1.6T Twin-port XDR 2x800Gb/s OSFP224 to Twin-port 2x800Gb/s OSFP224 Active Copper Cable

Features

- 2x800Gb/s data rate

- Based on 8-channels of 200G-PAM4 modulation

- 1m,1.1m,1.5m,2m,2.5m,3m length

- 2.5 Watts max per end Operate

- Operating case temperature 0°C to +70°C

- Single 3.3V supply voltage

- Hot pluggable

- RoHS compliant

- PROTECTIVE PLASTIC NET COVERING VW-1 (PET) jacket

- LF (Lead Free) HF (Halogen Free) PCB

- OSFP msa.org based

- Compliant to IEEE802.3ck

Applications

- InfiniBand and Ethernet

Description

NADDOD OSFP-1.6T-ACCH is a 1600Gb/s OSFP (Octal Small Form factor Pluggable) to 1600 Gb/s OSFP Active Copper Cable(ACC). ACC cables are the second lowest-cost, lowest-latency, very low-power consuming, high-speed links available due to their simplicity of design and minimal components. Using the Octal Small Formfactor Plug (OSFP) and containing 2x8 high-speed electrical copper pairs, each operating at data rates of up to 200Gb/s. NADDOD's cable solutions provide power-efficient connectivity enabling higher port bandwidth, density and configurability at a low cost and reduced power requirement in the data centers.

Absolute Maximum Specifications

Absolute maximum ratings are those beyond which damage to the device may occur.

Between the operational specifications and absolute maximum ratings, prolonged operation is not intended and permanent device degradation may occur.

Table1-Absolute Maximum Specifications

Parameter	Min.	Typical	Max.	Unit	Note
Supply voltage	-0.3		3.6	V	
Data Input Voltage	-0.3		3.6	V	
Control Input Voltage	-0.3		3.6	V	

Environmental Specifications

This table shows the environmental specifications for the product.

Table2-Environmental Specifications

Parameter	Min	Typical	Max.	Units
Storage Temperature	-40		85	°C

Operational Specifications

Table3-Copper Cable Specifications

Parameter	Min.	Typical	Max.	Unit	Note
Supply Voltage (Vcc)	3.135	3.3	3.465	V	
Power Consumption	--	--	2.5	W	
Operating Case Temperature	0		70	℃	
Operating Relative Humidity	5		85	%	

Electrical Specification

Table4-Electrical Specification

Parameter	Min.	Typical	Max	Units
Characteristic impedance	90	100	110	Ω
Time propagation delay	--	--	4.5	ns/m

SE Requirements

Table5-SE Requirements

Test Items	Specification
Shielding effectiveness	≥35 dB (1–10 GHz), ≥30 dB (10–18 GHz)

Mechanical Specifications

Table6-Copper Cable Specifications

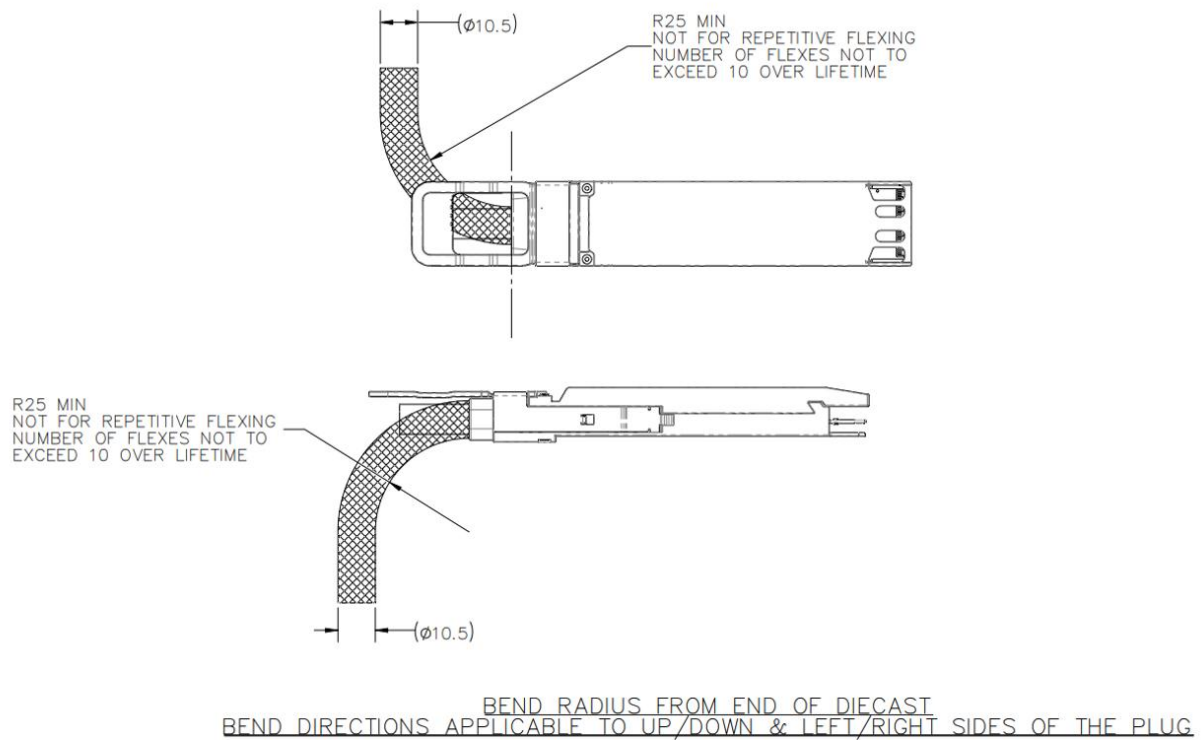| Parameter	Value		Units
Diameter	26AWG: 8.9 ±0.03		mm
Length tolerance	length < 1.5 m	±25	mm
	length ≥ 1.5 m	±50	

