

200G QSFP-DD Active Optical Cable

Part Number – V2C-D1DyyyC-AA

V2C-D1DyyyC-AA is a high performance 200G QSFP-DD Active Optical Cable for Gigabit Ethernet data links.

Features

- Up to 25.78 Gbps per channel
- 8-channel full-duplex
- Single 3.3 V power supply
- Low-power consumption: 3.3 W per cable end
- Up to 150 m † with OM3 fibers
- Hot pluggable QSFP-DD
- QSFP-DD MSA/CMIS compliant
- Commercial operating case temperature range: 0 to 70°C
- LSZH, LSZH/OFNR or OFNP-rated cables
- RoHS/REACH compliant



Applications

- 200G Ethernet
- Data center: Switches, servers, storages and NIC adapters
- Proprietary HPC interconnections

Ordering Information

Part Number	Description
V2C-D1DyyyC-AA	200G QSFP-DD Active Optical Cable, yyy is the length in meters. For factional length up to 10m, please use “P” designation. Example 0.5 meters – V2C-D1D0P5C-AA
V2C-D1DyyyC-KA	200G QSFP-DD Active Optical Cable with CDR bypass enabled by default, yyy is the length in meters. For factional length up to 10m, please use “P” designation. Example 0.5 meters – V2C-D1D0P5C-KA

Product Overview

Vitex V2C-D1DyyyC-AA QSFP28-DD AOC fully takes advantage of the high transmission bandwidth, low power consumption, and long reach being designed to provide a convenient solution for 200G applications in QSFP-DD form factor.

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Supply Voltage	V_{IN}	0	-	4.0	V	
Storage Temperature	T_{STG}	-40	-	85	°C	1
Relative Humidity	RH	0	-	85	%	

1.Ambient temperature

Operating Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Supply Voltage	V_{IN}	0	-	4.0	V	
Operating Case Temperature	T_{OP}	0	-	70	°C	
Power Supply Voltage	V_{CC}	3.13	3.30	3.47	V	
Power Supply Current	I_{CC}	-	1000	-	mA	1
Power Consumption		-	3.30	3.47	W	1

1.Per end

Electrical – Transmitter

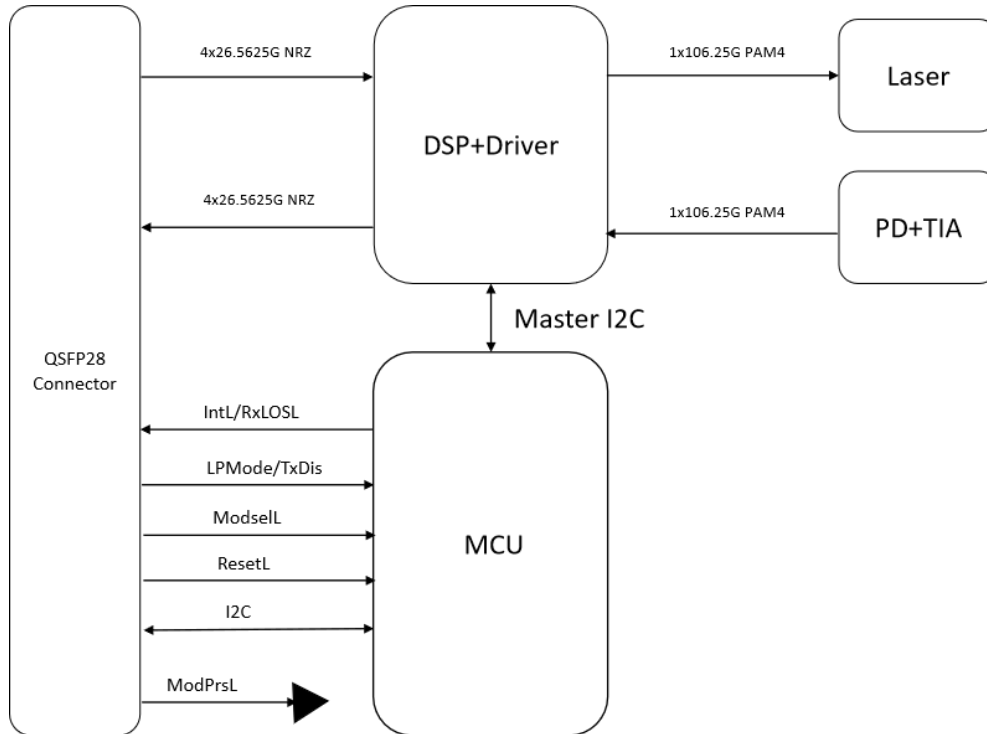
Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Data Rate (Per Channel)	BR	-	25.78	-	Gbps	
Input Differential Impedance	R_{IN}	90	100	110	Ω	
Differential Data Input Voltage	V_{INP-P}	200	-	900	mV	

