



NVIDIA ConnectX-7 Adapter Cards Firmware Release Notes v28.39.3560 LTS

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Info

This is a long-term support (LTS) release. LTS is the practice of maintaining a software product for an extended period of time (up to three years) to help increase product stability. LTS releases include bug fixes and security patches.

Release Notes Update History

Version	Date	Description
28.39.3560	July 03, 2024	Initial release of this Release Notes version, This version introduces Bug Fixes .

Overview

Firmware which is added at the time of manufacturing, is used to run user programs on the device and can be thought of as the software that allows hardware to run. Embedded firmware is used to control the functions of various hardware devices and systems, much like a computer's operating system (OS) controls the function of software applications. Firmware may be written into read-only memory (ROM), erasable programmable read-only memory (EPROM) or flash memory.

The ConnectX-7 smart host channel adapter (HCA) provides up to four ports of connectivity and 400Gb/s of throughput, hardware-accelerated networking, storage, security, and manageability services at data center scale for cloud, telecommunications, AI, and enterprise workloads. ConnectX-7 empowers agile and high-performance networking solutions with features such as Accelerated Switching and Packet Processing (ASAP2), advanced RoCE, GPUDirect Storage, and in-line hardware acceleration for Transport Layer Security (TLS), IP Security (IPsec), and MAC Security (MACsec) encryption and decryption. ConnectX-7 enables organizations to meet their current and future networking needs in both high-bandwidth and high-density environments.

The ConnectX-7 smart host channel adapter (HCA), featuring the NVIDIA Quantum-2 InfiniBand architecture, provides the highest networking performance available to take on the world's most challenging workloads. ConnectX-7 provides ultra-low latency, 400Gb/s

throughput, and innovative NVIDIA In-Network Computing acceleration engines to provide additional acceleration to deliver the scalability and feature-rich technology needed for supercomputers, artificial intelligence, and hyperscale cloud data centers.

Firmware Download

Please visit [Firmware Downloads](#).

Document Revision History

A list of the changes made to this document are provided in [Document Revision History](#).

Firmware Compatible Products

These are the release notes for the NVIDIA® ConnectX®-7 adapters firmware. This firmware supports the following protocols:

- InfiniBand - EDR, HDR100², HDR², NDR200², NDR²
- Ethernet - 1GbE, 10GbE, 25GbE, 40GbE, 50GbE¹, 100GbE¹, 200GbE², 400GbE²
- PCI Express 5.0, supporting backwards compatibility for v4.0, v3.0, v2.0 and v1.1

¹. Speed that supports both NRZ and PAM4 modes in Force mode and Auto-Negotiation mode.

². Speed that supports PAM4 mode only.

Note

When connecting an NVIDIA-to-NVIDIA adapter card in ETH PAM4 speeds, Auto-Neg should always be enabled.

Supported Devices

NVIDIA SKU	Legacy OPN	PSID	Device Description
900-9X7AH-0078-DTZ	MCX755106 AS-HEAT	MT_00 00000 834	NVIDIA ConnectX-7 HHHL Adapter Card; 200GbE (default mode) / NDR200 IB; Dual-port QSFP112; PCIe 5.0 x16 with x16 PCIe extension option; Crypto Disabled; Secure Boot Enabled
900-9X7AH-0078-ST0	MCX713106 AS-VEAT	MT_00 00000	NVIDIA ConnectX-7 HHHL Adapter Card; 200GbE; Dual-port QSFP112; PCIe 5.0 x16;

NVIDIA SKU	Legacy OPN	PSID	Device Description
		840	Crypto Disabled; Secure Boot Enabled
900-9X767-003N-DT0	MCX75210A AS-NEAT	MT_000000851	NVIDIA ConnectX-7 HHHL Adapter Card; NDR IB; Single-port OSFP; PCIe 5.0 2x8 in a row (Socket Direct); Crypto Disabled; Secure Boot Enabled
900-9X766-001N-ST0	MCX75310A AS-HEAT-N	NVD000000024	NVIDIA ConnectX-7 InfiniBand adapter card; 200Gb/s NDR200; single-port OSFP; PCIe 5.0 x 16; secure boot; no crypto; for Nvidia DGX
900-9X720-00E0-S0B / 900-9X720-007N-SN1 / 900-9X720-00E0-S00 / 900-9X720-007N-SN0	MCX750500 B-0D0K / MCX750500 C-0D0K / MCX750500 B-0D00 / MCX750500 C-0D00	MT_000000891	Nvidia adapter card with four ConnectX-7; each up to 400Gb/s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled; secure boot enabled
900-9X7AH-0058-DT1	MCX753106 AS-HEAT-N	NVD000000023	NVIDIA ConnectX-7 VPI adapter card; 200Gb/s; dual-port QSFP; single port InfiniBand and second port VPI (InfiniBand or Ethernet); PCIe 5.0 x16; secure boot; no crypto; for Nvidia DGX storage
900-9X7AX-004NMC0	MCX75343A MC-NEAC	MT_000001059	NVIDIA ConnectX-7 OCP3.0 TSFF Adapter Card; 400GbE / NDR IB (default mode); Single-port OSFP; Multi-Host and Socket Direct capable; PCIe 5.0 x16; Crypto Enabled; Secure Boot Enabled
900-9X7AH-0076-ST0	MCX713106 AS-CEAT	MT_000000843	NVIDIA ConnectX-7 HHHL Adapter Card; 100GbE; Dual-port QSFP 112; PCIe 5.0 x16; Crypto Disabled; Secure Boot Enabled
900-9X7AO-0003-ST0	MCX713104 AS-ADAT	MT_000000849	NVIDIA ConnectX-7 HHHL Adapter Card; 25/50GbE; Quad-Port SFP56; PCIe 4.0 x16; Crypto Disabled; Secure Boot Enabled
900-9X766-003N-SR0	MCX75310A AC-NEAT	MT_000001046	NVIDIA ConnectX-7 HHHL Adapter card; 400GbE / NDR IB (default mode); Single-port OSFP; PCIe 5.0 x16; Crypto Enabled; Secure Boot Enabled;
900-9X760-0078-MB0	MCX753436 MS-HEAB	MT_000000000	NVIDIA ConnectX-7 OCP3.0 SFF Adapter Card; 200GbE (default mode) / NDR200 IB; Dual-port

NVIDIA SKU	Legacy OPN	PSID	Device Description
		833	QSFP112; Multi-Host and Socket Direct capable; PCIe 5.0 x16; Crypto Disabled; Secure Boot Enabled
900-9X721-003N-DT0	MCX75510A AS-NEAT	MT_000000800	NVIDIA ConnectX-7 adapter card; 400Gb/s NDR IB; Single-port OSFP; PCIe 5.0 x16 with x16 Extension option (Socket Direct ready); Secure boot; No Crypto
900-9X766-003N-SQ0	MCX75310A AS-NEAT	MT_000000838	NVIDIA ConnectX-7 HHHL Adapter card; 400GbE / NDR IB (default mode); Single-port OSFP; PCIe 5.0 x16; Crypto Disabled; Secure Boot Enabled;
900-9X7AH-0088-ST0	MCX713106 AC-VEAT	MT_000000841	NVIDIA ConnectX-7 HHHL Adapter Card; 200GbE; Dual-port QSFP112; PCIe 5.0 x16; Crypto Enabled; Secure Boot Enabled
900-9X7AH-0086-SQ0	MCX713106 AC-CEAT	MT_000000842	NVIDIA ConnectX-7 HHHL Adapter Card; 100GbE; Dual-port QSFP112; PCIe 5.0 x16; Crypto Enabled; Secure Boot Enabled
900-9X760-0018-MB2	MCX753436 MC-HEAB	MT_000001030	NVIDIA ConnectX-7 OCP3.0 SFF Adapter Card; 200GbE (default mode) / NDR200 IB; Dual-port QSFP112; Multi-Host and Socket Direct capable; PCIe 5.0 x16; Crypto Enabled; Secure Boot Enabled;
900-9X7AX-003NMC0	MCX75343A MS-NEAC	MT_000001058	NVIDIA ConnectX-7 OCP3.0 TSFF Adapter Card; 400GbE / NDR IB (default mode); Single-port OSFP; Multi-Host and Socket Direct capable; PCIe 5.0 x16; Crypto Disabled; Secure Boot Enabled
900-9X7AX-0039-SB0	MCX75343A AS-NEAC	MT_000000784	NVIDIA ConnectX-7 VPI adapter card; NDR IB/400GbE OCP3.0 TSFF; Single-port OSFP; PCIe 5.0 x16; Secure boot; No Crypto
900-9X721-003N-DT1	MCX75510A AS-HEAT	MT_000000839	NVIDIA ConnectX-7 adapter card; 200Gb/s NDR200 IB; Single-port OSFP; PCIe 5.0 x16 Extension option (Socket Direct ready); Secure boot; No Crypto
900-9X767-003N-DT1	MCX75210A AS-HEAT	MT_000000850	NVIDIA ConnectX-7 HHHL Adapter Card; NDR200 IB; Single-port OSFP; PCIe 5.0 2x8 in a row (Socket Direct); Crypto Disabled; Secure Boot Enabled;

NVIDIA SKU	Legacy OPN	PSID	Device Description
900-9X7A0-00C3-STZ	MCX713104 AC-ADAT	MT_00 00000 852	NVIDIA ConnectX-7 HHHL Adapter Card; 25/50GbE; Quad-Port SFP56; PCIe 4.0 x16; Crypto Enabled; Secure Boot Enabled
900-9X766-003N-ST0	MCX75310A AS-HEAT	MT_00 00000 844	NVIDIA ConnectX-7 HHHL Adapter Card; 200GbE / NDR200 IB (default mode); Single-port OSFP; PCIe 5.0 x16; Crypto Disabled; Secure Boot Enabled;
900-9X7AH-0079-DTZ	MCX755106 AC-HEAT	MT_00 00001 045	NVIDIA ConnectX-7 HHHL adapter Card; 200GbE (default mode) / NDR200 IB; Dual-port QSFP112; PCIe 5.0 x16 with x16 PCIe extension option; Crypto Enabled; Secure Boot Enabled;
930-90000-0000-060	MCX755206 AS-NEAT-N	MT_00 00000 892	NVIDIA ConnectX-7 VPI adapter card; 400Gb/s IB and 200GbE; dual-port QSFP; PCIe 5.0 x16; dual slot; secure boot; no crypto; tall bracket for Nvidia DGX storage
900-9X7AH-0039-STZ	MCX715105 AS-WEAT	MT_00 00000 856	NVIDIA ConnectX-7 HHHL Adapter Card; 400GbE (default mode) / NDR IB; Single-port QSFP112; PCIe 5.0 x16 with x16 PCIe extension option; Crypto Disabled; Secure Boot Enabled

Driver Software, Tools and Switch Firmware

The following are the drivers' software, tools, switch/HCA firmware versions tested that you can upgrade from or downgrade to when using this firmware version:

	Supported Version
ConnectX-7 Firmware	28.39.3560 / 28.39.3004 / 28.39.2048
MLNX_OFED	23.10-3.2.1.1 / 23.10-2.1.3.1 / 23.10-1.1.9.0 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
MLNX_EN (MLNX_OFED based code)	23.10-3.2.1.1 / 23.10-2.1.3.1 / 23.10-1.1.9.0 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
WinOF-2	23.10.51000 / 23.10.50000 / 23.7.50000 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.

	Supported Version
MFT	4.26.1-6 / 4.26.1 / 4.26.0 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
mstflint	4.26.1-6 / 4.26.1 / 4.26.0 Note: For the list of the supported Operating Systems, please refer to the driver's Release Notes.
FlexBoot	3.7.300
UEFI	14.32.17
MLNX-OS	3.10.5002 onwards
Cumulus	5.4 onwards
NVIDIA Quantum-2 Firmware	31.2012.1024 onwards

Changes and New Feature in this Firmware Version

Feature/Change	Description
	28.39.3560
Bug Fixes	See <i>Bug Fixes in this Firmware Version</i> section.

Bug Fixes in this Firmware Version

Internal Ref.	Issue
3959470	<p>Description: Fixed a misconfiguration in OVS when RTTs are sent on a different priority that affected Congestion Control algorithm. This happened when the Round Trip Time (RTT) Congestion Control internal packets did not reach SW, even when flow is software offload (and the packets were not moved yet to the hardware offload by the OVS). To solve the issue, now such packets are sent to the SW when they are SW offloaded.</p> <p>Keywords: Round Trip Time (RTT) Congestion Control</p> <p>Discovered in Version: 28.39.3004</p> <p>Fixed in Release: 28.39.3560</p>
388760	<p>Description: Fixed an issue that caused Completion Timeout to mistakenly be treated as Advisory Non-Fatal error. Now Completion Timeout is treated as uncorrectable error.</p> <p>Keywords: Completion Timeout, Advisory Non-Fatal error</p> <p>Discovered in Version: 28.39.3004</p> <p>Fixed in Release: 28.39.3560</p>
388774	<p>Description: Fixed an issue that prevented PLDM command Get Schema URI from functioning properly when there were no base RDE resource IDs.</p> <p>Keywords: PLDM</p>

	<p>Discovered in Version: 28.39.3004</p>
	<p>Fixed in Release: 28.39.3560</p>
39 10 36 6	<p>Description: Fixed an issue that prevented RDE Port resource from showing 400Gb speed in CapableLinkSpeedGbps and in MaxSpeedGbps in some InfiniBand cards.</p> <p>Keywords: 400Gb, InfiniBand, RDE</p> <p>Discovered in Version: 28.39.3004</p> <p>Fixed in Release: 28.39.3560</p>
39 10 36 6	<p>Description: Fixed an issue where the CR_SPACE was open to any read operation, even though some reads could lock the gateway. Bad reads from CR_SPACE will now result in a bad_access error being returned.</p> <p>Keywords: CR_SPACE, Gateway</p> <p>Discovered in Version: 28.39.3004</p> <p>Fixed in Release: 28.39.3560</p>
39 10 36 8	<p>Description: Blocked access to invalid CR-SPACE registers when the adapter cards are secured.</p> <p>Keywords: CR-SPACE registers</p> <p>Discovered in Version: 28.39.3004</p> <p>Fixed in Release: 28.39.3560</p>
39 42 11 2	<p>Description: Fixed an issue that resulted in device assert when using DCBX CEE.</p> <p>Keywords: DCBX</p>

