



## **MCA7J50-H003R-OPC**

Mellanox® MCA7J50-H003R Compatible TAA 200GBase-CU QSFP56 to 2xQSFP56 Direct Attach Cable (Active Twinax, 3m, Infiniband HDR)

### **Features**

- QSFP Module Compliant to SFF-8663
- 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-H003R compatible 200GBase-CU QSFP56 to 2xQSFP56 Infiniband HDR direct attach cable that operates over active copper with a maximum reach of 3.0m (9.8ft). 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			3	M
AWG			30		AWG
Jacket Material		PVC, Black			

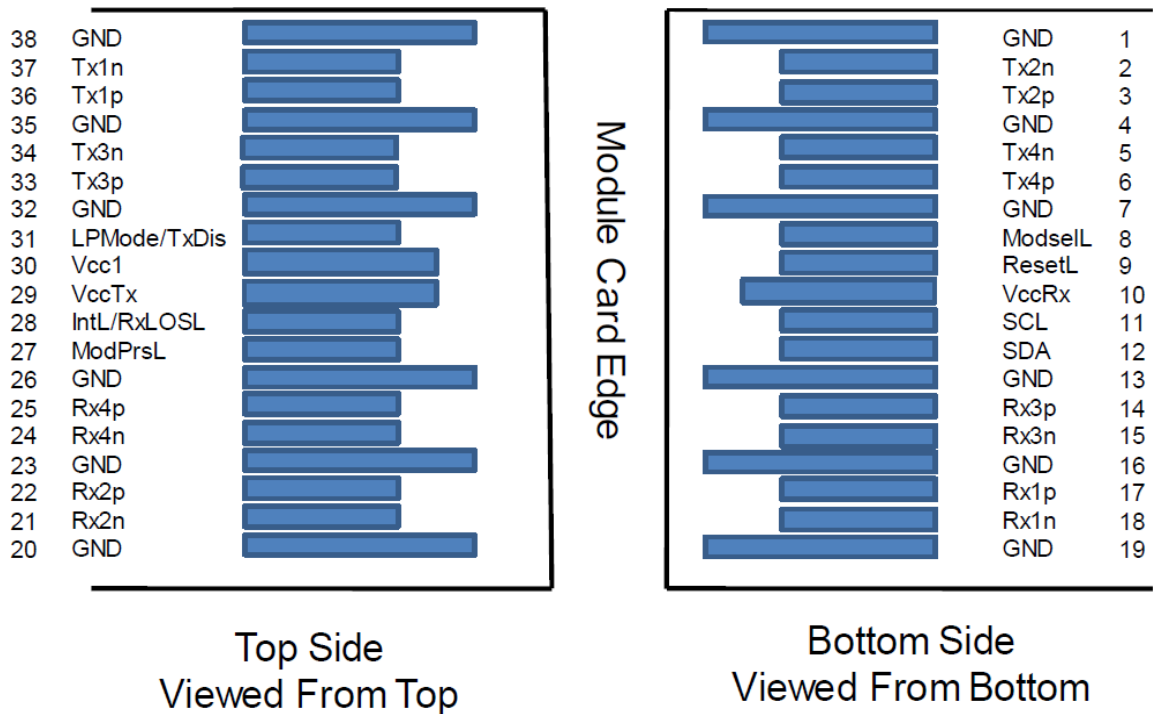
### Electrical Characteristics

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	TStartUp			10	ms
Time from Valid Vcc to VIH of 12C Signals	T12C	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 <sup>-8</sup>	

### Electrical Pin-Out Details for QSFP



## Pin Descriptions

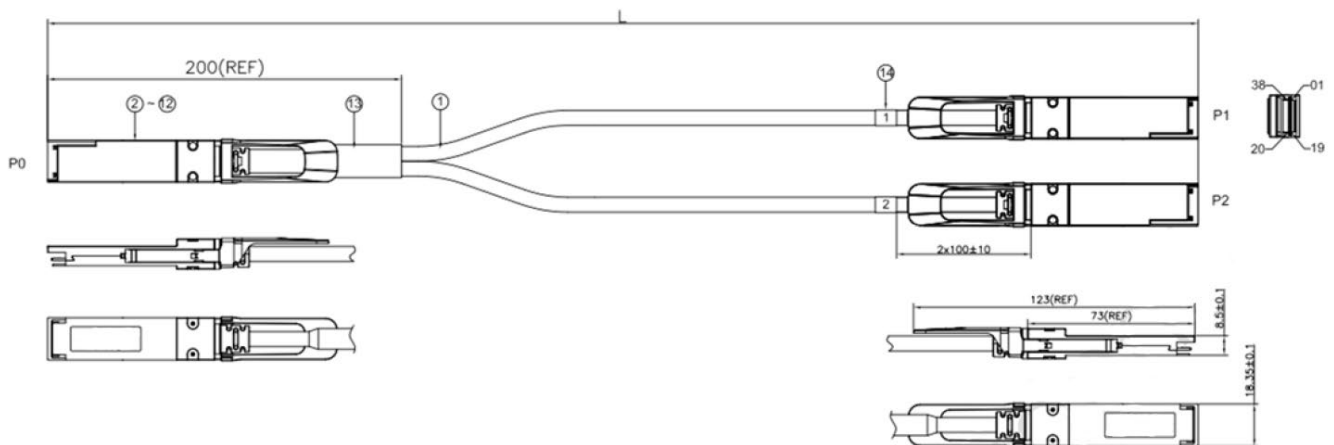
Pin	Logic	Symbol	Name/Description	Notes
1		GND	Module Ground.	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Input.	
4		GND	Module Ground.	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Input.	
7		GND	Module Ground.	1
8	LVTTTL-I	ModSelL	Module Select.	
9	LVTTTL-I	ResetL	Module Reset.	
10		VccRx	+3.3V Receiver Power Supply.	2
11	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock.	
12	LVC MOS-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	LVTTTL-O	ModPrsL	Module Present.	
28	LVTTTL-O	IntL	Interrupt.	
29		VccTx	+3.3V Transmitter Power Supply.	2
30		Vcc1	+3.3V Power Supply.	2
31	LVTTTL-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**

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