Electrical – Receiver

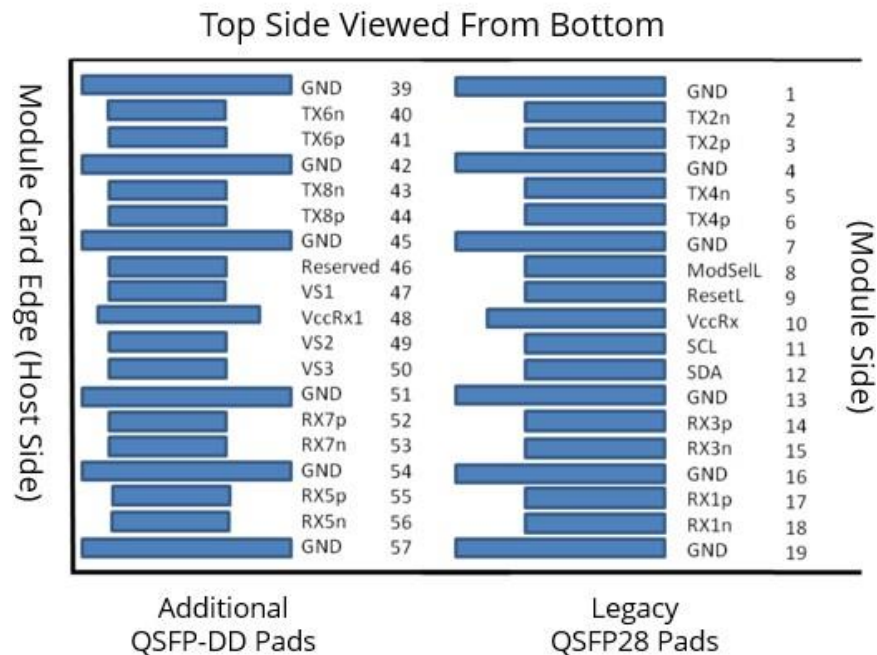
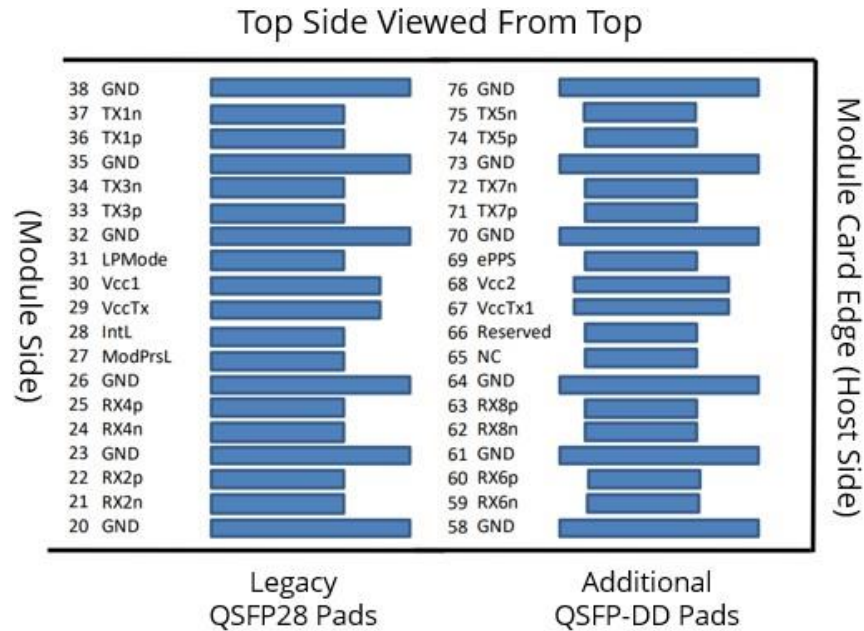
Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Data Rate (Per Channel)	BR	-	25.78	-	Gbps	
Output Differential Impedance	R_{OUT}	90	100	110	Ω	
Differential Data Output Voltage	V_{OUTP-P}	-	800	-	mV	
Bit Error Ratio (at 25.78 Gbps)		-	-	10-8	-	1

