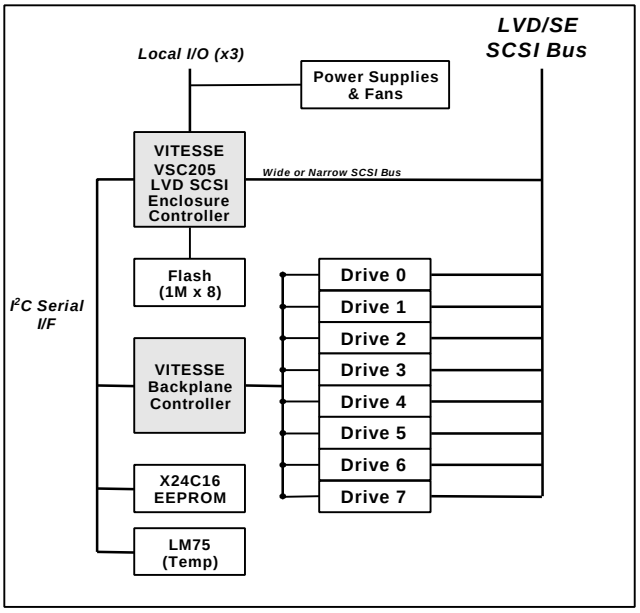
VSC205
LVD SCSI Enclosure Management Controller Product Brief

Overview
The VSC205 is an enclosure management controller for peripheral storage applications. This device supports in-band and out of band management strategies. The VSC205 implements in-band SES and SAF-TE enclosure management via the integrated SCSI interface. Out of band solutions are possible using IPMI (Intelligent Platform Management Interface) or through a customer unique approach.

JBOD and RAID subsystem developers are provided a common hardware and software platform, which supports all common subsystem diagnostic and enclosure management strategies. The VSC205 may be used as the master controller of a I^2C serial interface communicating with scalable slave backplane controllers such as Vitesse VSC055/050 and other industry standard devices.



Typical Application Block Diagram

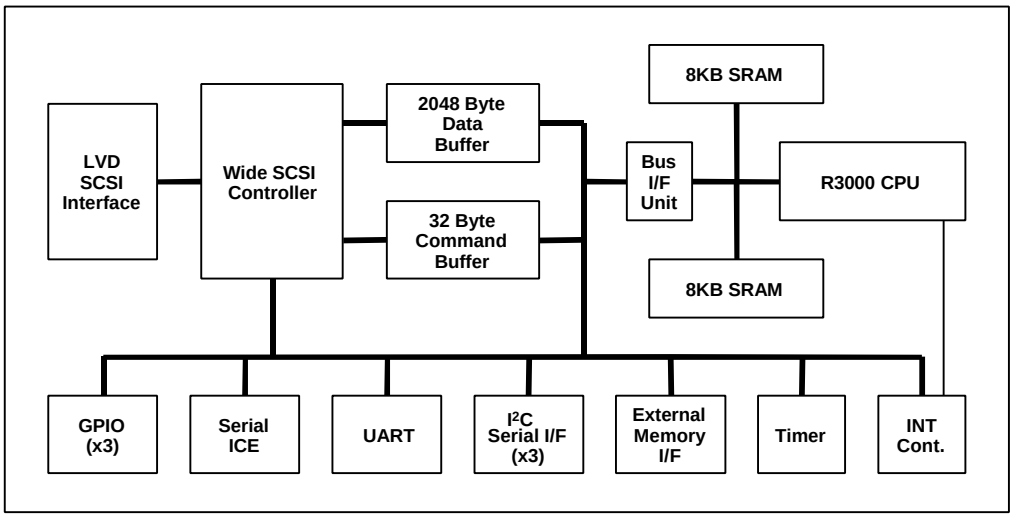
Device Features
- Integrated SCSI Controller with LVD or Single Ended operation over a wide SCSI bus
- Target and Initiator mode with wide SCSI arbitration and selection support
- Disconnect and reselect support minimizing SCSI bus connect time
- Three master/slave mode I^2C serial interfaces
- 32-bit, 40Mhz RISC CPU w/debug port
- RS-232 Monitor Port
- IPMI 1.0 Compatible
- External Flash and/or SRAM (60ns to 350ns)
- Two integrated 8K byte user data SRAMs
- 3 bits of user definable general purpose I/O with up to 3 external interrupts
- General purpose UART
- 160 PQFP Package

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 VSC205 offers dedicated port enclosure management across a parallel SCSI bus. The VSC205's integrated LVD SCSI controller is used to provide a high performance, SES or SAF-TE solution. No external components are required with this approach; the VSC205 integrates both the data and command buffers and control logic. This architecture provides system designers with a common platform for various SCSI bus speeds and physical interfaces.

Architecture
System Level Integration (SLI) techniques were used to create a complete system on a chip. The VSC205 integrates a RISC embedded processor and additional DMA, memory and controller functionality.

The VSC205 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



VSC205 Block Diagram

monitoring and management applications such as Vitesse VSC055/050 Backplane Controllers.

The VSC205 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 VSC205 has three external chip selects each with a one-megabyte address range.

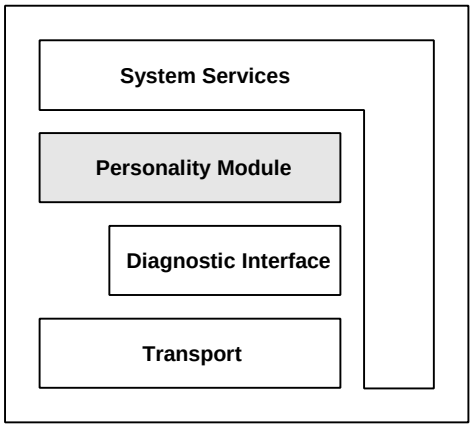
Two RS-232 serial ports provide assist firmware debug. One port is dedicated to in circuit emulation for the embedded processor. The second port implements a XMODEM connection for additional debug and firmware download. Firmware downloads are also supported via the SCSI bus.

Software

The software designed to execute on the VSC205 determines the characteristics of the overall enclosure management solution. Most enclosure management applications will be unique to a customer's individual product. The VSC205 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 SAF-TE or SES diagnostic environments. In addition, the SDK also includes a System Services module with provides APIs to the peripheral functionality (interrupts, timers etc.) in the VSC205.

The VSC205 shares a similar hardware and firmware architecture as Vitesse SSC200 and SSC100. 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

For More Information:
www.vitesse.com
email: prodinfo@vitesse.com
TEL: 1-800-VITESSE FAX: 805/987-5896

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