

400G OSFP to 2x200G QSFP56 AOC



FEATURES:

- 400G OSFP SR8 to 2* 200G QSFP56 Breakout
- Data Rate up to 53.125Gbps (PAM4) per channel
- Maximum power consumption: 10W for OSFP end & 4.5W for QSFP56 end
- OSFP end compliant with CMIS 4.0
- QSFP56 ends compliant with SFF-8636
- Case operating temperature 0°C to 70°C
- Single 3.3V power supply
- Hot pluggable
- RoHS compliant

I. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Storage Temperature	T _S	-40	85	°C	
Supply Voltage	V _{CC}	-0.3	3.6	V	
Relative Humidity (non-condensing)	RH	5	85	%	
Control Input Voltage	V _I	-0.3	V _{CC} +0.5	V	

II. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T _{OPR}	0	-	70	°C	
Power Supply Voltage	V _{CC}	3.135	3.3	3.465	V	
Maximum Power Dissipation (OSFP end)	P _D	-	-	10	W	
Maximum Power Dissipation (QSFP56 end)	P _D	-	-	4.5	W	
Signaling Rate per Lane	SRL	-	26.5625	-	GBd	PAM4
Power Supply Noise Tolerance (10Hz - 10MHz)	-	-	-	66	mV	

III. Electrical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Differential data input swing at TP1a		-	-	900	mVpp	
Differential data output swing at TP4		-	-	900	mVpp	
Near-end ESMW		0.265	-	-	UI	
Near-end output eye height		70	-	-	mVpp	

Output transition time, 20% to 80%		9.5	-	-	ps	
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IV. Pin Definitions

a) OSFP end:

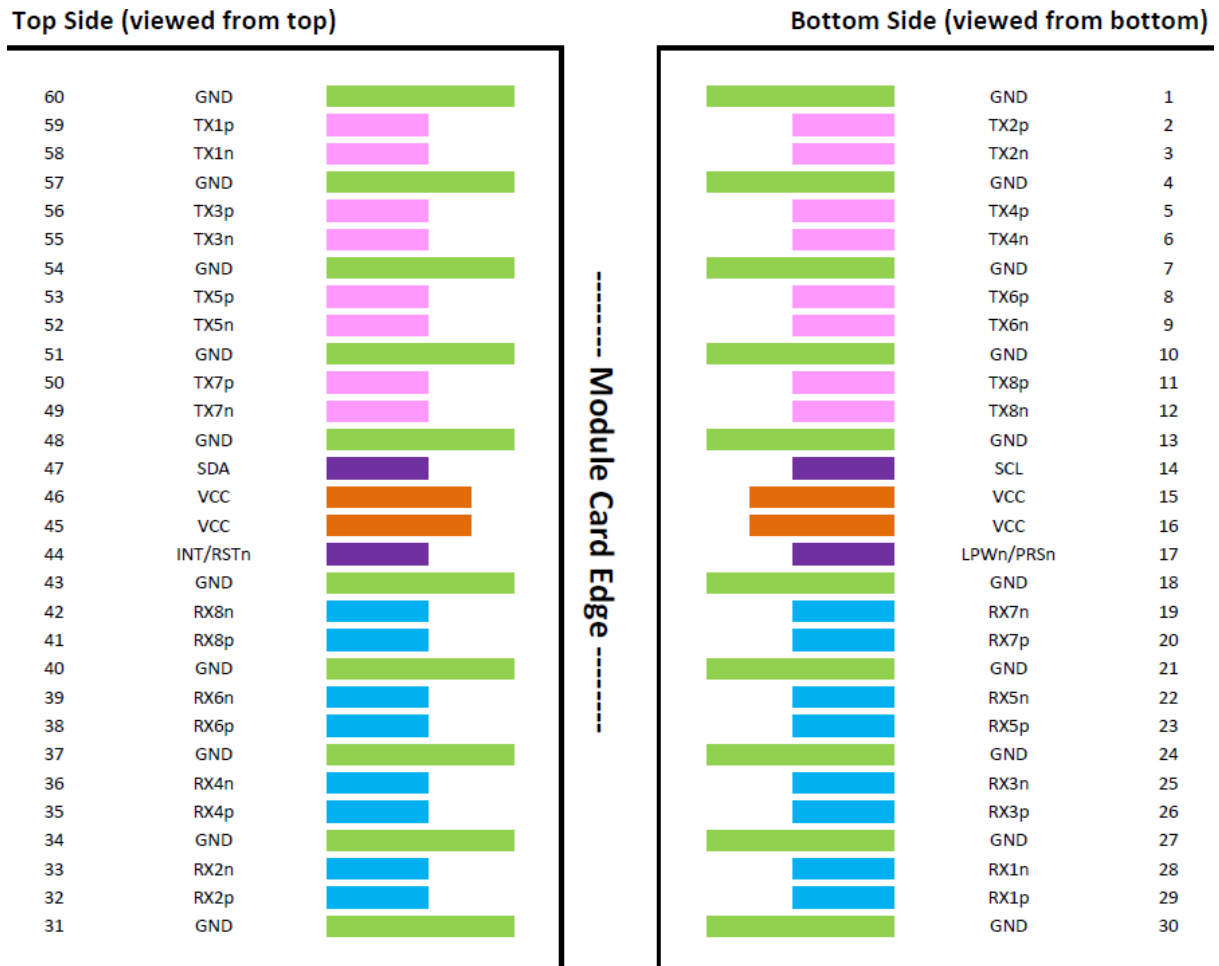


Figure 1 – OSFP module Pinout

Pin#	Logic	Symbol	Description	Direction	Plug Sequence	Notes
1		GND	Ground		1	
2	CML-I	TX2p	Transmitter Data Non-Inverted	Input from Host	3	
3	CML-I	TX2n	Transmitter Data Inverted	Input from Host	3	
4		GND	Ground		1	
5	CML-I	TX4p	Transmitter Data Non-Inverted	Input from Host	3	
6	CML-I	TX4n	Transmitter Data Inverted	Input from Host	3	
7		GND	Ground		1	
8	CML-I	TX6p	Transmitter Data Non-Inverted	Input from Host	3	
9	CML-I	TX6n	Transmitter Data Inverted	Input from Host	3	
10		GND	Ground		1	
11	CML-I	TX8p	Transmitter Data Non-Inverted	Input from Host	3	
12	CML-I	TX8n	Transmitter Data Inverted	Input from Host	3	
13		GND	Ground		1	
14	LVCMOS-I/O	SCL	2-wire Serial interface clock	Bi-directional	3	

15		VCC	+3.3V Power	Power from Host	2	
16		VCC	+3.3V Power	Power from Host	2	
17	Multi-Level	LPWn/PRSn	Low-Power Mode / Module Present	Bi-directional	3	
18		GND	Ground		1	
19	CML-O	RX7n	Receiver Data Inverted	Output to Host	3	
20	CML-O	RX7p	Receiver Data Non-Inverted	Output to Host	3	
21		GND	Ground		1	
22	CML-O	RX5n	Receiver Data Inverted	Output to Host	3	
23	CML-O	RX5p	Receiver Data Non-Inverted	Output to Host	3	
24		GND	Ground		1	
25	CML-O	RX3n	Receiver Data Inverted	Output to Host	3	
26	CML-O	RX3p	Receiver Data Non-Inverted	Output to Host	3	
27		GND	Ground		1	
28	CML-O	RX1n	Receiver Data Inverted	Output to Host	3	
