OSFP-ORHS-800GB-A0-5M-SKY

MSA Compliant 800GBase-CU OSFP to OSFP-RHS Direct Attach Cable (Active Twinax, 0.5m)

Product Description

This is an MSA compliant 800GBase-CU OSFP to OSFP-RHS direct attach cable that operates over active copper with a maximum reach of 50.0cm (1.6ft). 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:

- OSFP MSA Compliant
- Transmission Data Rate Up to PAM4 106.25Gbps Per Channel
- InfiniBand NDR Compatible
- Linear PAM4 Programmable Equalizer Optimized for 56GBaud
- Enabled Auto-Negotiation and Link Training
- Low Power Consumption
- Supports Device Programming by MCU with I2C
- Low Latency:
- Operating Temperature: 0 to 70 Celsius
- 3.3V Power Supply
- RoHS Compliant and Lead-Free

Applications:

- 800GBase InfiniBand

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	-0.3	3.3	3.6	V
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0		70	°C
Humidity	RH	5		85	%
Data Rate	DR		800		Gbps

Physical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Length	L			0.5	M
AWG			32		AWG
Jacket Material	Plastic Braided Mesh Technology Net				

Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	Vcc	3.1	3.3	3.5	V
Input Amplitude		800		1200	mVpp
Input Low Voltage	VIL	-0.3		0.35*Vcc	V
Input High Voltage	VIH	0.65*Vcc		Vcc+0.3	V
Output Logic Low	VOL			0.25*Vcc	V
I^2C Master-Mode Output Frequency			400		kHz
800G End Power Consumption			1.2	1.5	W

High-Speed Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Raw Cable Impedance	Zca	90	100	110	Ω	
Mated Connector Impedance	Zmated	85		115	Ω	
Maximum Insertion Loss @26.56GHz	SDD21	11		19.75	dB	
Differential- to Common-Mode Return Loss	SCD11/22	$RLcd(f) \geq \begin{cases} 22 - 10(f/26.56) & 0.05 \leq f < 26.56 \\ 15 - 3(f/26.56) & 26.56 \leq f \leq 40 \end{cases}$			dB	1
Differential to Common-Mode Conversion Loss	SCD21-SDD21	$Conversion_loss(f) - \begin{cases} 10 & 0.05 \leq f < 12.89 \\ 14 - 0.3108f & 12.89 \leq f \leq 40 \end{cases}$			dB	1
Common-Mode to Common-Mode Return Loss	SCC11/22	$RLcc(f) \geq 1.8$			dB	1
Minimum COM	COM	3			dB	
Minimum Cable Assembly ERL	ERL	8.25			dB	
BER				2.4×10^{-4}		

Notes:

