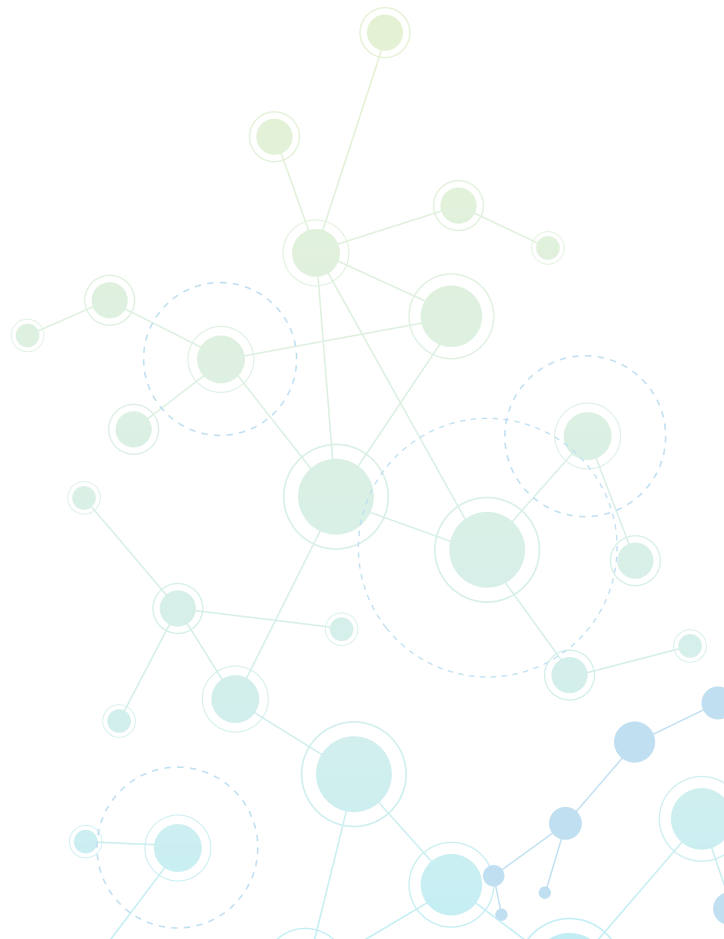# NVIDIA® AI

APPLICATION GUIDE

Structured Cabling for Installations
Using NVIDIA GPU Servers and Switches

PANDUIT®

Table of Contents

Step 1:

Choose the NVIDIA transceivers that match your application

	NVIDIA Model #	Type	Application	Reach (m)	Fiber Type	Interface	Infiniband or Ethernet
800G	**MMA4Z00-NS***	OSFP	SR8	30/50	OM3/OM4	2 x MPO12 APC	NDR Infiniband or 2x400GbE
	MMS4X00-NS*	OSFP	DR8	100	OS2	2 x MPO12 APC	NDR Infiniband or 2x400GbE
	MMS4X00-NM*	OSFP	DR8	500	OS2	2 x MPO12 APC	NDR Infiniband or 2x400GbE
	MMS4X50-NM	OSFP	FR4	2km	OS2	2 x Duplex LC	NDR Infiniband or 2x400GbE
400G	**MMA1Z00-NS400**	QSFP112	SR4	30/50	OM3/OM4	MPO12 APC	NDR Infiniband or 400GbE
	MMS1V00-WM	QSFP-DD	DR4	500	OS2	MPO12 APC	400GbE
	MMS4X00-NS400	OSFP	DR4	100	OS2	MPO12 APC	NDR Infiniband or 400GbE
	MMA4Z00-NS400	OSFP	SR4	30/50	OM3/OM4	MPO12 APC	NDR Infiniband or 400GbE
	T-DQ8FNS-N00-M	QSFP-DD	SR8	100	OM3/OM4	MPO16 APC	400GbE
200G	**MMA1T00-HS**	QSFP56	SR4	70/100	OM3/OM4	MPO12 UPC	Infiniband
	MMA1T00-VS	QSFP56	SR4	70/100	OM3/OM4	MPO12 UPC	200GbE
	MMS1W50-HM	QSFP56	FR4	2km	OS2	Duplex LC	Infiniband
100G	**MMA1B00-E100**	QSFP28	SR4	70/100	OM3/OM4	MPO12 UPC	Infiniband or Ethernet
	MMA1B00-C100D	QSFP28	SR4	70/100	OM3/OM4	MPO12 UPC	100GbE
	MMA1L10-CR	QSFP28	LR4	10km	OS2	Duplex LC	Infiniband or Ethernet
	MMA1L30-CR	QSFP28	LR4	10km	OS2	Duplex LC	Infiniband or Ethernet
	MMS1V70-CM	QSFP28	DR1	500m	OS2	Duplex LC	100GbE

*Also available as a flat-top transceiver. Add -FLT to the end of the transceiver part #
FLAT is used at the server side, FINNED at the switch side

