

200G QSFP56 AOC CDR Optical Module

Product Specification Data

Product Name: QM_200G_QSFP56_AOC_CDR_Optical Module

Part Number: 1000XXXX

Record Number: TS09051

Version: A1

Date: 2025.02.24

Features

- Supports IBTA InfiniBand HDR
- Up to 200Gb/s data rate
- 4x 50Gb/s PAM4 modulation
- Single 3.3V power supply
- 4.5W power dissipation each end, with retiming
- Operating case temp Commercial: 0°C to +70 °C
- Hot pluggable
- RoHS compliant



Applications

- 200Gb/s InfiniBand HDR systems
- Other optical links

Standards

- SFF-8665 compliant QSFP56 port
- SFF-8636 compliant I2C management

ESD

- ESD compatible with MIL-STD-883 method 3015

Laser Safety

- Laser eye safety compatible with FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2

Order Information

Table 1-Order Information

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance	Fiber Type	DDMI	Connector	Temp ^{note1}	Fiber length (m)
1000XXXX	4x53.125	850	1~100m	MMF	YES	N/A	0°C~+70°C	1~99

Note: 1 Case Temperature

Absolute Maximum Ratings

Table2- Absolute Maximum Ratings

Parameters	Symbol	Min.	Typical	Max.	Unit	Notes
Storage Temperature	T_s	-5		+75	°C	
Supply Voltage	V_{CC}	-0.5		+3.6	V	
Operating Humidity	RH	+5		+85	%	1

Note: 1 No condensation

Recommended Operating Condition

Table 3- Recommended operating Conditions

Parameters	Symbol	Min.	Typical	Max.	Unit	Notes
Power Supply Voltage	V_{CC}	3.14	3.3	3.47	V	
Power Dissipation	P_d			4.5	W	1
Operating Case Temperature	T_c	0		+70	°C	

Note: 1 Per terminal

Electrical Characteristics

Table 4- Electrical Characteristics

Parameters	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Signaling rate (each lane)	SR	26.5625 ± 100 ppm			GBd	
Differential data input voltage per lane	$V_{in,pp,diff}$	900			mV	
Differential termination mismatch	-			10	%	
Single-ended voltage tolerance range	-	-0.4		3.3	V	
DC common mode voltage	-	-350		2850	mV	
Receiver						
Signaling rate (each lane)	SR	26.5625 ± 100 ppm			GBd	
Differential output voltage	-			900	mV	
Differential termination mismatch	-			10	%	

Transition time (min, 20% to 80%)	-	9.5			ps	
DC common mode voltage	-	-350		2850	mV	
Error Bit Rate	<i>BER</i>			2.4E-4		1

