TITLE	DOC No. RFD-20250410100-001	
800G OSFP PAM4 Active Copper Cable	REVISION: 01	AUTHORIZED BY: Hawk Rong
	DATE: 2025.04.10	CLASSIFICATION: Active Copper Cable

1. Features and Benefits

- Compatible with IEEE 802.3ck
- Supports aggregate data rates of 800Gbps(PAM4)
- Optimized construction to minimize insertion loss and crosstalk
- Pull-to-release slide latch design
- Straight and break out assembly configurations available
- Customized cable braid termination limits EMI radiation
- Customizable EEPROM mapping for cable signature
- 26AWG and 30AWG cable
- 3.3V Power supply
- Low power Consumes 0.15W per active channel , the total power of the cable is 2.5W
- EQ programmable
- Temperature Range: 0~ 70 °C

2. Product Applications

- Switches, servers and routers
- Data Center networks
- Storage area networks
- High performance computing
- Telecommunication and wireless infrastructure
- Medical diagnostics and networking
- Test and measurement equipment

3. Industry Standards

- 800G Ethernet(IEEE 802.3ck)
- InfiniBand NDR

4. Product Description

OSFP active copper cable assembly feature sixteen differential copper pairs, providing eight data transmission channels at speeds up to 100Gbps(PAM4) per channel, and meets 800G Ethernet and InfiniBand Next Data Rate(NDR) requirements. Available in 26AWG and 30AWG wire gauges, this 800G copper cable assembly features low insertion loss and low crosstalk.

OSFP active copper cable uses PAM4 signals for transmission, which doubles the rate. However, there are more stringent requirements for cable insertion loss. For detailed requirements, please see High Speed Characteristics.

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4.1 Product Name And Series Number (S)

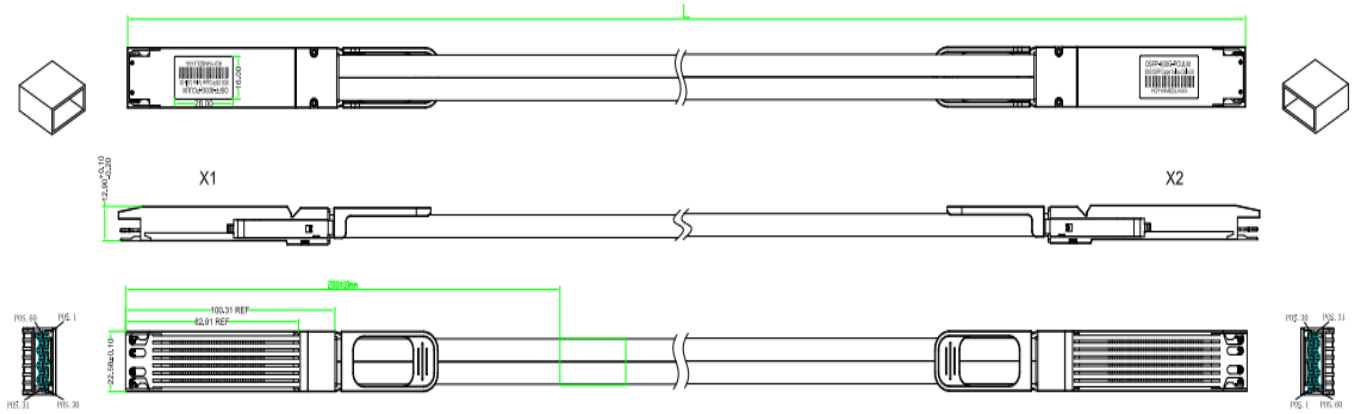
800G OSFP Active Copper Cable

JPC P/N	Length(m)	Cable AWG	Description
P83**7A0A**M-1	1.0m – 4.0m	30 AWG	800G OSFP ACC PAM4 30AWG **m
P83**7C0A**M-1	4.5m – 5.0m	26 AWG	800G OSFP ACC PAM4 26AWG **m

Note-1： ** **Indicates the customer code.**
Note-2： ** **Indicates the length.**

4.2 Mechanical Specifications

The connector is compatible with the SFF8024 specification.



