

SSC200

Enclosure Management Controller

Product Brief



Overview

The SSC200 is an enclosure management controller for peripheral storage applications. This device supports several in-band and out of band management strategies. The SSC200 can implement in band SES and SAF-TE enclosure management on parallel SCSI and Fibre Channel. Out of band solutions are possible using IPMI or customer unique approaches.

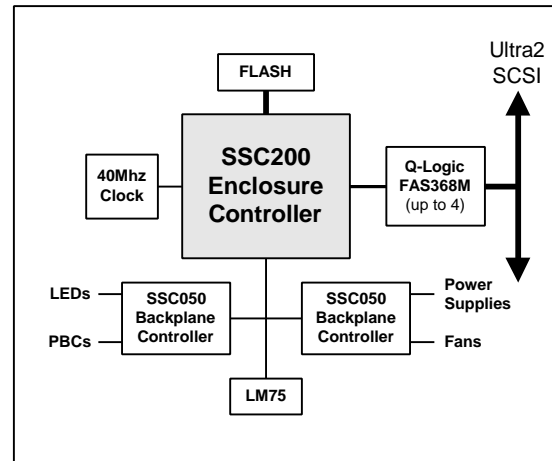
JBOD and RAID subsystem developers are provided a common hardware and software platform, which supports all common subsystem diagnostic and enclosure management strategies. The SSC200 may be used as the master controller of an I²C serial interface communicating with scalable slave backplane controllers such as Vitesse's VSC055/050 and other industry standard devices.

SFF-8067 Applications

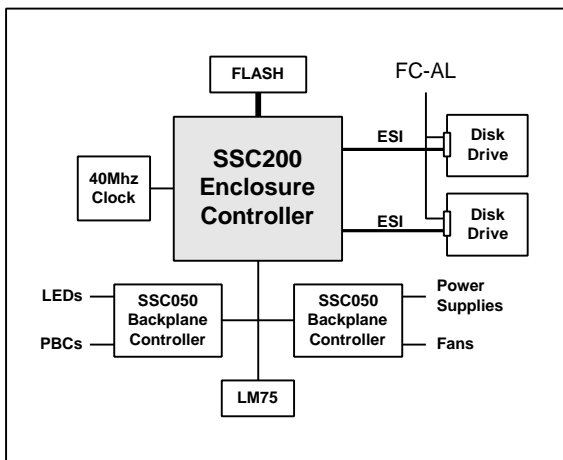
The SSC200 integrates two SFF-8067 ESI ports and supporting logic. Internal DMA allows fully automated high-speed data transfers. No external logic is required for AL_PA selection. Automated discovery phase guarantees compliance with the SFF-8067 specification. Flexible implementation allows communication with devices, which may not be compliant with the specification.

Device Features

- Two ESI Ports with DMA
- Manage up to Four Parallel SCSI Bus Controllers
- Three I²C Serial Interface Controllers
- 32-bit, 40Mhz RISC CPU w/debug port
- RS-232 Monitor Port
- IPMI 1.0 Compatible
- Four External 1MB Address Ranges
- External Flash and/or SRAM (60ns to 350ns)
- Internal 4KB SRAM
- Up to 28 Programmable General Purpose I/Os
- 100 PQFP Package



Parallel SCSI SAF-TE or SES Application



FC-AL SFF-8067 SES Application

Software Development Kit Features

- Modular architecture to support migration to other I/O technologies and protocols
- Extensive peripheral device library
- Sample Personality Module source code

SCSI Applications

The SSC200 supports two mechanisms for dedicated port enclosure management across a parallel SCSI bus. An external SCSI controller can be connected to the SSC200's DMA interface to provide a high performance, two-device SES or SAF-TE solution. No external components are required with this approach; the SSC200 integrates both the DMA buffers and control logic. This architecture provides system designers with a common platform for various SCSI bus speeds and

physical interfaces. Multiple SCSI controllers can be supported by a single SSC200 with the addition of external DMA control signal routing logic.

For lower cost applications, a simple SCSI bus transceiver device utilizing the 28 available general-purpose I/O signals may replace the external SCSI controller.

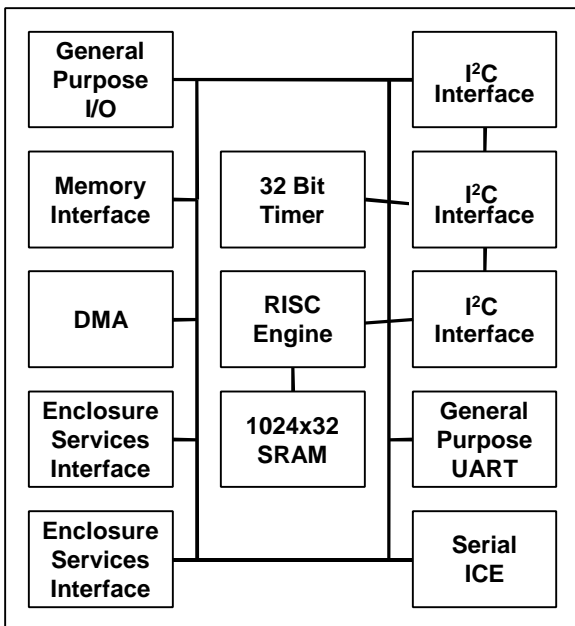
Architecture

System Level Integration (SLI) techniques were used to create a complete system on a chip. The SSC200 integrates a RISC embedded processor and additional DMA, memory and controller functionality.

The SSC200 includes three, I²C serial interface bus master controllers. These controllers may be used to interface to off-the-shelf instrumentation and control devices commonly used in environmental monitoring and management applications such as Vitesse's SSC050/055 Backplane Controller.

The SSC200 requires off chip memory for firmware code storage. Most applications will use flash memory devices for non-volatile storage. Static RAM may be added for higher performance applications. The SSC200 has four external chip selects each with a one-megabyte address range.

Two RS-232 serial ports provide assist firmware debug. One port is dedicated to in circuit emulation for the embedded processor. The second port implements a XMODEM connection for additional debug and firmware download. Firmware downloads are also supported via ESI and SCSI buses.



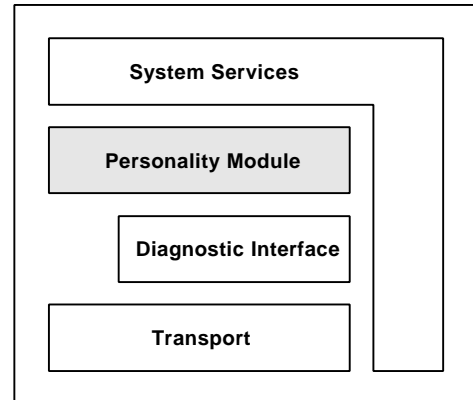
SSC200 Block Diagram

Software

The software designed to execute on the SSC200 determines the characteristics of the overall enclosure management solution. Most enclosure management applications will be unique to a customer's individual product. The SSC200 firmware architecture uses a Personality Module with captures the unique functionality required by a particular application. Vitesse provides a Software Development Kit (SDK) to customers to assist their development of their Personality Module.

The SDK includes software to implement an ESI and a parallel SCSI transport for a SAF-TE or SES diagnostic environment. In addition, the SDK also includes a System Services module with provides APIs to the peripheral functionality (interrupts, timers etc.) in the SSC200.

The SSC200 shares a similar hardware and firmware architecture as Vitesse's SSC100 for dedicated port FC-AL SES. This allows system designers to leverage enclosure management strategies and implementations across parallel SCSI, ESI and dedicated port FC-AL storage solutions.



SDK Firmware Block Diagram

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