

VSC8256

Quad Channel 1G/10GBASE-KR to SFI Ethernet Repeater

VSC8256 is a quad 1G/10G serial-to-serial, protocol-agnostic repeater/retimer that integrates hardware-based host-side only 10GBASE-KR auto-negotiation and training in a small form factor, low-power FCBGA ideal for a wide array of board-level signal integrity applications.

The quad channel VSC8256 device operates as a 10 GbE LAN, 10G WAN, 40 GbE (4 x 10G), as well as 1G legacy KR repeater with integrated cross-point switching enabling configurable line ordering for protection and broadcasting flexibility.

Target applications for the VSC8256 device include switching, IP edge router connectivity, rack mount server access through backplane, fiber and copper cable connectivity, and standalone server access (in LAN on motherboard designs or separate network adapters).

The VSC8256 device delivers excellent jitter attenuation with low power. It is also well-suited for SFP+ and QSFP+ based optical modules and direct attach copper cabling as well as challenging backplane interface applications.

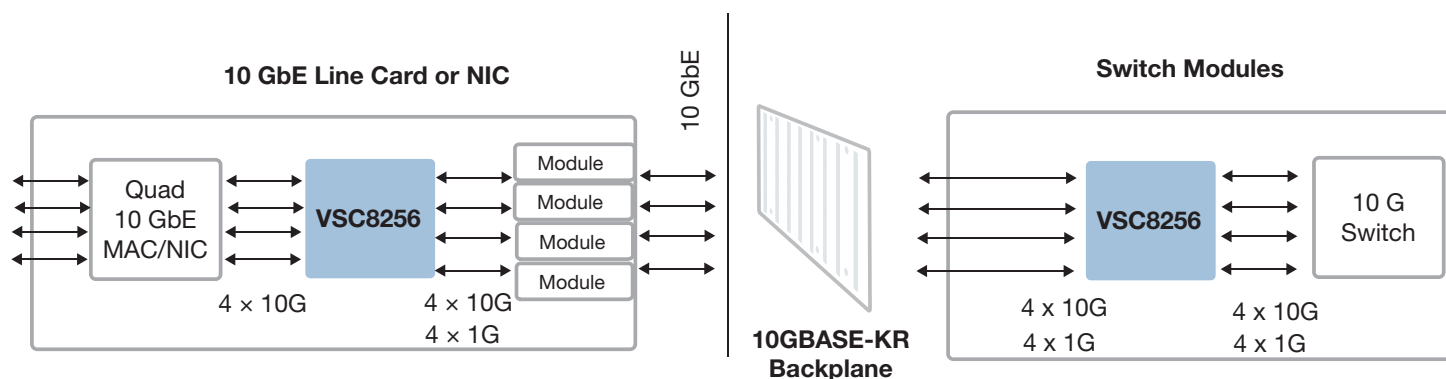
Its highly flexible clocking options support LAN and WAN operation using a single 156.25 MHz reference clock rate. Support for Synchronous Ethernet (SyncE) is also included.

Highlights

- Standards supported include IEEE 802.3ae, IEEE 802.3ap, SFF-8431, ITU-T G.8261, and ITU-T G.8262
- Data rates supported include 10.3125 Gbps LAN mode, 9.95328 Gbps WAN mode, and 1.25 Gbps mode
- Signal conditioner mode supports protocol-agnostic data rates
- Support for SFP+/QSFP+ line modules and 10GBASE-KR backplanes between 1.25 Gbps and 10.3125 Gbps (including host-side auto-negotiation and training)

Applications

- Multi-port serial-to-serial signal conditioning
- 10GBASE-KR-compliant backplane transceivers
- Multi-port XFI/KR to SFI/SFP+ 10 GbE switch cards, router cards, and network adapters



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Built-in Self-Test and SyncE

The VSC8256 device provides a complete suite of on-chip instrumentation including built-in self-test (BIST) functions, line-side and client-side circuit loopbacks, pattern generation, and error detection.

Range of Support

- Compliant with IEEE 802.3-2012 and SFF-8431 electrical (SFI) specifications
- 9.95 Gbps WAN and 10.3 Gbps LAN operation, as well as 1.25 Gbps Ethernet support
- Standard SFP+ and QSFP+ applications
- 10GBASE-KR (IEEE 802.3-2012) for 10G backplanes, including 1.25 Gbps and 10.3 Gbps auto-negotiation (host-side)
- Adaptive equalization receiver and programmable multi-tap transmitter pre-emphasis
- SPI, MDIO, and two-wire serial slave management interfaces

Key Specifications

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

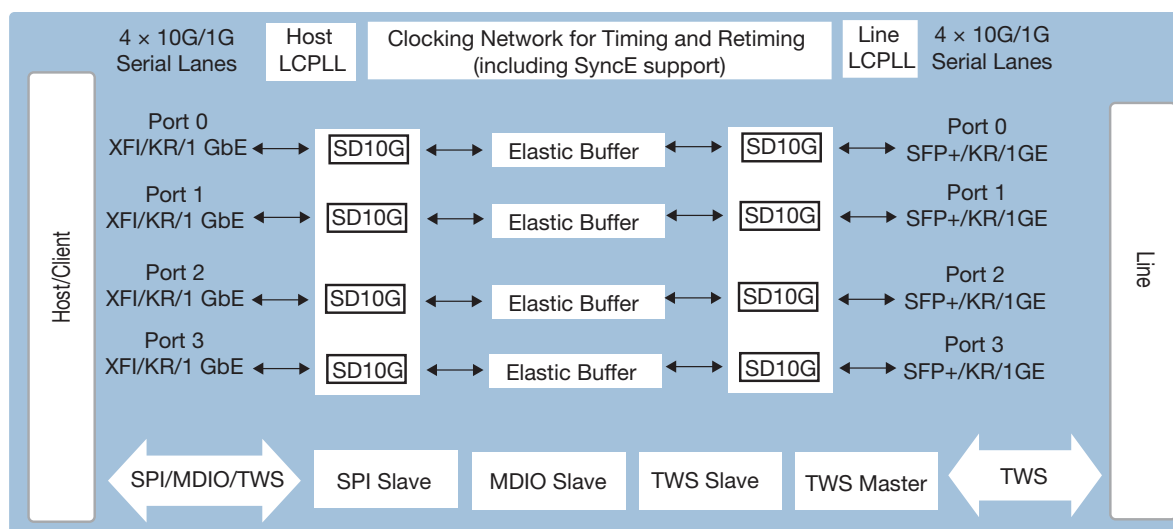
Flexibility and Tools

- VScope input signal monitoring integrated circuit
- Host-side and line-side loopbacks with BIST functions
- Programmable analog signal, invert, amplitude, slew, pre-emphasis, and equalization
- Flexible clocking options that enable Layer 1 support for Synchronous Ethernet
- Passive copper cable support for lowest connectivity cost

Related Products

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

- VSC8257 and VSC8258
- VSC8489, VSC8490, and VSC8491
- VSC8582 and VSC8584
- VSC7442, VSC7444, and VSC7448
- VSC7460, VSC7462, and VSC7468



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