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200G-AOC-A1-XXM

200Gb/s QSFP56 Active Optical Cable

Features

- Supports IBTA InfiniBand HDR
- Up to 200Gb/s data rate
- 4x 50Gb/s PAM4 modulation
- SFF-8665 compliant QSFP56 port
- SFF-8636 compliant I2C management
- 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

Order Information

Table 1-Order Information

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance	Fiber Type	DDMI	Connector	Tempnote1
200G-AOC-A1-XXM	4x50	850	1~100m	MMF	YES	N/A	0℃~+70℃

Note: 1 Case Temperature

Absolute Maximum Ratings

Table2- Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	Vcc3	-0.5	-	+3.6	V	
Storage Temperature	Ts	-5	-	+75	°C	
Operating Humidity	RH	+5	-	+85	%	1

Note: 1 No condensation

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	Pd	-	-	4.5	W	1

Note: 1 Per term

Electrical Characteristics

Table 4- Electrical Characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Transmitter						
Signaling rate (each lane)	SR	GBd	26.5625 ± 100 ppm			
Differential data input voltage per lane	Vin,pp,diff	mV	900	-	-	
Differential termination mismatchal	-	%	-	-	10	
Single-ended voltage tolerance range	-	V	-0.4	-	3.3	
DC common mode voltage	-	mV	-350	-	2850	
Receiver						
Signaling rate (each lane)	SR	GBd	26.5625 ± 100 ppm			
Differential output voltage	-	mV	-	-	900	
Differential termination mismatch	-	%	-	-	10	
Transition time (min, 20% to 80%)	-	ps	9.5	-	-	
DC common mode voltage	-	mV	-350	-	2850	
Error Bit Rate	BER	-	-	-	2.4E-4	Note1

