

160-9504-900-25-PRO

Ciena® 160-9504-900-25 Compatible TAA Compliant 40GBase-PLR4 QSFP+ Transceiver (SMF, 1310nm, 25km, DOM, 0 to 70C, MPO)

Features

- SFF-8436 Compliance
- MPO Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- 40GBase Ethernet
- Access and Enterprise

Product Description

This Ciena® 160-9504-900-25 compatible QSFP+ transceiver provides 40GBase-PLR4 throughput up to 25km over single-mode fiber (SMF) using a wavelength of 1310nm via an MPO connector. It is guaranteed to be 100% compatible with the equivalent Ciena® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow 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.

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

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products.



Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	TS	-40		85	°C
Operating Case Temperature	Top	0	25	70	°C
Relative Humidity	RH	5		95	%
Data Rate Per Channel			10.3125	11.2	Gb/s

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes	
Supply Voltage	Vcc	3.135	3.3	3.465	V		
Module Supply Current	Icc			1100	mA		
Power Dissipation	PD			3500	mW		
Transmitter							
Input Differential Impedance	ZIN		100		Ω		
Differential Data Input Swing	VIN, P-P	180		900	mVP-P		
TX_FAULT	Transmitter Fault	VOH	2.0		VCCHOST	V	
	Normal Operation	VOL	0		0.8	V	
TX_DISABLE	Transmitter Disable	VIH	2.0		VCCHOST	V	
	Transmitter Enable	VIL	0		0.8	V	
Receiver							
Output Differential Impedance	ZO		100		Ω		
Differential Data Output Swing	VOUT, P-P	300		850	mVP-P	1	
Data Output Rise Time, Fall Time	tr, tf	28			ps	2	
RX_LOS	Loss of Signal (LOS)	VOH	2.0		VCCHOST	V	3
	Normal Operation	VOL	0		0.8	V	3

Notes:

1. Internally AC coupled but requires an external 100Ω differential load termination.
2. 20 – 80 %.
3. LOS is an open collector output. Should be pulled up with 4.7kΩ on the host board.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power per lane	Po	-3		+1.5	dBm	1
Side Mode Suppression Ratio	SMSR	30			dB	
Center Wavelength Range	λ_0	1260	1310	1355	nm	
Extinction Ratio	EX	3.5			dB	2
Optical Return Loss Tolerance	ORLT			12	dB	
Pout @TX-Disable Asserted	Poff			-30	dBm	1
Eye Diagram	IEEE Std 802.3ba compatible					
Receiver						
Center Wavelength	λ_c	1260		1355	nm	
Receiver Sensitivity (OMA)	S			-12.6	dBm	1
Damage Threshold	POL	2.3			dBm	1
LOS De-Assert	LOSD			-15	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. The optical power is launched into SMF.
2. Measured with a PRBS $2^{31}-1$ test pattern @10.3125Gbps.
3. Measured with PRBS $2^{31}-1$ test pattern, 10.3125Gb/s, BER< 10^{-12} .

