QSFP56-100GB-PDAC3M-MX-SKY

Mellanox® Compatible 100GBase-CU QSFP56 to QSFP56 Direct Attach Cable (Passive Twinax, 3m)

Product Description

This is a Mellanox® compatible 100GBase-CU QSFP56 to QSFP56 direct attach cable that operates over passive 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 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:

- Compliant with SFF-8636
- Support I2C two line strong interface, easy to control
- Compliant with IEEE802.3bj & IEEE802.3cd
- Operating Temperature: -20 to 75 Celsius
- Low Crosstalk
- Hot-pluggable
- RoHS Compliant and Lead-Free
- Low power

Applications:

- 100GBase 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.

Electrical Characteristics

Parameter	Requirement	Test Condition
Differential Impedance		
Cable Impedance	105+5/-10Ω	Rise time of 25ps (20% ~ 80%).
Paddle Card Impedance	100±10Ω	
Cable Termination Impedance	100±15Ω	
Differential (Input/Output) Return Loss SDD11/SDD22	Return_loss (f) ≥ { *16.5-2vf 0.05 ≤ f ‹ 4.1* *10.66-14log10(f/ 5.5) 4.1≤ f≤ 19* } Where f is the frequency in GHz Return loss(f) is the return loss at frequency f	10MHz≤f ≤19GHz
Differential to common mode (Input/Output) Return loss SCD11/SCD22	Return loss (f) ≥ { *22-(20/25.78)f 0.01≤ f ‹ 12.89* *15-(6/25.78)f 12.89≤ f≤ 19* } Where f is the frequency in GHz Return loss(f) is the Differential to common-mode return loss at frequency f	10MHz≤f ≤19GHz
Common mode to common-mode (Input/Output) Return loss SCC11/ SCD22	Return loss *(f)*≥ 2dB 0.2≤f≤19 Where f is the frequency in GHz Return loss (f) is the common-mode to common-mode return loss at frequency f	10MHz≤f ≤19GHz
Low Level Contact Resistance	70 milliohms Max. From initial.	EIA-634-23: Apply a maximum voltage of 20mV and current of 100 mA.
Insulation Resistance	10 Mohm (Min)	EIA364-21:AC 300V 1minute
Dielectric Withstanding Voltage	NO disruptive discharge	EIA-364-20: Apply a voltage o f 300 VDC for 1 minute between adjacent terminals and between adjacent terminals and ground

Differential Insertion Loss Max. For TPa to TPb Excluding Test fixture

	F AWG	1.25GHz	2.5GHz	5.0GHz	7.0GHz	10Ghz	12.89Ghz	10MHz≤f ≤19GHz
Differential Insertion Loss (SDD21 Max)	30(1m) Max.	4.5dB	5.4dB	6.3dB	7.5dB	8.5dB	10.5dB	
	30/28(3m)Max.	7.5dB	9.5dB	12.2dB	14.8dB	18.0dB	21.5dB	
	26(3m) Max.	5.7dB	7.2dB	9.9 dB	11.9dB	14.1dB	16.5dB	
	26/25(5m)Max.	7.8dB	10.0dB	13.5dB	16.0dB	19.0dB	22.0dB	

Insertion Loss Deviation	-0.176*f - 0.7 ≤ ILD ≤ 0.176* f + 0.7	50MHz≤f ≤19GHz
Differential to common mode conversion Loss-Differential Insertion Loss (SCD21-SDD21)	10 0.01≤ f ‹ 12.89 Conversion loss(f) – IL (f) ≥ {*27-(29/22)f 12.89≤ f ‹ 15.7*} *6.3 15.7≤ f≤ 19* Where f is the frequency in GHz Conversion_loss (f) is the cable assembly differential to common-mode conversion loss IL (f) is the cable assembly insertion loss	10MHz≤f ≤19GHz

MDNEXT (multiple disturber near-end crosswalk)	≥26dB @12.89GHz	10MHz≤f ≤19GHz
Intra Skew	15ps/m	10MHz≤f ≤19GHz

Environment Performance

Parameter	Requirement	Test Condition
Operating Temperature Range	-20°C to +75°C	Cable operating temperature range
Storage Temperature Range	-40°C to +80°C	Cable storage temperature range in packed condition
Thermal Cycling Non-Powered	No evidence of physical damage	EIA-364-32D, Method A, -25 to 90C, 100 cycles, 15 min, dwells
Salt Spraying	48 hours salt spraying after shell corrosive area less than 5%	EIA-364-26
Mixed Flowing Gas	Pass electrical tests per 3.1 after stressing (Fpr connector only)	EIA-364-35 Class II, 14 days.
Temp. Life	No evidence of physical damage	EIA-364-17C w/RH, Damp heat 90°C at 85% RH for 500 hours then return to ambient
Cable Cold Bend	4H No evidence of physical damage	Condition: -20°C ±2℃, mandrel diameter is 6 times the cable diameter.

