



PAN-QSFP28-100GBASE-LR4-20-OPC

Palo Alto Networks® PAN-QSFP28-100GBASE-LR4-20 Compatible TAA 100GBase-LR4 QSFP28 Transceiver (SMF, 1295nm to 1309nm, 20km, LC, DOM)

Features

- SFF-8665 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- 100GBase Ethernet

Product Description

This Palo Alto Networks® PAN-QSFP28-100GBASE-LR4-20 compatible QSFP28 transceiver provides 100GBase-LR4 throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1295nm to 1309nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Palo Alto Networks® 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.

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

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	V _{CC}	-0.5		4.0	V
Storage Temperature	T _S	-40		85	°C
Operating Case Temperature	T _C	0	25	70	°C
Operating Humidity	RH	5		95	%
Data Rate PER Channel			25.78125		Gb/s

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	V _{CC}	3.135	3.3	3.465	V	
Power Dissipation	PD			3.5	W	
Module Supply Current	I _{CC}			1500	mA	
Transmitter						
Single-ended Input Voltage Tolerance		-0.3		4.0	V	
Input Differential Impedance	Z _{IN}		100		Ω	
Differential Data Input Swing	V _{IN, P-P}	190		700	mV _{p-p}	
AC Common Mode Input Voltage Tolerance		15			mV	
Differential Input Voltage Swing Threshold		50			mV _{pp}	
Receiver						
Single-ended Output Voltage		-0.3		4.0	V	
Output Differential Impedance	Z _O	90	100	110	Ω	
Differential Data Output Swing	V _{OUT, P-P}	300		850	mV _{p-p}	
AC Common Mode Output Voltage				7.5	mV	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power per lane	P _o	0		+5	dBm	1
Total Launch Optical Power	P _o			+10.5	dBm	1
Center Wavelength	L1	1294.53	1295.56	1296.59	nm	
	L2	1299.02	1300.05	1301.09	nm	
	L3	1303.54	1304.58	1305.63	nm	
	L4	1308.09	1309.14	1310.19	nm	
Extinction Ratio	EX	4.0			dB	2
Spectral width (-20dB)	Δλ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Optical Return Loss Tolerance	ORLT			20	dB	
P _{out} @TX-Disable Asserted	P _{off}			-30	dBm	1
Eye mask definitions: X1, X2, X3, Y1, Y2, Y3	0.25, 0.4, 0.45, 0.25, 0.28, 0.4					
Receiver						
Center Wavelength	L1	1294.53	1295.56	1296.59	nm	
	L2	1299.02	1300.05	1301.09	nm	
	L3	1303.54	1304.58	1305.63	nm	
	L4	1308.09	1309.14	1310.19	nm	
Sensitivity per Channel (OMA)	S			-9.0	dBm	3
Overload (each channel)	POL	5.0			dBm	3
Damage Threshold (each channel)	POL	5.5			dBm	
Optical Return Loss	ORL	26			dB	
LOS De-Assert	LOSD			-11.6	dBm	
LOS Assert	LOSA	-24			dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. The optical power is launched into SMF.
2. Measured with a PRBS 231-1 test pattern @25.78125Gbps.
3. Measured with PRBS 231-1 test pattern, 25.78125Gb/s.

