800Gbps XDR (200G-PAM4) Transceivers, Copper Cables, and Fiber Parts List

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Overview

800Gb/s XDR Twin-port OSFP and OSFP Transceivers and Fiber Part Numbers based on 200G-PAM4 Modulation for InfiniBand

The XDR InfiniBand four-channel 200G-PAM4 cable and transceiver product line consists of linear active copper cables (LACC), single-mode transceivers and optical fiber cables.

- 2x800G-to-2x800G links for switch-to-switch

- 2x800G-to-two 400G links to ConnectX-8 (PCIe and mezzanine cards)

- 2x800G-to-four 200G links to ConnectX-8 (PCIe and mezzanine cards)

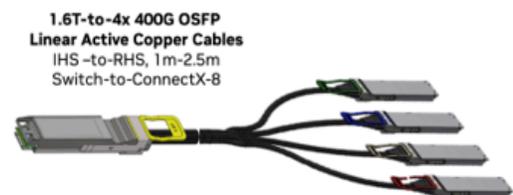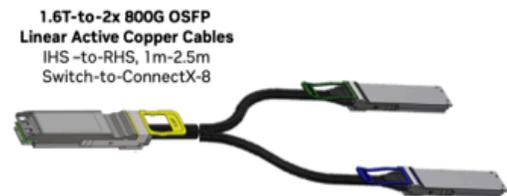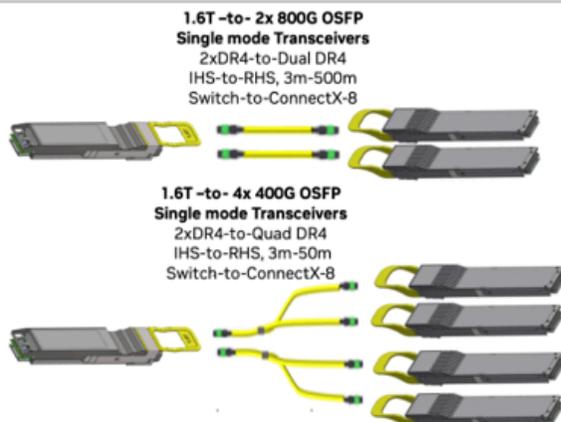> (i) **Note**
>
> Important notes:
>
> - The same single mode, straight and 1:2 splitter crossover fiber cables are used for both XDR and NDR/400GbE.
>
> - New OSFP metal connector terminologies: IHS and RHS.
>
> - Integrated Heat Sink (IHS) integrates the cooling fins into the **_transceiver_** plug tops for extra cooling (aka finned top).
>
>   - Two IHS versions:
>
>   - Open-top IHS (exposed cooling fins)
>
>   - Closed-top IHS (fins have a metal plate on top for extra cooling)
>
>   - IHS transceivers or copper cables are **_only_** used in air-cooled switches (Q3400, Q3200) – everything else uses RHS.
>
> - Riding Heat Sink (RHS) on top of ConnectX-8 card **_cage_** is called RHS, but the name applies to the OSFP plug (aka flat top).
>
>   - RHS devices are used in ConnectX-8 cages for B300, GB300, ConnectX-8 PCIe cards, and liquid cooled switches.

- Twin-port OSFP RHS connectors also may be referred to as "-FLT" in the legacy part numbers.

  - Note, there are tiny fins on the MPO end of the transceiver – this is still RHS device.

- Twin-port OSFP transceivers must use the **same fiber type** (straight or splitter) in **both optical ports** and not one of each.

- Not used for XDR:

  - **QSFP112 devices**, plug used in ConnectX-7/QSFP112 and BlueField-3/QSFP112 DPUs. QSFP112 is only for 100G-PAM4.

  - **Multimode transceivers**, active optical cables (AOC). (Lasers not available yet)

  - **Direct attach copper (DAC) cables** (too short at 200G-PAM4)

- 200G-PAM4-based transceivers cannot downshift to 100G-PAM4 or 50G-PAM4.

- IHS and RHS transceivers or copper cables contain the same internals and can be linked to each other.

- 1.6Tb/s refers to the transceiver electrical end. May also be called 2x800G or 1,600G.

- 2x800G refers to the dual 800G, 4-channel optical ports.

- Linear active copper cables (LACC) are passive direct attach copper (DAC) copper cables with a linear amplifier IC to boost the signal and extend cable length. Called active copper cables (ACC) in NDR generation.

- Active electric cables (AEC) are DAC cables with DSP ICs inside for switch-to-switch links replacing LACC 1.6T-1.6T LACCs.

- Q3200 XDR, InfiniBand switch supports 36 twin-port OSFP, IHS, 1.6Tb/s cables and transceivers. It consists of two Quantum-3 switch ICs inside the chassis that operate independently. The Q3200 supports backwards compatibility to the NDR (4x100G-

PAM4) product line of DAC, LACC copper cables, multimode transceivers and AOCs, and single mode transceivers.

- Q3400 XDR InfiniBand switch supports 72 twin-port OSFP, IHS, 1.6Tb/s cables and transceivers. It consists of four Quantum-3 switch ICs inside the chassis that operate together.

