2x100GBASE-SR4 QSFP-DD Active Optical Cable

Applications

- Double IEEE 802.3bm 100GBASE SR4 and 40GBASE SR4
- 128G Fiber Channel
- Infiniband FDR/EDR

Features

- Eight-channel full-duplex active optical cable
- Multirate capability: 10 Gb/s and 25Gb/s per channel
- QSFP-DD double-density form factor
- Reliable VCSEL array technology using multimode fiber
- Hot Pluggable
- power dissipation: <4.5W per cable end
- Commercial operating case temperature range: 0ºC to 70ºC
- UL certification cables

Ordering Information

PN	Cable Imformation
SOSQD-200G-AOC-XM	OM3 MMF with UL Certification(xxx≤70 meter) OM4 MMF with UL Certification(70＜xxx≤100meter)

QSFP28 Active Optical Cable Transceiver

#001: 1-meter cable

#003: 3-meter cable

#005: 5-meter cable

#010: 10-meter cable

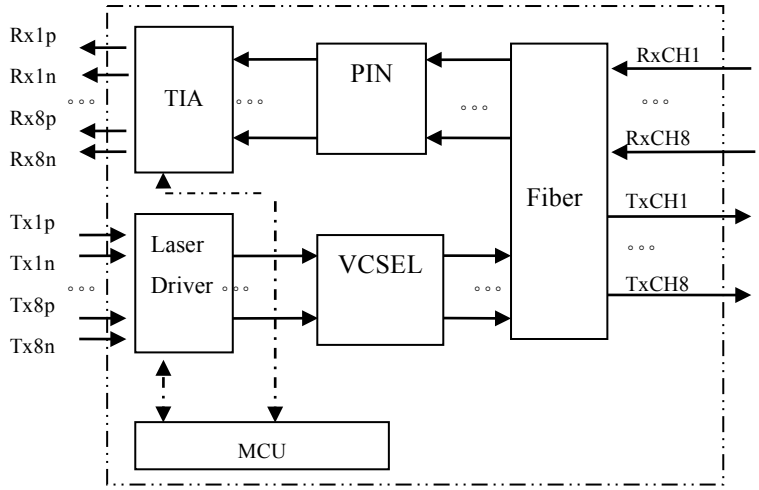
#015: 15-meter cable

#020: 20-meter cable

#030: 30-meter cable

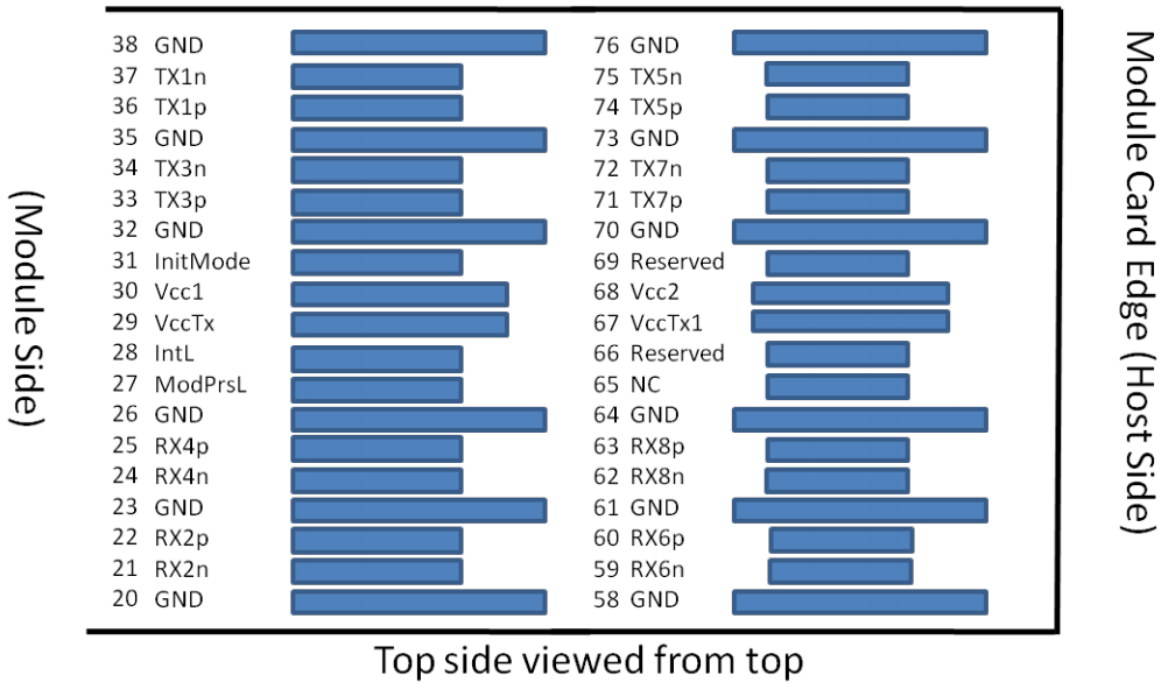
#050: 50-meter cable

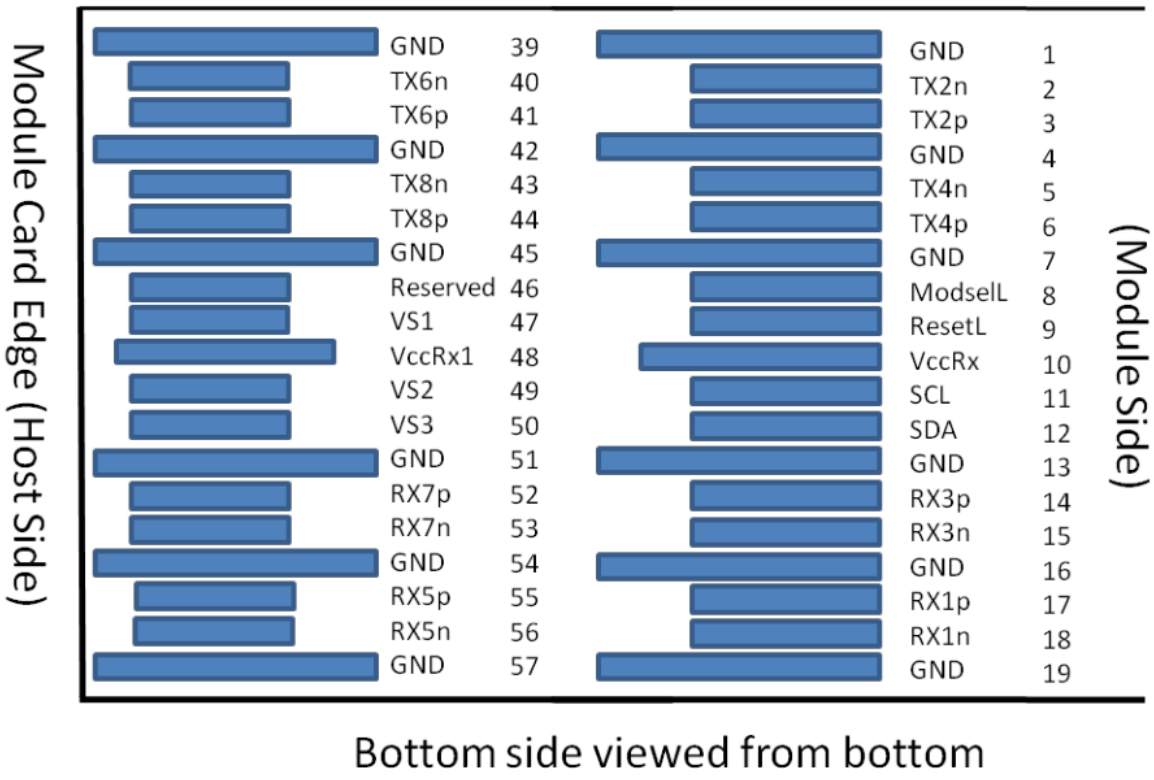
#0X0: 100-meter cable



Module Block Diagram

Pin Descriptions





Bottom side viewed from bottom

Pin	Symbol	Name/Description
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input
3	Tx2p	Transmitter Non-Inverted Data Input
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input
6	Tx4p	Transmitter Non-Inverted Data Input
7	GND	Ground
8	ModSelL	Module Select
9	ResetL	Module Reset
10	Vcc Rx	+3.3V Power Supply Receiver
11	SCL	2-wire serial interface clock
12	SDA	2-wire serial interface data
13	GND	Ground
14	Rx3p	Receiver Non-Inverted Data Output
15	Rx3n	Receiver Inverted Data Output
16	GND	Ground
17	Rx1p	Receiver Non-Inverted Data Output
18	Rx1n	Receiver Inverted Data Output
