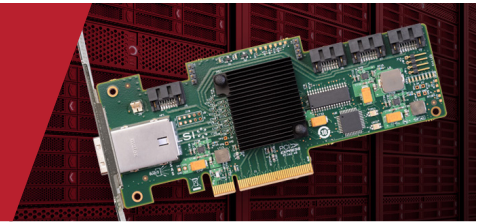


## Avago SAS 9212-4i4e

### 8-Port, 6Gb/s SAS+SATA to PCI Express Host Bus Adapter



#### Key Features

- 4 Internal and 4 external 6Gb/s SAS+SATA ports
- 8 lanes, PCIe 2.0
- Low profile form factor design
- Four x1 internal SATA connectors
- One x4 mini-SAS external connector (SFF8088)
- LSI SAS2008 6Gb/s SAS+SATA Controller
- Supports up to 256 SAS or SATA end devices
- Supports SSDs, HDDs and tape drives
- Offers Integrated RAID (0, 1, 1E and 10)

#### Key Advantages

- Provides state of the art connectivity for servers and appliances with internal storage and the ability to add external storage
- 8 lanes of PCIe 2.0 provides fast signaling for high-bandwidth applications
- High performance with 6Gb/s data transfer rates

## 8-Port SAS HBA Provides High Performance for Internal and External Storage Connections

### Overview

The Avago SAS 9212-4i4e host bus adapter provides high performance for internal and external storage connections. The SAS 9212-4i4e provides 8 lanes of 6Gb/s SAS and is matched with 8 lanes of PCI Express (PCIe) 2.0 5Gb/s performance to eliminate bottlenecks. Performance is based on the SAS 2008 IO controller that highly integrates the latest enhancements in PCIe and SAS technology.

The SAS 9212-4i4e has four x1 internal SATA connectors and one x4 mini-SAS external connector (SFF8088) enabling a low profile solution which provide SAS and SATA data transfer rates of 1.5, 3 and 6Gb/s per lane through automatic speed negotiation that can achieve over 320,000 IOPs. Enhanced features include T-10 Protection Information Model for early detection of and recovery from data corruption, and Spread Spectrum Clocking (SSC) for minimal EMI.

### Storage by LSI™

Avago Technologies products serve four primary target markets: wireless communications, wired infrastructure, enterprise storage, and industrial. Avago Storage by LSI offers the industry's broadest portfolio of storage solutions, backed by decades of experience and trusted by the world's leading server and storage suppliers. Avago provides the building blocks for storage solutions that help customers understand, prioritize, store and protect critical data.

The Avago SAS portfolio includes MegaRAID® controller cards, host bus adapters (HBAs), advanced software options, Syncro® shared DAS solutions and SAS storage ICs, including RAID-on-Chip (ROCs), I/O controllers and expanders.

### Fusion-MPT™ Architecture

Fusion-MPT architecture marks the next generation of I/O architecture designed to deliver the highest performance available today while reducing time to market, integration, and certification time. Fusion-MPT devices are high performance, cost-effective protocol controllers that represent the newest system-level integration technology in intelligent I/O processors from Avago.

SAS 9212-4i4e Host Bus Adapter											
IO Controller	SAS2008/ Fusion MPT 2.0										
Storage Connectivity ; Data Transfer Rates	8 ports, 6Gb/s SAS 2.0 Compliant										
SAS Bandwidth	Half Duplex 600 MB/s per lane										
Port Configurations	4 ea, x1 internal ports (individual drives) 4 ea, x1 external ports 1 ea, x4 external wide port										
Host Bus	x8 lane, PCI Express 2.0 compliant										
PCI Data Burst Transfer Rates	Half Duplex x8, PCIe, 4000 MB/s										
Physical Dimensions	Low Profile (2.6" x 6.6")										
Connectors	Four x1 internal SATA , One x4 external mini-SAS (SFF8088)										
Brackets	Full height and low profile										
Cable Support	Passive Copper										
Host Bus Type	x8 lane, PCI Express 2.0										
PCI Card Type	3.3 V Add-in Card										
Operating Voltage	+12V +/-8%; 3.3V +/-8%										
PCI Power (Nominal)	9W typical (Airflow min 200 LFM)										
Device Support	256 Non-RAID SAS/SATA devices										
Integrated RAID (IR)	<table border="0"> <tr> <td></td> <td>14 spread across 2 volumes</td> </tr> <tr> <td>RAID 0</td> <td>10 per volume</td> </tr> <tr> <td>RAID 1</td> <td>2 per volume plus hot spare</td> </tr> <tr> <td>RAID 1E</td> <td>10 per volume</td> </tr> <tr> <td>RAID 10</td> <td>10 per volume</td> </tr> </table>		14 spread across 2 volumes	RAID 0	10 per volume	RAID 1	2 per volume plus hot spare	RAID 1E	10 per volume	RAID 10	10 per volume
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Environmental	<table border="0"> <tr> <td>Operating</td> <td>Storage</td> </tr> <tr> <td>0°C to 55°C</td> <td>-45°C to 105°C</td> </tr> <tr> <td>5 to 90% Non-condensing</td> <td>5 to 90% Non-condensing</td> </tr> </table>	Operating	Storage	0°C to 55°C	-45°C to 105°C	5 to 90% Non-condensing	5 to 90% Non-condensing				
Operating	Storage										
0°C to 55°C	-45°C to 105°C										
5 to 90% Non-condensing	5 to 90% Non-condensing										
MTBF	>2,000,000 Hours										
Regulatory Certifications	EMC: Class B-US (CFR 47, P15B); Canada (ICES-003); Japan (V-3/02.04); Europe (EN55022/EN55024); Australia/New Zealand (AS/NZS 3548); Safety: EN60950; RoHS; WEEE										
OS Support	Microsoft Windows, Linux (SuSE , Red Hat), Solaris, VMware See <a href="http://www.lsi.com/support/pages/download-search.aspx">http://www.lsi.com/support/pages/download-search.aspx</a> for details on versions										
Warranty	3 years; with advanced replacement option Free technical support at <a href="http://www.lsi.com/support">http://www.lsi.com/support</a>										

## Ordering Information

SAS 9212-4i4e SGL

MPN: H5-25326-01

OPN: LSI00192



Visit the Avago Server Storage website at: [avagotech.com/server-storage](http://avagotech.com/server-storage)

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