NVIDIA BlueField-2 DPU Firmware Release Notes v24.41.1000

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1 Release Notes Update History

Version	Date	Description
24.41.1000	May 05, 2024	Initial release of this Release Notes version, This version introduces Changes and New Features and Bug Fixes.

2 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.

NVIDIA BlueField-2 DPU provides innovative acceleration, security, and efficiency in every host. BlueField-2 data center infrastructure combines the power of the NVIDIA ConnectX®-6 Dx with programmable Arm® cores and hardware offloads for software-defined storage, networking, security, and management workloads.

NVIDIA BlueField-2 also delivers superior performance, security, and reduced TCO for cloud computing platforms, enabling organizations to efficiently build and operate virtualized, containerized, and bare-metal infrastructures at massive scale.

2.1 Firmware Download

Please visit Firmware Downloads.

2.2 Document Revision History

A list of the changes made to this document are provided in Document Revision History.

3 Firmware Compatible Products

These are the release notes for the NVIDIA® BlueField-2 SmartNICs firmware. This firmware supports the following protocols:

- InfiniBand - QDR, FDR, EDR, HDR100, HDR
- Ethernet - 1GbE, 10GbE, 25GbE, 40GbE, 50GbE[1], 100GbE[1], 200GbE[2], 400GbE[2]
- PCI Express 4.0, supporting backwards compatibility for 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.

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

3.1 Supported Devices

NVIDIA SKU	Legacy OPNs	PSID	Description
900-9D219-0056-SN1	MBF2M516A-CENOT	MT_0000000560	BlueField-2 E-Series DPU 100GbE Dual-Port QSFP56; PCIe Gen4 x16; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D218-0073-ST0	MBF2H532C-AESOT	MT_0000000766	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; integrated BMC; PCIe Gen4 x8; Secure Boot Enabled; Crypto Disabled; 32GB on-board DDR; 1GbE OOB management; FHHL
900-9D219-0086-ST1	MBF2M516A-CECOT	MT_0000000375	BlueField-2 E-Series DPU 100GbE Dual-Port QSFP56; PCIe Gen4 x16; Crypto and Secure Boot Enabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D208-0076-ST2	MBF2H516C-EESOT	MT_0000000737	BlueField-2 P-Series DPU 100GbE/EDR/HDR100 VPI Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; Tall Bracket; FHHL
900-9D208-0076-STA	MBF2H516C-CEUOT	MT_0000000973	BlueField-2 P-Series DPU 100GbE Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled with UEFI disabled; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management
900-9D208-0086-ST4	MBF2M516C-EECOT	MT_0000000728	BlueField-2 E-Series DPU 100GbE/EDR/HDR100 VPI Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; Tall Bracket; FHHL
900-9D208-0086-ST2	MBF2H536C-CECOT	MT_0000000768	BlueField-2 P-Series DPU 100GbE Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Enabled; 32GB on-board DDR; 1GbE OOB management; FHHL
900-9D206-0063-ST1	MBF2H322A-AEEOT	MT_0000000543	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; PCIe Gen4 x8; Crypto Enabled; 8GB on-board DDR; 1GbE OOB management; HHHL
900-9D250-0048-ST1	MBF2M345A-HECOT	MT_0000000716	BlueField-2 E-Series DPU; 200GbE/HDR single-port QSFP56; PCIe Gen4 x16; Secure Boot Enabled; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; HHHL
900-9D218-0083-ST2	MBF2H512C-AECOT	MT_0000000724	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; integrated BMC; PCIe Gen4 x8; Secure Boot Enabled; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; FHHL