	Discovered in Version: 28.39.3004
	Fixed in Release: 28.39.3560
38 18 99 7	Description: Improved ZTR_RTTCC algorithm fairness when running with 4K MTU.
	Keywords: PCC
	Discovered in Version: 28.39.3004
	Fixed in Release: 28.39.3560
39 25 69 1	Description: Fixed an issue that caused CNP or RTT counters to not wrap-around properly.
	Keywords: CNP, RTT, counters
	Discovered in Version: 28.39.3004
	Fixed in Release: 28.39.3560
39 29 37 6	Description: Fixed an issue where Congestion Control could malfunction due to an invalid database.
	Keywords: Congestion control
	Discovered in Version: 28.39.3004
	Fixed in Release: 28.39.3560
38 32 28 4	Description: Fixed an issue that resulted in CNP moderation's mlxconfig preventing the CC mechanism from working properly.
	Keywords: Congestion control, CNP

Discovered in Version: 28.39.3004
Fixed in Release: 28.39.3560

Known Issues

VF Network Function Limitations in SR-IOV Legacy Mode

Dual Port Device	Single Port Device
127 VF per PF (254 functions)	127

VF Network Function Limitations in Switchdev Mode

Dual Port Device	Single Port Device
127 VF per PF (254 functions)	127

VF+SF Network Function Limitations in Switchdev Mode

Dual Port Device	Single Port Device
<ul style="list-style-type: none"> 127 VF per PF (254 functions) 512 PF+VF+SF per PF (1024 functions) 	<ul style="list-style-type: none"> 127 VF (127 functions) 512 PF+VF+SF per PF (512 functions)

Internal Ref.	Issue
3795 140	Description: Firmware cannot reach the line rate with a single QP while running traffic.
	Workaround: N/A
	Keywords: Line rate, MCX750500B-0D0K / MCX750500B-0D00
	Discovered in Version: 28.39.3004
3649 572	Description: Downgrading from firmware version 28.39.2048 to a lower one requires performing a Power Cycle after firmware burning and not fwreset.
	Workaround: N/A
	Keywords: Firmware downgrade, power cycle

Internal Ref.	Issue
	Discovered in Version: 28.39.1002
3614 362	<p>Description: When connected to a Spectrum-1 switch system using NRZ 25G optic module supporting DME in NO FEC, an EFF BER of -13 may be seen once in 200 toggles.</p> <p>Workaround: To raise the link, re-toggle the port.</p> <p>Keywords: Spectrum-1, NRZ, BER, port toggling</p> <p>Discovered in Version: 28.39.1002</p>
3629 216	<p>Description: mlxfwreset level 3 command is not supported for MCX750500B-OD00 / MCX750500B-OD0K / MCX755206AS-NEAT-N P/N.</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1. Enable mlxfwreset level 4. mlxfwreset -d <dev> r -l 4 -y 2. Reboot the server. <p>Keywords: mlxfwreset level 3</p> <p>Discovered in Version: 28.39.1002</p>
-	<p>Description: The I²C clock fall time is lower than the 12ns minimum defined in the I2C-bus specification. For further information, refer to the I²C-bus Specification, Version 7.0, October 2021, https://www.i2c-bus.org/.</p> <p>Workaround: N/A</p> <p>Keywords: I²C clock</p> <p>Discovered in Version: 28.39.1002</p>
3179 534	<p>Description: 25G/lane speeds are not supported on 200GbE optic cables.</p> <p>Workaround: N/A</p> <p>Keywords: Cables, 200GbE</p> <p>Discovered in Version: 28.39.1002</p>
3606 136	<p>Description: In rare cases, linkup time of NDR and NDR200 with MMA4Z00-NS400 may take longer than 60 seconds.</p> <p>Workaround: N/A</p>

Internal Ref.	Issue
	Keywords: Cables, NDR, NDR200, linkup time
	Discovered in Version: 28.39.1002
3435 259	Description: The host enables the device to populate only 1 bus. When opening extra 2 Physical ports, moving from dual-port to quad-port, the user can open 2 less Virtual Functions.
	Workaround: N/A
	Keywords: VF, dual-port, quad-port
	Discovered in Version: 28.39.1002
3525 865	Description: Unexpected system behavior might be observed if the driver is loaded while reset is in progress.
	Workaround: N/A
	Keywords: Sync 1 reset, firmware reset
	Discovered in Version: 28.39.1002
3363 753	Description: The link is down when connected to the MMS1V00-WM (DR4) optical module.
	Workaround: N/A
	Keywords: 400G, link down
	Discovered in Version: 28.38.1002
3439 438	Description: When connecting to a High Speed Traffic Generator in 400G speed, the linkup time may takes up to 3 minutes.
	Workaround: N/A
	Keywords: 400G, linkup time
	Discovered in Version: 28.38.1002
3457 472	Description: Disabling the Relaxed Ordered (RO) capability (relaxed_ordering_read_pci_enabled=0) using the vhca_resource_manager is currently not functional.
	Workaround: N/A
	Keywords: Relaxed Ordered
	Discovered in Version: 28.37.1014

Internal Ref.	Issue
3275 394	<p>Description: When performing PCIe link secondary-bus-reset, disable/enable or mlxfwreset on AMD based Genoa systems, the device takes longer then expected to link up, due to a PCIe receiver termination misconfiguration.</p> <p>Workaround: N/A</p> <p>Keywords: PCIe</p> <p>Discovered in Version: 28.37.1014</p>
-	<p>Description: When upgrading from firmware v28.35.2000 to a newer one, the default port speeds of adapter cards MCX755106AS-HEAT/ MCX755106AC-HEAT will change from InfiniBand to Ethernet.</p> <p>Workaround: To change it back to InfiniBand, please follow the instructions in the ConnectX-7 hardware User Manual.</p> <p>Keywords: Firmware upgrade, port type, MCX755106AS-HEAT/ MCX755106AC-HEAT</p> <p>Discovered in Version: 28.37.1014</p>
3376 224	<p>Description: FEC override is not supported when working with NRZ speeds on PAM4 Optical modules.</p> <p>Workaround: N/A</p> <p>Keywords: FEC override, NRZ, PAM4</p> <p>Discovered in Version: 28.37.1014</p>
3262 845	<p>Description: In the ConnectX-7 adapter card with P/N MCX750500B-OD0K, the "Fatal Error Reporting Enable" bit controls both the fatal and the non-fatal ERR MSG forwarding. The "Non-Fatal Error Reporting Enable" bit does not affect the ERR MSG forwarding.</p> <p>Workaround: N/A</p> <p>Keywords: Fatal Error Reporting Enable" bit, PCIe, MCX750500B-OD0K</p> <p>Discovered in Version: 28.36.1010</p>
3312 483	<p>Description: WoL packets may not working properly if sent to Unicast destination MAC.</p> <p>Workaround: N/A</p> <p>Keywords: WoL packets, Unicast destination MAC</p> <p>Discovered in Version: 28.36.1010</p>

Internal Ref.	Issue
3339 919	<p>Description:</p> <ul style="list-style-type: none"> When raising a link using 200G optical cables while connecting a ConnectX-7 to a ConnectX-7, raising a link with width less than the maximum provided by the cable with speed 25G lane is not supported. When raising a link using 400G optical cables while connecting a ConnectX-7 to a ConnectX-7, raising a link with width less than the maximum provided by the cable with speed 50G or 25G lane is not supported. <p>Workaround: To raise in Force flow, configure the speed, FEC and precoding.</p> <p>Keywords: Link up speed</p> <p>Discovered in Version: 28.36.1010</p>
3339 818	<p>Description: When performing a stress toggling on a ConnectX-7 adapter card that is connected to the MMA1Z00-NS400 cable and the speed is set to 100G_1x with interleaved FEC, a long linkup time of up to 5 min may occur.</p> <p>Workaround: N/A</p> <p>Keywords: Toggling, MMA1Z00-NS400</p> <p>Discovered in Version: 28.36.1010</p>
3329 109	<p>Description: MFS1S50-H003E cable supports only HDR rate when used as a split cable.</p> <p>Workaround: N/A</p> <p>Keywords: HDR, split cable, MFS1S50-H003E</p> <p>Discovered in Version: 28.36.1010</p>
2844 036	<p>Description: When using the "Dual Write" feature with QP buffer bigger than the maximum outstanding WQEs (128), the data being sent on the standby QP can be corrupted.</p> <p>Workaround: Limit the QP buffer size when using "Dual Write" up to 128 WQEs.</p> <p>Keywords: Dual-write, QP</p> <p>Discovered in Version: 28.36.1010</p>
3178 339	<p>Description: PCIe PML1 is disabled.</p> <p>Workaround: N/A</p> <p>Keywords: PCIe PML1</p>

Internal Ref.	Issue
	Discovered in Version: 28.35.1012
3110 297	Description: When ConnectX-7 adapter card is configured to use the Auto-Negotiation mode, 400G_8x linkup cannot be raised.
	Workaround: Configure the adapter card to use Force mode.
	Keywords: 400G_8x, linkup
	Discovered in Version: 28.34.4000
3033 910	Description: BAR misses caused by a memory write/read actions are not reported in the AER and the device status.
	Workaround: N/A
	Keywords: BAR miss, AER
	Discovered in Version: 28.34.4000
3140 645	Description: 3 rd party servers may hang after warm reboot due to the PCIe switch.
	Workaround: N/A
	Keywords: PCIe, 3rd party servers
	Discovered in Version: 28.34.4000
-	Description: Changing dynamic PCIe link width is not supported.
	Workaround: N/A
	Keywords: PCIe
	Discovered in Version: 28.34.1002
3174 038	Description: SPDM requests received while CPLD burn flow is in progress may be answered with incorrect responses.
	Workaround: Avoid activation of the two flows in tandem.
	Keywords: SPDM
	Discovered in Version: 28.34.1002
3141 072	Description: The "max_shaper_rate" configuration query via QEEC mlxreg returns a value translated to hardware granularity.
	Workaround: N/A
	Keywords: RX Rate-Limiter, Multi-host

Internal Ref.	Issue
	Discovered in Version: 28.34.1002
2870 970	Description: GTP encapsulation (flex parser profile 3) is limited to the NIC domain. Encapsulating in the FDB domain will render a 0-size length in GTP header.
	Workaround: N/A
	Keywords: GTP encapsulation
	Discovered in Version: 28.34.1002
3081 264	Description: 10G/40G speeds are not supported on MFS1S00-XXXX modules (200G optics) in ConnectX-7 adapter cards.
	Workaround: N/A
	Keywords: Optical cables
	Discovered in Version: 28.33.4030
3070 590	Description: PLL modules are not supported in ConnectX-7 ethernet adapter cards.
	Workaround: N/A
	Keywords: PLL
	Discovered in Version: 28.33.4030
3070 409	Description: When connecting a ConnectX-7 adapter card to a ConnectX-6 Dx or an NVIDIA Spectrum-3 switch, NRZ speeds are not raised when using 200GbE optical cable.
	Workaround: Configure PHY_FEC_OVERRIDE on the ConnectX-7 side for the requested speed.
	Keywords: Optical cables, NRZ, ConnectX-6 Dx, NVIDIA Spectrum-3, 200GbE optical cable
	Discovered in Version: 28.33.4030
2993 531	Description: PML1 is disabled by default. Enabling it might result in server hanging.
	Workaround: N/A
	Keywords: PML1
	Discovered in Version: 28.33.2028

Internal Ref.	Issue
-	<p>Description: Upgrading to firmware 28.33.2028 from any previous Engineering Sample (earlier than version 28.98.2406) must be done before installing WinOF-2 v2.90 driver and requires going through the following steps:</p> <ol style="list-style-type: none"> 1. Upgrade to 28.98.2406 version while the driver is disabled. 2. Upgrade to firmware version 28.33.2028 (the driver can be enable at this stage). <p>Workaround: N/A</p> <p>Keywords: Firmware upgrade</p> <p>Discovered in Version: 28.33.2028</p>
-	<p>Description: Downgrading from firmware 28.33.2028 to any previous Engineering Sample firmware is not supported.</p> <p>Workaround: N/A</p> <p>Keywords: Firmware downgrade</p> <p>Discovered in Version: 28.33.2028</p>

PreBoot Drivers (FlexBoot/UEFI)

FlexBoot Changes and New Features

For further information, please refer to the [FlexBoot Release Notes](#).

UEFI Changes and Major New Features

For further information, please refer to the [UEFI Release Notes](#).

Validated and Supported Cables and Switches

Validated and Supported Cables and Modules

Cables Lifecycle Legend

Lifecycle Phase	Definition
EOL	End of Life
LTB	Last Time Buy
HVM	GA level
MP	GA level
P-Rel	GA level
Preliminary	Engineering Sample
Prototype	Engineering Sample

VPI Protocol Support

 **Note**

ConnectX-7 adapter cards support both the Ethernet and InfiniBand networking protocols. The default port state of ConnectX-7 adapter cards is Ethernet.

Note

Upon firmware upgrade, after reset, the default port configuration could be changed.