Note: 1 PRBS31Q@26.5625Gbd PAM4

Recommended Interface Circuit

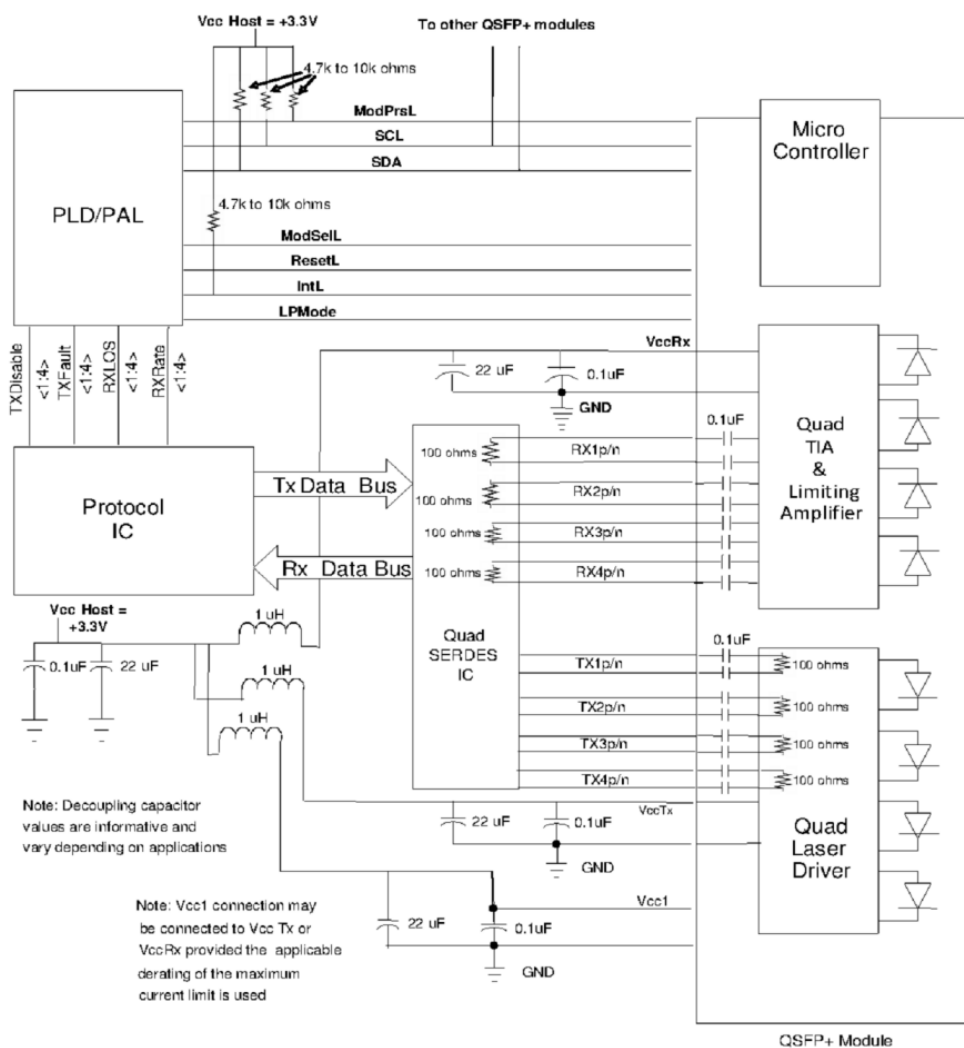


Figure 1, Recommended Interface Circuit

Pin arrangement

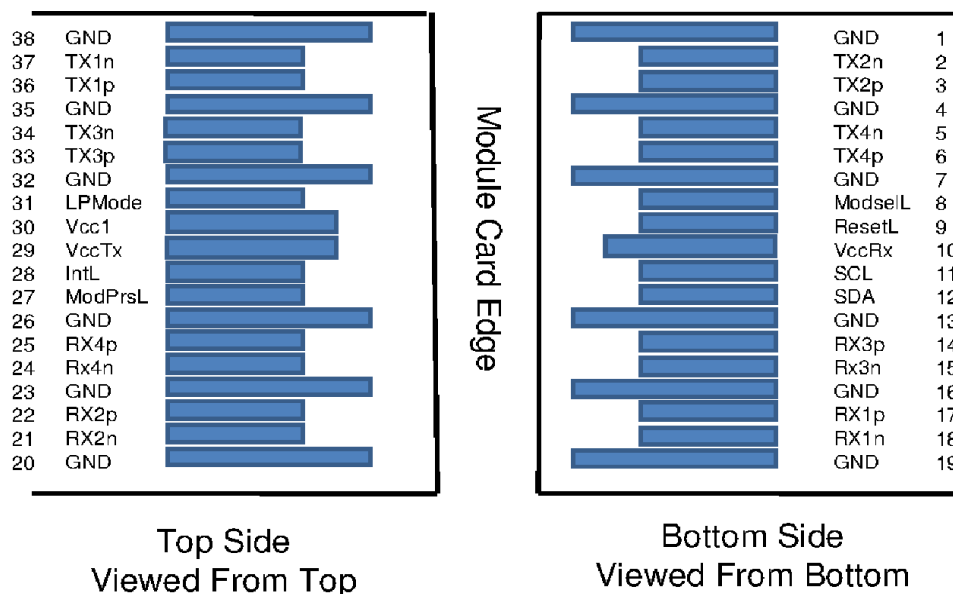


Figure 2, Pin View

Pin Function Definitions

Table 6-Pin Function Definitions

Pin	Logic	Symbol	Name/Description	Notes
1		GND	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	
4		GND	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	
7		GND	Ground	1
8	LVTTL-I	ModSelL	Module Select	
9	LVTTL-I	ResetL	Module Reset	
10		Vcc Rx	+3.3V Power Supply Receiver	
11	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVC MOS-I/O	SDA	2-Wire Serial Interface Data	
13		GND	Ground	1
14	CML-O	Rx3p	Receiver Inverted Data Output	
15	CML-O	Rx3n	Receiver Non-Inverted Data Output	
16		GND	Ground	1