NVIDIA SKU	Legacy OPNs	PSID	Description
900-9D208-0086-SQ0	MBF2H516C-CECOT	MT_0000000729	BlueField-2 P-Series DPU 100GbE Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; Tall Bracket; FHHL
900-9D208-0076-ST5	MBF2M516C-CESOT	MT_0000000731	BlueField-2 E-Series DPU 100GbE Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; Tall Bracket; FHHL
900-9D208-0076-ST3	MBF2H536C-CESOT	MT_0000000767	BlueField-2 P-Series DPU 100GbE Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Disabled; 32GB on-board DDR; 1GbE OOB management; FHHL
699140280000	N/A	NVD0000000020	ZAM/NAS
900-9D219-0066-ST2	MBF2M516A-CEEOT	MT_0000000561	BlueField-2 E-Series DPU 100GbE Dual-Port QSFP56; PCIe Gen4 x16; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D219-0086-ST0	MBF2M516A-EECOT	MT_0000000376	BlueField-2 E-Series DPU 100GbE/EDR/HDR100 VPI Dual-Port QSFP56; PCIe Gen4 x16; Crypto and Secure Boot Enabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D206-0053-SQ0	MBF2H332A-AENOT	MT_0000000539	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; PCIe Gen4 x8; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; HHHL
900-9D219-0006-ST0	MBF2H516A-CEEOT	MT_0000000702	BlueField-2 DPU 100GbE Dual-Port QSFP56; PCIe Gen4 x16; Crypto; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D219-0056-ST2	MBF2H516A-CENOT	MT_0000000703	BlueField-2 DPU 100GbE Dual-Port QSFP56; PCIe Gen4 x16; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D219-0066-ST3	MBF2H516A-EEEOT	MT_0000000704	BlueField-2 DPU 100GbE/EDR/HDR100 VPI Dual-Port QSFP56; PCIe Gen4 x16; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D218-0073-ST1	MBF2H512C-AESOT	MT_0000000723	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; integrated BMC; PCIe Gen4 x8; Secure Boot Enabled; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D208-0076-ST6	MBF2M516C-EESOT	MT_0000000732	BlueField-2 E-Series DPU 100GbE/EDR/HDR100 VPI Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; Tall Bracket; FHHL
900-9D208-0086-ST3	MBF2M516C-CECOT	MT_0000000733	BlueField-2 E-Series DPU 100GbE Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; Tall Bracket; FHHL
900-9D218-0083-ST4	MBF2H532C-AECOT	MT_0000000765	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; integrated BMC; PCIe Gen4 x8; Secure Boot Enabled; Crypto Enabled; 32GB on-board DDR; 1GbE OOB management; FHHL
P1004 / 699210040230	N/A	NVD0000000001 5	ROY BlueField-2 + GA100 PCIe Gen4 x8; two 100Gbe/EDR QSFP28 ports; FHFL
900-9D219-0056-ST1	MBF2M516A-EENOT	MT_0000000377	BlueField-2 E-Series DPU 100GbE/EDR/HDR100 VPI Dual-Port QSFP56; PCIe Gen4 x16; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; FHHL

NVIDIA SKU	Legacy OPNs	PSID	Description
900-9D206-0063-ST2	MBF2H332A-AEEOT	MT_0000000540	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; PCIe Gen4 x8; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; HHHL
900-9D206-0053-ST2	MBF2H322A-AENOT	MT_0000000544	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; PCIe Gen4 x8; Crypto Disabled; 8GB on-board DDR; 1GbE OOB management; HHHL
900-9D219-0066-ST0	MBF2M516A-EEEOT	MT_0000000559	BlueField-2 E-Series DPU 100GbE/EDR/HDR100 VPI Dual-Port QSFP56; PCIe Gen4 x16; Crypto Enabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D208-0076-ST1	MBF2H516C-CESOT	MT_0000000738	BlueField-2 P-Series DPU 100GbE Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; Tall Bracket; FHHL
900-9D206-0083-ST3	MBF2H332A-AECOT	MT_0000000541	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; PCIe Gen4 x8; Crypto and Secure Boot Enabled; 16GB on-board DDR; 1GbE OOB management; HHHL
900-9D219-0056-SQ0	MBF2H516A-EENOT	MT_0000000705	BlueField-2 DPU 100GbE/EDR/HDR100 VPI Dual-Port QSFP56; PCIe Gen4 x16; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; FHHL
900-9D250-0038-ST1	MBF2M345A-HESOT	MT_0000000715	BlueField-2 E-Series DPU; 200GbE/HDR single-port QSFP56; PCIe Gen4 x16; Secure Boot Enabled; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management; HHHL
900-9D218-0073-ST4	MBF2H512C-AEUOT	MT_0000000972	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; integrated BMC; PCIe Gen4 x8; Secure Boot Enabled with UEFI disabled; Crypto Disabled; 16GB on-board DDR; 1GbE OOB management
900-9D208-0076-STB	MBF2H536C-CEUOT	MT_0000001008	BlueField-2 P-Series DPU 100GbE Dual-Port QSFP56; integrated BMC; PCIe Gen4 x16; Secure Boot Enabled with UEFI Disabled; Crypto Disabled; 32GB on-board DDR; 1GbE OOB management; FHHL
900-9D206-0083-ST1	MBF2H322A-AECOT	MT_0000000542	BlueField-2 P-Series DPU 25GbE Dual-Port SFP56; PCIe Gen4 x8; Crypto and Secure Boot Enabled; 8GB on-board DDR; 1GbE OOB management; HHHL
900-9D206-0063-ST4	MBF2M322A-AEEOT	MT_0000000490	BlueField-2 E-Series DPU 25GbE Dual-Port SFP56; PCIe Gen4 x8; Crypto Enabled; 8GB on-board DDR; 1GbE OOB management; HHHL

