

# VSC8575

## Quad-Port 10/100/1000BASE-T PHY with Synchronous Ethernet, VeriTime™, and QSGMII/SGMII MAC

The quad port VSC8575 GbE PHY with VeriTime™ is ideal for securing cloud network applications including e-commerce, database, collaboration, smart grid, video, and enterprise or government communications.

VeriTime™ is Microsemi's patent-pending timing technology that delivers the industry's most accurate IEEE 1588v2 timing implementation available on the market today ( $\pm 4$  ns accuracy, 1 ns precision, 1000BASE-T).

VSC8575 supports Y.1731 OAM and MPLS-TP OAM for accurate delay measurement and performance monitoring. In addition, it includes dual recovered clock outputs for timing references in Synchronous Ethernet solutions. Using Microsemi's Ring Resiliency™ technology, the PHY switches between master and slave timing without interrupting the 1000BASE-T link.

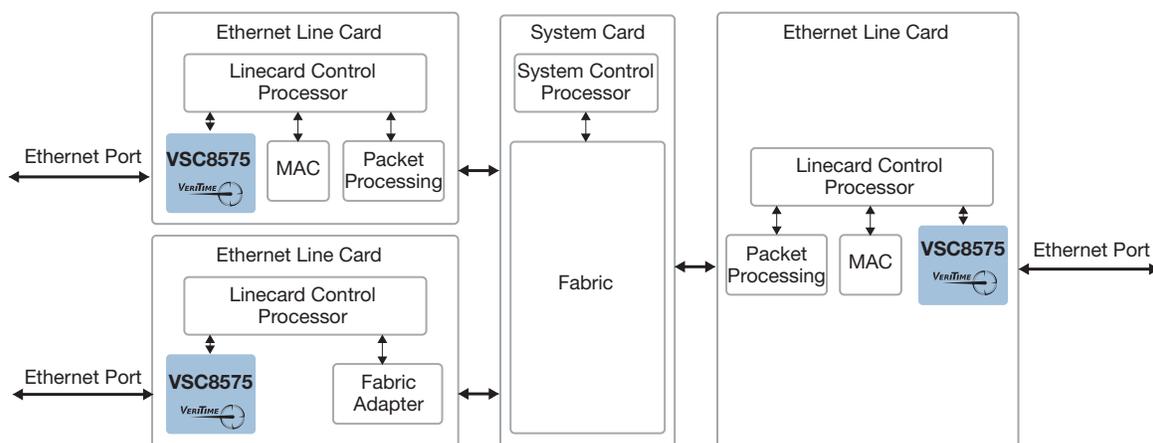
The device includes a simplified hardware and software migration path for designs already using VSC8574, VSC8572, VSC8504, or VSC8552 devices. It serves as the perfect alternative to the VSC8584 or VSC8582 devices for designs that need the highest 1588v2 PTP accuracy, but may not need MACsec 256-bit/128-bit encryption.

### Highlights

- One-step and two-step VeriTime™ time stamping over encapsulated links including MPLS and PBB
- MPLS and Ethernet Y.1731 OAM
- EcoEthernet™ 2.0 green technology
- Supports clause 45 MDIO register access
- Enhanced SPI interface supports high port count IEEE 1588v2 applications

### Applications

- Wireless backhaul systems
- Carrier Ethernet cellular base systems
- Industrial automation systems
- Secure data center to data center interconnects



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## Best-in-Class Power Consumption

- Voltage-mode quad port GbE PHY
- EcoEthernet 2.0 green energy efficiency modes with ActiPHY™ automatic link power down, PerfectReach™ intelligent cable algorithm, and IEEE 802.3az (including support for legacy MACs not supporting IEEE 802.3az)
- Fully 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 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 ms) for G.8261 SyncE applications

- Supports IEEE 1588v2 time stamp packet correction
- Flexible transmit and receive frequency timing per PHY port
- 1000BASE-T ring resiliency for switching between master/slave timing while maintaining linkup integrity
- Integrated quad I2C MUX to control SFP and PoE modules
- Supports IEEE 802.3bf timing and synchronization

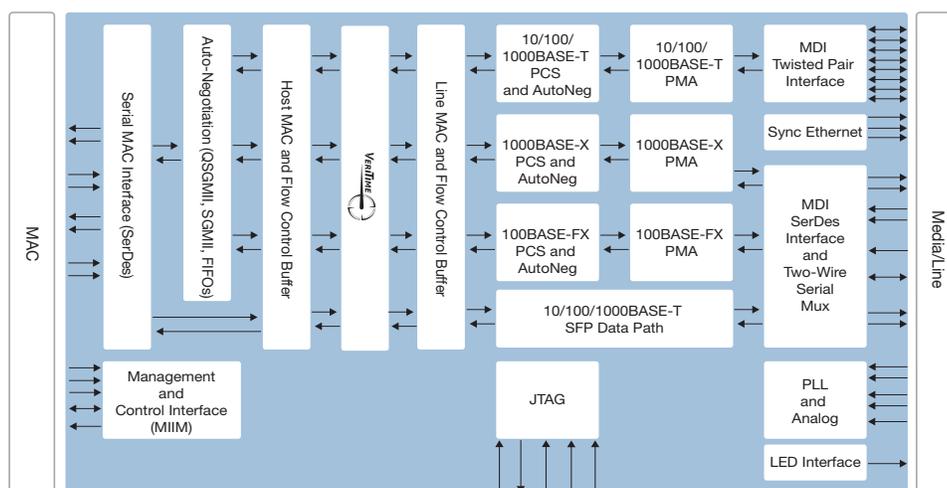
## Key Specifications

- 1.0 V core and 2.5 V I/O power supplies
- 3.3 V-tolerant 2.5 V inputs
- Supports QSGMII v1.3, SGMII v1.9, IEEE 1149.1 JTAG boundary scan, and IEEE 1149.6 AC-JTAG
- Compliant with IEEE 802.3 (10/1000 BASE-T, 10BASE-Te, 100BASE-TX, 100BASE-FX, and 1000BASE-X)
- Operating temperature range for VSC8575XKS-11 is 0 °C ambient to 125 °C junction. Operating temperature range for VSC8575XKS-14 is -40 °C ambient to 125 °C junction

## Related Products

Visit [www.microsemi.com](http://www.microsemi.com) for information about these related products:

- 1 GbE PHYs
- 10 GbE PHYs



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