1.6T Twin-port XDR 2x800Gb/s OSFP224 to 4x400Gb/s OSFP224 Active Copper Splitter Cable

Features

- Up to 1600Gb/s split to four 400Gb/s data rates
- Based on 200G-PAM4 modulation
- OSFP switch end 2.5 Watts
- 2.5-meter lengths
- Operating case temperature 0-70°C
- Single 3.3V supply voltage
- Hot pluggable
- RoHS compliant
- LSZH (Low Smoke Zero Halogen) jacket
- LF (Lead Free) HF (Halogen Free) PCB
- OSFP msa.org compliant

Applications

- Quantum-3 InfiniBand switch-to-four 400Gb/s ConnectX-8 OSFP adapters

Description

NADDOD O4O224-1.6T-ACCH is an 1600Gb/s twin-port OSFP (Octal Small Form-factor Pluggable) Finned Top to 4x400Gb/s OSFP Flat Top Active Copper Splitter Cable (ACC). The ACC uses 8-channels of 200G-PAM4 modulation and has a length of 2.5 meters. ACC cables are the second lowest-cost, low-latency, low-power consuming, high-speed links next to passive DACs due to their simplicity of design and minimal components.

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-Optical Specifications

Parameter	Min.	Typical	Max.	Units
Supply Voltage (Vcc)	3.135	3.3	3.465	V
Power Consumption (1600G head end for the switch)	--	--	2.5	W
Operating Case Temperature	0		70	°C
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

Mechanical Specifications

Table5-Optical Specifications

Parameter	Value		Units
Diameter	26AWG: 8.9 ±0.03		mm
Length tolerance	length < 2.5 m	±25	mm
	length ≥ 2.5 m	±50	

Minimum Bend Radius

Table6-Minimum Bend Radius

OPN	Length (m)	AWG (mm)	Cable Diameter	Min bend Radius R (mm)	Assembly Space L** Combined/ Single end (mm)
O4O224-1.6T-ACCH	2.5	26AWG, 2x8pairs	10.5-11.5	90	135

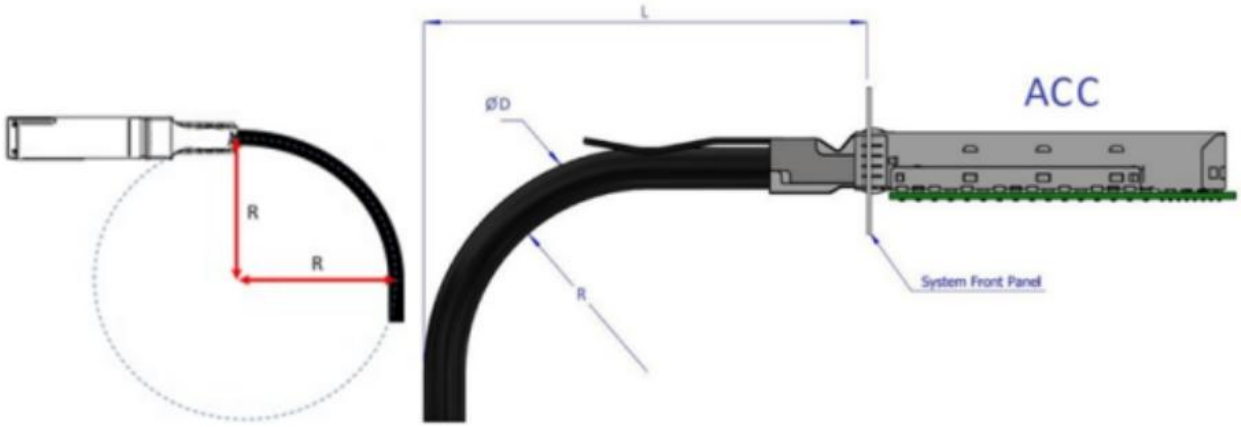
Note:

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.

