VSC8501

Single Port GbE Copper PHY with Synchronous Ethernet and RGMII/GMII Interface

Low-power PHY supports IEEE 802.3az Energy Efficient Ethernet.

The VSC8501 device is designed for space-constrained 10/100/1000BASE-T applications. It features integrated line-side termination to conserve board space, to lower EMI, and to improve system performance. To further reduce system complexity, component count, and system cost, the VSC8501 device can operate from a single 3.3 V supply using integrated voltage regulators that provide the necessary 1.0 V and 2.5 V rails for operation. Additionally, integrated RGMII timing compensation eliminates the need for on-board delay lines.

The VSC8501 device includes Microsemi's EcoEthernet™ 2.0 technology that supports Energy Efficient Ethernet and power saving features to reduce power based on link state and cable reach. The device optimizes power consumption in all link operating speeds and features Wake-on-LAN (WOL) power management using magic packets.

The VSC8501 device also includes fast link failure indication for high-availability networks. Fast link failure indication identifies the onset of a link failure in less than 1 ms typical to go beyond the IEEE 802.3 standard requirement of 750 ms ±10 ms (link master).
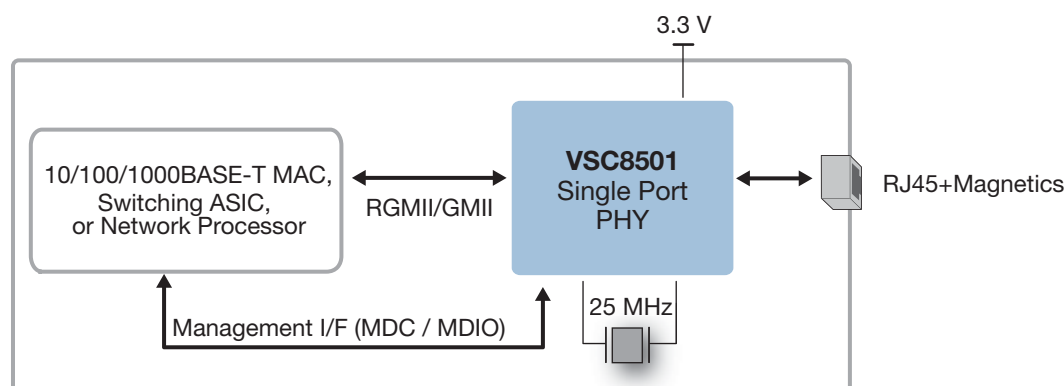
Synchronous Ethernet and Ring Resiliency™ are supported. The device has two recovered clock outputs for Synchronous Ethernet applications. Programmable clock squelch control is included to inhibit undesirable clocks from propagating and to help prevent timing loops. Ring Resiliency allows a PHY port to switch between master and slave timing references with no link drop in 1000BASE-T mode.

Highlights

- EcoEthernet™ 2.0, the gold standard for Energy Efficient Ethernet (EEE)
- Wake-on-LAN (WOL)
- Fast link failure indication
- Synchronous Ethernet support
- Dual recovered clocks for timing reference
- Ring Resiliency™
- Integrated voltage regulator
- Pin compatible with VSC8502

Applications

- IoT applications such as digital signage, eHealth, and industrial grade switches
- Consumer electronics such as CPE, UHDTV, media servers, NAS, and gaming consoles
- Wireless backhaul
- Small cells, femtocells

3.3 V

| 10/100/1000BASE-T MAC, Switching ASIC, or Network Processor | RGMII/GMII | **VSC8501** Single Port PHY | RJ45+Magnetics |

Management I/F (MDC / MDIO)

25 MHz

Superior PHY and Interface Technology

- Integrated 10/100/1000BASE-T Ethernet copper transceiver (IEEE 802.3ab compliant) with VeriPHY™ cable diagnostics software
- Patented line driver with low EMI voltage mode and integrated line-side termination resistors
- Wake-on-LAN using magic packets
- HP Auto-MDIX and manual MDI/MDIX support
- Jumbo frame support up to 16 kilobytes with programmable synchronization FIFOs

Synchronous Ethernet Support

- Recovered clock outputs with programmable clock squelch control and fast link failure indication (<1 ms typical) for ITU-T G.8261/Y.1361 compliant Synchronous Ethernet (SyncE) application
- 1000BASE-T Ring Resiliency to switch between master and slave timing without dropping link
- Clock output squelch to inhibit clocks during auto-negotiation and no link status

Best-in-Class Power Consumption

- EcoEthernet™ 2.0 green energy efficiency with ActiPHY™, PerfectReach™, and IEEE 802.3az Energy Efficient Ethernet
- Fully optimized power consumption for all link speeds
- Clause 45 registers to support IEEE 802.3az Energy Efficient Ethernet and IEEE 802.3bf

Key Specifications

- Compliant with IEEE 802.3 (10BASE-T, 100BASE-TX, and 1000BASE-T)
- Supports GMII
- Supports RGMII version 1.3, and 2.5 V and 3.3 V CMOS for RGMII version 2.0
- Supports IEEE 1149.1 JTAG boundary scan
- Devices support operating temperatures of –40 °C ambient to 125 °C junction or 0 °C ambient to 125 °C junction
- Optionally reports if a link partner is requesting inline Power over Ethernet (PoE or PoE+)
- Available in 12 mm × 12 mm, 135-pin multi-row QFN package

Related Products

Visit www.microsemi.com for information about these related products:
- VSC8502
- VSC8514

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense and security, aerospace, and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs, and ASICs; power management products; timing and synchronization devices and precise time solutions; voice processing devices; RF solutions; discrete components; enterprise storage and communications solutions, security technologies, and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California, and has approximately 4,800 employees worldwide. Learn more at www.microsemi.com.

VPPD-03360. 1.1. 4/16

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное   производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
| moschip.ru | moschip.ru_6 |
| moschip.ru_4 | moschip.ru_9 |