SFP-2-5GB-LX-V-CT-OPC

Coriant® Compatible TAA 2.5GBase-LX SFP Transceiver (SMF, 1310nm, 10km, LC, DOM, -40 to 95C)

Features

- Operating Data Rate up to 2.5Gbps
- FP Laser Transmitter and PIN-TIA Photo-Detector
- 10km with 9/125µm SMF
- Single 3.3V Power Supply
- Hot-Pluggable
- Duplex LC Connector Interface
- Power Dissipation: 1.0W
- Operating Temperature: -40 to 95 Celsius
- RoHS Compliant and Lead-Free

Applications:

- 2500Base Ethernet

Product Description

This Coriant® compatible SFP transceiver provides 2.5GBase-LX throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 95C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Coriant®. 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	Notes
Storage Temperature	Tstg	-40		95	°C	
Operating Case Temperature	Tc	-40		95	°C	
Maximum Supply Voltage	Vcc	-0.5		3.6	V	
Operating Relative Humidity	RH	5		85	%	
Data Rate			2.5		Gbps	
9μm Core Diameter SMF			10		km	

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Module Supply Voltage		Vcc	3.15	3.3	3.45	V	
Module Supply Current		Icc			300	mA	
Transmitter							
Differential LVPECL Inputs		VIN	400		1600	mVp-p	1
Differential Input Impedance		ZIN	85	100	115	Ω	2
Tx_Disable	**Disable**		2		Vcc+0.3	V	
	Enable		0		0.8		
Tx_Fault	**Fault**		2		Vcc+0.3	V	
	Normal		0		0.5		
Receiver							
Differential LVPECL Outputs		VOUT	400	800	1200	mVp-p	3
Differential Output Impedance		ZOUT	85	100	115	Ω	
Tx_Disable Assert Time		t_off			10	us	
Tx_LOS	**LOS**		2		Vcc+0.3	V	
	Normal		0		0.8		
MOD_DEF (0.2)		VOH	2.5			V	4
		VOL	0		0.5		

Notes:

1. AC Coupled Inputs. LVPECL Logic. Internally AC Coupled.
2. RIN>100kΩ @DC.
3. AC Coupled Outputs. LVPECL Logic. Internally AC Coupled.
4. With Serial ID.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λC	1260	1310	136	nm	
Spectral Width (RMS)	Δλ			3	nm	
Average Output Power	POUT	-11.7		-3	dBm	1
Extinction Ratio	ER	8.2			dB	
Rise/Fall Time (20-80%)	Tr/Tf			150	ps	
POUT @Tx_Disable Asserted	POUT			-45	dBm	
Output Optical Eye		ITU-T G.957 Compliant				2
Receiver						
Center Wavelength	λC	1260		1600	nm	
Receiver Sensitivity	Pmin			-18	dBm	3
Receiver Overload	Pmax	-3			dBm	
LOS De-Assert	LOSD			-19	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. Output power is coupled into a 9/125µm SMF.
2. Filtered, measured with a PRBS 2^{23}-1 test pattern @2.5Gbps.
3. Minimum average optical power is measured at BER less than $1E^{-12}$ with 2^{23}-1 PRBS and ER=8.2dB.

Pin Descriptions

Pin	Symbol	Name/Description	Plug Seq.	Notes
1	VeeT	Transmitter Ground.	1	5
2	Tx_Fault	Transmitter Fault Indication.	3	1
3	Tx_Disable	Transmitter Disable. Module disables on “high” or “open.”	3	2
4	SDA	Module Definition 2. 2-Wire Serial ID Interface.	3	3
5	SCL	Module Definition 1. 2-Wire Serial ID Interface.	3	3
6	MOD_ABS	Module Definition 0. Grounded within the module.	3	3
7	RS0	Not Connected. Function Not Available.	3	
8	LOS	Loss of Signal.	3	4
9	RS1	Receiver Ground.	1	5
10	VeeR	Receiver Ground.	1	5
11	VeeR	Receiver Ground.	1	5
12	RD-	Inverse Receiver Data Out.	3	6
13	RD+	Received Data Out.	3	7
14	VeeR	Received Data Out.	1	5
15	VccR	3.3 ± 5% Receiver Power.	2	7
16	VccT	3.3 ± 5% Transmitter Power.	2	7
17	VeeT	Transmitter Ground.	1	5
18	TD+	Transmit Data In.	3	8
19	TD-	Inverse Transmit Data In.	3	8
20	VeeT	Transmitter Ground.	1	5

Notes:

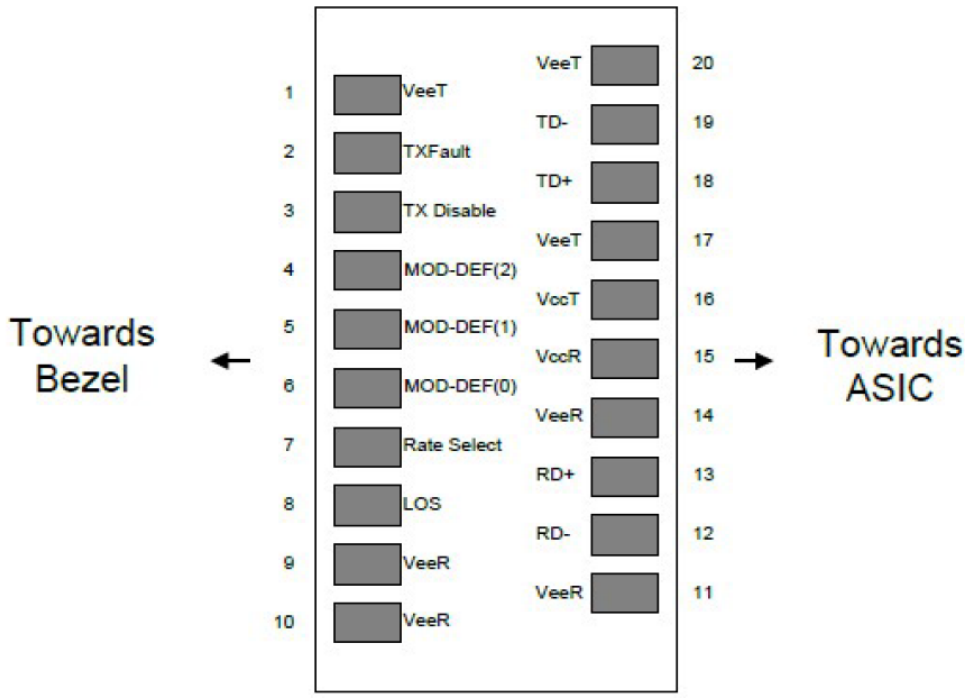
1. Tx_Fault is an open collector/drain output that should be pulled up with a 4.7kΩ to 10kΩ resistor on the host board to a voltage between 2.0V and VccT/R+0.3V. When “high,” the output indicates a laser fault of some kind. “Low” indicates normal operation. In the “low” state, the output will be pulled to <0.8V.
2. Tx_Disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a 4.7kΩ to 10kΩ resistor. Its states are:

   Low (0V to 0.8V): Transmitter On
   (>0.8V and <2V): Undefined
   High (2.0V to 3.465V): Transmitter Disabled
   Open: Transmitter Disabled.
3. MOD-DEF0, 1, & 2. These are the module definition pins. They should be pulled up with a 4.7kΩ to 10kΩ resistor on the host board. The pull-up voltage shall be VccT or VccR.

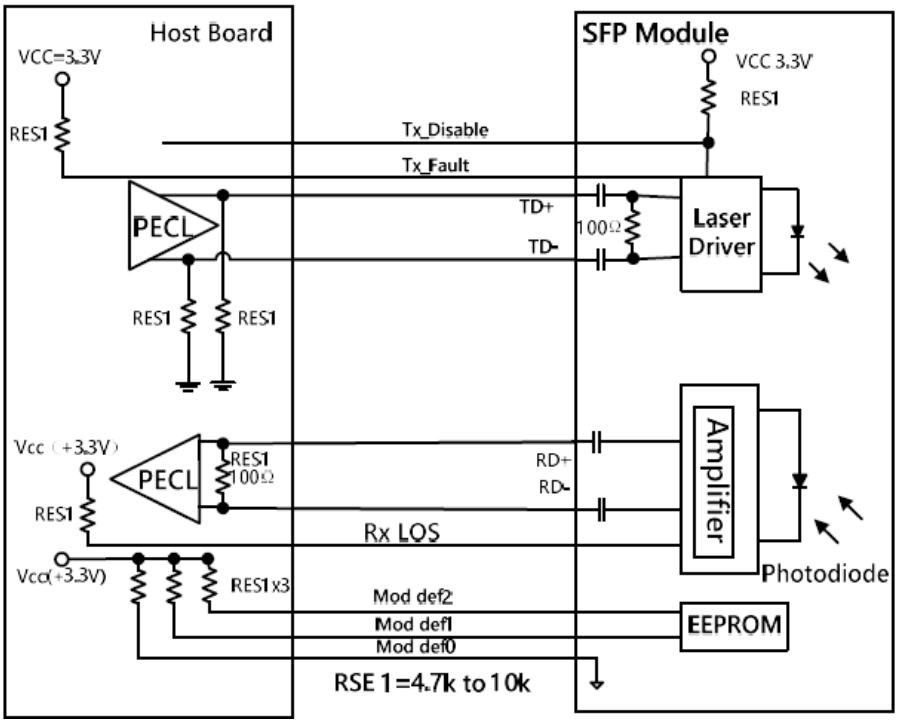
   MOD-DEF0 is grounded by the module to indicate that the module is present.
   MOD-DEF1 is the clock line of 2-wire serial interface for optional serial ID.
   MOD-DEF2 is the data line of 2-wire serial interface for optional serial ID.