To set the right configuration, run:

```
m1xconfig -d <mst device> s LINK_TYPE_P1=1/2 LINK_TYPE_P2=1/2
```

where:

- LINK_TYPE_P1 - sets the configuring protocol for port 1
- LINK_TYPE_P2 - sets the configuring protocol for port 2
- (1/2) - values used for the different protocols:
 - 1 – for InfiniBand
 - 2 - for Ethernet

NDR / 400GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	400GE	980-9108L-00W003	C-DQ8FNM003-NML	NVIDIA Select 400GbE QSFP-DD AOC 3m	Preliminary
N/A	400GE	980-9108N-00W005	C-DQ8FNM005-NML	NVIDIA Select 400GbE QSFP-DD AOC 5m	Preliminary

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	400GE	980-9I08P-00W010	C-DQ8FNM010-NML	NVIDIA Select 400GbE QSFP-DD AOC 10m	Preliminary
N/A	400GE	980-9I08R-00W020	C-DQ8FNM020-NML	NVIDIA Select 400GbE QSFP-DD AOC 20m	Preliminary
N/A	400GE	980-9I08T-00W050	C-DQ8FNM050-NML	NVIDIA Select 400GbE QSFP-DD AOC 50m	Preliminary
NDR	N/A	980-9I600-00N003	MCA4J80-N003-FLT	Active copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 3m, flat top	MP
NDR	N/A	980-9I601-00N003	MCA4J80-N003-FTF	NVIDIA Active copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 3m, flat to finned	MP
NDR	N/A	980-9I948-00N004	MCA7J60-N004	NVIDIA active copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 4m	P-Rel
NDR	N/A	980-9I949-00N005	MCA7J60-N005	NVIDIA active copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 5m	P-Rel
NDR	N/A	980-9I81B-00N004	MCA7J65-N004	NVIDIA Active copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xQSFP112, 4m	Prototype
NDR	N/A	980-9I81C-00N005	MCA7J65-N005	NVIDIA Active copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xQSFP112, 5m	Prototype
NDR	N/A	980-9I50D-00N004	MCA7J70-N004	NVIDIA active copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 4m	P-Rel
NDR	N/A	980-9I50E-00N005	MCA7J70-N005	NVIDIA active copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 5m	P-Rel
NDR	N/A	980-9I76G-	MCA7J75-N004	NVIDIA Active copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to	Prototype

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00N004		4xQSFP112, 4m	
NDR	N/A	980-9I76H-00N005	MCA7J75-N005	NVIDIA Active copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xQSFP112, 5m	Prototype
N/A	400GE	980-9I350-00W001	MCP1660-W001E30	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 1m, 30AWG	EOL [P-Rel]
N/A	400GE	980-9I35P-00W002	MCP1660-W002E26	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 2m, 26AWG	EOL [P-Rel]
N/A	400GE	980-9I35Q-00W003	MCP1660-W003E26	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 3m, 26AWG	EOL [P-Rel]
N/A	400GE	980-9I35R-00W00A	MCP1660-W00AE30	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 0.5m, 30AWG	EOL [P-Rel]
N/A	400GE	980-9I35S-00W01A	MCP1660-W01AE30	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 1.5m, 30AWG	EOL [P-Rel]
N/A	400GE	980-9I35T-00W02A	MCP1660-W02AE26	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 2.5m, 26AWG	EOL [P-Rel]
NDR	N/A	980-9IA0F-00N001	MCP4Y10-N001	NVIDIA passive Copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 1m	MP
NDR	N/A	980-9IA0G-00N001	MCP4Y10-N001-FLT	NVIDIA Passive Copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 1m, flat top	MP

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
NDR	N/A	980-9IA0J-00N002	MCP4Y10-N002-FLT	NVIDIA passive Copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 2m, flat top	MP
NDR	N/A	980-9IA0K-00N00A	MCP4Y10-N00A	NVIDIA passive Copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 0.5m	MP
NDR	N/A	980-9IA0R-00N01A	MCP4Y10-N01A-FLT	NVIDIA passive Copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 1.5m, flat top	MP
N/A	400GE	980-9I48Y-00W001	MCP7F60-W001R30	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 4x100Gb/s, QSFP-DD to 4xQSFP56, 1m, 30AWG	EOL [P-Rel]
N/A	400GE	980-9I48Z-00W002	MCP7F60-W002R26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 4x100Gb/s, QSFP-DD to 4xQSFP56, 2m, 26AWG	EOL [P-Rel]
N/A	400GE	980-9I822-00W02A	MCP7F60-W02AR26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 4x100Gb/s, QSFP-DD to 4xQSFP56, 2.5m, 26AWG	EOL [P-Rel]
N/A	400GE	980-9IA3S-00W001	MCP7H60-W001R30	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 1m, 30AWG	EOL [P-Rel]
N/A	400GE	980-9IA3T-00W002	MCP7H60-W002R26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 2m, 26AWG	EOL [P-Rel]
N/A	400GE	980-9IA3U-00W003	MCP7H60-W003R26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 3m, 26AWG	EOL [P-Rel]
N/A	400GE	980-9IA3V-00W01A	MCP7H60-	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 1.5m, 30AWG	EOL [P-Rel]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
			W01AR30		
N/A	400GE	980-9IA3W-00W02A	MCP7H60-W02AR26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 2.5m, 26AWG	EOL [P-Rel]
NDR	N/A	980-9I432-00N001	MCP7Y00-N001	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP,1m	P-Rel
NDR	N/A	980-9I433-00N001	MCP7Y00-N001-FLT	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP,1m, flat top	P-Rel
NDR	N/A	980-9I924-00N002	MCP7Y00-N002	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 2m	P-Rel
NDR	N/A	980-9I925-00N002	MCP7Y00-N002-FLT	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 2m, flat top	P-Rel
NDR	N/A	980-9I92N-00N003	MCP7Y00-N003	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 3m	P-Rel
NDR	N/A	980-9I926-00N01A	MCP7Y00-N01A	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP,1.5m	P-Rel
NDR	N/A	980-9I927-00N01A	MCP7Y00-N01A-FLT	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP,1.5m, flat top	P-Rel
NDR	N/A	980-9I920-00N02A	MCP7Y00-N02A	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 2.5m	P-Rel
NDR	N/A	980-9I928-00N001	MCP7Y10-N001	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xQSFP112, 1m	P-Rel
NDR	N/A	980-9I929-	MCP7Y10-N002	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s,	P-Rel

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00N002		OSFP to 2xQSFP112,2m	
NDR	N/A	980-9I80P-00N003	MCP7Y10-N003	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xQSFP112,3m	P-Rel
NDR	N/A	980-9I80A-00N01A	MCP7Y10-N01A	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xQSFP112,1.5m	P-Rel
NDR	N/A	980-9I80Q-00N02A	MCP7Y10-N02A	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 2x400Gb/s, OSFP to 2xQSFP112,2.5m	P-Rel
NDR	N/A	980-9I80B-00N001	MCP7Y40-N001	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xQSFP112, 1m	P-Rel
NDR	N/A	980-9I80C-00N002	MCP7Y40-N002	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xQSFP112, 2m	P-Rel
NDR	N/A	980-9I75R-00N003	MCP7Y40-N003	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xQSFP112, 3m	P-Rel
NDR	N/A	980-9I75D-00N01A	MCP7Y40-N01A	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xQSFP112, 1.5m	P-Rel
NDR	N/A	980-9I75S-00N02A	MCP7Y40-N02A	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xQSFP112, 2.5m	P-Rel
NDR	N/A	980-9I75E-00N001	MCP7Y50-N001	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 1m	P-Rel
NDR	N/A	980-9I75F-00N001	MCP7Y50-N001-FLT	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 1m, flat top	P-Rel
NDR	N/A	980-9I46G-00N002	MCP7Y50-N002	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 2m	P-Rel

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
NDR	N/A	980-9I46H-00N002	MCP7Y50-N002-FLT	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 2m, flat top	P-Rel
NDR	N/A	980-9I46T-00N003	MCP7Y50-N003	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 3m	P-Rel
NDR	N/A	980-9I46I-00N01A	MCP7Y50-N01A	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 1.5m	P-Rel
NDR	N/A	980-9I46J-00N01A	MCP7Y50-N01A-FLT	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 1.5m, flat top	P-Rel
NDR	N/A	980-9I46U-00N02A	MCP7Y50-N02A	NVIDIA passive copper splitter cable, IB twin port NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 2.5m	P-Rel
NDR	N/A	980-9I73U-000003	MFP7E10-N003	NVIDIA passive fiber cable, MMF , MPO12 APC to MPO12 APC, 3m	MP
NDR	N/A	980-9I73V-000005	MFP7E10-N005	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 5m	MP
NDR	N/A	980-9I57W-000007	MFP7E10-N007	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 7m	MP
NDR	N/A	980-9I57X-00N010	MFP7E10-N010	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 10m	MP
NDR	N/A	980-9I57Y-000015	MFP7E10-N015	NVIDIA passive fiber cable, MMF , MPO12 APC to MPO12 APC, 15m	MP
NDR	N/A	980-9I57Z-000020	MFP7E10-N020	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 20m	MP
NDR	N/A	980-9I573-	MFP7E10-N025	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 25m	MP

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00N025			
NDR	N/A	980-9I570-00N030	MFP7E10-N030	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 30m	MP
NDR	N/A	980-9I570-00N035	MFP7E10-N035	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 35m	MP
NDR	N/A	980-9I570-00N040	MFP7E10-N040	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 40m	MP
NDR	N/A	980-9I57Y-00N050	MFP7E10-N050	NVIDIA passive fiber cable, MMF, MPO12 APC to MPO12 APC, 50m	MP
NDR	N/A	980-9I571-00N003	MFP7E20-N003	NVIDIA passive fiber cable, MMF, MPO12 APC to 2xMPO12 APC, 3m	MP
NDR	N/A	980-9I572-00N005	MFP7E20-N005	NVIDIA passive fiber cable, MMF, MPO12 APC to 2xMPO12 APC, 5m	MP
NDR	N/A	980-9I573-00N007	MFP7E20-N007	NVIDIA passive fiber cable, MMF, MPO12 APC to 2xMPO12 APC, 7m	MP
NDR	N/A	980-9I554-00N010	MFP7E20-N010	NVIDIA passive fiber cable, MMF, MPO12 APC to 2xMPO12 APC, 10m	MP
NDR	N/A	980-9I555-00N015	MFP7E20-N015	NVIDIA passive fiber cable, MMF, MPO12 APC to 2xMPO12 APC, 15m	MP
NDR	N/A	980-9I556-00N020	MFP7E20-N020	NVIDIA passive fiber cable, MMF, MPO12 APC to 2xMPO12 APC, 20m	MP
NDR	N/A	980-9I557-00N030	MFP7E20-N030	NVIDIA passive fiber cable, MMF, MPO12 APC to 2xMPO12 APC, 30m	MP

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
NDR	N/A	980-9I55Z-00N050	MFP7E20-N050	NVIDIA passive fiber cable, MMF, MPO12 APC to 2xMPO12 APC, 50m	MP
NDR	N/A	980-9I558-00N001	MFP7E30-N001	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 1m	MP
NDR	N/A	980-9I559-00N002	MFP7E30-N002	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 2m	MP
NDR	N/A	980-9I55A-00N003	MFP7E30-N003	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 3m	MP
NDR	N/A	980-9I55B-00N005	MFP7E30-N005	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 5m	MP
NDR	N/A	980-9I58C-00N007	MFP7E30-N007	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 7m	MP
NDR	N/A	980-9I58D-00N010	MFP7E30-N010	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 10m	MP
NDR	N/A	980-9I58E-00N015	MFP7E30-N015	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 15m	MP
NDR	N/A	980-9I58F-00N020	MFP7E30-N020	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 20m	MP
NDR	N/A	980-9I58G-00N030	MFP7E30-N030	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 30m	MP
NDR	N/A	980-9I580-00N030	MFP7E30-N040	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 40m	MP
NDR	N/A	980-9I58H-	MFP7E30-N050	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 50m	MP

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00N050			
NDR	N/A	980-9I581-00N050	MFP7E30-N060	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 60m	MP
NDR	N/A	980-9I582-00N050	MFP7E30-N070	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 70m	MP
NDR	N/A	980-9I58I-00N100	MFP7E30-N100	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 100m	MP
NDR	N/A	980-9I58J-00N150	MFP7E30-N150	NVIDIA passive fiber cable, SMF, MPO12 APC to MPO12 APC, 150m	MP
NDR	N/A	980-9I58K-00N003	MFP7E40-N003	NVIDIA passive fiber cable, SMF, MPO12 APC to 2xMPO12 APC, 3m	MP
NDR	N/A	980-9I58L-00N005	MFP7E40-N005	NVIDIA passive fiber cable, SMF, MPO12 APC to 2xMPO12 APC, 5m	MP
NDR	N/A	980-9I58M-00N007	MFP7E40-N007	NVIDIA passive fiber cable, SMF, MPO12 APC to 2xMPO12 APC, 7m	MP
NDR	N/A	980-9I58N-00N010	MFP7E40-N010	NVIDIA passive fiber cable, SMF, MPO12 APC to 2xMPO12 APC, 10m	MP
NDR	N/A	980-9I56O-00N015	MFP7E40-N015	NVIDIA passive fiber cable, SMF, MPO12 APC to 2xMPO12 APC, 15m	MP
NDR	N/A	980-9I56P-00N020	MFP7E40-N020	NVIDIA passive fiber cable, SMF, MPO12 APC to 2xMPO12 APC, 20m	MP
NDR	N/A	980-9I56Q-00N030	MFP7E40-N030	NVIDIA passive fiber cable, SMF, MPO12 APC to 2xMPO12 APC, 30m	MP

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
NDR	N/A	980-9I56R-000050	MFP7E40-N050	NVIDIA passive fiber cable, SMF, MPO12 APC to 2xMPO12 APC, 50m	MP
NDR	N/A	980-9I693-00NS00	MMA1Z00-NS400	NVIDIA single port transceiver, 400Gbps,NDR, QSFP112, MPO12 APC, 850nm MMF, up to 50m, flat top	P-Rel
NDR	N/A	980-9I510-00NS00	MMA4Z00-NS	NVIDIA twin port transceiver, 800Gbps,2xNDR, OSFP, 2xMPO12 APC, 850nm MMF, up to 50m, finned	MP
NDR	N/A	980-9I51A-00NS00	MMA4Z00-NS-FLT*	NVIDIA twin port transceiver, 800Gbps,2xNDR, OSFP, 2xMPO12 APC, 850nm MMF, up to 50m, flat top	MP
NDR	N/A	980-9I51S-00NS00	MMA4Z00-NS400	NVIDIA single port transceiver, 400Gbps,NDR, OSFP, MPO12 APC, 850nm MMF, up to 50m, flat top	MP
NDR	N/A	980-9I51B-00NS00	MMA4Z00-NV4	NVIDIA twin port transceiver, 800Gbps,4xNVlink4, OSFP, 2xMPO12 APC, 850nm, finned	Prototype
NDR	N/A	980-9I51C-00NS00	MMA4Z00-NV4-FLT	NVIDIA twin port transceiver, 800Gbps,4xNVlink4, OSFP, 2xMPO12 APC, 850nm, flat top	Prototype
N/A	400GE	980-9I16Y-00W000	MMS1V00-WM	NVIDIA transceiver, 400GbE, QSFP-DD, MPO, 1310nm, DR4	MP
NDR	N/A	980-9I039-00NS00	MMS4X00-NL	NVIDIA twin port transceiver, 800Gbps,2xNDR, OSFP, 2xMPO12 APC, 1310nm SMF, up to 30m, finned	EOL [EVT]
NDR	N/A	980-9I30F-00NS00	MMS4X00-NL400	NVIDIA single port transceiver, 400Gbps,NDR, OSFP, MPO12 APC, 1310nm SMF, up to 30m, flat top	EOL [Prototype]
NDR	N/A	980-9I30G-00NM00	MMS4X00-NM	NVIDIA twin port transceiver, 800Gbps,2xNDR, OSFP, 2xMPO, 1310nm SMF, up to 500m, finned	MP
NDR	N/A	980-9I301-	MMS4X00-NM-	NVIDIA twin port transceiver, 800Gbps,2xNDR, OSFP, 2xMPO12 APC,	Prototype

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00NM00	FLT	1310nm SMF, up to 500m, flat top	
NDR	N/A	980-9I30H-00NM00	MMS4X00-NS	NVIDIA twin port transceiver, 800Gbps, 2xNDR, OSFP, 2xMPO12 APC, 1310nm SMF, up to 100m, finned	MP
NDR	N/A	980-9I30I-00NM00	MMS4X00-NS-FLT	NVIDIA twin port transceiver, 800Gbps, 2xNDR, OSFP, 2xMPO12 APC, 1310nm SMF, up to 100m, flat top	MP
NDR	N/A	980-9I31N-00NM00	MMS4X00-NS400	NVIDIA single port transceiver, 400Gbps, NDR, OSFP, MPO12 APC, 1310nm SMF, up to 100m, flat top	MP

i Note

* MMA4Z00-NS-FLT transceiver is used with the following ConnectX-7 adapter cards **ONLY**: MCX750500B-0D0K / MCX750500C-0D0K / MCX750500B-0D00 / MCX750500C-0D00.