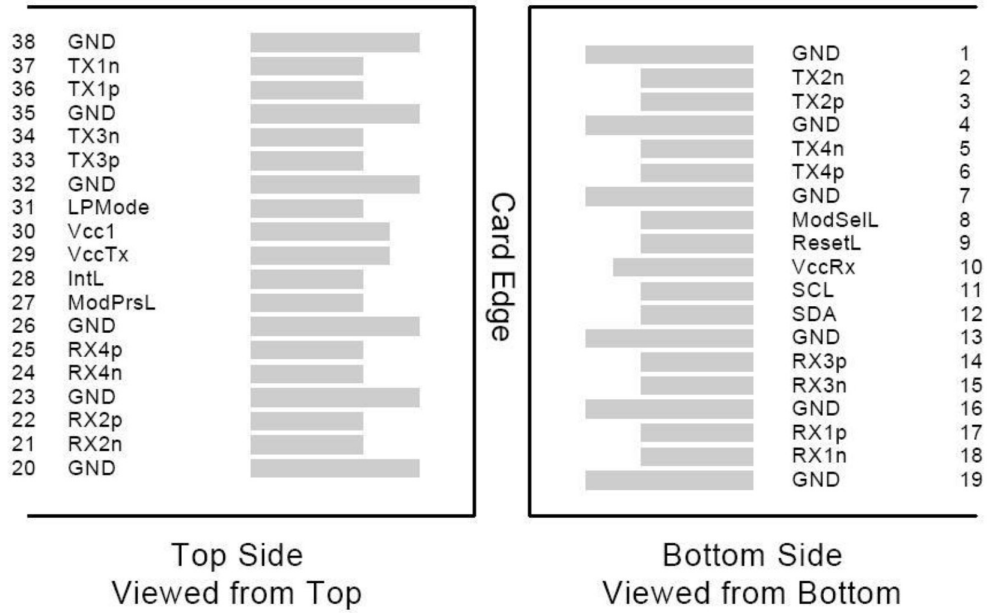
Pin Descriptions

Pin	Name	Function/Description	Notes
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2-	Transmitter Inverted Data Input	
3	Tx2+	Transmitter Non-Inverted Data output	
4	GND	Transmitter Ground (Common with Receiver Ground)	1
5	Tx4-	Transmitter Inverted Data Input	
6	Tx4+	Transmitter Non-Inverted Data output	
7	GND	Transmitter Ground (Common with Receiver Ground)	1
8	ModSelL	Module Select	2
9	ResetL	Module Reset	2
10	VccRx	3.3V Power Supply Receiver	
11	SCL	2-Wire serial Interface Clock	2
12	SDA	2-Wire serial Interface Data	2
13	GND	Transmitter Ground (Common with Receiver Ground)	1
14	Rx3+	Receiver Non-Inverted Data Output	
15	Rx3-	Receiver Inverted Data Output	
16	GND	Transmitter Ground (Common with Receiver Ground)	1
17	Rx1+	Receiver Non-Inverted Data Output	
18	Rx1-	Receiver Inverted Data Output	
19	GND	Transmitter Ground (Common with Receiver Ground)	1
20	GND	Transmitter Ground (Common with Receiver Ground)	1
21	Rx2-	Receiver Inverted Data Output	
22	Rx2+	Receiver Non-Inverted Data Output	
23	GND	Transmitter Ground (Common with Receiver Ground)	1
24	Rx4-	Receiver Inverted Data Output	1
25	Rx4+	Receiver Non-Inverted Data Output	
26	GND	Transmitter Ground (Common with Receiver Ground)	1
27	ModPrsl	Module Present	
28	IntL	Interrupt	2
29	VccTx	3.3V power supply transmitter	
30	Vcc1	3.3V power supply	
31	LPMode	Low Power Mode	2
32	GND	Transmitter Ground (Common with Receiver Ground)	1
33	Tx3+	Transmitter Non-Inverted Data Input	
34	Tx3-	Transmitter Inverted Data Output	
35	GND	Transmitter Ground (Common with Receiver Ground)	1
36	Tx1+	Transmitter Non-Inverted Data Input	
37	Tx1-	Transmitter Inverted Data Output	
38	GND	Transmitter Ground (Common with Receiver Ground)	1

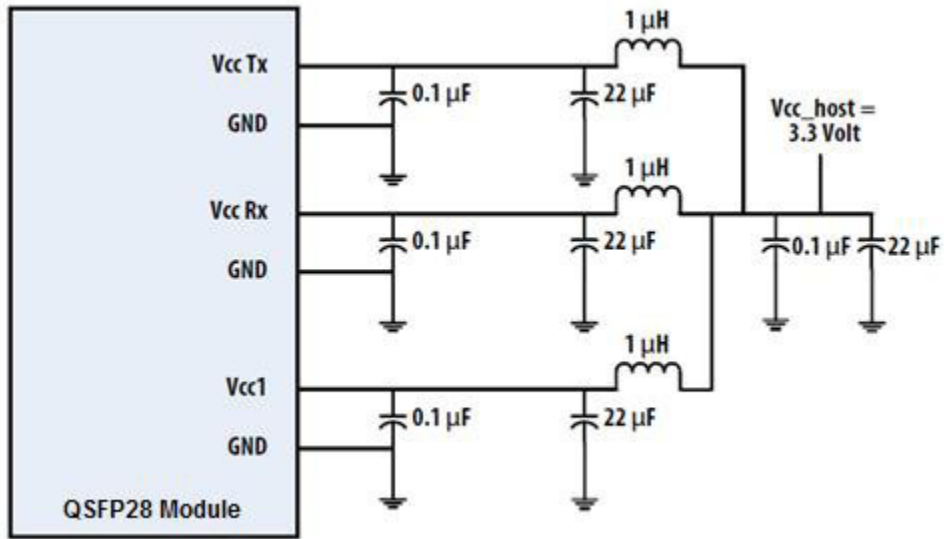
Notes:

- 1. The module signal grounds are isolated from the module case.
- 2. This is an open collector/drain output that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.

