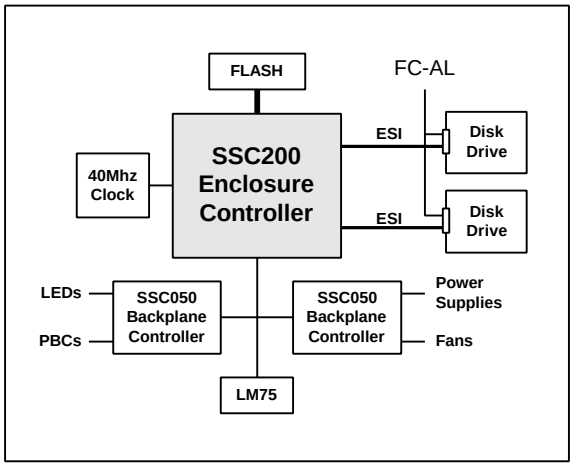
# SSC200
## Enclosure Management Controller
## Product Brief

### 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.



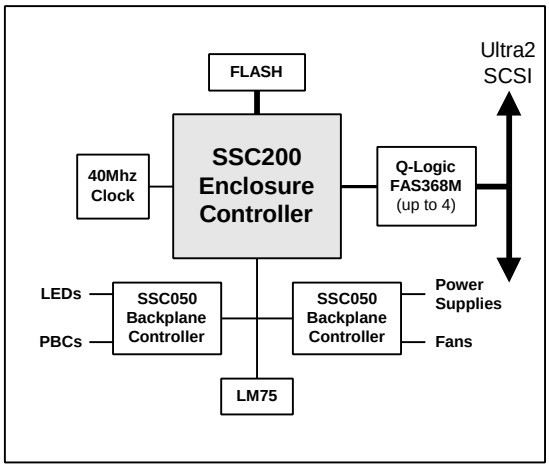
JBOD and RAID subsystem developers are provided a common hardware and software platform, which supports all common subsystem diagnostic and enclosure management strategies. The SSC200 may be used as the master controller of an $I^2C$ serial interface communicating with scalable slave backplane controllers 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.




**FC-AL SFF-8067 SES Application**

### Device Features
- Two ESI Ports with DMA
- Manage up to Four Parallel SCSI Bus Controllers
- Three $I^2C$ 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**

### 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

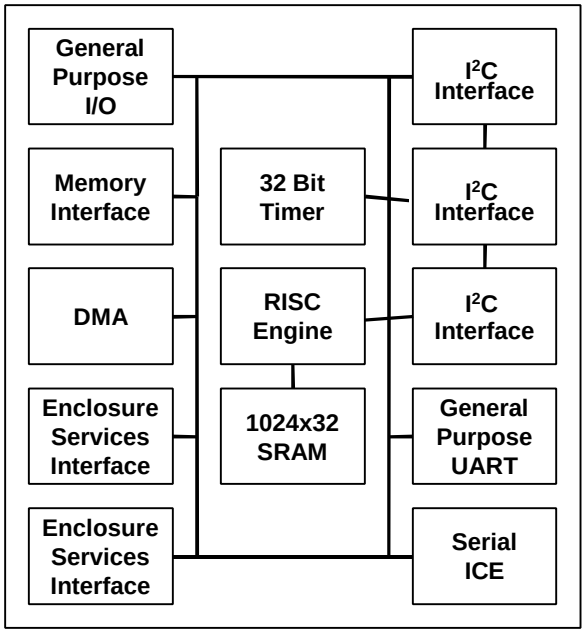
System Level Integration (SLI) techniques were used to create a complete system on a chip. The SSC200 integrates a RISC embedded processor and additional DMA, memory and controller functionality.

The SSC200 includes three, $I^2C$ 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.



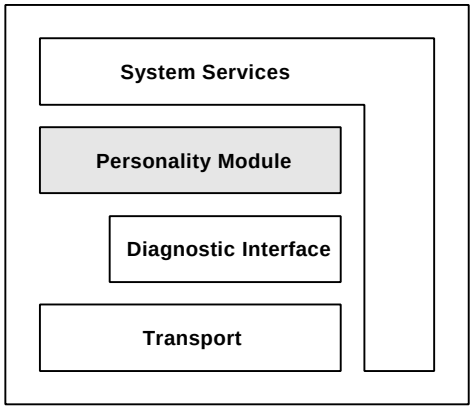

**SSC200 Block Diagram**

## 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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