Pin Descriptions

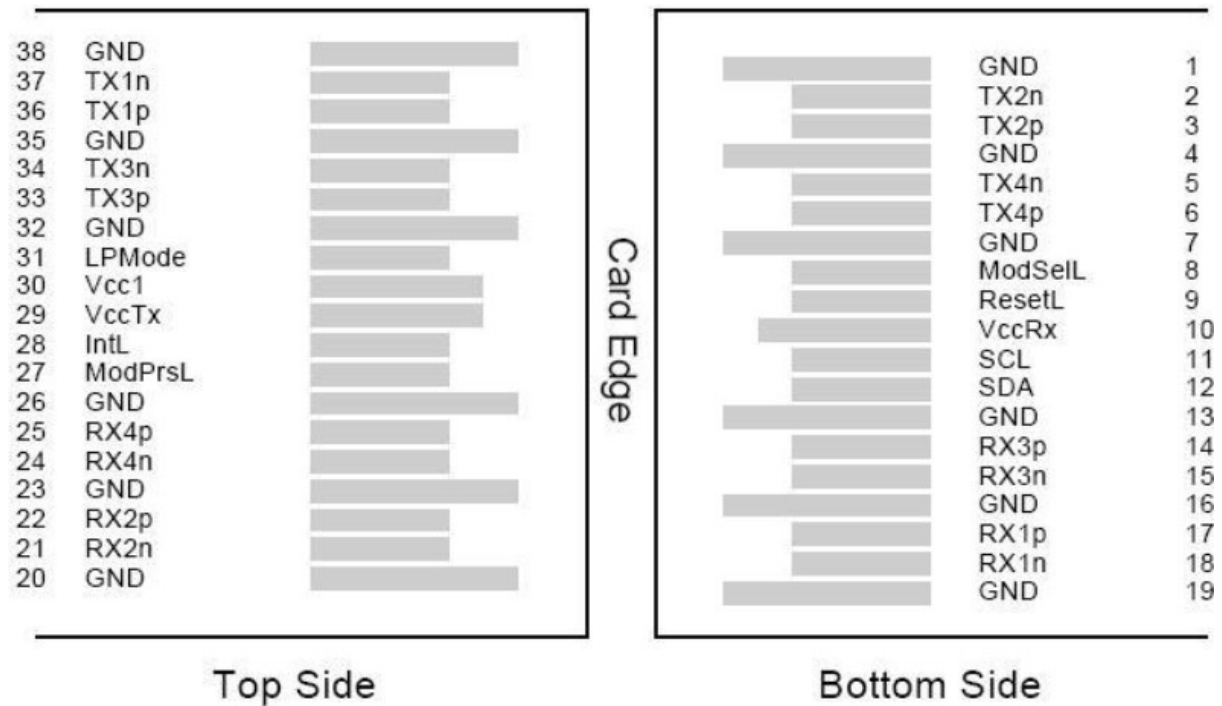
Pin	Symbol	Name/Descriptions	Ref.
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2-	Transmitter Inverted Data Input	
3	Tx2+	Transmitter Non-Inverted Data output	
4	GND	Transmitter Ground (Common with Receiver Ground)	1
5	Tx4-	Transmitter Inverted Data Input	
6	Tx4+	Transmitter Non-Inverted 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

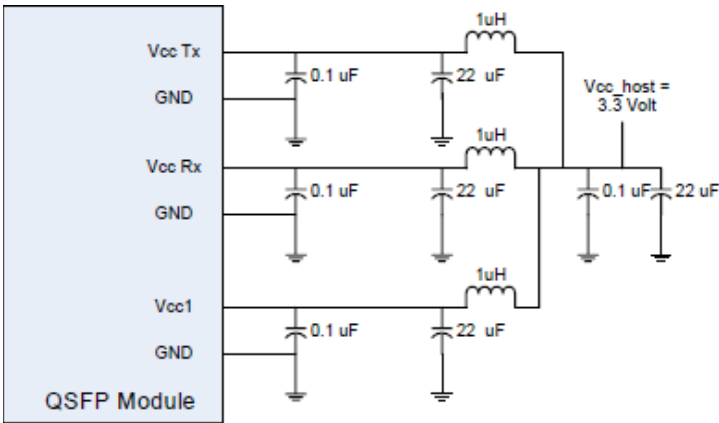
Notes:

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.

