Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

VSC7420-04

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

Microsemi's next-generation switch device delivers the industry's lowest power GbE switching solution.

VSC7420-04 is the industry's first fully integrated 10-port Gigabit Ethernet switch with eight copper PHYs in a single package.

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

A rich set of Ethernet switching features, such as Layer 2 forwarding with VLAN and QoS processing, enables the delivery of differentiated services. The VSC7420-04 device 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.
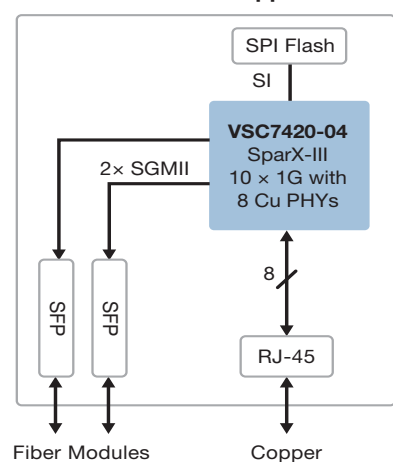
Highlights

- 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
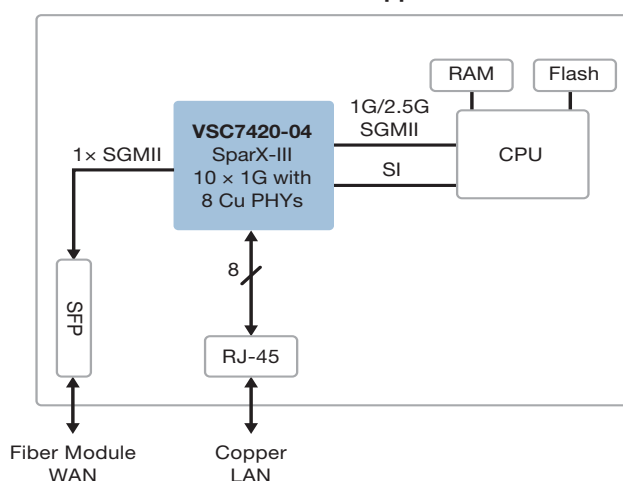
Applications

- Unmanaged and Lightly Managed Ethernet switches
- Industrial switches and routers
- Customer premises equipment (CPE) and outdoor equipment
- VPN, firewall, and UTM appliances

VSC7420-04 in a 10-Port 1-Gigabit Industrial Switch Application

VSC7420-04 in a 9-Port 1-Gigabit Industrial Router Application

VSC7420-04
10-Port Layer 2 Gigabit Ethernet Switch with 8 Fully Integrated Copper PHYs

Best-in-Class Power Consumption

- Lowest power 10-port Gigabit Ethernet switch available in the market
- Green energy efficiency modes including ActiPHY™, Perfect-Reach™, 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 quad-speed 10/100/1000/2500 Mbps SGMII
- 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
- Push/pop VLAN tag
- Supports IEEE 1149.1 JTAG boundary scan, IEEE 1149.6 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
- Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
- 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
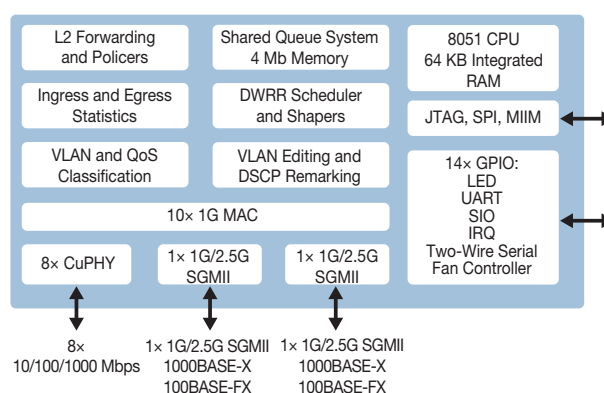- Multicast and broadcast storm control with flooding control

Key Specifications

- 1 V core power supply
- 2.5 V I/O power supplies
- 24 mm × 24 mm thin QFP package
- –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 4 Mb Memory	8051 CPU 64 KB Integrated RAM
Ingress and Egress Statistics	DWRR Scheduler and Shapers	JTAG, SPI, MIIM
VLAN and QoS Classification	VLAN Editing and DSCP Remarking	14× GPIO: LED UART SIO IRQ Two-Wire Serial Fan Controller
10× 1G MAC		
8× CuPHY	1× 1G/2.5G SGMII	1× 1G/2.5G SGMII

8× 10/100/1000 Mbps

1× 1G/2.5G SGMII 1000BASE-X 100BASE-FX

1× 1G/2.5G SGMII 1000BASE-X 100BASE-FX