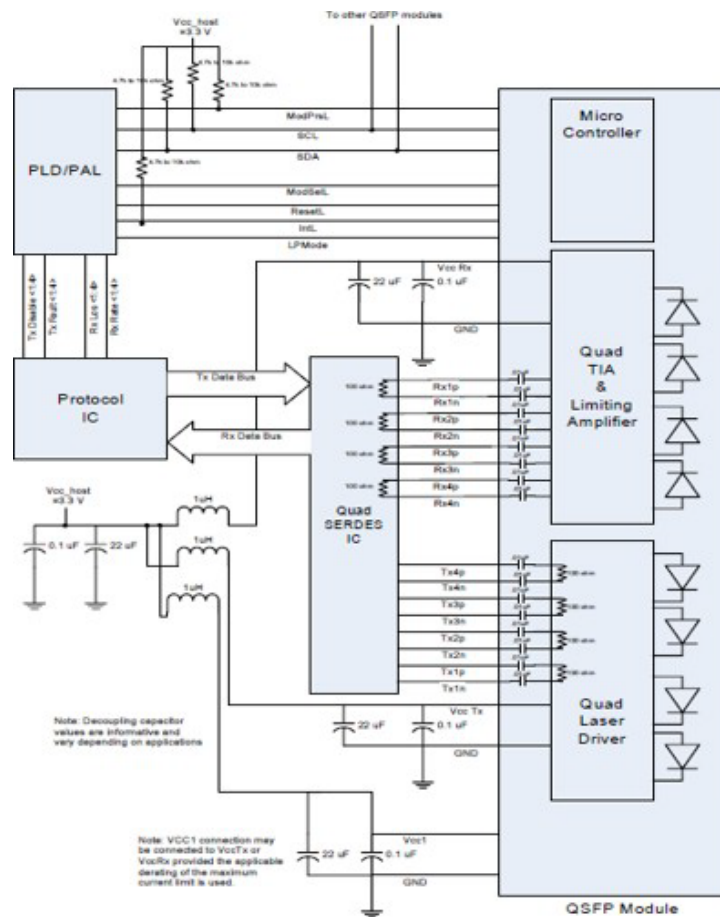
Electrical Pin-out Details



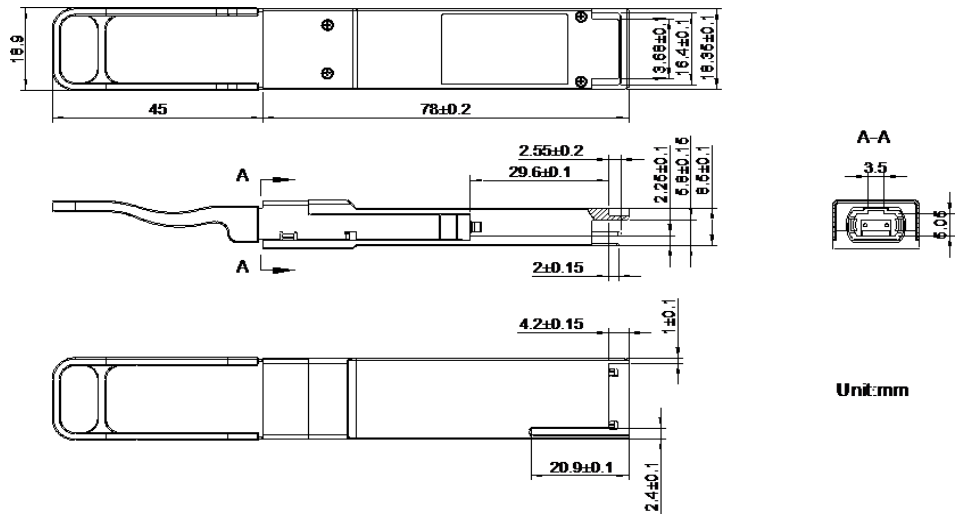
Recommended Host Board Power Supply Filter Network



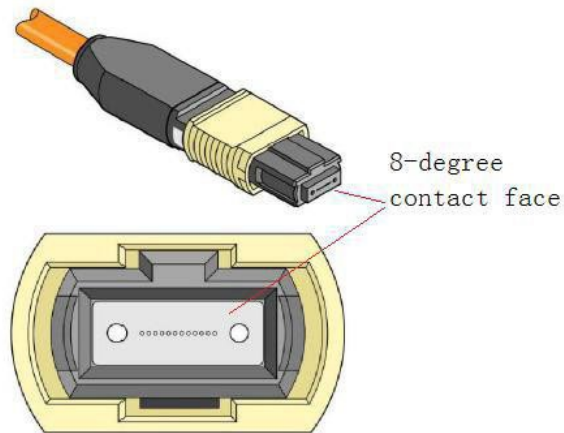
Recommended Application Interface Block Diagram



Mechanical Specifications



Attention: To minimize MPO connection induced reflections, an MPO receptacle with 8-degree angled end-face is utilized for this product. A female MPO connector with 8-degree end-face should be used with this product as illustrated in below Figure.



About Us:

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.



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