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 an 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.

Figure 1. SAS Controller Block Diagram

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 LSISAS1068E 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...
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**

![SAS Topology](image)

**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
- Gflx™ 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

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