HDR / 200GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
HDR	200GE	980-9I548-00H001	MCP1650-H001E30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 1m	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
HDR	200GE	980-91549-00H002	MCP1650-H002E26	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 2m	HVM
HDR	200GE	980-9154A-00H00A	MCP1650-H00AE30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 0.5m	HVM
HDR	200GE	980-9154B-00H01A	MCP1650-H01AE30	Nvidia Passive Copper cable, up to 200Gbps, QSFP56 to QSFP56, 1.5 m	HVM
N/A	200GE	980-9154C-00V001	MCP1650-V001E30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 1m, black pulltab, 30AWG	LTB [HVM]
N/A	200GE	980-9154D-00V002	MCP1650-V002E26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2m, black pulltab, 26AWG	LTB [HVM]
N/A	200GE	980-9154E-00V002	MCP1650-V002E26_FF	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2m, black pulltab, 26AWG	EOL [HVM]
N/A	200GE	980-9154G-00V003	MCP1650-V003E26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 3m, black pulltab, 26AWG	EOL [HVM]
N/A	200GE	980-9154H-00V00A	MCP1650-V00AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 0.5m, black pulltab, 30AWG	LTB [HVM]
N/A	200GE	980-9154I-00V01A	MCP1650-V01AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 1.5m, black pulltab, 30AWG	LTB [HVM]
N/A	200GE	980-9154L-00V02A	MCP1650-V02AE26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2.5m, black pulltab, 26AWG	LTB [HVM]
HDR	200GE	980-9139E-00H001	MCP7H50-H001R30	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 1m	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
HDR	200GE	980-9199F-00H002	MCP7H50-H002R26	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 2m	HVM
HDR	200GE	980-9198G-00H01A	MCP7H50-H01AR30	Nvidia Passive copper splitter cable, 200Gbps to 2x100Gbps, QSFP56 to 2xQSFP56, 1.5m	HVM
N/A	200GE	980-9198H-00V001	MCP7H50-V001R30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 1m, 30AWG	LTB [HVM]
N/A	200GE	980-9198I-00V002	MCP7H50-V002R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 2m, 26AWG	LTB [HVM]
N/A	200GE	980-9198J-00V003	MCP7H50-V003R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 3m, 26AWG	EOL [HVM]
N/A	200GE	980-9198K-00V01A	MCP7H50-V01AR30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 1.5m, 30AWG	EOL [HVM]
N/A	200GE	980-9198M-00V02A	MCP7H50-V02AR26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 2.5m, 26AWG	LTB [HVM]
N/A	200GE	980-9198O-00V002	MCP7H60-C002	NVIDIA DAC splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP-DD to 2xQSFP28, colored pulltabs, 2m	EOL [P-Rel]
N/A	200GE	980-91A3P-00V003	MCP7H60-C003	NVIDIA DAC splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP-DD to 2xQSFP28, colored pulltabs, 3m	EOL [P-Rel]
N/A	200GE	980-91A3P-00V003-M	MCP7H60-C003-M	NVIDIA DAC splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP-DD to 2xQSFP28, colored pulltabs, 3m	EOL [P-Rel]
N/A	200GE	980-91A3X-00V001	MCP7H70-V001R30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 1m, 30AWG	EOL [P-Rel]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	200GE	980-91A3Y-00V002	MCP7H70-V002R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 2m, 26AWG	EOL [P-Rel]
N/A	200GE	980-9143Z-00V003	MCP7H70-V003R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4x4SFP56, colored, 3m, 26AWG	EOL [P-Rel]
N/A	200GE	980-91430-00V01A	MCP7H70-V01AR30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 1.5m, 30AWG	EOL [P-Rel]
N/A	200GE	980-91431-00V02A	MCP7H70-V02AR26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 2.5m, 26AWG	EOL [P-Rel]
HDR	200GE	980-9146K-00H001	MCP7Y60-H001	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 2x200Gbps, OSFP to 2xQSFP56, 1m, fin to flat	MP
HDR	200GE	980-9146L-00H002	MCP7Y60-H002	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 2x200Gbps, OSFP to 2xQSFP56, 2m, fin to flat	MP
HDR	200GE	980-9193M-00H01A	MCP7Y60-H01A	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 2x200Gbps, OSFP to 2xQSFP56, 1.5m, fin to flat	MP
HDR	200GE	980-9193N-00H001	MCP7Y70-H001	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 1m, fin to flat	MP
HDR	200GE	980-91930-00H002	MCP7Y70-H002	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 2m, fin to flat	MP
HDR	200GE	980-9147P-00H01A	MCP7Y70-H01A	NVIDIA passive copper splitter cable, 400(2x200)Gbps to 4x100Gbps, OSFP to 4xQSFP56, 1.5m, fin to flat	MP
HDR	N/A	980-9141X-00H003	MFA7U10-H003	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 3m	P-Rel
HDR	N/A	980-9111Z-	MFA7U10-H005	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to	P-Rel

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00H005		2xQSFP56, 5m	
HDR	N/A	980-91111-00H010	MFA7U10-H010	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 10m	P-Rel
HDR	N/A	980-91113-00H015	MFA7U10-H015	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 15m	P-Rel
HDR	N/A	980-91115-00H020	MFA7U10-H020	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 20m	P-Rel
HDR	N/A	980-91117-00H030	MFA7U10-H030	NVIDIA AOC splitter, IB twin port HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 30m	P-Rel
HDR	N/A	980-91124-00H003	MFS1S00-H003E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 3m	EOL [HVM]
HDR	200GE	980-91457-00H003	MFS1S00-H003V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 3m	MP
HDR	N/A	980-9145A-00H005	MFS1S00-H005E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 5m	EOL [HVM]
HDR	200GE	980-9145D-00H005	MFS1S00-H005V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 5m	MP
HDR	N/A	980-9145G-00H010	MFS1S00-H010E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 10m	EOL [HVM]
HDR	200GE	980-9145J-00H010	MFS1S00-H010V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 10m	MP
HDR	N/A	980-9145M-00H015	MFS1S00-H015E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 15m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
HDR	200GE	980-91450-00H015	MFS1S00-H015V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 15m	MP
HDR	N/A	980-9145R-00H020	MFS1S00-H020E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 20m	EOL [HVM]
HDR	200GE	980-9145T-00H020	MFS1S00-H020V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 20m	MP
HDR	N/A	980-9145Y-00H030	MFS1S00-H030E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 30m	EOL [HVM]
HDR	200GE	980-91440-00H030	MFS1S00-H030V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 30m	MP
HDR	N/A	980-91455-00H050	MFS1S00-H050E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 50m	EOL [HVM]
HDR	200GE	980-91447-00H050	MFS1S00-H050V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 50m	MP
HDR	N/A	980-9144G-00H100	MFS1S00-H100E	NVIDIA active fiber cable, IB HDR, up to 200Gb/s, QSFP56, LSZH, black pulltab, 100m	EOL [HVM]
HDR	200GE	980-9144H-00H100	MFS1S00-H100V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 100m	MP
HDR	200GE	980-9144K-00H130	MFS1S00-H130V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 130m	MP
HDR	200GE	980-9144N-00H150	MFS1S00-H150V	Nvidia active optical cable, up to 200Gbps , QSFP56 to QSFP56, 150m	MP
N/A	200GE	980-9144P-	MFS1S00-V003E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab,	LTB [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00V003		3m	
N/A	200GE	980-9145Q-00V005	MFS1S00-V005E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 5m	LTB [HVM]
N/A	200GE	980-9145R-00V010	MFS1S00-V010E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 10m	LTB [HVM]
N/A	200GE	980-9144S-00V015	MFS1S00-V015E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 15m	LTB [HVM]
N/A	200GE	980-9144T-00V020	MFS1S00-V020E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 20m	LTB [HVM]
N/A	200GE	980-9144U-00V030	MFS1S00-V030E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 30m	LTB [HVM]
N/A	200GE	980-9144V-00V050	MFS1S00-V050E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 50m	LTB [HVM]
N/A	200GE	980-9144W-00V100	MFS1S00-V100E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 100m	EOL [HVM] [HIBERN/ATE]
HDR	N/A	980-91452-00H003	MFS1S50-H003E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 3m	EOL [HVM]
HDR	200GE	980-91445-00H003	MFS1S50-H003V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 3m	HVM
HDR	N/A	980-91956-00H005	MFS1S50-H005E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 5m	EOL [HVM]
HDR	200GE	980-91969-00H005	MFS1S50-H005V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 5m	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
HDR	N/A	980-9195A-00H010	MFS1S50-H010E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 10m	EOL [HVM]
HDR	200GE	980-9196D-00H010	MFS1S50-H010V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 10m	HVM
HDR	N/A	980-9195E-00H015	MFS1S50-H015E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 15m	EOL [HVM]
HDR	200GE	980-9196H-00H015	MFS1S50-H015V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 15m	HVM
HDR	N/A	980-9195I-00H020	MFS1S50-H020E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 20m	EOL [HVM]
HDR	200GE	980-9196L-00H020	MFS1S50-H020V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 20m	HVM
HDR	N/A	980-9195M-00H030	MFS1S50-H030E	NVIDIA active fiber splitter cable, IB HDR, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56 , LSZH, 30m	EOL [HVM]
HDR	200GE	980-9196P-00H030	MFS1S50-H030V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 30m	HVM
HDR	200GE	980-9195S-00H040	MFS1S50-H040V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 40m	Prototype
HDR	200GE	980-9195T-00H050	MFS1S50-H050V	Nvidia active optical splitter cable, 200Gbps to 2x100Gbps , QSFP56 to 2x QSFP56, 50m	Prototype
N/A	200GE	980-9195Q-00V003	MFS1S50-V003E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 3m	EOL [HVM]
N/A	200GE	980-9196R-	MFS1S50-V005E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00V005		to 2xQSFP56, LSZH, black pulltab, 5m	
N/A	200GE	980-9196S-00V010	MFS1S50-V010E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 10m	EOL [HVM]
N/A	200GE	980-9196T-00V015	MFS1S50-V015E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 15m	EOL [HVM]
N/A	200GE	980-9195U-00V020	MFS1S50-V020E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 20m	EOL [HVM]
N/A	200GE	980-9195V-00V030	MFS1S50-V030E	NVIDIA active fiber splitter cable, 200GbE, 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, LSZH, black pulltab, 30m	EOL [HVM]
HDR	N/A	980-9117S-00HS00	MMA1T00-HS	NVIDIA transceiver, HDR, QSFP56, MPO, 850nm, SR4, up to 100m	HVM
N/A	200GE	980-9120T-00V000	MMA1T00-VS	NVIDIA transceiver, 200GbE, up to 200Gb/s, QSFP56, MPO, 850nm, SR4, up to 100m	HVM
HDR	N/A	980-91055-00H000	MMS1W50-HM	NVIDIA transceiver, IB HDR, up to 200Gb/s, QSFP56, LC-LC, 1310nm, FR4	MP

