



APPLICATIONS

- Direct attached ROC solution for entry to mid-range servers
- SAS RAID host bus adapter
- Cost effective, single chip solution for entry-level RAID storage systems.
- Storage Processor for external storage applications (LSISAS2208SP)

FEATURES

- High Performance IOP
 - Dual PowerPC 440 @ 800MHz
 - (2) 32KB L1 I/D caches
 - (2) 1MB L2 caches
- Exclusive-OR hardware engine for RAID 5
- RAID 6 hardware acceleration
- RAID Features
 - MegaRAID® support with activation key
 - RAID levels 0, 1, 5, 6, 10, 50 and 60
 - Integrated RAID
 - RAID levels 0, 1, 1E and 10
- DRAM back-up at power fail using USB
- 6Gb/s SAS Interface
 - 8 port SAS/SATA ROC controller
 - Supports 1.5Gb/s, 3Gb/s, and 6Gb/s SAS and SATA data transfer rates
 - Spread spectrum clocking
 - Supports SSP, SMP, STP and SATA protocols
 - SAS and SATA device support
 - Supports narrow and wide ports
 - T-10 data protection
 - T-10 Optical support
 - SAS 2.1 power management

LSISAS2208

PCI Express to 8-Port 6Gb/s SAS/SATA ROC

Extending Its RAID And SAS Technology Leadership, LSI™ Introduces Its Fifth Generation RAID-On-a-Chip (ROC)

LSI offers the broadest SAS product portfolio in the industry with true end-to-end solutions — controllers, expanders, SAS to SATA bridge products, ROCs, host bus adapters, RAID solutions, and external storage. LSI's proven SAS core has completed extensive stress and interoperability testing resulting in the industry's most robust, interoperable solution.

Overview

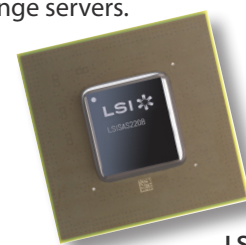
The LSISAS2208 is LSI's third generation Serial Attached SCSI (SAS) RAID-On-a-Chip (ROC) device based on five generations of ROC technology and the industry-leading Fusion-MPT™ (Message Passing Technology) architecture. The LSI SAS2208 integrates the latest enhancements in SAS and PCI Express technology.

The LSISAS2208 supports 8 PCIe lanes and complies with the PCI Express 3.0 specification that extends the PCIe data rates up to 8.0 GT/s per lane, and is backwards compatible to the 5.0/2.5 GT/s data rate supported by PCIe 2.x, 1.x. It also incorporates enhancements such as Single Root I/O Virtualization (SR-IOV) with 16 virtual functions, End-to-End CRC (ECRC) with Advanced Error Reporting (AER) and the latest advancements in lane and polarity reversal, power management, hot plug support, and MSI/MSI-X and legacy interrupt generation.

The eight-port ROC device provides SAS and SATA data transfer rates of 1.5,

3, and 6Gb/s per lane and automatically negotiates between the speeds. Enhanced features are supported such as T-10 Data Protection Model for early detection of and recovery from data corruption, Spread Spectrum-Clocking (SSC) for EMI reduction, and data encryption for the protection of confidential data as well as SAS 2.1 power management. The LSISAS2208 is available with encryption and without encryption.

The LSISAS2208 ROC integrates a 72-bit, DDR3-1333 SDRAM interface, hardware acceleration engines for RAID 5 and RAID 6 parity calculations, and the high performance dual core, PowerPC 440 RISC processor that achieves 1600 Dhrystone MIPS (DMIPS) resulting in a cost-effective ROC ideal for entry and mid-range servers.



LSISAS2208

LSI offers a complete selection of internal RAID product offerings for direct attached storage (DAS) connectivity and RAID-on-Motherboard (ROMB) solutions. Integrated RAID (R0, 1, 1E, 10) is a low cost, high performance RAID solution designed for system environments requiring redundancy and high availability where a full featured RAID implementation is cost prohibitive or not required.

