



MCP2M00-A002-SKY

Mellanox® MCP2M00-A002 Compatible 25GBase-CU SFP28 Direct Attach Cable (Passive Twinax, 2m)

Product Description

This is a Mellanox® MCP2M00-A002 compatible 25GBase-CU SFP28 to SFP28 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 built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

Features:

- SFF-8431/8432, INF-8074i
- SFP28 to SFP28
- 25.78125Gbps
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free
- Passive copper
- Operating Temperature: 0 to 70 Celsius
- Single power supply 3.3V
- RoHS Compliant and Lead-Free



Applications:

- 25GBase Ethernet

For your product safety, please read the following information carefully before any manipulation of the transceiver:



ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 / JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0		70	°C
Relative Humidity	RH	5		85	%
Data Rate			25.78125		Gbps

Physical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Length	L		2		M	
AWG			30		AWG	
Jacket Material		LSZH, Black				

Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Resistance	Rcon			3	Ω	
Insulation Resistance	Rins			10	MΩ	
Raw Cable Impedance	Zca	95	100	110	Ω	
Mated Connector Impedance	Zmated	85	100	115	Ω	
Insertion Loss @12.89GHz	SDD21	8		22.48	dB	
Return Loss	SDD11/22	$\text{Return_loss}(f) \geq \begin{cases} 16.5-2vf & 0.05 \leq f < 4.1 \\ 10.66-14\log_{10}(f/5.5) & 4.1 \leq f \leq 19 \end{cases}$			dB	1
Differential- to Common-Mode Return Loss	SCD11/22	$\text{Return_loss}(f) \geq \begin{cases} 22-(20/25.78)f & 0.01 \leq f < 12.89 \\ 15-(6/25.78)f & 12.89 \leq f \leq 19 \end{cases}$			dB	2
Differential- to Common-Mode Conversion Loss	SCD21-SDD21	$\text{Conversion_loss}(f) - \text{IL}(f) \geq \begin{cases} 10 & 0.01 \leq f < 12.89 \\ 27-(29/22)f & 12.89 \leq f < 15.7 \\ 6.3 & 15.7 \leq f \leq 19 \end{cases}$			dB	2
Minimum COM	COM	3			dB	

Notes:

1. For $0.05 \leq f \leq 19\text{GHz}$, where f is the frequency in GHz.
2. For $0.01 \leq f \leq 19\text{GHz}$, where f is the frequency in GHz.

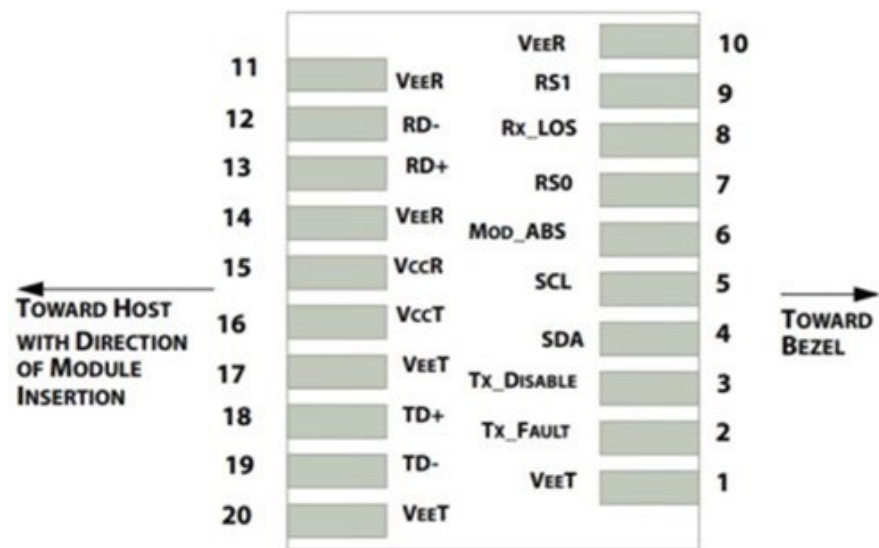
Pin Descriptions

Pin	Logic	Symbol	Name/Description	Plug Sequence	Notes
1		VeeT	Module Transmitter Ground.	1B	1
2	LVTTL-O	Tx_Fault	Module Transmitter Fault.	3B	2
3	LVTTL-I	Tx_Disable	Transmitter Disable. Turns off the transmitter laser output.	3B	3
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data (Same as MOD_DEF2 in INF-8074i).	3B	
5	LVTTL-I/O	SCL	2-Wire Serial Interface Clock (Same as MOD_DEF1 in INF-8074i).	3B	
6		MOD_ABS	Module Absent. Connected to the VeeT or VeeR in the module.	3B	
7	LVTTL-I	RS0	Rate Select 0. Optionally controls the SFP+ module receiver.	3B	4
8	LVTTL-O	Rx_LOS	Receiver Loss of Signal Indication. In FC, designated as Rx_LOS. In Ethernet, designated as Signal Detect.	3B	2
9	LVTTL-I	RS1	Rate Select 1. Optionally controls the SFP+ module transmitter.	3B	4
10		VeeR	Module Receiver Ground.	1B	1
11		VeeR	Module Receiver Ground.	1B	1
12	CML-O	RD-	Receiver Inverted Data Output.	3B	
13	CML-O	RD+	Receiver Non-Inverted Data Output.	3B	
14		VeeR	Module Receiver Ground.	1B	1
15		VccR	Module Receiver 3.3V Supply.	2B	
16		VccT	Module Transmitter 3.3V Supply.	2B	
17		VeeT	Module Transmitter Ground.	1B	1
18	CML-I	TD+	Transmitter Non-Inverted Data Input.	3B	
19	CML-I	TD-	Transmitter Inverted Data Input.	3B	
20		VeeT	Module Transmitter Ground.	1B	1