1. Pre-FEC Bit Error Ratio with a PRBS $2^{31} - 1$ test pattern

Block Diagram



Electrical Connector Layout



Electrical Pin Definition

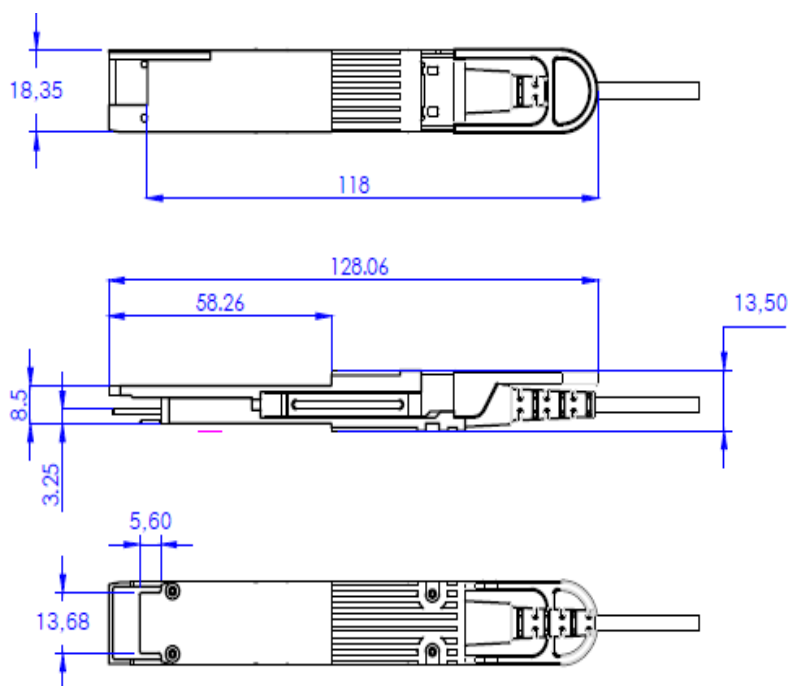
PIN #	Symbol	Description	Remarks
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	VccRx	3.3V Power Supply Receiver	2
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	VccTx	3.3V Power Supply Transmitter	2
30	Vcc1	3.3V Power Supply	2
31	InitMode	Initialization Mode; In legacy QSFP applications, LPMODE	
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
39	GND	Ground	1
40	Tx6n	Transmitter Inverted Data Input	
41	Tx6p	Transmitter Non-Inverted Data Input	
42	GND	Ground	1
43	Tx8n	Transmitter Inverted Data Input	
44	Tx8p	Transmitter Non-Inverted Data Input	
45	GND	Ground	1
46	Reserved	For Future Use	3
47	VS1	Module Vendor Specific 1	3
48	VccRx1	3.3V Power Supply	2
49	VS2	Module Vendor Specific 2	3
50	VS3	Module Vendor Specific 3	3
51	GND	Ground	1
52	Rx7p	Receiver Non-Inverted Data Output	
53	Rx7n	Receiver Inverted Data Output	
54	GND	Ground	1
55	Rx5p	Receiver Non-Inverted Data Output	
56	Rx5n	Receiver Inverted Data Output	
57	GND	Ground	1
58	GND	Ground	1
59	Rx6n	Receiver Inverted Data Output	
60	Rx6p	Receiver Non-Inverted Data Output	
61	GND	Ground	1
62	Rx8n	Receiver Inverted Data Output	
63	Rx8p	Receiver Non-Inverted Data Output	
64	GND	Ground	1
65	NC	No Connect	3
66	Reserved	For Future Use	3
67	VccTx1	3.3V Power Supply	2

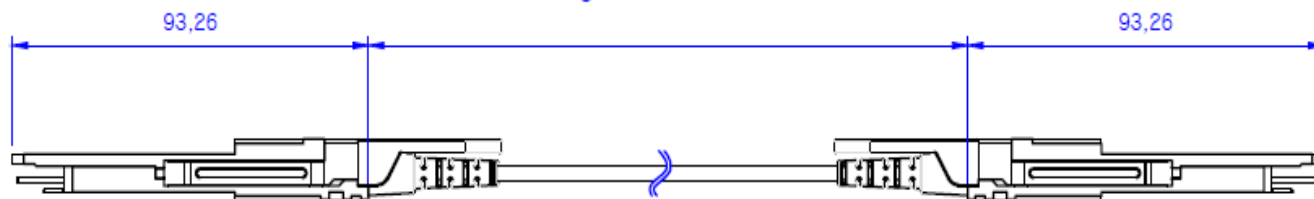
68	Vcc2	3.3V Power Supply	2
69	ePPS	Precision Time Protocol (PTP) Reference Clock Input	3
70	GND	Ground	1
71	Tx7p	Transmitter Non-Inverted Data Input	
72	Tx7n	Transmitter Inverted Data Input	
73	GND	Ground	1
74	Tx5p	Transmitter Non-Inverted Data Input	
75	Tx5n	Transmitter Inverted Data Input	
76	GND	Ground	1

1. GND is the symbol for signal and supply (power) common for the QSFP-DD module. All are common within the QSFP-DD module and all module voltages are referenced to this potential unless otherwise noted.
2. VccRx, VccRx1, Vcc1, Vcc2, VccTx and VccTx1 shall be applied concurrently. The connector pins are each rated for a maximum current of 1000 mA.
3. All Vendor Specific, Reserved, No Connect and ePPS (if not used) pins may be terminated with 50 ohms to ground on the host, and Pad 65 (No Connect) shall be left unconnected within the module.

Mechanical Dimensions



Cable Length = xx meters + Tolerance



Revision History

Date	Rev	Description
2/11/2022	1.0	Initial Release
4/6/2022	1.1	CDR bypass default order option added

Contact Information

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