

TITLE 200G QSFP56 Active Optical Cable	DOC No. RFD-20220926004-002	
	REVISION : 02	AUTHORIZED BY : Albert Lin
	DATE : 2023.02.10	CLASSIFICATION : Optical Transceiver

1. PRODUCT FEATURES

- Supports 212.5Gb/s aggregate bit rate
- 4x26.5625GBd PAM4) electrical interface
- VCSEL Transmitter
- PIN and TIA array on the receiver side
- Hot-pluggable QSFP56 footprint
- Low power Consumption
- RoHS-6 compliant and lead-free
- +3.3V single power supply
- Support Digital Diagnostic Monitor interface
- Case operating temperature (Commercial) 0°C to +70°C

2. PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

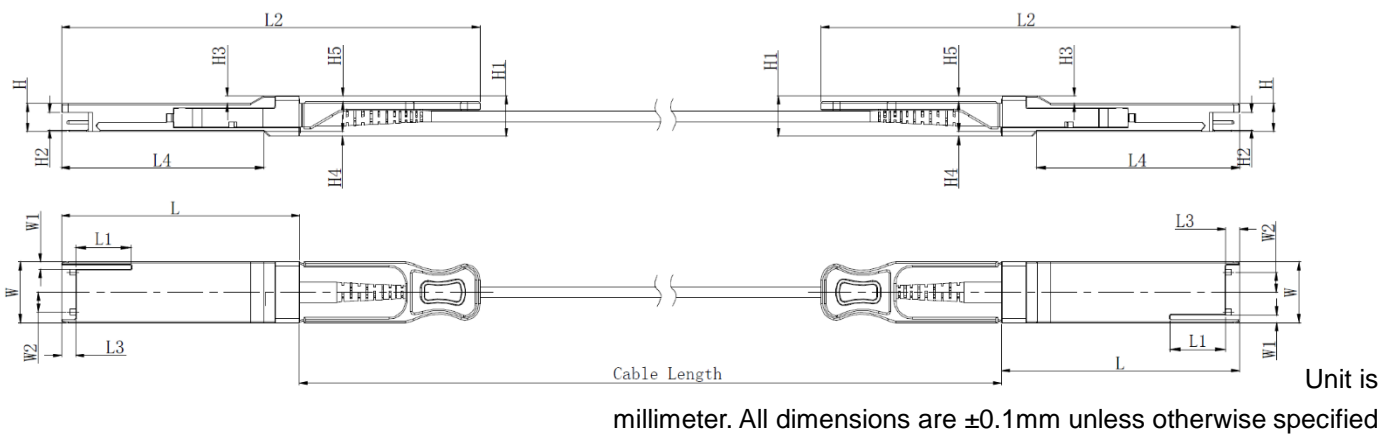
200G QSFP56 Active Optical Cable

Part Number	Bit Rate	Laser(nm)	Distance	Fiber Type	DDMI	Connector
P7400FC0xxxM-1	212.5Gb/s	850nm	1~100m	MMF	YES	N/A

Note:xxx for length of fiber cable(m)

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2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKING



3. APPLICABLE DOCUMENTS AND SPECIFICATIONS

- 200Gb/s InfiniBand HDR Systems
- 200GBASE-SR4 Ethernet
- Other Optical Links
- QSFP MSA
- IEEE802.3cd
- SFF-8636
- RoHS

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4. Absolute Maximum Ratings & Recommended Operating Conditions

Absolute Maximum Ratings				
Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _s	-40	85	°C
Storage Ambient Humidity	H _A	0	85	%
Maximum Supply Voltage	V _{CC}	-0.5	3.6	V
Lead Soldering Temperature/Time	TSOLD		260/10	°C/sec
Lead Soldering Temperature/Time	TSOLD		360/10	°C/sec

