VSC8221
Single Port 10/100/1000BASE-T PHY with 1.25 Gbps SerDes for SFPs / GBICs

The VSC8221 is the smallest, lowest power Gigabit Ethernet over copper PHY available and is ideal for SFP/GBIC and Media Converter applications. It is the only triple speed copper SFP PHY to meet the stringent MSA power consumption requirement of <1 W for the entire module. Its integrated switching regulator enables it to be powered by a single 3.3 V power supply, reducing board space requirements and system cost.
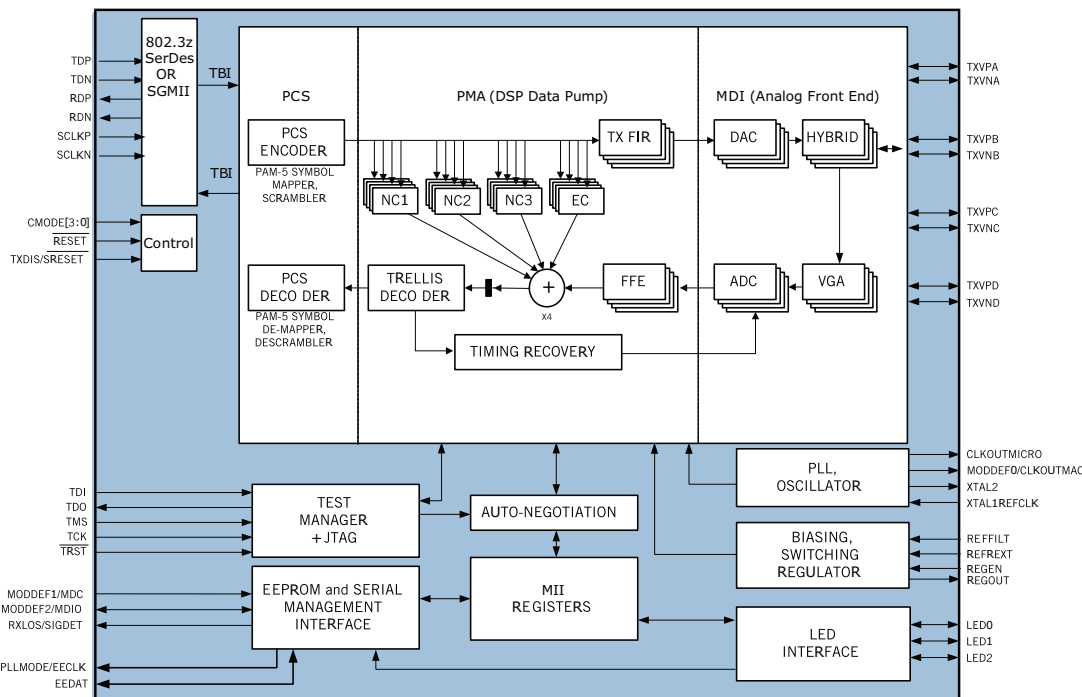
Microsemi's mixed signal and DSP architecture yields robust performance, supporting both full and half duplex 10BASE-T, 100BASE-TX, and 1000BASE-T over >140 m of Category 5, unshielded twisted pair (UTP) cable, with industry leading tolerance to NEXT, FEXT, Echo, and system noise.

Applications

- Triple Speed Copper SFP/GBIC modules
- Media converters

Specifications

- Steady state power consumption (1000BASE-T) including SerDes
- Power consumption in ActiPHY™ power down mode
- Cable link length supported in 1000BASE-T & 100BASE-TX modes
- SerDes, SGMII interface data rate
- DC power supply voltage range
- Crystal parallel resonant frequency (± 100 ppm tolerance)

Features

- Very low power consumption at < 700 mW
- Single 3.3 V power supply with on-chip regulator
- Patented, low EMI line driver with integrated line side termination resistors
- Supports PICMG 2.16 and 3.0 Ethernet backplanes at approximately 500 mW
- High performance 1.25 Gbps SerDes supports SGMII and SerDes to CAT-5 interfaces
- Compliant with IEEE 802.3 (10BASE-T, 100BASE-TX, 1000BASE-T, 1000BASE-X) and SFP MSA specifications
- Full suite of BIST, MAC, far-end, and connector loopback modes
- Over 150 m of Category 5 reach with industry's highest noise tolerance
- VeriPHY™ cable diagnostics software suite
- Automatic detection and correction of cable pair swaps, pair skew and pair polarity, along with auto MDI/MDI-X crossover function
- Several flexible power management modes
- Manufactured in advanced 0.13 µm, 3.3 V/1.2 V digital CMOS process

Benefits

- Only Gigabit Ethernet PHY that enables copper SFP designers to meet the stringent MSA power consumption specification of < 1 W

- Eliminates external regulators, reducing system costs
- Removed 12 passive components, reducing PCB area and cost by 50%
- Lowest power mode reduces power supply costs
- Connects to serial MACs or optical modules and can be used to design copper SFP/GBIC modules and 100BASE-FX modules
- Ensures seamless deployment throughout copper and optical networks with industry's highest tolerance to noise and substandard cabling infrastructures
- Simplifies comprehensive in-system test to ensure the highest product quality
- Ensures trouble-free deployment in real world Ethernet networks
- Enables network manufacturers to simplify deployment and improve network management capabilities of gigabit Ethernet links
- Compatible with 1st generation 1000BASE-T PHYs, minimizing common interoperability problems
- Reduces power consumption and system costs
- Most cost effective technology eliminates more expensive analog process variants

Related Products

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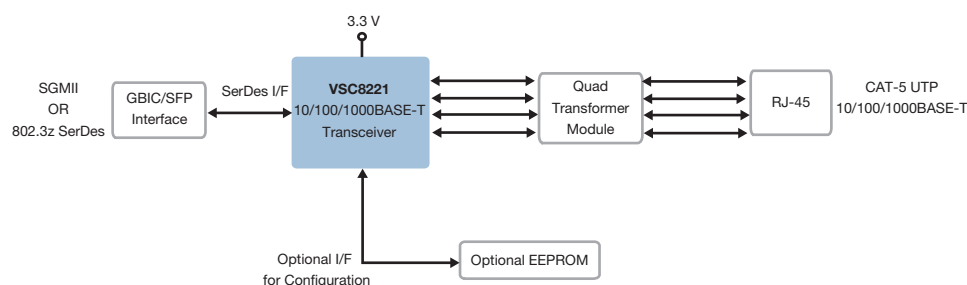
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