(All Dimensions are ±0.20mm Unless Otherwise Specified, Unit: mm)

Length (m)	Cable AWG
1	30
2	30
3	30
4	30
5	26

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5. General Product Characteristics

OSFP ACC Specifications	
Number of Lanes	Tx8 & Rx8
Channel Data Rate	106. 25Gbps
Operating Temperature	0 to + 70°C
Storage Temperature	-40 to + 85°C
Supply Voltage	3.3 V nominal
Electrical Interface	60pins edge connector
Management Interface	Serial, I^2C

6. High Speed Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential Impedance	TDR	90	100	110	Ω	
Insertion loss	SDD21	-19.75			dB	At 26.56 GHz
Differential Return Loss	SDD11 SDD22			See 1	dB	At 0.05 to 26.56GHz
				See 2	dB	At 26.56 to 40 GHz
Common-mode to common-mode output return loss	SCC11 SCC22			-2	dB	At 0.2 to 40GHz
Differential to common Mode Conversion Loss	SCD21-SDD21			-10	dB	At 0.05 to 12.89 GHz
				See3		At 12.89 to 40 GHz

Notes:
1. Reflection Coefficient given by equation SDD11(dB) <22-10(f/26.56), with f in GHz
2. Reflection Coefficient given by equation SDD11(dB) <15-3(f/26.5), with f in GHz
3. Reflection Coefficient given by equation SCD21-CDD21(dB) < 14-0.3108*f, with f in GHz

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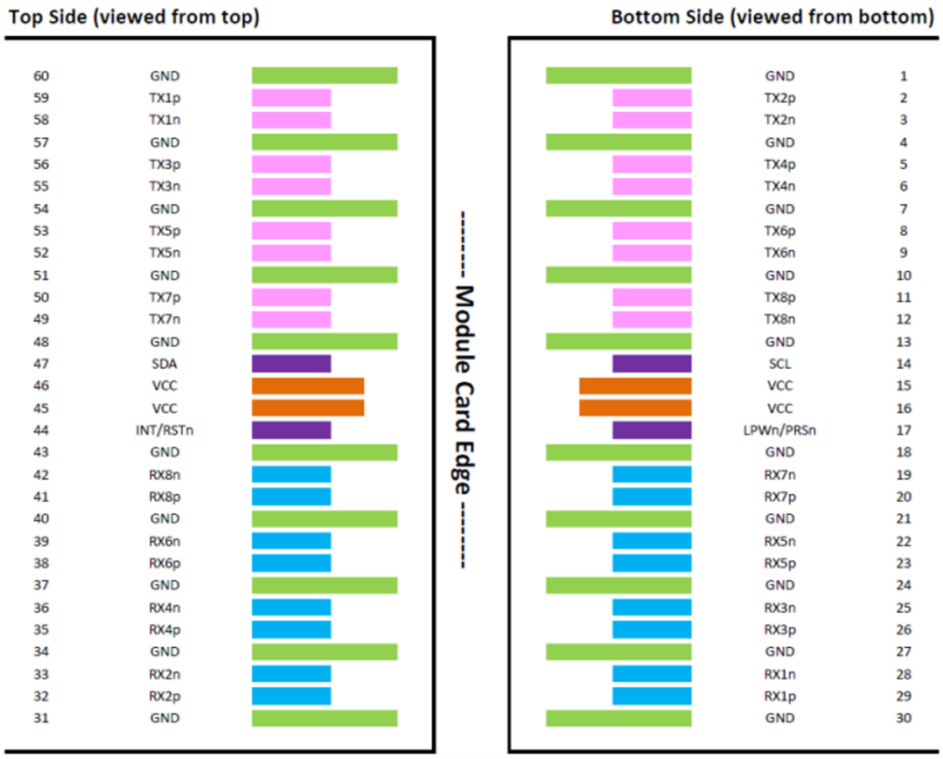
7. Pin Assignment