    - It supports "selected" backwards compatibility parts to the NDR product line of cables and transceivers.

    - Q3400 can only link to ConnectX-7, ConnectX-8 PCIe cards – not NDR switches or B300, GB300 mezzanine cards.

    - Q3400 does not support 1:2 port splitting the 4-channel MPO-12/APC ports. Q3200 does.

- 1:2 and 1:4 LACC splitters in the Q3400 can only link to the ConnectX-8 PCIe card – not switches, Iris8 mezzanine card in B300, GB300. They can link to all cards and switches in the Q3200 switch.

1.6T to 1.6T, 800G and AEC, LACC and Transceiver Summary

1.6T-to-1.6T OSFP
Single mode Transceivers
2xDR4 3m-500m
IHS & RHS
Switch-to-Switch

1.6T-to-1.6T OSFP
Single mode Transceivers
2xFR4 IHS 3m-2km
Switch-to-Switch

1.6T-to-1.6T OSFP
Copper Active Electric Cables
IHS –to-IHS, 1m-3m
Switch-to-Switch

1.6T –to- 2x 800G OSFP
Single mode Transceivers
2xDR4-to-Dual DR4
IHS-to-RHS, 3m-500m
Switch-to-ConnectX-8

1.6T –to- 4x 400G OSFP
Single mode Transceivers
2xDR4-to-Quad DR4
IHS-to-RHS, 3m-50m
Switch-to-ConnectX-8

1.6T-to-2x 800G OSFP
Linear Active Copper Cables
IHS –to-RHS, 1m-2.5m
Switch-to-ConnectX-8

1.6T-to-4x 400G OSFP
Linear Active Copper Cables
IHS –to-RHS, 1m-2.5m
Switch-to-ConnectX-8

Parts List

Tip

- Click on the green bold underlined part numbers to open the Product Specifications for that specific product.

- See also the **user guide** and **configuration map** for configuring these transceivers in DGXs, switches, network adapters, and DPUs.

2x800G Twin-port OSFP IHS and RHS Transceivers 500m, 2km for Switch-to-Switch Ap							
Name	Form Factor	Configuration	Reach, Power	Part Number (link to product spec)	NVIDIA SKU	Crossover Cables Type-B	Nc
2x800G 2xDR4 Single mode	Twin-port OSFP RHS 2x MPO-12/APC optical connectors	8x200G-PAM4 electrical to Dual 4x200G-PAM4optical Parallel	500m 33.5W	**MMS4A00-XM** OSFP-IHSfor air-cooled switches OSFP-RHS for liquid-cooled switches	980-9IAH1-00XM00 980-9IAH0-00XM00	Multimode Straight cables**MFP7E30-Nxxx** (xx = 01-to-100 meters) or Single mode1:2 Splitter cables(xx=01-to-50m)	IH RH lin ot Ea lin 80 tra M XN 1:2 fib or us Q3 sw
2x800G 2xFR4	Twin-port OSFP IHS	4x200G-PAM4 electrical	2km 33.5W	**MMS4A50-XM**	980-9IAS0-00XM00		2x or ea

2x800G Twin-port OSFP IHS and RHS Transceivers 500m, 2km for Switch-to-Switch Ap						
Single mode	2x LC optical connector	to 4x200G-PAM4 optical Serial Multiplexed		OSFP-IHS For air-cooled switches only		2x LC fiber cables not supplied by NVIDIA. Two LC fiber cables per transceiver.	8C nc su N\ LC co ca sp

800G Single-Port Transceivers 500m for ConnectX-8 Embedded Mezzanine and PCIe Ca Adapters							
Name	Form Factor	Configuration	Reach, Power	Part Number (link to product spec)	NVIDIA SKU	Figure	Notes
800G DR4 Single mode	Single port MPO-12/APC optical connector	4x200G-PAM4 electricalto4x200G-PAM4optical Parallel	500m 18W	**MMS4A20-XM800** OSFP-RHS	980-9IAT0-00XM00		Links to 2x800G IH or RHS transceive Used in B: GB300, ConnectX PCIe andmezza cards.

Name	Configuration	Part Number (link to product spec) (one fiber)	Reach (m)		NVIDIA SKU
Straight Fiber Cables Type-B Crossover MPO-12/APC	4 channels to 4-channels Parallel	**MFP7E30-N003** MFP7E30-N005 MFP7E30-N007MFP7E30-N010MFP7E30-N015MFP7E30-N020MFP7E30-N030MFP7E30-N050MFP7E30-	3 5 710152030506070100150		980-9I55A-00N(980-9I55B-00N(980-9I58C-00N(00N010980-9I5: 9I58F-00N209: 00N030980-9I5: 00N050980-9I5: 9I582-00N509: 00N100980-9I5:

		N060MFP7E30-N070MFP7E30-N100MFP7E30-N150		
1:2 Splitter Fiber Cables MPO-12/APC	4 channels to Dual 2-channel Parallel	**MFP7E40-N003** MFP7E40-N005 MFP7E40-N007MFP7E40-N010MFP7E40-N015MFP7E40-N020MFP7E40-N030MFP7E40-N050	3 5 71015203050	980-9I58K-00N0 980-9I58L-00N0 980-9I58M-00N0 00N010980-9I5(00N015980-9I5(00N020980-9I5(00N030980-9I5(

Notes (for table above):

- Part numbers refer to one fiber only. ***Order two per twin-port OSFP transceiver***.

