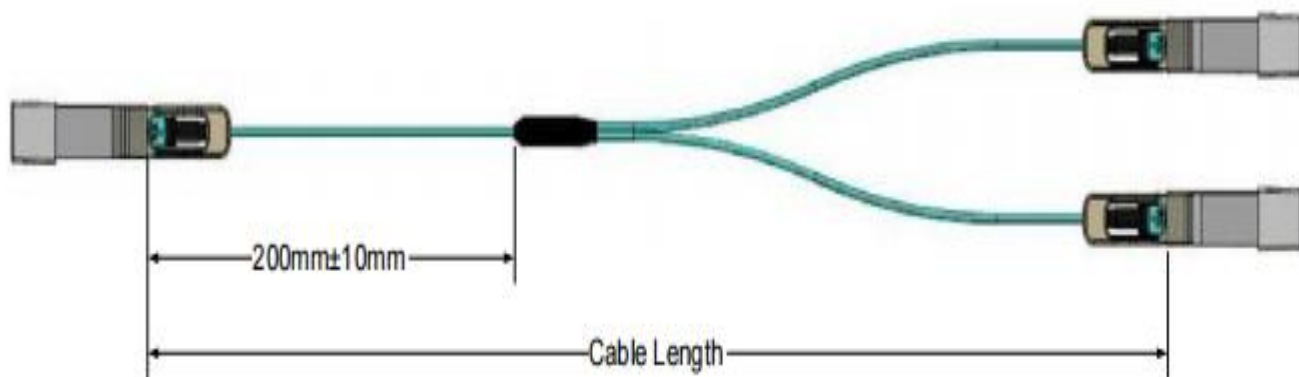


# AOC-QPQ2-XXM

## 100Gb/s QSFP28 TO 2\*50G Active Optical Cable Datasheet

Widely used in 100GbE to 2x50GbE at 25.78125Gbps per lane and other optical links.



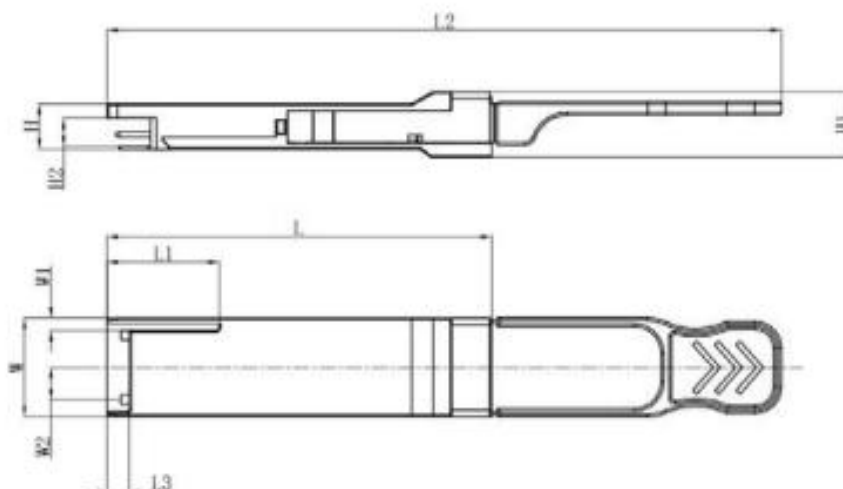
### • Description

The QSFP28-100G-AOCxM series is a QSFP+ Active Optical Cable (AOC) for 100G Ethernet (100GbE) applications. 100G QSFP28 AOC cables provide an ideal alternative solution to QSFP28 DACs (Direct Attach Copper) and QSFP28 short reach transceivers, while offering improved signal integrity, lower cost and performance value. They are designed for the high speed, high density and low power consumption of today's data center networking applications.

### • Advantages

- Support 100GbE to 2x50GbE application
- Compliant to QSFP28 Electrical MSA SFF-8636
- SFF-8665 compliant QSFP28 port
- Multi rate of up to 25.78125Gbps
- +3.3V single power supply
- Low power consumption
- Operating case temp commercial: 0°C to +70 °C
- RoHS 6/6 compliant

### • Transmission Drawing(Unit: mm)



• **Absolute Maximum Ratings**

Table2- Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	Vcc3	-0.5	-	+5	V	
Storage Temperature	Ts	-10	-	+85	°C	
Operating Humidity	RH	+5	-	+85	%	1

• **Recommended Operating Conditions**

Table 3- Recommended operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	TC	0	-	+70	°C	
Power Supply Voltage	Vcc	3.14	3.3	3.47	V	
Power dissipation (100GbE retiming on all lanes)	Pd100G	-	2.3	2.5	W	1
Power dissipation (50GbE retiming on all lanes)	Pd50G	-	1.5	1.7	W	1
Supply noise tolerance (10 Hz – 10 MHz)	N	66	-	-	mVpp	
Bit Rate	BR	-	25.78125	-	Gbps	

**Note:**

1. Specified without connectors
2. Add an additional 0.2dB loss including connectors

**Tips:**

Due to the COVID-19, sorry that you and our team couldn't visit face to face with each other. In order to make the customers know us more, please visit our VR factory, it is just like you were really standing in our factory.

