areca® At the Heart of Storage

ARC-4038

(8-Bays 12Gb/s SAS Tower JBOD Enclosure)

Highlights

- Four 12Gb/s SFF-8644 and one 6Gb/s SFF-8088 SAS host and expansion connections
- LED activity/status in each drive carrier
- Daisy chain capacity expansion for additional ARC-4038
- Plug & Play add capacity without shutting down
- Support CLI for configuration and environmental information

Overview

The ARC-4038 SAS-to-SAS JBOD box provides a compact external storage chassis capable of accommodating up to 8 12Gb/s, Serial-Attached SCSI (SAS) drives or 6Gb/s Serial ATA (SATA) drives. The box can support both 3.5-inch disk drives and 2.5-inch disk drives, each one contained in its individual hole on the disk carrier. The expander module on ARC-4038 is designed with an integrated ARM Cortex-R4 processor for topology management functions such as discovery, enclosure and drive management, and LED management. Each ARC-4038 compact tower JBOD supports four 12Gb/s SFF-8644 and one 6Gb/s SFF-8088 SAS host and expansion connections. Out-of-band CLI can re-define manufacture default setting on those connections. Configuration and environmental information is accessible either via in-band (SES-3.0 over SMP) or out-of-band serial port.

Unparalleled Performance

The ARC-4038 includes 8 internal plus 20 external 12Gb/s SAS ports connection for host and easy expansion. High performance architecture sets new boundaries of industry performance expectations: 12Gb/s SAS or 6.0Gb/s and 3Gb/s SAS/SATA. The ARC-4038 incorporates the latest enhancements in SAS along with new LSI DataBolt bandwidth optimizer technology. This is designed to help facilitate the industry transition to 12Gb/s SAS-enabled systems by allowing users to take advantage of 12Gb/s speeds while utilizing existing 6Gb/s drives and backplanes. Using DataBolt, the ARC-4038 buffers 6Gb/s data and then transfers it out to the host at 12Gb/s speeds in order to match the bandwidth between faster hosts and slower SAS or SATA devices.

Easy Management

The ARC-4038 contains an embedded expander manager that can access via in-band SES-3.0 over SMP protocol and out-of band RS-232 port. An out-of-band serial port is available for managing the configuration and monitoring the expander. The ARC-4038 expander firmware and EPLD has implemented the SES-3.0 protocol and disk activity map to the individual fault/activity status indicator on the backplanes. It has implemented autonomous chassis management of power supply status connectors, two fan monitor/speed control connectors through the SES-3.0 protocol. In data center environments, identifying issues with drives and environments are crucial. The hardware monitor can monitor system voltage and temperature. The warning message will be shown in alarm buzzer and respect LED.

Maximum Interoperability

Areca presents its ultra-high performance and high reliability 12Gb/s SAS expander module for a cost-effective and enterprise-class JBOD storage enclosure. A 12Gb/s SAS expander module literally expands the number of end devices that you can connect together. Expander devices, typically embedded into an expander module to connect system backplane, support large configurations of SAS end devices, including SAS host/RAID adapters and SAS and SATA disk drives. The SAS protocol defines a mechanism that has been implemented in the SAS expanders to guarantee fair access between drives in a domain. The ARC-4038 is ideal for 12Gb/s SAS storage systems with external interfaces and get the benefits of more storage capacity. The type and total amount of drives you use are based on the host interface in the server that the JBOD is connected. Host-based RAID configuration is supported via an external connectors on PCIe to 12Gb/s SAS RAID controller, external series SAS/Fibre/iSCSI to 12Gb/s SAS RAID and SAS host adapters.

Features

Drives

SAS hard drives
- Up to 8 2.5-inch or 3.5-inch SAS hot-plug hard drives (12.0 Gb/s) at speeds of 7.2K, 10K or 15K rpm

SATA hard drives
- Up to 8 2.5-inch or 3.5-inch SATA hot-plug hard drives (6.0 Gb/s) at speeds of 7.2K or 10K rpm

JBOD Controller Modules

- Expander board: 1 module
- Sensors: 1 sensor on the expander board

Backplane Board

Connectors
- 8 x SAS hard-drive connectors
- 1 x Power supply connector
- 2 x Cooling fan module connectors
- 1 x Sets of expander board connector

Controller Back-Panel Connectors

I/O connectors
- 2 x SFF-8644 + 1 x SFF-8088 "Host In" connectors for connection to the host
- 2 x SFF-8644 "Expansion Out" connectors for expansion to an additional JBOD enclosure

Management connectors
- 1 x 6-pin UART RJ-11 connector
- 1 x RJ-45 LAN connector (manufacture manager only)

LED Indicators

Hard-drive carrier
- 1 x Blue single-color activity LED
- 1 x Two-color LED status indicator per drive

Expander board
- 2 x One-color LED status indicators for each SAS host port, one for SAS host port link and one for the activity status
- 2 x One-color LED status indicators for each SAS expansion port, one for SAS expansion port link and one for the activity state

Power Supply

• Wattage	220 W maximum continuous;
• Voltage	90–256 V rated
• Frequency	50–60 Hz
• Amperage	+12V/16A, +5V/16A, +3.3V/14A

Cooling Fan

• Speed	2 x 2700rpm/brushless fan
• Amperage	2 x 0.135A

Physical

Dimension

• Height	302 mm
• Width	146 mm
• Depth	290 mm
• Weight	14.9lbs/6.8 kg (without disk)

Environmental

Temperature

• Operating	0° to 40°C
• Storage	–40° to 60°C

Relative humidity

• Operating	10% to 80% (non-condensing)
• Storage	5% to 95% (non-condensing)

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