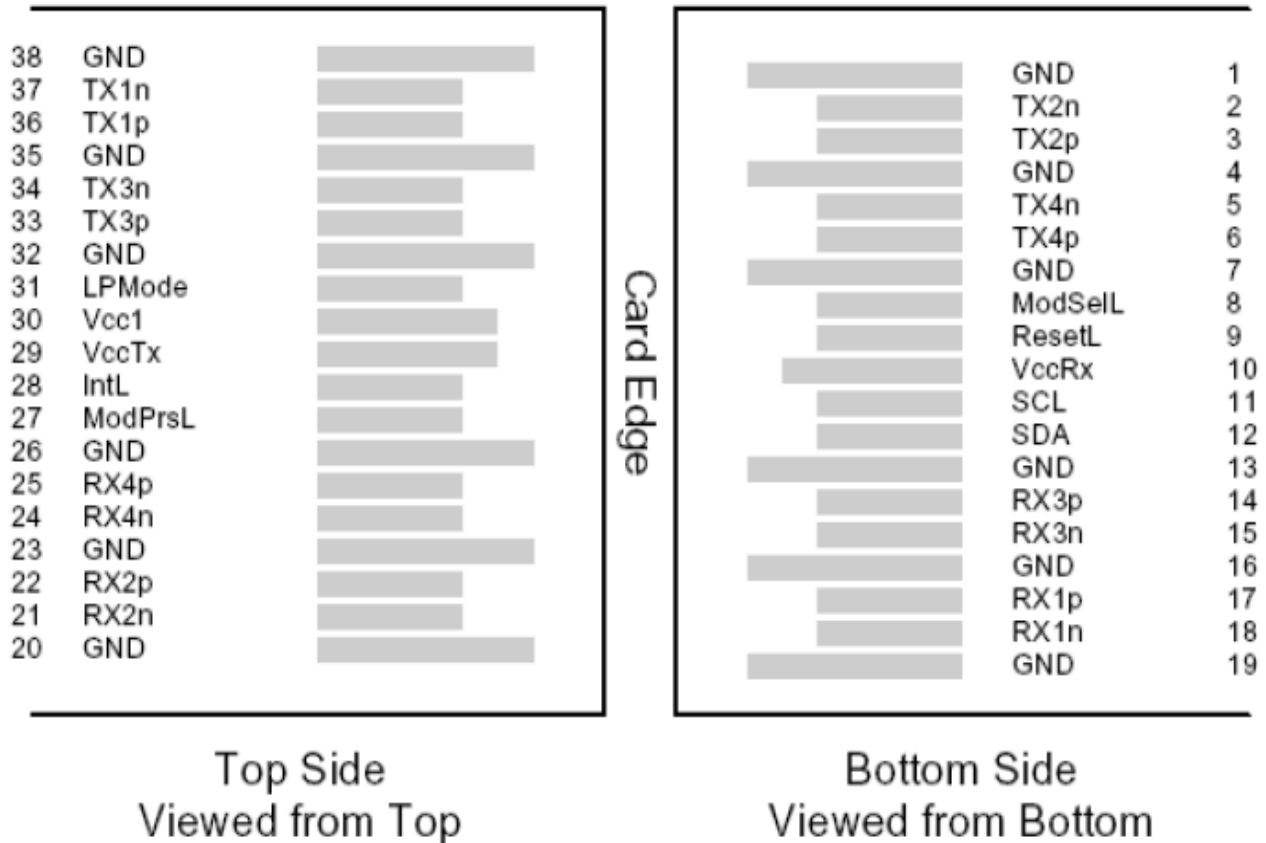
Recommended Operating Conditions					
Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V _{CC}	3.13	3.3	3.47	V
Baud Rate (per channel) PAM4	BR		26.5625		GBd
Operating Case Temperature	T _c	0		70	°C

Electrical Interface Characteristics					
Parameter	Symbol	Min.	Typ.	Max.	Remark
Supply Voltage	V _{CC}	3.13		3.47	V
Power Dissipation	P _d			4.5	W
Transmitter					
Input different impedance	R _{in}	90	100	110	Ω
Single ended input voltage tolerance	V _{inT}	-0.3		4.0	V
Differential Input Voltage Amplitude	V _{in,pp}			900	mV
Receiver					
Error Bit Rate	BER			2.4E-4	
Output different impedance	R _{out}	90	100	110	Ω

