

VSC7416

7-Port Layer-2 SGMII Gigabit Ethernet Switch with MPLS/MPLS-TP Support and VeriTime™

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

VSC7416 contains five 10/100/1000 Mbps SGMII/SerDes ports and two 2.5G SGMII/SerDes ports. The VSC7416 device provides a rich set of Carrier Ethernet switching features such as MPLS/MPLS-TP, MEF Ethernet services, hierarchical QoS scheduling, provider bridging, protection switching, OAM, and Synchronous Ethernet.

For critical network timing applications, VSC7416 uses VeriTime™, Microsemi's patent-pending distributed timing technology that delivers the industry's most accurate IEEE 1588v2 timing implementation.

VSC7416 supports advanced TCAM-based service SLA guarantees. Security is assured through frame processing using a TCAM-based Versatile Content Aware Processor (VCAP).

An embedded 416 MHz MIPS processor 32-bit CPU with DDR2/DDR3 external memory and DMA-based frame extraction and insertion supports VeriTime[™] as well as injection of advanced data flows for service activation measurement (SAM) testing.

VSC7416 is an excellent choice for Mobile backhaul and for service provider demarcation points in Edge and Access devices.

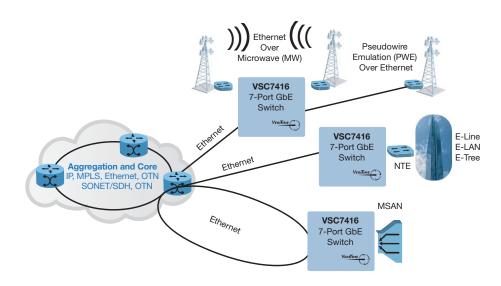
A comprehensive application programming interface (API) and software package are provided for Carrier Ethernet applications. The software package integrates easily with third-party software, preserving existing software investments while adding new, enhanced carrier functionality.

Highlights

- Ethernet, MPLS, and MPLS-TP
- MEF UNI and NNI functionality
- Hardware-based Ethernet OAM, performance monitoring, and service activation measurement (SAM)
- Network demarcation
- Hierarchical QoS priority for queuing and subscriber separation
- Service protection (linear, ring)
- Integrated timing: VeriTime™, SyncE

Applications

- Wireless and mobile backhaul (small cell)
- Ethernet/MPLS demarcation



Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information is entirely by such information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.



VSC7416

7-Port Layer-2 SGMII Gigabit Ethernet Switch with MPLS/MPLS-TP Support and VeriTime™

Architecture

- Integrated shared packet memory
- Fully nonblocking wire-speed switching performance for all frame size
- 8 QoS classes with thousands of queues that can be assigned to ports, QoS classes, and services
- OAM and performance monitoring (IEEE 802.1ag ITU-T Y.1731, ITU-T Y.1564)
- Protection switching (ITU-T G.8031, ITU-T G.8032)
- Advanced security and prioritization available through a multistage TCAM engine

Layer 2 Switching

- IEEE 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)
- MPLS and MPLS-TP

- 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

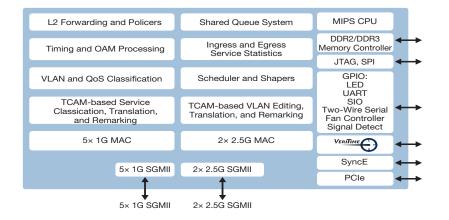
Key Specifications

- 24 mm × 24 mm thermally enhanced TQFP package
- 1.5 W typical power dissipation
- Operating temperature -40 °C to 125 °C

Related Products

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

- VSC7418 11-Port Layer 2 Gigabit Ethernet Switch with MPLS/ MPLS-TP and VeriTime[™]
- VSC7460/VSC7462 24/12-Port Gigabit Ethernet Carrier Ethernet Switch with VeriTime™
- VSC7428 11-Port Layer 2 Gigabit Ethernet Switch with 8 Integrated Copper PHYs and Embedded CPU with VeriTime™





www.microsemi.com

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

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense and 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; voice processing devices; RF solutions; discrete components; enterprise storage and communications solutions, security technologies, and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California, and has approximately 4,800 employees worldwide. Learn more at www.microsemi.com.