

VSC8258

Quad Channel 1G/10GBASE-KR to SFI Ethernet WIS PHY with VeriTime™ and Intellisec™

VSC8258 is a quad 1G/10G serial-to-serial Ethernet PHY featuring IEEE 1588v2 and 128/256-bit MACsec encryption. It also supports dual-sided 10GBASE-KR functionality including auto-negotiation and training in a small form factor, low-power FCBGA ideal for a wide array of board-level signal integrity designs and system-level IEEE standard compliant (intelligent) Ethernet connectivity.

VeriTime™ is Microsemi’s patent-pending timing technology that delivers the industry’s most accurate IEEE 1588v2 timing implementation. It is the only IEEE 1588v2 solution to be validated by major OEMs in real-world tests and adopted as the preferred low-cost upgrade for meeting emerging requirements in 4G/LTE-Advanced (LTE-A).

Intellisec™ is Microsemi’s patent-pending flow-based extension of the IEEE 802.1AE-based, end-to-end MACsec solution for confidential communications over any MEF CE 2.0 Ethernet or MPLS service provider connections. It is the world’s first FIPS 197-certified CGM-AES 256-bit strong MACsec, with legacy support for today’s CGM-AES 128-bit field deployments. The VSC8258 device supports full line rate encryption at both 1 GbE and 10 GbE speeds over multiple media types.

Target applications for the VSC8258 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).

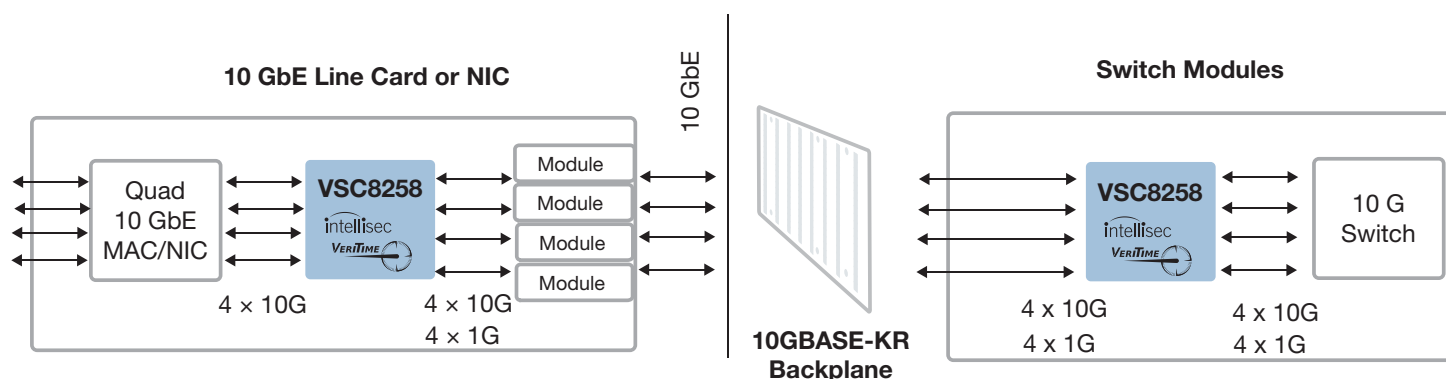
The VSC8258 device delivers excellent jitter attenuation with low power. It is well-suited for SFP+ and QSFP+ based optical modules and direct attach copper cabling as well as challenging backplane interface applications.

Highlights

- Standards supported include IEEE 1588v2/Y.1731 OAM (4 ns), IEEE 802.1AE (128/256-bit MACsec), IEEE 802.3ae, IEEE 802.3ap, SFF-8431, ITU-T G.8261, and ITU-T G.8262
- Support for 10G LAN, 10G WAN, and 1G modes
- Support for SFP+/QSFP+ line modules and 10GBASE-KR backplanes between 1.25 Gbps and 10.3125 Gbps (including auto-negotiation and training)

Applications

- Multi-port serial-to-serial signal conditioning
- 10GBASE-KR-compliant backplane transceivers
- Networks requiring high-accuracy time synchronization
- Encryption, authentication, and data integrity across WAN data center interconnections
- Multi-port XFI/KR to SFI/SFP+ 10 GbE switch cards, router cards, and network adapters



Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information itself or anything described by such information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.

VSC8258

Quad Channel 1G/10GBASE-KR to SFI Ethernet WIS PHY with VeriTime™ and Intellisec™

Built-in Self-Test and SyncE

The VSC8258 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. 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.

Range of Support

- IEEE 1588v2/Y.1731 OAM precision timing support at 1.25 Gbps and 10.3 Gbps
- Compliant with IEEE 802.1AE specifications for 128/256-bit MACsec 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
- Adaptive equalization receiver and programmable multi-tap transmitter pre-emphasis
- SPI, MDIO, and two-wire serial slave management interfaces

Key Specifications

- 1.4 W, typical, for each bidirectional channel
- 1.2 V and 0.97 V core power supplies (2.5 V TTL supply)

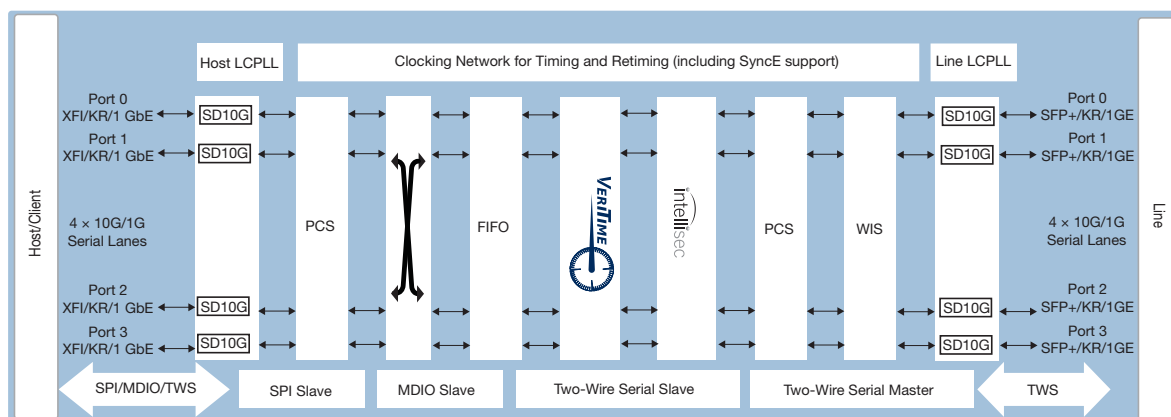
Flexibility and Tools

- VScope input signal monitoring integrated circuit
- Host-side and line-side loopbacks with BIST functions
- I/O programmability for lane swap, invert, amplitude, slew, pre-emphasis, and equalization
- Optional forward error correction (FEC)
- 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:

- VSC8256 and VSC8257
- VSC8489, VSC8490, and VSC8491
- VSC8582 and VSC8584
- VSC7442, VSC7444, and VSC7448
- VSC7460, VSC7462, and VSC7468



Microsemi Corporate Headquarters
 One Enterprise, Aliso Viejo, CA 92656 USA
 Within the USA: +1 (800) 713-4113
 Outside the USA: +1 (949) 380-6100
 Sales: +1 (949) 380-6136
 Fax: +1 (949) 215-4996
 email: sales.support@microsemi.com
www.microsemi.com

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense and security, aerospace, and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs, and ASICs; power management products; timing and synchronization devices and precise time solutions; voice processing devices; RF solutions; discrete components; enterprise storage and communications solutions, security technologies, and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California, and has approximately 4,800 employees worldwide. Learn more at www.microsemi.com.