⚠ Please be aware that not all firmware binaries contain FlexBoot or UEFI, support may vary between cards.

3.2 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
NVIDIA BlueField-2 Firmware	24.41.1000 / 24.40.1000 / 24.39.2048

	Supported Version
BlueField DPU OS Software	4.7.0
MLNX_OFED	24.04-0.6.6.0 / 24.01-0.3.3.1 / 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)	24.04-0.6.6.0 / 24.01-0.3.3.1 / 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	24.4.50000 / 24.1.50000 / 23.10.50000 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
MFT	4.28.0-92 / 4.27.0 / 4.26.1 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
mstflint	4.28.0-92 / 4.27.0 / 4.26.1 **Note:** For the list of the supported Operating Systems, please refer to the driver's Release Notes.
FlexBoot	3.7.400
UEFI	14.34.12
MLNX-OS	3.10.5002 onwards
Cumulus	5.4 onwards
NVIDIA Quantum-2 Firmware	31.2012.1024 onwards
NVIDIA Quantum Firmware	27.2012.1010 onwards

4 Changes and New Features

Feature/Change	Description
24.41.1000	
TRNG FIPS Compliance	Implemented Deterministic Random Bit Generator (DRBG) algorithm on top of firmware TRNG (the source for raw data input) in accordance with NIST SP800-90A.
vDPA Live Migration	Added support for vDPA virtual queue state change from suspend to ready, and discrete mkey for descriptor. vDPA Live Migration uses these two new capabilities to reduce downtime since vq can go back to ready state for traffic and descriptor-only-mkey can help reduce mkey mapping time.
NVConfig	Added a new NVConfig option to copy AR bit from the BTH header to the DHCP header.
Steering	Added the option provide field's offset and length in Steering add_action option.
Flex Parser Merge Mechanism	Extended Flex Parser merge mechanism to support hardware capabilities.
Flex Parser	Enabled the option to disable the native parser when the parse graph node is configured with the same conditions.
Flex Parser	Added support for father/son headers parsing.
LRO	Added support for tunnel_offload in LRO.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

