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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China









# Avago Technologies SAS 9300 16-port 12Gb/s SAS Host Bus Adapter (HBA) Family



#### **Key Features**

- 16 external or internal 12Gb/s SAS + SATA ports
- 8 lanes, PCle 3.0
- 2 SAS 3008 12Gb/s SAS + SATA Controllers
- Supports SSDs, HDDs, and tape drives

#### **Key Advantages**

- High performance with 12Gb/s data transfer rates with full size form factor
- 8 lanes of PCle 3.0 provides fast signaling for high bandwidth applications

For applications demanding high levels of storage connectivity and performance, 16-port 12Gb/s SAS HBAs connect servers and appliances to internal and external storage, achieving close to 2 million IOPS.

#### **Overview**

The Avago SAS 9300 16-port, 12Gb/s SAS HBA family provides increased connectivity and maximum performance for high-end servers and appliances within internal storage, or connecting to large scale storage enclosures.

The SAS 9300 16-port HBA family is based on the SAS 3008 IO controller, integrating the latest enhancements in SAS and PCI Express\* (PCIe) technology. The SAS 9300-16e and SAS 9300-16i support 16 SAS ports operating at 12Gb/s data transfer rates, and can reach close to 2 million IOPS. The 16-port adapter family supports 8 PCIe lanes that comply with the latest PCIe 3.0 specifications. In addition, these adapters are backwards compatible with previous SAS and PCIe generations through automatic negotiation, and provide SAS data transfer rates of 12, 6, and 3 Gb/s per lane, and SATA data transfer rates of 6 and 3Gb/s per lane. Avago Technologies provides a broad suite of industry standard operating system drivers.

#### Avago 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 12Gb/s SAS portfolio includes MegaRAID\* controller cards, HBAs, advanced software options, Syncro\* shared DAS solutions and SAS storage ICs, including RAID-on-Chip (ROCs), I/O controllers and expanders.

#### Fusion-MPT<sup>™</sup> Architecture

The Avago SAS HBAs are based on the Fusion-MPT architected SAS controllers, which implements the Fusion-MPT (Message Passing Technology) architecture. Each controller features embedded PowerPC<sup>™</sup> processors that help deliver maximum host CPU offload. The built-in intelligence enables Avago to publish a single binary OS driver to operate any Fusion-MPT controller or adapter. This architecture helps enable high performance, reduced software development, and faster time to market.

### Avago 9300 16-port HBAs

	SAS 9300-16i	SAS 9300-16e	
IO Controller	Two, SAS 3008/ Fusion MPT 2.5	Two, SAS 3008/ Fusion MPT 2.5	
Port Count	16-port, internal	16-port, external	
	Mini-SAS HD	Mini-SAS HD	
Connectors	SFF8643 Four (x4)	SFF8644 Four (x4)	
Storage Connectivity Data Transfer Rates	12Gb/s SAS 3.0 Compliant	12Gb/s SAS 3.0 Compliant	
AC Davidudidah	Half Duplex (x16 wide bus)	Half Duplex (x16 wide bus)	
SAS Bandwidth	19200 MB/s	19200 MB/s	
	16 ea, x1 ports (individual drives)	16 ea, x1 ports (individual drives)	
Port Configurations	4ea, x4 wide ports	4ea, x4 wide ports	
	2 ea, x8 wide ports	2 ea, x8 wide ports	
Host Bus	x8 lane, PCle 3.0	x8 lane, PCle 3.0	
PCI Data Burst Transfer Rates	Half Duplex	Half Duplex	
PCI Data burst Transfer Rates	x8, PCle 3.0, 8000 MB/s	x8, PCle 3.0, 8000 MB/s	
Form Factor	Full Height	Full Height	
Physical Dimensions	4.4" x 6.1"	4.4" x 6.6"	
Brackets	Full Height	Full Height	
Cable Support	Passive Copper, Active Optical	Passive Copper, Active Copper	
LED Management	Reference SFF-8485 (SGPIO) compliant		
Operating Voltage	+12V +/-8%; 3.3V +/-9%	+12V +/-8%; 3.3V +/-9%	
PCI Power (Nominal)	27W	28.6W	
PCI Power (Norminal)		*no active cable support	
Device Support	1024 Non-RAID devices	1024 Non-RAID devices	
	Operating: 0°C to 55°C	Operating: 0°C to 55°C	
Environmental	Storage: -45°C to 105°C	Storage: -45°C to 105°C	
Environmental	5 to 90% non-condensing	5 to 90% non-condensing	
	Airflow: 200 LFM	Airflow: 200 LFM	
MTBF	>2,500,000 hours	>2,500,000 hours	
	USA (FCC 47 CFR part 15 Subpart B, class B); Canada (ICES -003, Class B); Taiwan (CNS 13438) ;Japan (VCCI V-3) ;		
Regulatory Certifications	Australia/New Zealand (AS/NZS CISPR 22);Korea (RRA no 2013-24 & 25); Europe (EN55022/EN55024); Safety: EN/IEC/		
	UL 60950; RoHS; WEEE		
	Microsoft Windows, Linux (SuSE, Red Hat), Solaris, VMware, FreeBSD		
OS Support	See http://www.lsi.com/support for details on versions *The HBA supports Solaris 10 and Oracle* provides a built in driver; installation of an Avago driver is not required. For more informa-		
	tion on the Oracle Solaris 10 driver and installation, sign in at the following Oracle link: https://support.oracle.com/ Contact Oracle support for Oracle driver or software support.		
Marrantu	3 years; with advanced replacement option		
Warranty	Free technical support at http://www.lsi.com/support		

Ordering Information	
9300-16i Single	9300-16e Single
MPN: 05-25600-00	MPN: H5-25520-00
OPN: LSI00447	OPN: LSI00342



Visit the Avago Server Storage website at: avagotech.com/server-storage