EDR / 100GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	100GE	980-9190Z-00C000	FTLC9152RGPL	100Gb/s Transceiver, QSFP28, LC-LC, 850nm SWDM4 up to 100m Over Multi-Mode Fiber	EOL [MP]
N/A	100GE	980-91620-00C001	MCP1600-C001	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 1m 30AWG	EOL [HVM]
N/A	100GE	980-91620-00C001	MCP1600-C001E30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 1m, Black, 30AWG, CA-N	HVM
N/A	100GE	980-9162S-00C001	MCP1600-C001LZ	NVIDIA Passive Copper Cable, ETH 100GbE, 100Gb/s, QSFP, 1m, LSZH, 30AWG	EOL [MP]
N/A	100GE	980-91621-00C002	MCP1600-C002	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 2m 30AWG	EOL [HVM]
N/A	100GE	980-91622-00C002	MCP1600-C002E26N	NVIDIA® Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2m, Black, 26AWG, CA-N	Preliminary
N/A	100GE	980-9162V-00C002	MCP1600-C002E30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2m, Black, 30AWG, CA-N	HVM
N/A	100GE	980-9162X-00C003	MCP1600-C003	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 3m 28AWG	EOL [HVM]
N/A	100GE	980-9162Z-00C003	MCP1600-C003E26N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 3m, Black, 26AWG, CA-N	EOL [HVM]
N/A	100GE	980-91620-00C003	MCP1600-C003E30L	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 3m, Black, 30AWG, CA-L	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	100GE	980-91622-00C003	MCP1600-C003LZ	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, 3m, LSZH, 26AWG	EOL [MP]
N/A	100GE	980-91625-00C005	MCP1600-C005E26L	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 5m, Black, 26AWG, CA-L	HVM
N/A	100GE	980-91626-00C00A	MCP1600-C00A	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 0.5m 30AWG	EOL [HVM]
N/A	100GE	980-91627-00C00A	MCP1600-C00AE30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 0.5m, Black, 30AWG, CA-N	EOL [HVM]
N/A	100GE	980-91629-00C00B	MCP1600-C00BE30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 0.75m, Black, 30AWG, CA-N	EOL [HVM]
N/A	100GE	980-9162B-00C01A	MCP1600-C01A	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 1.5m 30AWG	EOL [HVM]
N/A	100GE	980-9162C-00C01A	MCP1600-C01AE30N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 1.5m, Black, 30AWG, CA-N	HVM
N/A	100GE	980-9162G-00C02A	MCP1600-C02A	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 2.5m 30AWG	EOL [HVM]
N/A	100GE	980-9162H-00C02A	MCP1600-C02AE26N	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2.5m, Black, 26AWG, CA-N	EOL [HVM]
N/A	100GE	980-9162I-00C02A	MCP1600-C02AE30L	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2.5m, Black, 30AWG, CA-L	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	100GE	980-9162M-00C03A	MCP1600-C03A	NVIDIA Passive Copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 3.5m 26AWG	EOL [P-Rel]
EDR	100GE	980-9162P-00C001	MCP1600-E001	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m 30AWG	EOL [HVM]
EDR	N/A	980-9162Q-00E001	MCP1600-E001E30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1m, Black, 30AWG	HVM
EDR	100GE	980-9162S-00C002	MCP1600-E002	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2m 28AWG	EOL [HVM]
EDR	N/A	980-9162T-00E002	MCP1600-E002E26	NVIDIA® Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2m, Black, 26AWG	Preliminary
EDR	N/A	980-9162U-00E002	MCP1600-E002E30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2m, Black, 30AWG	HVM
EDR	100GE	980-9162V-00C003	MCP1600-E003	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m 26AWG	EOL [HVM]
EDR	N/A	980-9162W-00E003	MCP1600-E003E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 3m, Black, 26AWG	HVM
EDR	N/A	980-9162Y-00E004	MCP1600-E004E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 4m, Black, 26AWG	EOL [HVM]
EDR	N/A	980-9162Z-00E005	MCP1600-E005E26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 5m, Black, 26AWG	HVM
EDR	N/A	980-91620-00E00A	MCP1600-E00A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 0.5m 30AWG	EOL [HVM]
EDR	N/A	980-91621-	MCP1600-	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 0.5m, Black, 30AWG	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00E00A	E00AE30		
EDR	N/A	980-91622-00E00B	MCP1600-E00BE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 0.75m, Black, 30AWG	EOL [HVM] [HIBERN/ATE]
EDR	100GE	980-91623-00C01A	MCP1600-E01A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1.5m 30AWG	EOL [HVM]
EDR	N/A	980-91624-00E01A	MCP1600-E01AE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1.5m, Black, 30AWG	HVM
EDR	N/A	980-91625-00E01C	MCP1600-E01BE30	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 1.25m, Black, 30AWG	EOL [HVM] [HIBERN/ATE]
EDR	100GE	980-91626-00C02A	MCP1600-E02A	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2.5m 26AWG	EOL [HVM]
EDR	N/A	980-91627-00E02A	MCP1600-E02AE26	NVIDIA Passive Copper cable, IB EDR, up to 100Gb/s, QSFP28, 2.5m, Black, 26AWG	HVM
N/A	100GE	980-91645-00C001	MCP7F00-A001R	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pulltabs, 1m, 30AWG	EOL [HVM]
N/A	100GE	980-91486-00C001	MCP7F00-A001R3ON	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 1m, Colored, 30AWG, CA-N	LTB [HVM]
N/A	100GE	980-9148A-00C002	MCP7F00-A002R	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pulltabs, 2m, 30AWG	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	100GE	980-9148B-00C002	MCP7F00-A002R30N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2m, Colored, 30AWG, CA-N	LTB [HVM]
N/A	100GE	980-9148G-00C003	MCP7F00-A003R26N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m, Colored, 26AWG, CA-N	EOL [HVM]
N/A	100GE	980-9148H-00C003	MCP7F00-A003R30L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m, Colored, 30AWG, CA-L	LTB [HVM]
N/A	100GE	980-9148J-00C005	MCP7F00-A005R26L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 5m, Colored, 26AWG, CA-L	LTB [HVM]
N/A	100GE	980-9148M-00C01A	MCP7F00-A01AR	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pulltabs, 1.5m, 30AWG	EOL [HVM]
N/A	100GE	980-9148N-00C01A	MCP7F00-A01AR30N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 1.5m, Colored, 30AWG, CA-N	LTB [HVM]
N/A	100GE	980-9148S-00C02A	MCP7F00-A02AR26N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, Colored, 26AWG, CA-N	EOL [HVM]
N/A	100GE	980-9148T-00C02A	MCP7F00-A02AR30L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, Colored, 30AWG, CA-L	LTB [HVM]
N/A	100GE	980-9148U-00C02A	MCP7F00-A02ARLZ	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, LSZH, Colored, 28AWG	EOL [P-Rel]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	100GE	980-9148X-00C03A	MCP7F00-A03AR26L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3.5m, Colored, 26AWG, CA-L	EOL [HVM]
N/A	100GE	980-9161C-00C005	MCP7H00-G00000	NVIDIA® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 5m, Colored, 26AWG, CA-L	Preliminary
N/A	100GE	980-9161D-00C001	MCP7H00-G001	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1m, 30AWG	EOL [HVM]
N/A	100GE	980-9199F-00C001	MCP7H00-G001R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 1m, 30AWG	EOL [HVM]
N/A	100GE	980-9199G-00C001	MCP7H00-G001R30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1m, Colored, 30AWG, CA-N	LTB [HVM]
N/A	100GE	980-9199J-00C002	MCP7H00-G002R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 2m, 30AWG	EOL [HVM]
N/A	100GE	980-9199K-00C002	MCP7H00-G002R26N	NVIDIA® passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2m, Colored, 26AWG, CA-N	Preliminary
N/A	100GE	980-9199L-00C002	MCP7H00-G002R30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2m, Colored, 30AWG, CA-N	LTB [HVM]
N/A	100GE	980-9199O-00C003	MCP7H00-G003R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 3m, 28AWG	EOL [HVM]
N/A	100GE	980-9199Q-00C003	MCP7H00-G003R26N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 3m, Colored, 26AWG, CA-N	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	100GE	980-9139R-00C003	MCP7H00-G003R30L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 3m, Colored, 30AWG, CA-L	LTB [HVM]
N/A	100GE	980-9199S-00C004	MCP7H00-G004R26L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 4m, Colored, 26AWG, CA-L	EOL [HVM]
N/A	100GE	980-9199W-00C01A	MCP7H00-G01AR	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 1.5m, 30AWG	EOL [HVM]
N/A	100GE	980-9199X-00C01A	MCP7H00-G01AR30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1.5m, Colored, 30AWG, CA-N	LTB [HVM]
N/A	100GE	980-91992-00C02A	MCP7H00-G02AR	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pulltabs, 2.5m, 30AWG	EOL [HVM]
N/A	100GE	980-91994-00C02A	MCP7H00-G02AR26N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2.5m, Colored, 26AWG, CA-N	EOL [HVM]
N/A	100GE	980-91395-00C02A	MCP7H00-G02AR30L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2.5m, Colored, 30AWG, CA-L	LTB [HVM]
N/A	100GE	980-9113S-00C003	MFA1A00-C003	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 3m	HVM
N/A	100GE	980-9113X-00C005	MFA1A00-C005	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 5m	HVM
N/A	100GE	980-91134-00C010	MFA1A00-C010	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 10m	HVM

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	100GE	980-9113A-00C015	MFA1A00-C015	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 15m	HVM
N/A	100GE	980-9113F-00C020	MFA1A00-C020	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 20m	HVM
N/A	100GE	980-9113N-00C030	MFA1A00-C030	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 30m	HVM
N/A	100GE	980-9113O-00C050	MFA1A00-C050	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 50m	HVM
N/A	100GE	980-9113B-00C100	MFA1A00-C100	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 100m	LTB [HVM]
EDR	N/A	980-9113D-00E001	MFA1A00-E001	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m	HVM
EDR	N/A	980-9113F-00E003	MFA1A00-E003	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m	HVM
EDR	N/A	980-9113J-00E005	MFA1A00-E005	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 5m	HVM
EDR	N/A	980-9113M-00E007	MFA1A00-E007	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 7m	LTB [HVM]
EDR	N/A	980-9113O-00E010	MFA1A00-E010	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 10m	HVM
EDR	N/A	980-9113R-00E010	MFA1A00-E010_FF	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 10m	EOL [HVM] [HIBERN/ ATE]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
EDR	N/A	980-9113S-00E015	MFA1A00-E015	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 15m	HVM
EDR	N/A	980-9113V-00E020	MFA1A00-E020	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 20m	HVM
EDR	N/A	980-9113Y-00E030	MFA1A00-E030	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 30m	HVM
EDR	N/A	980-91133-00E050	MFA1A00-E050	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 50m	HVM
EDR	N/A	980-91135-00E100	MFA1A00-E100	NVIDIA active fiber cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 100m	LTB [HVM]
N/A	100GE	980-9137H-00C003	MFA7A20-C003	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 3m	EOL [HVM]
N/A	100GE	980-9137I-00C005	MFA7A20-C005	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 5m	EOL [HVM]
N/A	100GE	980-9140J-00C010	MFA7A20-C010	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 10m	EOL [HVM]
N/A	100GE	980-9140K-00C020	MFA7A20-C020	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 20m	EOL [HVM]
N/A	100GE	980-9140L-00C002	MFA7A20-C02A	NVIDIA® active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 2.5m	Preliminary
N/A	100GE	980-9140M-00C003	MFA7A20-C03A	NVIDIA® active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 3.5m	Preliminary
N/A	100GE	980-9140N-	MFA7A50-C003	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28,	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00C003		3m	
N/A	100G E	980-91400-00C005	MFA7A5 0-C005	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 5m	EOL [HVM]
N/A	100G E	980-9149P-00C010	MFA7A5 0-C010	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 10m	EOL [HVM]
N/A	100G E	980-9149Q-00C015	MFA7A5 0-C015	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 15m	EOL [HVM]
N/A	100G E	980-9149R-00C020	MFA7A5 0-C020	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 20m	EOL [HVM]
N/A	100G E	980-9149S-00C030	MFA7A5 0-C030	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 30m	EOL [HVM]
N/A	100G E	980-91149-00CS00	MMA1B 00-C100D	NVIDIA transceiver, 100GbE, QSFP28, MPO, 850nm, SR4, up to 100m, DDMI	HVM
N/A	100G E	980-9117B-00CS00	MMA1B 00-C100D_FF	NVIDIA transceiver, 100GbE, QSFP28, MPO, 850nm, SR4, up to 100m, DDMI	EOL [HVM] [HIBERN/ATE]
N/A	100G E	980-9117D-00CS00	MMA1B 00-C100T	NVIDIA® transceiver, 100GbE, QSFP28, MPO, 850nm, up to 100m, OTU4	Preliminary
EDR	N/A	980-9117L-00E000	MMA1B 00-E100	NVIDIA transceiver, IB EDR, up to 100Gb/s, QSFP28, MPO, 850nm, SR4, up to 100m	HVM
N/A	100G E	980-9117P-00CR00	MMA1L 10-CR	NVIDIA optical transceiver, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, LR4 up to 10km	HVM
N/A	100G E	980-9117Q-	MMA1L 30-CM	NVIDIA optical module, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, CWDM4, up to 2km	MP

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00CM00			
N/A	100GE	980-9116X-00C000	MMS1C10-CM	NVIDIA active optical module, 100Gb/s, QSFP, MPO, 1310nm, PSM4, up to 500m	EOL [MP]
N/A	100GE	980-91042-00C000	MMS1V70-CM	NVIDIA transceiver, 100GbE, QSFP28, LC-LC, 1310nm, DR1	P-Rel
N/A	100GE	980-9153X-00C000	SPQ-CE-ER-CDFL-M	40km 100G QSFP28 ER Optical Transceiver	P-Rel
N/A	100GE	980-9163F-00CM00	X65406	NVIDIA® optical module, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, CWDM4, up to 2km	Preliminary

i Note

EDR links raise with RS-FEC.

