



NDS-2241



New SAS 2.0 based SBB implemented 2U x 24 HDD/SSD solution provides exceptional 6Gb/s performance and scalability for today's tiered storage technology environment.

Robust Performance-oriented Storage Expansion

Data storage capacity continues to expand, but the need to provide higher performance tiered storage within that growing capacity is also needed. Today's business environment requires simple, easy ways to grow capacity as well as providing performance and scalability on demand. The Newisys® NDS-2241 Storage Head/Expansion Array enables 2.5" SAS/SATA hard disk drive (HDD) and solid state disk (SSD) device connections via standard serial attached SCSI (SAS 2.0) protocol with enclosure services linked via SES firmware. The Newisys NDS-2241 Storage Head/Expansion Array offers best-in-class performance, space-saving density, "green" energy efficiency and 24x7 high-availability redundancy of key components. The Newisys NDS-2241 is the next generation NDS-2240 (SAS 1.0).

The NDS-2241 is a perfect JBOD expansion companion for other Newisys products such as the Newisys NDS-8250 Storage Server Appliance, an NDS-2241 ABOD/RBOD storage head with Original Equipment Manufacturer (OEM) Storage Bridge Bay (SBB) implemented ABOD/RBOD controllers, or any other SAS compliant host/expansion port.

Partner with Newisys

Partnering with Newisys not only means accelerated time-to-market for storage products, but also the proven strength of our reliability and performance. Customers are backed by an industry-leading design team and a world-class Electronics Manufacturing Services (EMS) organization. Newisys supports Storage Bridge Bay Working Group (SBBWG) specifications in addition to our own Flexible Storage Architecture (FSA). All of this provides block-based modular designs with configuration flexibility that can become the foundation of your storage solutions so you can accelerate your time-to-market.



NDS-2241-JD Back Panel



Product Highlights

- Full-featured robust 6Gb/sec high-performance SAS 2.0 and SBB implemented storage enclosure
- Operation with either single I/O controller or dual I/O controller for redundant failover
- Multiple Drive partitioning/split-bus zoning modes
- Sold with Newisys JBOD SAS 2.0 I/O controllers or as an Open Bay model to support OEM ABOD/RBOD controllers in an SBB implemented canister
- Hot-pluggable I/O controller(s) and dual redundant high efficiency advanced power/cooling(APC) modules
- Redundant system cooling blowers per APC that are powered by either APC module
- Three SFF-8088 6Gb/sec SAS 2.0 host and expansion connections support up to 2,400MB/sec bandwidth each
- Flexibility to choose SAS or SATA drives to achieve the right performance, reliability and price
- Modular design increases product configuration flexibility
- Standard chassis customization and branding available
- SAS point-to-point connectivity isolates drive failures, increasing reliability and fault tolerance, and improving performance
- SAS daisy-chain expansion to additional NDS-2241 storage arrays and other SFF-8088 SAS compliant host/expansion ports

Host/Expansion Interfaces

- One or two Newisys SAS 2.0 JBOD I/O controller modules per system, with each I/O module supporting three 6Gb/sec SAS 2.0 SFF-8088 connections
 - 6Gb/sec SAS 2.0 SFF-8088 connections can be used for host connections or as a combination of host connection and expansion and support up to 2,400MB/sec bandwidth
 - Up to 4 systems can be daisy chained together, for up to 96 disks

Capacity

- 24 drive capacity per 2U enclosure

Firmware

- SCSI Enclosure Services (SES) 2.0 based firmware

I/O Controller Models and Features

- NDS-2241-JS Model:
 - Single 6Gb/sec SAS 2.0 JBOD I/O controller module with support for storage expansion enclosures
- NDS-2241-JD Model:
 - Dual redundant 6Gb/sec SAS 2.0 JBOD I/O modules, each with support for storage expansion enclosures
- NDS-2241-RX Model:
 - Open bay for support of single or dual redundant 6Gb/s SAS 2.0 compliant OEM ABOD/RBOD controller modules for our SBB implementation
- Auto-negotiate data path speeds
- In-band management
- Redundant cable support
- Three 6Gb/s SAS 2.0 host and expansion (SFF-8088) connects support up to 2,400 MB/sec bandwidth each

