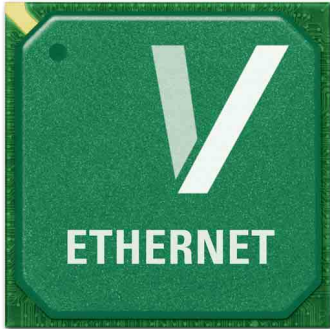
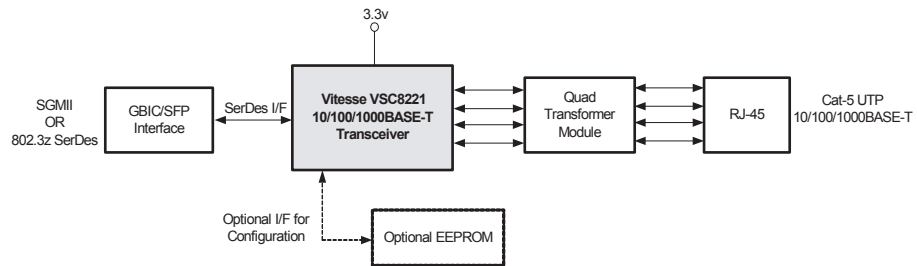


VSC8221

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



SFP/GBIC Serial Interface (SGMII or 802.3z SerDes) to Cat-5



FEATURES:

- ▶ Very Low Power Consumption at < 700mW
- ▶ Single 3.3V 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 500mW
- ▶ 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 150m 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 0.13µm, 3.3V/1.2V Digital CMOS Process

BENEFITS:

- ▶ Only Gigabit Ethernet PHY That Enables Copper SFP Designers to Meet the Stringent MSA Power Consumption Specification of < 1W
- ▶ 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

APPLICATIONS:

- ▶ Triple Speed Copper SFP/GBIC Modules
- ▶ Media Converters

VSC8221

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

GENERAL DESCRIPTION:

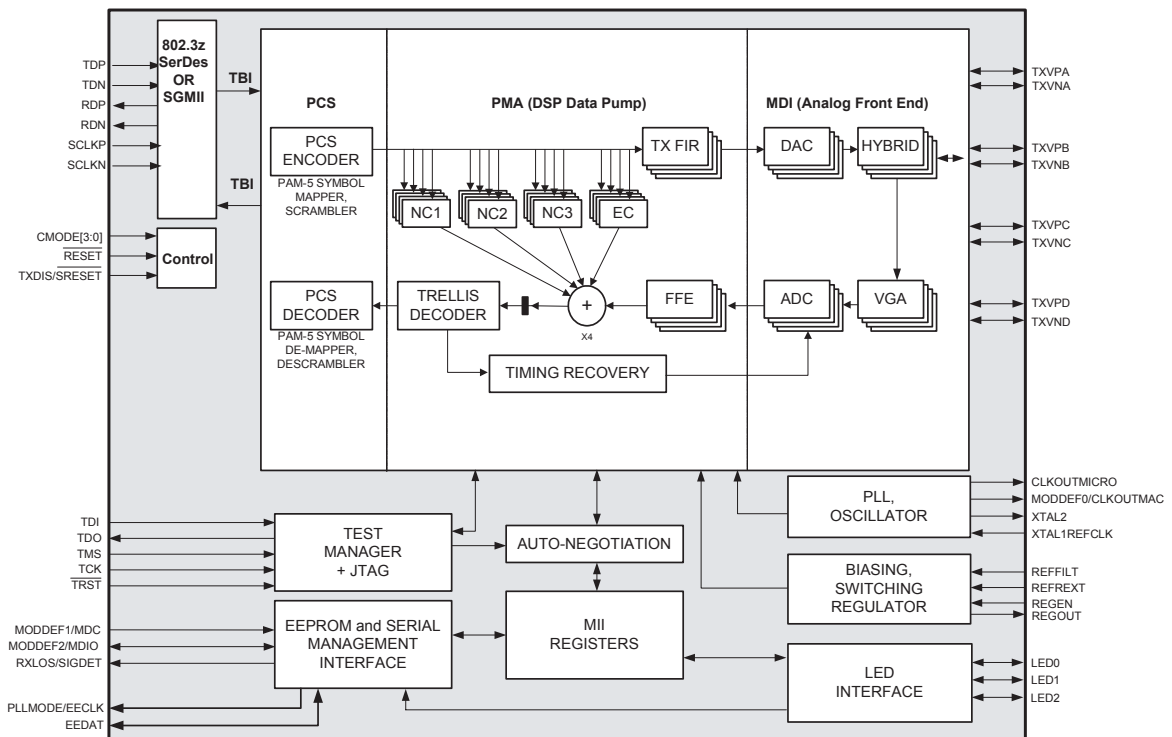


The VSC8221 is the smallest, lowest power Gigabit Ethernet over copper PHY available and is ideal for SFP/GBIC and Media Converter applications. It is the only triple speed copper SFP PHY to meet the stringent MSA power consumption requirement of <1W for the entire module. Its integrated switching regulator enables it to be powered by a single 3.3V power supply, reducing board space requirements and system cost. Vitesse'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.

SPECIFICATIONS:

PARAMETER	TYP	UNIT	COMMENTS
P _D	700	mW	Steady state power consumption (1000BASE-T) including SerDes
P _{DDQ}	100	mW	Power consumption in ActiPHY™ power down mode
L _{1G} , L _{100M}	150	m	Cable link length supported in 1000BASE-T & 100BASE-TX modes,
Serial Data Rate	1.25	Gbps	SerDes, SGMII interface data rate
VDD	3.3	V	DC power supply voltage range
F _{TOL (REFERENCE)}	25	MHz	Crystal parallel resonant frequency (+/- 100 ppm tolerance)

BLOCK DIAGRAM:



For more information on Vitesse Products visit the Vitesse web site at www.vitesse.com or contact Vitesse Sales at (800) VITESSE or sales@vitesse.com

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