VSC8211

Single Port 10/100/1000BASE-T PHY and 1000BASE-X PHY with SGMII, SerDes, GMII, MII, TBI, RGMII / RTBI MAC Interfaces

The VSC8211 is ideal for Media Converter and 100BASE-FX applications. Its low power consumption and patented line driver technology reduce the cost and complexity of Gigabit Ethernet system designs.

The VSC8211's integrated 1.25 Gbps SerDes and Auto-Media Sense™ feature allow system designers to support Category 5 twisted pair, fiber optic, and backplane interfaces from a single device.

Microsemi's mixed signal and DSP architecture yields robust performance, supporting both full and half duplex 10BASE-T, 100BASE-TX, and 1000BASE-T over >140m of Category 5, unshielded twisted pair (UTP) cable, with industry leading tolerance to NEXT, FEXT, Echo, and system noise.

Applications

- Media converters
- Dual media switch ports
- iSCSI and TOE LOM
- Triple speed copper GBIC/SFP modules
- 100BASE-FX switch ports and modules
- Backplanes

Specifications

- Steady state power consumption (1000BASE-T) including SerDes
- Power consumption in ActiPHY™ low power state
- Cable link length supported in 1000BASE-T & 100BASE-TX modes, over Category 5 cable
- Cable link length supported in 10BASE-T mode, over Category 3 cable
- SerDes, SGMII interface data rate
- DC power supply voltage range
- Core supply voltage
- Crystal parallel resonant frequency (± 100 ppm tolerance)
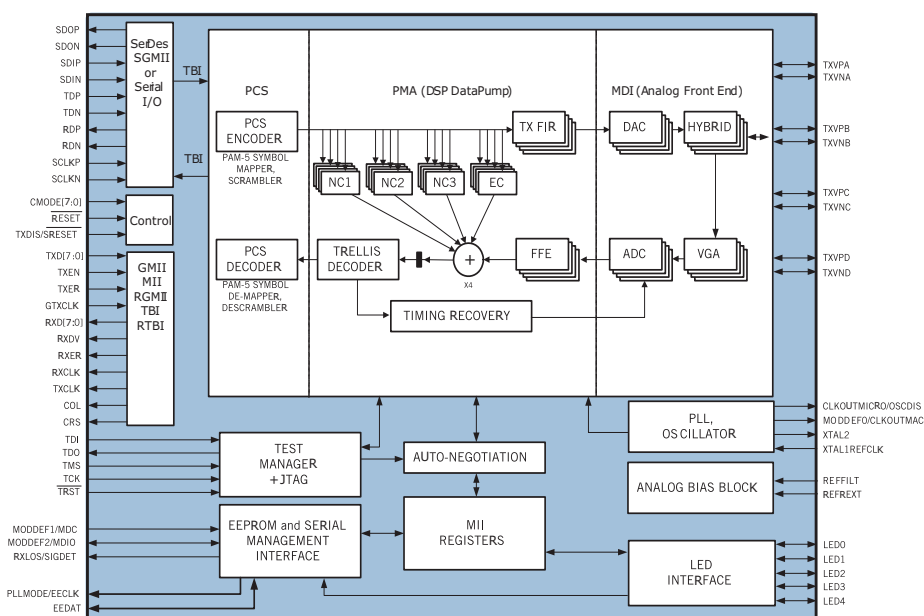
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Features

- Very low power consumption at < 700 mW
- Patented, low EMI line driver with integrated line side termination resistors
- Supports PICMG 2.16 and 3.0 Ethernet backplanes at approximately 500 mW
- Supports Cisco SGMII v 1.7 and 1000BASE-X MACs, RGMII and RTBI v 1.3 & v 2.0 (2.5 V & 3.3 V)
- User-programmable RGMII timing compensation
- High performance 1.25 Gbps SerDes
- Auto-media sense feature detects and configures to support either copper or fiber media
- 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
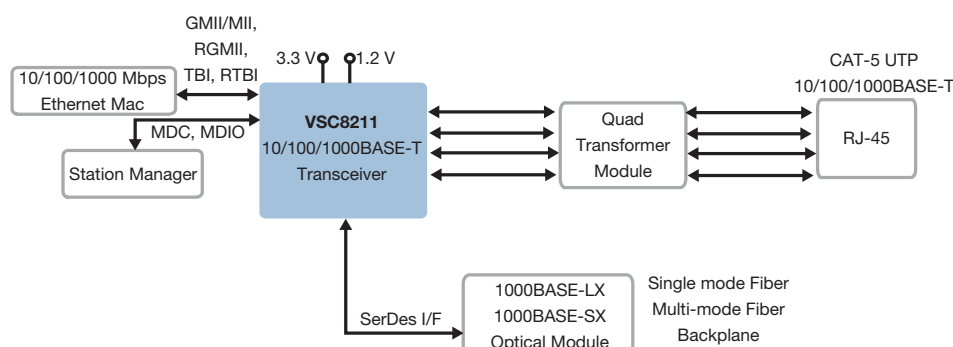
Benefits

- Reduces power supply costs
- Removes 12 passive components, reducing PCB area and cost by 50%
- Lowest power mode reduces power supply costs
- Connects to virtually any MAC or optical module and can be used to design copper GBIC/SFP modules and 100BASE-FX modules
- Simplifies PCB layout, eliminating the need for on-board delay lines
- Supports Category 5 copper, fiber optic, and back plane interfaces from a single device
- Single chip solution for flexible media support
- 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

Related Products

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