QSFP28-DD-200GB-AOC12M-SKY

MSA Compliant 200GBase-AOC QSFP28-DD to QSFP28-DD Active Optical Cable (850nm, MMF, 12m) with CDR Bypass

Product Description

This is an MSA compliant 200GBase-AOC QSFP28-DD to QSFP28-DD active optical cable that operates over active fiber with a maximum reach of 12.0m (39.4ft). At a wavelength of 850nm, it has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This active optical cable is built to comply with MSA (Multi-Source Agreement) standards. 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-DD Form Factor
- Power Dissipation: < 5W Per End
- Supports 8G to 20G Line Rate w/CDR Bypass
- 8x25Gbps 850nm VCSEL-Based Transmitter
- I2C Management Interface
- Single 3.3V Power Supply
- RoHS Compliant and Lead-Free
- Operating Temperature: 0 to 70 Celsius
- CDR Bypass by Default

Applications:

- 200GBase Ethernet

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
Maximum Supply Voltage	Vcc	-0.5		4.0	V	
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	0		70	°C	1
Relative Humidity	RH	15		85	%	2
Receiver Damage Threshold Per Lane	PRdmg	3.4			dBm	
Modulation Format		8x25G NRZ				

Notes:

1. Can support temporary excursions of operating case temperature from -5°C to -75°C, not exceeding 24 hours.
2. Non-condensing.
3. Module performance is not guaranteed beyond the operating range. Exceeding the limits above may damage the transceiver module permanently.

General Specifications

Parameter	Symbol	Min	Typ.	Max.	Unit	Notes
Bit Rate (When CDR On) Per Lane	$BR_{CDR\ ON}$			25.78125	Gbps	1
Bit Rate (When CDR bypass) Per Lane	$BR_{CDR\ BP}$	8.0		20.0	Gbps	

Notes:

1. Supports 2x100GBASE-SR4 per IEEE 802.3bm.

Cable Specifications

Cable Length (Unit: m)	Tolerance (Unit: cm)
5.0~14.5	+30/-0

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage	Vcc	3.135		3.465	V	
Supply Current	Icc			1.5	A	
Module Total Power Per End	P			5	W	
Transmitter						
Signaling Rate Per Lane		25.78125 ± 100ppm			Gbps	
Differential Pk-Pk Input Voltage Tolerance	VIN,pp,diff			900	mV	
Single-Ended Voltage Tolerance	VIN,pp	-0.35		3.3	V	
Receiver						
Signaling Rate Per Lane		25.78125 ± 100ppm			Gbps	
Differential Data Output Swing	VOUT,pp	100		400	mVp-p	1
		300		600		
		400	600	800		
		600		1200		
Eye Width		0.57			UI	
Eye Height Differential		228			mV	
Transition Time (20-80%)	Tr/Tf	12			ps	

Notes:

1. The output voltage is settable in 4 discrete ranges via I2C. Default range is Range 3 (400mV-800mV).

Pin Descriptions

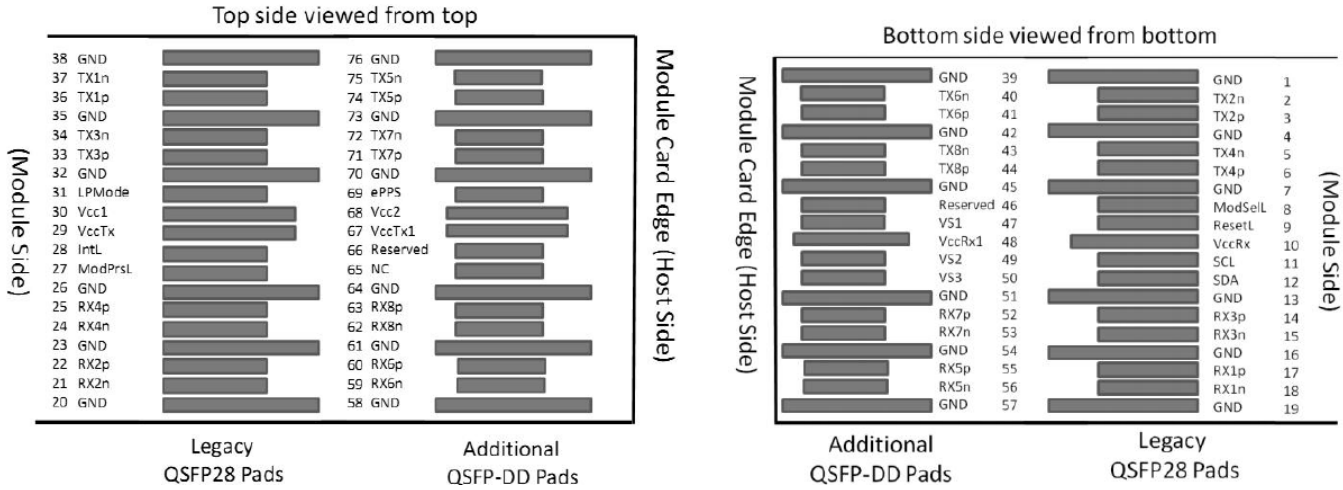
Pin	Symbol	Name/Description	Notes
1	GND	Module Ground.	1
2	TX2n	Transmitter Inverted Data Input.	
3	TX2p	Transmitter Non-Inverted Data Input.	
4	GND	Module Ground.	1
5	TX4n	Transmitter Inverted Data Input.	
6	TX4p	Transmitter Non-Inverted Data Input.	
7	GND	Module Ground.	1
8	ModSelL	Module Select.	
9	ResetL	Module Reset.	
10	VccRx	+3.3V Receiver Power Supply.	
11	SCL	2-Wire Serial Interface Clock.	
12	SDA	2-Wire Serial Interface Data.	
13	GND	Module Ground.	1
14	RX3p	Receiver Non-Inverted Data Output.	
15	RX3n	Receiver Inverted Data Output.	
16	GND	Module Ground.	1
17	RX1p	Receiver Non-Inverted Data Output.	
18	RX1n	Receiver Inverted Data Output.	
19	GND	Module Ground.	1
20	GND	Module Ground.	1
21	RX2n	Receiver Inverted Data Output.	
22	RX2p	Receiver Non-Inverted Data Output.	
23	GND	Module Ground.	1
24	RX4n	Receiver Inverted Data Output.	
25	RX4p	Receiver Non-Inverted Data Output.	
26	GND	Module Ground.	1
27	ModPrsL	Module Present.	
28	IntL	Interrupt.	
29	VccTx	+3.3V Transmitter Power Supply.	
30	Vcc1	+3.3V Power Supply.	
31	LPMODE	Low-Power Mode.	
32	GND	Module Ground.	1
33	TX3p	Transmitter Non-Inverted Data Input.	
34	TX3n	Transmitter Inverted Data Input.	
35	GND	Module Ground.	1
36	TX1p	Transmitter Non-Inverted Data Input.	
37	TX1n	Transmitter Inverted Data Input.	
38	GND	Module Ground.	1
39	GND	Module Ground.	1
40	TX6n	Transmitter Inverted Data Input.	

41	TX6p	Transmitter Non-Inverted Data Input.	
42	GND	Module Ground.	1
43	TX8n	Transmitter Inverted Data Input.	
44	TX8p	Transmitter Non-Inverted Data Input.	
45	GND	Module Ground.	1
46	Reserved	For Future Use.	
47	VS1	Module Vendor-Specific 1.	
48	VccRx1	+3.3V Receiver Power Supply.	
49	VS2	Module Vendor-Specific 2.	
50	VS3	Module Vendor-Specific 3.	
51	GND	Module Ground.	1
52	RX7p	Receiver Non-Inverted Data Output.	
53	RX7n	Receiver Inverted Data Output.	
54	GND	Module Ground.	1
55	RX5p	Receiver Non-Inverted Data Output.	
56	RX5n	Receiver Inverted Data Output.	
57	GND	Module Ground.	1
58	GND	Module Ground.	1
59	RX6n	Receiver Inverted Data Output.	
60	RX6p	Receiver Non-Inverted Data Output.	
61	GND	Module Ground.	1
62	RX8n	Receiver Inverted Data Output.	
63	RX8p	Receiver Non-Inverted Data Output.	
64	GND	Module Ground.	1
65	NC	Not Connected.	
66	Reserved	For Future Use.	
67	VccTx1	+3.3V Transmitter Power Supply.	
68	Vcc2	+3.3V Power Supply.	
69	ePPS	Precision Time Protocol (PTP) Reference Clock Input.	
70	GND	Module Ground.	1
71	TX7p	Transmitter Non-Inverted Data Input.	
72	TX7n	Transmitter Inverted Data Input.	
73	GND	Module Ground.	1
74	TX5p	Transmitter Non-Inverted Data Input.	
75	TX5n	Transmitter Inverted Data Input.	
76	GND	Module Ground.	1