FDR / 56GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
FDR	56GE	980-9I679-00L004	MC2207 126-004	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 4m	EOL [HVM]
FDR	56GE	980-9I67A-00L003	MC2207 128-003	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m	EOL [HVM]
FDR	56GE	980-9I67C-00L02A	MC2207 128-0A2	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2.5m	EOL [MP]
FDR	56GE	980-9I67D-00L001	MC2207 130-001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1m	EOL [HVM]
FDR	56GE	980-9I67E-00L002	MC2207 130-002	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2m	EOL [HVM]
FDR	56GE	980-9I67F-00L00A	MC2207 130-00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 0.5m	EOL [HVM]
FDR	56GE	980-9I67G-00L01A	MC2207 130-0A1	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1.5m	EOL [HVM]
FDR	56GE	980-9I15U-00L003	MC2207 31V-003	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 3m	EOL [HVM]
FDR	56GE	980-9I15V-00L005	MC2207 31V-005	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 5m	EOL [HVM]
FDR	56GE	980-9I15W-00L010	MC2207 31V-010	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 10m	EOL [HVM]
FDR	56GE	980-9I15X-00L015	MC2207 31V-015	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 15m	EOL [HVM]
FDR	56GE	980-9I15Y-	MC2207 31V-020	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 20m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00L020			
FDR	56GE	980-9115Z-00L025	MC2207 31V-025	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 25m	EOL [HVM]
FDR	56GE	980-91150-00L030	MC2207 31V-030	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 30m	EOL [HVM]
FDR	56GE	980-91151-00L040	MC2207 31V-040	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 40m	EOL [HVM] [HIBERN/ATE]
FDR	56GE	980-91152-00L050	MC2207 31V-050	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 50m	EOL [HVM]
FDR	56GE	980-91153-00L075	MC2207 31V-075	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 75m	EOL [HVM]
FDR	56GE	980-91154-00L100	MC2207 31V-100	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 100m	EOL [HVM]
FDR	56GE	980-91675-00L001	MCP170 L-F001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1m	EOL [P-Rel]
FDR	56GE	980-91676-00L002	MCP170 L-F002	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 2m	EOL [P-Rel]
FDR	56GE	980-91677-00L003	MCP170 L-F003	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 3m	EOL [P-Rel] [HIBERN/ATE]
FDR	56GE	980-91678-00L00A	MCP170 L-F00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 0.5m	EOL [P-Rel]
FDR	56GE	980-91679-00L01A	MCP170 L-F01A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1.5m	EOL [P-Rel] [HIBERN/ATE]

50GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	50GE	980-91790-00G000	MAM1Q00A-QSA56	NVIDIA cable module, ETH 50GbE, 200Gb/s to 50Gb/s, QSFP56 to SFP56	EOL [POR]
N/A	50GE	980-91873-00G001	MCP2M50-G001E30	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 1m, black pulltab, 30AWG	EOL [P-Rel]
N/A	50GE	980-91874-00G002	MCP2M50-G002E26	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 2m, black pulltab, 26AWG	EOL [P-Rel]
N/A	50GE	980-91875-00G003	MCP2M50-G003E26	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 3m, black pulltab, 26AWG	EOL [P-Rel]
N/A	50GE	980-91876-00G00A	MCP2M50-G00AE30	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 0.5m, black pulltab, 30AWG	EOL [P-Rel]
N/A	50GE	980-91877-00G01A	MCP2M50-G01AE30	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 1.5m, black pulltab, 30AWG	EOL [P-Rel]
N/A	50GE	980-91878-00G02A	MCP2M50-G02AE26	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 2.5m, black pulltab, 26AWG	EOL [P-Rel]

25GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	25GE	980-91781-00A000	MAM1Q00A-QSA28	NVIDIA cable module, ETH 25GbE, 100Gb/s to 25Gb/s, QSFP28 to SFP28	HVM
N/A	25GE	980-9163J-00A001	MCP2M00-A001	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1m, 30AWG	EOL [HVM]
N/A	25GE	980-9163L-00A001	MCP2M00-A001E30N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1m, Black, 30AWG, CA-N	LTB [HVM]
N/A	25GE	980-9163M-00A002	MCP2M00-A002	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2m, 30AWG	EOL [HVM]
N/A	25GE	980-9163N-00A002	MCP2M00-A002E26N	NVIDIA® Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2m, Black, 26AWG, CA-N	Preliminary
N/A	25GE	980-9163O-00A002	MCP2M00-A002E30N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2m, Black, 30AWG, CA-N	LTB [HVM]
N/A	25GE	980-9163R-00A003	MCP2M00-A003E26N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 3m, Black, 26AWG, CA-N	EOL [HVM]
N/A	25GE	980-9163S-00A003	MCP2M00-A003E30L	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 3m, Black, 30AWG, CA-L	LTB [HVM]
N/A	25GE	980-9163T-00A004	MCP2M00-A004E26L	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 4m, Black, 26AWG, CA-L	EOL [HVM]
N/A	25GE	980-9163V-00A005	MCP2M00-A005E26L	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 5m, Black, 26AWG, CA-L	LTB [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	25GE	980-9163W-00A00A	MCP2M00-A00A	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 0.5m, 30AWG	EOL [HVM]
N/A	25GE	980-9163X-00A00A	MCP2M00-A00AE30N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 0.5m, Black, 30AWG, CA-N	EOL [HVM]
N/A	25GE	980-9163Z-00A01A	MCP2M00-A01AE30N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 1.5m, Black, 30AWG, CA-N	LTB [HVM]
N/A	25GE	980-91631-00A02A	MCP2M00-A02AE26N	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2.5m, Black, 26AWG, CA-N	EOL [HVM]
N/A	25GE	980-91632-00A02A	MCP2M00-A02AE30L	NVIDIA Passive Copper cable, ETH, up to 25Gb/s, SFP28, 2.5m, Black, 30AWG, CA-L	LTB [HVM]
N/A	25GE	980-91A1T-00A003	MFA2P10-A003	NVIDIA active optical cable 25GbE, SFP28, 3m	EOL [HVM]
N/A	25GE	980-9153W-00A005	MFA2P10-A005	NVIDIA active optical cable 25GbE, SFP28, 5m	EOL [HVM]
N/A	25GE	980-9153Z-00A007	MFA2P10-A007	NVIDIA active optical cable 25GbE, SFP28, 7m	EOL [HVM]
N/A	25GE	980-91532-00A010	MFA2P10-A010	NVIDIA active optical cable 25GbE, SFP28, 10m	EOL [HVM]
N/A	25GE	980-91535-00A015	MFA2P10-A015	NVIDIA active optical cable 25GbE, SFP28, 15m	EOL [HVM]
N/A	25GE	980-91536-00A020	MFA2P10-A020	NVIDIA active optical cable 25GbE, SFP28, 20m	EOL [HVM]
N/A	25GE	980-91539-	MFA2P10-A030	NVIDIA active optical cable 25GbE, SFP28, 30m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00A030			
N/A	25GE	980-9153A-00A050	MFA2P10-A050	NVIDIA active optical cable 25GbE, SFP28, 50m	EOL [HVM]
N/A	25GE	980-91094-00AR00	MMA2L20-AR	NVIDIA optical transceiver, 25GbE, 25Gb/s, SFP28, LC-LC, 1310nm, LR up to 10km	MP
N/A	25GE	980-91595-00AM00	MMA2P00-AS	NVIDIA transceiver, 25GbE, SFP28, LC-LC, 850nm, SR	HVM
N/A	25GE	980-9134B-00AS00	MMA2P00-AS-SP	NVIDIA transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 100m, single package	EOL [HVM]
N/A	25GE	980-9134D-00AS00	MMA2P00-AS_FF	NVIDIA transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 100m	EOL [HVM]

10GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	10GE	980-9171G-00J000	MAM1Q00A-QSA	NVIDIA cable module, ETH 10GbE, 40Gb/s to 10Gb/s, QSFP to SFP+	HVM
N/A	10GE	980-9165P-00J005	MC2309124-005	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 5m	EOL [P-Rel]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	10GE	980-9165Q-00J007	MC230 9124-007	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 7m	EOL [P-Rel]
N/A	10GE	980-9165R-00J001	MC230 9130-001	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 1m	EOL [HVM]
N/A	10GE	980-9165S-00J002	MC230 9130-002	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 2m	EOL [HVM]
N/A	10GE	980-9165T-00J003	MC230 9130-003	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 3m	EOL [HVM]
N/A	10GE	980-9165U-00J00A	MC230 9130-00A	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 0.5m	EOL [HVM] [HIBERN/ATE]
N/A	10GE	980-91682-00J004	MC330 9124-004	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 4m	EOL [HVM]
N/A	10GE	980-91683-00J005	MC330 9124-005	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 5m	EOL [HVM]
N/A	10GE	980-91684-00J006	MC330 9124-006	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 6m	EOL [HVM]
N/A	10GE	980-91685-00J007	MC330 9124-007	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 7m	EOL [HVM]
N/A	10GE	980-91686-00J001	MC330 9130-001	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m	EOL [HVM]
N/A	10GE	980-91688-00J002	MC330 9130-002	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m	EOL [HVM]
N/A	10GE	980-9168B-	MC330 9130-	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
		00J003	003		
N/A	10GE	980-9168F-00J00A	MC330 9130-00A	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 0.5m	EOL [HVM]
N/A	10GE	980-9168G-00J01A	MC330 9130-0A1	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1.5m	EOL [HVM]
N/A	10GE	980-9168H-00J02A	MC330 9130-0A2	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2.5m	EOL [HVM]
N/A	10GE	980-9168A-00J001	MCP21 00-X001B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m, Blue Pulltab, Connector Label	EOL [HVM] [HIBERN/ATE]
N/A	10GE	980-9168B-00J002	MCP21 00-X002B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m, Blue Pulltab, Connector Label	EOL [HVM] [HIBERN/ATE]
N/A	10GE	980-9168C-00J003	MCP21 00-X003B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m, Blue Pulltab, Connector Label	EOL [HVM]
N/A	10GE	980-9168E-00J001	MCP21 04-X001B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m, Black Pulltab, Connector Label	EOL [HVM] [HIBERN/ATE]
N/A	10GE	980-9168F-00J002	MCP21 04-X002B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m, Black Pulltab, Connector Label	EOL [HVM]
N/A	10GE	980-9168G-00J003	MCP21 04-X003B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m, Black Pulltab, Connector Label	EOL [HVM]
N/A	10GE	980-9168H-00J01A	MCP21 04-X01AB	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1.5m, Black Pulltab, Connector Label	EOL [HVM]
N/A	10GE	980-9168I-00J02A	MCP21 04-X02AB	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2.5m, Black Pulltab, Connector Label	EOL [HVM]

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	10GE	MFM1T02A-LR-F	MFM1T02A-LR-F	NVIDIA optical module, ETH 10GbE, 10Gb/s, SFP+, LC-LC, 1310nm, LR up to 10km	HVM
N/A	10GE	MFM1T02A-SR-F	MFM1T02A-SR-F	NVIDIA optical module, ETH 10GbE, 10Gb/s, SFP+, LC-LC, 850nm, SR up to 300m	HVM
N/A	10GE	MFM1T02A-SR-P	MFM1T02A-SR-P	NVIDIA optical module, ETH 10GbE, 10Gb/s, SFP+, LC-LC, 850nm, SR up to 300m	HVM

1GbE Cables

IB Data Rate	Eth Data Rate	NVIDIA P/N	Legacy OPN	Description	LifeCycle Phase
N/A	1GE	980-91270-00IM00	MC3208011-SX	NVIDIA Optical module, ETH 1GbE, 1Gb/s, SFP, LC-LC, SX 850nm, up to 500m	EOL [P-Rel]
N/A	1GE	980-91251-00IS00	MC3208411-T	NVIDIA module, ETH 1GbE, 1Gb/s, SFP, Base-T, up to 100m	HVM

Supported 3rd Party Cables and Modules

Speed	Cable OPN	Description
400GbE	C-DQF8FNMxxx-N00	400Gb/s QSFP-DD to 2x QSFP56 Parallel Active Optical Cable (AOC) (Rev 1A)
400GbE	DME8811-EC07	400G-2x200G split 7M AOC cables (400G QSFP-DD breaking out to 2x 200G QSFP56) (Rev 12)
400GbE	RTXM500-910	400G-2x200G split 10M AOC cables (400G QSFP-DD breaking out to 2x 200G QSFP56) (Rev 10)
200GbE	RTXM500-905	400G-2x200G split 5M AOC cables (400G QSFP-DD breaking out to 2x 200G QSFP56) (Rev C0)
100GbE	1AT-3Q4M01XX-12A	O-NET QSFP28 100G Active cable/module
100GbE	AQPMANQ4EDMA0784	QSFP28 100G SMF 500m Transceiver
100GbE	CAB-Q-Q-100G-3M	Passive 3 meter, QSFP+ to QSFP+ QSFP100 TWINAX 103.125Gbps-CR4
100GbE	CAB-Q-Q-100GbE-3M	Passive 3 meter , QSFP+ to QSFP+ QSFP100 TWINAX 103.125Gbps-CR4
100GbE	FCBN425QE1C30-C1	100GbE Quadwire® QSFP28 Active Optical Cable 30M
100GbE	FTLC1151RDPL	TRANSCIEVER 100GBE QSFP LR4
100GbE	FTLC9152RGPL	100G 100M QSFP28 SWDM4 OPT TRANS
100G	FTLC9555REP	100m Parallel MMF 100GQSFP28Optical Transceiver

bE	M3-E6	
100G bE	NDAAFJ-C102	SF-NDAAFJ100G-005M
100G bE	QSFP-100G-AOC30M	30m (98ft) Cisco QSFP-100G-AOC30M Compatible 100G QSFP28 Active Optical Cable
100G bE	QSFP28-LR4-AJ	CISCO-PRE 100GbE LR4 QSFP28 Transceiver Module
100G bE	SFBR-89BDDZ-CS2	CISCO-PRE 100G AOM BiDi
100G bE	SQF1002L4LNC101P	Cisco-SUMITOMO 100GbE AOM
40Gb E	2231254-2	Cisco 3m 40GbE copper
40Gb E	AFBR-7QER15Z-CS1	Cisco 40GbE 15m AOC
40Gb E	BN-QS-SP-CBL-5M	PASSIVE COPPER SPLITTER CABLE ETH 40GBE TO 4X10GBE 5M
40Gb E	NDCCGJ-C402	15m (49ft) Avago AFBR-7QER15Z Compatible 40G QSFP+ Active Optical Cable
40Gb E	QSFP-40G-SR-BD	Cisco 40GBASE-SR-BiDi, duplex MMF

Tested Switches

NDR / 400GbE Switches

Speed	NVIDIA SKU	Legacy OPN	Description
NDR	920-9B210-00FN-xxx	QM9790	NVIDIA Quantum-2 based NDR InfiniBand EVB Switch, 64 NDR ports, 32 OSFP ports, non-blocking switching capacity of 51.2Tbps, 2 Power Supplies (AC), Standard depth, Unmanaged, P2C airflow, Rail Kit, RoHS6
NDR	920-9B210-00FN-xxx	QM9700	NVIDIA Quantum 2 based NDR InfiniBand Switch, 64 NDR ports, 32 OSFP ports, 2 Power Supplies (AC), Standard depth, Managed, P2C airflow, Rail Kit
40GbE	920-9N42F-00RI-xxx	SN5600	NVIDIA Spectrum-4 based 800GbE 2U Open Ethernet switch with ONIE and NOS Authentication, 64 OSFP ports and 1 SFP28 port, 2 power supplies (AC), x86 CPU, Secure-boot, standard depth, C2P airflow, Tool-less Rail Kit
40GbE	920-9N301-00xB-xxx	SN4700	NVIDIA Spectrum-3 based 400GbE, 1U Open Ethernet switch, 32xQSFP-DD ports, x86 CPU, standard depth
40GbE	920-9N312-00xB-xxx	SN4410	NVIDIA Spectrum-3 based 400GbE 1U Open Ethernet switch, 24 QSFPDD28 and 8 QSFP-DD ports, 2 Power Supplies (AC), x86 CPU, standard depth
40GbE	N/A	Wedge 400	Meta: Wedge 400-48X 400GbE Data Center Switch
40GbE	N/A	Cisco Nexus 3432D-S	Cisco Nexus 3432D-S, 32 fixed 400-Gigabit Ethernet QSFP-DD ports with backward compatibility for QSFP56, QSFP28, and QSFP+

