

# VSC7428-12

## 11-Port L2 Ethernet Switch with 8 Fully Integrated Copper PHYs and Embedded MIPS CPU

Microsemi's switch family delivers a comprehensive end-to-end Carrier Ethernet solution.

VSC7428-12 is the industry's most integrated 11-port Ethernet switch with three SGMII ports, eight Fast Ethernet copper PHYs, and two 1G/2.5G SGMII uplink ports. One SGMII port can be dedicated to the CPU for packet insertion and extraction. VSC7428-12 meets the IEEE 802.3az requirements for green energy efficient Ethernet through Microsemi's ActiPHY™ and PerfectReach™ energy efficient modes. A powerful embedded 416 MHz MIPS processor 32-bit CPU with DDR2 external memory and DMA-based frame extraction and insertion supports VeriTime™, Ethernet OAM, and performance monitoring.

For critical network timing applications, VSC7428-12 uses VeriTime™, Microsemi's patent-pending distributed timing technology that delivers the industry's most accurate IEEE 1588v2 timing implementation.

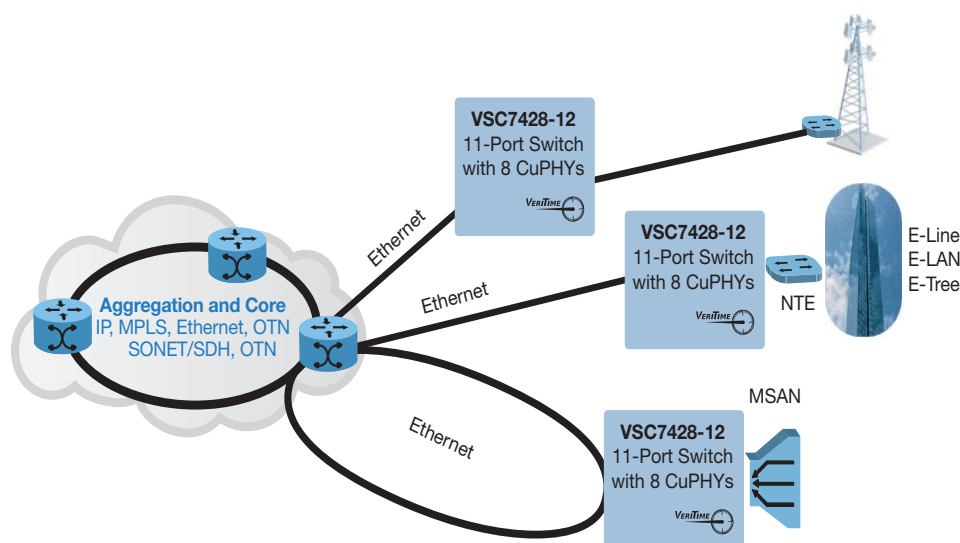
A comprehensive application programming interface (API) and software development package accelerates time-to-market for managed Ethernet applications. The software API package integrates easily with third-party software, preserving existing software investments.

### Highlights

- Fully integrated Fast Ethernet copper PHYs
- Integrated timing: VeriTime™, SyncE
- Supports IEEE 802.3az and green energy efficiency modes with ActiPHY™ and PerfectReach™

### Applications

- Industrial switches and routers
- Carrier Ethernet switches



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### I/O Configurations

- 8 × 10/100 Cu PHY
- 1 × 10/100/1000 SGMII
- 2 × quad-speed 10/100/1000/2500 Mbps SGMII
- Up to three ports supporting 100BASE-FX or 1000BASE-X SerDes

### Architecture

- Shared memory buffer with per-port and CoS memory management
- 4 Mb packet memory
- Hierarchical MEF compliant policing and scheduling
- 8 priorities and 8 CoS queues per port with strict or deficit-weighted round robin scheduling
- Shaping/policing per queue and per port
- Advanced security and prioritization available through a multi-stage TCAM engine
- 8 integrated 10/100 Mbps Ethernet copper transceivers (IEEE 802.3ab compliant) with ActiPHY™ and PerfectReach™ power management and VeriPHY™ cable diagnostics
- Integrated 416 MHz MIPS CPU with DDR2 and serial flash interface

### Layer 2 Switching

- 802.1Q VLAN switch with 8K MACs and 4K VLANs
- Push/pop up to two VLAN tags
- IPv4/IPv6 multicast
- Policing with storm control and MC/BC protection
- RSTP and MSTP support
- Hardware and software-based learning

- Link aggregation (IEEE 802.3ad)
- Independent and shared VLAN learning (IVL, SVL)
- Jumbo frame support

### Carrier Ethernet Features

- Provider Bridging (PB)
- MEF E-Lane, E-Line, and E-Tree services
- Dual leaky bucket policers with remarking and statistics
- OAM and protection switching
- L1 Synchronous Ethernet
- Enhanced Carrier Ethernet API

### VeriTime™ Features

- L2 IEEE 1588v2
- Boundary clock and transparent clock

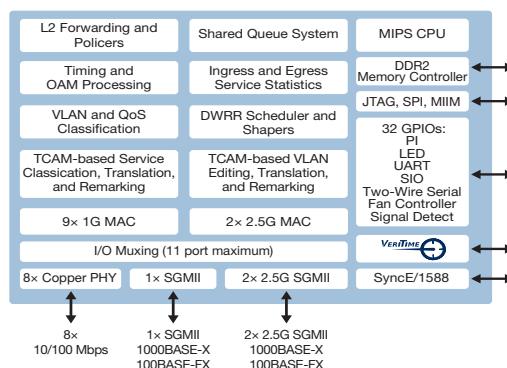
### Key Specifications

- 27 mm × 27 mm BGA thermally enhanced package
- Operating temperature –40 °C to 125 °C

### Related Products

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

- VSC7460/VSC7462 24/12-Port Gigabit Ethernet Carrier Ethernet Switch with VeriTime™
- Unified API, WebStaX™, SMBStaX™, and CEServices™ software
- VSC7429 26-Port Layer 2 Gigabit Ethernet Switch with VeriTime™, 12 Copper PHYs, and Embedded CPU



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