PMC-SIERRA

36-Port SAS Edge Expander

FEATURES

GENERAL

- Flexible 36-port SAS Expander device
- Low-atency connection arbitration
- Supports table routing of 1024 entries, direct routing and subtractive routing
- Integrated non-blocking cross bar switch allowing any port to any port connections
- Arbitrary SAS wide port configurations
- STP bridge function allows either SAS or SATA target devices to be attached to any port
- Integrated RISC processor for SAS SMP functions and SES support
- Three configurable multi-master or slave mode TWI interfaces for device configuration and control of external interfaces
- UART interface for debugging support
- SFF_8485 compliant Serial GPIO (SGPIO) interface provides expansion for up to 144 GPIOs

HIGH-SPEED I/O

- 1.5 Gbit/s and 3.0 Gbit/s operation
- Automatic negotiation of link speed
- Accepts Spread Spectrum Clocking (SSC) from SATA HDDs
- Programmable transmit pre-emphasis and receiver equalization
- Programmable transmit output swing to support both SATA and SAS levels
- Integrated resistive termination and receiver AC coupling

STATISTICS & PERFORMANCE MONITORING

- Per-port error counters to provide comprehensive diagnostic functions.
- Programmable performance monitoring counters and interrupt generation
- Per-link PRBS and CJPAT pattern generators and checkers for link integrity diagnostics

PHYSICAL

- Built in 0.13 μm (1.2 V core and 3.3 V I/O supply) CMOS technology
- Packaged in a 27 mm x 27 mm 352-pin CSBGA

APPLICATIONS
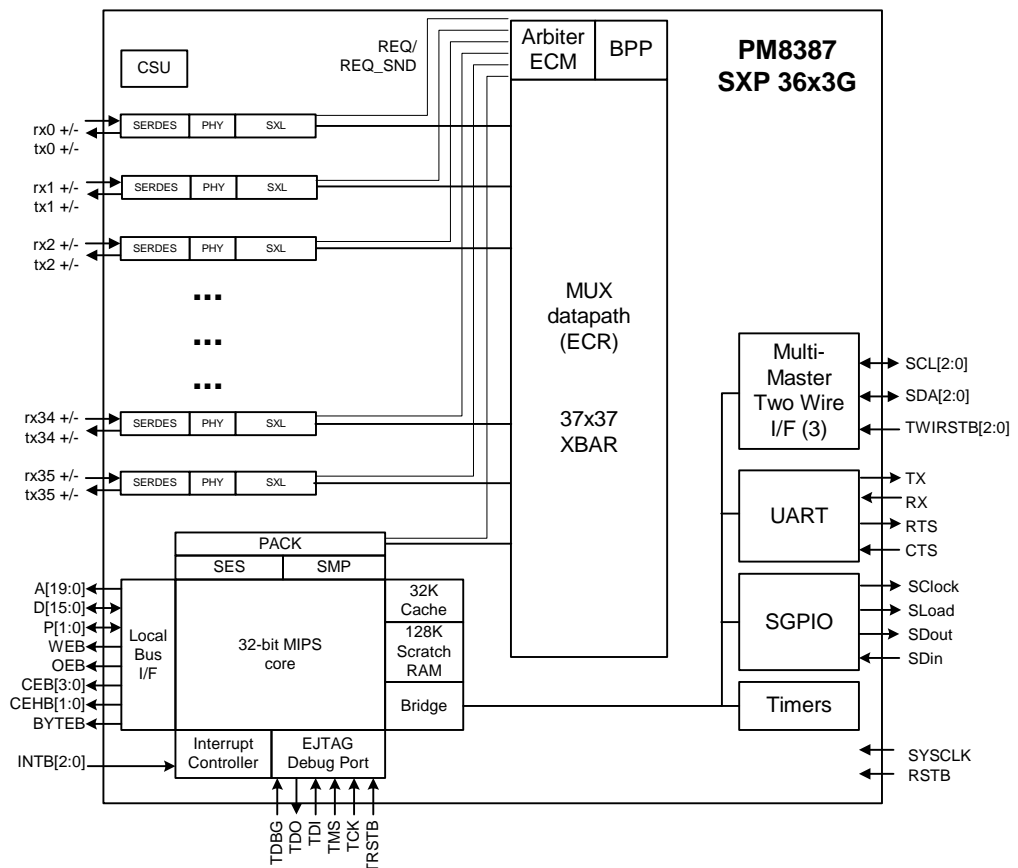
- SAS Fanout Expander
- SAS Storage Enclosures

