

## MC2210130-002-C

Mellanox® MC2210130-002 Compatible TAA Compliant 40GBase-CU QSFP+ Direct Attach Cable (Passive Twinax, 2m)

### Features

- Up to 40Gb/s bi-directional data links
- Compliant with QSFP+ MSA specifications
- Fully Compliant with IEEE802.3ba
- Fully Compliant with InfiniBand QDR specifications
- 4 independent duplex channels operating at 10Gbps
- Support for 2.5Gbps, 5Gbps data rates
- AC coupled inputs and outputs
- 100 Ohm differential impedance
- Enhanced EMI design
- Single power supply 3.3V
- Operating Temperature Range: 0~70°C
- RoHS Compliant



### Application

- 40GBASE Ethernet
- Serial Data Transmission
- QDR

### Product Description

This is a Mellanox® MC2210130-002 compatible 40GBase-CU QSFP+ to QSFP+ direct attach cable that operates over passive copper with a maximum reach of 2.0m (6.6ft). 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.

ProLabs' direct attach cables are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products.



## General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Bit Error Rate	BER			10 <sup>-12</sup>		
Operating Temperature	Tc	0		70	°C	1
Storage Temperature	Tstg	-40		85	°C	2
Supply Current	Icc			4	mA	3
Input Voltage	Vcc	3.14	3.3	3.46	V	3
Cable Impedance	Z	90	100	110	Ω	

### Notes:

1. Case temperature.
2. Ambient temperature.
3. For electrical power interface.

## Cable Dimensions

Length	Standard Wire Gauge AWG	Cable Diameter OD (mm)	Minimum Bending Radius R (mm)
2m	30AWG	6.6	30

## Length Tolerance

Nominal Length L1 (m)	Tolerance Range ± (cm)
L1 ≤ 2	2

## Pin Descriptions

Pin	Symbol	Name/Description	Note
1	GND	Module Ground.	5
2	Tx2-	Transmitter Inverted Data Input. LAN2.	
3	Tx2+	Transmitter Non-Inverted Data Input. LAN2.	
4	GND	Module Ground.	5
5	Tx4-	Transmitter Inverted Data Input. LAN4.	
6	Tx4+	Transmitter Non-Inverted Data Input. LAN4.	
7	GND	Module Ground.	5
8	ModSelL	Module Select Pin. The module responds to 2-wire serial communication when low level.	1
9	ResetL	Module Reset.	2
10	VccRX	+3.3V Power Supply Receiver.	
11	SCL	2-Wire Serial Interface Clock.	

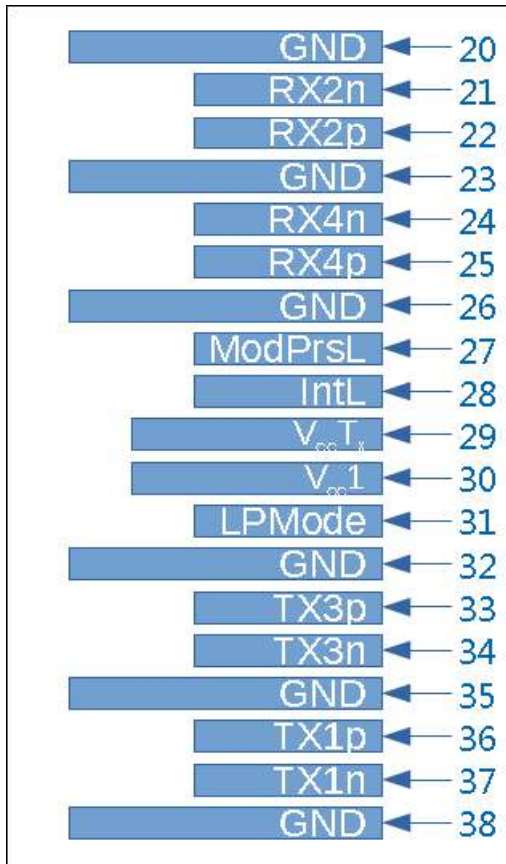
12	SDA	2-Wire Serial Interface Data.	
13	GND	Module Ground.	5
14	Rx3+	Receiver Non-Inverted Data Output. LAN3.	
15	Rx3-	Receiver Inverted Data Output. LAN3.	
16	GND	Module Ground.	5
17	Rx1+	Receiver Non-Inverted Data Output. LAN1.	
18	Rx1-	Receiver Inverted Data Output. LAN1.	
19	GND	Module Ground.	5
20	GND	Module Ground.	5
21	Rx2-	Receiver Inverted Data Output. LAN2.	
22	Rx2+	Receiver Non-Inverted Data Output. LAN2.	
23	GND	Module Ground.	5
24	Rx4-	Receiver Inverted Data Output. LAN4.	
25	Rx4+	Receiver Non-Inverted Data Output. LAN4.	
26	GND	Module Ground.	5
27	ModPrsL	The module is inserted into the indicate pin and grounded in the module.	3
28	IntL	Interrupt.	4
29	VccTx	+3.3V Power Supply Transmitter.	
30	Vcc1	+3.3V Power Supply.	
31	LPMode	Low-Power Mode.	5
32	GND	Module Ground.	5
33	Tx3+	Transmitter Non-Inverted Data Input. LAN3.	
34	Tx3-	Transmitter Inverted Data Input. LAN3.	
35	GND	Module Ground.	5
36	Tx1+	Transmitter Non-Inverted Data Input. LAN1.	
37	Tx1-	Transmitter Inverted Data Input. LAN1.	
38	GND	Module Ground.	5

