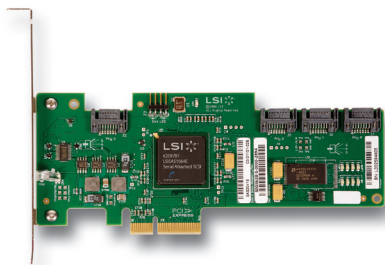LSI™

LSISAS3041E-R

3Gb/s SAS Four-Port Host Bus Adapter

Cost-Effective Serial Attached SCSI (SAS) Host Bus Adapter (HBA) Increases Performance and Reliability

KEY ADVANTAGES

- *Integrated RAID* – LSI RAID avoids additional host CPU overhead
- *Scalablilty* – addresses up to 122 SAS/SATA devices using expanders
- *Speed* – 2.5Gb/s PCI Express with 3Gb/s per port SAS interconnect
- *Complete Solution* – kit includes all necessary cables and brackets
- *Market Leader* – LSI SAS powers 80% of SAS worldwide

APPLICATIONS

- High-performance workstations
- Mid to high-end servers
- Internal connections
- 1U/2U rack servers

TYPICAL USES

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

FEATURES

- 3Gb/s per port
- 4 internal SATA x1 connectors
- Integrated RAID 0, 1, 1E and 10E
- MD-2 small form-factor design
- 4-lane 2.5Gb/s 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

Most Economical SAS/SATA HBA in the Market Today

The LSISAS3041E-R card offers leading-edge SAS and SATA RAID and non-RAID data off-load at a fraction of the cost for competing products. The low-cost HBA supports medium capacity internal server storage applications by connecting a 4-lane 2.5Gb/s PCI Express bus with four SAS/SATA ports through SATA 1x connectors. Cost advantages over parallel SCSI are realized by optimizing the HDD array between SAS and SATA drive types, utilizing the lower-cost SATA drives for backup while using the feature-rich SAS drives for mission-critical applications.

Superior LSI SAS Integrated RAID Performance

As the performance leader in SCSI/SAS controllers, the LSISAS3041E-R leverages the LSISAS1064E controller ASIC's advanced Fusion-MPT™ architecture. While other SAS cards drive large RAID software stacks between the host CPU and controller, the LSISAS3041E-R HBA utilizes the embedded CPU in the LSISAS1064E ASIC to perform integrated RAID 0, 1, 1E and 10E operations. By reducing RAID code overhead, the LSISAS3041E-R is first in READ/ WRITE operation execution.

PCI Express and SAS Connectivity from the Serial IO Experts

The LSISAS3041E-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 LSISAS3041E-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*.

LSISAS3041E-R HOST BUS ADAPTER		
PCI Bus	4-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 1000MB/s 4-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	Full Duplex Single lane – 600MB/s Wide port (2-lanes) – 1200MB/s
PCI Voltage/Card Type	+3.3V ±0.3V 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	Four 3Gb/s SAS/SATA Ports	
SAS Processor	LSISAS1064E	
Connectors	Internal Four – SATA x1 Connectors	External N/A
LED Indicators	Internal Activity, per Phy (4)	Internal Fault, per Phy (4)
Integrated RAID Levels	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	122 10 spread across 2 volumes 8 per volume 2 per volume plus hotspare 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	

Software Support
    MyStorage™
    OS Support
	Drive monitoring, HBA management, drive topology
	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	LSISAS3041E-R Kit – P/N: LSI00112 LSISAS3041E-R 5-pack – P/N: LSI00113	
Warranty	3 years, advanced replacement option, free advanced technical support at *www.lsi.com/support*	

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

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