

# LSISAS1068E

## 8-Port PCI Express to 3Gb/s SAS Controller



Extends 20 Years of SCSI Technology to Next Generation Product Platforms for High Performance, Scalability, Flexibility and RAID Capability

### Overview

The LSISAS1068E is a eight-port 3.0Gb/s Serial Attached SCSI (SAS) controller that is based on the Fusion-MPT (Message Passing Technology) architecture and provides an eight-lane PCI Express interface. The LSI SAS integrated controller provides 1.5 and 3.0Gb/s SAS and SATA data transfer rates per port and enables Integrated RAID solutions in storage environments including servers, workstations, blade servers and external storage systems. The LSISAS1068E is ideal for today's data centers and leverages existing SCSI infrastructure for investment protection.

The LSISAS1068E complies with the PCI Express 1.0a specification and supports 8 PCI Express lanes at 2.5Gb/s, full duplex, for an aggregate bandwidth of up to 4GB/s. The LSISAS1068E can be configured as a PCI Express x8, x4, or x1 device, supporting auto-negotiation among those link widths. For example, if the LSI-SAS1068E is configured for 8 lanes and is plugged into a x8 connector that is wired as a x4, the LSISAS1068E will automatically negotiate to a x4 link width. The PCI Express architecture is an industry standard high-performance, general-purpose serial I/O interconnect utilizing a cost-effective, low-pin count interface offering high

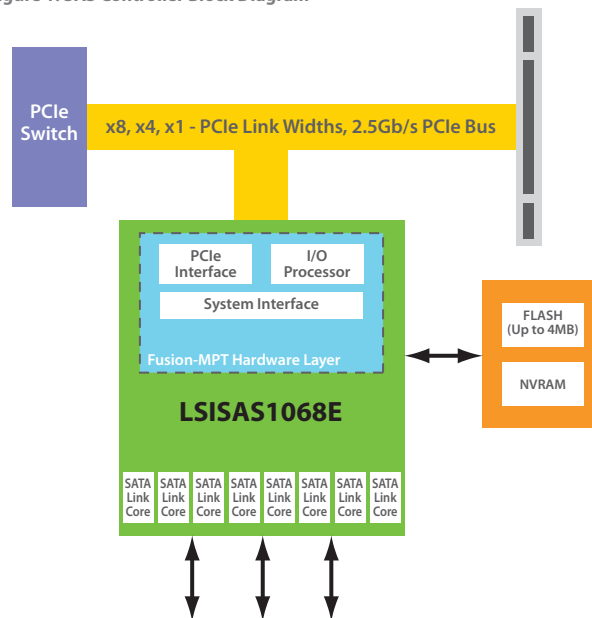
### APPLICATIONS

- Entry-level servers
  - 1U/2U rack mount servers
- Mid-range, high-end servers
- Workstations
- Storage subsystems

### FEATURES

- Supports 8 PCI Express lanes at a transfer rate up to 2.5Gb/s per lane, full duplex
- Automatically negotiates PCI Express link widths
  - Supports x8, x4, x1 link widths
- Supports PCI Express hot plug
- Power management support
- PCI Express software is compatible with PCI and PCI-X software
- 8-port SAS/SATA controller
- Supports 2, 3, or 4 PHY wide SAS port configurations
- Supports 1.5 and 3.0Gb/s SAS and SATA data transfer rates
- Port independent auto-negotiation
- Compatible with SATA target devices

Figure 1. SAS Controller Block Diagram

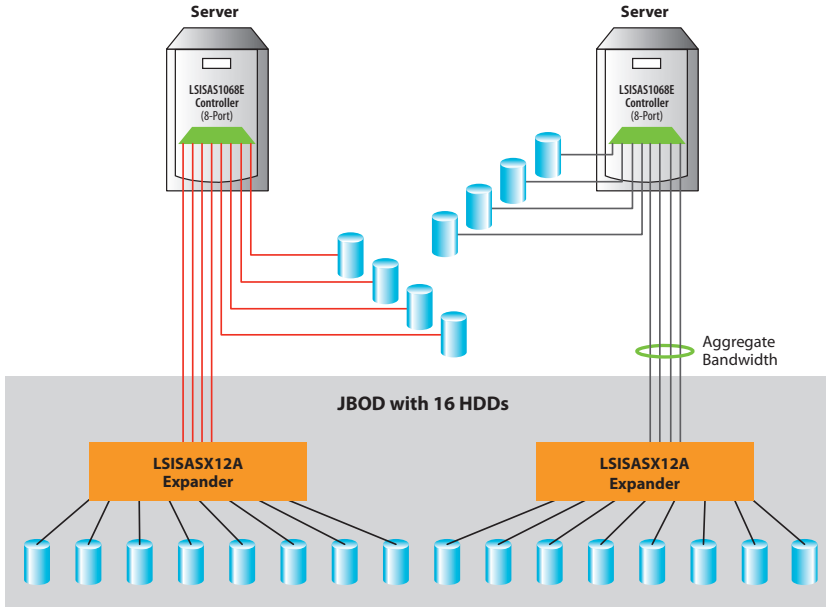


bandwidth per pin. For investment protection and ease of development migration, it retains PCI compatibility by using the established PCI software programming models, thus facilitating a smooth transition to new hardware while allowing software to evolve to take advantage of PCI Express features.

### Fusion-MPT Architecture

LSI's Fusion-MPT architecture provides unparalleled performance, binary compatibility of host software with LSI's Ultra320 SCSI, Serial Attached SCSI, and Fibre Channel products, and significantly reduces software development time. With advanced architecture, the LSI product family can be quickly adapted to respond to emerging I/O interfaces.

Figure 2. SAS Topology Offers Flexible Link Configuration and Redundancy



### FEATURES (Continued)

- Supports SSP, SMP, STP, and SATA protocols
- Supports SGPIO (SFF8485)
- Flash and local memory interface
- RAID Levels
  - Integrated Mirroring™, Integrated Mirroring Enhanced and Integrated Striping
  - Zero Channel RAID (ZCR)
- GigaBlaze® integrated transceivers
- Fusion-MPT architecture
- Gfix™ technology
- 636 EPBGA package

### OS SUPPORT

- Windows® Server 2003
- Windows®2000
- Windows®XP
- Linux® Red Hat®, SuSE® Enterprise Editions
- Solaris SPARC® 9.X
- NetWare®
- SCO® UnixWare® and Open Server



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