17	CML-O	Rx1p	Receiver Inverted Data Output	
18	CML-O	Rx1n	Receiver Non-Inverted Data Output	
19		GND	Ground	1
20		GND	Ground	1
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23		GND	Ground	1
24	CML-O	Rx4n	Receiver Inverted Data Output	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	
26		GND	Ground	1
27	LVTTL-O	ModPrsL	Module Present	
28	LVTTL-O	IntL	Interrupt	
29		V _{CC} Tx	+3.3V Power Supply Transmitter	
30		V _{CC} 1	+3.3V Power Supply	
31	LVTTL-I	LPMODE	Low Power Mode	
32		GND	Ground	1
33	CML-I	Tx3p	Transmitter Inverted Data Input	
34	CML-I	Tx3n	Transmitter Non-Inverted Data Input	
35		GND	Ground	1
36	CML-I	Tx1p	Transmitter Inverted Data Input	
37	CML-I	Tx1n	Transmitter Non-Inverted Data Input	
38		GND	Ground	1

Note: 1 Circuit ground is internally isolated from chassis ground

Monitoring Specification

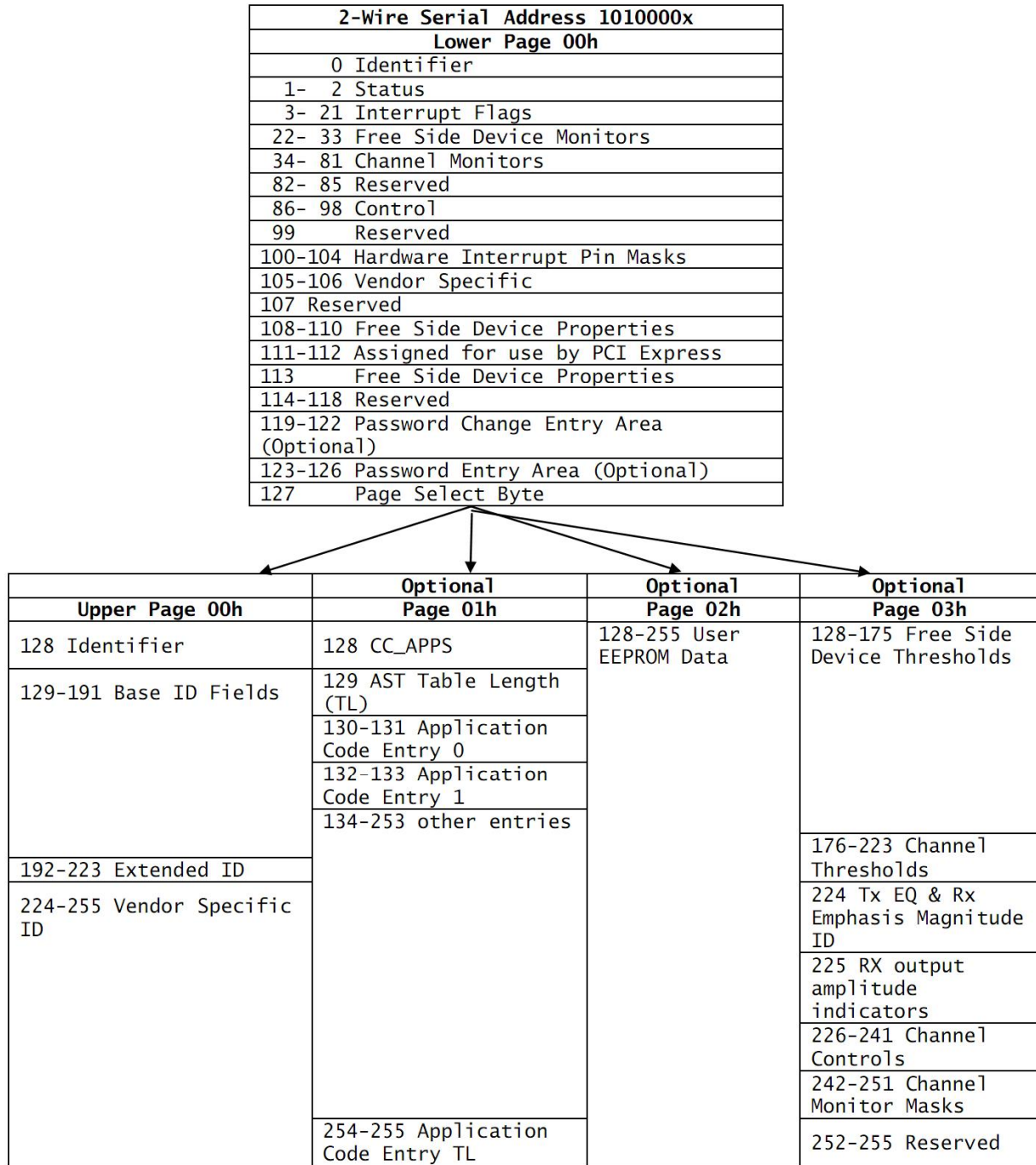
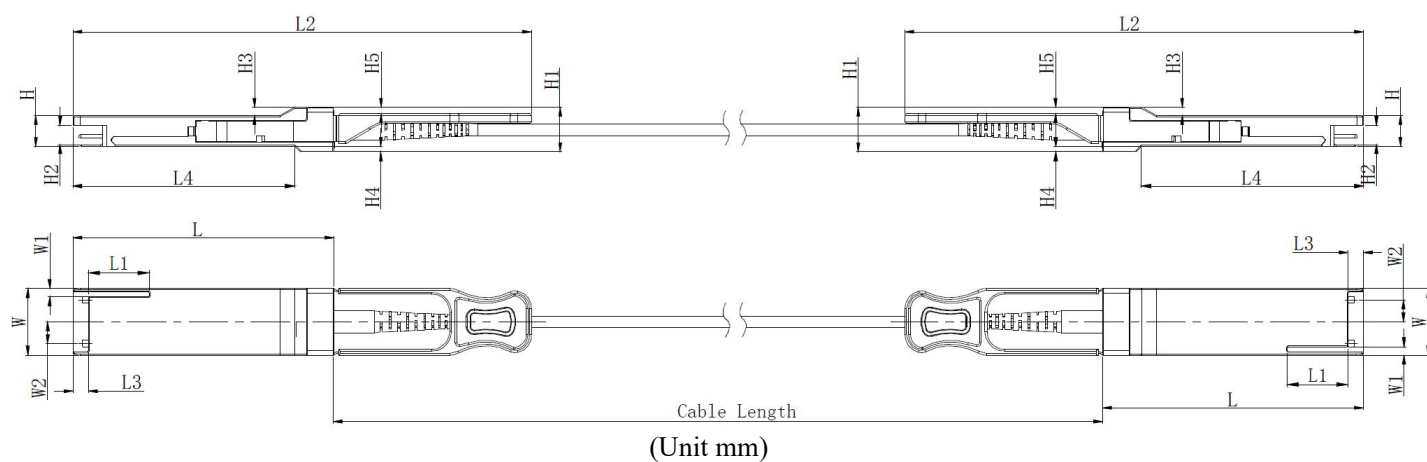


Figure 3, Memory Map

Mechanical Outline Dimensions



	L	L1	L2	L3	L4	W	W1	W2	H	H1	H2	H3	H4	H5
Max	72.2	-	128	4.35	61.4	18.45	-	6.2	8.6	12.4	5.35	2.5	1.6	2.0
Type	72.0	-	-	4.20	61.2	18.35	-	-	8.5	12.2	5.2	2.3	1.5	1.8
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

Figure4, Mechanical Diagram

Product list

Part Number	Product Name
1000XXXX	光模块_850nm_200G_QSFP56_AOC_Xm_MPO-12_1*4_J97