2U Profile
SCSI to SATA-II
12- or 8-drive RAID Subsystem

EonStor® A12U/A08U-G2421

Designed using Infortrend's next-generation custom ASIC266 as a dedicated XOR engine, the EonStor A12U and A08U provide ample margins for flexible load-balancing and multi-pathing algorithms. Boasting a 2GB internal system bandwidth, the dedicated ASIC architecture frees the PowerPC CPU of XOR computing load and features abundant throughput sufficient for the subsystem's various data protection procedures with minimum disturbance to host access.

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Reliable Storage Networking Solution Provider

Infortrend's RAID functionality is unmatched in the industry in terms of its wide variety of array configuration, maintenance, and monitoring capabilities. The SCSI-to-SATA series provides IT professionals with versatile options to meet their needs.

The subsystem provides two SCSI-320 host channels with 12 or 8 drive bays for SATA-II disk drives in a smartly managed enclosure. The subsystem combines massive storage capacity with SATA-II benefits, such as high performance and dedicated bandwidth, in a safe environment where the highest level of data availability is assured. High throughput is available by segregating I/O traffic across the separate PCI-X buses, while IOPS performance is delivered through the internal buffer on the XOR engine and CPU with the help of intelligent firmware algorithms.

Highlights

- Two (2) SCSI-320 host channels; transfer rate up to 320MB/s per channel
- Single RAID controller providing complete RAID functionality
- Designed to use 3Gbps SATA-II disk drives; backward compatible with SATA-I disk drives
- Modular, passive backplane, high redundancy enclosure design
- High density 2U chassis providing up to 4.8TB of storage capacity
- Optional hot-swappable battery backup units (BBU)
- Dual-speed cooling fans to reduce system noise
- Ease of management through an LCD keypad panel, RS-232C terminal, or an Ethernet link (TCP/IP) to a PC running Java-based RAIDWatch® manager
- Real-time event notification by a variety of methods
- Hardware provider interface ready for third-party management software that supports Windows Server 2003 Virtual Disk Service (VDS)
- High density 2U chassis providing up to 5TB of storage capacity with 500GB SATA drives
- RAID5 configuration end-to-end I/O performance
  Sequential Read: 328 MB/sec
  Sequential Write: 229 MB/sec

High Performance

Featuring two (2) 64-bit 133MHz data buses, the subsystem's high data throughput is more than sufficient for small-to-medium-sized servers or workstations. Robust functionality and adaptive algorithms facilitate chip-level operation that is already fast and flexible. For example, a timeout can be configured for individual drive response time. If a specific disk drive fails to respond in time, the firmware accumulates data from the adjacent stripes of the array to maintain a fast return of data.

The adaptive designs assure adequate throughput for a wide range of applications running on Windows 2000/2003/XP-, Linux-, or Unix-based servers. Ideal applications include disk-to-disk backup, database, file, business network, storage consolidation and others.

Enclosure Management

In addition to RAID protection for the disk drives, the PSUs and cooling modules are both redundant and hot-swappable modules. Even the battery backup module can be replaced online.

The rotation speed of the enclosure's dual-speed fans is controlled by the firmware. In critical conditions, e.g., PSU or fan failure, the fan rotation speed is automatically raised to a higher level. Control over caching behaviors is a user-configurable option. In the event of component failures, such as UPS failure or low battery charge, the firmware stops caching write requests in cache memory.

Manageability

The EonStor A12U and A08U include a number of interface features to keep users constantly aware and automatically notified of array status. The subsystem comes standard with an Ethernet port for local or remote management using simple telnet protocol or the feature-rich RAIDWatch Java GUI. The RAIDWatch manager provides graphical presentations of array components, monitoring windows, and all configuration options. Additionally, the built-in LCD keypad panel displays event messages and provides onsite access to all firmware features.

SPECIFICATIONS

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Intelligent Drive Handling (IDH)

If two bad blocks occur simultaneously on two member drives of an array, the integrity of the stored data will be endangered. Media Scan is an innovative intelligent drive handling function that retrieves data from degraded or damaged hard drives and handles low quality drives in both the degraded mode and during the rebuild process. To further ensure data security, other intelligent drive management features include the transparent resetting of non-responsive hard drives, power-failure management, and bad-drive handling during LD expansion.