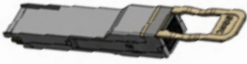| 800G Transceivers	
NVIDIA Model #	**Description**
 MMA4Z00-NS	The NVIDIA MMA4Z00-NS is an InfiniBand and Ethernet 800Gb/s 2x400Gb/s Twin-port OSFP, DR8 multimode, parallel, 8-channel transceiver using two, 4-channel MPO-12/APC optical connectors at 400Gb/s each. The parallel multimode, short reach 8-channel (SR8) uses 100G-PAM4 modulation and has a maximum fiber reach of 50-meters using 8 multimode fibers. The 50-meter length assumes two optical patch panels in the link. *Also available in Flat-Top
 MMS4X00-NS	The NVIDIA MMS4X00-NS is an InfiniBand and Ethernet 800Gb/s 2x400Gb/s Twin-port OSFP finned, DR8 single mode, parallel, 8-channel transceiver using two, 4-channel MPO-12/APC optical connectors at 400Gb/s each. The parallel single mode, datacenter reach 8-channel (DR8) design uses 100G-PAM4 modulation and has a maximum fiber reach of 100-meters using 8 single mode fibers. The 100-meter length assumes two optical patch panels in the link. *Also available in Flat-Top
 MMS4X00-NM	The NVIDIA MMS4X00-NM is an InfiniBand and Ethernet 800Gb/s, 2x400Gb/s Twin-port OSFP, DR8 single mode, parallel, 8-channel transceiver using two, 4-channel MPO-12/APC optical connectors at 400Gb/s each. The parallel single mode, datacenter reach 8-channel (DR8) design uses 100G-PAM4 modulation and has a maximum fiber reach of 500-meters using 8 single mode fibers. The 500-meter length assumes two optical patch panels in the link. *Also available in Flat-Top
 MMS4X50-NM	The NVIDIA MMS4X50-NM is an 800Gb/s 2x400Gb/s Twin-port OSFP finned, 2xFR4 single mode, 8-channel electrical transceiver. This transceiver uses two, 2-fiber, LC Duplex optical connectors each carrying 4-channels of 100G-PAM4. The dual Far Reach 8-channel (2xFR4) design uses 100G-PAM4 electrical and optical modulation based on the CWDM4 serial, multiplexed 1310nm wavelength grid. It has a maximum fiber reach of 2,000-meters which assumes two optical patch panels in the link.

400G Transceivers	
NVIDIA Model #	**Description**
 MMA1Z00-NS400	The NVIDIA MMA1Z00-NS400 is an InfiniBand and Ethernet 400Gb/s, Single-port, QSFP112, SR4 multimode parallel transceiver using a single, 4-channel MPO-12/APC optical connector. The Short Reach 4-channel (SR4) design uses 100G-PAM4 modulation and has a maximum fiber reach of 50-meters using OM4 multimode fiber and assumes two optical patch panels in the link.
 MMS1V00-WM	The NVIDIA MMS1V00-WM transceiver is a single-mode 4-channel (DR4) QSFP-DD optical transceiver, designed for 400 Gigabit Ethernet (GbE) links on up to 500m of single mode fiber. The MMS1V00-WM converts 8 input channels of 50Gb/s PAM4 electrical data to 4 channels of 100Gb/s PAM4 optical signals, using a nominal wavelength of 1310nm, for 400Gb/s optical transmission.
 MMS4X00-NS400	The NVIDIA MMS4X00-NS400 is an InfiniBand (IB) and Ethernet (ETH) 400Gb/s, Single-port, OSFP, DR4 single mode parallel transceiver using a single, 4-channel MPO-12/APC optical connector. The Datacenter Reach 4-channel (DR4) design uses 100G-PAM4 modulation and has a maximum fiber reach of 100-meters and assumes two optical patch panels in the link.
 MMA4Z00-NS400	The NVIDIA MMA4Z00-NS400 is an InfiniBand (IB) and Ethernet (ETH) 400Gb/s, Single-port, OSFP, SR4 multimode parallel transceiver using a single, 4-channel MPO-12/APC optical connector. The Short Reach 4-channel (SR4) design uses 100G-PAM4 modulation and has a maximum fiber reach of 50-meters using OM4 multimode fiber and assumes two optical patch panels in the link.
 T-DQ8FNS-N00-M	The NVIDIA T-DQ8FNS-N00-M is a 400G single port, multimode 8 channel parallel transceiver. The application type is SR8 using a MPO-16 APC connector with a 100m reach

200G Transceivers	
NVIDIA Model #	**Description**
 MMA1T00-HS	The NVIDIA MMA1T00 transceiver is a 4-channel, pluggable, QSFP56 optical transceiver, designed for use in 200Gb/s HDR InfiniBand applications. This module incorporates NVIDIA integrated circuit technology, in order to provide high performance. The transceiver operates over 4-lane parallel multi-mode fiber (MMF), using a nominal wavelength of 850nm, and is QSFP56 MSA compliant.