19	GND	Ground
20	GND	Ground
21	Rx2n	Receiver Inverted Data Output
22	Rx2p	Receiver Non-Inverted Data Output
23	GND	Ground
24	Rx4n	Receiver Inverted Data Output
25	Rx4p	Receiver Non-Inverted Data Output
26	GND	Ground

27	ModPrsL	Module Present
28	IntL	Interrupt
29	Vcc Tx	+3.3V Power supply transmitter
Pin	Symbol	Name/Description
30	Vcc1	+3.3V Power supply
31	LPMode	Low Power Mode
32	GND	Ground
33	Tx3p	Transmitter Non-Inverted Data Input
34	Tx3n	Transmitter Inverted Data Input
35	GND	Ground
36	Tx1p	Transmitter Non-Inverted Data Input
37	Tx1n	Transmitter Inverted Data Input
38	GND	Ground
39	GND	Ground
40	Tx6n	Transmitter Inverted Data Input
41	Tx6p	Transmitter Non-Inverted Data Input
42	GND	Ground
43	Tx8n	Transmitter Inverted Data Input
44	Tx8p	Transmitter Non-Inverted Data Input
45	GND	Ground
46	Reserved	For future use
47	VS1	Module Vendor Specific 1
48	VccRx1	3.3V Power Supply
49	VS2	Module Vendor Specific 2
50	VS3	Module Vendor Specific 3
51	GND	Ground
52	Rx7p	Receiver Non-Inverted Data Output
53	Rx7n	Receiver Inverted Data Output
54	GND	Ground
55	Rx5p	Receiver Non-Inverted Data Output
56	Rx5n	Receiver Inverted Data Output
57	GND	Ground
58	GND	Ground
59	Rx6n	Receiver Inverted Data Output
60	Rx6p	Receiver Non-Inverted Data Output
61	GND	Ground
62	Rx8n	Receiver Inverted Data Output
63	Rx8p	Receiver Non-Inverted Data Output
64	GND	Ground
65	NC	No Connect
66	Reserved	For future use
67	VccTx1	3.3V Power Supply
68	Vcc2	3.3V Power Supply
69	Reserved	For future use
70	GND	Ground
71	Tx7p	Transmitter Non-Inverted Data Input
72	Tx7n	Transmitter Inverted Data Input
73	GND	Ground
74	Tx5p	Transmitter Non-Inverted Data Input
75	Tx5n	Transmitter Inverted Data Input
76	GND	Ground

