



QSFP28-100GB-SR4-MDC-SKY

MSA Compliant 100GBase-SR4 QSFP28 Transceiver (MMF, 850nm, 100m, MDC, DOM)

Product Description

This MSA compliant QSFP28 transceiver provides 100GBase-SR4 throughput up to 100m over OM4 multi-mode fiber (MMF) using a wavelength of 850nm via an MDC connector. 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. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

Features:

- Hot-Pluggable QSFP28 Form Factor
- Maximum Link Length of 100m on OM4 MMF
- Supports 103.1Gbps Aggregate Bit Rate
- Single 3.3V Power Supply
- Power Consumption: 1.8W
- MDC Interface
- Operating Temperature: 0 to 70 Celsius
- 4x25G Electrical Interface
- RoHS Compliant and Lead-Free



Applications:

- 100GBase Ethernet
- Access and Enterprise

For your product safety, please read the following information carefully before any manipulation of the transceiver:



ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 / JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

Absolute Maximum Ratings

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature		Tstg	-40		85	°C	
Operating Case Temperature		Tc	0		70	°C	
Bit Rate (All Wavelengths Combined)		DR			103.1	Gbps	
Bit Error Rate (Pre-FEC)		BER			5×10^{-5}		
Data Rate Per Lane		DR		25.78125 ± 100ppm		Gbps	1
Fiber Type	OM3 MMF	LMax1			70	m	
	OM4 MMF	LMax2			100	m	

Notes:

1. Receiver consists of 4 lasers and photo detectors operating at a maximum speed of 25.78125Gbps ± 100ppm each.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Supply Current	Icc			800	mA	
Power Consumption	PC			2.5	W	
Transmitter						
Differential Voltage Pk-Pk				900	mV	
Single-Ended Voltage Tolerance	VIN,pp	-0.65		3.3	V	
Module Stressed Input Test		Per Section 83E.3.4.1, IEEE 802.3bm			V	
Receiver						
Differential Data Output Swing	VOUT,pp	100		400	mVp-p	
		300		600		
		400	600	800		
		600		1200		
Eye Width		0.57			UI	
Differential Eye Height		228			mV	
Vertical Eye Closure	VEC	5.5			dB	
Transition Time (20-80%)	Tr/Tf	12			ps	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λ_C	840	850	860	nm	
RMS Spectral Width	$\Delta\lambda$			0.6	nm	
Average Optical Power Per Lane	TxPx	-8.4		2.4	dBm	
Optical Power OMA Per Lane	TxOMA	-6.4		3	dBm	
Launch Power OMA Minus TDEC Per Lane	P-TDEC	-7.3			dBm	
TDEC Per Lane	TDEC			4.3	dBm	
Optical Extinction Ratio	ER	2			dB	
Optical Return Loss Tolerance	ORL			12	dB	
Encircled Flux	FLX		>86% at 19 μ m <30% at 4.5 μ m			
Average Launch Power of Off Transmitter Per Lane	Poff			-30	dBm	
Transmitter Eye Mask Definitions: {X1, X2, X3, Y1, Y2, Y3}		{0.25, 0.4, 0.45, 0.25, 0.28, 0.4}				1
Receiver						
Center Wavelength	λ_C	840		860	nm	
Damage Threshold	DT	3.4			dBm	
Average Receive Power Per Lane	RxPx	-10.3		2.4	dBm	
Receive Power on OMA Per Lane	RxOMA			3	dBm	
Receiver Reflectance	Rfl			-12	dB	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-13	dBm	
LOS Hysteresis	LOSH	0.5	2		dB	
Stressed Sensitivity (OMA)	SRS			-5.2	dBm	2
Stressed Conditions						
Stressed Eye Closure	SEC		4.3		dB	
Stressed Eye J2 Jitter	J2		0.39		UI	
Stressed Eye J4 Jitter	J4		0.53		UI	
OMA of Each Aggressor Lane			3		dBm	
Stressed Receiver Eye Mask Definitions: {X1, X2, X3, Y1, Y2, Y3}		{0.25, 0.4, 0.45, 0.25, 0.28, 0.4}				3

Notes:

1. Hit ratio 1.5×10^{-3} hits/sample.
2. Minimum value is informative only and not the principal indicator of signal strength.
3. Hit ratio 5×10^{-5} hits/sample.