200G Transceivers (continued)	
NVIDIA Model #	**Description**
MMA1T00-VS	The NVIDIA MMA1T00 transceiver is a 4-channel, pluggable, QSFP56 optical transceiver, designed for use in 200GbE Ethernet applications. This module incorporates NVIDIA integrated circuit technology to provide high performance. The transceiver operates over 4-lane parallel multi-mode fiber (MMF), using a nominal wavelength of 850nm, and is QSFP56 MSA compliant.
MMS1W50-HM	The NVIDIA MMS1W50-HM transceiver supports link lengths of up to 2km over Single Mode Fiber with Duplex-LC UPC connector in a QSFP56 form factor, using a nominal wavelength of 1310 nm. This transceiver complies with the CMIS4.04, QSFP MSA, IEEE 802.3bs (relevant sections) and operates according to the InfiniBand IBTA specification, and it is designed for use in 200Gb/s HDR InfiniBand applications.

100G Transceivers	
NVIDIA Model #	**Description**
MMA1B00-E100	The NVIDIA MMA1B00-E100 pluggable optical transceiver is designed for use in 100Gb/s InfiniBand link protocol applications. This SFF-8665 compliant transceiver is a flexible alternative to an Active Optical Cable (AOC), as it combines high port density and configurability with longer reach than passive copper cables in the data centers. The MMA1B00 transceiver has a standard QSFP28 port on the electrical side towards the host system.
MMA1B00-C100D	The NVIDIA MMA1B00-C100D is a 4-channel, pluggable QSFP28 optical transceiver designed for use in 100GbE Ethernet links with up to 100 m reach on multi-mode fiber (MMF). This transceiver incorporates our integrated circuit technology to provide high performance at low power. The MMA1B00-C100D converts 4 input channels of 25 Gb/s electrical data to 4 optical signals at 850 nm. Reversely, the receiver side de-multiplexes 4 optical inputs into 4 electrical differential output signals.The transceiver has selectable retiming as specified in the SFF-8636 MSA. The transceiver can therefore be used in both 40 GbE and 100 GbE applications.
MMA1L10-CR	The NVIDIA MMA1L10-CR is a 4-channel pluggable QSFP28 optical transceiver designed for 100 Gigabit Ethernet (GbE) links with up to 10 km reach on a single mode fiber. It is also qualified for use in InfiniBand EDR end-to-end systems.
MMA1L30-CR	The NVIDIA MMA1L30-CM transceiver is a single mode 4- channel (CWDM4), QSFP28 optical transceiver, designed for use in 100 Gigabit Ethernet (GbE) links on up to 2km of single mode fiber. It is also qualified for use in InfiniBand EDR end-to-end systems.
MMS1V70-CM	The NVIDIA MMS1V70-CM transceiver is a single mode 1-lane (DR1), QSFP28 optical transceiver, designed for use in 100 Gigabit Ethernet (GbE) links on up to 500m of single mode fiber.

Notes: All MPO-MPO fiber in the guide is Method B polarity. All Fiber Adapter Panels (FAP's) are Key-up to Key-down due to angle/polish of the MPO connectors

AI/ML connectivity can be complicated by several different factors which include customer preference, availability of components, distance between active components, quantity of connections, etc.

Panduit's suggestion is to future-proof yourself with structured cabling. Quite often customers can upgrade application speeds with new optical transceivers while being able to repurpose their cabling plant. Using structured cabling allows for better cable management, equipment upgrades without re-running cabinet to cabinet cabling, and easier moves/ adds/changes in the environment as needed. This guide considers best practices, although there are other methods such as direct connect.

The part numbers within are suggestions for connectivity types. Installation quantities may vary and change with port density requirements. Please see Panduit.com for Enclosure, Panel, Cassette, FAP, Interconnect, and Patch Cord available options. Additional components such as horizontal cable managers are available at Panduit.com but not specifically shared in the infrastructure link.

Step 2:

Identify the enclosure system(s) that meet your application needs. Select the MPO Fiber Adapter Panel (FAP) density needed to suit your requirements

HD Flex™ Fiber Enclosures

The HD Flex Fiber Cabling System is the highest density solution designed to set you free by removing the barriers of architecture, deployment, scalability and maintenance challenges.

- Provides up to 576 fibers (72 MPO ports) per RU
- Enclosures and panels are adaptable between 4 & 6 port MPO adapters
- Split tray feature allows each half of the tray to be pulled out independently

SFQ QuickNet™ Patch Panels

Panduit QuickNet Patch Panels provide the flexibility to deploy both copper and fiber connectivity in the same RU.

