

VSC8489

Dual Channel WAN/LAN/Backplane RXAUI/XAUI to SFP+/KR 10 GbE SerDes PHY

Microsemi's full dual channel SerDes PHY provides hardware-based KR support for timing-critical applications, including all industry-standard protocol encapsulations.

The VSC8489 device meets the SFP+ SR/LR/ER/220MMF host requirements in accordance with the SFF-8431 specifications. It also compensates for optical impairments in SFP+ applications, along with degradations of the PCB.

The VSC8489 device provides full KR support, including KR state machine, for autonegotiation and link optimization. The transmit path incorporates a multitap output driver to provide flexibility to meet the demanding 10GBASE-KR (IEEE 802.3ap) Tx output launch requirements.

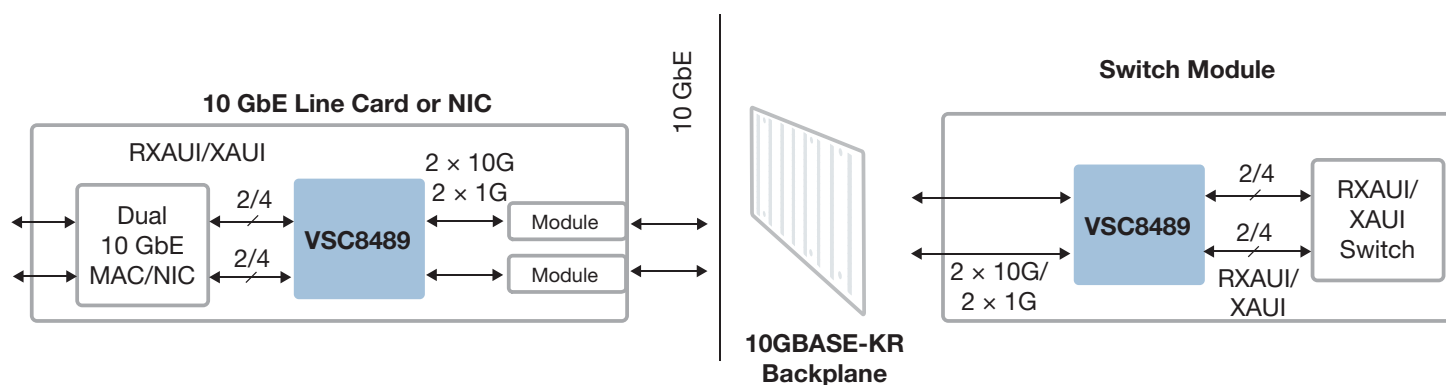
Highly flexible clocking options enable Layer 1 support for Synchronous Ethernet. The VSC8489 device uses a single 156.25 MHz reference clock for LAN/WAN operation. It includes a failover switching capability for protection routing, along with selectable lane ordering. A complete suite of BIST functionality includes line and client loopbacks along with pattern generation and error detection.

Highlights

- Failover switching and lane ordering
- Simultaneous LAN and WAN support
- RXAUI/XAUI support
- SFP+ I/O with KR support
- 1 GbE support
- Seamless upgrade path for IEEE 1588v2 and MACsec functionality

Applications

- Multiple-port RXAUI/XAUI to SFI/ SFP+ line cards or NICs
- 10GBASE-KR compliant backplane transceivers
- Secure data center to data center interconnects
- 10 GbE switch cards and router cards



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Range of Support

- Compliant to IEEE 802.3ae and SFF-8431 electrical (SFI) specifications
- 9.95 Gbps WAN and 10.3 Gbps LAN operation, as well as 1.25 Gbps Ethernet support
- Supports all standard SFP+ applications
- Support for 10GBASE-KR (IEEE 802.3ap) for 10G backplanes, including 1.25 Gbps and 10.3 Gbps autonegotiation
- Adaptive equalization receiver and programmable, multitap transmitter pre-emphasis
- Synchronous Ethernet support
- MDIO/SPI and two-wire serial slave management interfaces
- IEEE 1588v2/Y.1731 OAM precision timing support at 1.25 Gbps and 10.3 Gbps using pin-compatible VSC8489-10 and VSC8489-13 devices

Key Specifications

- 875 mW typical for each bidirectional channel
- 1.2 V and 1.0 V core power supplies (2.5 V TTL supply)

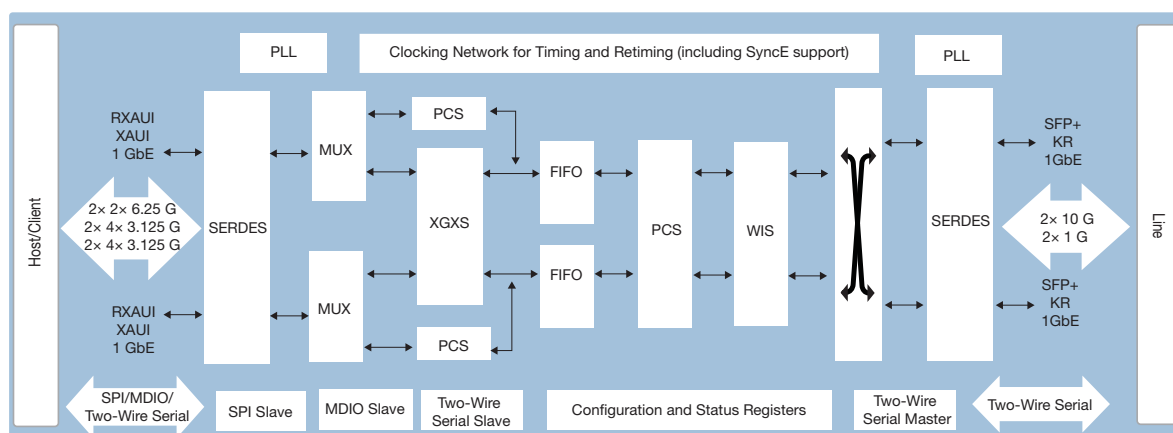
Flexibility

- Failover switching and lane ordering
- VScope input signal monitoring integrated circuit
- Host-side and line-side loopbacks with BIST functions
- I/O programmability for lane swap, invert, amplitude, slew, pre-emphasis, and equalization
- Optional forward error correction (FEC)
- Synchronous Ethernet support with flexible clocking
- Passive copper cable support for minimum transmission cost
- Extended temperature range (–40 °C to 110 °C) using pin-compatible VSC8489-13
- Pin compatible with VSC8489-10, VSC8489-13, VSC8490, and VSC8491

Related Products

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

- VSC8490-10
- VSC8491-10
- VSC8572
- VSC8574
- VSC8584



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