



### **SFP-10/16GB-SW-C-OPC**

Cisco® Compatible TAA 10/16GBase-SR/SW FC SFP+ Transceiver Multi-Rate (MMF, 850nm, 100m, LC, DOM)

#### **Features**

- Up to 16Gbps Fiber Channel Serial Line Rate
- Up to 10Gbps Ethernet
- Duplex LC Connector
- 850nm VCSEL
- OM3
- AC/AC Coupling Interface
- Multi-Mode Fiber
- Commercial Temperature: 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead-Free



#### **Applications:**

- 10GBase-SR Ethernet
- Tri-Rate 4G/8G/16G Fibre Channel
- Datacenter and Enterprise

#### **Product Description**

This Cisco® compatible multi-rate SFP+ transceiver provides 10/16GBase-SR/SW Fibre Channel throughput up to 100m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Cisco®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V <sub>cc</sub>	-0.5		4	V
Storage Temperature	T <sub>stg</sub>	-40		85	°C
Operating Case Temperature	T <sub>c</sub>	0	25	70	°C
Relative Humidity	RH	0		85	%

## Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V <sub>cc</sub>	3.15	3.3	3.46	V
Supply Current	I <sub>cc</sub>			300	mA
Transmitter					
Input Differential Impedance	R <sub>IN</sub>		100		Ω
Single-Ended Data Input Swing	V <sub>IN,pp</sub>	90		800	mV
Transmit Disable Voltage	V <sub>D</sub>	2		V <sub>cc</sub>	V
Transmit Enable Voltage	V <sub>EN</sub>	V <sub>ee</sub>		V <sub>ee</sub> +0.8	V
Receiver					
Single-Ended Data Output Swing	V <sub>OUT,pp</sub>	185		425	mV
LOS Fault	V <sub>LOS<sub>fault</sub></sub>	2		Host_V <sub>cc</sub>	V
LOS Normal	V <sub>LOS<sub>norm</sub></sub>	V <sub>ee</sub>		V <sub>ee</sub> +0.8	V
Power Supply Rejection	PSR	100			mVp-p
Receiver Deterministic Jitter @14.025Gbps	DJ			0.22	UI
Receiver Deterministic Jitter @8.5Gbps	DJ			0.42	UI

## Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	BR	4.25		14.025	Gbps	
Bit Error Rate	BER			$10^{-12}$		1
Transmitter						
Center Wavelength	$\lambda$	840		860	nm	
RMS Spectral Width	$\sigma$			0.6	nm	
Average Optical Power	Pavg	-8.4		2.4	dBm	2
Optical Modulation Amplitude	OMA	-6.4		3	dBm	
Extinction Ratio	ER	2			dB	
Optical Return Loss Tolerance	ORLT			12	dB	
Receiver						
Center Wavelength	$\lambda$	840		860	nm	
Damage Threshold		3.4			dBm	
Receiver Power Overload		2.4			dBm	
Receiver Sensitivity	SENS			-10.3	dBm	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-13	dBm	
LOS Hysteresis	LOSH	0.5			dB	

### Notes:

1. PRBS  $2^7-1$  for 8GFC. PRBS  $2^{31}-1$  for 16GFC.
2. Class 1 Laser Safety limits CDRH and EN60825 standards.

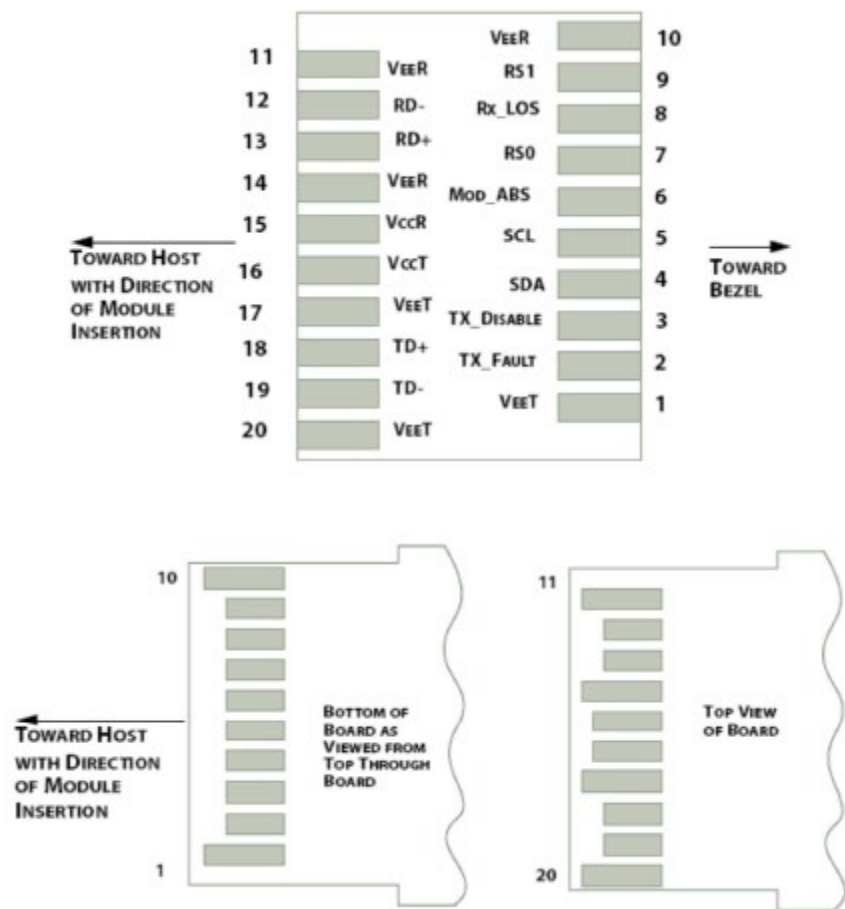
## Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1		VeeT	Module Transmitter Ground.	1
2	LVTTL-O	Tx_Fault	Module Transmitter Fault.	2
3	LVTTL-I	Tx_Disable	Transmitter Disable. Turns off the transmitter laser output.	3
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data.	
5	LVTTL-I	SCL	2-Wire Serial Interface Clock.	
6		MOD_ABS	Module Absent. Connected to the VeeT or VeeR in the module.	2
7	LVTTL-I	RS0	Rate Select 0. Optionally controls the SFP+ module receiver. When “high,” the input signaling rate is >4.25GBd. When “low,” the input signal rate is ≤4.25GBd.	
8	LVTTL-O	Rx_LOS	Receiver Loss of Signal Indication.	2
9	LVTTL-I	RS1	Rate Select 1. Optionally controls the SFP+ module transmitter. When “high,” the input signaling rate is >4.25GBd. When “low,” the input signal rate is ≤4.25GBd.	
10		VeeR	Module Receiver Ground.	1
11		VeeR	Module Receiver Ground.	1
12	CML-O	RD-	Receiver Inverted Data Output.	
13	CML-O	RD+	Receiver Data Output.	
14		VeeR	Module Receiver Ground.	1
15		VccR	3.3V Module Receiver Power Supply.	
16		VccT	3.3V Module Transmitter Power Supply.	
17		VeeT	Module Transmitter Ground.	1
18	CML-I	TD+	Transmitter Non-Inverted Data Input.	
19	CML-I	TD-	Transmitter Inverted Data Input.	
20		VeeT	Module Transmitter Ground.	1