- High-density patch panels conserve valuable rack space with up to 512 fibers (64 MPO ports) per RU. Available in 4, 6, or 8 MPO's per FAP
- Available in flat or angled patch panels to facilitate proper bend radius control and minimize the need for horizontal cable managers

Opticom® Fiber Enclosures

Opticom Fiber Enclosures accept pre-terminated, splice-on, and field terminated fiber connectivity.

- Slide-out, tilt-down drawer provides up to 576 fibers (72 MPO's) per RU. Available in 4, 6, 8, 12, 16, 18 MPO's per FAP
- Integral bend radius control and cable management for fiber optic patch cords
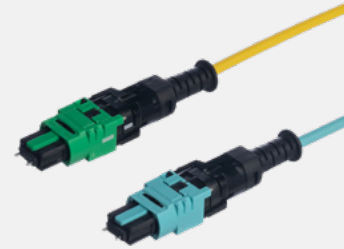
PanMPO™ Fiber Connector

The PanMPO Fiber Connector is a unique, patented MPO design that specifically addresses today's needs for fast and efficient Ethernet and Fiber Channel migration to help maximize return on cabling infrastructure investment and minimize downtime. Protect your investments today; minimizing installed cost of high-speed data center engineered links securing your position as a next-generation data center prepared to face future demands.

- Innovative push-pull boot to allow for easy installation and removal
- Alignment pins and tool are permanently housed and protected inside the connector allowing for a tool-less change of gender and polarity
- Easy migration from serial duplex (SR/SR-BD) to parallel (SR4.x) while maintaining compliance with cabling standards (TIA and ISO/IEC)
- Connector cleaning – the pin retraction feature allows for complete cleaning of the MPO surface
- Link certification – the gender changing ability of PanMPO on test leads allows for multiple test scenarios without the need for multiple test lead styles (which increase test variability)
- Mistake proofing – PanMPO Patch Cords can be reconfigured for gender and polarity in the field

Step 3:

Select the components to build out your end-to-end fiber connectivity channel.

800G Twin Port OSFP to 800G Twin Port OSFP

View is 'top view' of link. MPO's will be installed vertically on 800G dual MPO transceivers

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Interconnect
MPO8	**HD Flex**		**MPO8**	**HD Flex**		**MPO8**
OM4			**OM4**			**OM4**
GZ8RPJPJPYNM***	**FHMP-4-ABL**	**FLEX1U04**	**GZ8RPKPKPYNM*****	**FHMP-4-ABL**	**FLEX1U04**	**GZ8RPJPJPYNM*****
Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors	**SFQ Quicknet**		Male to Male, PanMPO Method B, Plenum 8F APC connectors	**SFQ Quicknet**		Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors
(2) per transceiver			(2) per link			(2) per transceiver
OS2			**OS2**			**OS2**
G98RPJPJPLNM***	**FQMAP85BL**	**QPP48HDBL**	**G98RPKPKPLNM*****	**FQMAP85BL**	**QPP48HDBL**	**G98RPJPJPLNM*****
Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors	**Opticom**		Male to Male, PanMPO Method B, Plenum 8F APC connectors	**Opticom**		Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors
(2) per transceiver	**FAPH1612BLMPO**	**FCE1U**	(2) per link	**FAPH1612BLMPO**	**FCE1U**	(2) per transceiver

	Near	Far	Application
OM4	**MMA4Z00-NS**	**MMA4Z00-NS**	800G Switch to 800G Switch
		MMA4Z00-NS-FLT	800G Switch to DGX H100 GPU
	MMA4Z00-NS-FLT	**MMA4Z00-NS**	400G IB/EN Switch to DGX H100 GPU
OS2	**MMS4X00-NM**	**MMS4X00-NM**	800G Switch to 800G Switch
		MMS4X00-NS-FLT	800G Switch to DGX H100 GPU
	MMS4X00-NS	**MMS4X00-NS**	800G Switch to 800G Switch
		MMS4X00-NS-FLT	800G Switch to DGX H100 GPU
	MMS4X00-NS-FLT	**MMS4X00-NS**	400G IB/EN Switch to DGX H100 GPU

^Interconnects are also available in LSZH (change '8RP' to '8RL')
Interconnects are available in standard MPO, change 'JPJP' to 'GPGP'
Replace *** with length, ie *** to 005 = 5 meters
ex: GZ8RPJPJPYNM020 = OM4, 8F, MMF APC Plenum, PanMPO female to PanMPO female, Method B, 20m

Step 3 (continued):

Select the components to build out your end-to-end fiber connectivity channel.

