

Tower or Desktop, 8-bay
Single-controller
SCSI-320 to SATA-II RAID Subsystem

EonStor[®] A08U-C2412 (MassCube-II)



The subsystem's 320MB per second (MBps) SCSI host channels are interfaced each through two (2) separate VHDCI ports in a dual-stack configuration. The VHDCI ports can either be connected to clustered servers or cascaded to a second Cube subsystem. A maximum of four (4) Cube subsystems can be cascaded together. In the desktop configuration four (4) subsystems can be stacked on top of each other.

The eight (8) hot-swappable drive bays accommodate 3Gbps SATA II disk drives and are routed directly through a drive-plane board to the RAID controller unit in the back without the use of cables.

The two (2) redundant, single-fan cooling modules and two (2) 250W power supply unit (PSU) modules ensure a stable operating environment and are all hot-replaceable.

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. Users can be constantly aware and are automatically notified of array status using any or all LAN broadcast, SNMP traps, MSN messaging, ICQ, SMS short messages, and the configuration utility screen.

Infortrend[®]

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The EonStor A08U-C2412 provides snap-on storage for small offices and workgroups requiring easy integration and future expandability, without the complexity of traditional storage devices. The highly versatile EonStor A08U (Cube) RAID subsystems are the latest in Infortrend's family of highly acclaimed SATA RAID products. The subsystem can be conveniently configured as either a desktop or a tower subsystem and its modular architecture is designed for ease of maintenance and protection for redundant disk array operation.

■ Highlights

- Dual-speed fan: runs at low speed for energy efficiency and quick operation under normal conditions; switches to high speed when critical conditions are detected
- Convertible as either a tower or desktop subsystem ; LCD installed in different orientations
- Two (2) 320MBps SCSI-320 host channels interfaced through two(2) dual-stacked VHDCI connectors
- Scalable to 16TB by cascading four (4) subsystems
- Supports 3.5" profile, 3Gbps SATA II, disk drives
- Co-existing, flexible, multi-level RAID configurations
- Up to 1GB SDRAM memory
- Auto detection, auto rebuild, hot spare, and hot-swap capability
- Media Scan: Manual or scheduled scans discover and repair media errors and data inconsistencies
- RAIDWatch: Browser-based GUI manager on Windows and Linux platforms

■ Reliability

The subsystem supports a complete list of RAID configuration levels in the forms of logical drives, logical volumes and logical partitions. Multiple RAID configurations can co-exist within one enclosure, each with distinct write policy, stripe size, and optimization modes. Hot rebuild and numerous fault correction mechanisms ensure the highest standard of RAID protection.

Safe distribution of data is embodied in many ingenious fault-preventive designs. From memory ECC, write-verify, parity regeneration, parity update tracking, Media Scan, to battery backup protection, your data is warranted against factors that might cause data inconsistencies. For example, the controller is capable of managing storage arrays with fault containment algorithms. If a critical component fails, e.g., a battery module, the subsystem automatically disables its write-back caching and assumes the conservative write-through mode. Algorithms like this guarantees that data is reliably managed and all risk factors are always carefully checked.

■ Availability

Unlike most snap-in storage, the A08U-C2412 is equipped with field-hardened technologies that ensure data protection that best fits your applications. The subsystem is managed by firmware developed with more than a decade of experience with RAID technologies and sophisticated redundant component designs. Incorporating various data protection algorithms and featuring RAID levels 0, 1(0+1), 3, 5, 10, 30, and 50, JBOD the subsystem actually offers capabilities only seen in enterprise-class solutions.

To ensure a high level of system availability, critical components such as disk drives, power supplies, and cooling fans, are all redundant and hot-swappable. Modules are integrated with the main signal path PCB via board-to-board or interface-specific connectors to eliminate points of failure. Assisted by GUI management software, the operating status of all components can be constantly monitored through a local or remote console.

