VSC7511
4-Port Layer-2 Gigabit Ethernet Switch

Microsemi's industrial Ethernet switch device delivers the industry's lowest power Gigabit Ethernet (GbE) switching solution.

The VSC7511 is a fully-integrated 4-port GbE switch with four copper PHYs or four SGMIIs in a single package.

The VSC7511 leverages Microsemi's SimpliPHY™ technology, resulting in the one of the most cost-effective and lowest power consumption devices in the industry. The single-chip solution utilizes the most advanced Energy Efficient Ethernet features for bringing low-power and high-performance solutions to market.

The VSC7511 provides a rich set of unmanaged Ethernet switching features such as Layer-2 forwarding with basic VLAN and QoS processing, enabling the delivery of differentiated services. The VSC7511 contains an 8051 CPU for configuration of the switch.
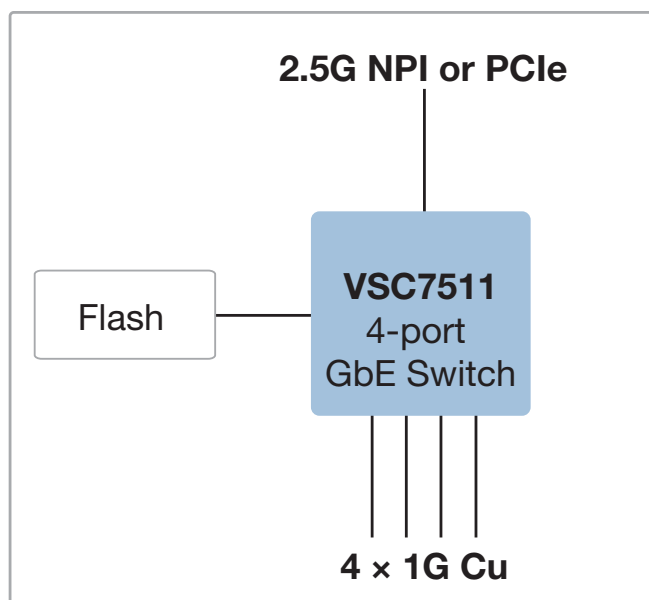
A comprehensive application software package is provided for LED control, loop indication, device overheat protection, and other enhanced functions.

Highlights
- Low-power and single-chip industrial switch
- Four ports, either integrated copper PHYs or SGMII ports
- 2.5G SGMII NPI port or PCIe

Applications
- Industrial Ethernet switches
- SME and SMB switches
- Customer-premise Equipment (CPE) and Network Termination Equipment (NTE)

VSC7511
4-Port Layer-2 Gigabit Ethernet Switch

Best-In-Class Power Consumption

- Single IC reduces overall power requirements
- Optimal power consumption for all link speeds

Features

- 4 x 1G SGMII or integrated copper PHY ports
- Integrated 250 MHz 8051 CPU with 64 KB internal storage
- PCIe and 2.5G SGMII NPI for external CPU register access
- Device overheat protection
- Hardware loop detection
- Integrated fan controller
- 4K MAC addresses and 4K VLAN support

Layer 2 Switching

- 4-port GbE switch with nonblocking wire-speed performance
- Link aggregation (IEEE 802.3ad) with programmable traffic distribution based on Layer 2 through Layer 4 information
- Wire-speed hardware-based learning and CPU-based learning configurable per port
- Independent and shared VLAN learning
- Jumbo frame support up to 12.2 KB with per-port programmable MTU
- Q-in-Q tagging support
- 1.75 Mb of integrated shared packet memory

QoS

- Eight QoS queues per port with strict or deficit-weighted round robin scheduling
- QoS classification based on IEEE 802.1p and IPv4/IPv6 DSCP
- Data rate shaper and policer per-queue, per-port for both ingress and egress directions
- Full-duplex flow control (IEEE 802.3x) and half-duplex back-pressure, symmetric and asymmetric
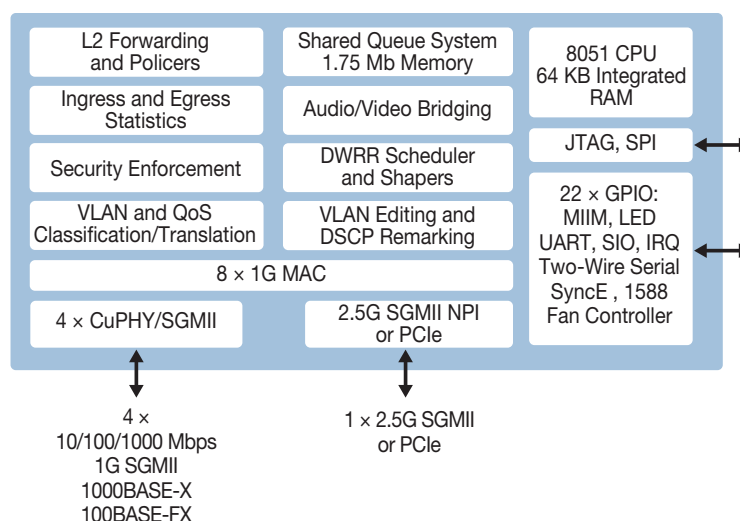- Multicast and broadcast storm control with flooding control

Key Specifications

- 13 mm × 13 mm DRQFN package
- –40 °C to 125 °C temperature range

Related Products

Visit www.microsemi.com for information about these related products:
- Ethernet switches
- 1G copper PHYs

L2 Forwarding and Policers	Shared Queue System 1.75 Mb Memory	8051 CPU 64 KB Integrated RAM
Ingress and Egress Statistics	Audio/Video Bridging	
Security Enforcement	DWRR Scheduler and Shapers	JTAG, SPI
VLAN and QoS Classification/Translation	VLAN Editing and DSCP Remarking	22 × GPIO: MIIM, LED UART, SIO, IRQ Two-Wire Serial SyncE , 1588 Fan Controller
8 × 1G MAC		
4 × CuPHY/SGMII	2.5G SGMII NPI or PCIe	

4 × 10/100/1000 Mbps 1G SGMII 1000BASE-X 100BASE-FX

1 × 2.5G SGMII or PCIe