EDOP800-2OPxx

800Gbps OSFP112 To 2x 400G OSFP Passive High Speed Cable

PRODUCT FEATURES

- **Products Compliance with CMIS, OSFP_MSA**
- **Ethernet-Compliance with IEEE802.3ck**
- **Support 112G (PAM4) electrical data rates/channel**
- **Support I2C two - line string interface, easy to control**
- **Support for hot plugging**
- **Low crosstalk/Low power**
- **Maximum Link Length: up to 2m**
- **ROHS Compliance**

APPLICATIONS

- **Telecommunications equipment**
- **Servers, Routers, Switches**
- **Central office, Cellular infrastructure**
- **Servers, Storage**

Description

The 800G OSFP112 to 2x400Gb/s OSFP Passive Direct Attach Copper Twinax Cable is designed for use in 800GBASE Ethernet， QSFP112 is the module and cage/connector system based on current OSFP, targeting to support the 112Gb/s per lane speed in a 8x lane OSFP system and to enable the QSFP 800G interconnect ecosystem. This will greatly help the legacy OSFP users upgrade the link bandwidth to 800G per port with lower cost and shorter transition time.

Information

Part No.	Description
EDOP800-2OPxx-30	800Gbps OSFP112 To 2x 400G OSFP Passive High Speed Cable 30AWG 0.5~1M
EDOP800-2OPxx-28	800Gbps OSFP112 To 2x 400G OSFP Passive High Speed Cable 28AWG 1.5~3M

Notes:

1. where "x" denotes cable length in meters. Examples are as follows:
2. xx = 0.5 for 0.5m，x=1for 1m

Wiring Diagram

WIRE	START			END		WIRE	START			END	
W 1	GND	X1.60	-----	X2.30	GND	W 2	GND	X1.54	-----	X3.30	GND
	TX1+	X1.59	--->	X2.29	RX1+		TX5+	X1.53	--->	X3.29	RX1+
	TX1-	X1.58	--->	X2.28	RX1-		TX5-	X1.52	--->	X3.28	RX1-
	GND	X1.57	-----	X2.27	GND		GND	X1.51	-----	X3.27	GND
	GND	X1.30	-----	X2.60	GND		GND	X1.24	-----	X3.60	GND
	RX1+	X1.29	-----	X2.59	TX1+		RX5+	X1.23	<---	X3.59	TX1+
	RX1-	X1.28	<---	X2.58	TX1-		RX5-	X1.22	<---	X3.58	TX1-
	GND	X1.27	<---	X2.57	GND		GND	X1.21	-----	X3.57	GND
	GND	X1.1	-----	X2.31	GND		GND	X1.7	-----	X3.31	GND
	TX2+	X1.2	--->	X2.32	RX2+		TX6+	X1.8	--->	X3.32	RX2+
	TX2-	X1.3	--->	X2.33	RX2-		TX6-	X1.9	--->	X3.33	RX2-
	GND	X1.4	-----	X2.34	GND		GND	X1.10	-----	X3.34	GND
	GND	X1.31	-----	X2.1	GND		GND	X1.37	-----	X3.1	GND
	RX2+	X1.32	<---	X2.2	TX2+		RX6+	X1.38	<---	X3.2	TX2+
	RX2-	X1.33	<---	X2.3	TX2-		RX6-	X1.39	<---	X3.3	TX2-
	GND	X1.34	-----	X2.4	GND		GND	X1.40	-----	X3.4	GND
	GND	X1.57	-----	X2.27	GND		GND	X1.51	-----	X3.27	GND
	TX3+	X1.56	--->	X2.26	RX3+		TX7+	X1.50	--->	X3.26	RX3+
	TX3-	X1.55	--->	X2.25	RX3-		TX7-	X1.49	--->	X3.25	RX3-
	GND	X1.54	-----	X2.24	GND		GND	X1.48	-----	X3.24	GND
	GND	X1.27	-----	X2.57	GND		GND	X1.21	-----	X3.57	GND
	RX3+	X1.26	<---	X2.56	TX3+		RX7+	X1.20	<---	X3.56	TX3+
	RX3-	X1.25	<---	X2.55	TX3-		RX7-	X1.19	<---	X3.55	TX3-
	GND	X1.24	-----	X2.54	GND		GND	X1.18	-----	X2.54	GND
	GND	X1.4	-----	X2.34	GND		GND	X1.10	-----	X2.34	GND
	TX4+	X1.5	--->	X2.35	RX4+		TX8+	X1.11	--->	X2.35	RX4+
	TX4-	X1.6	--->	X2.36	RX4-		TX8-	X1.12	--->	X2.36	RX4-
	GND	X1.7	-----	X2.37	GND		GND	X1.13	-----	X2.37	GND
	GND	X1.34	-----	X2.4	GND		GND	X1.40	-----	X2.4	GND
	RX4+	X1.35	<---	X2.5	TX4+		RX8+	X1.41	<---	X2.5	TX4+
	RX4-	X1.36	<---	X2.6	TX4-		RX8-	X1.42	<---	X2.6	TX4-
	GND	X1.37	-----	X2.7	GND		GND	X1.43	-----	X2.7	GND

