

200G QSFP56 Active Optical Cable

Part Number – V2C-Q1QyyyC-AA

V2C-Q1QyyyC-AA is a high performance 200G QSFP56 Active Optical Cable for Gigabit Ethernet data links.

Features

- Low latency DSP-free electronics-based CDR
- Multi-data rate up to 56.15 Gb/s per lane
- PAM4 modulation
- HPC-grade BER $\leq 5 \times 10^{-8}$
- Single 3.3 V power supply
- Low power consumption : 3.6 W per cable end with all CDRs enabled
- Up to 100 m length
- SFF-8665 compliant QSFP56 port
- SFF-8636 compliant I2C management interface
- Commercial operating case temperature range: 0 to 70°C
- Hot pluggable
- RoHS/REACH compliant
- TUV-certified
- LSZH, LSZH/OFNR or OFNP-rated cable

Applications

- IEEE 802.3cd 200GBASE SR4
- IBTA InfiniBand HDR
- Datacenter: servers, switches, storages and NIC adapters
- Proprietary HPC interconnections

Ordering Information

Part Number	Description
V2C-Q1QyyyC-AA	200G QSFP56 Active Optical Cable, yyy is the length in meters. For fractional length up to 10m, please use "P" designation. Example 0.5 meters - V2C-Q1Q0P5C-AA

Product Overview

Vitex V2C-Q1QyyyC-AA is designed for 200Gbase links over fiber used in InfiniBand or Ethernet applications in LSZH, LSZH/OFNR or OFNP-rated cable jackets.

General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Storage Temperature	TS	-40		85	°C	Ambient
Relative Humidity	RH	5		85	%	
Supply Voltage	VIN	0		4.0	V	
Input Swing	VIN-MAX			1500	mVpp	
Operating Case Temperature	TC	0		70	oC	
Power Supply Voltage	Vcc	3.15	3.3	3.47	V	
Power Supply Current	Icc	-	1100	1250	mA	1
Power Consumption		-	3.6	4.0	W	1

1. Per end, all channel CDRs enabled

Electrical – Transmitter

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Data Rate (Per Channel)	BR	-	26.5625		GBd	1
Input Differential Impedance	ZIN		100		Ω	
Differential Data Input Voltage	VIN P-P	900			mV	
Input High Voltage	VIH	0.7×Vcc			V	
Input Low Voltage	VIL			0.3×Vcc	V	
Output High Voltage	VOH	Vcc-0.7			V	
Output Low Voltage	VOL			0.6	V	

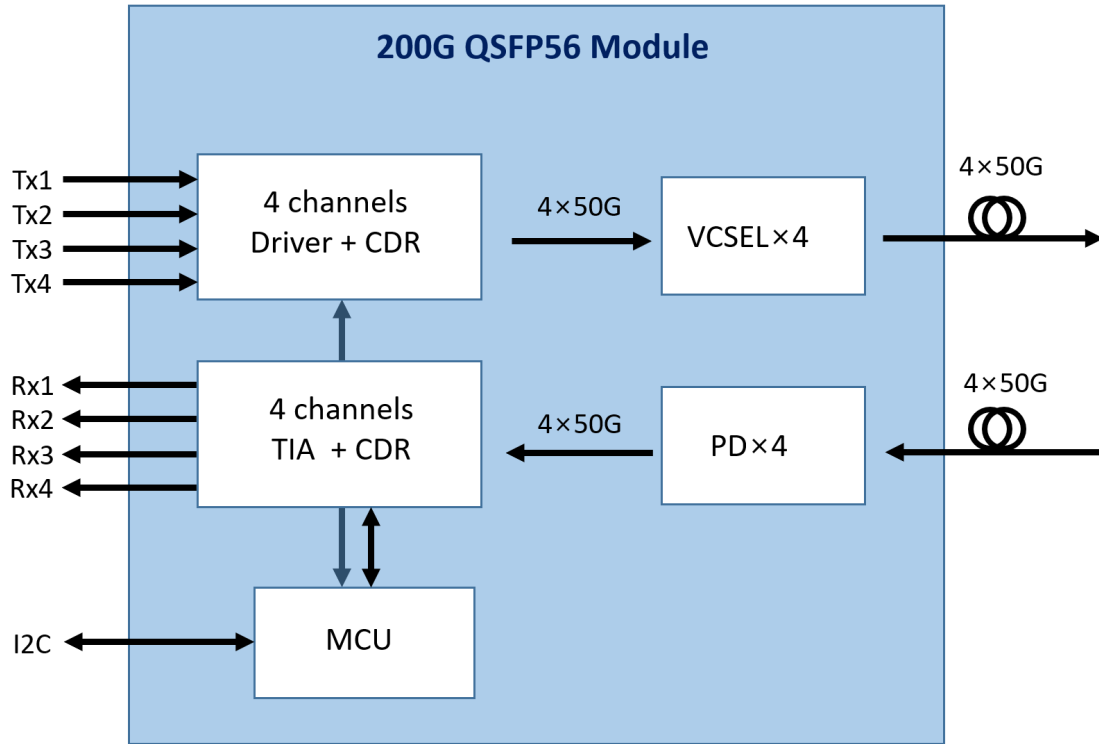
1. Dual data rate of 25.78125 and 28.07618 Gbaud are available upon request.