■ Serviceability

All critical modules are housed in their own removable canister, including hard disk drives, power supplies, battery modules, and cooling fans. In the event of component failure, each can be replaced within seconds. Spring screws, securing latches, and keylocks all help provide easier access to the modules.

A variety of configuration and monitoring methods are available, either locally via the LCD keypad panel and the text-mode RS-232C terminal utility, or remotely through the Java-based GUI manager. All fault conditions, including module failure and abnormal voltage and temperature readings, are instantly reported. A system administrator can choose to be notified via LAN broadcast, SNMP traps, email, fax, SMS, ICQ, and MSN messenger when he is away from the installation site. Even the notification utility can be installed redundantly on two different machines to avoid the chance of blind time due to a single fault.

Reliable Storage Networking Solution Provider

■ Infortrend Smart Technologies

Derived from more than ten years of experience in RAID storage design, our firmware features extremely compact protocol and rich varieties of algorithms to deal with the stringent requirements of storage applications. The technologies are smart for I/O processing, drive handling, and system management.

IOSmart

The IOSmart technologies consist of specific functions and configuration options that control various I/O characteristics in order to meet the rapidly increasing requirements of today's applications. These functions include the adaptable stripe size, Adaptive write policy, optimizations modes, Guaranteed Latency I/O, and the automatically adjusted multi-threaded, predictive read-ahead, sorted, or group writes.

DrvSmart

DrvSmart is comprised of fault-preventive algorithms that ensure data integrity when conditions related to hard drive imperfections occur. DrvSmart mechanisms correct minor defects, increase reaction time, allow

more time to prepare a rebuild, and help minimize performance impact. DrvSmart functions include Media Scan & Task Scheduler, hot-spare, drive roaming, SMART and manual cloning options, etc.

SysSmart

SysSmart combines enclosure monitoring and firmware management capabilities in order to minimize the chance of down time caused by hardware failures. With SysSmart, Infortrend's subsystems are smartly managed and guarded against extreme operating conditions.

SysSmart functions include the event-triggered, Auto data protection mechanisms and the various monitoring utilities and monitoring approaches combined with the powerful RAIDWatch manager.

Specifications

Subsystem Characteristics

- 400MHz CPU, 256KB L2 cache
- ASIC133 RAID engine
- SDRAM cache memory 128MB
- SCSI-320 host channel 2
- LCD keypad panels 1
- COM port 1
- 10/100BaseT Ethernet port 1
- Diagnostic LEDs on all FRUs Yes

Drive Interface

- Number of disk trays 8
- Serial ATA I/II drive support Yes

Host Interface

- VHDCI SCSI ports 4
- Single channel bandwidth 320Mbps
- Tag command queuing
- Multiple target Ids

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
- Intelligent drive handling

High Availability

- Redundant, hot-swappable FRUs
- Subsystem self-diagnostics
- Hot spare drives
- Battery backup unit

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 messages 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:
 - 90VAC at 8A; 260VAC at 4A with PFC (auto-switching)
- DC Output:
 - 12V-16A; 5V-20A; 3.3V-20A
- Relative Humidity:
 - 5% to 95% non-condensing
- Operating Temperature:
 - 0° to 40°

Dimensions

- 138.0 W x 362.3 H x 327.6 D mm (5.4 x 14.3 x 12.9 inches)





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.



Spare Parts

Description	Part Number
SCSI-to-SATA RAID controller module, dual SCSI-320 host channels, 8 SATA-II drive channels	IFT-81AU24GC08D
Drive tray, Type-III bezel and Type-II LED lightpipe	IFT-9273CDTray
Power supply module, EonStor Cube 8-bay subsystems, 250W capacity	IFT-9271CPSU
EonStor Cube 8-bay subsystems	IFT-9271CFanMod
LCD keypad panel, Cube 8-bay subsystems	IFT-9271CLCD

Accessories

Description	Part Number
SCSI external round cable, DB68-to-VHDCI	IFT-9270UHstCab
Battery cell pack Li-ION, Cube 8-bay subsystems	IFT-9271CBT
SCSI external 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



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