

# VSC8522

## 12-Port 10/100/1000BASE-T PHY with QSGMII MAC Interfaces

Microsemi's next-generation triple-speed PHY delivers the industry's lowest power Gigabit Ethernet physical media solution.

The VSC8522-02 and VSC8522-04 devices contain 12 integrated Gigabit Ethernet (GbE) PHYs with a power efficient voltage-mode design, all within a single package. They leverage Microsemi's 65 nm technology, resulting in one of the most cost-effective and lowest power consumption solutions in the industry. They include the most advanced Ethernet energy efficiency features for bringing green technology solutions to market.

The devices employ the latest QSGMII MAC interfaces to reduce PCB routing to a MAC, switch, or ASIC chip. Ideal for high-density switch and router applications, these devices enable Ethernet multiport systems to achieve very low system Bill of Material (BOM) costs, reducing overall production costs for more cost-effective deployments.

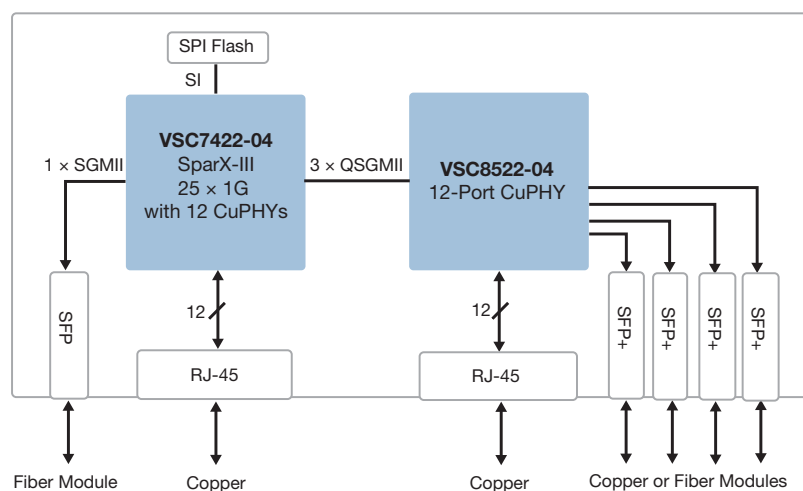
The devices use field-proven, fully adaptive equalization and innovative timing recovery algorithms for unparalleled noise tolerance performance. In addition, they are based on patented, fully balanced voltage-mode line driver technology, which allows lower cost magnetics to be used.

### Highlights

- 12 GbE PHYs in a single package
- QSGMII MAC interfaces
- Simplified design requires only two voltage planes

### Applications

- Blade servers
- Edge and Access platforms
- Ethernet switches and routers
- Industrial/IoT



**VSC8522-04 in a 1-Gigabit industrial switch application**

# VSC8522

## 12-Port 10/100/1000BASE-T PHY with QSGMII MAC Interfaces

### Best-in-Class Power Consumption

- One of the lowest power per-port GbE PHY in the industry
- Green energy efficiency modes including ActiPHY™, Perfect-Reach™, and IEEE 802.3az
- Programmable direct drive LED outputs with adjustable brightness levels
- Optimal power consumption for all link speeds

### Features

- 12 integrated 10/100/1000BASE-T full and half duplex Ethernet transceivers with VeriPHY™ cable diagnostics
- QSGMII SerDes MAC interfaces
- Patented line driver with low EMI voltage mode and integrated line side termination resistors
- Jumbo frame support up to 16 kB with programmable synchronization FIFOs
- Extensive test features including loopbacks, packet generators, and CRC counters
- HP Auto-MDIX support

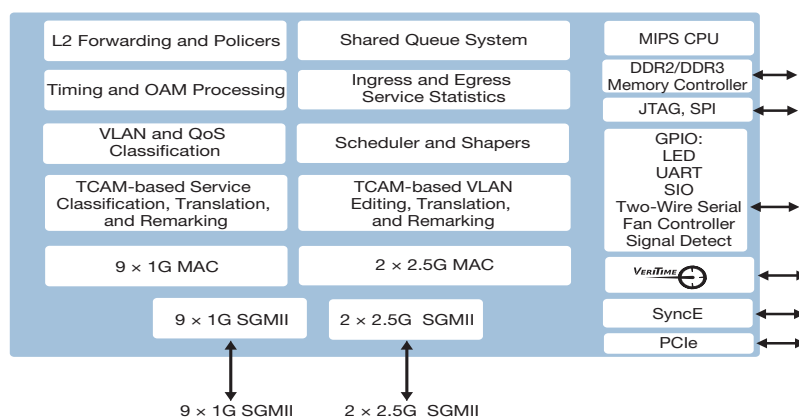
### Key Specifications

- 1.0 V core power supply
- 2.5 V I/O power supplies
- 3.3 V-tolerant 2.5 V inputs
- 24 mm × 24 mm thin quad flat package (TQFP)
- Supports QSGMII v1.2, IEEE 1149.1 JTAG boundary scan, and IEEE 1149.6 AC-JTAG
- Compliant with IEEE 802.3 (10BASE-T, 100BASE-TX, and 1000BASE-T)
- 0 °C to 125 °C temperature range for VSC8522-02
- -40 °C to 125 °C temperature range for VSC8522-04

### Related Products

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

- Ethernet switches
- 10G PHY solutions
- 1G PHY solutions



**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](mailto:sales.support@microsemi.com)  
[www.microsemi.com](http://www.microsemi.com)

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense & 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, setting the world's standard for time; voice processing devices; RF solutions; discrete components; security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, Calif., and has approximately 4,800 employees globally. Learn more at [www.microsemi.com](http://www.microsemi.com).