**Notes:**

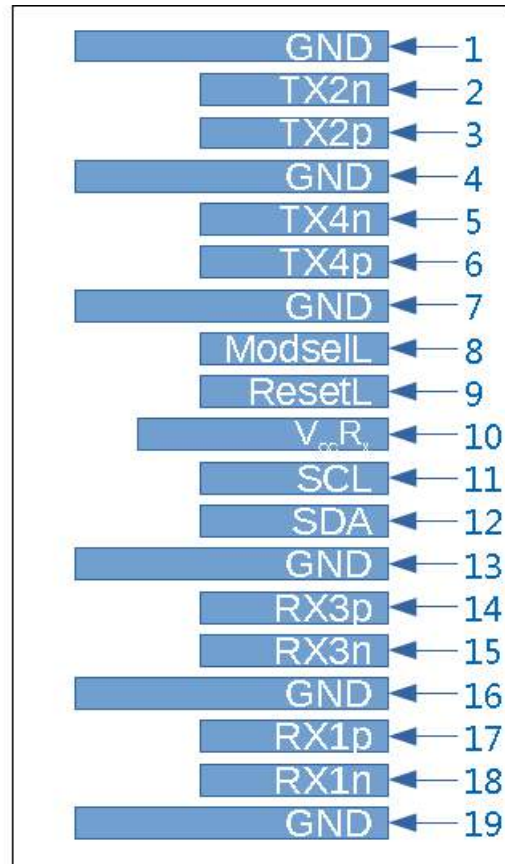
1. ModSelL is the input pin. The module responds to 2-wire serial communication commands when it is held "low" by the host. ModSelL allows multiple QSFP modules to be used on a single 2-wire interface bus. If ModSelL is "high," the module will not respond to any 2-wire interface communication from the host. ModSelL has internal pull-up resistors in the module.
2. The module restart pin, when the "low" level on the ResetL pin, lasts longer than the minimum pulse length, resets the module, and restores all user modules to their default state. When performing reset device, the host should ignore all status bits. Until the module reset interrupt is completed, please note that during hot plugging, the module will issue this information to complete the reset interrupt without resetting.

3. This pin is active, "high," indicating that the module is running under a low-power setting.
4. "IntL" is the output pin, which is the open collector output and must be pulled up to the Vcc on the motherboard. When it is "low," it indicates that the module may malfunction. The host uses a 2-wire serial interface to identify the interrupt source.
5. Circuit ground is internally isolated from the chassis ground.