Notes：

[1] The minimum assembly bending radius (close to the connector) is 10x the cable's outer diameter. The repeated bend (far from the connector) is also 10x the cable's outer diameter. The single bend (far from the connector) is 5x the cable's outer diameter.
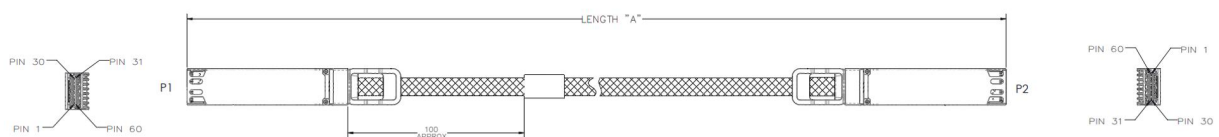
Minimum Bend Radius

Table7-Minimum Bend Radius

OPN	Length (m)	AWG (mm)	Min bend Radius R (mm)
OSFP-1.6T-ACCH	1m,1.1m,1.5m,2m,2.5m,3m	26AWG, 2x8pairs	25

Assembly Bending Radius

R25 MIN
NOT FOR REPETITIVE FLEXING
NUMBER OF FLEXES NOT TO
EXCEED 10 OVER LIFETIME

(Ø10.5)

R25 MIN
NOT FOR REPETITIVE FLEXING
NUMBER OF FLEXES NOT TO
EXCEED 10 OVER LIFETIME

(Ø10.5)

BEND RADIUS FROM END OF DIECAST
BEND DIRECTIONS APPLICABLE TO UP/DOWN & LEFT/RIGHT SIDES OF THE PLUG

Mechanical Dimensions

LENGTH "A"

PIN 30   PIN 31

P1

PIN 1   PIN 60

100
APPROX

PIN 60   PIN 1

P2

PIN 31   PIN 30

Pin Description

The device is OSFP MSA Specification for OSFP Octal Small Form Factor Pluggable Module Rev. 1.12 compliant.