5 Bug Fixes in this Firmware Version

Internal Ref.	Issue
3665350	**Description:** Fixed an issue on the customized server with an independent power supply, that led to an assert with ext_synd as 0x8ce5 during a power cycle process for virtio.
	Keywords: virtio emulation, independent power supply
	Discovered in Version: 24.39.2048
	Fixed in Release: 24.41.1000
3798733	**Description:** Fixed an issue that caused traffic not to function properly after performing Live Migration with ingress traffic for vDPA over VFE scenario.
	Keywords: virtio, vDPA over VFE, Live Migration
	Discovered in Version: 24.39.2048
	Fixed in Release: 24.41.1000
3555832	**Description:** Fixed an issue that caused traffic failure when modifying the VIRTIO_NET_F_MRG_RXBUF bit for the VDPA device during traffic.
	Keywords: VDPA, MRG_RXBUF
	Discovered in Version: 24.39.2048
	Fixed in Release: 24.41.1000
3771100	**Description:** Fixed an issue that resulted in the second mkey index returning even if it was not set in the creation of the virtio q when querying virtio q object.
	Keywords: VDPA, virtio, query object
	Discovered in Version: 24.39.2048
	Fixed in Release: 24.41.1000
3783686	**Description:** Fixed an issue on the customized server with an independent power supply, that led to a non-functional virtio when power cycled the server during stressful traffic. The following error was provided: "DESTROY_GENERAL_OBJECT(0xa03) No done completion".
	Keywords: virtio full emulation, independent power supply
	Discovered in Version: 24.39.2048
	Fixed in Release: 24.41.1000
3691774	**Description:** Fixed an issue that resulted in traffic loss after performing Live Migration with virtio vq "frozen-ready" feature. **Note:** When the traffic load is high, and the vq frozen-ready cap is on, traffic loss might still be experienced after modifying the vq from suspend to ready mode.
	Keywords: VDPA, live migration, virtio, resume
	Discovered in Version: 24.39.2048
	Fixed in Release: 24.41.1000

6 Known Issues

VF Network Function Limitations in SRIOV 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
• 127 VF per PF (254 functions) • 512 PF+VF+SF per PF (1024 functions)	• 127 VF (127 functions) • 512 PF+VF+SF per PF (512 functions)

For known issues prior to version

24.33.1048

, please refer to the NVIDIA BlueField-2 DPU documentation.

Internal Ref.	Issue
3754913	**Description:** PHYless Reset is currently not supported.
	Workaround: N/A
	Keywords: PHYless Reset
	Discovered in Version: 24.40.1000
3605828 / 3629606	**Description:** Some pre-OS environments may fail when sensing a hot-plug operation during their boot stage.
	Workaround: N/A
	Keywords: Hot-plug operation
	Discovered in Version: 24.39.2048
3525865	**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: 24.39.2048

Internal Ref.	Issue
3547022	**Description:** When `tx_port_ts` is set to `"true"`, due to a compensation mechanism in the Tx timestamp available in some hardware Rx timestamp errors, a symmetrical error and no clock offset occur when using the timestamps to synchronize the device clock. This might also cause an error while using timestamps for delay measurements (e,g., delay measurements reported by a PTP daemon) and even negative delay measurements in some cases.
	Workaround: N/A
	Keywords: PTP path delay
	Discovered in Version: 24.38.1002
3547022	**Description:** When unloading the network drivers on an external host, sync1 reset may be still reported as 'supported' although it is not. Thus, initiating the reset flow may result in reset failure after a few minutes.
	Workaround: N/A
	Keywords: Sync1 reset
	Discovered in Version: 24.38.1002
3457472	**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: 24.37.1300
3296463	**Description:** fwreset is currently supported on PCI Gen 4 devices only.
	Workaround: N/A
	Keywords: fwreset, PCI Gen4
	Discovered in Version: 24.37.1300
2878841	**Description:** The firmware rollback fails for the signature retransmit flow if the QPN field is configured in the mkey (as it only allows the given QP to use this Mkey) as the firmware rollback flow relies on an internal QP that uses the mkey.
	Workaround: N/A
	Keywords: Signature retransmit flow
	Discovered in Version: 24.37.1300
3329109	**Description:** MFS1S50-H003E cable supports only HDR rate when used as a split cable.
	Workaround: N/A
	Keywords: HDR, split cable, MFS1S50-H003E
	Discovered in Version: 24.37.1300
3267506	**Description:** CRC is included in the traffic byte counters as a port byte counter.
	Workaround: N/A