Pin Descriptions

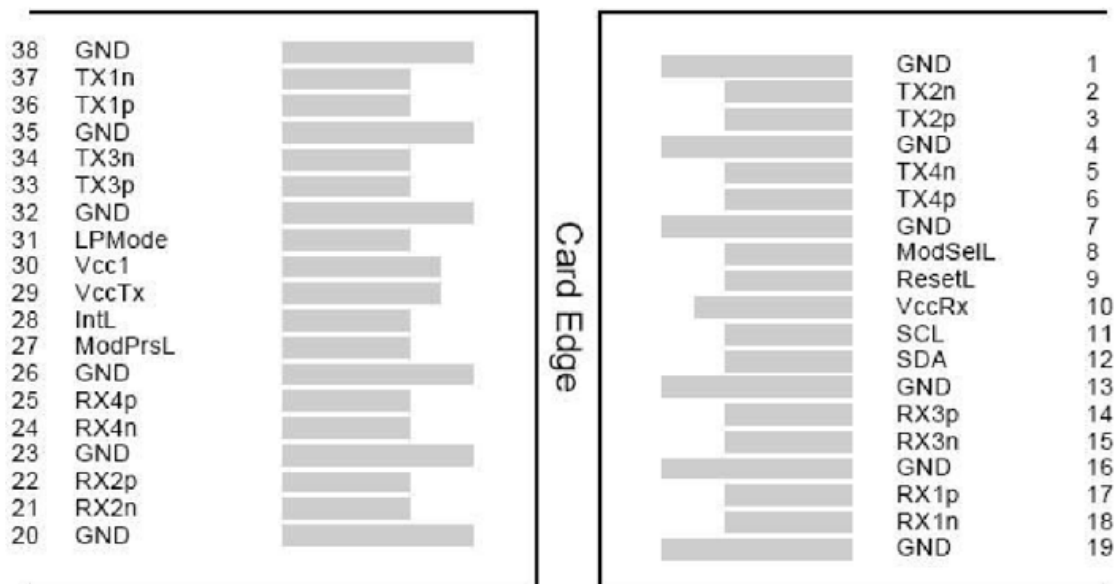
Pin	Symbol	Name/Description	Notes
1	GND	Module Ground.	1
2	Tx2-	Transmitter Inverted Data Input.	
3	Tx2+	Transmitter Non-Inverted Data Input.	
4	GND	Module Ground.	1
5	Tx4-	Transmitter Inverted Data Input.	
6	Tx4+	Transmitter Non-Inverted Data Input.	
7	GND	Module Ground.	1
8	ModSelL	Module Select.	
9	ResetL	Module Reset.	
10	VccRx	+3.3V Receiver Power Supply.	2
11	SCL	2-Wire Serial Interface Clock.	
12	SDA	2-Wire Serial Interface Data.	
13	GND	Module Ground.	1
14	Rx3+	Receiver Non-Inverted Data Output.	
15	Rx3-	Receiver Inverted Data Output.	
16	GND	Module Ground.	1
17	Rx1+	Receiver Non-Inverted Data Output.	
18	Rx1-	Receiver Inverted Data Output.	
19	GND	Module Ground.	1
20	GND	Module Ground.	1
21	Rx2-	Receiver Inverted Data Output.	
22	Rx2+	Receiver Non-Inverted Data Output.	
23	GND	Module Ground.	1
24	Rx4-	Receiver Inverted Data Output.	
25	Rx4+	Receiver Non-Inverted Data Output.	
26	GND	Module Ground.	1
27	ModPrsL	Module Present.	
28	IntL/RxLOSL	Interrupt. Optionally configurable as RxLOSL via the management interface (SFF-8636).	
29	VccTx	+3.3V Transmitter Power Supply.	2
30	Vcc1	+3.3V Power Supply.	2
31	LPMode/TxDis	Low-Power Mode. Optionally configurable as TxDis via the management Interface (SFF-8636).	
32	GND	Module Ground.	1
33	Tx3+	Transmitter Non-Inverted Data Input.	
34	Tx3-	Transmitter Inverted Data Input.	
35	GND	Module Ground.	1

