

# VSC8476

VITESSE

## XAUI to XFI 10GE & 10GFC Transceiver



### APPLICATIONS:

- ▶ 10 Gbps Ethernet Switches
- ▶ 10 Gbps Ethernet Routers
- ▶ 10 Gbps Ethernet Network Interface Cards
- ▶ 10 Gbps Fibre Channel Host Bus Adapters
- ▶ 10 Gbps Fibre Channel Switches

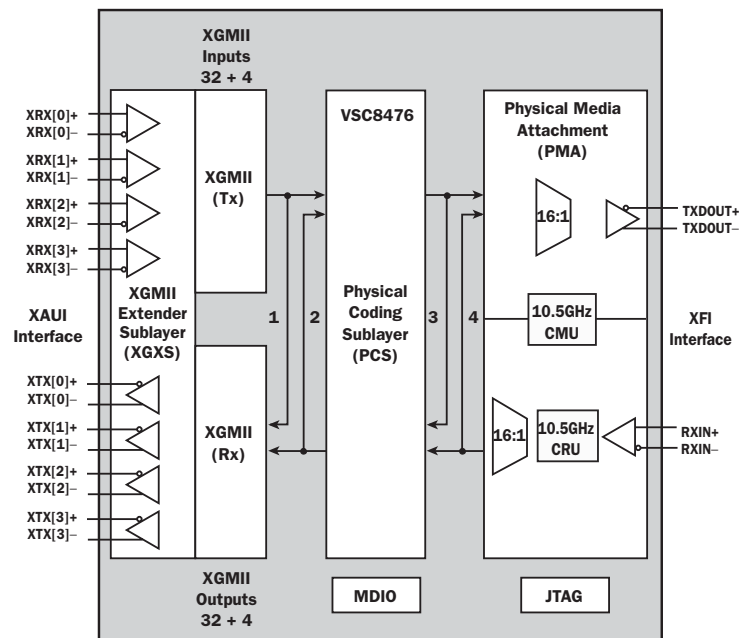
### BENEFITS:

- ▶ Alternate High Speed Data Output with Emphasis for Copper Interconnect Applications
- ▶ Enhanced High Speed Input Equalization to Copper Interconnect Beyond the XFI Requirements
- ▶ 1mm Ball Pitch for Reduced Assembly Cost
- ▶ 1kV ESD on all Pins for Robust Performance in Assembly and End User Applications
- ▶ Lower Cost of Ownership with Low Power, 1W Typical, Allowing for Higher Density and Operating Without a Heat Sink in Most Applications
- ▶ Offering Multiple Loop Backs and Built in Self Test for Improved Test Capabilities and Reduced System Debug and Bring Up Time

### FEATURES:

- ▶ 10GbE and Fibre Channel Serial LAN Transceiver
- ▶ Fully Compliant per IEEE802.3ae and T11 10GFC
- ▶ XFI compliant 10.5 Gbps High-speed Front-end
- ▶ Enhanced IO for Long Reach Copper Interconnect
- ▶ 4 x 3.125 & 3.182 Gbps XAUI I/O
- ▶ XAUI I/O Programmability: Lane Swap, Bit Order Swap, Invert, Deskew, Amplitude, Emphasis and Equalization
- ▶ Multiple Loop back Modes and Built in Self Test capabilities
- ▶ JTAG Access Port
- ▶ 1.8V & 1.2V & 1.5V Supplies
- ▶ TTL-compatible (1.5V or 1.8V or 3.3V Supply)
- ▶ 1W (Typical) Power

