsystems, applicable to the left or right-side of JBOD subsystems	IFT-9270CHandR

Accessories

Description	Part Number
Null modem, DB9 female to DB9 male, wires swapped	IFT-9011
RS-232C serial cable, audio-jack to DB9	IFT-9270ASCab
Serial port Y-cable for dual-controller subsystem, 2 audio jacks to 1 DB-9; maintenance-free during controller failover/failback	IFT-9270AYCab
UPS cable, audio-jack to DB-9	IFT-9270CUPSCab
Agilent Fibre Channel 2.125 / 1.0625 Gb Small Form Pluggable Optical Transceiver, LC, wave-length 850nm, multi-mode	IFT-9270CSFP2GA01
Optical FC cable, LC-LC, MM-62.5/125, Duplex, LSZH, O.D.=1.8mmx2, 1 Meter	IFT-9270CFCCab01
Optical FC cable, LC-LC, MM-62.5/125, Duplex, LSZH, O.D.=1.8mmx2, 5 Meters	IFT-9270CFCCab02
Optical FC cable, LC-LC, MM-62.5/125, Duplex, LSZH, O.D.=1.8mmx2, 10 Meters	IFT-9270CFCCab03
Slide rail assembly for enhanced EonStor 3U enclosures, 23" to 32" rack depth	IFT-9273Cslider32
Slide rail assembly for enhanced EonStor 3U enclosures, 23" to 36" rack depth	IFT-9273Cslider36



Built around Infortrend's next-generation, custom ASIC266 with XOR engine, the EonStor F16F-R/S2021 subsystem is created for today's data intensive application demands.

This SAN-ready subsystem is designed to meet the demands of 24/7 operation and is the perfect choice for high-bandwidth applications such as high performance computing, financial transactions, medical imaging, and video streaming.



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A new member of Infortrend's highly acclaimed line of 2Gbps Fibre Channel (FC to FC) products, the EonStor F16F-R/S2021 RAID subsystem provides the high density of 16 drives in a 3U chassis. Using sophisticated RAID technologies, including a high-performance ASIC266 with XOR RAID engine and comprehensive firmware functionalities, the F16F-R/S2021 delivers benefits derived from Infortrend's years of experience in storage design.

Infortrend's RAID functionality is unmatched in the industry in terms of its wide variety of array configuration, maintenance, and monitoring capabilities. The Single or redundant controller, F16F-R/S2021 subsystem provides IT professionals with versatile options to meet their needs.

Available models

MODELS	CONTROLLERS	CHANNELS
EonStor F16F-R2021	Redundant controllers	FC-2G x12
EonStor F16F-S2021	Single controller	FC-2G x 6

Highlights

- The best F16F-R2021's end-to-end I/O performance in RAID5 configuration:
 - Sequential Reads: 725 MB/sec
 - Sequential Writes: 487 MB/sec
- Full-featured single- or dual-controller architecture
- Six (6) FC-2G channels routed to twelve (12) Fibre ports; four (4) are host/drive adjustable
- Highest redundancy level with separate host and drive I/O boards
- Support up to 2GB DDR RAM DIMM module
- Support for up to 248 drives by cascading up to fourteen (14) subsystems
- Modular, passive backplane, high redundancy enclosure design
- Dual-speed cooling fans to reduce system noise and power consumption
- Hot-swappable battery backup units (BBUs)
- Effortless management through the LCD keypad, RS-232C terminal, or Java-based RAIDWatch[®] manager over the Internet

Reliability

The ES F16F-R/S2021 is a full-featured data protection subsystem supporting RAID levels 0, 1(0+1), 3, 5, 10, 30, 50, NRAID, and JBOD. The Flexible design allows the F16F-R/S2021 to be configured for a wide range of applications. The subsystem is equipped with one (1) BBU in F16F-S2021 and two (2) BBUs in F16F-R2021 that provide power to cache memory during a power failure. The subsystem further guarantees data safety by supporting the installation of an uninterruptible power supply (UPS) which can extend the operating time for the entire subsystem if the power shortage ever happens.

Combined with Infortrend's seamless firmware features such as DrvSmart and SysSmart, the ES F16F-R/S2021 delivers reliable, consolidated storage for today's enterprise environments.

Serviceability

The completely cableless, backplane-based design eliminates problems associated with cable connections to offer a higher level of serviceability and hot-swappability.

Major hardware configurations, such as enclosure ID setting, enable/disable internal hub, and FC channel speed, can be adjusted using easily accessible DIP switches on the enclosure configuration card located on the subsystem rear panel.