Note: 1 PRBS31Q@26.5625Gbd PAM4

Recommended Interface Circuit

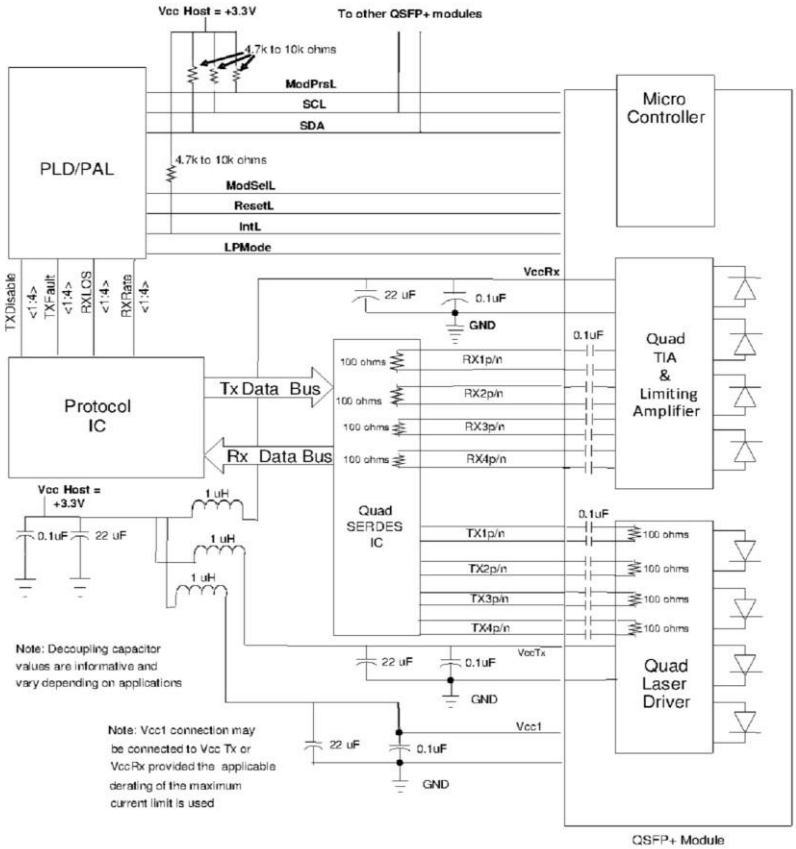


Figure 1, Recommended Interface Circui

Pin arrangement

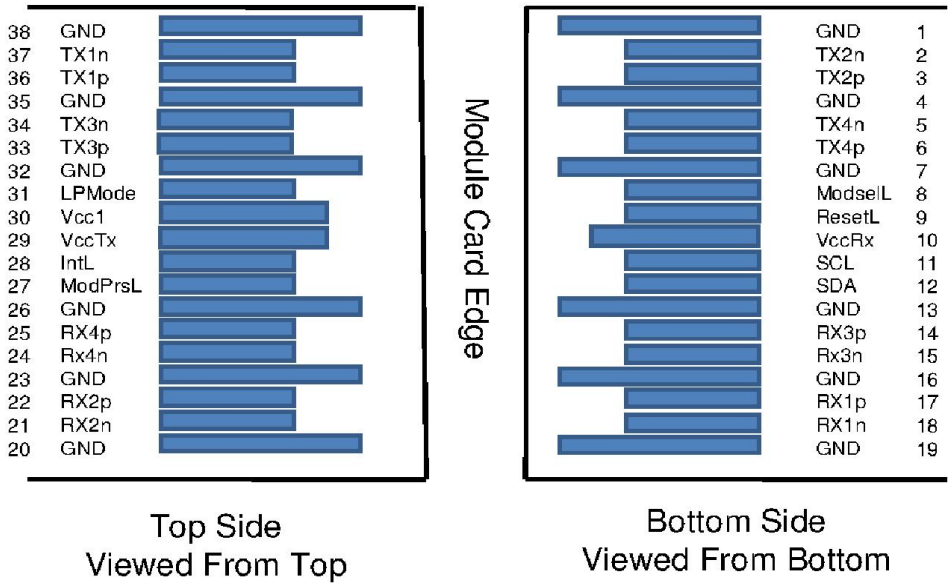


Figure 2, Pin View

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	

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

Note: 1. Circuit ground is internally isolated from chassis ground.

