



## Q400Q100-AOC-XM-AQ

400GBase-AOC QSFP-DD to 4x 100G QSFP56  
Active Optic Breakout Cable

### Features

- 400Gb/s to 4x100Gb/s data rate
- 8x 50Gb/s PAM4 modulation
- Case temperature range of 0°C to +70°C
- +3.3V single power supply
- 8x50G PAM4 retimed 400GAUI-8 electrical interface aligned with IEEE 802.3bs
- Compliant to CMIS V4.0
- RoHS compliant

### Applications

- 400Gb/s systems
- 200Gb/s systems
- Other optical links

#### Absolute Maximum Ratings

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Supply Voltage	Vcc3	-0.5	-	3.6	V	
Storage Temperature	Ts	-10	-	70	°C	
Operating Humidity	RH	5	-	85	%	1

#### Notes:

1. No condensation.

#### Recommended Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Operating Case Temperature	TC	0	-	70	°C	
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Dissipation per QSFPDD	Pd	-	-	10	W	1

## Recommended Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Power Dissipation per QSFP56	Pd	-	-	2.5	W	1
Bit Rate	BR	-	26.5625	-	GBaud	2

### Notes:

1. Per terminal
2. Per channel, PAM4

## Electrical Characteristics

Parameter	Symbol	Unit	Minimum	Typical	Maximum	Notes
<b>Transmitter</b>						
Signaling rate (each lane)	SR	GBd	26.5625 ± 100 ppm			
Differential data input voltage per lane	V <sub>in,pp,diff</sub>	mV	-	-	900	
Differential termination mismatch	-	%	-	-	10	
Single-ended voltage tolerance range	-	V	-0.4	-	3.3	
DC common mode voltage	-	mV	-350	-	2850	
<b>Receiver</b>						
Signaling rate (each lane)	SR	GBaud	26.5625 ± 100 ppm			
Differential output voltage	-	mV	-	-	900	
Near-end ESMW (Eye symmetry mask width)	-	UI	0.265	-	-	
Near-end Eye height, differential (min)	-	mV	70	-	-	
Far-end ESMW (Eye symmetry mask width)	-	UI	0.2	-	-	
Far-end Eye height, differential (min)	-	mV	30	-	-	
Differential termination mismatch	-	%	-	-	10	
Transition time (min, 20% to 80%)	-	ps	9.5	-	-	
DC common mode voltage	-	mV	-350	-	2850	
Bit Error Ratio	-	-	-	-	2.4E-4	1

### Notes:

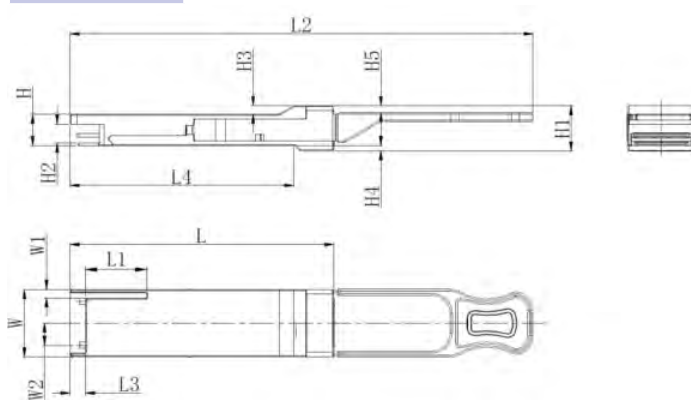
1. Pattern PRBS31Q

## Mechanical Diagrams

### QSFP-DD end:

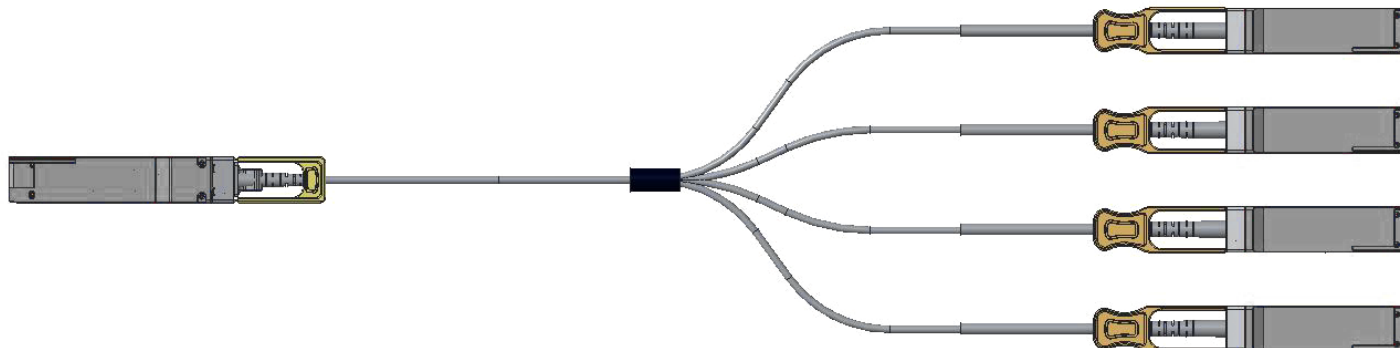


### QSFP56 end:



**QSFP56 (Unit: mm)**

	L	L1	L2	L3	L4	W	W1	W2	H	H1	H2	H3	H4	H5	H6
Max	72.2	-	128	4.35	61.4	18.45	-	6.2	8.6	12.4	5.35	2.5	1.6	2.0	-
Typ	72.0	-	-	4.20	61.2	18.35	-	-	8.5	12.2	5.2	2.3	1.5	1.8	6.55
Min	68.8	16.5	124	4.05	61.0	18.25	2.2	5.8	8.4	12.0	5.05	2.1	1.3	1.6	-



**Note:**

External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

**Breakout Cable Nominal Length**

Total Length	Breakout Point Measured from QSFP LQ (Unit: m)	Breakout Point Measured from SFP LS (Unit: m)
1	0.3	0.7
2	0.6	1.4
3	1	2
5	2	3
7	4	3
10	7	3
15	12	3
20	17	3
25	22	3
30	27	3
40	37	3
50	47	3

**Ordering Information**

OEM	Part Number	OEM	Part Number
Arista to Mellanox	QDD400X100G-ANMX-AOC-1M-A	Juniper to Mellanox	QDD400X100G-JNMX-AOC-1M-A
	QDD400X100G-ANMX-AOC-3M-A		QDD400X100G-JNMX-AOC-3M-A
	QDD400X100G-ANMX-AOC-5M-A		QDD400X100G-JNMX-AOC-5M-A
	QDD400X100G-ANMX-AOC-10M-A		QDD400X100G-JNMX-AOC-10M-A
	QDD400X100G-ANMX-AOC-30M-A		QDD400X100G-JNMX-AOC-30M-A
	QDD400X100G-ANMX-AOC-xM-A		QDD400X100G-JNMX-AOC-xM-A
MSA	AN-QDD400G4XQ56-AOC-1M	MSA	AN-QDD400G4XQ56-AOC-10M
	AN-QDD400G4XQ56-AOC-3M		AN-QDD400G4XQ56-AOC-30M
	AN-QDD400G4XQ56-AOC-5M		AN-QDD400G4XQ56-AOC-xM

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