Electrical Performance

Signal Integrity

ITEM		REQUIREMENT	TEST CONDITION
（Differential Impedance）	Cable Impedance	100±5Ω	Rise time of 25ps (20 % - 80 %).
	Paddle Card Impedance	100±10Ω	
	Cable Termination Impedance	100±10Ω	
[Differential (Input/Output)Return loss S_{DD11}/S_{DD22}]		Return_loss(f)≥ $\begin{cases} 16.5-2\sqrt{f} & 0.05 \le f < 4.1 \\ 10.66-14\log_{10}(f/5.5) & 4.1 \le f \le 40 \end{cases}$ Where f is the frequency in GHz Return loss(f) is the return loss at frequency f	10MHz≤f ≤40GHz
[Differential to common-mode (Input/Output)Return loss S_{CD11}/S_{CD22}]		Return_loss(f)≥ $\begin{cases} 22-10(f/26.56) & 0.05 \le f < 26.56 \\ 15-3(f/26.56) & 26.56 \le f \le 40 \end{cases}$ Where f is the frequency in GHz Return_loss(f) is the Differential to common-mode return loss at frequency f	50MHz≤f ≤40GHz
[Common-mode to Common-mode (Input/Output)Return loss S_{CC11}/S_{CC22}]		*Return_loss(f)*≥1.8dB 0.05≤f≤40 Where f is the frequency in GHz Return_loss(f) is the common-mode to common-mode return loss at frequency f	50MHz≤f ≤40GHz
差模插入损耗[Differential Insertion Loss (S_{DD21} Max.)]		(Differential InsertionLoss Max. For TPa to TPb Excluding Test fixture)	50MHz≤f ≤40GHz
		Insertion _loss(f)≥-19.75dB 0.05≤f≤26.56 Where f is the frequency in GHz Insertion Loss (f) Differential Insertion Loss at frequency f	
[Insertion Loss Deviation]		-0.176*f - 0.7 ≤ ILD ≤ 0.176* f + 0.7	50MHz≤f ≤ 26.56GHz
Differential to common-mode Conversion Loss-Differential Insertion Loss(S_{CD21}-S_{DD21})		Conversion _loss(f) – IL(f)≥ $\begin{cases} 10 & 0.05 \le f < 12.89 \\ 14-0.3108f & 12.89 \le f < 40 \end{cases}$ Where f is the frequency in GHz Conversion_loss(f) is the cable assembly differential to common-mode conversion loss	50MHz≤f ≤ 40GHz