4. LOS (Loss of Signal) is an open collector/drain output that should be pulled up with a 4.7kΩ to 10kΩ. Pull-up voltage between 2.0 and VccT/R+0.3V. When “high,” this output indicates that the receiver optical power is below the worst-case receiver sensitivity (as defined by the standard in use). “Low” indicates normal operation. In the “low” state, the output will be pulled to <0.8V.
5. VeeR and VeeT may be internally connected within the SFP module.
6. RD-/+. These are the differential receiver outputs. They are AC coupled 100Ω differential lines which should be terminated with differential 100Ω at the user SERDES. The AC coupling is done inside the module and is thus not required on the host board. The voltage swing on these lines will be between 400mV and 2000mV differential (200mV-1000mV single-ended) when properly terminated.
7. VccR and VccT are the receiver and transmitter power supplies. They are defined as 3.3V±5% at the SFP connector pin. Maximum supply current is 300mA. Recommended host board power supply filtering is shown below. Inductors with DC resistance of less than 1Ω should be used in order to maintain the required voltage at the SFP input pin with 3.3V supply voltage. When the recommended supply-filtering network is used, hot plugging of the SFP transceiver module will result in an in-rush current of no more than 30mA greater that the steady state value. VccR and VccT may be internally connected within the SFP module.
8. TD-/+. These are the differential transmitter inputs. They are AC coupled, differential lines with 100 differential termination inside the module. The AC coupling is done inside the module and is thus not required on the host board. The inputs will accept differential swings of 400mV-2000mV (200mV-1000mV single-ended).

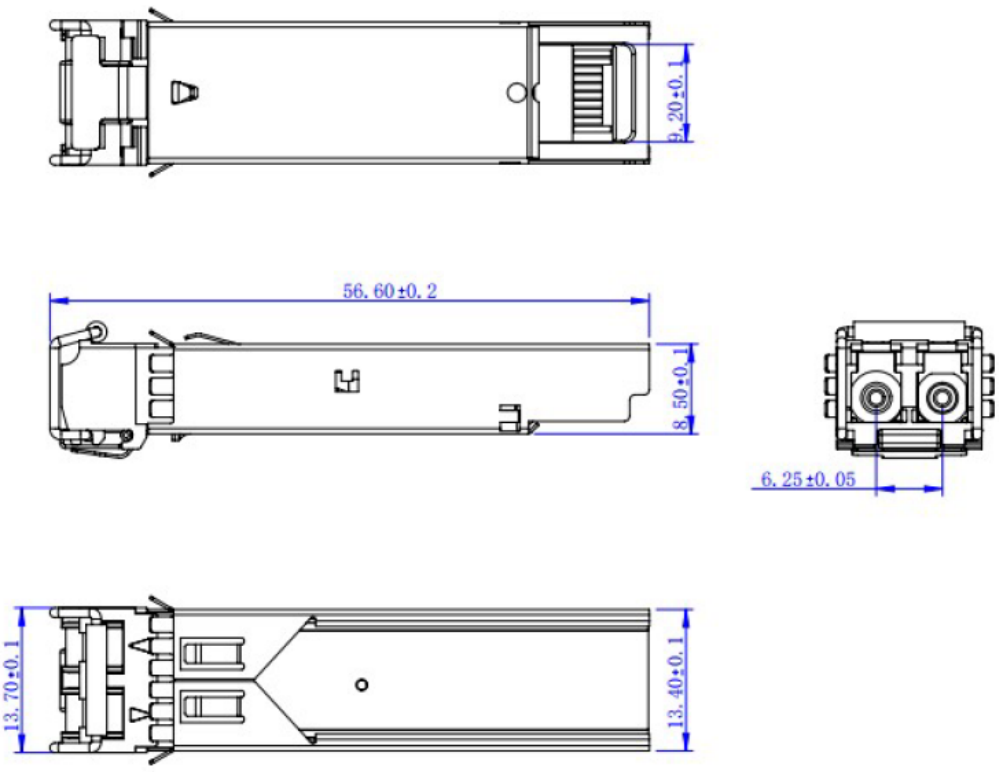
Electrical Pin-Out Details



Recommended Circuit Schematic



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.
www.optioconnect.com | info@optioconnect.com