321-1646-PRO

NetScout® 321-1646 Compatible TAA Compliant 40GBase-SR4 QSFP+ Transceiver (MMF, 850nm, 150m, DOM, 0 to 70C, MPO)

Features

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

Applications:

- 40GBase Ethernet
- 4x10G Breakout Option
- Access and Enterprise

Product Description

This NetScout® 321-1646 compatible QSFP+ transceiver provides 40GBase-SR4 throughput up to 150m over multi-mode fiber (MMF) using a wavelength of 850nm via an MPO connector. It is guaranteed to be 100% compatible with the equivalent NetScout® 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.

Rev. 030524

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0	25	70	°C
Relative Humidity	RH	5		95	%
Data Rate Per Channel			10.3125		Gbps

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage	Vcc	3.135	3.3	3.465	V	
Module Supply Current	Icc			430	mA	
Power Dissipation	P_{DISS}			1.5	W	
Transmitter						
Input Differential Impedance	ZIN		100		Ω	
Differential Data Input Swing	VIN,pp	180		900	mVp-p	
Receiver						
Output Differential Impedance	ZOUT		100		Ω	
Differential Data Output Swing	VOUT,pp	300		850	mVp-p	1
Data Output Rise Time/Fall Time	Tr/Tf	28			ps	2

Notes:

1. Internally AC coupled but requires an external 100Ω differential load termination.
2. 20 – 80 %.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power	Po	-7.6		+2.4	dBm	1
Center Wavelength Range	λC	830	850	860	nm	
Extinction Ratio	ER	3			dB	2
Spectral Width (RMS)	Δλ			0.65	nm	
Transmitter and Dispersion Penalty	TDP			3.2	dB	
Optical Return Loss Tolerance	ORLT			12	dB	
Eye Diagram	IEEE Std 802.3ba Compatible					
Receiver						
Center Wavelength	λC	830	850	860	nm	
Receiver Sensitivity (P$_{avg}$)	S			-9.5	dBm	3
Damage Threshold	P$_{OL}$	2.5			dBm	3
Optical Return Loss	ORL	12			dB	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-11	dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. The optical power is launched into OM3 MMF.
2. Measured with a PRBS 2^{31}-1 test pattern @10.3125Gbps.
3. Measured with PRBS 2^{31}-1 test pattern, 10.3125Gbps, and BER<10^{-12}.
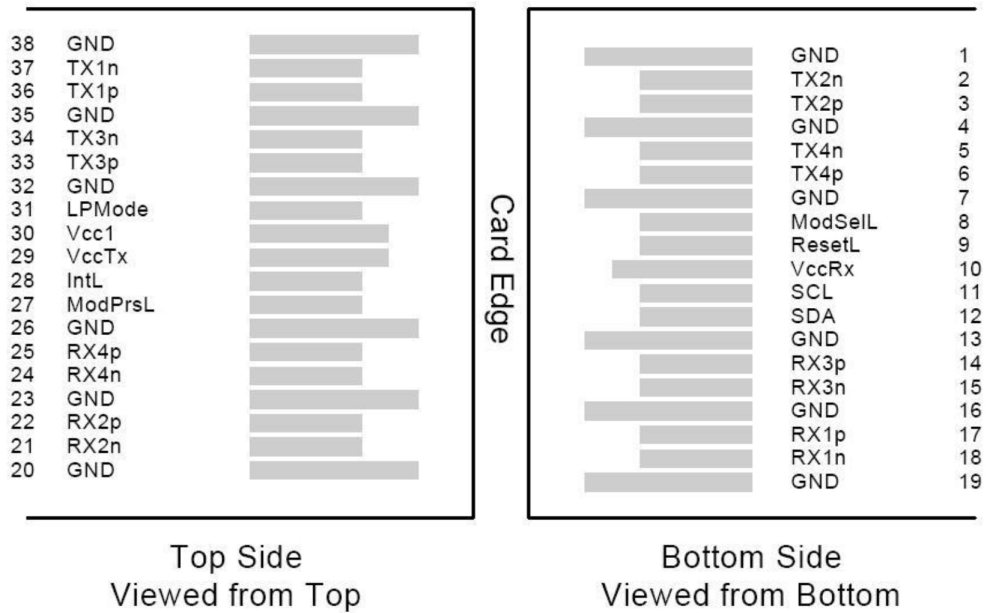
Pin Descriptions

Pin	Logic	Symbol	Name/Descriptions	Notes
1		GND	Module Ground.	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Input.	
4		GND	Module Ground.	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Input.	
7		GND	Module Ground.	1
8	LVTTL-I	ModSelL	Module Select.	2
9	LVTTL-I	ResetL	Module Reset.	2
10		VccRx	+3.3V Receiver Power Supply.	
11	LVCMOS-I	SCL	2-Wire Serial Interface Clock.	2
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data.	2
13		GND	Module Ground.	1
14	CML-O	Rx3+	Receiver Non-Inverted Data Output.	
15	CML-O	Rx3-	Receiver Inverted Data Output.	
16		GND	Module Ground.	1
17	CML-O	Rx1+	Receiver Non-Inverted Data Output.	
18	CML-O	Rx1-	Receiver Inverted Data Output.	
19		GND	Module Ground.	1
20		GND	Module Ground.	1
21	CML-O	Rx2-	Receiver Inverted Data Output.	
22	CML-O	Rx2+	Receiver Non-Inverted Data Output.	
23		GND	Module Ground.	1
24	CML-O	Rx4-	Receiver Inverted Data Output.	1
25	CML-O	Rx4+	Receiver Non-Inverted Data Output.	
26		GND	Module Ground.	1
27	LVTTL-O	ModPrsL	Module Present. Internally pulled down to GND.	
28	LVTTL-O	IntL	Interrupt Output. Should be pulled up on the host board.	2
29		VccTx	+3.3V Transmitter Power Supply.	
30		Vcc1	+3.3V Power Supply.	
31	LVTTL-I	LPMode	Low-Power Mode.	2
32		GND	Module Ground.	1
33	CML-I	Tx3+	Transmitter Non-Inverted Data Input.	
34	CML-I	Tx3-	Transmitter Inverted Data Input.	

35		GND	Module Ground.	1
36	CML-I	Tx1+	Transmitter Non-Inverted Data Input.	
37	CML-I	Tx1-	Transmitter Inverted Data Input.	
38		GND	Module 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-10kΩ pull-up resistor to the Host_Vcc.

Electrical Pin-Out Details


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38  GND                                    GND    1
37  TX1n                                   TX2n   2
36  TX1p                                   TX2p   3
35  GND                                    GND    4
34  TX3n                                   TX4n   5
33  TX3p                                   TX4p   6
32  GND                                    GND    7
31  LPMode          Card Edge              ModSelL 8
30  Vcc1                                   ResetL 9
29  VccTx                                  VccRx  10
28  IntL                                   SCL    11
27  ModPrsL                                SDA    12
26  GND                                    GND    13
25  RX4p                                   RX3p   14
24  RX4n                                   RX3n   15
23  GND                                    GND    16
22  RX2p                                   RX1p   17
21  RX2n                                   RX1n   18
20  GND                                    GND    19
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Top Side
Viewed from Top

Bottom Side
Viewed from Bottom

Recommended Host Board Power Supply Filter Network

Mechanical Specifications

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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