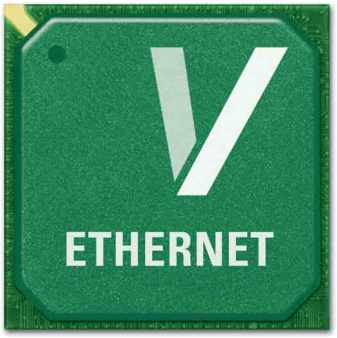
ETHERNET PRODUCTS

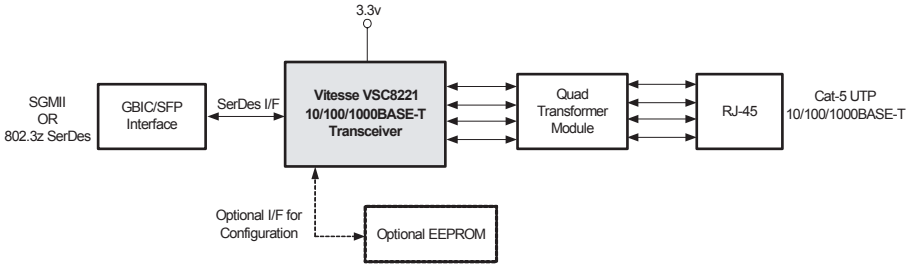
VSC8221

VITESSE

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:	BENEFITS:
Very Low Power Consumption at < 700mW	Only Gigabit Ethernet PHY That Enables Copper SFP Designers to Meet the Stringent MSA Power Consumption Specification of < 1W
Single 3.3V Power Supply with On-chip Regulator	Eliminates External Regulators, Reducing System Costs
Patented, Low EMI Line Driver with Integrated Line Side Termination Resistors	Removed 12 Passive Components, Reducing PCB Area and Cost by 50%
Supports PICMG 2.16 and 3.0 Ethernet Backplanes at Approximately 500mW	Lowest Power Mode Reduces Power Supply Costs
High Performance 1.25 Gbps SerDes Supports SGMII and SerDes to Cat-5 Interfaces	Connects to Serial MACs or Optical Modules and can be Used to Design Copper SFP/GBIC Modules and 100BASE-FX Modules
Compliant with IEEE 802.3 (10BASE-T, 100BASE-TX, 1000BASE-T, 1000BASE-X) and SFP MSA Specifications	Ensures Seamless Deployment Throughout Copper and Optical Networks with Industry's Highest Tolerance to Noise and Substandard Cabling Infrastructures
Full Suite of BIST, MAC, Far-end, and Connector Loopback Modes	Simplifies Comprehensive In-system Test to Ensure the Highest Product Quality
Over 150m of Category-5 Reach with Industry's Highest Noise Tolerance	Ensures Trouble-free Deployment in Real World Ethernet Networks
VeriPHY™ Cable Diagnostics Software Suite	Enables Network Manufacturers to Simplify Deployment and imProve Network Management Capabilities of Gigabit Ethernet Links
Automatic Detection and Correction of Cable Pair Swaps, Pair Skew and Pair Polarity, Along with Auto MDI/MDI-X Crossover Function	Compatible with 1st Generation 1000BASE-T PHYs, Minimizing Common Interoperability Problems
Several Flexible Power Management Modes	Reduces Power Consumption and System Costs
Manufactured in Advanced 0.13µm, 3.3V/1.2V Digital CMOS Process	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

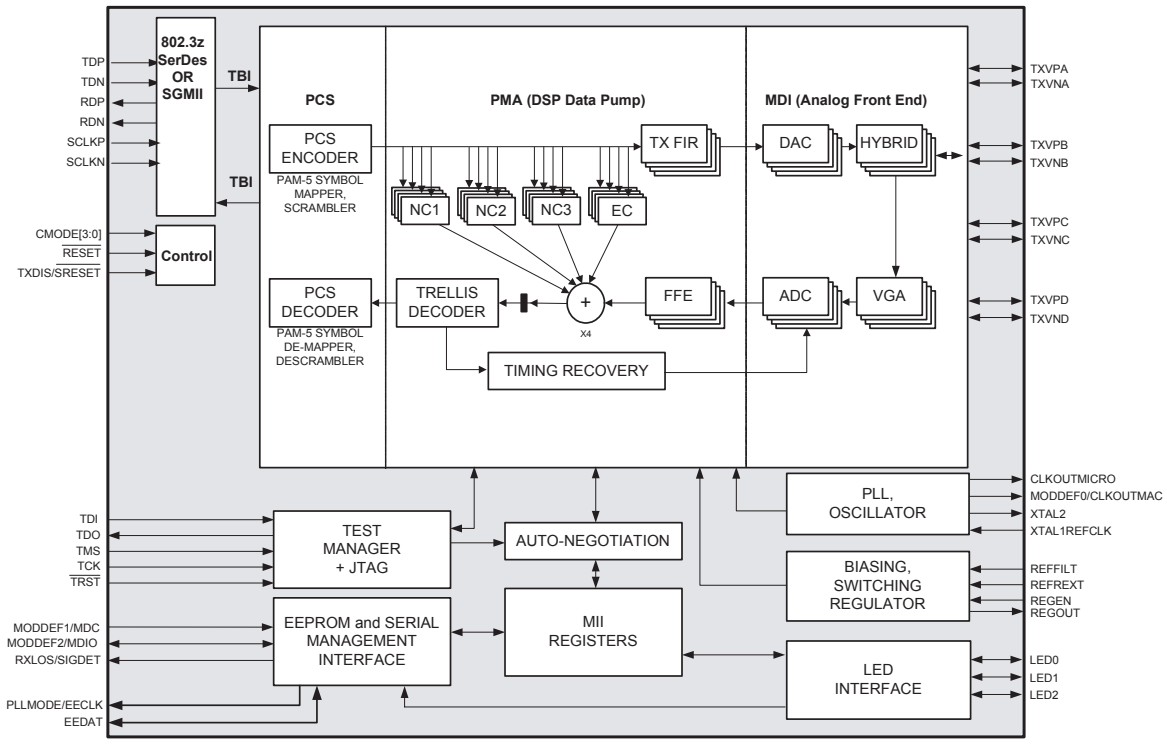
GENERAL DESCRIPTION:

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_{DQ}	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

Vitesse, ASIC-Friendly, FibreTimer, TimeStream and Snoop Loop are trademarks of Vitesse Semiconductor Corporation. All other trademarks or registered trademarks mentioned herein are the property of their respective holders. Vitesse Semiconductor Corporation ("Vitesse") retains the right to make changes to its products or specifications to improve performance, reliability or manufacturability. All information in this document, including descriptions of features, functions, performance, technical specifications and availability, is subject to change without notice at any time.

741 Calle Plano
Camarillo, CA 93012, USA
Tel: +1 805.388.3700
Fax: +1 805.987.5896
www.vitesse.com