TITLE 200G QSFP56 to 2*100G QSFP56 AOC	DOC No. RFD-20240826006-001	
	REVISION：01	AUTHORIZED BY：Andy Yang
	DATE：2024.08.28	CLASSIFICATION：Active Optics Cable

1.Features

- ✓ Supports IBTA InfiniBand HDR
- ✓ 200GbE to 2x100GbE data rate
- ✓ 4x 50Gb/s PAM4 modulation
- ✓ SFF-8665 compliant QSFP56 port
- ✓ SFF-8636 compliant I2C management
- ✓ Single 3.3V power supply Hot pluggable
- ✓ RoHS compliant
- ✓ 4.5W power dissipation each end, with retiming
- ✓ Operating case temp Commercial: 0°C to +70 °C
- ✓ Hot pluggable

2.Application

- ✓ 200Gb/s InfiniBand HDR systems
- ✓ 200GBASE-SR4 and 100GBASE-SR2 compliant

3.PRODUCT DESCRIPTION

3.1PRODUCT NAME

200G QSFP56 to 2*100G QSFP56 AOC

Category	Bit Rate	Laser(nm)	Distance	Fiber Type	DDMI	Connector
QSFP56	200G	850nm	1~100m	MMF	YES	N/A

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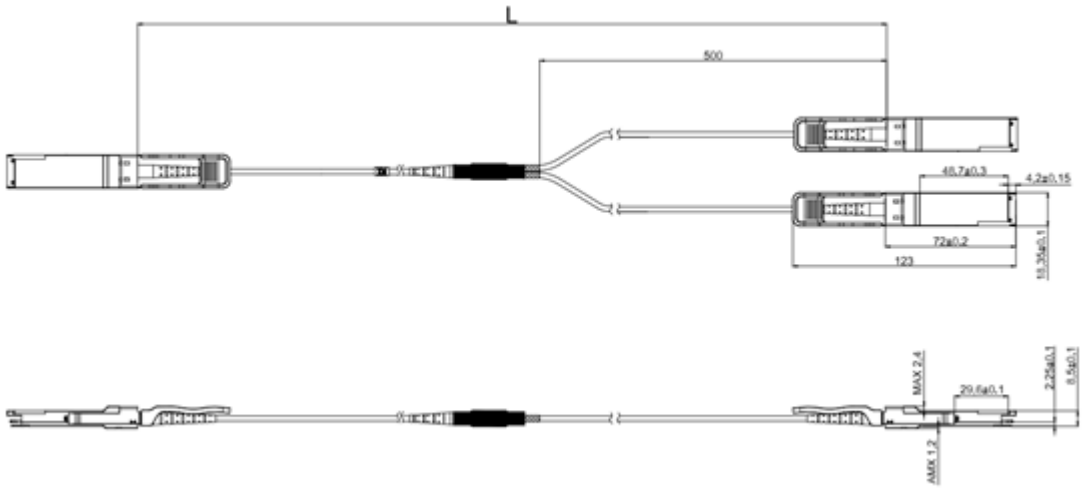
3.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKING



Mechanical Package Outline (All dimensions in mm)

4.Product Specification

4.1 Absolute Maximum Ratings

Parameter	Symbol	Conditions	Min.	Max.	Unit
Storage Temperature	$T_{Storage}$		-40	+85	℃
Relative Humidity	RH		0	+85	%

4.2 Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Case Temperature	T_C		0		70	℃
Power Supply Voltage	V_{CC}		3.135	3.3	3.465	V