800G Twin Port OSFP to (2) 400G Single Port OSFP

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Interconnect
MPO8	HD Flex		MPO8	HD Flex		MPO8
OM4			**OM4**			**OM4**
GZ8RPJPJPYNM***	FHMP-4-ABL	FLEX1U04	GZ8RPKPKPYNM***	FHMP-4-ABL	FLEX1U04	GZ8RPJPJPYNM***
Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors	SFQ Quicknet		Male to Male, PanMPO Method B, Plenum 8F APC connectors	SFQ Quicknet		Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors
(2) per transceiver			(2) per link			1 per transceiver 2 total per link
OS2			**OS2**			**OS2**
G98RPJPJPLNM***	FQMAP85BL	QPP48HDBL	G98RPKPKPLNM***	FQMAP85BL	QPP48HDBL	G98RPJPJPLNM***
Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors	Opticom		Male to Male, PanMPO Method B, Plenum 8F APC connectors	Opticom		Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors
(2) per transceiver	FAPH1612BLMPO	FCE1U	(2) per link	FAPH1612BLMPO	FCE1U	1 per transceiver 2 total per link

	Near	Far	Application
OM4	MMA4Z00-NS	MMA4Z00-NS400	800G Switch to (2) 400G ConnectX-7
		MMA1Z00-NS400	800G Switch to (2) 400G BlueField-3 or 400G ConnectX-7
OS2	MMS4X00-NS	MMS4X00-NS400	800G Switch to (2) 400G ConnectX-7
		MMS1X00-NS400	800G Switch to (2) 400G BlueField-3 or 400G ConnectX-7
		MMX1V00-WM (2)	800G Switch to (2) 400G Switch
	MMS4X00-NS-FLT	MMS1V00-WM (2)	800G Switch to (2) 400G ConnectX-7

^Interconnects are also available in LSZH (change '8RP' to '8RL')
Interconnects are available in standard MPO, change 'JPJP' to 'GPGP'
Replace *** with length, ie *** to 005 = 5 meters
ex: GZ8RPJPJPYNM020 = OM4, 8F, MMF APC Plenum, PanMPO female to PanMPO female, Method B, 20m

Step 3 (continued):

Select the components to build out your end-to-end fiber connectivity channel.

800G Twin Port OSFP to (4) 200G Single Port OSFP with Y Splitter

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Y-Splitter
MPO8	HD Flex		MPO8	HD Flex		MPO8
OM4			OM4			OM4
GZ8RPJPJPYNM*** Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors (2) per transceiver	FHMP-4-ABL	FLEX1U04	GZ8RPKPKPYNM*** Male to Male, PanMPO Method B, Plenum 8F APC connectors (2) per link	FHMP-4-ABL	FLEX1U04	GZ8RP5ZJPYNM*** Fem. to Fem., PanMPO Method B, Plenum 8F to (2) 4F MPO Y - Splitter Cable (2) per link
	SFQ Quicknet			SFQ Quicknet		
OS2			OS2			OS2
G98RPJPJPLNM*** Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors (2) per transceiver	FQMAP85BL	QPP48HDBL	G98RPKPKPLNM*** Male to Male, PanMPO Method B, Plenum 8F APC connectors (2) per link	FQMAP85BL	QPP48HDBL	G98RP5ZJPLNM*** Fem. to Fem., PanMPO Method B, Plenum 8F to (2) 4F MPO Y - Splitter Cable (2) per link
	Opticom			Opticom		
	FAPH1612BLMPO	FCE1U		FAPH1612BLMPO	FCE1U	

	Near	Far	Application
OM4	MMA4Z00-NS	MMA4Z00-NS400 (4)	800G Switch to (4) 200G ConnectX-7
		MMA1Z00-NS400 (4)	800G Switch to 400G BlueField3 + ConnectX-7
OS2	MMS4X00-NS	MMS4X00-NS400 (4)	800G Switch to (4) 200G ConnectX-7
		MMS1X00-NS400 (4)	800G Switch to 400G BlueField3 + ConnectX-7

^Interconnects are also available in LSZH (change '8RP' to '8RL')
Interconnects are available in standard MPO, change 'JPJP' to 'GPGP'
Replace *** with length, ie *** to 005 = 5 meters
ex: GZ8RPJPJPYNM020 = OM4, 8F, MMF APC Plenum, PanMPO female to PanMPO female, Method B, 20m

Step 3 (continued):

Select the components to build out your end-to-end fiber connectivity channel.

400G Single Port to 400G Single Port DR4

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Interconnect
MPO8	HD Flex		MPO8	HD Flex		MPO8
OS2			**OS2**			**OS2**
G98RPJPJPLNM***	FHMP-4-ABL	FLEX1U04	G98RPKPKPLNM***	FHMP-4-ABL	FLEX1U04	G98RPJPJPLNM***
Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors	SFQ Quicknet		Male to Male, PanMPO Method B, Plenum 8F APC connectors	SFQ Quicknet		Fem. to Fem., PanMPO Method B, Plenum 8F APC connectors
	FQMAP85BL	QPP48HDBL		FQMAP85BL	QPP48HDBL	
	Opticom			Opticom		
	FAPH1612BLMPO	FCE1U		FAPH1612BLMPO	FCE1U	

	Near	Far	Application
OS2	MMS1V00-WM	MMS1V00-WM	400G Eth Switch to 400G Eth Switch
		MMS4X00-NS400	400G Eth Switch to 400G ConnectX-7
		MMX1X00-NS400	400G Eth Switch to 400G ConnectX-7, or Bluefield-3

^Interconnects are also available in LSZH (change '8RP' to '8RL')
Interconnects are available in standard MPO, change 'JPJP' to 'GPGP'
Replace *** with length, ie *** to 005 = 5 meters
ex: G98RPJPJPLNM020 = OS2, 8F, MMF APC Plenum, PanMPO female to PanMPO female, Method B, 20m

Step 3 (continued):

Select the components to build out your end-to-end fiber connectivity channel.