Internal Ref.	Issue
	Keywords: Counters, CRC
	Discovered in Version: 24.35.2000
3141072	**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
	Discovered in Version: 24.34.1002
2870970	**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: 24.34.1002
2899026 / 2853408	**Description:** Some pre-OS environments may fail when sensing a hot plug operation during their boot stage.
	Workaround: N/A
	Keywords: BIOS; Hot plug; Virtio-net
	Discovered in Version: 24.33.1048
2870213	**Description:** Servers do not recover after configuring `PCI_SWITCH_EMULATION_NUM_PORT` to 32 followed by power cycle.
	Workaround: N/A
	Keywords: VirtIO-net; power cycle
	Discovered in Version: 24.33.1048
2855592	**Description:** When working with 3rd party device (e.g., Paragon) in 25GbE speed, the 25GbE speed must be configured in force mode.
	Workaround: N/A
	Keywords: Force mode, 3rd party devices, 25GbE
	Discovered in Version: 24.33.1048
2850003	**Description:** Occasionally, when rising a logical link, the link recovery counter is increase by 1.
	Workaround: N/A
	Keywords: Link recovery counter
	Discovered in Version: 24.33.1048
2616755	**Description:** Forward action for IPoIB is not supported on RX RDMA Flow Table.
	Workaround: N/A
	Keywords: Steering, IPoIB
	Discovered in Version: 24.33.1048

7 PreBoot Drivers (FlexBoot/UEFI)

7.1 FlexBoot Changes and New Features

For further information, please refer to the FlexBoot Release Notes.

7.2 UEFI Changes and Major New Features

For further information, please refer to the UEFI Release Notes.

8 Validated and Supported Cables and Modules

8.1 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

8.2 NDR / 400GbE Cables

Speed	Part Number	Marketing Description
400GE	MCP1660-W001E30	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 1m, 30AWG
400GE	MCP1660-W002E26	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 2m, 26AWG
400GE	MCP1660-W003E26	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 3m, 26AWG
400GE	MCP1660-W00AE30	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 0.5m, 30AWG
400GE	MCP1660-W01AE30	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 1.5m, 30AWG
400GE	MCP1660-W02AE26	NVIDIA Direct Attach Copper cable, 400GbE, 400Gb/s, QSFP-DD, 2.5m, 26AWG
400GE	MCP7F60-W001R30	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 4x100Gb/s, QSFP-DD to 4xQSFP56, 1m, 30AWG
400GE	MCP7F60-W002R26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 4x100Gb/s, QSFP-DD to 4xQSFP56, 2m, 26AWG
400GE	MCP7F60-W02AR26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 4x100Gb/s, QSFP-DD to 4xQSFP56, 2.5m, 26AWG
400GE	MCP7H60-W001R30	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 1m, 30AWG
400GE	MCP7H60-W002R26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 2m, 26AWG
400GE	MCP7H60-W01AR30	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 1.5m, 30AWG
400GE	MCP7H60-W02AR26	NVIDIA DAC splitter cable, 400GbE, 400Gb/s to 2x200Gb/s, QSFP-DD to 2xQSFP56, 2.5m, 26AWG

8.3 HDR / 200GbE Cables

Speed	Part Number	Marketing Description
200GE	MFS1S00-V003E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 3m
200GE	MFS1S00-V005E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 5m
200GE	MFS1S00-V010E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 10m
200GE	MFS1S00-V015E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 15m
200GE	MFS1S00-V020E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 20m
200GE	MFS1S00-V030E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 30m
200GE	MFS1S00-V050E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 50m
200GE	MFS1S00-V100E	NVIDIA active fiber cable, 200GbE, 200Gb/s, QSFP56, LSZH, black pulltab, 100m
200GE	MCP1650-V001E30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 1m, black pulltab, 30AWG
200GE	MCP1650-V002E26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2m, black pulltab, 26AWG
200GE	MCP1650-V00AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 0.5m, black pulltab, 30AWG
200GE	MCP1650-V01AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 1.5m, black pulltab, 30AWG
200GE	MCP1650-V02AE26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2.5m, black pulltab, 26AWG
200GE	MCP7H50-V001R30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 1m, 30AWG
200GE	MCP7H50-V002R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 2m, 26AWG
200GE	MCP7H50-V01AR30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 1.5m, 30AWG
200GE	MCP7H50-V02AR26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 2.5m, 26AWG
200GE	MMA1T00-VS	NVIDIA transceiver, 200GbE, up to 200Gb/s, QSFP56, MPO, 850nm, SR4, up to 100m
200GE	MCP1650-V001E30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 1m, black pulltab, 30AWG
200GE	MCP1650-V002E26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2m, black pulltab, 26AWG
200GE	MCP1650-V003E26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 3m, black pulltab, 26AWG

