

VSC8664

Quad Port 10/100/1000BASE-T PHY and 100BASE-FX/1000BASE-X SerDes with Recovered Clock Outputs

The industry's first PHY with dual recovered clock outputs delivers carrier-quality Synchronous Ethernet.

Helping OEMs to capitalize on the cost reduction and optimization of Synchronous Ethernet, the VSC8664 addresses the challenges in providing fully traceable timing across TDM backhaul links, cellular base stations, and other Synchronous Ethernet applications. With dual recovered clock outputs, the VSC8664 meets and goes beyond the requirements of the ITU-T Recommendation G.8261/Y.1361.

Supporting four copper/fiber ports and SGMII MAC interfaces, the VSC8664 includes a highly integrated feature set to ensure low-cost, rapid deployment.

Meeting the carrier demands for redundancy, the VSC8664 features dual recovered clocks to enable a primary and secondary timing reference. Programmable clock squelch control is included to inhibit undesirable clocks from propagating and to help prevent timing loops.

VSC8664 is the first GbE PHY to provide clock recovery in combination with an SGMII interface, making layouts simpler than RGMII/GMII solutions. Also featured is a fast link failure indication that can indicate the onset of a link failure in less than 1 ms, a critical feature for support of synchronization timing.

VSC8664 helps to lower the component count without sacrificing capabilities or utility, resulting in more cost-effective production and deployment. Its patented, low electromagnetic interference line driver and integrated line side termination resistors conserve both power and printed circuit board space. With an integrated I2C multiplexer to control SFPs or power-over-Ethernet modules, VSC8664 also eliminates the need for an external two-wire serial device.

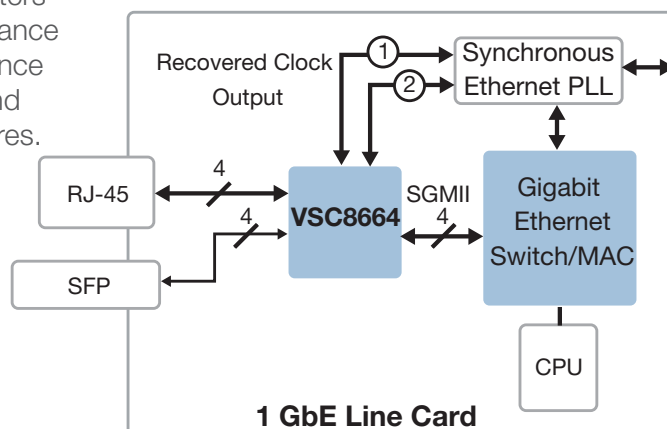
Microsemi's mixed signal and digital signal processing (DSP) architecture yield robust performance, supporting both full and half duplex 10BASE-T, 100BASE-TX, and 1000BASE-T over >140 meters of CAT-5, unshielded twisted pair cable, with industry leading tolerance to NEXT, FEXT, Echo, and system noise. With dual, high-performance 1.25 Gbps SerDes, VSC8664 maximizes receive jitter tolerance and minimizes transmit jitter in comparison to single SerDes architectures.

Applications

- Copper and fiber-based synchronous Ethernet systems
- SGMII-to-SFP designs
- Multiport, SGMII-based Gigabit Ethernet (GbE) designs

Low Power

- Low power consumption with three power savings modes
- ActiPHY™ power management system with built-in intelligence and saving modes



Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information itself or anything described by such information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.

VSC8664

Quad Port 10/100/1000BASE-T PHY and 100BASE-FX/1000BASE-X SerDes with Recovered Clock Outputs

Wide Range of Support

- Compliant with IEEE 802.3 (10BASE-T, 100BASE-TX, 1000BASE-T, 100BASE-FX, and 1000BASE-X) specifications
- Support for 802.3ah unidirectional transport for 100BASE-FX and 1000BASE-X fiber media
- Support for >16 kB jumbo frames in all speeds with programmable synchronization FIFOs
- Supports Cisco SGMII v1.7 and 1000BASE-X MACs, IEEE 1149.1 JTAG boundary scan, and IEEE 1149.6 AC-JTAG

Synchronous Ethernet

- Recovered clock output support for G.8261 and IEEE-1588 synchronous Ethernet applications, including programmable squelch control
- Patent-pending, fast link fail indication (<1 ms) to provide an earlier indication of a link failure to critical metro ethernet traffic and synchronization links

Flexibility

- Integrated quad I2C multiplexer to control SFPs or PoE modules, eliminating the need for an external two-wire serial device for the control and status of SFP or PoE modules

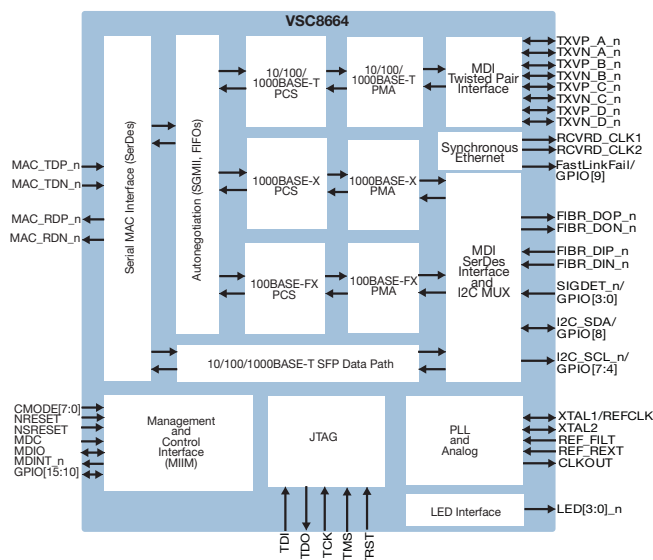
- VeriPHY® cable diagnostics suite provides extensive network cable information such as cable length, termination status, and open/short fault location
- Extensive test features (including near end, far end, and connector loopback, and Ethernet packet generator with CRC error counter) to decrease time-to-market

Advanced SerDes

- Dual, high-performance 1.25 Gbps SerDes to maximize receive jitter tolerance and minimize transmit jitter (in comparison to single SerDes architectures)
- Supports 100BASE-FX fiber, 1000BASE-X fiber, and triple-speed copper SFPs over SerDes pins
- Advanced SerDes feature capabilities including transmitter amplitude control, receiver equalization, and link integrity status information

Related Products

Visit www.microsemi.com for information about other related products.



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

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.