Electrical – Receiver

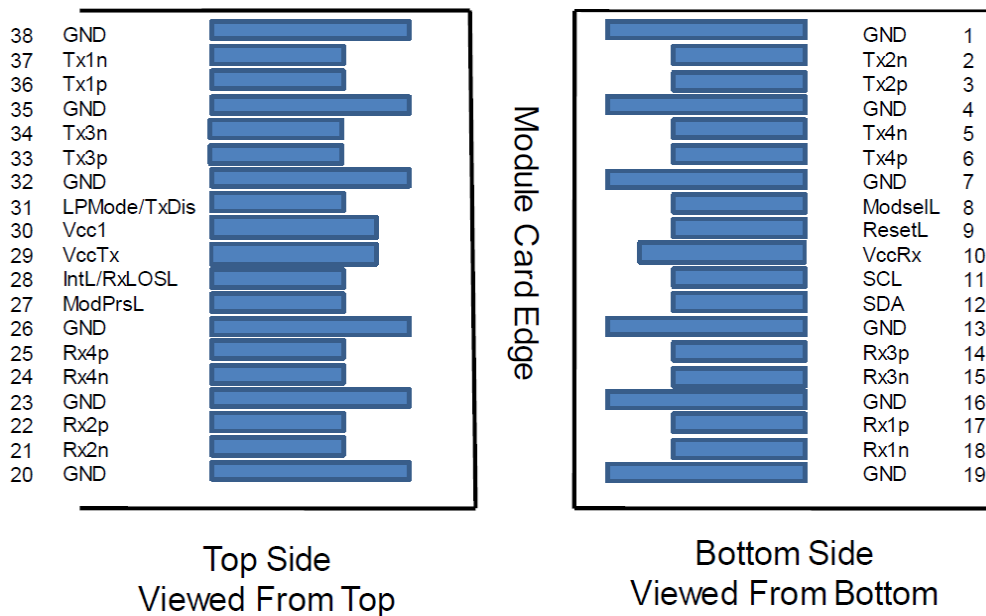
Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Output Differential Impedance	ZO		100		Ω	
Differential Data Output Voltage	VOUT,	700	800	900	mV-P	
Bit Error Ratio (at 26.5625 GBd)	-	-	-	2.4×10 ⁻⁴		1

