800G Twin-port 2x400G OSFP Passive DAC Cable

800G OSFP Cable Series

- **Compliant to OSFP MSA**
- **Transmission data rate up to PAM4 106.25Gbps per channel**
- **Enable 800Gb/s Transmission**
- **Link length up to 3m**
- **Built-in EEPROM functions**
- **Operating case temperature 0°C to +70°C**
- **RoHS2.0 compliant**

800G OSFP DAC (Passive Direct Attach Copper) enables high-bandwidth 800G links and supports 800G Ethernet rate. It provides an OSFP copper direct-attach solution. This cable is compliant with OSFP MSA (Multi-Source Agreement), IEEE 802.3ck and 400GBase-CR4 standards. This direct attach copper twinax cable is suitable for short-distance connectivity within a rack or between adjacent racks in data centers.

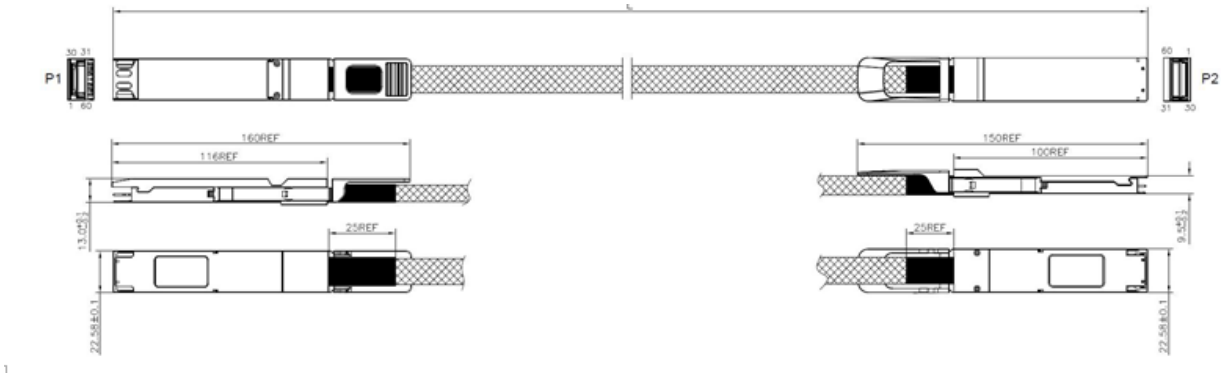
Using the Octal Small Form factor Plug (OSFP) and contains 8 independent full-duplex passive copper cable, each operating at data rates up to 106.25Gb/s, which are suitable for very short links and offer a cost-effective and power-efficient way to establish a 800-Gigabit link between OSFP ports of switches/routers within racks and across adjacent racks.

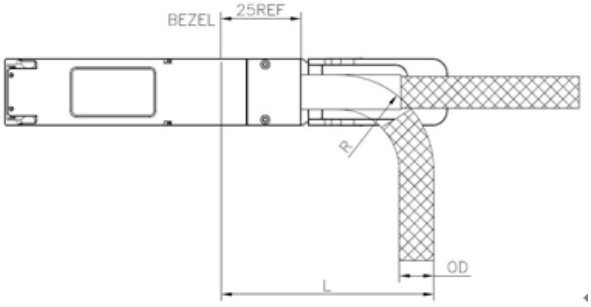
The 800G OSFP DAC assembly is high-speed, cost-effective alternatives to OSFP optical modules in 800G Ethernet applications. It meets OSFP800 MSA, IEE802.3ck, 400GBase-CR4 standards. These high performance 800G OSFP-to-OSFP copper direct-attach cables are offered in lengths of 1, 1.5, and 2 meters.

Key Features

- OSFP Module compliant to OSFP MSA
- Transmission data rate up to PAM4 106.25Gbps per channel
- Enable 800Gb/s Transmission
- Link length up to 3m
- Built-in EEPROM functions
- Operating case temperature 0°C to +70°C
- RoHS2.0 compliant