FIRMWARE DEVELOPMENT KIT

- SES API for utilizing SES pages and commands over the SAS link
- SCSI-3 API for underlying access to the SAS Port
- SAS link layer, SMP & SSP Transport Layer protocols
- SMP routing management including topology discovery
- API for downloading firmware over the SAS link
- Expander Diagnostics API
- Disk spin-up control
- Peripheral Drivers for TWI, UART, SGPIO, Timer

THIRD-PARTY SUPPORT

- ThreadX Operating System from Green Hills Software or Express Logic
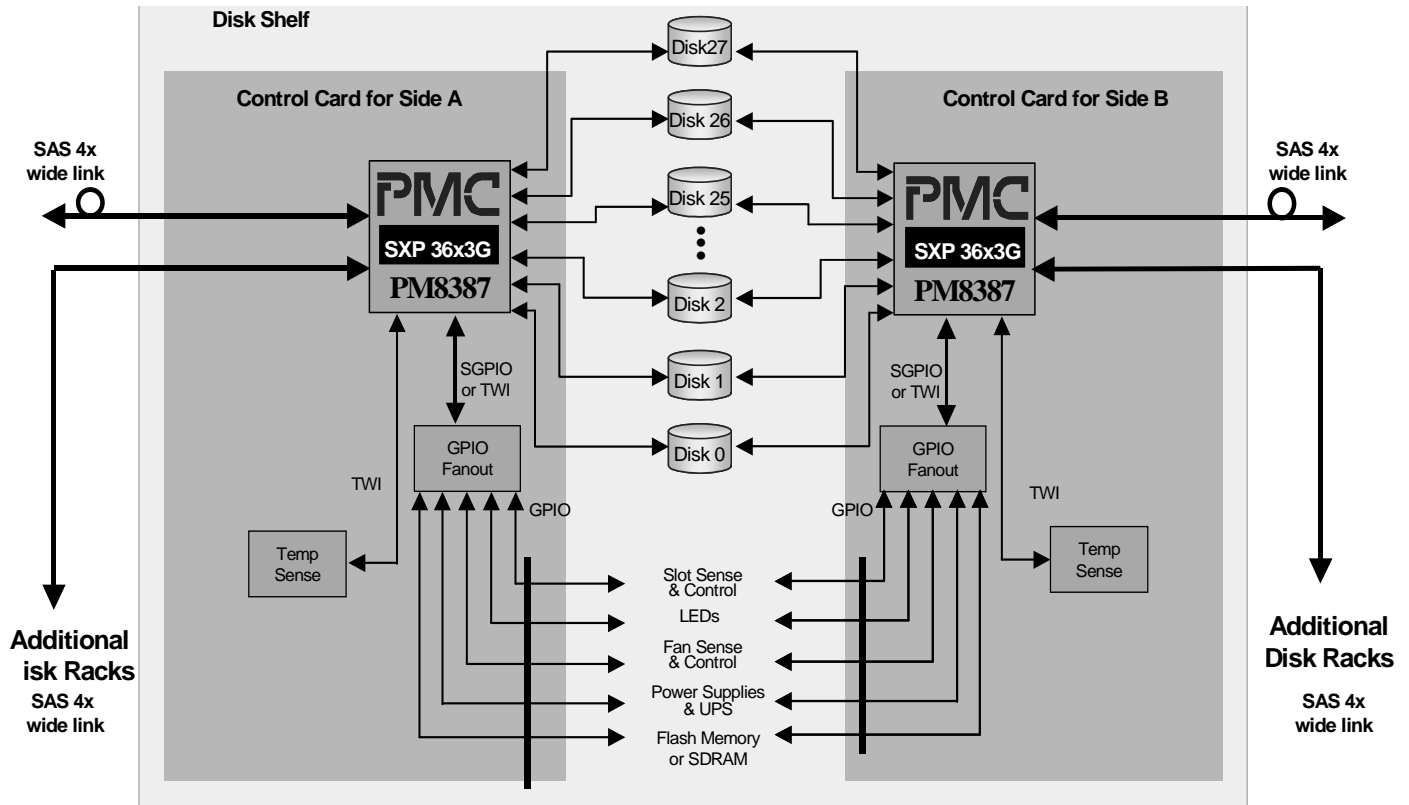- MULTI Development Environment and EJTAG Emulator from Green Hills Software

BLOCK DIAGRAM

TYPICAL APPLICATIONS

SERVER STORAGE APPLICATION

www.DataSheet4U.com