1. Pre-FEC Bit Error Ratio with a PRBS 2³¹ – 1 test pattern over a normal operating temperature range

Block Diagram



Electrical Connector Layout



Electrical Pin Definition

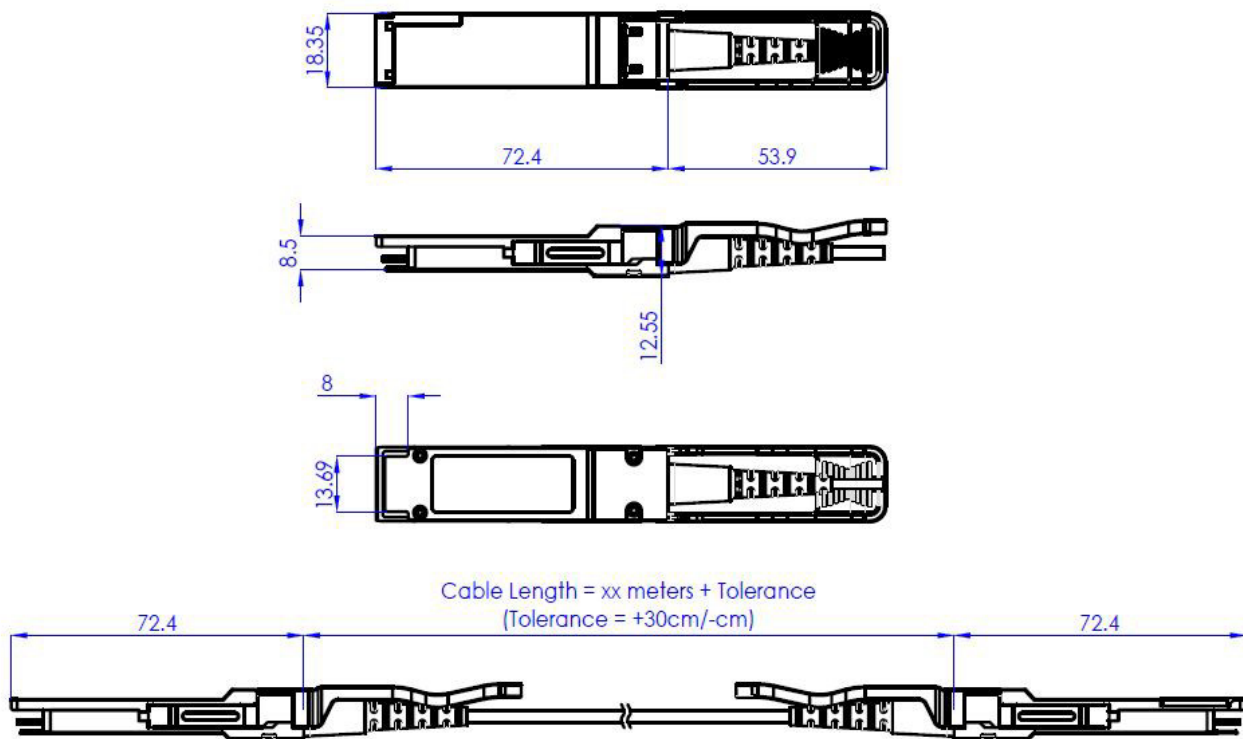
PIN #	Symbol	Description	Remarks
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	2
9	ResetL	Module Reset	2
10	Vcc Rx	+3.3V Power Supply Receiver	
11	SCL	2-wire Serial Interface Clock	2
12	SDA	2-wire Serial Interface Data	2
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	Grounds	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	
28	IntL/RxL OSL	Interrupt. Optionally configurable as RxLOSL via the management interface (SFF-8636).	2
29	Vcc Tx	+3.3V Power Supply Transmitter	
30	Vcc1	+3.3V Power Supply	

31	LPMoDe/ TxDis	Low Power Mode. Optionally configurable as TxDis via the management interface (SFF-8636).	2
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

1. GND is the symbol for signal and supply (power) common for the module. All are common within the module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.

2. Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for a maximum current of 500 mA.

Mechanical Dimensions



Active Optical Cable

Parameters	Value	Unit	Remarks
Cable Diameter	<ul style="list-style-type: none">LSZH, LSZH/OFNR: $\varnothing 3.0 \pm 0.15$OFNP: $\varnothing 3.0 \pm 0.20$	mm	
Minimum Bend Radius	30	mm	Without tension
Length Tolerance	+300 / -0	mm	
Cable Jacket	LSZH, LSZH/OFNR or OFNP-rated, Aqua		

Revision History

Date	Rev	Description
6/15/2021	1.0	Initial Release

Contact Information

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