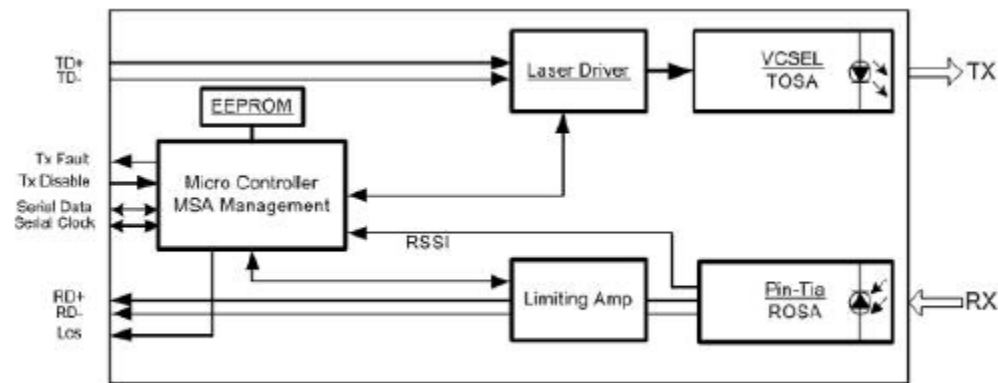
### Notes:

1. Module ground pins are isolated from the module case and chassis ground within the module.
2. Shall be pulled up with 4.7kΩ to 10kΩ to a voltage between 3.15V and 3.45V on the host board.
3. Shall be pulled up with 4.7kΩ to 10kΩ to the VccT in the module.

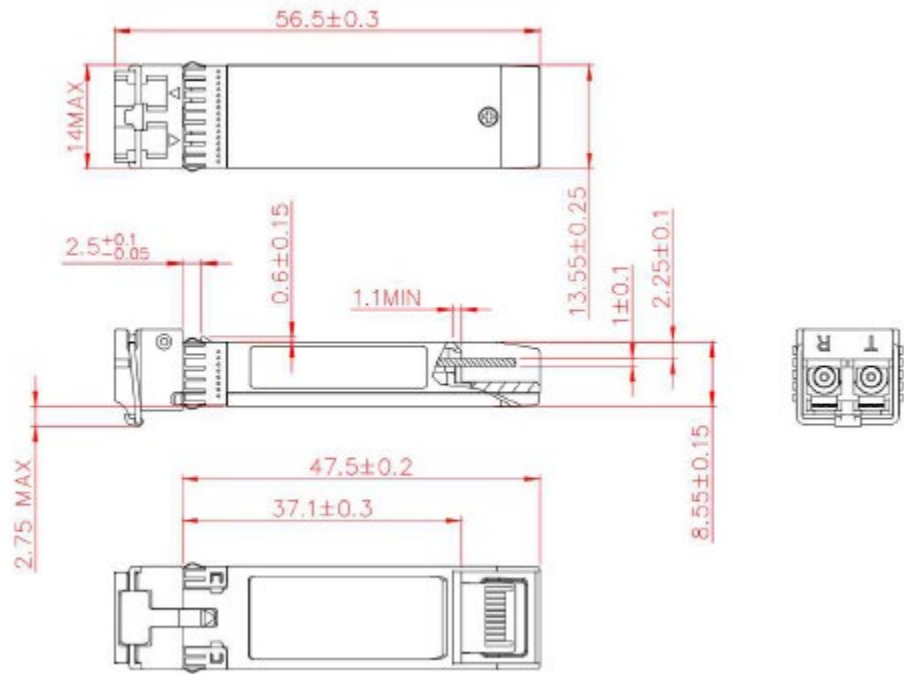
Electrical Pin-Out Details



Transceiver Block Diagram



Mechanical Specifications



## **OptioConnect**

### **Innovation for the Future of High-Speed Networking**

#### **Who We Are**

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

#### **What We Do**

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

#### **Smarter Networks by Design**

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

#### **Our Team**

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

#### **Our Mission**

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

#### **Let's Connect**

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

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