400G QSFP-DD to 400G QSFP-DD MMF SR8

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Interconnect
MPO16	HD Flex		MPO16	HD Flex		MPO16
OM4			OM4			OM4
FRZCPOOY021M***			FRZCPMMY021M***			FRZCPOOY021M***
Fem. to Fem., MPO Method B, Plenum 16F APC connectors	FHMP-4M-ABL	FLEX1U04	Male to Male, MPO Method B, Plenum 16F APC connectors	FHMP-4M-ABL	FLEX1U04	Fem. to Fem., MPO Method B, Plenum 16F APC connectors
	SFQ Quicknet			SFQ Quicknet		
	FQMAP8MBL	QPP48HDBL		FQMAP8MBL	QPP48HDBL	
	Opticom			Opticom		
	FAPH08MBLMPO	FCE1U		FAPH08MBLMPO	FCE1U	

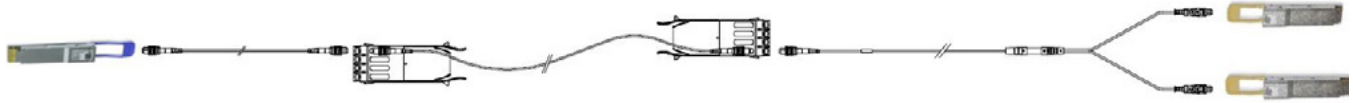|	Near	Far	Application
OM4	T-DQ8FNS-N00-M	T-DQ8FNS-N00-M	400G Eth Switch to 400G Eth Switch

^Interconnects are also available in LSZH (change 'CP' to 'CL')
Replace *** with length, ie *** to 005 = 5 meters.
ex: FRZCPOOY021M005 = OM4, 16F, MMF APC LSZH, PanMPO female to PanMPO female, Method B, 5m
Note: Opticom FAPs are 8 ports

Step 3 (continued):

Select the components to build out your end-to-end fiber connectivity channel.

400G QSFP-DD to (2) 200G QSFP-DD MMF Breakout SR8 – SR4

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Interconnect
MPO16	HD Flex		MPO16	HD Flex		MPO16
OM4			OM4			OM4
FRZCPOOY021M***			FRZCPMMY021M***			FRZCPOJY23M***
Fem. to Fem., MPO Method B, Plenum 16F APC	FHMP-4M-ABL	FLEX1U04	Male to Male, MPO Method B, Plenum 16F APC	FHMP-4M-ABL	FLEX1U04	Fem. to Fem., MPO Method B, Plenum 16F APC to (2) 8F UPC PanMPO, 24" Breakout "Y" Splitter cable
	SFQ Quicknet			SFQ Quicknet		
	FQMAP8MBL	QPP48HDBL		FQMAP8MBL	QPP48HDBL	
	Opticom			Opticom		
	FAPH08MBLMPO	FCE1U		FAPH08MBLMPO	FCE1U	

	Near	Far	Application
OM4	T-DQ8FNS-N00-M	MMA1T00-VS	400G Eth Switch to Bluefield-3, ConnectX-7, ConnectX-6, or 200GbE Switch
		MMA1B00C100D	400G Eth Switch to Bluefield-3, ConnectX-7, ConnectX-6, or 100GbE Switch

^Interconnects are also available in LSZH (change 'P' to 'L')
Replace *** with length, ie *** to 020 = 20 Meters
ex: FRZCPOOY021M020 = OM4, 16F to (2) 8F UPC PanMPO Fem to PanMPO Fem, "Y" Splitter, Plenum, Method B, 20m
Note: Opticom FAPs have 8 ports

Step 3 (continued):

Select the components to build out your end-to-end fiber connectivity channel.

