MCA7J50-H001R-OPC

Mellanox® MCA7J50-H001R Compatible TAA 200GBase-CU QSFP56 to 2xQSFP56 Direct Attach Cable (Active Twinax, 1m, Infiniband HDR)

Features

- • QSFP Module Compliant to SFF-8661
- • Compliant to InfiniBand HDR
- • Transmission Data Rate up to PAM4 53.125Gbps Per Channel
- • Enables 212.5Gbps to 2x106.25Gbps Transmission
- • Fully Preserves Effects of Transmit Pre-Emphasis or Amplitude Adjustments
- • Low Power Consumption:
- • Independent Equalization Setting and Standby Control
- • Operating Case Temperature: 0 to 70 Celsius
- • RoHS Compliant and Lead-Free

Applications:

- • 200GBase

Product Description

This is a Mellanox® MCA7J50-H001R compatible 200GBase-CU QSFP56 to 2xQSFP56 Infiniband HDR direct attach cable that operates over active copper with a maximum reach of 1.0m (3.3ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	-0.3	3.3	3.6	V
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0		70	°C
Relative Humidity	RH	5		85	%
Data Rate			212.5		Gbps

Physical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Length	L			1	M
AWG			30		AWG
Jacket Material		PVC, Black			

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	Vcc	3.1	3.3	3.5	V
Current Draw for Each Active Channel	Iact-Ch		45		mA
Current Draw When Both Channels are Placed in Standby Mode	Istdby		1		mA
Input Voltage - High (PROGEN, SCL, SDA)	VIH	3.1	3.3	3.5	V
Input Voltage - High (ADDR0/1/2)	VIH_ADDR	2.3	2.5	2.7	V
Input Voltage - Low	VIL	0		0.4	V
Time from Valid Vcc to Operation of the IC	$T_{StartUp}$			10	ms
Time from Valid Vcc to VIH of 12C Signals	T_{I2C}	0			ms

High-Speed Channel Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Raw Cable Differential Impedance	Zca	90		110	Ω
PCBA Differential Impedance	Zpcba	85		115	Ω
Maximum Insertion Loss at 13.28GHz	SDD21	6		14	dB
Other SI Performance			Compliant with Infiniband HDR		
Minimum COM	COM	3			dB
Bit Error Ratio				$1E^{-8}$	

Electrical Pin-Out Details for QSFP

	Top Side			Bottom Side	
38	GND		GND	1	
37	Tx1n		Tx2n	2	
36	Tx1p		Tx2p	3	
35	GND		GND	4	
34	Tx3n		Tx4n	5	
33	Tx3p		Tx4p	6	
32	GND		GND	7	
31	LPMode/TxDis		ModselL	8	
30	Vcc1		ResetL	9	
29	VccTx		VccRx	10	
28	IntL/RxLOSL		SCL	11	
27	ModPrsL		SDA	12	
26	GND		GND	13	
25	Rx4p		Rx3p	14	
24	Rx4n		Rx3n	15	
23	GND		GND	16	
22	Rx2p		Rx1p	17	
21	Rx2n		Rx1n	18	
20	GND		GND	19	
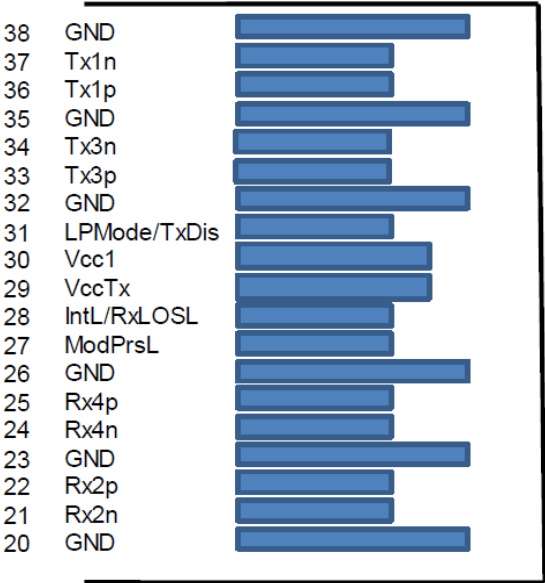
Module Card Edge

Top Side
Viewed From Top
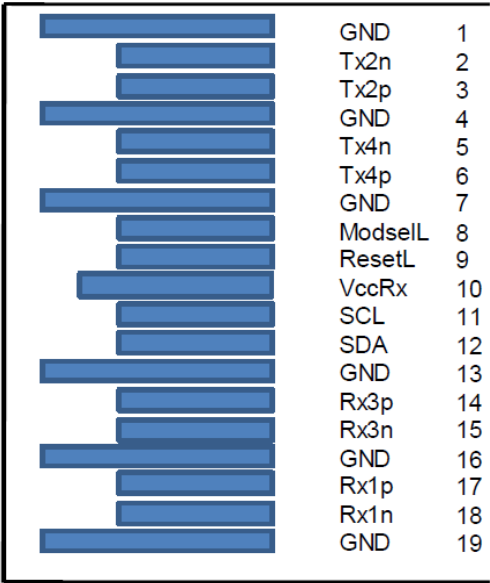
Bottom Side
Viewed From Bottom

Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1		GND	Module Ground.	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Input.	
4		GND	Module Ground.	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Input.	
7		GND	Module Ground.	1
8	LVTTL-I	ModSelL	Module Select.	
9	LVTTL-I	ResetL	Module Reset.	
10		VccRx	+3.3V Receiver Power Supply.	2
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock.	
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data.	
13		GND	Module Ground.	1
14	CML-O	Rx3+	Receiver Non-Inverted Data Output.	
15	CML-O	Rx3-	Receiver Inverted Data Output.	
16		GND	Module Ground.	1
17	CML-O	Rx1+	Receiver Non-Inverted Data Output.	
18	CML-O	Rx1-	Receiver Inverted Data Output.	
19		GND	Module Ground.	1
20		GND	Module Ground.	1
21	CML-O	Rx2-	Receiver Inverted Data Output.	
22	CML-O	Rx2+	Receiver Non-Inverted Data Output.	
23		GND	Module Ground.	1
24	CML-O	Rx4-	Receiver Inverted Data Output.	
25	CML-O	Rx4+	Receiver Non-Inverted Data Output.	
26		GND	Module Ground.	1
27	LVTTL-O	ModPrsL	Module Present.	
28	LVTTL-O	IntL	Interrupt.	
29		VccTx	+3.3V Transmitter Power Supply.	2
30		Vcc1	+3.3V Power Supply.	2
31	LVTTL-I	LPMode	Low-Power Mode.	
32		GND	Module Ground.	1
33	CML-I	Tx3+	Transmitter Non-Inverted Data Input.	
34	CML-I	Tx3-	Transmitter Inverted Data Input.	

35		GND	Module Ground.	1
36	CML-I	Tx1+	Transmitter Non-Inverted Data Input.	
37	CML-I	Tx1-	Transmitter Inverted Data Input.	
38		GND	Module Ground.	1

Notes:

1. GND is the symbol for signal and supply (power) common for the QSFP module. All are common within the QSFP 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. VccRx, Vcc1, and VccTx are the receiver and transmitter power supplies and shall be applied concurrently. VccRx, Vcc1, and VccTx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for a maximum current of 500mA.

Mechanical Specifications
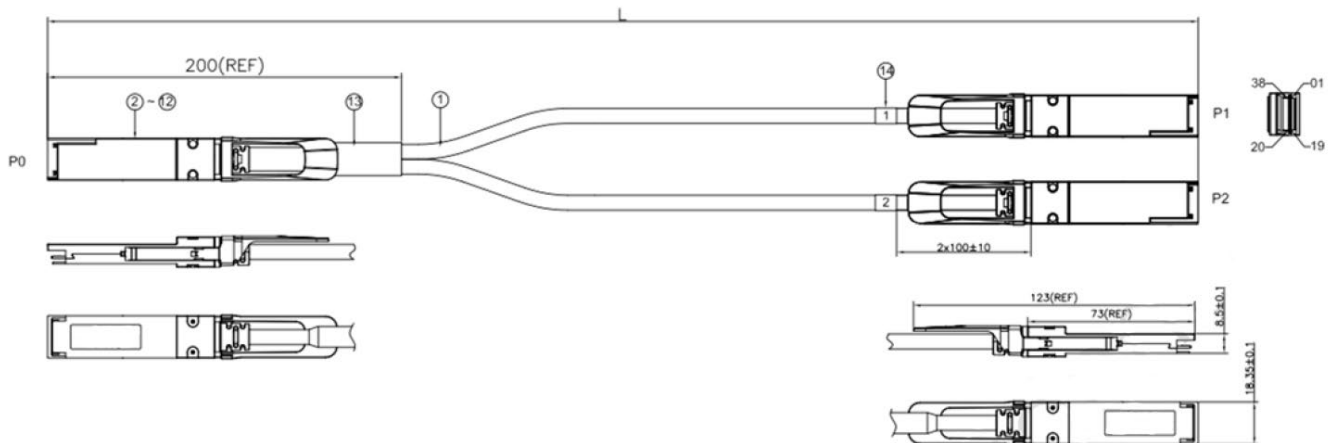
OptioConnect
Innovation for the Future of High-Speed Networking

Who We Are

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.
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