VSC7424

10-Port Layer-2 Gigabit Ethernet Switch with 8 Fully Integrated Copper PHYs and Embedded 416 MHz CPU

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

The VSC7424 is the industry's first fully integrated 10-port Gigabit Ethernet switch with eight copper PHYs in a single package.

The VSC7424 leverages Microsemi'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 VSC7424 provides a rich set of Small Medium Enterprise (SME) Ethernet switching features such as Layer-2 forwarding with advanced TCAM-based VLAN and QoS processing, enabling the delivery of differentiated services. Security is ensured through frame processing using a TCAM-based Versatile Content Aware Processor (VCAP-II). The VSC7424 contains a powerful 416 MHz CPU, enabling full management of the switch.

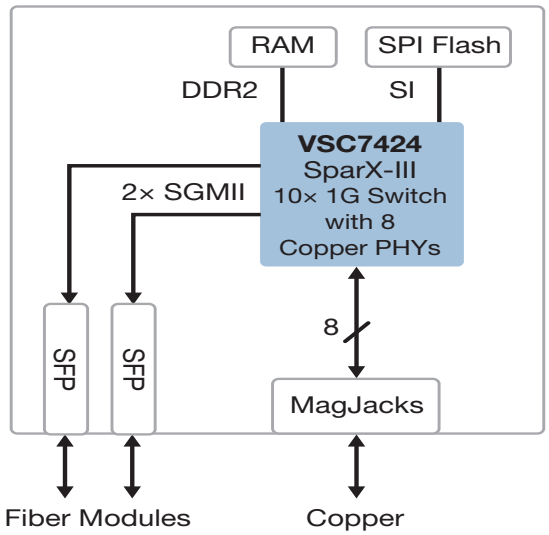
A comprehensive application programming interface (API) and software development package is available for Layer-2 Managed Ethernet applications for faster time-to-market. The software API package integrates easily with third-party software, preserving existing software investments.

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)



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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
- Integrated 416 MHz MIPS CPU with DDR2 and serial Flash interface
- Advanced Access and QoS Control Lists (ACL and QCL) support through TCAM-based match patterns
- Integrated temperature monitoring circuit
- 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
- Audio and video bridging (AVB)

QoS

- Eight QoS queues per port with strict or deficit-weighted round robin scheduling
- QoS classification based on IEEE 802.1p, EtherType, VID, MAC/IP addresses, IPv4/IPv6 DSCP, and UDP/TCP ports and ranges
- 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

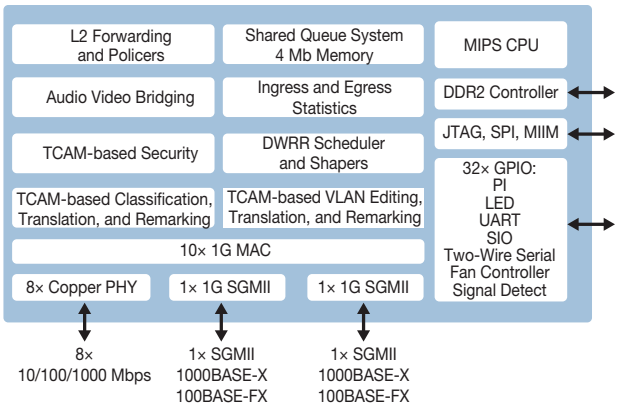
Key Specifications

- 1 V core power supply
- 1.8 V and 2.5 V I/O power supplies
- 27 mm × 27 mm thermally enhanced plastic BGA package

Related Products

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

- Ethernet switches
- 1G copper PHYs



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
www.microsemi.com

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VPPD-02600. 1.0. 4/16