

10-Port Layer-2 Gigabit Ethernet Switch with 8 Fully Integrated Copper PHYs

Vitesse’s next-generation switch device delivers the industry’s lowest power GbE switching solution

The VSC7420 is the industry’s first fully integrated 10-port Gigabit Ethernet switch with eight copper PHYs in a single package.

The VSC7420 leverages Vitesse’s new 65 nm SimpliPHY™ technology, resulting in the one of the most cost-effective and lowest power consumption devices in the industry. The single-chip solution combines the most advanced Ethernet energy efficiency features for bringing green technology solutions to market.

The VSC7420 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 VSC7420 contains an 8051 CPU for light management of the switch.

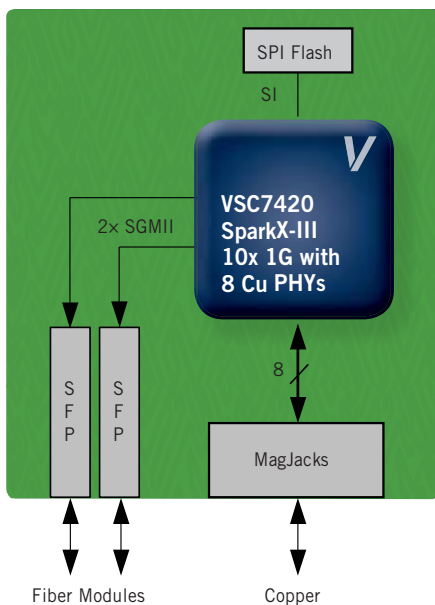
A comprehensive application software package is provided for LED control, loop indication, device overheat protection, and other enhanced functions.

HIGHLIGHTS

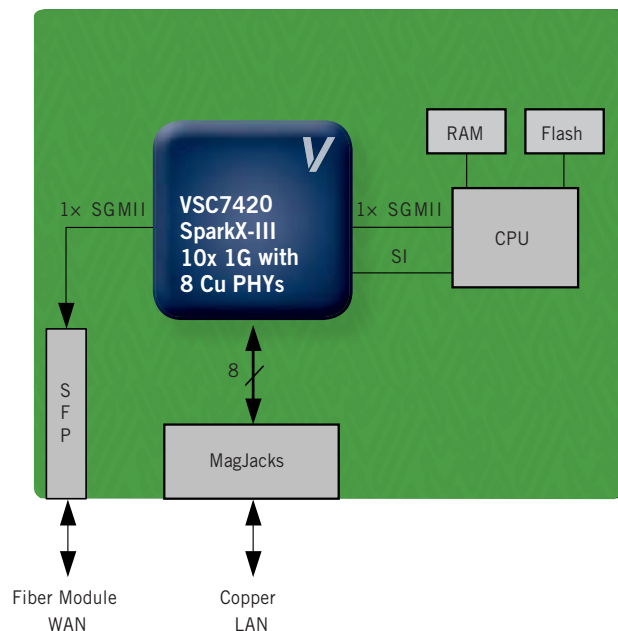
- Supports IEEE 802.3az and green energy efficiency modes with ActiPHY™ and PerfectReach™
- Lowest BOM solution requires only one IC
- Up to two SGMII ports with 100 Mbps and 1 Gbps fiber support

APPLICATIONS

- Ethernet switches
- Edge and Access platforms
- Customer-premises equipment (CPE) and network termination equipment (NTE)



VSC7420 in a 10-port 1-GbE switch application



VSC7420 in a 9-port 1-GbE router application

Best-In-Class Power Consumption

- Lowest power 10-port Gigabit Ethernet switch available in the market
- Green energy efficiency modes including ActiPHY™, PerfectReach™, and Draft IEEE 802.3az
- Single IC reduces overall power requirements
- Optimal power consumption for all link speeds

Features

- Eight integrated IEEE 802.3ab-compliant 10/100/1000BASE-T Ethernet copper transceivers with VeriPHY™ cable diagnostics
- Two SGMII 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
- Integrated fan controller
- 8 K MAC addresses and 4 K VLAN support
- Supports IEEE 1149.1 JTAG boundary scan, IEEE 1149.6 AC-JTAG, 1 Gbps SGMII, and 100BASE-FX and 1000BASE-X

Layer 2 Switching

- 10-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

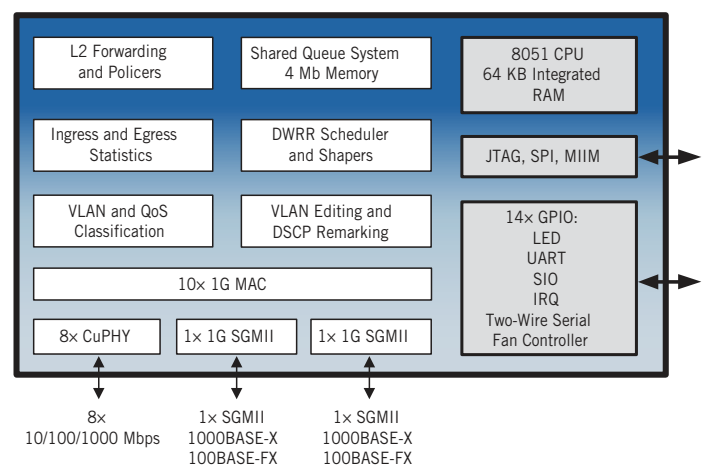
Key Specifications

- 1 V core power supply
- 2.5 V I/O power supplies
- 24 mm × 24 mm thin QFP package

Related Vitesse Products

Visit www.vitesse.com for information about these related Vitesse products:

- Ethernet switches
- 1G copper PHYs



741 Calle Plano • Camarillo, CA 93012 USA • Tel: +1.800.VITESSE • +1.805.388.3700 • Fax: +1.805.987.5896 • www.vitesse.com