see www.osfpmsa.org.
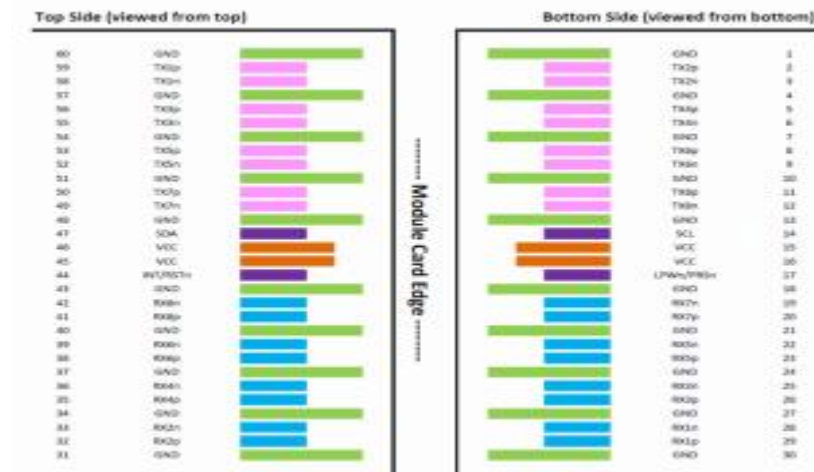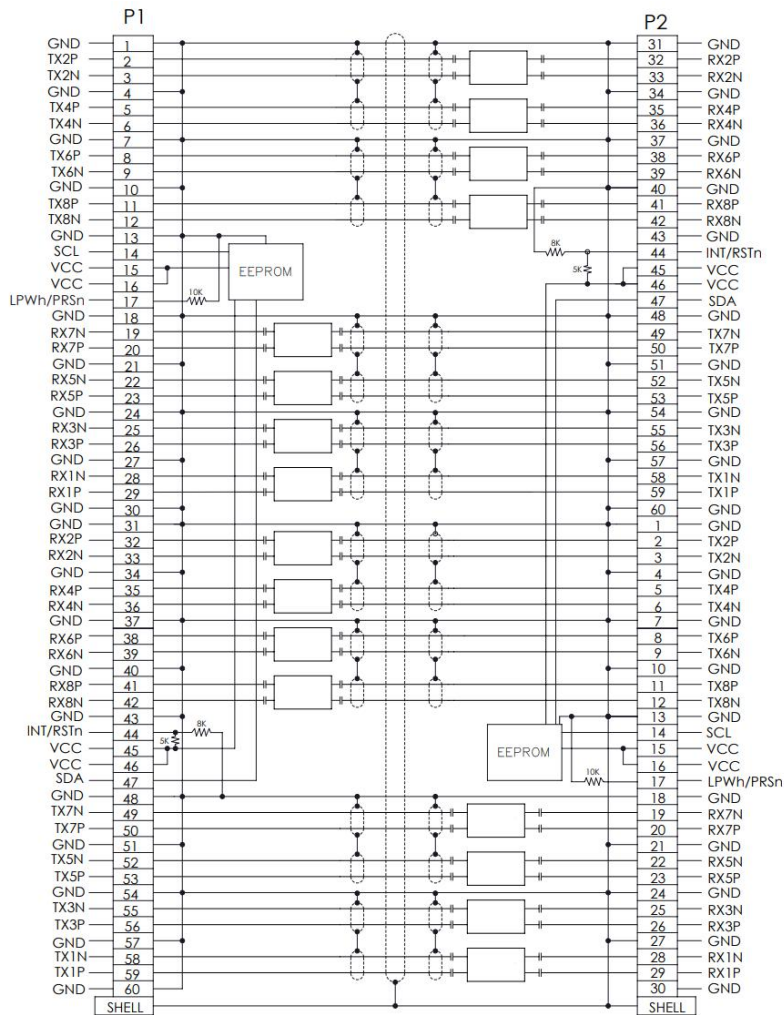
Table8-Pin Description

Pin	Symbol	Description	Pin	Symbol	Description
1	GND	Ground	31	GND	Ground
2	Tx2p	Transmitter Non-Inverted Data Input	32	Rx2p	Receiver Non-Inverted Data Output
3	Tx2n	Transmitter Inverted Data Input	33	Rx2n	Receiver Inverted Data Output
4	GND	Ground	34	GND	Grounds
5	Tx4p	Transmitter Non-Inverted Data Input	35	Rx4p	Receiver Non-Inverted Data Output
6	Tx4n	Transmitter Inverted Data Input	36	Rx4n	Receiver Inverted Data Output
7	GND	Ground	37	GND	Ground
8	Tx6p	Transmitter Non-Inverted Data Input	38	Rx6p	Receiver Non-Inverted Data Output
9	Tx6n	Transmitter Inverted Data Input	39	Rx6n	Receiver Inverted Data Output
10	GND	Ground	40	GND	Ground
11	Tx8p	Transmitter Non- Inverted Data input	41	Rx8p	Receiver Non-Inverted Data Output
12	Tx8n	Transmitter Inverted Data Input	42	Rx8n	Receiver Inverted Data Output
13	GND	Ground	43	GND	Ground
14	SCL	2-wire serial interface clock	44	INT / RSTn	Module Interrupt / Module Reset
15	VCC	+3.3V Power	45	VCC	+3.3V Power
16	VCC	+3.3V Power	46	VCC	+3.3V Power
17	LPWn / PRSn	Low-Power Mode / Module Present	47	SDA	2-wire Serial interface data
18	GND	Ground	48	GND	Ground
19	Rx7n	Receiver Inverted Data Output	49	Tx7n	Transmitter Inverted Data Input
20	Rx7p	Receiver Non-Inverted Data Output	50	Tx7p	Transmitter Non-Inverted Data Input
21	GND	Ground	51	GND	Ground
22	Rx5n	Receiver Inverted Data Output	52	Tx5n	Transmitter Inverted Data Input
23	Rx5p	Receiver Non-Inverted Data Output	53	Tx5p	Transmitter Non-Inverted Data Input
24	GND	Ground	54	GND	Ground
25	Rx3n	Receiver Inverted Data Output	55	Tx3n	Transmitter Inverted Data Input
26	Rx3p	Receiver Non-Inverted Data Output	56	Tx3p	Transmitter Non-Inverted Data Input