Mechanical and Physical Characteristics

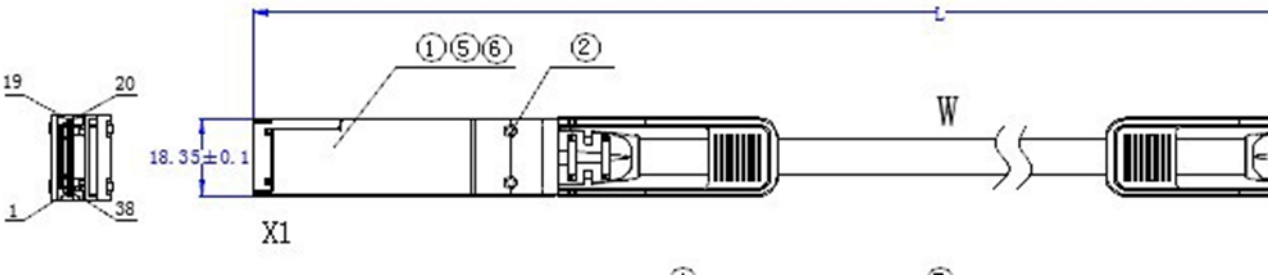
Parameter	Requirement	Test Condition
Vibration	Pass electrical tests per 3.1 after stressing	Clamp & vibrate per EIA-364-28E, TC-VII, test condition letter – D, 15 minutes in X, Y & Z axis
Cable Flex	No evidence of physical damage	Flex cable 180° for 20 cycles (±90° from nominal position) at 12 cycles per minute with a 1.0kg load applied to the cable jacket. Flex in the boot area 90º in each direction from vertical. Per EIA-364-41C
Cable Plug Retention in Cage	90N Min. No evidence of physical damage	Force to be applied axially with no damage to cage. Per SFF 8661 Rev 2.1 Pull on cable jacket approximately 1 ft behind cable plug. No functional damage to cable plug below 90N. Per SFF-8432 Rev 5.0
Cable Retention in Plug	90N Min. No evidence of physical damage	Cable plug is fixtured with the bulk cable hanging vertically. A 90N axial load is applied (gradually) to the cable jacket and held for 1 minute. Per EIA-364-38B
Mechanical Shock	Pass electrical tests Per 3.1 after stressing	Clamp and shock per EIA-364-27B, TC- G,3 times in 6 directions, 100g, 6ms.
Cable Plug Insertion	40N Max (QSFP28)	Per SFF8661 Rev 2.1
Cable plug Extraction	30N Max (QSFP28)	Place axial load on de-latch to de-latch plug.Per SFF8661

		Rev 2.1
Durability	50 cycles, No evidence of physical damage	EIA-364-09, perform plug &unplug cycles:Plug and receptacle mate rate: 250times/hour. 50times for QSFP28/SFP28 module (CONNECTOR TO PCB)

Wiring Diagram

X1	X2	Remarks	X1	X2	Remarks
18 (RX1-)	37(TX1-)	Pair	37(TX1-)	18 (RX1-)	Pair
17 (RX1+)	36 (TX1+)		36 (TX1+)	17 (RX1+)	
15 (RX3-)	34 (TX3-)	Pair	34 (TX3-)	15 (RX3-)	Pair
14 (RX3+)	33 (TX3+)		33 (TX3+)	14 (RX3+)	
6 (TX4+)	25 (RX4+)	Pair	25 (RX4+)	6 (TX4+)	Pair
5 (TX4-)	24 (RX4-)		24 (RX4-)	5 (TX4-)	
3 (TX2+)	22 (RX2+)	Pair	22 (RX2+)	3 (TX2+)	Pair
2 (TX2-)	21 (RX2-)		21 (RX2-)	2 (TX2-)	
1, 4, 7, 13, 16, 19, 20, 23, 26, 32,35,38	1, 4, 7, 13, 16, 19,20, 23, 26, 32, 35, 38	GND	8, 9, 10, 11, 12, 27, 28, 29, 30, 31	8, 9, 10, 11, 12, 27, 28, 29, 30, 31	EEPROM point at both ends

Mechanical Specifications



UNIT: mm

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.