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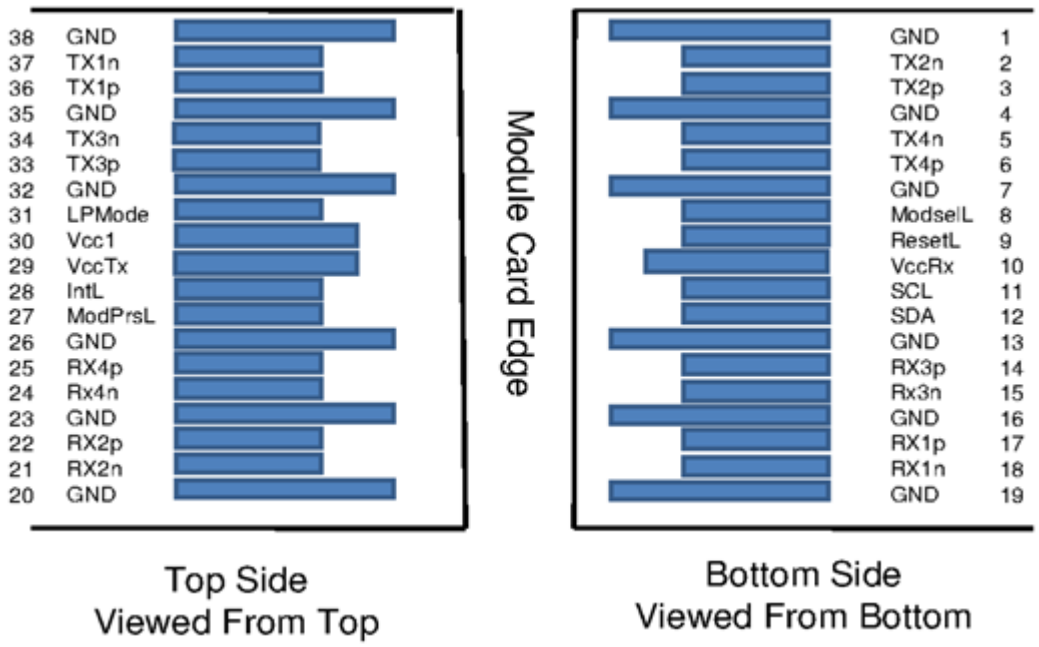
Power Consumption					4.5	W
Signaling Rate each Channel				26.5625		Gbps
Data Rate Accuracy			-100		100	ppm
Error Bit Rate					2.4E-4	

Notes: PRBS31Q@26.5625Gbd PAM4

5.Pin Assignments



OSFP Pad Function Definition

Electrical Pin Definition(QSFP)

PIN	Logic	Symbol	Name/Description	Note
1		GND	Ground	
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data output	
4		GND	Ground	

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5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data output	
7		GND	Ground	
8	LVTTL-I	ModSelL	Module Select	
9	LVTTL-I	ResetL	Module Reset	
10		VccRx	+ 3.3V Power Supply Receiver	
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data	
13		GND	Ground	
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	
15	CML-O	Rx3n	Receiver Inverted Data Output	
16		GND	Ground	
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	
20		GND	Ground	
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23		GND	Ground	
24	CML-O	Rx4n	Receiver Inverted Data Output	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	
26		GND	Ground	
27	LVTTL-O	ModPrsL	Module Present	
28	LVTTL-O	IntL	Interrupt	
29		VccTx	+3.3 V Power Supply transmitter	
30		Vcc1	+3.3 V Power Supply	
31	LVTTL-I	LPMode	Low Power Mode	
32		GND	Ground	
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	

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34	CML-I	Tx3n	Transmitter Inverted Data Output	
35		GND	Ground	
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	
37	CML-I	Tx1n	Transmitter Inverted Data Output	
38		GND	Ground	

PIN DESCRIPTION - 100G QSFP56 END

PIN	Logic	Symbol	Name/Description	Note
1		GND	Ground	
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data output	
4		GND	Ground	
5	CML-I	Tx4n	NC	
6	CML-I	Tx4p	NC	
7		GND	Ground	
8	LVTTL-I	ModSelL	Module Select	
9	LVTTL-I	ResetL	Module Reset	
10		VccRx	+ 3.3V Power Supply Receiver	
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data	
13		GND	Ground	
14	CML-O	Rx3p	NC	
15	CML-O	Rx3n	NC	
16		GND	Ground	
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	
20		GND	Ground	