400G QSFP-DD to (4) 100G QSFP28 LC DR4 – DR1 Breakout

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Interconnect
MPO8	HD Flex		MPO8	HD Flex		LC Harness
OS2			**OS2**			**OS2**
G98RPGPGPLNM***			G98RPHPHPLNM***			FH98PVLV016M***
Fem. to Fem., MPO Method B, Plenum 8F APC connectors	FHMP-4-ABL	FLEX1U04	Male to Male, MPO Method B, Plenum 8F APC connectors	FHMP-4-ABL	FLEX1U04	Fem PanMPO 8F 4:1 Duplex LC Brk. U2 Polarity 24" Breakout
	SFQ Quicknet			SFQ Quicknet		
	FQMAP85BL	QPP48HDBL		FQMAP85BL	QPP48HDBL	
	Opticom			Opticom		
	FAPH1612BLMPO	FCE1U		FAPH1612BLMPO	FCE1U	

	Near	Far	Application
OS2	MMS1V00-WM	MMS1V70-CM (4)	400G Eth Switch to 200G Eth Switch, Bluefield-3, ConnectX-7 or X-6 via LC Breakout

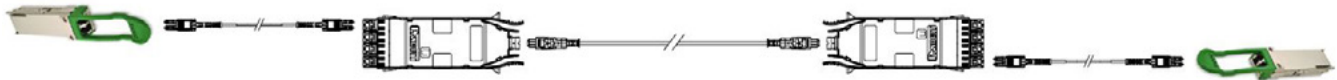^Interconnects are also available in LSZH (change '98P' to '98L')
Replace *** with length, ie *** to 005 = 5 meters
ex: G98RPGPGPLNM020 = OS2, 8F, SMF APC Plenum, PanMPO female to PanMPO female, Method B, 20m

Step 3 (continued):

Select the components to build out your end-to-end fiber connectivity channel.

200G QSFP56 to 200G QSFP56, or 100G QSFP28 to 100G QSFP28 SR4

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Interconnect
MPO8	HD Flex		MPO8	HD Flex		MPO8
OM4			**OM4**			**OM4**
FRZ8PJJY011M***			FRZ8PKKY011M***			FRZ8PJJY011M***
Fem. to Fem., PanMPO Method B, Plenum 8F UPC connectors	FHMP-4-ABL	FLEX1U04	Male to Male, PanMPO Method B, Plenum 8F UPC connectors	FHMP-4-ABL	FLEX1U04	Fem. to Fem., PanMPO Method B, Plenum 8F UPC connectors
	SFQ Quicknet			SFQ Quicknet		
	FQMAP85BL	QPP48HDBL		FQMAP85BL	QPP48HDBL	
	Opticom			Opticom		
	FAPH1612BLMPO	FCE1U		FAPH1612BLMPO	FCE1U	

	Near	Far	Application
OM4	MMA1B00-C100D	MMA1B00-C100D	200G HDR/Eth Switch to DGX H100 ConnectX-7
	MMA100-E00	MMA100-E00	200G HDR/Eth Switch to DGX H100 ConnectX-7
	MMA1T00-HS	MMA1T00-HS	200G HDR/Eth Switch to DGX H100 ConnectX-7
			200G IB Switch to 200G IB Switch, ConnectX-6, or Bluefield-2
	MMA1T00-VS	MMA1T00-VS	200G Eth Switch to 200G Eth Switch, ConnectX-6, or Bluefield-2

^Interconnects are also available in LSZH (change 'P' to 'J')
Interconnects are available in standard MPO, change 'JJ' to 'GG'
Replace *** with length, ie *** to 005 = 5 meters
ex: FRZ8PJJY011M020 = OM4, 8F, MMF UPC Plenum, PanMPO female to PanMPO female, Method B, No Breakout, 20m

Step 3 (continued):

Select the components to build out your end-to-end fiber connectivity channel.

200G QSFP56 to 200G QSFP56 Duplex LC FR4

Interconnect	Fiber Adapter Panels	Enclosures	Horizontal Link (Interconnect)	Fiber Adapter Panels	Enclosures	Interconnect
MPO8	HD Flex		MPO8	HD Flex		LC Harness
OS2			**OS2**			**OS2**
F92RPU1U1ONM***			FR98PVVY011M			F92RPU1U1ONM***
Duplex LC Uniboot Standard Polarity	FHC39O-08H-10U	FLEX1U04	Fem. to Fem., PanMPO Method B, Plenum 8F UPC connectors	FHC39O-08H-10U	FLEX1U04	Duplex LC Uniboot Standard Polarity
	SFQ Quicknet			SFQ Quicknet		
	FQ39O-08-10U	QPP48HDBL		FQ39O-08-10U	QPP48HDBL	
	Opticom			Opticom		
	FQ39O-16-10U	FCE1U		FQ39O-16-10U	FCE1U	