Redundant Hot-Swappable Components

- Up to two SAS 2.0 JBOD or OEM ABOD/RBOD I/O controller modules
- Two advanced power and cooling modules (APC)
- Two independent AC power inlets
- Up to 24 Drives

I/O Controller Module Canister

- JBOD/RBOD/ABOD SBB design-partner design-in guide available

Environmental Protection

- RoHS and WEEE compliant

2U Rackmount Enclosure

- Dimensions: 3.5 in. H x 17.6 in. W x 19.5 in. D (8.9 cm H x 44.7 cm W x 49.53 cm D)
- Weight with drives: 60 lbs (27 kg) max
- Standard Rackmount Rail Kit Adjustable
 - Depth: 23.0 in. to 32.5 in (58.4 cm to 82.6 cm)

Failure Notifications

- SCSI Enclosure Services (SES-2) over in-band interface and via LEDs

Disk Drives

- 24 independent 600MB/s point-to-point connections to each SAS or SATA disk drive with dual-port access and failover by each I/O controller to each drive (SATA drive requires optional 2:1 Active MUX)
- Form factor: 2.5" SAS, SATA and SSD drives
- Rotational speed: 7200 RPM, 10K RPM and 15K RPM
- Interface: 6Gb/3Gb SAS; 3Gb/1.5Gb SATA

AC Power

- Input voltage: Auto ranging, 88-264V AC
- Input frequency: 47-63Hz
- Power factor correction: Per EN61000-3-2
- Input current: JS, JD & UX Models: 2.50 Amps max @ 240VAC
- Maximum system continuous DC output power rating: JS, JD and UX Models: 550W

Monitoring and Reporting

- Monitoring for temperature, advanced power and cooling modules including blower speed control, disk drives and I/O module(s), as well as error rates and quality of service
- In-band reporting of all serial number, part number and revisions of each FRU and chassis

Drive Partitioning/split-bus zoning

- Single Newisys SAS 2.0 JBOD I/O controller module can be zoned as 1x24 or 3x8 via F/W control
- Dual Newisys SAS 2.0 JBOD I/O controller modules can be zoned as 1x24, 2x12, 3x8 or 6x4 via F/W control
 - 1x24 and 3x8 zoning options can be redundant, whereas 2x12 and 6x4 zoning options with dual I/O controller modules are in split-bus mode and preclude any additional enclosure expansion daisy chaining

Maximum External Cable Lengths (Customer Supplied)

- 6Gb/sec or 3Gb/sec SAS: up to 6m

Performance

- Up to 2,400 MB/s (sustained reads) using 6Gb/s disk drives/SFF-8088 host connections
- Up to 1,200 MB/s (sustained reads) using 3Gb/s disk drives/SFF-8088 host connections

Operating Environment

- Temperature: 5° to 35°C
- Temperature gradient: 20°C per hour
- Relative humidity: 10 to 80 percent (non-condensing)
- Humidity gradient: 10% per hour
- Altitude: -200 to 10,000 ft.
- Shock: 5G at 11ms, 1/2 sine wave pulse
- Vibration: 0.15G at 5Hz to 500Hz
- Acoustics: 6.5 Bels at normal operation tested to ISO7779

Non-Operating Environment

- Temperature: -40° to 70°C
- Relative humidity: 5% to 95% (non-condensing)
- Altitude: -200 to 40,000 ft.
- Shock: 10G at 11ms, 1/2 sine wave pulse
- Vibration: 0.5G at 5Hz to 500Hz

Electromagnetic Emissions and Immunity Standards

- CE Mark, EN55022/EN61000 Class A
- FCC Class A, Canadian IECES-003
- VCCI Class A

Safety Standards

- UL 60950, CSA 22.2-950
- IEC 60950, EN 60950

Quality Standards

- Manufactured under an ISO 9002 registered quality system



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