



**400GbE and 200G (50G-PAM4) and 100G (25G-NRZ)
Cables and Transceivers Parts List using QSFP-DD,
QSFP56, QSFP28, SFP28**

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Part List Using 50G-PAM4 Modulation for 400GbE Ethernet Only QSFP-DD

Tip

- Click on the bold underlined part numbers to open the Product Specifications for that specific product.
- See also the [user guide](#) for configuring these transceivers and cables.

400Gb/s Transceivers: 50G-PAM4 Ethernet Only (QSFP-DD)							
Name	Form Factor	Configuration	Optical Connector	Length (m)	Part Number (link to product spec)	NVIDIA SKU	Fig
400Gb/s DR4 Single mode	QSFP-DD	8x50G-PAM4 electrical to 4x100G-PAM4 optical Parallel	MPO-12 APC	500m	<u>MMS1V00-WM</u>	980-9116Y-00W000	
100Gb/s Transceiver Often Used with 400G DR4 for 1:4 Split Ends							
100Gb/s DR1 Single mode	QSFP28	1x100G-PAM4 optical to 4x25G-NRZ electrical	2-fiber duplex LC	500m	<u>MMS1V70-CM</u> (Used with 400G DR4)	980-91042-00C000	

Notes (for table above):

- Used as 4x split ends with 400G DR4. MPO-12/APC-to-4xLC splitter fibers are not supplied by NVIDIA.
- MFP7E30 fibers can be used with QSFP-DD DR4 supporting splits to four 4x100G DR1.

Part List Using 50G-PAM4 Modulation for 200Gb/s InfiniBand and/or Ethernet QSFP56

This section profiles 4-channel, 200Gb/s, QSFP56-based cables and transceivers using 50G-PAM4 modulation for Ethernet and/or InfiniBand from 0.5m-to-2km for use in 200GbE and HDR switches, ConnectX-6 adapters, and BlueField-2/3 DPUs -- all use QSFP56 connectors for DACs, AOCs, and transceivers.

- Some parts support both InfiniBand and Ethernet protocols, and some are protocol specific.
- InfiniBand HDR cables and transceivers can be used in NVIDIA-only Ethernet systems, but not the reverse.

Tip

- Click on the bold underlined part numbers to open the Product Specifications for that specific product.
- See also the [user guide](#) for configuring these transceivers and cables.

200Gb/s Direct Attach Copper (DAC) 50G-PAM4 InfiniBand & Ethernet							
Name	Form Factor	Channels	Length (m)	AWG	Part Number (link to product spec)	NVIDIA SKU	Figure
HDR	QSFP56 RHS	4x 50G-PAM4	1	30	<u>MCP1650-H001E30</u>	980-91548-00H001	
			1.5	30	MCP1650-H01AE30	980-91548-00H01A	
			2	26	MCP1650-H002E26	980-91548-00H002	

200Gb/s Active Optical Cables (AOC) 50G-PAM4 InfiniBand & Ethernet

Name	Form Factor	Channels	Watts	Length (m)	Part Number* (link to product spec)	NVIDIA SKU	Figure
200GbE HDR AOC	QSFP56 RHS	4x 50G-PAM4	5W	3 5 10 15 20 30 50 100	<u>MFS1S00-H003V</u> MFS1S00-H005V MFS1S00-H010V MFS1S00-H015V MFS1S00-H020V MFS1S00-H030V MFS1S00-H050V MFS1S00-H100V	980-9I457-00H003 980-9I45D-00H005 980-9I45J-00H010 980-9I45O-00H015 980-9I45T-00H020 980-9I440-00H030 980-9I447-00H050 980-9I44H-00H100	F

200Gb/s Optical Transceivers 50G-PAM4 InfiniBand and/or Ethernet

Name	Form Factor	Channels	Optical Connector	Reach, Watts	Wave Length	Part Number (link to product spec)
HDR 200GbE FR4	QSFP56 RHS	4x 50G-PAM4 electrical 4x 50G-PAM4 optical Multiplexed	2-fiber duplex LC	2km 5W	1310nm singlemode	<u>MMS1VHM</u>

Part List Using 25G-NRZ Modulation for 100Gb/s InfiniBand and/or Ethernet QSFP28

LinkX 100Gb/s Direct Attached Cables (DAC) InfiniBand or Ethernet QSFP28

Name	Form Factor	Channels	Length (m)	AWG	Part Number	NVIDIA SKU	Figure
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LinkX 100Gb/s Direct Attached Cables (DAC) InfiniBand or Ethernet QSFP28							
					(link to product spec)		
InfiniBand & Ethernet							
100GbE EDR DAC	QSFP28 RHS	4x 25G-NRZ	1 2 35	30 30 2626	<u>MCP1600-E001E30</u> MCP1600-E002E30 MCP1600-E003E26 MCP1600-E005E26	980-9162Q-00E001 980-9162U-00E002 980-9162W-00E003 980-9162Z-00E005	

Notes (for table above):

- CA-N Ethernet enables no-FEC up to 2m. CA-L used for longer lengths with FEC 2.5 to 5m.
- AWG is the wire gauge 30AWG thin and 26AWG thicker.