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• **Electrical Characteristics**

Table 4- Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Power Dissipation	Pd	-	-	1.5	W	1
Transmit turn-on time	TON	2000	-	-	ms	
Input Logic Level High	VIH	2.5	-	VCC+0.3	V	
Input Logic Level Low	VIH	0	-	0.8	V	
Output Logic Level High	VOH	2.4	-	VCC	V	
Output Logic Level Low	VOH	0	-	0.4	V	
Electrical transmitter Characteristics						
Differential Date Input Swing	Vout	200	-	1600	mV	
Output Differential Impedance	ZD	90	100	110	Ω	
Average Launch power Tx_off	POFF	dBm	-	-	-30	
Electrical Receiver Characteristics						
Differential Data Output Swing	Vin,P-P	200	-	800	mVPP	
Bit Error Rate	BER			E-12		1
Input Differential Impedance	ZIN	90	100	110	Ω	

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• Table 5-Pin Function Definitions

Pin	Symbol	Name/Description	Notes
1	GND	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	+3.3V Power Supply Receiver	
11	SCL	2-wire serial interface clock	
12	SDA	2-wire serial interface data	
13	GND	Ground	1
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data Output	

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**Tips:**

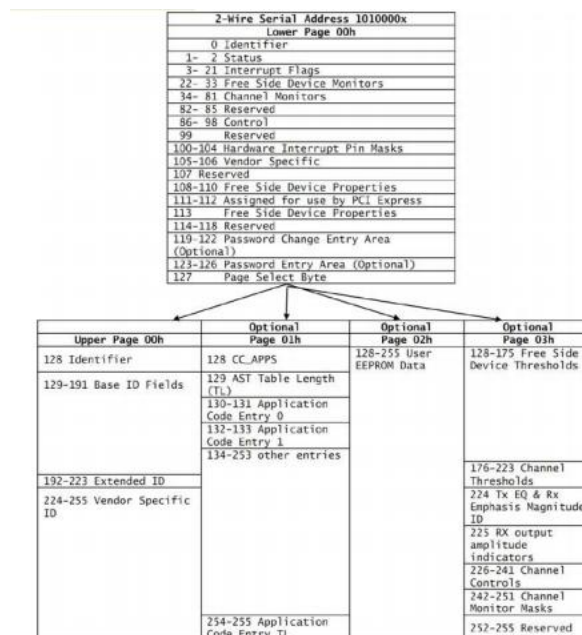
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• Table 5-Pin Function Definitions

Pin	Symbol	Name/Description	Notes
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3V Power supply transmitter	
30	Vcc1	+3.3V Power supply	
31	LPMODE	Low Power Mode	
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1

• Table 5-Pin Function Definitions



Note:

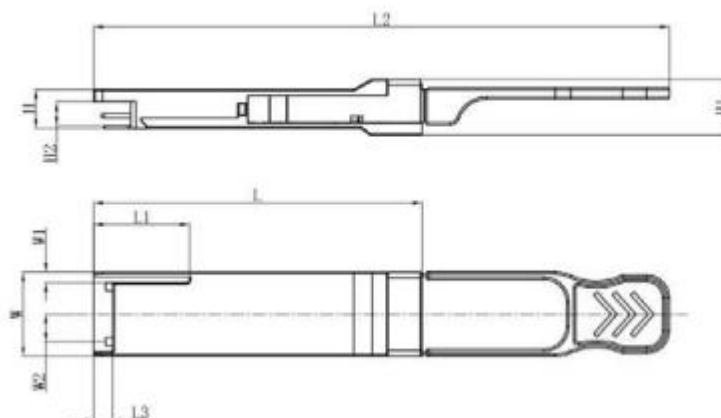
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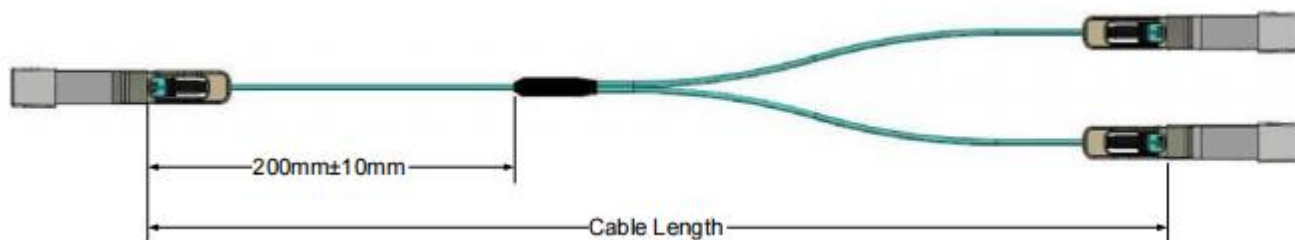
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• Mechanical



	L	L1	L2	L3	W	W1	W2	H	H1	H2
Max	72.2	-	128	4.35	18.45	-	6.2	8.6	12.0	5.35
Type	72.0	-	-	4.20	18.35	-	-	8.5	11.8	5.20
Min	68.8	16.5	124	4.05	18.25	2.2	5.8	8.4	11.6	5.05



Note:

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• Table 6- Cable Length

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

• Table 7: Connectivity Schematic

100Gb/s Side	50Gb/s Side
	Port 1
TX1	RX1
RX1	TX1
TX2	RX2
RX2	TX2
	Port 2
TX3	RX1
RX3	TX1
TX4	RX2
RX4	TX2

• Revision history

Version	Initiated	Reviewed	Revision	Release Date
A0	Ling	Zhang	New Release	2018-9-1

Note:

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