### BLOCK DIAGRAM:



## XAUI to XFI 10GE & 10GFC Transceiver

### GENERAL DESCRIPTION:

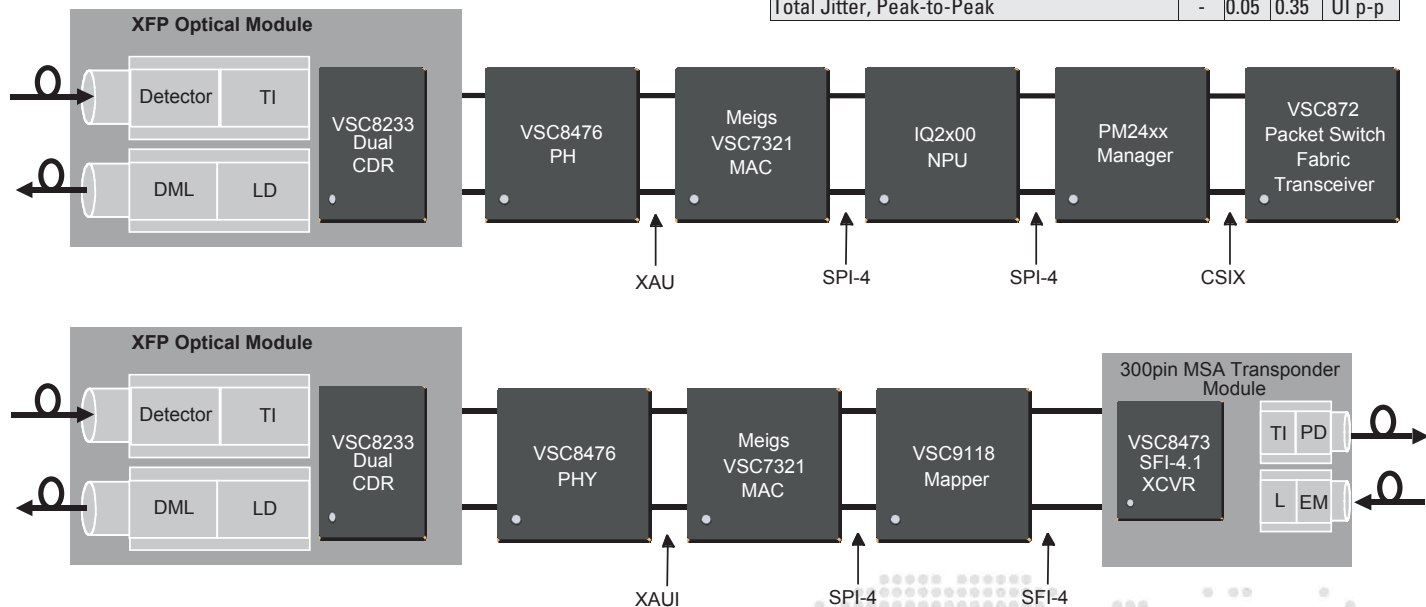


The VSC8476 is a 10Gb Ethernet and 10Gb Fibre Channel Serial Transceiver that has a 10-Gigabit Attachment Unit Interface (XAUI) I/O, 8B/10B Encoder/Decoders, 64B/66B encoder/decoder, gearboxing function, 16:1 mux/demux and high speed I/O. The VSC8476 also offers an additional data output with programmable pre-emphasis to enable longer links for copper. With these functions the VSC8476 implements the IEEE 802.3ae and T11 10GFC XGMII Extender Sub-layer (XGXS), Physical Coding Sub layer (PCS), and Physical Medium Attachment (PMA). The VSC8476 supports both the 10.3Gb/s and the 10.5 Gbps as defined by IEEE802.3ae and T11 10GFC respectively. The device operates using both 1.2V and 1.8V supplies for optimal power, dissipating a typical power of only 1 Watt. The VSC8476 is available in a 17mm x 17mm 256 ball package with 1mm ball pitch.

### SPECIFICATIONS:

	Min	Typ	Max	Units	
Total Power	-	1	-	W	
1.8V Supply Voltage	1	1.8	1.89	V	
1.8V Supply Current	-	25	-	A	
1.2V Supply Voltage	1.14	1.2	1.26	V	
1.2V Supply Current	-	800	-	A	
TTL IO Supply Voltage	2.97	3.3	3.63	V	
	1.71	1.8	1.89	V	
	1.42	1.5	1.58	V	
TTL IO Supply Current	--	3	-	A	
Temperature (Min Ambient; Max Case)	-40	-	85	oC	
XFI 10 Gbps Data Input					
Differential Input Swing	110	-	1050	mV	
Total Jitter Tolerance, Peak-to-Peak	0.65	-	-	UI(p-p)	
XAUI 3 Gbps Data Inputs					
Differential Input Amplitude	150	-	2000	mVp-p	
Total Jitter Tolerance, Peak-to-Peak	0.65	-	-	UI p-p	
XFI 10 Gbps Data Output					
Differential Output Swing	360	-	770	mV	
Rise and Fall Time	24	35	-	ps	
Total Jitter, Peak-to-Peak	-	0.07	0.3	UI (p-p)	
XAUI 3 Gbps Data Outputs					
Differential Output Swing	Full Swing	800	-	1300	mVp-p
	Half Swing	500	-	1000	mVp-p
Total Jitter, Peak-to-Peak	-	0.05	0.35	UI p-p	

### APPLICATION DIAGRAM:



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

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