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Single-ended output voltage	VoutR	-0.3		4.0	V
Differential Output Voltage Amplitude	Vout,pp			900	mV

5. Applications Note:



Pin Definitions

Pin	Symbol	Description	Notes
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	

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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	ModSe1L	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	

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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

Notes:

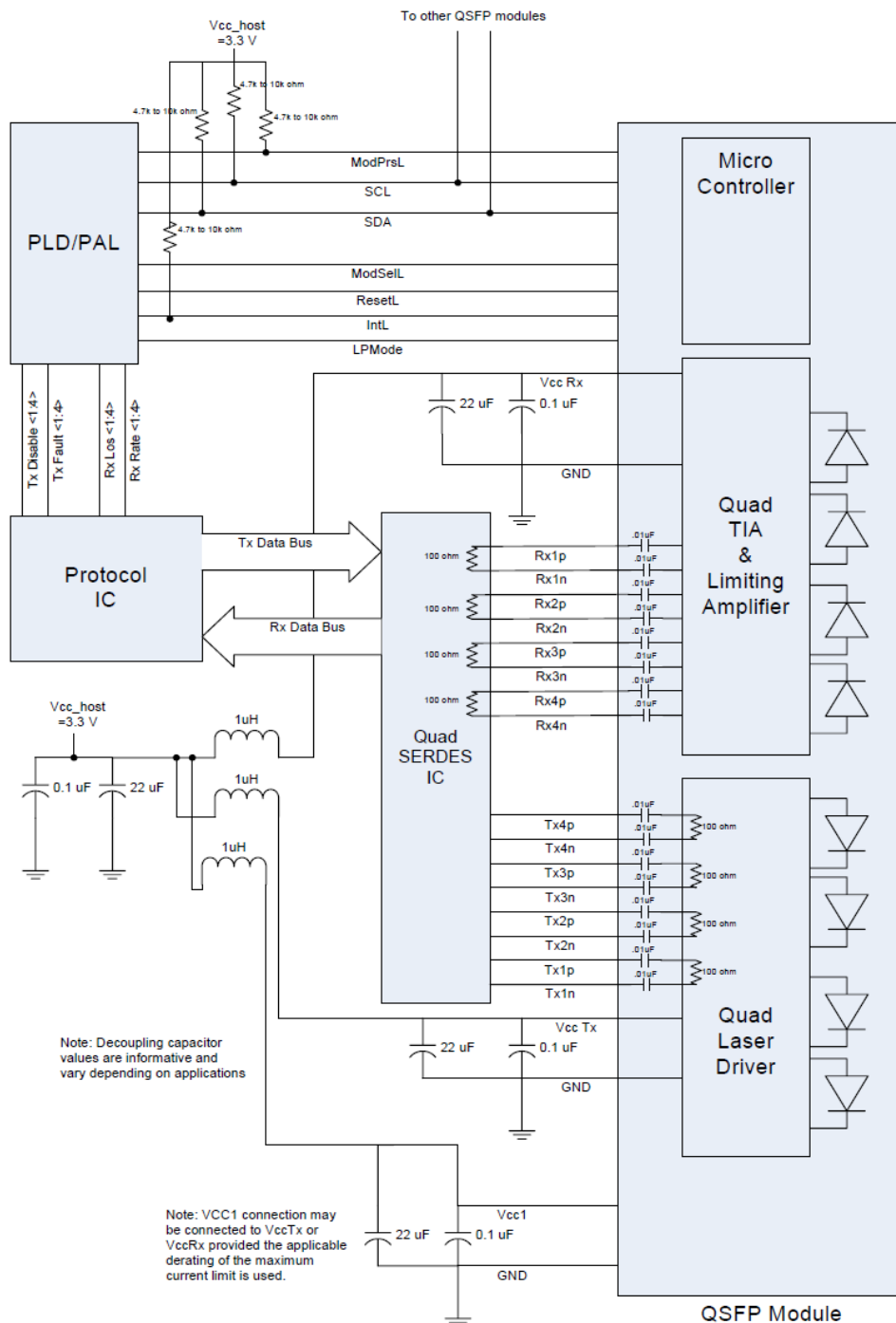
1. Circuit ground is internally isolated from chassis ground.