Monitoring Specification

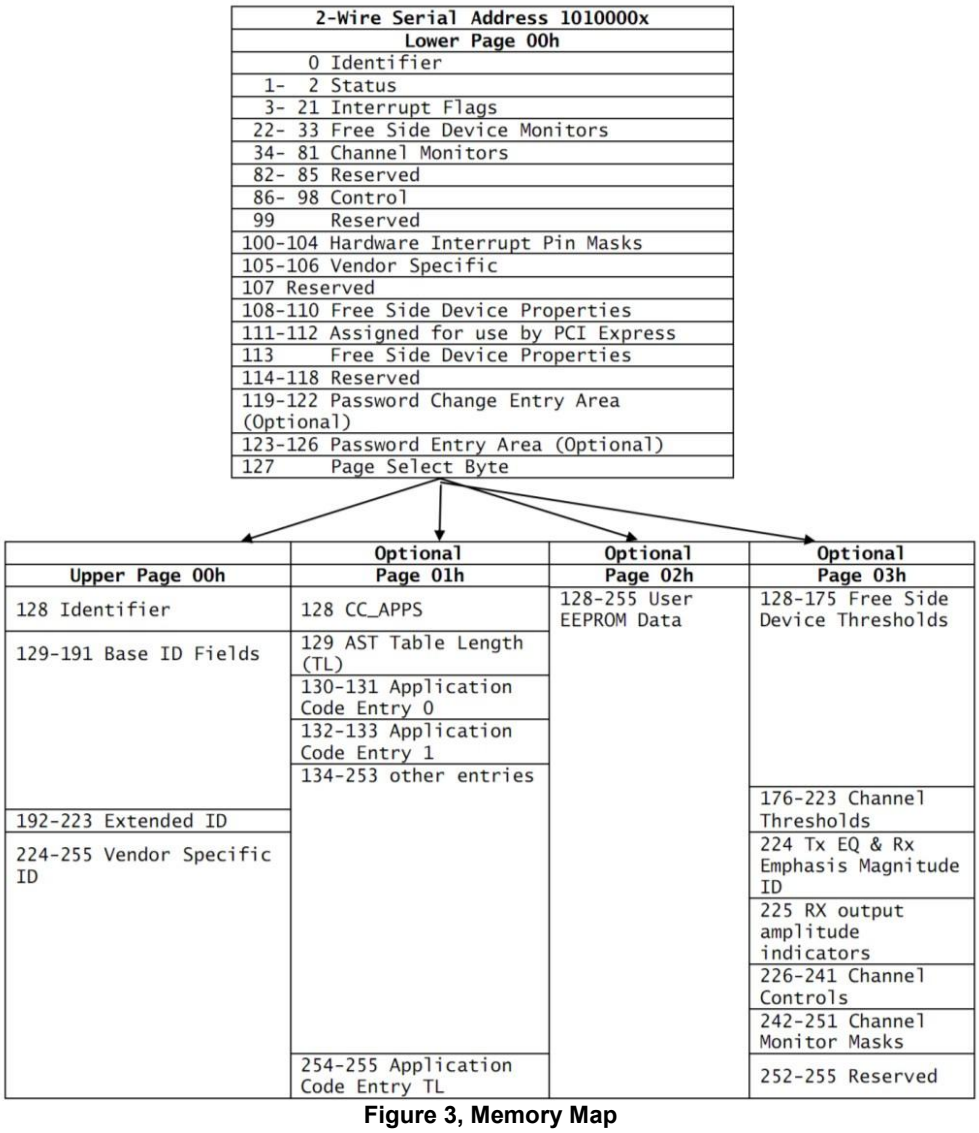
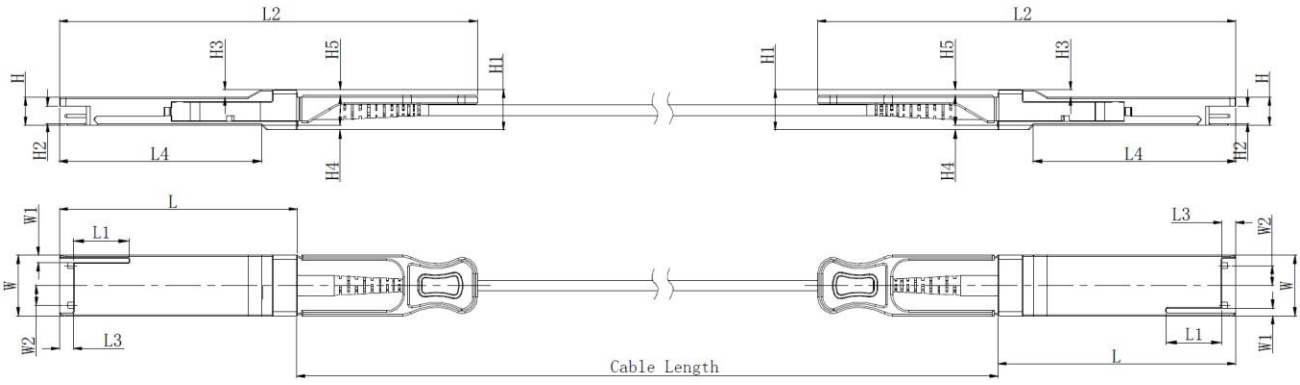


Figure 3, Memory Map

Mechanical



Unit mm

	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

Figure 4, Mechanical Diagram

Table 6- Cable Length

Parameter	Value		Units
Diameter	3±0.2		mm
Minimum bend radius	30		mm
Length tolerance	1 m ≤length ≤ 4.5 m:	+15 / -0	cm
	5 m ≤length ≤ 14.5 m:	+30 / -0	cm
	Length≥15.0 m	+2% / -0	m
Cable color	Aqua		

Version	Initiated	Reviewed	Revision	Release Date
A0	Ling	Zhang	New Release	2021-2-24

Revision history