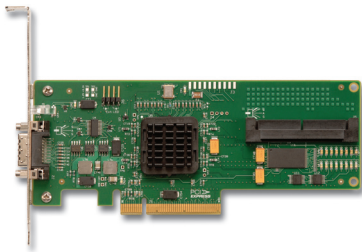**LSI** ™

LSISAS3442E-R

3Gb/s SAS Eight-Port Host Bus Adapter with Integrated RAID

Providing Full-Duplex High-Performance Connectivity for Internal and External Storage Arrays

KEY ADVANTAGES

- Integrated RAID avoids additional host CPU overhead
- Flexible SAS/SATA array architecture optimizes cost
- Complete product package includes all the necessary cables and brackets
- Superior system performance from 2.5Gb/s PCI Express bus

APPLICATIONS

- High performance workstations
- Mid to high-end servers
- External and internal storage connections
- 1U/2U rack servers

TYPICAL USES

- Direct-attach internal SAS/SATA HDDs
- External and internal JBOD enclosures
- Mixed SAS/SATA RAID
- Mission-critical applications running from SAS drives

FEATURES

- 3Gb/s per port
- x4 internal SFF8484/x4 external SFF8470 connectors
- Integrated RAID 0, 1, 1E and 10E
- MD-2 small form-factor design
- 2.5Gb/s 8-lane PCI Express
- Allows more than 122 SAS or SATA end-point devices
- Fusion-MPT™ architecture providing over 140,000 I/Os per second
- Supports all major operating systems

Highest Performance SAS Host Bus Adapter Available

The LSISAS3442E-R card provides ultra-high speed data transfer for data back-up and mission-critical applications. The HBA offers eight 3Gb/s ports, driving up to 122 Serial Attached SCSI and Serial ATA RAID and non-RAID devices. The low-cost host bus adapter supports medium to large capacity internal server storage applications by connecting a 2.5Gb/s 8-lane PCI Express bus with one external x4 SFF8470 connector and one internal x4 SFF8484 connector. Performance advantages over parallel SCSI are seen from the huge increase in data throughput and device support from SAS, utilizing LSI's Integrated RAID solution.

Low-Overhead RAID Architecture

As the performance leader in SCSI/SAS controllers, the LSISAS3442E-R leverages the LSISAS1068E controller ASIC's advanced Fusion-MPT architecture. While other SAS cards drive large RAID software stacks between the host CPU and controller, the LSISAS3442E-R HBA utilizes the embedded CPU in the LSISAS1068E ASIC to perform Integrated RAID 0, 1, 1E and 10E

operations. The result is an ultra-thin low overhead device driver communicating over the PCI Express host-bus. By reducing RAID code overhead, the LSISAS3442E-R is first in READ/WRITE operation execution.

PCI Express and SAS Connectivity from the Serial IO Experts

The LSISAS3442E-R is a part of the first generation of fully serialized Direct Attached Storage (DAS) controllers. Successful implementation of these serial adapters is best served with supplier experience and know-how. Having a supplier who fully understands the physical, electrical and protocol requirements of each new serial standard will reduce the time for system bring-up and offer greater flexibility in system topography.

LSI has supplied leading edge serial technology to systems throughout the world for over six generations, making LSI the most experienced enabler of serial interconnect for storage in the world. Integrators can be assured that their LSI adapter is providing the most advanced and robust serial technology available.

Operating System Support

The LSISAS3442E-R HBA supports all key 32-bit and 64-bit versions of Microsoft Windows, Linux, Solaris, Netware as well as the x86, IA64, SPARC, AMD64 and EM64T system architectures. All OS drivers are backed by extensive testing and validation to ensure optimum system performance. For a list of the most current supported drivers, visit *lsi.com/support*.

LSISAS3442E-R HOST BUS ADAPTER		
PCI Bus	8-lane, 2.5Gb/s PCI Express	
PCI Modes	Bus Master DMA	
PCI Data Burst Transfer Rates	250MB/s per lane half duplex 500MB/s per lane full duplex 2000MB/s 8-lane half duplex	
SAS Bandwidth	Half Duplex Single lane – 300MB/s Wide port (2-lanes) – 600MB/s Wide port (3-lanes) – 900MB/s Wide port (4 lanes) – 1200MB/s Wide port (2 x4) – 2400MB/s	Full Duplex Single lane – 600MB/s Wide port (2-lanes) – 1200MB/s Wide port (4-lanes) – 2400MB/s
PCI Voltage/Card Type	3.3V add-in card	
PCI Form Factor	6.6" x 2.5" (MD2 Low-Profile)	
PCI Power	7.5W	
Bracket	Full Height and Low-Profile	
Certification Level	PCI Express 1.0a	
I/O Bus	Two x4 3Gb/s SAS/SATA Ports	
SAS Processor	LSISAS1068E	
Connectors	Internal One SFF8484 SAS Connector	External One SFF8470 SAS Connector
LED Indicators Internal	Activity per PHY (8) Fault per PHY (8)	
Integrated Mirroring™	Integrated RAID 0, 1, 1E and 10E	
Max Number of Physical Devices	Non-RAID Integrated RAID (IR) IR RAID 0 IR RAID 1 IR RAID 1E IR RAID 10E	122 10 spread across 2 volumes 8 per volume 2 per volume plus hotspare 8 per volume 8 per volume
Environments	Operating 0°C to 60°C 5 to 90% Non-condensing	Storage -45°C to 105°C 5 to 90% Non-condensing
MTFB	>200,000 Hours	
Compliances	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	
OS Support	Microsoft® Windows® 2000, Server 2003 32-bit and 64-bit (x86 and AMD64), XP Red Hat® Linux® RHEL 3 Novell® NetWare® 5.1 and 6.5 SuSE® Linux®/SLES Sun SPARC Solaris 2.6 thru 2.10	
Ordering Information	LSISAS3442E-R Kit – P/N: LSI00110	LSISAS3442E-R 5-pack – P/N: LSI00111
Warranty	3 years, advanced replacement option, free advanced technical support at *lsi.com/support*	

For more information and sales office locations, please visit the LSI web sites at: lsi.com lsi.com/contacts