1. For $0.05 \leq f \leq 40$GHz, where f is the frequency in GHz.

Pin Descriptions

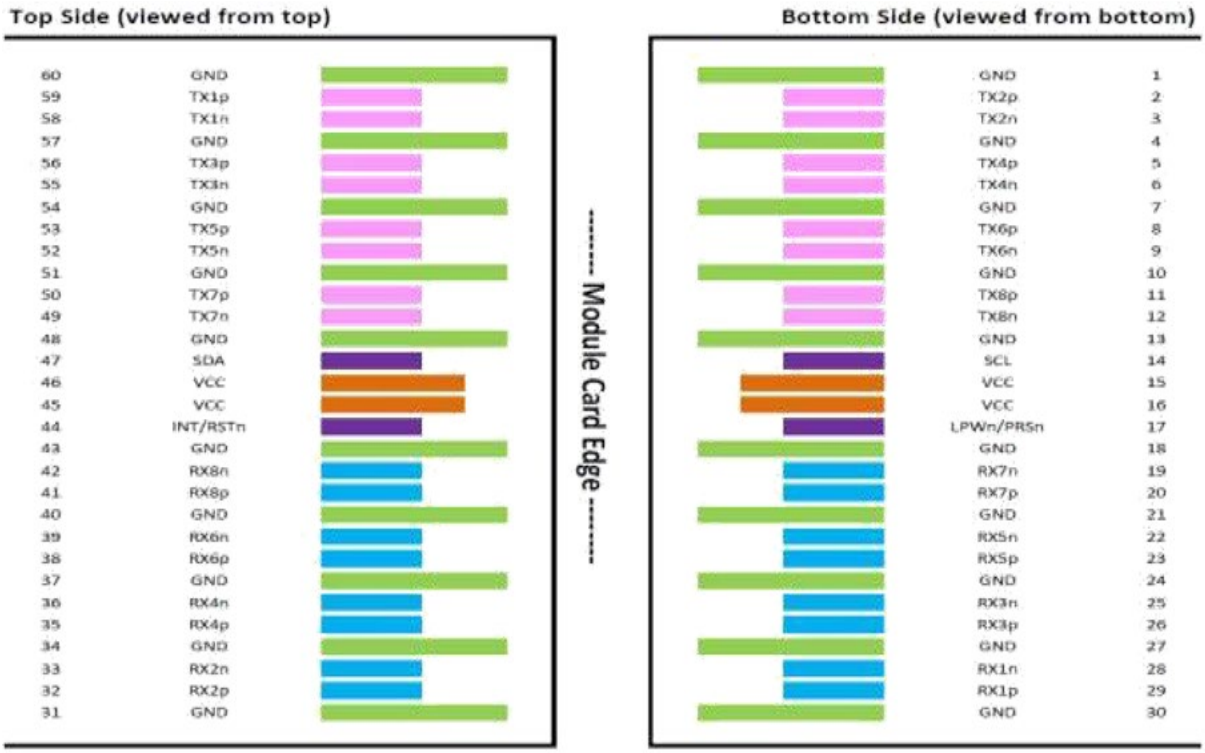
Pin	Symbol	Name/Description	Logic	Plug Sequence	Direction	Notes
1	GND	Module Ground.		1		
2	TX2p	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
3	TX2n	Transmitter Data Inverted.	CML-I	3	Input from Host	
4	GND	Module Ground.		1		
5	TX4p	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
6	TX4n	Transmitter Data Inverted.	CML-I	3	Input from Host	
7	GND	Module Ground.		1		
8	TX6p	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
9	TX6n	Transmitter Data Inverted.	CML-I	3	Input from Host	
10	GND	Module Ground.		1		
11	TX8p	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
12	TX8n	Transmitter Data Inverted.	CML-I	3	Input from Host	
13	GND	Module Ground.		1		
14	SCL	2-Wire Serial Interface Clock.	LVCMOS-I/O	3	Bi-Directional	1
15	Vcc	+3.3V Power.		2	Power from Host	
16	Vcc	+3.3V Power.		2	Power from Host	
17	LPWn/PRSn	Low-Power Mode/Module Present.	Multi-Level	3	Bi-Directional	2
18	GND	Module Ground.		1		
19	RX7n	Receiver Data Inverted.	CML-O	3	Output to Host	
20	RX7p	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
21	GND	Module Ground.		1		
22	RX5n	Receiver Data Inverted.	CML-O	3	Output to Host	
23	RX5p	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
24	GND	Module Ground.		1		
25	RX3n	Receiver Data Inverted.	CML-O	3	Output to Host	
26	RX3p	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
27	GND	Module Ground.		1		
28	RX1n	Receiver Data Inverted.	CML-O	3	Output to Host	
29	RX1p	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
30	GND	Module Ground.		1		
31	GND	Module Ground.		1		
32	RX2p	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
33	RX2n	Receiver Data Inverted.	CML-O	3	Output to Host	
34	GND	Module Ground.		1		
35	RX4p	Receiver Data Non-Inverted.	CML-O	3	Output to Host	

36	RX4n	Receiver Data Inverted.	CML-O	3	Output to Host	
37	GND	Module Ground.		1		
38	RX6p	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
39	RX6n	Receiver Data Inverted.	CML-O	3	Output to Host	
40	GND	Module Ground.		1		
41	RX8p	Receiver Data Non-Inverted.	CML-O	3	Output to Host	
42	RX8n	Receiver Data Inverted.	CML-O	3	Output to Host	
43	GND	Module Ground.		1		
44	INT/RSTn	Module Interrupt/Module Reset.	Multi-Level	3	Bi-Directional	2
45	Vcc	+3.3V Power.		2	Power from Host	
46	Vcc	+3.3V Power.		2	Power from Host	
47	SDA	2-Wire Serial Interface Data.	LVCMOS-I/O	3	Bi-Directional	1
48	GND	Module Ground.		1		
49	TX7n	Transmitter Data Inverted.	CML-I	3	Input from Host	
50	TX7p	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
51	GND	Module Ground.		1		
52	TX5n	Transmitter Data Inverted.	CML-I	3	Input from Host	
53	TX5p	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
54	GND	Module Ground.		1		
55	TX3n	Transmitter Data Inverted.	CML-I	3	Input from Host	
56	TX3p	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
57	GND	Module Ground.		1		
58	TX1n	Transmitter Data Inverted.	CML-I	3	Input from Host	
59	TX1p	Transmitter Data Non-Inverted.	CML-I	3	Input from Host	
60	GND	Module Ground.		1		