36	Tx1+	Transmitter Non-Inverted Data Input.	
37	Tx1-	Transmitter Inverted Data Input.	
38	GND	Module Ground.	1

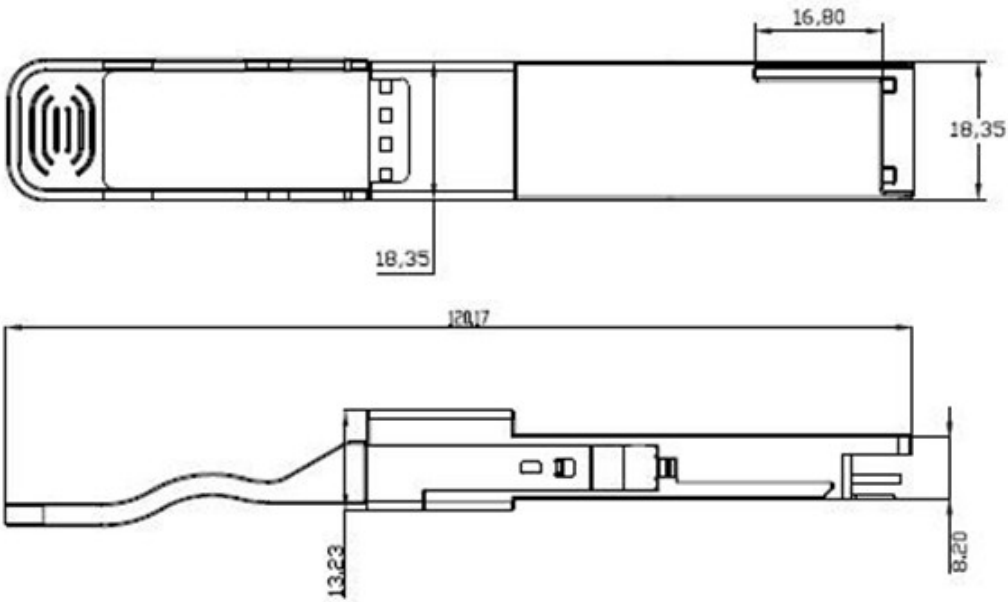
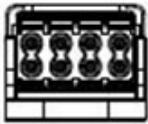
Notes:

1. GND is the symbol for signal and supply (power) common for the QSFP28 module. All are common within the module, and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal common ground plane.
2. VccRx, Vcc1, and VccTx are the receiving and transmission power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown below. VccRx, Vcc1, and VccTx may be internally connected within the module in any combination. The connector pins are each rated for a maximum current of 1000mA.

Electrical Pin-Out Details



Mechanical Specifications



About Skylane Optics

Skylane is a leading provider of transceivers for optical communication.

We offer an extensive portfolio for the enterprise, access, datacenter and metropolitan fiber optical market as well as for smart home applications and home networks.

We cover the European, South American and North American market with a strong partner network and have offices in Belgium, Brazil, Sweden and USA.

Our offerings are characterized by high quality and performance. In combination with our strong technical support, we enable our customers to build cost optimized network solutions.

We offer an extensive range of high-quality products including transceivers (Optical and copper), Active Optical Cable (AOC), Direct Attach Cable (DAC), Mux/Demux, Coding Box.

