VSC7111

11.5 Gbps Quad Signal Conditioner Mux/Demux

Microsemi's best-in-class equalizer delivers the industry's highest performance PCI Express (PCIe) re-driver.

VSC7111 is a high-performance, quad-channel asynchronous buffer that simplifies high-speed signal path designs (up to 11.5 Gbps) by providing Microsemi's industry-proven signal equalization at both the inputs and outputs. The device optimizes energy efficiency with innovative Green modes that lower power consumption at lower data rates. Additional power savings can be achieved by deactivating unused channels and configuring the best output level settings for an application.

The VSC7111 device offers programmable, static, and adaptive equalization settings to provide a comprehensive solution for countering signal degradation over a wide variety of transmission cabling and interconnect transmission paths in broadcast video, telecommunications, storage, and server applications.

VSC7111 is fully compatible with the latest server, interconnect, and storage protocols including PCIe Gen 1/2/3, 10GBASE-KR, and SAS/SATA.

Loss of signal (LOS) detectors with programmable thresholds are included on every input port. Each channel includes PCIe Gen 1/2/3 receive detection and state machines. The VSC7111 can be configured for pass-through 4-channel buffer, dual 2 × 2 matrix, dual 1:2 duocast, or dual 2:1 selector configurations.

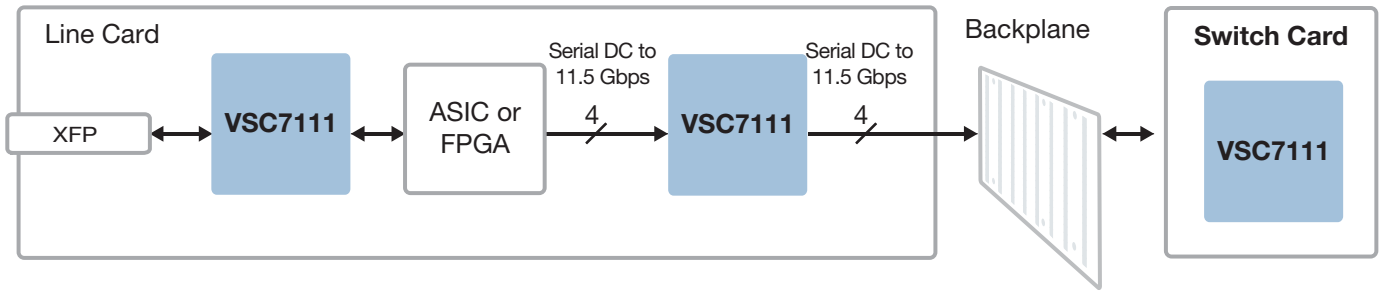
Highlights

- Up to 11.5 Gbps asynchronous operation
- Energy-efficient Green modes
- Adaptive equalization

Applications

- PCIe Gen 1/2 blade servers
- 1.5G, 3G, and 6G SAS/SATA
- High-speed cable equalization

VSC7111 Line Card and Central Switch Card Applications



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11.5 Gbps Quad Signal Conditioner Mux/Demux

Flexible Architecture

- 0 Gbps to 11.5 Gbps asynchronous operation
- 4-channel buffer, dual 2 × 2 matrix, dual 1:2 duocast, or dual 2:1 selector configurations

Best-in-Class EQ

- Input EQ of 26 dB at 11.5 Gbps
- Transmit pre-emphasis with 15 output levels (maximum 1600 mV differential peak-to-peak)
- Input sensitivity 100 mV differential peak-to-peak

Ultra Low-Power Green Mode

- 0.71 W typical power consumption in full power mode (11.5 Gbps) and 0.47 W typical power consumption in Green mode (6.5 Gbps)

Storage and Server Protocols

- PCIe Gen 1/2/3 receive detection and state machines
- SAS/SATA-compatible loss of signal (LOS) detection and out-of-band (OOB) forwarding

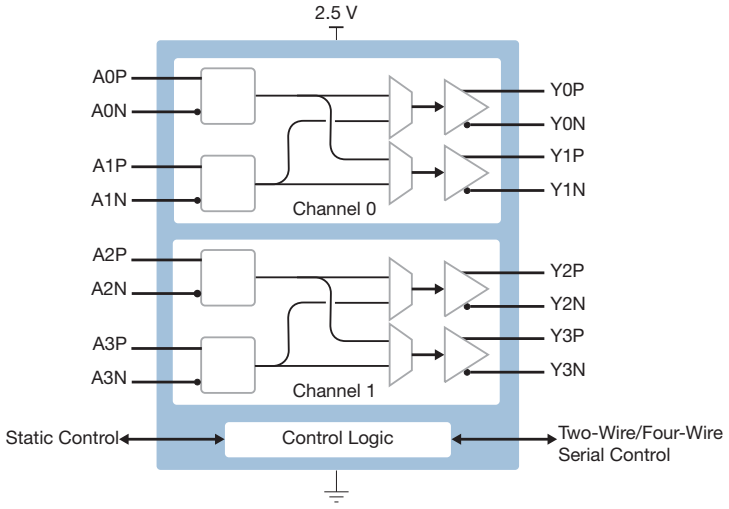
Key Specifications

- 2.5 V power supply
- 180 mW typical power consumption per channel in full-power mode, 140 mW per channel in Green mode
- 32-pin, 5 mm × 5 mm QFN package

Related Products

Visit www.microsemi.com for information about these related products:

- Crosspoint Switches
- Ethernet Switches



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