QSFP28-100G-B10

Optical SFP Module

100Gbps QSFP28 Transceiver, Bi-di, 1270/1330nm, 10KM

Features

- Supports 106.25Gb/s PAM4.
- Built-in 100G PAM4 DSP
- 1270nm DFB laser and PIN receiver for Tx1270nm/Rx1330nm
- 1330nm DFB laser and PIN receiver for Tx1330nm/Rx1270nm
- LC BIDI single receptacle
- Up to 10km reach for SMF
- Hot-pluggable QSFP28 form factor
- Digital Diagnostics Monitoring Interface
- Power dissipation < 4.5 W
- Compatible with RoHS
- Commercial operating case temperature: 0 to +70° C

Application

- 100G Ethernet
- Data center
- Infiniband QDR
- Fiber channel

Standard

- 100G Lambda MSA
- QSFP MSA compliant
- Compliant to SFF-8636

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Power Supply Voltage	Vcc	-0.3	3.6	V
Signal Input Voltage		Vcc-0.3	Vcc +0.3	V
Storage Temperature	Ts	-20	+85	°C
Operating Humidity	-	0	85	%

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Tc	0		70	°C
Power Supply Voltage	Vcc	3.13	3.3	3.47	V
Date Rate per Channel (4*25G NRZ)			25.78125		Gbps
Date Rate per Channel (2*50G PAM4)			53.125		Gbps
Bit Error Ratio (BER) with FEC on			10-12		
Bit Error Ratio (BER) without FEC			2.4x10-4		
Fiber Length 9/125μm core SMF		-	-	10	km

Notes:

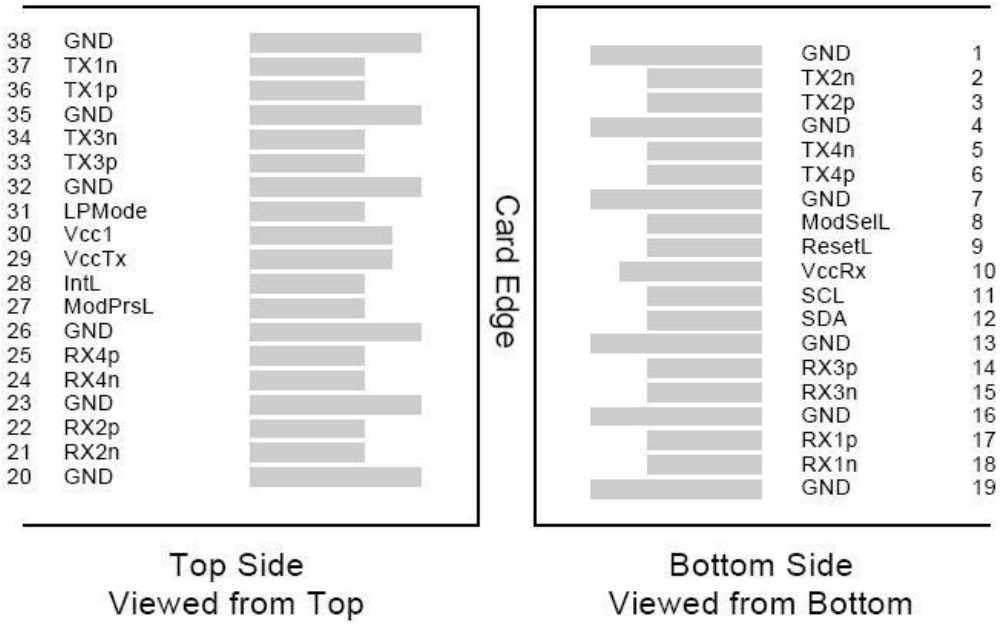
1. Bit-Error-Rate (BER) is tested with PRBS 31 pattern.
2. 100G QSFP28 LR1 requires an electrical connector compliant with QSFP28 MSA which is used on the host board in order to guarantee its electrical interface specification.

Optical and Electrical Characteristics

Optical transmitter Characteristics						
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**	**Notes**
Launched Power (avg.) Per Lane	Pavg	-1.4		4.5	dBm	
Wavelength Range	λ0	1264.5 1324.5	1271 1331	1277.5 1337.5	nm	
Spectral Width(-20dB)	Δλ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	3.5			dB	
Transmitter OFF Output Power	POff			-30	dBm	
Optical Modulation Amplitude(OMA outer)	OMA	0.7		4.7	dBm	
Transmitter and dispersion eye closure(TDECQ)	TDECQ			3.4	dB	
Optical receiver Characteristics						
Parameter	**Symbol**	**Min**	**Typical**	**Max**	**Unit**	**Notes**
Receiver Wavelength Range		1324.5 1264.5	1331 1271	1337.5 1277.5	nm	
Average Receiver Power Per Lane		-7.7		4.5	dBm	
Receiver sensitivity (OMAouter)				-6.1	dBm	
Stressed receiver sensitivity (OMAouter)				-4.1	dBm	
Optical Power Input Overload	Pin-max	5			dBm	
Receiver Reflectance	Rr			-26	dB	