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21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23		GND	Ground	
24	CML-O	Rx4n	NC	
25	CML-O	Rx4p	NC	
26		GND	Ground	
27	LVTTL-O	ModPrsL	Module Present	
28	LVTTL-O	IntL	Interrupt	
29		VccTx	+3.3 V Power Supply transmitter	
30		Vcc1	+3.3 V Power Supply	
31	LVTTL-I	LPMode	Low Power Mode	
32		GND	Ground	
33	CML-I	Tx3p	NC	
34	CML-I	Tx3n	NC	
35		GND	Ground	
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	
37	CML-I	Tx1n	Transmitter Inverted Data Output	
38		GND	Ground	

Digital Diagnostic Monitor Accuracy

The following characteristics are defined over recommended operating conditions

Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.C
Internally measured transceiver supply voltage	+/-3	%
Measured Tx bias current	+/-10	%
Measured Tx output power	+/-3	dB
Measured Rx received average optical power	+/-3	dB

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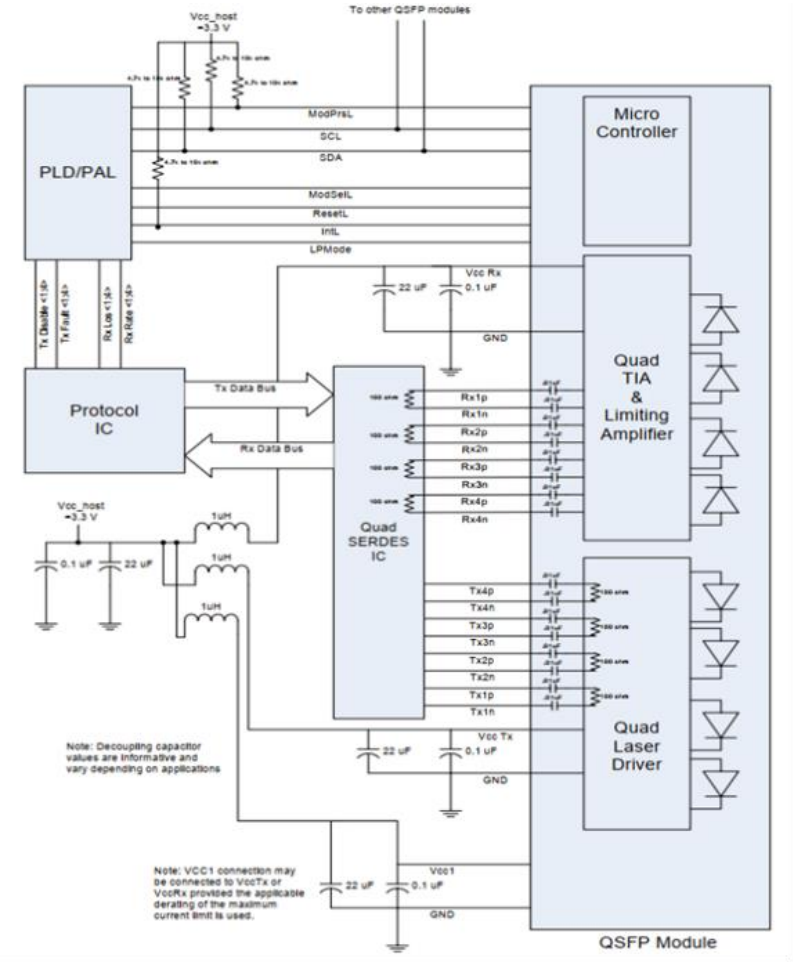
Recommended Interface



6.Modification History

Rev.	Comments	Date	Originator	Approval
01	Preliminary Draft	2024/8/28	Andy Yang	Mike Sun

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