HDR / 200GbE Switches

Speed	NVIDIA SKU	Legacy OPN	Description
HDR	920-9B110-00FH-xxx	MQM8700	NVIDIA Quantum HDR InfiniBand Switch, 40 QSFP56 ports, 2 Power Supplies (AC), x86 dual core, standard depth, P2C airflow, Rail Kit
HDR	920-9B110-00FH-xxx	MQM8790	NVIDIA Quantum HDR InfiniBand Switch, 40 QSFP56 ports, 2 Power Supplies (AC), unmanaged, standard depth, P2C airflow, Rail Kit
200 GbE	920-9N302-00xA-xxx	MSN4600V	NVIDIA Spectrum-3 based 200GbE 2U Open Ethernet switch, 64 QSFP56 ports, 2 Power Supplies (AC), x86 CPU, standard depth
200 GbE	920-9N210-C1x7-xxx	MSN3700	NVIDIA Spectrum-2 based 200GbE Open Ethernet switch, 32 QSFP56 ports, x86 CPU, standard depth

100GbE Switches

Speed	Switch Silicon	OPN # / Name	Description	Vendor
100GbE	Spectrum-3	MSN4600-XXXX	64-port Non-blocking 100GbE Open Ethernet Switch System	NVIDIA
100GbE	Spectrum-2	MSN3700C-XXXX	32-port Non-blocking 100GbE Open Ethernet Switch System	NVIDIA
100GbE	Spectrum-2	MSN3420-XXXX	48 SFP + 12 QSFP ports Non-blocking 100GbE Open Ethernet Switch System	NVIDIA
100GbE	Spectrum	MSN2700-XXXX	32-port Non-blocking 100GbE Open Ethernet Switch System	NVIDIA
100GbE	N/A	QFX5200-32C-32	32-port 100GbE Ethernet Switch System	Juniper
100GbE	N/A	7060CX-32S	32-port 100GbE Ethernet Switch System	Arista
100GbE	N/A	3232C	32-port 100GbE Ethernet Switch System	Cisco
100GbE	N/A	N9K-C9236C	36-port 100GbE Ethernet Switch System	Cisco

Speed	Switch Silicon	OPN # / Name	Description	Vendor
100GbE	N/A	93180YC-EX	48-port 25GbE + 6-port 100GbE Ethernet Switch System	Cisco
100GbE	N/A	S6820-56HF	H3C S6850-56HF L3 Ethernet Switch with 48 SFP28 Ports and 8 QSFP28 Ports	H3C
100GbE	N/A	BMS T7032-IX7	32 QSFP28 ports support for 10/25/40/50/100GbE	Quanta Mesh

Release Notes History

Changes and New Feature History

i Note

This section includes history of changes and new feature of 3 major releases back. For older releases history, please refer to the relevant firmware versions.

Feature/Change	Description
	28.39.3004
Bug Fixes	See <i>Bug Fixes in this Firmware Version</i> section.

Feature/Change	Description
	28.39.2048
FEC Configuration	Changed the default FEC configuration for the "Protocol Aware" and "Active DME Modules" (ETH cables). For the list of cable identifiers, see tables below.
Bug Fixes	See <i>Bug Fixes in this Firmware Version</i> section.

Byte 192 of Page 0 for sff cables	Name	Auto Detect FEC	Current Default FEC	Previous Default FEC	P/N - Example of one module
0x1A	100GBase DWDM2	No	NO FEC	RS FEC	
0x21	100G BIDI PAM4	No	NO FEC	RS FEC	SFBR-89BDDZ-CS4
0x25	100GBASE-DR	No	NO FEC	RS FEC	MMS1V70-CM
0x26	100GBASE-FR	No	NO FEC	RS FEC	QSFP28-FR-C
0x27	100GBASE-LR	No	NO FEC	RS FEC	SPTSBP4LLCDF

Protocol Aware ETH Cables

Byte 192 of Page 0 for sff cables	Name	Auto Detect FEC	Current Default FEC	Previous Default FEC	P/N - Example of one module
0x1	100G AOC / 25GAUI C2M AOC	Yes	RS FEC	RS FEC	
0x2	100GBASE-SR4 / 25GBASE-SR	Yes	RS FEC	RS FEC	MMA2P00-AS
0x3	100GBASE-LR4	Yes	NO FEC	RS FEC	MMA1L10-CR
0x3	25GBASE-LR	Yes	RS FEC	FC FEC	MMA2L20-AR
0x4	100GBASE-ER4	Yes	NO FEC	RS FEC	SPQCEERCDF LM Source Photonics
0x5	100GBASE-SR10	Yes	NO FEC	RS FEC	
0x6	100G CWDM4 MSA with FEC	Yes	RS FEC	RS FEC	MMA1L30-CM
0x7	100G PSM4 Parallel SMF	Yes	RS FEC	RS FEC	MMS1C10-CM

Byte 192 of Page 0 for sff cables	Name	Auto Detect FEC	Current Default FEC	Previous Default FEC	P/N - Example of one module
0x8	100G ACC / 25GAUI C2M ACC	Yes	RS FEC	RS FEC	
0x9	100G CWDM4 MSA without FEC	Yes	NO FEC	RS FEC	LQ210CR- CPA2
0x17	100G CLR4	Yes	RS FEC	RS FEC	
0x18	100G AOC	Yes	NO FEC	RS FEC	MFA1A00- C010
0x19	100G ACC	Yes	NO FEC	RS FEC	
0x20	100G SWDM4	Yes	RS FEC	RS FEC	FTLC9152RG PL
0x22 / 0x23 / 0x24	4WDM-10 MSA / 4WDM-20 MSA / 4WDM-40 MSA	Yes	RS FEC	RS FEC	

Active DME Modules ETH Cables

Warning

To configure FEC or Speed that is different than the default, you must configure both sides.

The following are examples of when FEC detection capability is available:

- when a 25G SFP module is connected to card, it will support FEC detection in 25G
- when a 100G QSFP module is connected to a card, it will support FEC detection in 100G, but not in 50G or 25G

Note

Firmware version 28.38.1900 (together with MLNX_OFED v23.07-0.5.1.2) should be used by InfiniBand customers.

Feature/Change	Description
28.38.1900	
QKEY Mitigation in the Kernel	<p>QKEY creation with the MSB set is available now for non-privileged users as well.</p> <p>To allow non-privileged users to create QKEY with MSB set, the below new module parameter was added to <code>ib_uverbs</code> module:</p> <ul style="list-style-type: none">• Module Parameter: <code>enforce_qkey_check</code>• Description: Force QKEY MSB check for non-privileged user on UD QP creation• Default: 0 (disabled) <p>Note: In this release, this module parameter is disabled by default to ensure backward compatibility and give customers the opportunity to update their applications accordingly. In the upcoming release, it will be enabled by default, and later on deprecated.</p>

Feature/Change	Description
28.38.1002	
Header Modification	Added support to the metadata <code>reg_c 8-11</code> (packet fields) for matching and modifying the header, and Advanced Steering Operation (ASO) actions.
INT Packets	Added support for forwarding INT packets to the user application for monitoring purposes by matching the BTH acknowledge request bit (<code>bth_a</code>).
Get Electrical Sensor, NC-SI	Implemented NVIDIA NC-SI OEM Commands: <ul style="list-style-type: none">• Get Electrical Sensor Count (command 0x13, parameter 0x6)• Gel Electrical Sensor (command 0x13, parameter 0x7)

Feature/Change	Description
	<ul style="list-style-type: none"> Get Electrical Sensors (command 0x13, parameter 0x8)
IPsec CPS Bulk Allocation	<p>Improved the IPsec CPS by using bulk allocation. For cases in which <code>log_obj_range == 0</code>, single IPSEC object will be allocated and initialized as before keeping backward compatibility.</p> <p>For better performance, it is recommended to work with IPsec bulk allocation and to initialize IPsec ASO context not via the firmware but via the hardware using ASO WQE.</p>
DPA PROCESS ERROR	<p>Added support for a new value for <code>coredump_type</code> field in <code>DPA_PROCESS_COREDUMP</code>, [<code>FIRST_ERROR_THREAD_DUMP (1)</code>].</p>
Device Attestation	<p>Attestation is a mechanism in which a host/platform automatically verifies the authenticity and integrity of the hardware and software state of a device. The mechanism is based on a HW RoT and utilizes SPDM messages that handle the attestation, measurement collection, and trust between device and platform BMC or platform RoT (usually host BMC). This provides the added value of increased security and assurance that the host/platform of device is not being tampered with and has the proper software running on it.</p> <p>A CoRIM is comprised of one or more CoMIDs , with each CoMID providing the reference claims about hardware and firmware for a device. The CoRIM and CoMIDs are encoded in CBOR format. Signed CoRIMs use COSE signatures. For further information, see "NVIDIA Device Attestation and CoRIM-based Reference Measurement Sharing".</p>
QKEY Mitigation in the Kernel	<p>Non-privileged users are now blocked by default from setting controlled/privileged QKEYs (QKEY with MSB set).</p>
Bug Fixes	<p>See <i>Bug Fixes in this Firmware Version</i> section.</p>

Feature/Change	Description
28.37.1014	
Mergeable Buffer	<p>Added mergeable buffer support (<code>VIRTIO_NET_F_MRG_RXBUF</code> in virtio spec) for VDPA kernel mode to improve performance in case of large MTU such as 9K. The feature is disabled by default and must be</p>

Feature/Change	Description
	manually enabled while creating or modifying the virtio device. Note: For best performance, it is NOT recommended to enable the feature if the VDPA MTU is set to the default value (1500).
Monitoring Cloud Guest RoCE Statistics on Cloud Provider	This new capability enables the VM to track and limit its Vport's activity. This is done using the new q_counters counter which enables aggregation of other Vport's from PF GVMI.
Linux Bridge Offload	Added a flow rule that enables offloading of multicast traffic by broadcasting it to multi-Flow-Table in FDB.
Selective Repeat	Selective repeat improves network utilization in case of a lossy fabric. This features is enabled by default.
Dynamic VF MSIX Allocation	Added support for dynamic MSIX modification on a VF NVME device emulation. If a PF NVME device emulation is created with <code>dynamic_vf_msix_control = 1</code> , then the <code>dynamic_vf_msix_reset</code> can set the PF device emulation's VF MSIX number to 0. The <code>num_msix</code> is used in the modified VF device emulation to modify the MSIX number of the VF device emulation.
InfiniBand Congestion Control (IB CC)	Enabled IB CC per Service Level (SL) for RC/UC on the HCA side. Now different SLs can be configured to be CC on/off according to the bitmask decided by the software.
ATS/ATC	Optimizes the ATC configuration dynamically based on the returned pages of the ATS translation requests that have been made.
PCC Algorithms	Enables a smooth and statically switch between PCC algorithms. In addition, the user can now switch between PCC algorithms while running traffic.
Hardware Steering: Bulk Allocation	Added support for 32 actions in the header modify pattern using bulk allocation.
InfiniBand Congestion Control - RTT Response Service Level	The software can explicitly set the SL of an RTT response packet, instead of it being taken from the RTT request packet's SL. The RTT response packet SL may be set/queried via the <code>CONGESTION_CONTROL_HCA_NP_PARAMETER</code> MAD.

Feature/Change	Description
Bug Fixes	See <i>Bug Fixes in this Firmware Version</i> section.

Bug Fixes History

Note

This section includes history of 3 major releases back. For older releases history, please refer to the relevant firmware versions.

Internal Ref.	Issue
373028 2	Description: Added mlxconfig ROCE_CC_DCQCN_COMPATIBILITY_MODE for interoperability with different generations of HCAs, and ROCE_CC_CNP_MODERATION for different CNP moderation options.
	Keywords: Congestion Control, DCQCN, CNP
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.3004
375777 2	Description: Changed the link speed setting behavior to be "full link speed" instead of the limited rate when in the InfiniBand mode and the Congestion Control does not have a valid database to use for the data.
	Keywords: IB Congestion Control
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.39.3004
374894 4	Description: Fixed an issue that kept the adapter cards' quad ports UP when using breakout cables / QSFP-split-4. Now when a 4 alignment loss is noticed, the link in 25G/lane Ethernet is dropped.
	Keywords: Quad ports, link up, breakout cables / QSFP-split-4

Internal Ref.	Issue
	Discovered in Version: 28.39.1002
	Fixed in Release: 28.39.3004
374894 3	Description: Modified PCIe switch Downstream Port EQLZ.PH1 timing to 3ms.
	Keywords: PCIe, EQLZ, Phase1
	Discovered in Version: 28.39.1002
	Fixed in Release: 28.39.3004
369908 6	Description: Fixed a rare race condition in NODNIC teardown that caused commands to hang on regular PF.
	Keywords: NODNIC teardown
	Discovered in Version: 28.39.1002
	Fixed in Release: 28.39.3004
377036 2	Description: Fixed an issue that prevented Congestion Control from behaving properly when GRH is used in traffic of an IB cluster.
	Keywords: IB congestion control, CNP, SL
	Discovered in Version: 28.39.1002
	Fixed in Release: 28.39.3004
374894 7	Description: Added back the Digital Feedforward Equalizer (DFFE) hardware component to improve the signal integrity link.
	Keywords: Digital Feedforward Equalizer (DFFE)
	Discovered in Version: 28.36.2020
	Fixed in Release: 28.39.3004

Internal Ref.	Issue
365287 4	Description: Fixed firmware measurements calculation.
	Keywords: Firmware measurements calculation
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048

Internal Ref.	Issue
3664415	Description: Fixed an issue that caused Live Migration to hang during the "save" stage.
	Keywords: Live migration
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3629353	Description: Fixed the cr_space in port configuration to prevent wrong timestamp of cques.
	Keywords: Hardware timestamp
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3582559	Description: Added support for LED scheme #2 to MCX750500B-0D0K / MCX750500B-0D00 adapter cards.
	Keywords: LED
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3669258	Description: Fixed a rare issue that prevented changes in mlxconfig from taking effect upon warm reboot.
	Keywords: mlxconfig
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3670719 / 3676590	Description: Added a small delay after the power up process to fix an issue that occasionally caused the module to be unstable after the power up.
	Keywords: Link up
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3629562	Description: Fixed a code mismatch in the process of handling the cause to the link being down when the remote faults were received.
	Keywords: Link down
	Discovered in Version: 28.38.1002

Internal Ref.	Issue
	Fixed in Release: 28.39.2048
3532508	Description: Fixed a wrong parameter in the cable info MAD that resulted in unnecessary messages in the log.
	Keywords: Cable info MAD
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3634350	Description: Disabled PCI power event messages on OCP 3.0 adapter cards according to the spec requirements.
	Keywords: PCI, OCP 3.0
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3636714	Description: Fixed an issue that caused the buffer for PLDM firmware update that were pending NIC requests to not being properly locked in case of PLDM-over-NC-SI, and consequently being corrupted by other flows.
	Keywords: PLDM, buffer
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3592276	Description: Fixed an issue that prevent MSI Interrupts from being advertised correctly, resulting in the wrong MSI being sent.
	Keywords: MSI
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3605363	Description: "Get Temperature" OEM command now always returns a unified temperature.
	Keywords: Temperature
	Discovered in Version: 28.38.1002
	Fixed in Release: 28.39.2048
3531972	Description: Changed the bar configuration algorithm so that the last update to the bar address will be the one that takes affect when the host configures the same bar address for two different PFs.