Pin Definitions

Pin Diagram



QSFP MSA-compliant 38-pin connector

Pin	Symbol	Name/Description	Notes
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	TX2N	Transmitter Inverted Data Input	
3	TX2P	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	TX4N	Transmitter Inverted Data Input	
6	TX4P	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	+3.3 V Power supply receiver	2
11	SCL	2-wire serial interface clock	
12	SDA	2-wire serial interface data	
13	GND	Ground	
14	RX3P	Transmitter Inverted Data Input	
15	RX3N	Transmitter Non-Inverted Data Input	
16	GND	Ground	1

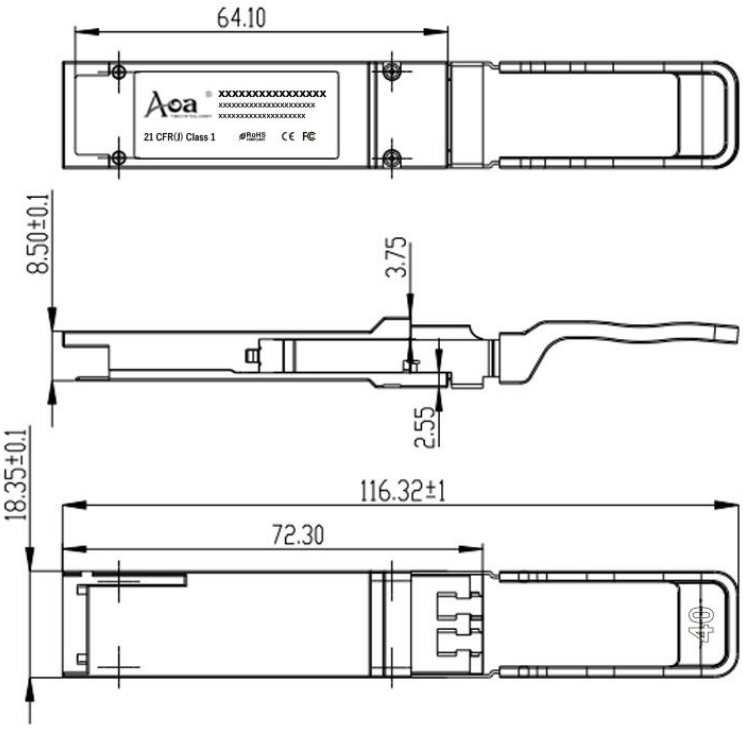
17	RX1P	Transmitter Inverted Data Input	
18	RX1N	Transmitter Non-Inverted Data Input	
19	GND	Ground	1
20	GND	Ground	1
21	RX2N	Transmitter Inverted Data Input	
22	RX2P	Transmitter Non-Inverted Data Input	
23	GND	Ground	1
24	RX4N	Transmitter Inverted Data Input	1
25	RX4P	Transmitter Non-Inverted Data Input	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3 V Power supply transmitter	2
30	Vcc1	+3.3 V Power Supply	2
31	LPMode	Low Power Mode	
32	GND	Ground	1
33	TX3P	Transmitter Inverted Data Input	
34	TX3N	Transmitter Non-Inverted Data Input	
35	GND	Ground	1
36	TX1P	Transmitter Inverted Data Input	
37	TX1N	Transmitter Non-Inverted Data Input	
38	GND	Ground	1

QSFP Module PIN Definition

Notes：

1. GND is the symbol for signal and supply (power) common for QSFP28 modules. All are common within the QSFP28 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 in Figure 3 below. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP28 transceiver module in any combination. The connector pins are each rated for a maximum current of 500mA.

Mechanical Dimensions



Ordering information

Part. No	Specifications								
	Pack	Rate (Gbps)	Tx (nm)	Po (dBm)	RX	Sen (dBm)	Temp (℃)	Reach (km)	DDM
QSFP28-100G-B10 Tx1270nm/Rx1330nm	QSFP28	100G	DFP 1270nm	-1.4~4.5	PIN	<-6.1	0~70	10	Y
QSFP28-100G-B10 Tx1330nm/Rx1270nm	QSFP28	100G	DFP 1330nm	-1.4~4.5	PIN	<-6.1	0~70	10	Y

For further information, please visit our website https://www.aoatech.com