27	GND	Ground	57	GND	Ground
28	Rx1n	Receiver Inverted Data Output	58	Tx1n	Transmitter Inverted Data Input
29	Rx1p	Receiver Non-Inverted Data Output	59	Tx1p	Transmitter Non-Inverted Data Input
30	GND	Ground	60	GND	Ground

OSFP Module Pad Layout

WIRING TABLE:OSFP TO OSFP

P1 pins: GND(1), TX2P(2), TX2N(3), GND(4), TX4P(5), TX4N(6), GND(7), TX6P(8), TX6N(9), GND(10), TX8P(11), TX8N(12), GND(13), SCL(14), VCC(15), VCC(16), LPWh/PRSn(17), GND(18), RX7N(19), RX7P(20), GND(21), RX5N(22), RX5P(23), GND(24), RX3N(25), RX3P(26), GND(27), RX1N(28), RX1P(29), GND(30), GND(31), RX2P(32), RX2N(33), GND(34), RX4P(35), RX4N(36), GND(37), RX6P(38), RX6N(39), GND(40), RX8P(41), RX8N(42), GND(43), INT/RSTn(44), VCC(45), VCC(46), SDA(47), GND(48), TX7N(49), TX7P(50), GND(51), TX5N(52), TX5P(53), GND(54), TX3N(55), TX3P(56), GND(57), TX1N(58), TX1P(59), GND(60), SHELL

P2 pins: GND(31), RX2P(32), RX2N(33), GND(34), RX4P(35), RX4N(36), GND(37), RX6P(38), RX6N(39), GND(40), RX8P(41), RX8N(42), GND(43), INT/RSTn(44), VCC(45), VCC(46), SDA(47), GND(48), TX7N(49), TX7P(50), GND(51), TX5N(52), TX5P(53), GND(54), TX3N(55), TX3P(56), GND(57), TX1N(58), TX1P(59), GND(60), GND(1), TX2P(2), TX2N(3), GND(4), TX4P(5), TX4N(6), GND(7), TX6P(8), TX6N(9), GND(10), TX8P(11), TX8N(12), GND(13), SCL(14), VCC(15), VCC(16), LPWh/PRSn(17), GND(18), RX7N(19), RX7P(20), GND(21), RX5N(22), RX5P(23), GND(24), RX3N(25), RX3P(26), GND(27), RX1N(28), RX1P(29), GND(30), SHELL

Ordering Information

Table9-Ordering Information

PN	Description
OSFP-1.6T-AC1H	active copper cable, 2x800Gb/s InfiniBand, up to 1600Gb/s, OSFP, IHS to IHS,1m
OSFP-1.6T-AC11H	active copper cable, 2x800Gb/s InfiniBand, up to 1600Gb/s, OSFP, IHS to IHS,1.1m
OSFP-1.6T-AC15H	active copper cable, 2x800Gb/s InfiniBand, up to 1600Gb/s, OSFP, IHS to IHS,1.5m
OSFP-1.6T-AC2H	active copper cable, 2x800Gb/s InfiniBand, up to 1600Gb/s, OSFP, IHS to IHS,2m
OSFP-1.6T-ACCH	active copper cable, 2x800Gb/s InfiniBand, up to 1600Gb/s, OSFP, IHS to IHS,2.5m
OSFP-1.6T-AC3H	active copper cable, 2x800Gb/s InfiniBand, up to 1600Gb/s, OSFP, IHS to IHS,3m

Disclaimer

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