29	CML-O	RX1p	Receiver Data Non-Inverted	Output to Host	3	
30		GND	Ground		1	
31		GND	Ground		1	
32	CML-O	RX2p	Receiver Data Non-Inverted	Output to Host	3	
33	CML-O	RX2n	Receiver Data Inverted	Output to Host	3	
34		GND	Ground		1	
35	CML-O	RX4p	Receiver Data Non-Inverted	Output to Host	3	
36	CML-O	RX4n	Receiver Data Inverted	Output to Host	3	
37		GND	Ground		1	
38	CML-O	RX6p	Receiver Data Non-Inverted	Output to Host	3	
39	CML-O	RX6n	Receiver Data Inverted	Output to Host	3	
40		GND	Ground		1	
41	CML-O	RX8p	Receiver Data Non-Inverted	Output to Host	3	
42	CML-O	RX8n	Receiver Data Inverted	Output to Host	3	
43		GND	Ground		1	
44	Multi-Level	INT/RSTn	Module Interrupt / Module Reset	Bi-directional	3	
45		VCC	+3.3V Power	Power from Host	2	
46		VCC	+3.3V Power	Power from Host	2	
47	LVCNOS-I/O	SDA	2-wire Serial interface data	Bi-directional	3	
48		GND	Ground		1	
49	CML-I	TX7n	Transmitter Data Inverted	Input from Host	3	
50	CML-I	TX7p	Transmitter Data Non-Inverted	Input from Host	3	
51		GND	Ground		1	
52	CML-I	TX5n	Transmitter Data Inverted	Input from Host	3	
53	CML-I	TX5p	Transmitter Data Non-Inverted	Input from Host	3	
54		GND	Ground		1	
55	CML-I	TX3n	Transmitter Data Inverted	Input from Host	3	
56	CML-I	TX3p	Transmitter Data Non-Inverted	Input from Host	3	
57		GND	Ground		1	
58	CML-I	TX1n	Transmitter Data Inverted	Input from Host	3	
59	CML-I	TX1p	Transmitter Data Non-Inverted	Input from Host	3	
60		GND	Ground		1	