Absolute Maximum Ratings

Form Parameter	Symbol	Min	Typ	Max	Unit	Ref.

Maximum Supply Voltage	Vcc1, VccTx, VccRx	-0.5		3.6	V	
Storage Temperature	T_S	-20		85	°C	
Case Operating Temperature	T_{OP}	0		70	°C	
Relative Humidity	RH	0		85	%	

Recommended Operating Conditions

Form Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Supply Voltage	Vcc	3.13	3.3	3.47	V	
Operating Case temperature	Tca	0		70	°C	
Data Rate Per Lane	fd		25.78125		Gbps	
Humidity	Rh	5		85	%	
Fiber Bend Radius	Rb	6			cm	

Electrical Characteristics(EOL, T_{OP} = 0 to 70° C, V_{CC} = 3.135 to 3.465 Volts)

NOTE: The EDR module requires an electrical connector compliant with SFF-8662 or SFF-8672 be used on the host board to guarantee its electrical interface specification. Please check with your connector supplier.

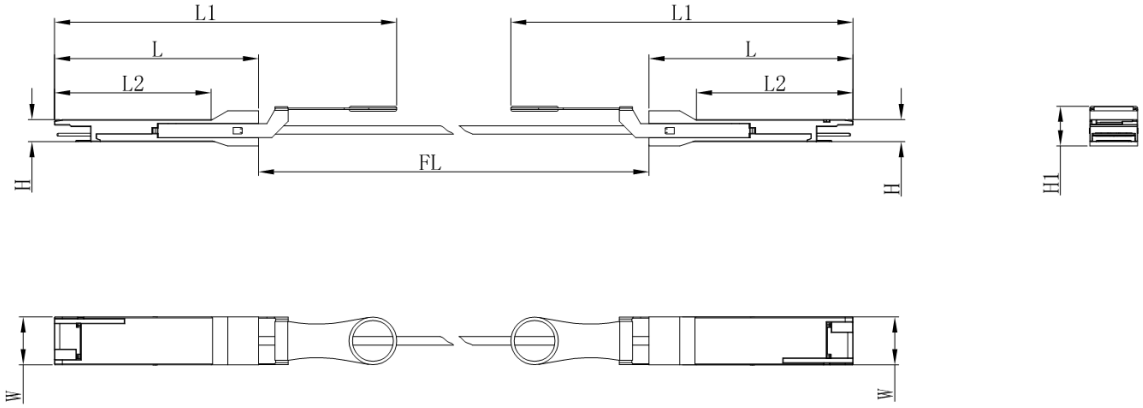
Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Supply Voltage	Vcc1, VccTx, VccRx	3.15		3.45	V	
Supply Current	Icc			1500	mA	
Module total power	P			4.5	W	1,2
Input electrical specifications (per Lane)						
Differential Voltage pk-pk				900	mV	
Differential Termination Resistance Mismatch				10	%	
Transition Time, 20 to 80%	Tr, Tf	10			ps	
Output electrical specifications (per Lane)						
Differential Voltage pk-pk				900	mV	
Differential Termination Resistance Mismatch				10	%	
Transition Time, 20 to 80%	Tr, Tf	9.5			ps	
Bit Error Rate	BER			E-12		3

Notes:

1. Maximum total power value is specified across the full temperature and voltage range.
2. Settable in various discrete steps via the I2C interface.
3. BER=10^{-12}; PRBS 2^{31}-1@25.78125Gbps

Mechanical Design Diagram (mm)

The module mechanical specifications are compliant with the QSFP-DD transceiver module specifications (as defined in QSFP-DD Hardware Rev 3.0), substituting the MPO24 receptacle with a fiber optics cable connecting both ends.



Unit: m

	L	L1	L2	W	H	H1
MAX	78.9	—	—	18.45	8.60	—
TYPE	—	131.4	—	—	—	13.3
MIN	78.3	—	58.3	18.25	8.40	—

Cable Length（Unit: m）	Tolerant（Unit: cm）
＜1.0	+5/-0
1.0~4.5	+15/-0
5.0~14.5	+30/-0
≥15.0	+2%/-0