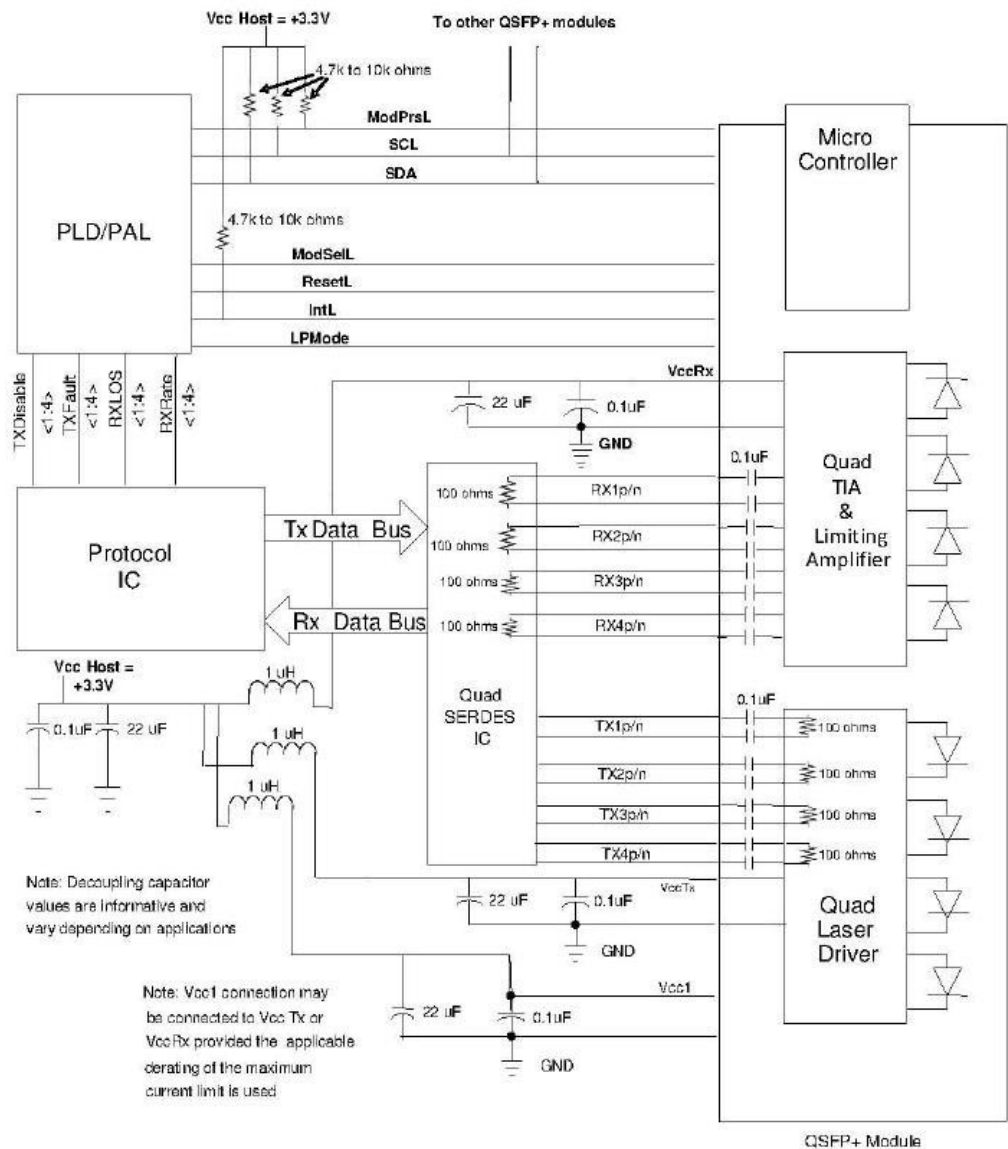
Electrical Pin-out Details



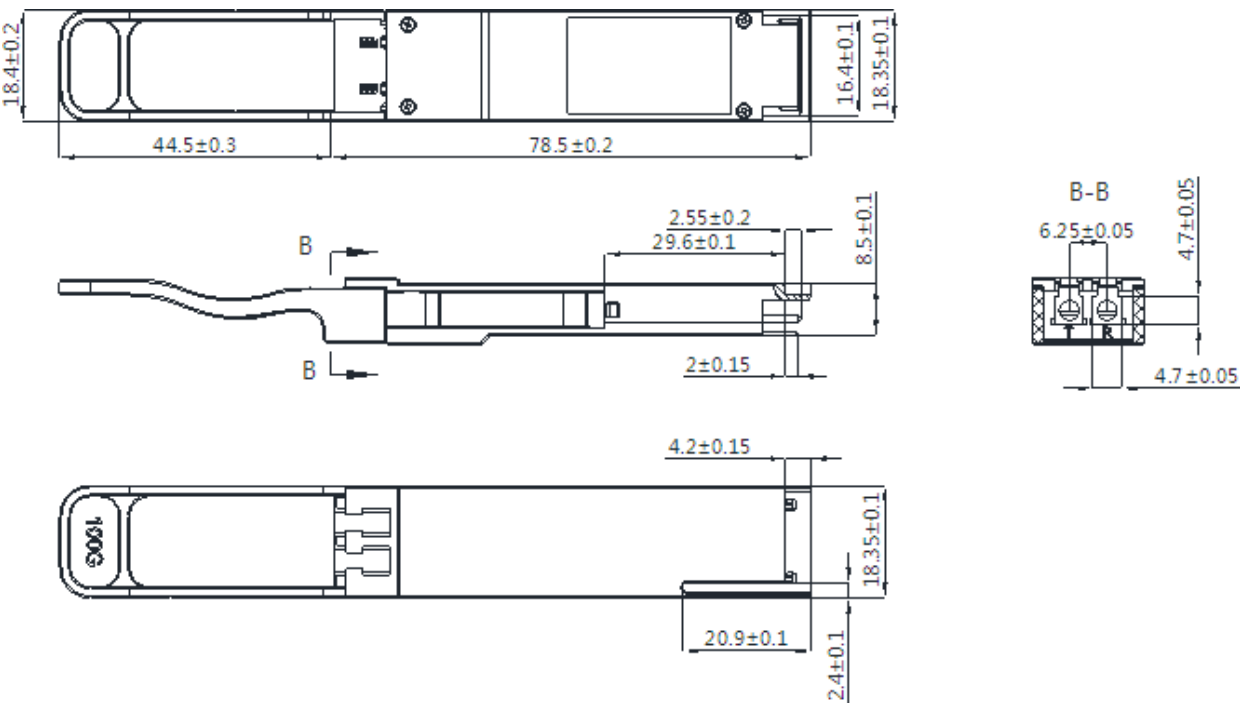
Recommended Host Board Power Supply Filter Network



Recommended Application Interface Block Diagram



Mechanical Specifications



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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