Speed	Part Number	Marketing Description
200GE	MCP1650-V00AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 0.5m, black pulltab, 30AWG
200GE	MCP1650-V01AE30	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 1.5m, black pulltab, 30AWG
200GE	MCP1650-V02AE26	NVIDIA Passive Copper cable, 200GbE, 200Gb/s, QSFP56, LSZH, 2.5m, black pulltab, 26AWG
200GE	MCP7H50-V001R30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 1m, 30AWG
200GE	MCP7H50-V002R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 2m, 26AWG
200GE	MCP7H50-V003R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 3m, 26AWG
200GE	MCP7H50-V01AR30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 1.5m, 30AWG
200GE	MCP7H50-V02AR26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 2x100Gb/s, QSFP56 to 2xQSFP56, colored, 2.5m, 26AWG
200GE	MCP7H70-V001R30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 1m, 30AWG
200GE	MCP7H70-V002R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 2m, 26AWG
200GE	MCP7H70-V003R26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4x4SFP56, colored, 3m, 26AWG
200GE	MCP7H70-V01AR30	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to 4x50Gb/s, QSFP56 to 4xSFP56, colored, 1.5m, 30AWG
200GE	MCP7H70-V02AR26	NVIDIA passive copper hybrid cable, 200GbE 200Gb/s to4x50Gb/s, QSFP56 to 4xSFP56, colored, 2.5m, 26AWG

8.4 EDR / 100GbE Cables

Speed	Part Number	Marketing Description
100GbE	MCP1600-C001	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 1m 30AWG
100GbE	MCP1600-C001E30N	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 1m, black, 30AWG, CA-N
100GbE	MCP1600-C001LZ	NVIDIA passive copper Cable, ETH 100GbE, 100Gb/s, QSFP, 1m, LSZH, 30AWG
100GbE	MCP1600-C002	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 2m 30AWG
100GbE	MCP1600-C002E30N	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2m, black, 30AWG, CA-N
100GbE	MCP1600-C003	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 3m 28AWG
100GbE	MCP1600-C003E26N	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 3m, black, 26AWG, CA-N

Speed	Part Number	Marketing Description
100GbE	MCP1600-C003E30L	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 3m, black, 30AWG, CA-L
100GbE	MCP1600-C003LZ	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, 3m, LSZH, 26AWG
100GbE	MCP1600-C005AM	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, 5m, 26AWG
100GbE	MCP1600-C005E26L	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 5m, black, 26AWG, CA-L
100GbE	MCP1600-C00A	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 0.5m 30AWG
100GbE	MCP1600-C00AE30N	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 0.5m, black, 30AWG, CA-N
100GbE	MCP1600-C00BE30N	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 0.75m, black, 30AWG, CA-N
100GbE	MCP1600-C01A	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 1.5m 30AWG
100GbE	MCP1600-C01AE30N	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 1.5m, black, 30AWG, CA-N
100GbE	MCP1600-C02A	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 2.5m 30AWG
100GbE	MCP1600-C02AE26N	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28, 2.5m, black, 26AWG, CA-N
100GbE	MCP1600-C02AE30L	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP28,2.5m, black, 30AWG, CA-L
100GbE	MCP1600-C03A	NVIDIA passive copper cable, ETH 100GbE, 100Gb/s, QSFP, PVC, 3.5m 26AWG
100GbE	MCP1600-E001	NVIDIA passive copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1m 30AWG
100GbE	MCP1600-E002	NVIDIA passive copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2m 28AWG
100GbE	MCP1600-E003	NVIDIA passive copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 3m 26AWG
100GbE	MCP1600-E01A	NVIDIA passive copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 1.5m 30AWG
100GbE	MCP1600-E02A	NVIDIA passive copper cable, IB EDR, up to 100Gb/s, QSFP, LSZH, 2.5m 26AWG
100GbE	MCP7F00-A001R	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pull-tabs, 1m, 30AWG
100GbE	MCP7F00-A001R30N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 1m, colored, 30AWG, CA-N
100GbE	MCP7F00-A002R	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pull-tabs, 2m, 30AWG