Internal Ref.	Issue
	<p>Keywords: Network Interface</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3626872	<p>Description: Fixed an issue that caused the firmware to miscalculate the value of the maximum current temperature measured from all the diodes (found in the Internal_sensor_curr_temp field).</p> <p>Keywords: Sensor, temperature</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3544340 / 3537706 / 3639178	<p>Description: Improved SPDM v1.0 compatibility. SPDM measurements signature additional fixes.</p> <p>Keywords: SPDM</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3587821	<p>Description: Fixed a HW bug that resulted in transaction loss that when cache replacement transaction occurs in parallel to code transcoding.</p> <p>Keywords: HW bug, transaction loss</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3610861	<p>Description: The eeprom module gets stuck in polling in 20% of the times after reset. To resolve the issue, a delay after config module to high power was added.</p> <p>Keywords: Polling, module, reset</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3507928	<p>Description: Fixed a linkup failure issue that occurred when connecting to a 25GbE transceiver by clearing the PSI Aging before trying to open Tx power.</p> <p>Keywords: Cables, PSI Aging, 25GbE transceiver</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>

Internal Ref.	Issue
3602379	<p>Description: The "Bad Signal Integrity" message seen after power cycle can be safely ignored. The user should monitor BER number.</p> <p>Keywords: Bad Signal Integrity, BER</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3605686	<p>Description: Fixed a statics issue that caused the i2c access to module to lock and stuck the switch.</p> <p>Keywords: i2c, switch</p> <p>Discovered in Version: 28.38.1900</p> <p>Fixed in Release: 28.39.2048</p>
3482251	<p>Description: Added support for hairpin drop counter in QUERY_VNIC_ENV command.</p> <p>Keywords: Hairpin</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3539437	<p>Description: Fixed an issue that prevented the get_func_num_from_pci_func_num function from returning the value "-1" for undefined function type.</p> <p>Keywords: get_func_num_from_pci_func_num</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3570478	<p>Description: Fixed Signal-to-Noise Ratio (SNR) value calculation for correct readings from the MMA4Z00 optical cable module.</p> <p>Keywords: SNR</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3602169	<p>Description: Added a locking mechanism to protect the firmware from a race condition between insertion and deletion of the same rule in parallel. Such behavior occasionally resulted in firmware accessing a memory that has already been released, thus causing IOMMU / translation error.</p> <p>Note: This fix will not impact insertion rate for tables owned by SW steering.</p>

Internal Ref.	Issue
	<p>Keywords: Firmware steering</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3588515 / 3409806	<p>Description: Fixed a race condition that led to a firmware assert upon driver removal, or when changing the ETH flow control scheme in case of a stress of larger than MTU ingress packets.</p> <p>Keywords: Race condition, firmware assert</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>
3610169	<p>Description: Fixed QoS Shaper handling behavior for non-transmitting applications.</p> <p>Keywords: QoS Shaper</p> <p>Discovered in Version: 28.38.1002</p> <p>Fixed in Release: 28.39.2048</p>

Internal Ref.	Issue
3537571	<p>Description: Fixed SPDM measurements signature.</p> <p>Keywords: SPDM</p> <p>Discovered in Version: 28.37.1014</p> <p>Fixed in Release: 28.38.1002</p>
3439757	<p>Description: Fixed an issue that prevented the system from detecting the PCIe device during slot DC power cycle tests.</p> <p>Keywords: PCIe device, DC power cycle tests</p> <p>Discovered in Version: 28.37.1014</p> <p>Fixed in Release: 28.38.1002</p>
3534473	<p>Description: Added a new field/slot ID to PRS pcie_cfg_data.pci_cfg_space.pcie.pcie_switch_ini_defined_base_slot_id = 3 to define a specific slot number for GPU bridge DSP.</p> <p>Keywords: Slot ID</p>

Internal Ref.	Issue
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3331179	Description: Improved token calculation.
	Keywords: Token calculation
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3299420	Description: Upgrading from firmware v28.38.1014 and below to v28.38.1002 no longer requires an upgrade to an intermediate version.
	Keywords: Firmware upgrade
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3394841	Description: Updated the plug in/out events' reporting method to report only when the last recorded event is the opposite of the current event.
	Keywords: Port events
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3469311	Description: Fixed the SPDM operations order according to the spec. v1.1.0.
	Keywords: SPDM operations
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3527987	Description: Added support for NC-SI channel on both ports.
	Keywords: NC-SI channel
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3459317	Description: Changed the protection mechanism for BAR configuration.
	Keywords: BAR configuration
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002

Internal Ref.	Issue
3345150	Description: Fixed an issue that caused a packet with invalid/bad padcount to be silently dropped instead of sending a bad nack error.
	Keywords: Packet drop
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3418627	Description: Fixed wrong credits configuration that occurred when MAX_ACC_OUT_READ was configured.
	Keywords: Performance
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3466088	Description: Update the SX root to work with driverless mode in vport0 gvmi teardown.
	Keywords: Driverless mode
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3487313	Description: Fixed a a rare deadlock case between 2 DC packets in the RX side.
	Keywords: Firmware deadlock
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3495889	Description: Fixed a QoS host port rate limit shaper inaccuracy that occurred when the shaper was configured via the QSHR access register.
	Keywords: Port rate limit shaper
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002
3449451	Description: When using ConnectX-7 adapter card as InfiniBand, the port must be configured to use the Auto-Negotiation mode.
	Keywords: Auto-Negotiation, InfiniBand
	Discovered in Version: 28.37.1014
	Fixed in Release: 28.38.1002

Internal Ref.	Issue
3272599	Description: Removed the option to clear "Tx disable cap" for all non-baseT SFP modules.
	Keywords: Tx disable cap
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3339087	Description: Added a split mask verification process to check whether or not a module is split in HCA.
	Keywords: Cables, split module
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3411270	Description: Fixed an issue that resulted in firmware crash when setting large payload length values (more than ~1500) in NC-SI command's header.
	Keywords: NC-SI
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3405790	Description: Fixed an issue that resulted in the interface type being shown as "unsupported" in CMIS modules.
	Keywords: CMIS
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3418889	Description: Updated the NEGOTIATE_ALGORITHMS response according to the SPDM specification.
	Keywords: SPDM
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3409686	Description: Added the option to clear the DPC registers after warm reboot.
	Keywords: DPC
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014

Internal Ref.	Issue
3411116	Description: Fixed the configuration of the TS1s sent by the DownStream port (DSP) when moving to EQLZ.ph2.
	Keywords: DSP
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3138665	Description: Changed the initial Tx preset configuration for the DownStream port (DSP).
	Keywords: Tx, DSP
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3138665	Description: PLDM firmware update process fails in case 1304 bytes chunk size is chosen.
	Keywords: PLDM firmware update
	Discovered in Version: 28.34.4000
	Fixed in Release: 28.37.1014
3336619	Description: Fixed an issues that occurred during secure firmware update when decrypting and authenticating each chunk of data using its authentication tag. The issue appeared when the main code chunk was split between the user chunks and any GCM operation (e.g., flash read with decryption). This GCM operation broke the GCM context for main chunk authentication and therefore failed.
	Keywords: Secure firmware update, GCM, code chunk
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3327847	Description: CNP received, handled, and ignored counters in the hardware counters cannot work after moving to Programmable Congestion Control mode.
	Keywords: CNP, Programmable Congestion Control
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014

Internal Ref.	Issue
3336610	Description: Fixed a rare issue that prevented the hardware from handling an error flow that occurred when accessing the DPA cluster L2 cache from the firmware processor. In this case the firmware processor hardware requested a VA=>PA translation from the internal mmio, and the address translation was broken by the mmio on the 4K page boundary.
	Keywords: Error handling, mmio, firmware processor
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014
3073517	Description: When connecting a ConnectX-7 adapter card to a ConnectX-5 or an NVIDIA Spectrum switch and trying to raise 10G/40G over 100G optics cable is not supported.
	Keywords: Optical cables, ConnectX-5, NVIDIA Spectrum
	Discovered in Version: 28.33.4030
	Fixed in Release: 28.37.1014
3358994	Description: Fixed an issue that prevented the hardware from consuming Port-VL and credits, which consequently blocked traffic from being transmitted due to a race condition between the firmware and the hardware when accessing the chip memory (CR space).
	Keywords: Firmware race, CR space, Port-VL
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.37.1014

Internal Ref.	Issue
-	Description: Fixed an issue for adapter cards P/N MCX755106AS-HEAT that caused the link not to raise after changing both ports to Ethernet mode.
	Keywords: Port type, link up
	Discovered in Version: 28.36.1010
	Fixed in Release: 28.36.1700

Internal Ref.	Issue
3923754 (NVbugs)	Description: Fixed an issue that caused the Downstream Port Containment (DPC) not to be exposed on the downstream ports of the top level PCIe switch in products supporting PCIe switch.
	Keywords: PCIe Switch, DPC
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010
3070480	Description: Fixed an issue that resulted in PRBS lock loss (PRBS_CHK_ERR_CNT_NO_CLR field is raising) when the PRBS mode was first configured on the ConnectX-7 adapter card and then on the Wedge400 switch.
	Keywords: PRBS
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010
3317621	Description: Fixed an issue that caused wqe_based_steering CQEs not to be generated upon an error.
	Keywords: CQE
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010
3239340	Description: Aligned RDE behavior to DSP0266 v1.15.0 table 23.
	Keywords: RDE
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010
3016801	Description: Fixed a rare issue that resulted in link not raising when connecting a ConnentX-7 adapter card to IXIA in PAM4 speeds.
	Keywords: PAM4, IXIA, link up
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010
3073517	Description: Fixed an issue that resulted in device link down, and the device not being able to get traffic, when moving between two states DETECT and POLLING CONFIG in RTL.

Internal Ref.	Issue
	<p>Keywords: RTL, link down, traffic</p> <p>Discovered in Version: 28.35.1012</p> <p>Fixed in Release: 28.36.1010</p>
3073517	<p>Description: When connecting a ConnectX-7 adapter card to a ConnectX-5 or an NVIDIA Spectrum switch, configuring first 10G/40G and then configuring back 100G we result in linkup failure.</p> <p>Keywords: ConnectX-5, NVIDIA Spectrum, linkup</p> <p>Discovered in Version: 28.33.4030</p> <p>Fixed in Release: 28.36.1010</p>
3077026	<p>Description: When connecting with MMS4X00-NL400 transceiver at 200Gb/s, instability may be experienced upon link up.</p> <p>Keywords: Transceiver, Link Up</p> <p>Discovered in Version: 28.34.1002</p> <p>Fixed in Release: 28.36.1010</p>
3077026	<p>Description: When connecting a ConnectX-7 adapter card to ConnectX-7 adapter card and one side is configured to RM Loopback, and the port is toggled, link flap maybe experienced.</p> <p>Keywords: Link flap</p> <p>Discovered in Version: 28.34.1002</p> <p>Fixed in Release: 28.36.1010</p>
3106146	<p>Description: Live migration of MPV affiliated function pair is not supported when port numbers are changed. Each function should stay on the same port number as before migration.</p> <p>Keywords: MPV live migration</p> <p>Discovered in Version: 28.34.1002</p> <p>Fixed in Release: 28.36.1010</p>
2169950	<p>Description: When decapsulation on a packet occurs, the FCS indication is not calculated correctly.</p> <p>Keywords: FCS</p> <p>Discovered in Version: 28.34.1002</p>

Internal Ref.	Issue
	Fixed in Release: 28.36.1010
3147219	Description: SPDM Get Measurements might return an invalid signature while executed without the included measurements (request param2 = 0).
	Keywords: SPDM
	Discovered in Version: 28.34.4000
	Fixed in Release: 28.36.1010
3147207	Description: The SPDM challenge command returns the hash of all the measurements without their headers.
	Keywords: SPDM
	Discovered in Version: 28.34.4000
	Fixed in Release: 28.36.1010
3261861	Description: Connecting an HDR device to an NDR device with Optical cables longer than 30m causes degradation in the bandwidth.
	Keywords: HDR-to-NDR, cables
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010
3225504	Description: Enabled constant clock offset (visible using PPS out) when synchronizing the device using PTP in 25G or 10G port link speed.
	Keywords: PTP, PPS offset
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010
3288489	Description: Fixed an issue that caused the Pkey table not to be updated, and wrong value to be sent, when the MADs handled in a long process were sent using GLOBAL_GVMI instead of vport0_gvmi.
	Keywords: Pkey
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010
3283455	Description: Fixed a wrong lane mapping to serdes when selecting the OSFP port and using only 4 lanes.
	Keywords: QSFP, lanes

Internal Ref.	Issue
	Discovered in Version: 28.35.1012
	Fixed in Release: 28.36.1010

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Product	Version	Legal Notices and 3rd Party Licenses
Firmware	xx.39.3004	<ul style="list-style-type: none">• HCA Firmware EULA• 3rd Party Unify Notice• License
MLNX_OFED	23.10-2.1.3.1	<ul style="list-style-type: none">• License• 3rd Part Notice
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MFT Windows		<ul style="list-style-type: none">• 3rd Party Notice• License
msfflint	4.26.1	<ul style="list-style-type: none">• 3rd Party Notice• License

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