Cable Length

Symbol	Description	Notes
Diameter	3±0.2	mm
Minimum bend radius	30	mm
Length tolerance	Length<1m: +5/-0	cm
	1≤Length≤4.5m: +15/-0	cm
	5≤Length≤14.5m: +30/-0	cm
	Length≥15.0m: +2/-0	m
Cable color	Orange (OM2), Aqua (OM3), Megenta (OM4)	

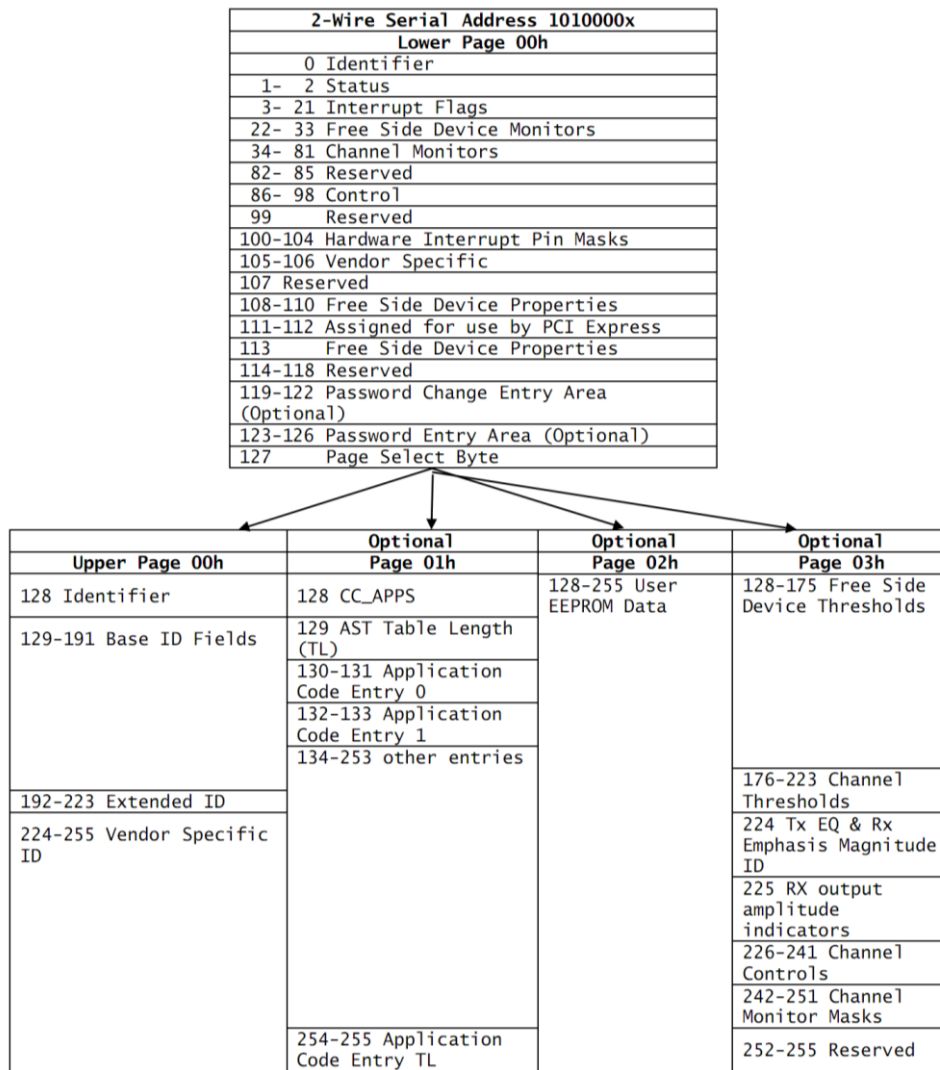
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Recommended Interface Circuit



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6. Digital Diagnostic Functions



7. Modification History

Rev.	Comments	Date	Originator	Approval
01	Initial	2022.09.26	Albert Lin	Mike Sun
02	Add applicable for SR4 Ethernet	2023.02.10	Albert Lin	Mike Sun