Speed	Part Number	Marketing Description
100GbE	MCP7F00-A002R30N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2m, colored, 30AWG, CA-N
100GbE	MCP7F00-A003R26N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m, colored, 26AWG, CA-N
100GbE	MCP7F00-A003R30L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m, colored, 30AWG, CA-L
100GbE	MCP7F00-A005R26L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 5m, colored, 26AWG, CA-L
100GbE	MCP7F00-A01AR	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, colored pull-tabs,1.5m, 30AWG
100GbE	MCP7F00-A01AR30N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 1.5m, colored, 30AWG, CA-N
100GbE	MCP7F00-A02AR26N	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, colored, 26AWG, CA-N
100GbE	MCP7F00-A02AR30L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, colored, 30AWG, CA-L
100GbE	MCP7F00-A02ARLZ	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 2.5m, LSZH, colored, 28AWG
100GbE	MCP7F00-A03AR26L	NVIDIA passive copper hybrid cable, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3.5m, colored, 26AWG, CA-L
100GbE	MCP7H00-G001	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1m, 30AWG
100GbE	MCP7H00-G001R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pull-tabs, 1m, 30AWG
100GbE	MCP7H00-G001R30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1m, colored, 30AWG, CA-N
100GbE	MCP7H00-G002R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pull-tabs, 2m, 30AWG
100GbE	MCP7H00-G002R30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2m, colored, 30AWG, CA-N
100GbE	MCP7H00-G003R	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pull-tabs, 3m, 28AWG

Speed	Part Number	Marketing Description
100GbE	MCP7H00-G003R26N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 3m, colored, 26AWG, CA-N
100GbE	MCP7H00-G003R30L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 3m, colored, 30AWG, CA-L
100GbE	MCP7H00-G004R26L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 4m, colored, 26AWG, CA-L
100GbE	MCP7H00-G01AR	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pull-tabs, 1.5m, 30AWG
100GbE	MCP7H00-G01AR30N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 1.5m, colored, 30AWG, CA-N
100GbE	MCP7H00-G02AR	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, colored pull-tabs, 2.5m, 30AWG
100GbE	MCP7H00-G02AR26N	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2.5m, colored, 26AWG, CA-N
100GbE	MCP7H00-G02AR30L	NVIDIA passive copper hybrid cable, ETH 100Gb/s to 2x50Gb/s, QSFP28 to 2xQSFP28, 2.5m, colored, 30AWG, CA-L
100GbE	MFA1A00-C003	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 3m
100GbE	MFA1A00-C005	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 5m
100GbE	MFA1A00-C010	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 10m
100GbE	MFA1A00-C015	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 15m
100GbE	MFA1A00-C020	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 20m
100GbE	MFA1A00-C030	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 30m
100GbE	MFA1A00-C050	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 50m
100GbE	MFA1A00-C100	NVIDIA active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 100m
100GbE	MFA7A20-C003	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 3m
100GbE	MFA7A20-C005	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 5m
100GbE	MFA7A20-C010	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 10m

Speed	Part Number	Marketing Description
100GbE	MFA7A20-C020	NVIDIA active fiber hybrid solution, ETH 100GbE to 2x50GbE, QSFP28 to 2xQSFP28, 20m
100GbE	MFA7A50-C003	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 3m
100GbE	MFA7A50-C005	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 5m
100GbE	MFA7A50-C010	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 10m
100GbE	MFA7A50-C015	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 15m
100GbE	MFA7A50-C020	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 20m
100GbE	MFA7A50-C030	NVIDIA active fiber hybrid solution, ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 30m
100GbE	MMA1B00-C100D	NVIDIA transceiver, 100GbE, QSFP28, MPO, 850nm, SR4, up to 100m, DDMI
100GbE	MMA1B00-C100D_FF	NVIDIA transceiver, 100GbE, QSFP28, MPO, 850nm, SR4, up to 100m, DDMI
100GbE	MMA1L10-CR	NVIDIA optical transceiver, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, LR4 up to 10km
100GbE	MMA1L30-CM	NVIDIA optical module, 100GbE, 100Gb/s, QSFP28, LC-LC, 1310nm, CWDM4, up to 2km
100GbE	MMS1C10-CM	NVIDIA active optical module, 100Gb/s, QSFP, MPO, 1310nm, PSM4, up to 500m