The modular nature of the subsystem and the easy accessibility to all field replaceable units (FRUs) through front and rear panels ensure easy subsystem maintenance.

Manageability

A variety of management interfaces are available: The array can be accessed through the LCD keypad panel, RS-232C terminal, telnet, or remotely through the Java-based RAIDWatch manager. The RAIDWatch manager provides "Install Once, Run Anywhere" convenience with a graphical user interface. Users are constantly aware and automatically notified of array status using any or all of the following notification methods: email, fax, LAN broadcast, SNMP traps, MSN Messenger, ICQ, SMS messages, and the configuration utility screen.

Infortrend Smart Technologies

Derived from more than ten years experience in RAID storage design, Infortrend's innovative firmware delivers Smart technologies that provide enhanced storage solutions for every customer environment, from small organizations to large enterprises. These technologies enhance I/O processing, drive handling, and system management.

IOSmart

IOSmart allows for the flexible configuration of logical drives, logical volumes and logical partitions and ensures instant RAID availability via background logical drive initialization. Fibre loops' load balancing is provided within the subsystem. The firmware's embedded intelligent algorithms, such as Adaptive Write Policy and Guaranteed Latency I/O, improve sequential write performance and ensure the fast and continuous flow of data.

DrvSmart

The DrvSmart utility provides an easy way to store data while keeping it safe. One of the main DrvSmart functions, Media Scan, retrieves data from degraded or damaged hard drives and handles low quality drives in both the degraded mode and during the rebuild process. Other DrvSmart features include disk cloning, drive roaming, SMART, transparent resetting of non-responsive hard drives, and RAID parity update tracking and recovery.

SysSmart

SysSmart combines enclosure monitoring and firmware management capabilities in order to minimize the chance of down time caused by hardware failures. The Auto data protection mechanisms are developed to ensure data safety. Other SysSmart functions include the event-triggered and the various monitoring utilities and monitoring approaches combined with the powerful RAIDWatch manager. Component status, voltage and temperature readings, and system events are instantly revealed through the manager's graphical interface.

Specifications

Subsystem Characteristics

- 600MHz RISC CPU, 512KB L2 cache
- ASIC266 RAID engine
- Single/Redundant RAID controller(s) Yes
- DDR cache memory per controller 512MB
- BBU per controller 1
- Host connection modules 2
- Drive loop expansion modules 2
- LCD keypad panel 1
- COM ports per controller 2
- 10/100 Ethernet port per controller 1
- Diagnostic LEDs on all FRUs Yes

Drive Interface

- Number of disk trays 16
- 2Gbps single dual loops Yes

Host Connection ports

- SFP ports to optical fiber 4
- Data single channel bandwidth 200MBps
- Auto-negotiate (1Gbps, 2Gbps) Yes
- F_port, FL_port Yes

Raid Configurations

- RAID levels 0, 1(0+1), 3, 5, 10, 30, 50, JBOD
- Max. 128 logical drives
- Max. 1024 LUNs
- Multiple array configurations
- Automatic background rebuild
- Infortrend Smart Technologies

High Availability

- Redundant, hot-swappable FRUs
- Subsystem self-diagnostics
- Independent host I/O modules
- Independent expansion I/O modules
- Battery backup units
- UPS status detection
- Hot-spare disk drives
- Cluster ready

Management Software

- RAIDWatch GUI software Yes
- Terminal via RS-232C Yes
- Telnet over Ethernet Yes
- LCD keypad panel Yes
- Event notification methods
 - Email Yes
 - Fax Yes
 - LAN broadcast Yes
 - SNMP traps Yes
 - Cell phone message Yes
 - Instant messengers MSN/ICQ

OS SUPPORT

- Microsoft Windows NT
- Microsoft Windows 2000 Server
- Microsoft Windows 2003 Server
- Sun Solaris ver. 8/9
- RedHat_Linux ver. 8/9, Enterprise ver.3
- SUSE LINUX ver. 8/9

Requirements

- AC Input: 100VAC at 10A; 240VAC at 5A with PFC (auto-switching)
- DC Output: 12V-32A; 5V-32A; 3.3V-30A
- Relative Humidity: 5 to 95% non-condensing
- Operating Temperature: 0° to 40°C

Dimensions

- 3U, 19-inch rackmount chassis
- Without handles: 445(W) x 130(H) 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 5.2 x 19.9 inches)