

VSC8564

Quad Port QSGMII/SGMII Dual Media GbE PHY with Intellisec™

The VSC8564 device enables network-wide Layer 2 MACSec encryption with a simple PHY upgrade.

The quad port VSC8564 GbE PHY with Intellisec is ideal for securing cloud network applications such as e-commerce, databases, collaboration, smart grid, video, and enterprise or government communications. In addition, VSC8564 can be added into the design of FIPS 140-2 compliant products for use in a wide variety of markets including (but not limited to) medical, insurance, financial, banking, military, defense, security, retail, industrial, entertainment, and cloud computing.

Intellisec enables a realistic and affordable Layer 2 MACsec security solution. Intellisec is a patented technology enabling IEEE 802.1AE MACsec encryption end-to-end over any network (including multioperator and cloud-based networks), independent of the network's awareness of security protocols. Intellisec is not limited to traditional MACsec link-based box-to-box applications, and scales easily with the number of interfaces (delivering significant cost savings in network deployment), but is still capable of being configured to be 100% backward compatible to currently deployed 128-bit MACsec 802.1AE-2006 compliant solutions. The device also includes dual recovered clock outputs for timing references in Synchronous Ethernet solutions.

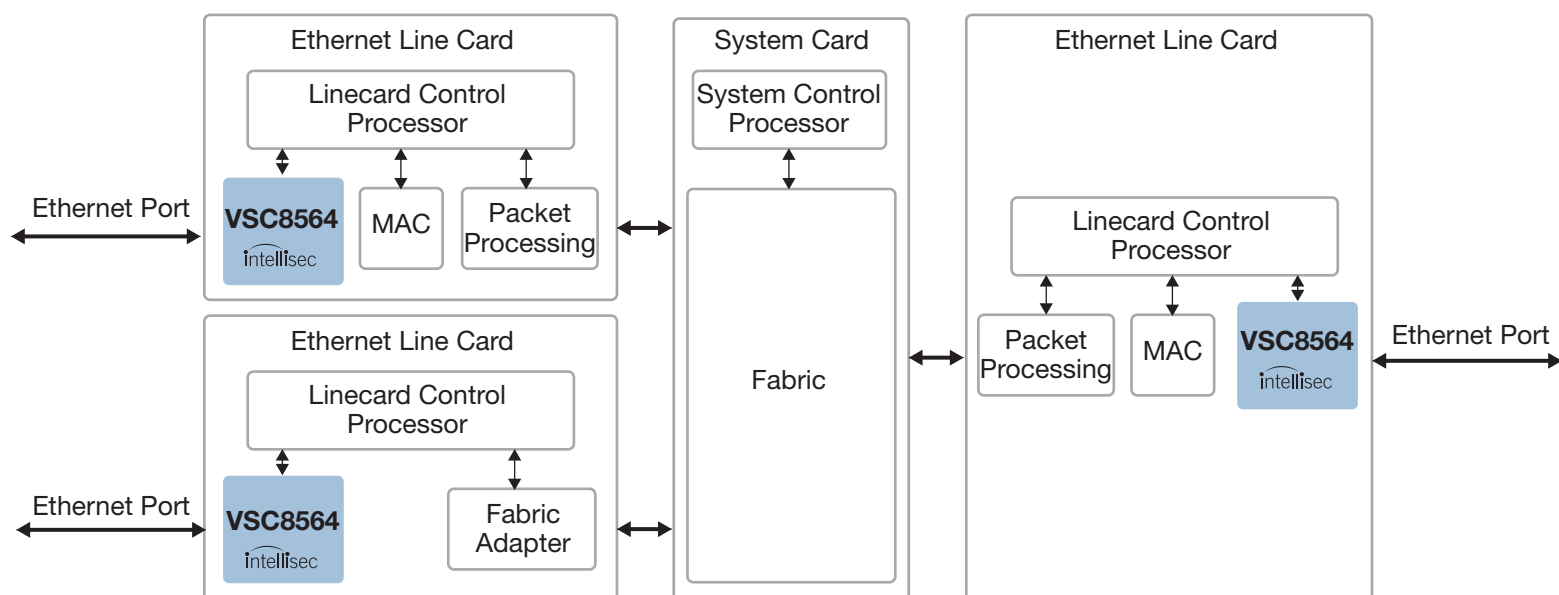
VSC8564 is pin compatible with the 1588v2 PTP-capable VSC8584 device.

Highlights

- Part of the world's first and only NIST FIPS197 128/256-bit MACsec-support family of GbE PHYs
- 802.1AE-2006, 802.1AEbn-2011, and 802.1AEbw-2013 compliant
- Exclusive patented "Tag-in-the-Clear" and "Flow-Based" technologies enable MACsec to work in any IPv4 or IPv6-based network capable of supporting VLANs and/or MPLS
- UNH IOL certified
- EcoEthernet™ 2.0 green technology
- VeriPHY™ cable diagnostics that work concurrently while line is in use

Applications

- FIPS 140-2 compliant designs
- WLAN (Wi-Fi) access points
- Industrial automation systems
- Secure data center to data center interconnects
- HIPPA compliant medical equipment
- Small Cells
- CPE/vCPE (Gateways)



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Best-in-Class Power Consumption

- Voltage-mode architecture line-drivers with integrated termination resistors
- EcoEthernet 2.0 green energy efficiency modes with ActiPHY automatic link power down, PerfectReach™ intelligent cable algorithm, and IEEE 802.3az (including connection to legacy MACs not supporting IEEE 802.3az)
- Optimized power consumption for all link speeds

Superior PHY and Interface Technology

- Four integrated 10/100/1000BASE-T Ethernet copper transceivers (IEEE 802.3ab compliant) with VeriPHY™ cable diagnostics
- Four dual media copper/fiber ports with unidirectional IEEE 802.3ah support
- SGMII and QSGMII SerDes MAC interface
- Patented line driver with low EMI voltage mode architecture and integrated line-side termination resistors
- HP Auto-MDIX support
- Integrated AC-coupling capacitors for SGMII interface
- Jumbo frame support up to 16 kB with programmable synchronization FIFOs

Advanced Carrier Ethernet Support

- Recovered clock outputs with programmable clock squelch control and fast link failure indication (1.6 ms typical) for G.8261 SyncE applications

- Flexible transmit and receive frequency timing per PHY port
- 1000BASE-T ring resiliency for switching between master/slave timing while maintaining linkup
- Integrated quad I2C MUX to control SFP and PoE modules
- IEEE 802.3bf timing and synchronization support

Key Specifications

- 1.0 V core and 2.5 V I/O power supplies
- 3.3 V-tolerant 2.5 V inputs
- QSGMII v1.3, SGMII v1.9 and IEEE 1149.1 JTAG boundary scan support
- Compliant with IEEE 802.3 (10/100BASE-T, 10BASE-Te, 100BASE-TX, 100BASE-FX, and 1000BASE-X)
- Operating temperature range for VSC8564XKS-11 is 0 °C ambient to 125 °C junction. Operating temperature range for VSC8564XKS-14 is -40 °C ambient to 125 °C junction

Related Products

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

- 1 GbE PHYs
- 10 GbE PHYs