	IL(f) is the cable assembly insertion loss	
[MDNEXT(multiple disturber near-end crosstalk)]	⩾35dB @26.5GHz	10MHz≤f ≤26.5GHz
[Intra Skew]	10ps/m,	10MHz≤f ≤26.5GHz

Other Electrical Performance

ITEM	REQUIREMENT	TEST CONDITON
[Low Level Contact Resistance]	70milliohms Max. From initial.	EIA-364-23:Apply a maximum voltage of 20mV And a current of 100 mA.
Insulation Resistance	10Mohm(Min.)	EIA364-21:AC 300V 1minute
[Dielectric Withstanding Voltage]	NO disruptive discharge.	EIA-364-20:Apply a voltage of 300 VDC for 1minute between adjacent terminals And between adjacent terminals and ground.

Environment Performance

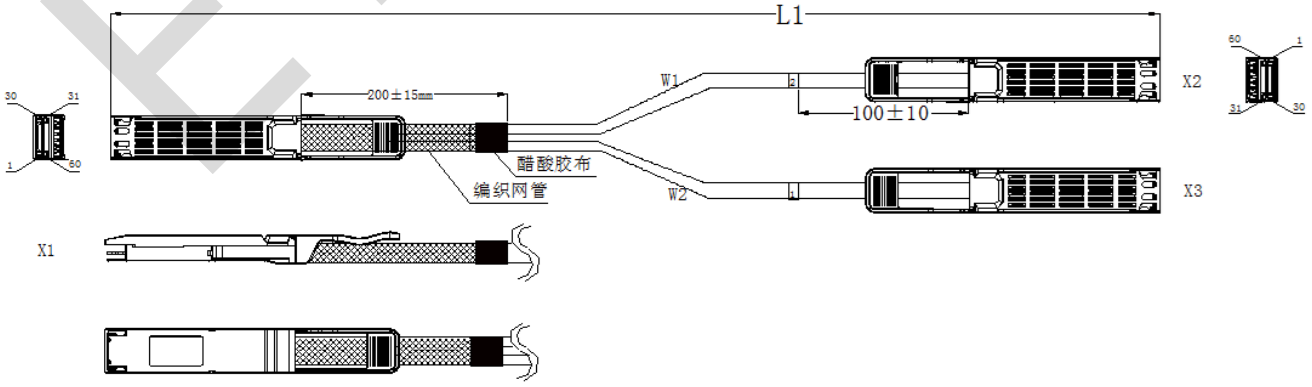
ITEM	REQUIREMENT	TEST CONDITON
[Operating Temp. Range]	0°C to +70°C	Cable operating temperature range.
[Storage Temp. Range (in packed condition)]	-40°C to +85°C	Cable storage temperature range in packed condition.
[Thermal Cycling Non-Powered]	No evidence of physical damage	EIA-364-32D, Method A, -25 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. (For connector only)	EIA-364-35 Class II,14 days.
Temp. Life	No evidence of physical damage	EIA-364-17C w/ RH, Damp heat 90℃ at 85% RH for 500 hours then return to ambient
Cable Cold Bend	4H,No evidence of physical damage	Condition: -20℃±2℃, mandrel diameter is 6 times the cable diameter.

Mechanical and Physical Characteristics

ITEM	REQUIREMENT	TEST CONDITON
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
Retention in Cage	125N Min （OSFP） No evidence of physical damage	No functional damage to module, connector, or cage with latching mechanism activated. . Per OSFP _Specification_Rev5
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.(55N) OSFP	Module to be inserted into connector and cage with latch mechanism engaged. (55N if the cage has riding heatsink) Per OSFP _Specification_Rev5
Cable plug Extraction	30N Max. (45N) OSFP	Module to be removed from connector and cage with latching mechanism disengaged. (45N if the cage has riding heatsink) Per OSFP _Specification_Rev5_0 5.0
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)

Outline drawing



Revision History

Version No.	Date	Description
1.0	May 17, 2024	Preliminary datasheet

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