

# VSC8504

## Quad Port QSGMII Dual Media PHY with EEE Support

Microsemi's new GbE PHY with award-winning EcoEthernet™ technology delivers best-in-class power consumption for QSGMII designs.

VSC8504 is a quad port Gigabit Ethernet PHY with Microsemi's next-generation EcoEthernet green technology for optimizing power in Enterprise networks, data centers, and consumer electronics. VSC8504 supports four dual media copper/fiber ports with QSGMII MAC interfaces, delivering Carrier-quality Synchronous Ethernet for TDM backhaul links, cellular base stations, and other SyncE applications. VSC8504 features Microsemi's innovative EcoEthernet 2.0 technology that supports Energy Efficient Ethernet (EEE) through ActiPHY™ automatic link powerdown and the PerfectReach™ intelligent algorithm that adjusts power based on cable length.

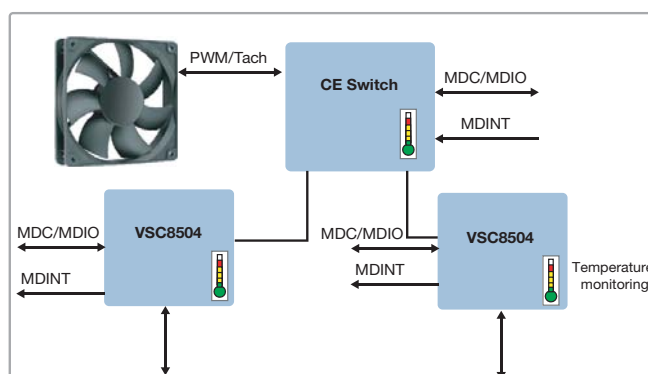
The VSC8504 device optimizes power consumption in all link operating speeds. It includes integrated temperature monitoring and smart fan control for extending system life and reducing BOM costs. Adjustable LED brightness control further reduces power consumption for end users.

### Highlights

- EcoEthernet 2.0 green technology for energy efficiency
- IEEE 802.3az Energy Efficient Ethernet (EEE) support
- QSGMII MAC interfaces

### Applications

- Enterprise switches and routers
- Home gateways and wireless routers



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## Quad Port QSGMII Dual Media PHY with EEE Support

### Best-in-Class Power Consumption

- Lowest power quad port GbE PHY in the industry
- EcoEthernet 2.0 green energy efficiency modes including ActiPHY, PerfectReach, and IEEE 802.3az
- Integrated temperature monitoring and LED brightness control
- 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
- QSGMII SerDes MAC interfaces
- Patented line driver with low EMI voltage mode and integrated line side termination resistors
- HP Auto-MDIX support
- Integrated AC-coupling capacitor
- Jumbo frame support up to 16 kB with programmable synchronization FIFOs

### Superior PHY and Interface Technology

- Recovered clock outputs with programmable clock squelch control and fast link failure indication (<1 ms) for G.8261 SyncE applications
- 1000BASE-T ring resiliency for switching between master/slave timing while maintaining link up 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
- 17 mm × 17 mm ball grid array package
- Supports QSGMII v1.3, IEEE 1149.1 JTAG boundary scan, and IEEE 1149.6 AC-JTAG
- Compliant with IEEE 802.3 (10/100BASE-T, 100BASE-TX, 100BASE-FX, and 1000BASE-X)

### Related Products

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

- 1 GbE Carrier Ethernet switches, PHYs, and MACs
- 10/40/100G PHY solutions
- Electronic dispersion compensation CDRs and backplane signal conditioners



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