b) QSFP56 end:

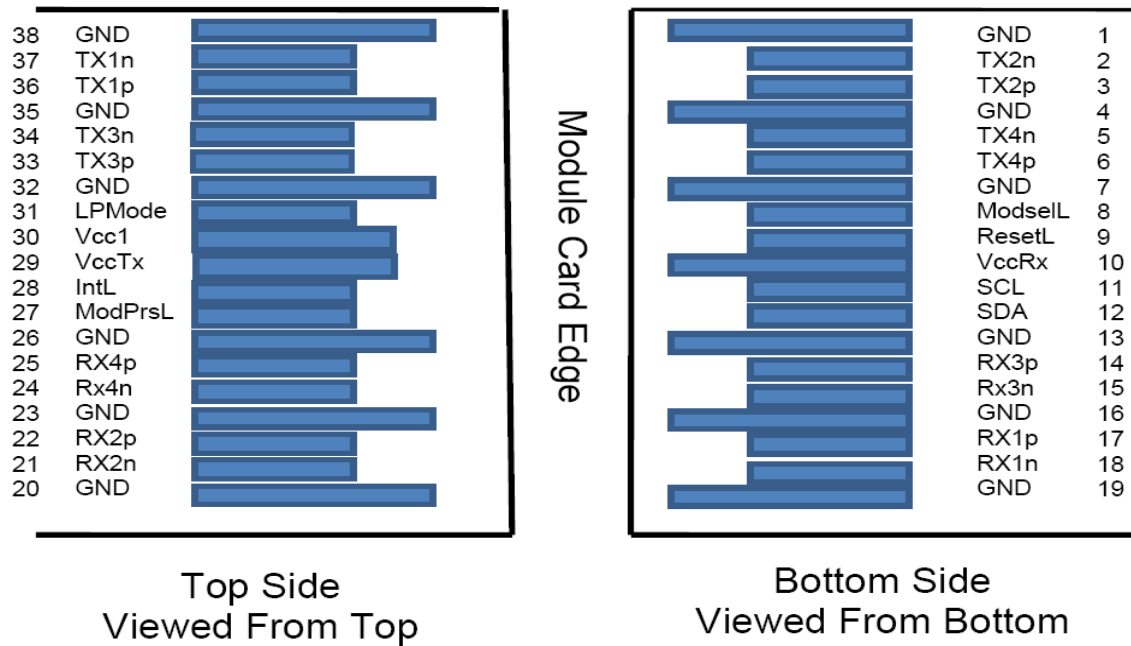


Figure 2 – QSFP56 module Pinout

Pin	Logic	Symbol	Description	Plug Sequence	Notes
1		GND	Ground	1	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	3	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	3	
4		GND	Ground	1	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	3	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	3	
7		GND	Ground	1	1
8	LVTTL-I	ModSelL	Module Select	3	
9	LVTTL-I	ResetL	Module Reset	3	
10		Vcc Rx	+3.3V Power Supply Receiver	2	2
11	LVC MOS-I/O	SCL	2-wire serial interface clock	3	
12	LVC MOS-I/O	SDA	2-wire serial interface data	3	
13		GND	Ground	1	1
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	3	
15	CML-O	Rx3n	Receiver Inverted Data Output	3	
16		GND	Ground	1	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	3	
18	CML-O	Rx1n	Receiver Inverted Data Output	3	
19		GND	Ground	1	1
20		GND	Ground	1	1
21	CML-O	Rx2n	Receiver Inverted Data Output	3	

22	CML-O	Rx2p	Receiver Non-Inverted Data Output	3	
23		GND	Ground	1	1
24	CML-O	Rx4n	Receiver Inverted Data Output	3	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	3	
26		GND	Ground	1	1
27	LVTTL-O	ModPrsL	Module Present	3	
28	LVTTL-O	IntL	Interrupt	3	
29		Vcc Tx	+3.3V Power supply transmitter	2	2
30		Vcc1	+3.3V Power supply	2	2
31	LVTTL-I	LPMode	Low Power Mode	3	
32		GND	Ground	1	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	3	
34	CML-I	Tx3n	Transmitter Inverted Data Input	3	
35		GND	Ground	1	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	3	
37	CML-I	Tx1n	Transmitter Inverted Data Input	3	
38		GND	Ground	1	1

V. Mechanical Dimensions

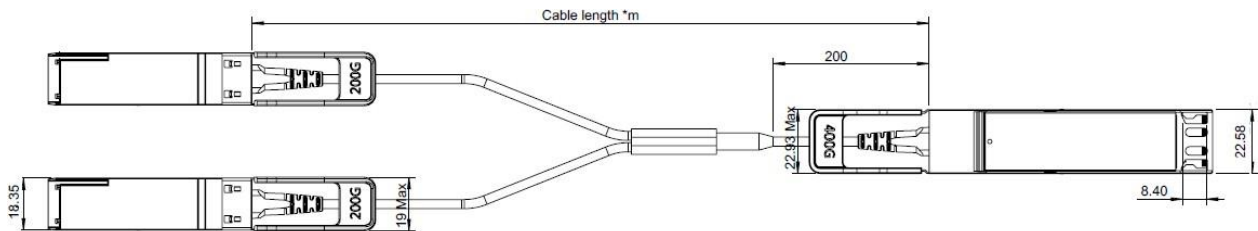


Figure 3 – Mechanical Dimensions

Parameter	Value	Unit
Diameter	3±0.2	mm
Minimum bend radius	30	mm
Length tolerance	1m≤length<5m: +15/-0	cm
	5m≤length<15m: +30/-0	cm
	length>15.0m: +3%/-0	m
Cable color	Aqua	

Connectivity Schematic				
400G OSFP end	TX1	RX1	QSFP56 end1	
	TX2	RX2		
	TX3	RX3		
	TX4	RX4		
	RX1	TX1		
	RX2	TX2		
	RX3	TX3		
	RX4	TX4		
	TX5	RX1	QSFP56 end2	
	TX6	RX2		
	TX7	RX3		
	TX8	RX4		
	RX5	TX1		
	RX6	TX2		
	RX7	TX3		
	RX8	TX4		

VI. Ordering Information

Part Number	Description
O-50H-O-2Q-030	Splitter cable, IB, twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 3m
O-50H-O-2Q-050	Splitter cable, IB, twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 5m
O-50H-O-2Q-070	Splitter cable, IB, twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 7m
O-50H-O-2Q-100	Splitter cable, IB, twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 10m
O-50H-O-2Q-150	Splitter cable, IB, twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 15m
O-50H-O-2Q-200	Splitter cable, IB, twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 20m
O-50H-O-2Q-300	Splitter cable, IB, twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 30m
O-50H-O-2Q-500	Splitter cable, IB, twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 50m