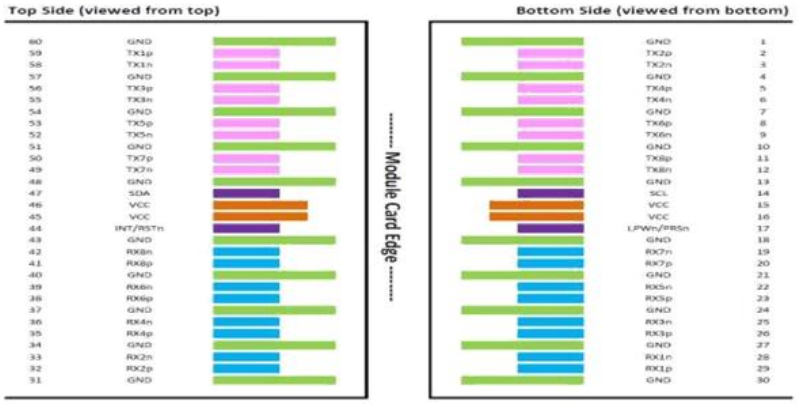
Mechanical Dimensions





OSFP RHS			
GAUGE	OD	BEND RADIUS "R"	MIN. BEND RADIUS "L"
28AWG	10.2MM	21MM	65MM
26/25AWG	12.1MM	25MM	70MM

Pin Description



Pin	Symbol	Description	Logic	Direction	Plug Sequence	Notes
1	GND	Ground			1	
2	TX2p	Transmitter Data Non-Inverted	CML-I	Input from Host	3	
3	TX2n	Transmitter Data Inverted	CML-I	Input from Host	3	
4	GND	Ground			1	
5	TX4p	Transmitter Data Non-Inverted	CML-I	Input from Host	3	
6	TX4n	Transmitter Data Inverted	CML-I	Input from Host	3	
7	GND	Ground			1	
8	TX6p	Transmitter Data Non-Inverted	CML-I	Input from Host	3	
9	TX6n	Transmitter Data Inverted	CML-I	Input from Host	3	
10	GND	Ground			1	
11	TX8p	Transmitter Data Non-Inverted	CML-I	Input from Host	3	
12	TX8n	Transmitter Data Inverted	CML-I	Input from Host	3	
13	GND	Ground			1	
14	SCL	2-wire Serial interface clock	LVCMOS-I/O	Bi-directional	3	
15	VCC	+3.3V Power		Power from Host	2	
16	VCC	+3.3V Power		Power from Host	2	
17	LPWn/PRSn	Low-Power Mode/ Module Present	Multi-Level	Bi-directional	3	
18	GND	Ground			1	
19	RX7n	Receiver Data Inverted	CML-O	Output to Host	3	
20	RX7p	Receiver Data Non-Inverted	CML-O	Output to Host	3	
21	GND	Ground			1	
22	RX5n	Receiver Data Inverted	CML-O	Output to Host	3	
23	RX5p	Receiver Data Non-Inverted	CML-O	Output to Host	3	
24	GND	Ground			1	
25	RX3n	Receiver Data Inverted	CML-O	Output to Host	3	
26	RX3p	Receiver Data Non-Inverted	CML-O	Output to Host	3	

Pin	Symbol	Description	Logic	Direction	Plug Sequence	Notes
27	GND	Ground			1	
28	RX1n	Receiver Data Inverted	CML-O	Output to Host	3	
29	RX1p	Receiver Data Non-Inverted	CML-O	Output to Host	3	
30	GND	Ground			1	
31	GND	Ground			1	
32	RX2p	Receiver Data Non-Inverted	CML-O	Output to Host	3	
33	RX2n	Receiver Data Inverted	CML-O	Output to Host	3	
34	GND	Ground			1	
35	RX4p	Receiver Data Non-Inverted	CML-O	Output to Host	3	
36	RX4n	Receiver Data Inverted	CML-O	Output to Host	3	
37	GND	Ground			1	
38	RX6p	Receiver Data Non-Inverted	CML-O	Output to Host	3	
39	RX6n	Receiver Data Inverted	CML-O	Output to Host	3	
40	GND	Ground			1	
41	RX8p	Receiver Data Non-Inverted	CML-O	Output to Host	3	
42	RX8n	Receiver Data Inverted	CML-O	Output to Host	3	
43	GND	Ground			1	
44	INT/RSTn	Module Interrupt / Module Reset	Multi-Level	Bi-directional	3	
45	VCC	+3.3V Power		Power from Host	2	
46	VCC	+3.3V Power		Power from Host	2	
47	SDA	2-wire Serial interface data	LVCMOS-I/O	Bi-directional	3	
48	GND	Ground			1	
49	TX7n	Transmitter Data Inverted	CML-I	Input from Host	3	
50	TX7p	Transmitter Data Non-Inverted	CML-I	Input from Host	3	
51	GND	Ground			1	
52	TX5n	Transmitter Data Inverted	CML-I	Input from Host	3	
53	TX5p	Transmitter Data Non-Inverted	CML-I	Input from Host	3	
54	GND	Ground			1	
55	TX3n	Transmitter Data Inverted	CML-I	Input from Host	3	
56	TX3p	Transmitter Data Non-Inverted	CML-I	Input from Host	3	
57	GND	Ground			1	
58	TX1n	Transmitter Data Inverted	CML-I	Input from Host	3	
59	TX1p	Transmitter Data Non-Inverted	CML-I	Input from Host	3	
60	GND	Ground			1	

Module Memory Map

Compatible with CMIS rev 5.0 or further CMIS revisions and customer spec

Specifications

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Supply Voltage	V_{cc}	3.13	3.3	3.47	V
Storage temperature	T_s	-40		85	°C
Operating Case temperature	T_c	0		70	°C
Humidity	Rh	5		85	%
Data Rate			800		Gbps

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Length	L	0.5		3.0	M
AWG		28		25	AWG
Jacket material	Hair Tail Technology Net, Gray				

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.		Unit
Resistance	R_{con}			3		ohm
Insulation Resistance	R_{ins}			10		Mohm
Raw cable impedance	Z_{ca}	95		110		ohm
Mated connector Impedance	Z_{mated}	85		110		ohm
Maximum insertion Loss at 26.56 GHz	SDD21	11		18	1.5M	dB
				19.75	2.0M	
		0.5		25.3	3.0M	
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
		For 0.05 =f =40 GHz, Where f is the frequency in GHz				
Differential to common-mode conversion loss	SCD21-SDD21	$Conversion\_loss(f) - IL(f) \geq \begin{cases} 10 & 0.05 \leq f < 12.89 \\ 14-0.3108f & 12.89 \leq f \leq 40 \end{cases}$				dB
		For 0.05 =f =40 GHz, Where f is the frequency in GHz				
Common-mode to common-mode return loss	SCC11/22	RLCC ≥18 For 0.05 =f =40 GHz, Where f is the frequency in GHz				dB
Minimum COM	COM	3				dB

Ordering Information

Product Name	Product Description
OSFP-800G-DAC01	800G OSFP Passive Direct Attach Copper Cable, IB twin port NDR, 1m (3ft), 28AWG, Flat top to Finned top
OSFP-800G-DAC015	800G OSFP Passive Direct Attach Copper Cable, IB twin port NDR, 1.5m (4.5ft), 28AWG, Flat top to Finned top
OSFP-800G-DAC02	800G OSFP Passive Direct Attach Copper Cable, IB twin port NDR, 2m (6ft), 28AWG, Flat top to Finned top

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