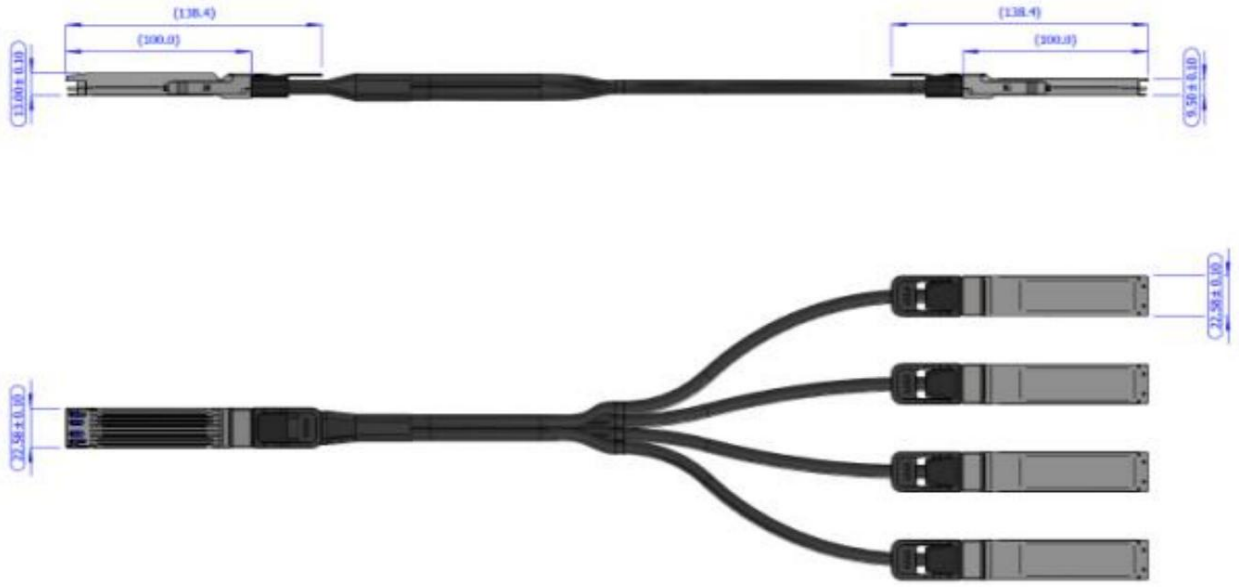
'Combined' end is the 'head' where the cables join together, inserted into the switch. 'Single' end is the 'tail' which plugs into the HCA/NIC in a server.

L = Assembly Space. Minimum value depends on the backshell (connector housing) dimensions = the space for the cable assembly behind the rack door.

Assembly Bending Radius



Mechanical Dimensions



Pin Description

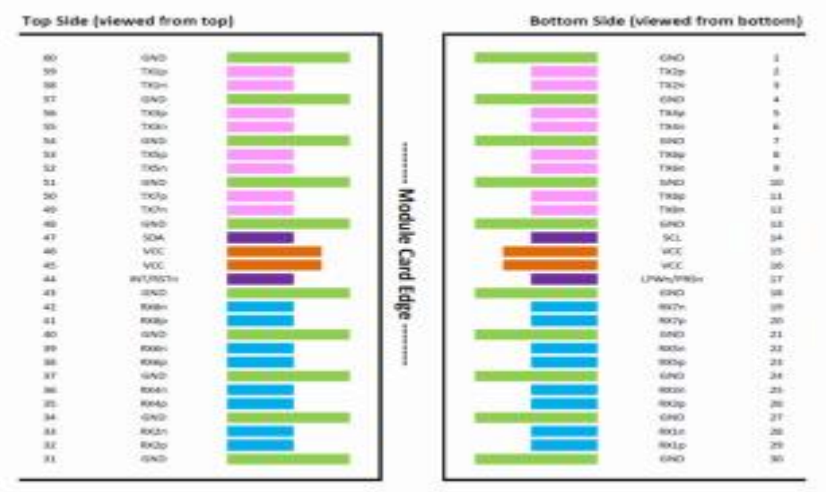
The device is OSFP MSA Specification for OSFP Octal Small Form Factor Pluggable Module Rev. 1.12 compliant, see www.osfpmsa.org.

Table7-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



Ordering Information

Table8-Ordering Information

PN	Description
O4O224-1.6T-ACCH	active copper splitter cable, split port InfiniBand 1600Gb/s to 4x 400Gb/s, OSFP to 4x OSFP, IHS to RHS, 2.5m

Further Information:

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Disclaimer

1. We are committed to continuous product improvement and feature upgrades, and the contents contained in this manual are subject to change without notice.

2. Nothing herein should be construed as constituting an additional warranty.

3. NADDOD assumes no responsibility for the use or reliability of equipment or software not provided by NADDOD.