VSC7422

25-Port, Layer-2 Gigabit Ethernet Switch with 12 Fully Integrated Copper PHYs

The VSC7422 is the industry's first fully integrated 25-port Gigabit Ethernet switch with 12 copper PHYs in a single package. In conjunction with Microsemi's 12-port PHY VSC8512 or VSC8522, a 25-port switch can be designed using only two ICs.

The device leverages Microsemi's 65 nm SimpliPHY™ technology, resulting in one of the most cost-effective and lowest power consumption devices in the industry. The dual chip solution combines the most advanced Ethernet energy efficiency features for bringing green technology solutions to market.

The device 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 VSC7422 contains an 8051 CPU for light management of the switch.

A comprehensive application software package is provided for LED control, loop indication, device overheat protection, and other enhanced functions.

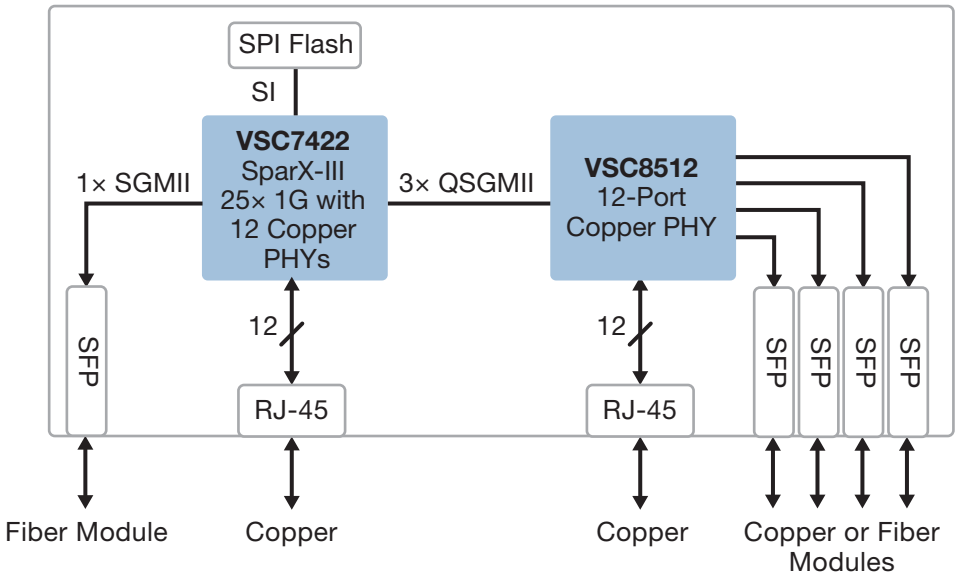
Highlights

- Supports IEEE 802.3az and green energy efficiency modes with ActiPHY™, PerfectReach™
- Lowest BOM solution requires only two ICs
- Three QSGMII MAC interfaces and one SGMII port with 100 Mbps and 1 Gbps fiber support

Applications

- Unmanaged and lightly managed Ethernet switches
- Customer-premises equipment (CPE)
- VPN, firewall, and UTM appliances

VSC7422 in a 25-Port 1-GbE Switch Application



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25-Port, Layer-2 Gigabit Ethernet Switch with 12 Fully Integrated Copper PHYs

Best-in-Class Power Consumption

- Lowest power 25-port Gigabit Ethernet switch available in the market
- Green energy efficiency modes including ActiPHY™ PerfectReach™, and Draft IEEE 802.3az
- Two ICs reduce overall power requirements
- Optimal power consumption for all link speeds

Features

- Twelve intergrated IEEE 802.3ab-compliant 10/100/1000BASE-T Ethernet copper transceivers with VeriPHY™ cable diagnostics
- Three QSGMII MAC interfaces
- Integrated 250 MHz 8051 CPU with 64 KB internal storage
- Serial interface for external CPU register access
- Device overheat protection
- Hardware loop detection
- Intergrated fan controller
- 8K MAC addresses and 4K VLAN support
- Supports IEEE 1149.1 JTAG boundary scan, IEEE 1149.6 AC-JTAG, QSGMII v1.2, 1 Gbps SGMII, and 100BASE-FX and 1000BASE-X

Layer 2 Switching

- 25-port Gigabit Ethernet 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 kilobytes with per-port programmable MTU
- Q-in-Q tagging support
- 4 megabits 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 backpressure, symmetric, and asymmetric
- Multicast and broadcast storm control with flooding control

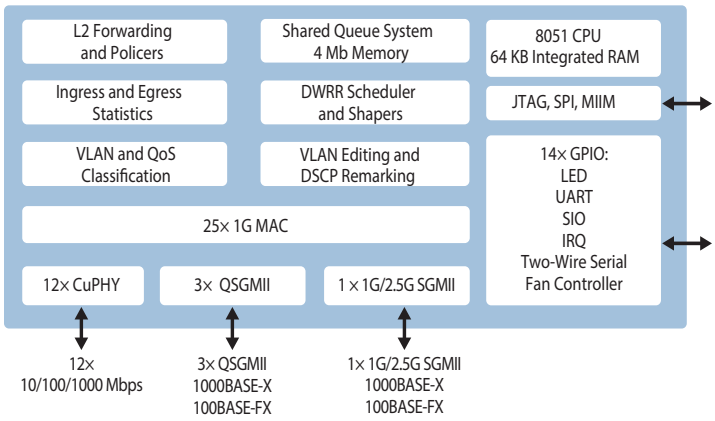
Key Specifications

- 1 V core-power supply
- 2.5 V I/O power supplies

Related Microsemi Products

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

- Ethernet switches
- 1G copper PHYs



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VPPD-02599. 1.2. 5/18

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