For applications that require a full featured RAID implementation, MegaRAID® hardware RAID (0, 1, 5, 6, 10, 50, 60) is ideal for high performance and high availability applications. In addition to offering a complete suite of RAID offerings, LSI also offers upgrade paths from our low cost RAID solutions to our full featured RAID enabled with an activation key.

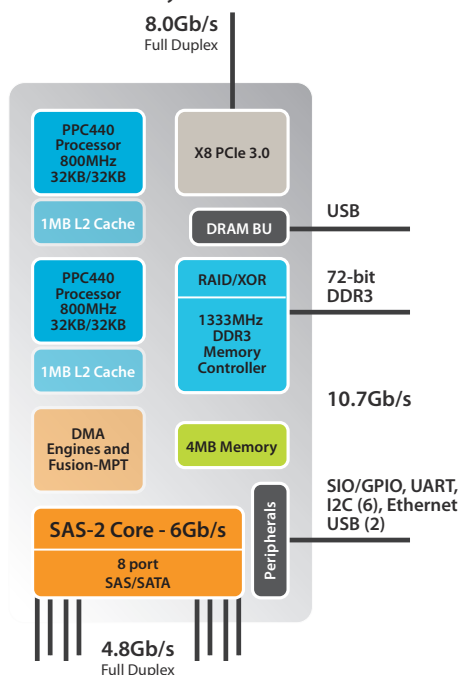


Figure 1: LSI SAS2208 Block Diagram

For more information and sales office locations, please visit the LSI web sites at: lsi.com lsi.com/contacts
 Phone: 1.866.574.5741 or 1.610.712.4323

For ease of use, the LSI RAID products are managed under a common management utility, MegaRAID Storage Manager (MSM™).

LSI provides a complete suite of industry standard operating system drivers.

Fusion-MPT Architecture Overview

Fusion-MPT architecture marks the next generation of I/O architecture designed to deliver the highest performance available today while reducing time to market, integration, and certification time. Fusion-MPT devices are high performance, cost-effective protocol controllers that represent the newest system-level integration technology in intelligent I/O processors from LSI.

Please contact your LSI Sales Representative for ordering information.

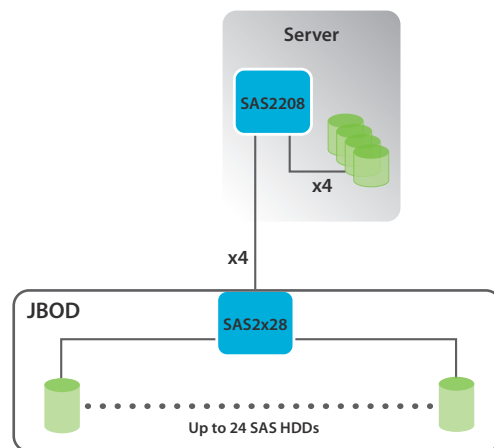


Figure 2: LSI SAS2208 Topology Diagram

FEATURES (Continued)

- PCI Express 3.0 Interface
 - Supports x8, x4, x1 PCIe lanes at a transfer rate up to 8.0 GT/s per lane, full duplex
 - Lane and polarity reversal
 - SR-IOV (16 virtual functions)
 - Supports End to End CRC (ECRC) and Advanced Error Reporting (AER)
 - PCI Express hot plug support
 - Root Complex support (LSISAS2208SP)
- Advanced Power Management support
 - Slumber and Partial power mode support for SAS and SATA devices
 - Programmable SAS link power down
 - Variable PCIe bandwidth negotiation
- External memory interface support
 - 40/72-bit, DDR3-1333
 - Flash ROM
 - NVSRAM/SRAM
- Communication Interfaces
 - I2C interfaces for enclosure management services
 - UART and Ethernet interfaces
- Security Features
 - Full Disk Encryption Support (FDE)
 - Advanced Encryption Standard support
- SFF-8485 Compliant, SGPIO
- JTAG support
- 1020 HP-FPBGA (27mm)

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