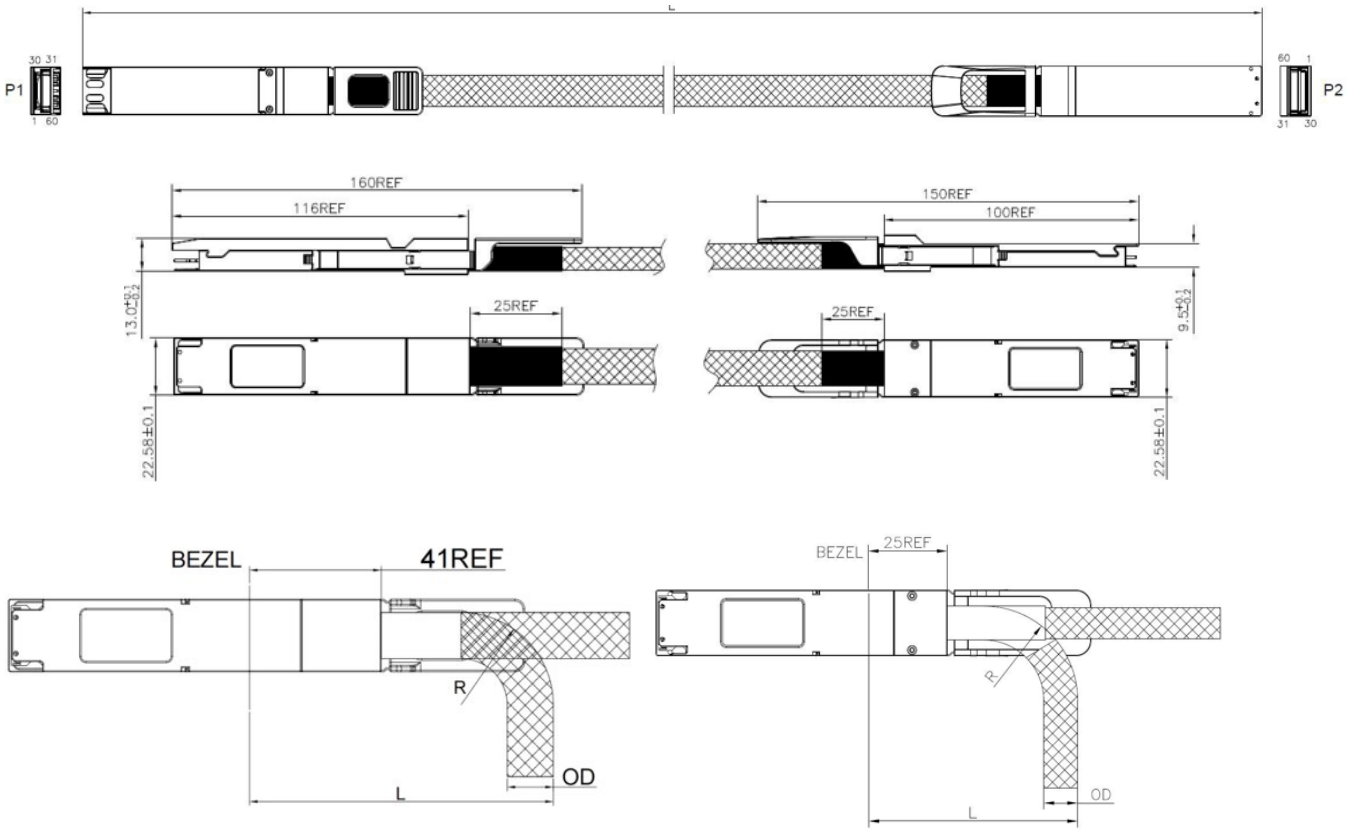
Notes:

1. Open-drain with pull-up resistor on the host.
2. See “Pin Assignments” below.

Pin Assignments



Mechanical Specifications



Bending Radius

Wire Gauge	OSFP Type 2			OSFP-RHS		
	OD (Ref.)	Bend Radius “R”	Min. Bend Radius “L”	OD (Ref.)	Bend Radius “R”	Min. Bend Radius “L”
32AWG	7.0mm	15mm	75mm	7.0mm	15mm	59mm

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.