Notes:

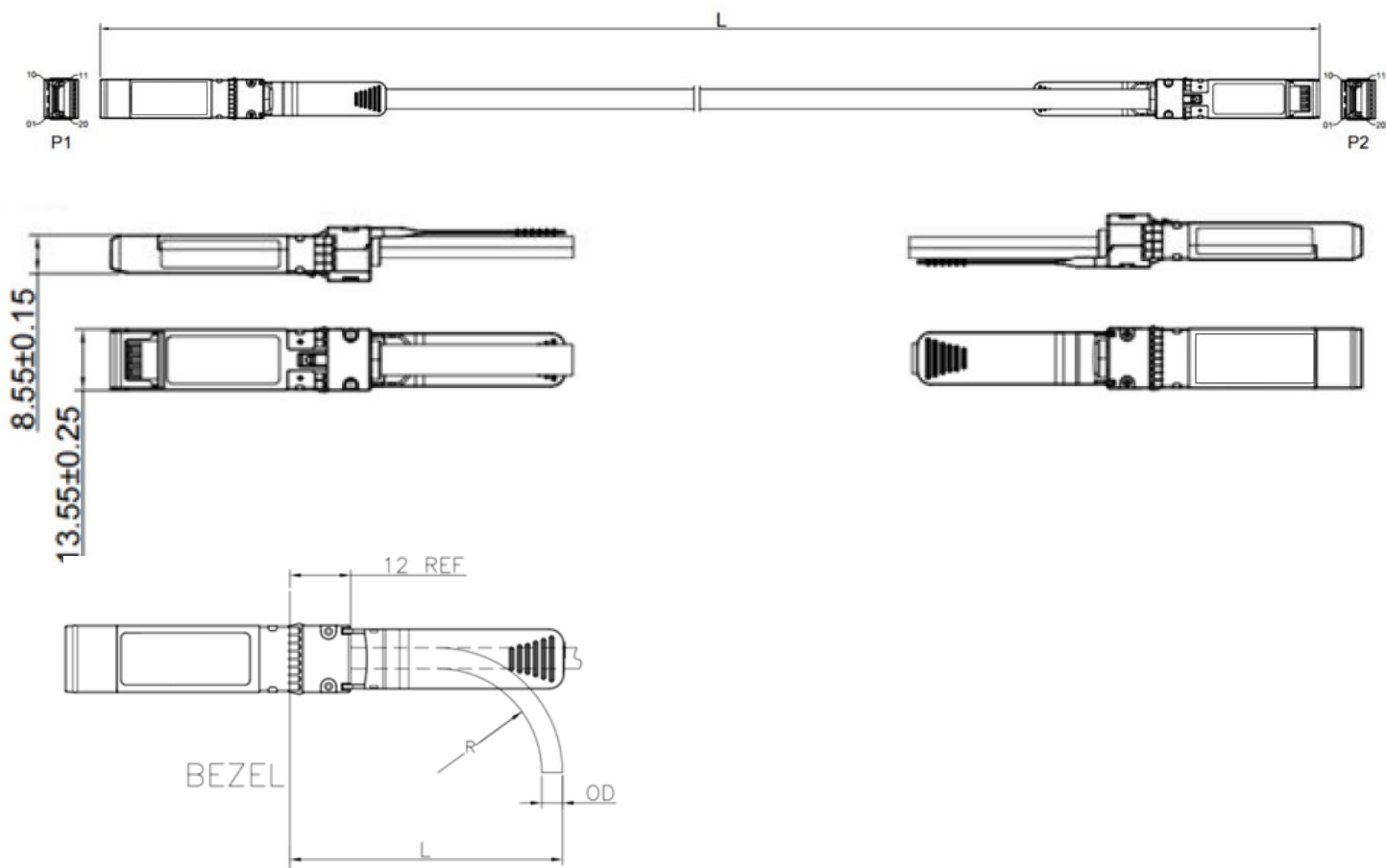
1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output contact and shall be pulled up on the host. Pull-ups can be connected to one of several power supplies; however, the host board design shall ensure that no module contact has a voltage exceeding the module VccT/R+0.5V.
3. Tx_Disable is an input contact with a 4.7kΩ to 10Ω pull-up to the VccT inside the module.
4. For SFF-8431 rate select definition see section 2.4.3 and 2.5. If implementing SFF-8079, contact 7 and 9 in SFF-8431 are used for AS0 and AS1, respectively.

Electrical Pin-Out Details



Electrical Pin-out Details for SFP

Mechanical Specifications



SFP28			
Gauge	OD	Bend Radius "R"	Min. Bend Radius "L"
30AWG	4.5MM	22.5MM	39MM

About Skylane Optics

Skylane is a leading provider of transceivers for optical communication.

We offer an extensive portfolio for the enterprise, access, datacenter and metropolitan fiber optical market as well as for smart home applications and home networks.

We cover the European, South American and North American market with a strong partner network and have offices in Belgium, Brazil, Sweden and USA.

Our offerings are characterized by high quality and performance. In combination with our strong technical support, we enable our customers to build cost optimized network solutions.

We offer an extensive range of high-quality products including transceivers (Optical and copper), Active Optical Cable (AOC), Direct Attach Cable (DAC), Mux/Demux, Coding Box.