LinkX 100Gb/s Optical Transceivers QSFP28							
Name	Form Factor	Configuration	Optical Connector	Max Reach, Watts	Wave Length	Part Number (link to product spec)	NVID SKU
Ethernet and InfiniBand							
100GbE SR4	QSFP28 RHS	4x 25G-NRZ Parallel	8-fiber, MPO-12/UPC	100m 3.5W	850nm Multimode	<u>MMA1B00-C100D</u>	980-91149-00CS
Ethernet Only							
100G DR1	QSFP28 RHS	4x 25G-NRZ electrical Gear boxed to 1x 100G-PAM4 optical	2-fiber duplex LC	500m 4.5W	1310nm Single mode	<u>MMS1V70-CM</u>	980-91042-00CC

Part List Using 1G, 10G, 25G-NRZ Modulation Ethernet Only SFP, SFP+, SFP28

LinkX 25Gb/s Optical Transceivers SFP28								
Name	Form Factor	Configuration	Optical Connector	Max Reach	Wave Length	Part Number (link to product spec)	NVIDIA SKU	Figure
10GbE SR	SFP+ RHS	1x 10G-NRZ	2-fiber duplex LC	100m	850nm Multimode	MFM1T02A-SR	930-90000-000-409	
10GbE LR	SFP+ RHS	1x 10G-NRZ	2-fiber duplex LC	10km	1310nm Single mode	MFM1T02A-LR	930-90000-000-343	
25G SR	SFP28 RHS	1x 25G-NRZ	2-fiber duplex LC	100m	850nm Multimode	<u>MMA2P00-AS</u>	980-91595-00AM00	

LinkX QSFP-to-SFP Port Adaptors					
Name	Form Factor	Configuration	Part Number (link to product spec)	NVIDIA SKU	Figure
QSA28 Port Adaptor	QSFP28 RHS	Adapts SFP28 devices into QSFP28 cages	<u>MAM1Q00A-QSA28</u>	980-91781-00A000	
QSA+ Port Adaptor	QSFP+ RHS	Adapts SFP+ devices into QSFP+ cages	<u>MAM1Q00A-QSA</u>	980-9171G-00J000	

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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:	<p>Review of parts, important notes, and configuration details for linking to NVIDIA switches and adapters</p> <ul style="list-style-type: none">• LinkX Cables and Transceivers Guide to Key Technologies• LinkX User Guide for 400Gb/s 100G-PAM4 OSFP & QSFP112-based Cables and Transceivers
Configuration Maps:	<p>Picture and part number-based PowerPoint® slides for configuration with NVIDIA switches, network adapters, and DGX GPU systems with NVIDIA cables and transceivers</p> <ul style="list-style-type: none">• Configuration Maps
Parts Lists:	<p>Tables summarize by speed, form factor, connector, power, reach, etc. and hyperlinks to individual products specs</p> <ul style="list-style-type: none">• 400Gb/s (100G-PAM4) Transceivers and Fiber Parts List• 400Gb/s and 200Gb/s (50G-PAM4) and 100Gb/s (25G-NRZ) Cables and Transceivers Parts List using QSFP-DD, QSFP56, QSFP28, SFP28 (this document)• 800Gb/s XDR (200G-PAM4) Transceivers, Copper Cables and Fiber Parts List
Product Specifications:	<p>10-to-16-page detailed hardware datasheets with physical, thermal, electrical, and optical specifications for each product</p> <ul style="list-style-type: none">• docs.nvidia.com/networking/ > Networking Interconnect > <i>select speed and type</i>

Additional Docs:	<ul style="list-style-type: none">• NVIDIA Cable Management Guidelines and FAQ• NVIDIA Interconnect Structured Cabling Requirements for InfiniBand NDR/XDR and 400/800G ETH Solutions
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Document Revision History

Version	Date	Changes
1.2	November 2025	Updates
1.1	May 2025	Updates
1.0	August 2023	Initial release

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