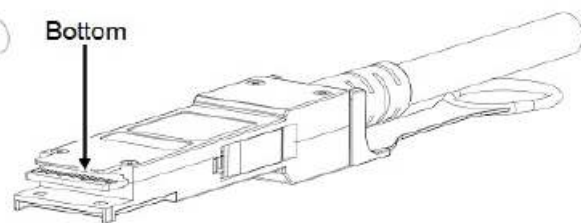
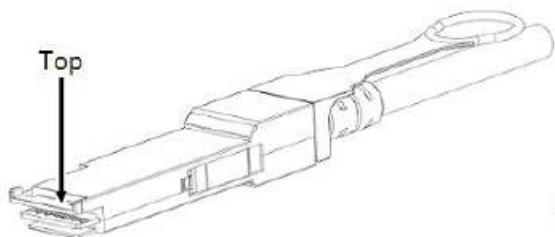
### Electrical Pad Layout



Top of Board



Bottom of Board



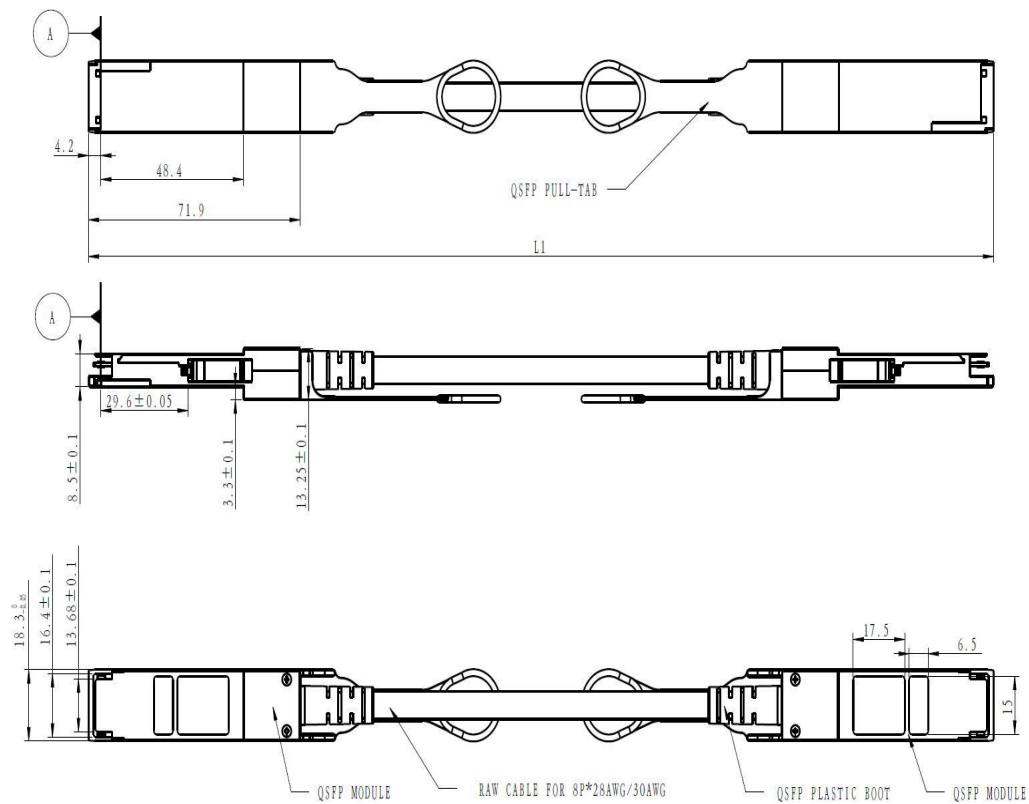
## Weight

Parameter	Symbol	Typ.	Unit	Remarks
30AWG Product Weight	GD30	140	g/PCS	1
30AWG Cable Weight	GC30	62	g/M	
Dust Cap Weight	GQ	1.40	g/PCS	

## Notes:

- For example, the weight of a 5m cable with 28AWG is:  $160 + 76 * (5-1) + 1.40 * 2 = 466.8g$ .

## Mechanical Specifications



All Dimensions are  $\pm 0.2\text{mm}$  Unless Otherwise Specified  
Unit: mm

## **About ProLabs**

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

## **Complete Portfolio of Network Solutions**

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

## **Trusted Partner**

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.

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