Pin Description

Pin	Logic	Symbol	Description
1		GND	Ground
2	CML-I	Tx2p	Transmitter Non-Inverted Data Input
3	CML-I	Tx2n	Transmitter Inverted Data Input
4		GND	Ground
5	CML-I	Tx4p	Transmitter Non-Inverted Data Input
6	CML-I	Tx4n	Transmitter Inverted Data Input
7		GND	Ground
8	CML-I	Tx6p	Transmitter Non-Inverted Data Input
9	CML-I	Tx6n	Transmitter Inverted Data Input
10		GND	Ground
11	CML-I	Tx6p	Transmitter Non-Inverted Data Input
12	CML-I	Tx6n	Transmitter Inverted Data Input
13		GND	Ground
14	LVCMOS-	SCL	2-wire serial interface clock

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	I/O		
15		VCC	+3.3V Power supply
16		VCC	+3.3V Power supply
17		LPWn/PRSn	Low-Power Mode / Module Present
18		GND	Ground
19	CML-O	Rx7n	Receiver Inverted Data Output
20	CML-O	Rx7p	Receiver Non-Inverted Data Output
21		GND	Ground
22	CML-O	Rx5n	Receiver Inverted Data Output
23	CML-O	Rx5p	Receiver Non-Inverted Data Output
24		GND	Ground
25	CML-O	Rx3n	Receiver Inverted Data Output
26	CML-O	Rx3p	Receiver Non-Inverted Data Output
27		GND	Ground
28	CML-O	Rx1n	Receiver Inverted Data Output
29	CML-O	Rx1p	Receiver Non-Inverted Data Output
30		GND	Ground
31		GND	Ground
32	CML-O	Rx2p	Receiver Non-Inverted Data Output
33	CML-O	Rx2n	Receiver Inverted Data Output
34		GND	Ground
35	CML-O	Rx4p	Receiver Non-Inverted Data Output
36	CML-O	Rx4n	Receiver Inverted Data Output
37		GND	Ground
38	CML-O	Rx6p	Receiver Non-Inverted Data Output
39	CML-O	Rx6n	Receiver Inverted Data Output
40		GND	Ground
41	CML-O	Rx8p	Receiver Non-Inverted Data Output
42	CML-O	Rx8n	Receiver Inverted Data Output
43		GND	Ground
44		INT/RSTn	Module Interrupt / Module Reset
45		VCC	+3.3V Power supply
46		VCC	+3.3V Power supply
47	LVCMOS-I/O	SDA	2-wire serial interface data
48		GND	Ground
49	CML-I	Tx7n	Transmitter Inverted Data
50	CML-I	Tx7p	Input Transmitter Non-Inverted Data Input
51		GND	Ground
52	CML-I	Tx5n	Transmitter Inverted Data
53	CML-I	Tx5p	Input Transmitter Non-Inverted Data Input
54		GND	Ground
55	CML-I	Tx3n	Transmitter Inverted Data
56	CML-I	Tx3p	Input Transmitter Non-Inverted Data Input

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57		GND	Ground
58	CML-I	Tx1n	Transmitter Inverted Data
59	CML-I	Tx1p	Input Transmitter Non-Inverted Data Input
60		GND	Ground

8. Regulatory Compliance

Feature	Test Method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883C Method 3015.7	Class 1(>2000 Volts)
Electromagnetic Interference(EMI)	FCC Class B	Compliant with Standards
	CENELEC EN55022 Class B	
	CISPR22 ITE Class B	
RF Immunity(RFI)	IEC61000-4-3	Typically Show no Measurable Effect from a 10V/m Field Swept from 80 to 1000MHz
RoHS Compliance	RoHS Directive 2011/65/EU and it's Amendment Directives （EU）2015/863	RoHS （EU）2015/863 compliant
REACH Compliance	REACH Regulation (EC) No 1907/2006	REACH (EC) No 1907/2006 compliant

9. Modification History

Rev.	Comments	Date	Originator	Approval
01	Initial	2025.04.10	Hawk Rong	Mike Sun