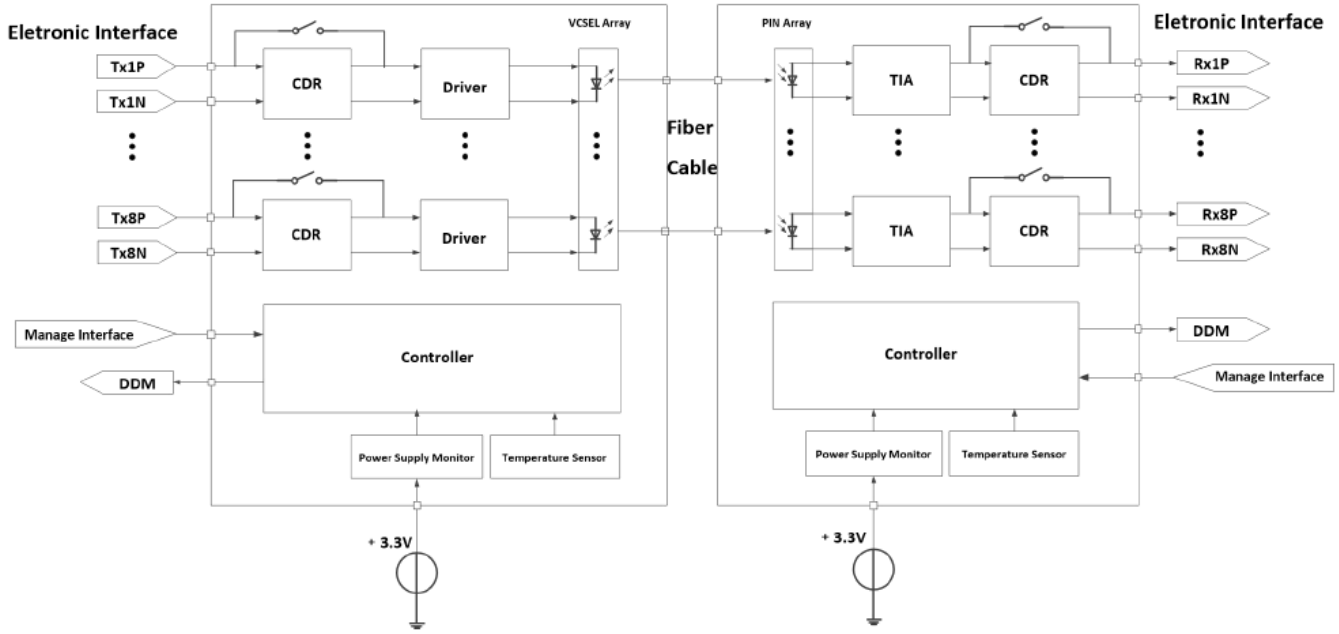
Notes:

1. The circuit ground is internally isolated from the chassis ground.

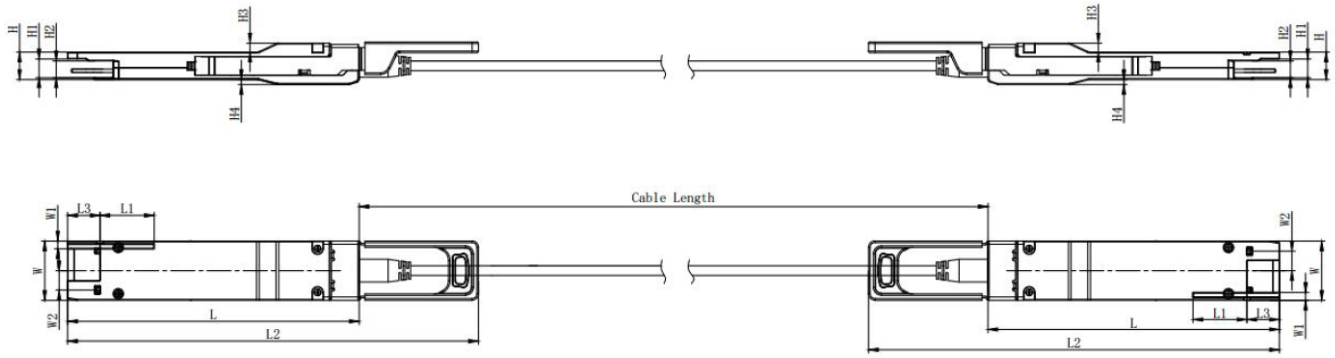
Pin Connectors



Block Diagram



Mechanical Specifications



Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2	H3	H4
Max.	90.76		129.66	10.21	18.45		6.15	8.6	5.96	5.35	3.4	1.6
Typical.	90.56		127.66	10.06	18.35		6	8.5	5.81	5.2		
Min.	90.36	16.5	125.66	9.91	18.25	2.2	5.85	8.4	5.66	5.05		

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.