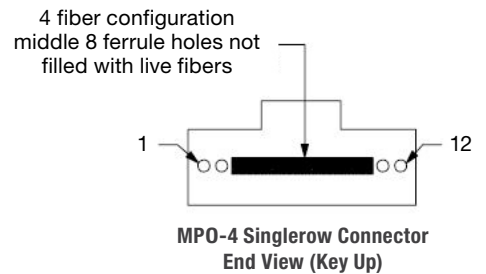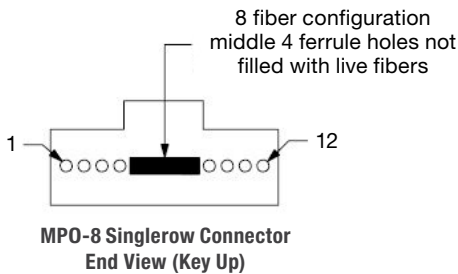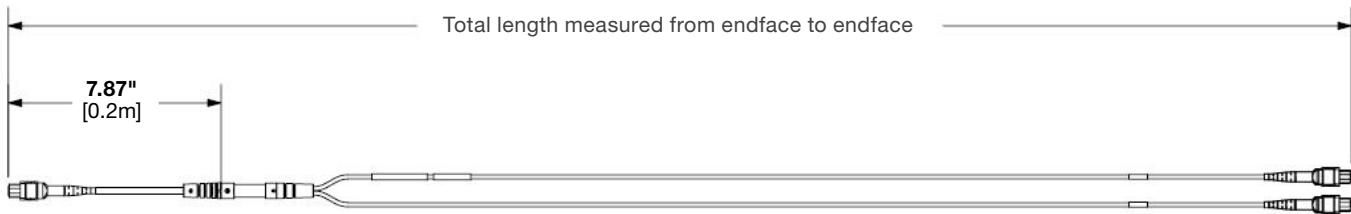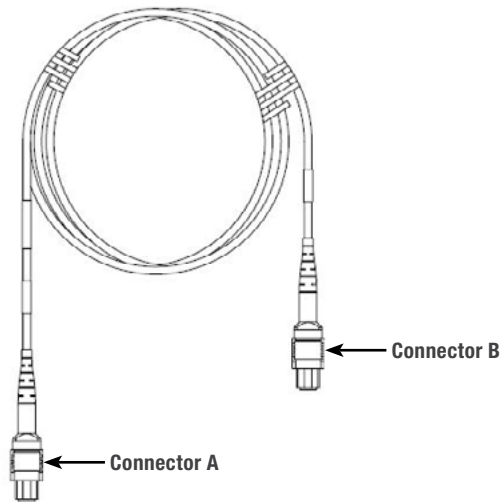|	Near	Far	Application
OS2	MMS1W50-HM	MMS1W50-HM	200G Eth/IB Switch to 200G Eth/IB Switch, 200G ConnectX-6, or Bluefield-2

^Interconnects are also available in LSZH (change '98P' to '98L')
Interconnects are available in standard MPO, change 'KK' to 'HH'
Replace *** with length, ie *** to 005 = 5 meters
ex: F92RPU1U1ONM020 = OS2, 2F, SMF Duplex LC, Standard Polarity, 20m

Notes: These configurations are shown completed with Fiber Interconnects (jumpers) due to generally close distances on active AI equipment. Multi-connector fiber trunks are also available by contacting Panduit Customer Service.

All Panduit fiber connectivity comes pre-tested and labeled with our award-winning RapidID™ labels.

Multimode and Singlemode connectivity options are both 0.35dB IL, with Singlemode using Ultra Low Loss connectors.

Nvidia to Panduit Cross	Panduit Part Numbers						
Nvidia Part # Equivalent	Plenum With MPO	Plenum With PanMPO	LSZH With MPO	LSZH With PanMPO	Mode	Method	Gender
MFP7E10-Nxxx	GZ8RPGPGPYNM***	GZ8RPJPJPYNM***	GZ8RLGPGPYNM***	GZ8RLJPJPNM***	OM4	B	Female to Female
MFP7E10-Nxxx	GZ8RPHPHPYNM***	GZ8RPKPKPYNM***	GZ8RLHPHPYNM***	GZ8RLKPKPNM***			Male to Male
MFP7E20-Nxxx	GZ8RP3ZGPYNM***	GZ8RP5ZJPYNM***	GZ8RL3ZGPYNM***	GZ8RL5ZJPYNM***			Splitter Female to 2x Female
MFP7E30-Nxxx	G98RPGPGPLNM***	G98RPJPJPLNM***	G98RLGPGPLNM***	G98RLJPJPLNM***	OS2	B	Female to Female
MFP7E30-Nxxx	G98RPHPHPLNM***	G98RPKPKPLNM***	G98RLHPHPLNM***	G98RLKPKPLNM***			Male to Male
MFP7E40-Nxxx	G98RP3ZGPLNM***	G98RP5ZJPLNM***	G98RL3ZGPLNM***	G98RL5ZJPLNM***			Splitter Female to 2x Female

Connector B

Connector A

Total length measured from endface to endface

7.87"
[0.2m]

8 fiber configuration middle 4 ferrule holes not filled with live fibers

4 fiber configuration middle 8 ferrule holes not filled with live fibers

1   12

1   12

MPO-8 Singlerow Connector
End View (Key Up)

MPO-4 Singlerow Connector
End View (Key Up)

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