Task Scheduler

Media Scan is now armed with a unique function that helps repair media errors on drives. By combining Task Scheduler with Media Scan, the scanning operation can be scheduled to begin at a specified start time and repeated at configured intervals. This hands-free operation allows each such schedule to be defined to operate on individual hard drives, all drives of a certain class, all member drives of a specified logical drive, or all member drives in the subsystem.

Specifications

Subsystem Characteristics

• 400MHz CPU, 256KB L2 cache	Yes
• ASIC266 RAID engine	Yes
• DDR cache memory up to 1GB	Yes
• SCSI-320 host channels	2
• LCD keypad panel	1
• Serial COM ports	1
• 10/100BaseT Ethernet port	1
• Diagnostic LEDs on all FRUs	Yes

Drive Interface

• Number of disk trays	12/8
• SATA-I/II drive supported	Yes

Host Interface

• Dual-stacked SCSI connectors	Yes
• Data single channel bendwidth	320MB/s
• Tag command queuing	Yes
• Multiple target IDs	Yes

RAID Configurations

- RAID levels 0, 1(0+1), 3, 5, 10, 30, 50, JBOD
- Max. 16 logical drives
- Max. 128 LUNs
- Multiple array configurations
- Automatic background rebuild
- Intelligent drive handling

High Availability

• Redundant, hot-swappable FRUs	Yes
• Subsystem self-diagnostics	Yes
• Dual-stacked connectors	Yes
• Li-ION battery backup unit	Optional
• Hot-spare drives	Yes

Management

• 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	SMS
Instant messengers	MSN/ICQ

OS Support

- Microsoft Windows NT
- Microsoft Windows 2000 Server
- Microsoft Windows 2003 Server
- Sun Solaris ver. 8/9
- Red Hat Linux ver. 8/9, enterprise ver. 3
- SuSE Linux ver. 8/9

Requirements

- AC Input:
  100VAC at 6A; 240VAC at 3A with PFC (auto-switching)
- DC Output:
  12V-25A; 5V-25A; 3.3V-20A
- Relative Humidity:
  5% to 95% non-condensing
- Operating Temperature:
  0°C to 40°C

Dimensions

2U, 19-inch rackmount chassis

- Without handles:
  446(W) x 88(H) x 490(D) mm
  (17.6" x 3.5" x 19.3")
- With handles:
  482(W) x 88(H) x 505(D) mm
  (19" x 3.5" x 19.9")

Major Markets and Uses

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



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Spare Parts

Description	Part Number
SCSI-to-SATA RAID controller module, 2 x SCSI-320 host channels, 8 x SATA-II drive channels	IFT-82AU24GD08
SCSI-to-SATA RAID controller module, 2 x SCSI-320 host channels, 8 x SATA-II drive channels, 256MB DDR RAM	IFT-82AU24GD08-M2
SCSI-to-SATA RAID controller module, 2 x SCSI-320 host channels, 12 x SATA-II drive channels	IFT-82AU24GD12
SCSI-to-SATA RAID controller module, 2 x SCSI-320 host channels, 12 x SATA-II drive channels, 256MB DDR RAM	IFT-82AU24GD12-M2
Drive tray, Type-III bezel and Type-II LED lightpipe	IFT-9273CDTray
Power supply module, EonStor 2U DDR-interface subsystems, 350W capacity	IFT-9272CPSU-0011
Dual-speed cooling fan module for EonStor 2U subsystems	IFT-9272CFanModE
Battery cell pack, Li-ION battery cells	IFT-9273CBT-C
Right-side forearm handle for 2U subsystems	IFT-9272CHandR
Left-side forearm handle with LCD keypad panel for 2U subsystems	IFT-9272CHandLLCD

Accessories

Description	Part Number
SCSI external round cable, DB68-to-VHDCI	IFT-9270UHstCab
External SCSI round cable, VHDCI-to-VHDCI *One included in the shipping package	IFT-9270UJBODCab
RS-232C serial cable, audio-jack-to-DB9 *One included in the shipping package	IFT-9270ASCab
Null modem, DB9-female-to-DB9-male, wires swapped *One included in the shipping package	IFT-9011
Slide rails for 21" to 28.5" deep racks	IFT-9272CEslide28
Slide rails for 23" to 36" deep racks	IFT-9272CEslide36

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