- 2x800Gb/s transceivers used with 1:2 fiber splitters result in four 400Gb/s transceivers ends.

- 400Gb/s transceivers based on 200G-PAM4 are not offered. Use 800G transceivers with fiber 2-channel split ends.

- Twin-port transceivers can only use either 2 straight or 2 splitter fiber cables; not one of each.

- LC Duplex fibers and MPO-12/APC fibers beyond listed 50- or 150-meter reaches are not offered.

- These are the same fiber cables used with NDR/400GbE.

- MPO-12/APC cables use 8-fibers; 4 fibers are not used.

2x800G (1.6T) Active Electric Cables (AEC) Copper Switch-to-Switch (PVC mesh sheath)							
Name	Form Factor	Configuration	Reach (m)	Part Number (link to product spec)	NVIDIA SKU	Specs	Active Electric Cables (AEC)

2x800G (1.6T) Active Electric Cables (AEC) Copper Switch-to-Switch (PVC mesh sheath)							
2x800G AEC IHS	OSFP-IHS toOSFP-IHS	8x 200G-PAM4 to8x 200G-PAM4	1 1.5 22.53	**MCA4K50-X001** MCA4K50-X01A MCA4K50-X002MCA4K50-X02AMCA4K50-X003	980-9IAM5-00X001 980-9IAM5-00X01A 980-9IAM3-00X002980-9IAM3-00X02A980-9IAM3-00X003	26 AWG 27W	

2x800G (1.6T) Linear Active Copper Cables (LACC) 1:1, 1:2 and 1:4 Splitters (PVC mesh s							
Name	Form Factor	Channels	Reach (m)	Part Number (link to product spec)	NVIDIA SKU	Specs	Lin Cop Cab
2x800G 2x 800G 1:2Splitter	OSFP-IHS toOSFP-RHS	8x 200G-PAM4 toDual4x 200G-PAM4	1 1.5 22.5	**MCA7K10-X001** MCA7K10-X01A MCA7K10-X002MCA7K10-X02A	980-9IAO5-00X001 980-9IAO5-00X01A 980-9IAO5-00X002980-9IAO5-00X02A	26 AWG 4.3W 8-ch end <0.1W split end	
2x800G 4x 400G1:4Splitter	OSFP-IHS toOSFP-RHS	8x 200G-PAM4 toQuad2x 200G-PAM4	1 1.5 22.5	**MCA7K20-X001** MCA7K20-X01A MCA7K20-X002MCA7K20-X02A	980-9IAQ5-00X001 980-9IAQ5-00X01A 980-9IAQ5-00X002980-9IAQ5-00X02A	26 AWG 4.3W 8-ch end <0.1W split end	

Notes (for table above):

- AEC contains DSP ICs in each end at 27 Watts; 22 Watts typical.

- LACC contain linear amplifiers in 1.6T end at 4.3 Watts and <0.1 Watts in split end.

- 1:2 and 1:4 LACC splitters in the Q3400 can only link to the ConnectX-8 PCIe card -- not switches, Iris8 mezzanine card in B300, GB300. They can link to all cards and switches in the Q3200 switch.

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Where to Find More LinkX Documentation

This parts list is to be used in conjunction with other documents located in folders in docs.nvidia.com/networking/ > Networking Interconnect.

This site is where the following LinkX cables and transceivers documents are provided.

LinkX Overview Documents:	Review of parts, important notes, and configuration details for linking to NVIDIA switches and adapters • LinkX Cables and Transceivers Guide to Key Technologies • LinkX User Guide for 400Gb/s 100G-PAM4 OSFP & QSFP112-based Cables and Transceivers
Configuration Maps:	Picture and part number-based PowerPoint® slides for configuration with NVIDIA switches, network adapters, and DGX GPU systems with NVIDIA cables and transceivers • Configuration Maps
Parts Lists:	Tables summarize by speed, form factor, connector, power, reach, etc. and hyperlinks to individual products specs • 400Gb/s (100G-PAM4) Transceivers and Fiber Parts List • 400GbE and 200Gb/s (50G-PAM4) and 100Gb/s (25GNRZ) Cables and Transceivers Parts List using QSFP-DD, QSFP56, QSFP28, SFP28 • 800Gb/s XDR (200G-PAM4) Transceivers, Copper Cables and Fiber Parts List (this document)
Product Specifications:	10–to-16-page detailed hardware datasheets with physical, thermal, electrical, and optical specifications for each product • docs.nvidia.com/networking/ > Networking Interconnect > *select speed and type*

Additional Docs:	- NVIDIA Cable Management Guidelines and FAQ - NVIDIA Interconnect Structured Cabling Requirements for InfiniBand NDR/XDR and 400/800G ETH Solutions

Document Revision History

Version	Date	Changes
1.2	November 2025	Initial release

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