8.5 FDR / 56GbE Cables

Speed	Part Number	Marketing Description
56GbE	MC2207126-004	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 4m
56GbE	MC2207128-003	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m
56GbE	MC2207128-0A2	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2.5m
56GbE	MC2207130-001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1m
56GbE	MC2207130-002	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2m
56GbE	MC2207130-00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 0.5m
56GbE	MC2207130-0A1	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1.5m
56GbE	MC220731V-003	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 3m

Speed	Part Number	Marketing Description
56GbE	MC220731V-005	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 5m
56GbE	MC220731V-010	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 10m
56GbE	MC220731V-015	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 15m
56GbE	MC220731V-020	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 20m
56GbE	MC220731V-025	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 25m
56GbE	MC220731V-030	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 30m
56GbE	MC220731V-040	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 40m
56GbE	MC220731V-050	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 50m
56GbE	MC220731V-075	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 75m
56GbE	MC220731V-100	NVIDIA active fiber cable, VPI, up to 56Gb/s, QSFP, 100m
56GbE	MCP1700-F001C	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1m, Red pull-tab
56GbE	MCP1700-F001D	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 1m, Yellow pull-tab
56GbE	MCP1700-F002C	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2m, Red pull-tab
56GbE	MCP1700-F002D	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 2m, Yellow pull-tab
56GbE	MCP1700-F003C	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m, Red pull-tab
56GbE	MCP1700-F003D	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, 3m, Yellow pull-tab
56GbE	MCP170L-F001	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1m
56GbE	MCP170L-F002	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 2m
56GbE	MCP170L-F003	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 3m
56GbE	MCP170L-F00A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 0.5m
56GbE	MCP170L-F01A	NVIDIA passive copper cable, VPI, up to 56Gb/s, QSFP, LSZH, 1.5m

8.6 50GbE Cables

Speed	Part Number	Marketing Description
50GE	MAM1Q00A-QSA56	NVIDIA cable module, ETH 50GbE, 200Gb/s to 50Gb/s, QSFP56 to SFP56
50GE	MCP2M50-G001E30	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 1m, black pulltab, 30AWG
50GE	MCP2M50-G002E26	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 2m, black pulltab, 26AWG
50GE	MCP2M50-G003E26	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 3m, black pulltab, 26AWG
50GE	MCP2M50-G00AE30	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 0.5m, black pulltab, 30AWG
50GE	MCP2M50-G01AE30	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 1.5m, black pulltab, 30AWG
50GE	MCP2M50-G02AE26	NVIDIA Passive Copper cable, 50GbE, 50Gb/s, SFP56, LSZH, 2.5m, black pulltab, 26AWG

8.7 FDR10 / 40GbE Cables

Speed	Part Number	Marketing Description
40GbE	MC2206128-004	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 4m
40GbE	MC2206128-005	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 5m
40GbE	MC2206130-001	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 1m
40GbE	MC2206130-002	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 2m
40GbE	MC2206130-003	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 3m
40GbE	MC2206130-00A	NVIDIA passive copper cable, VPI, up to 40Gb/s, QSFP, 0.5m
40GbE	MC2210126-004	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 4m
40GbE	MC2210126-005	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 5m
40GbE	MC2210128-003	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 3m
40GbE	MC2210130-001	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1m
40GbE	MC2210310-003	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 3m
40GbE	MC2210310-005	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 5m

Speed	Part Number	Marketing Description
40GbE	MC2210310-010	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 10m
40GbE	MC2210310-015	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 15m
40GbE	MC2210310-020	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 20m
40GbE	MC2210310-030	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 30m
40GbE	MC2210310-050	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 50m
40GbE	MC2210310-100	NVIDIA active fiber cable, ETH 40GbE, 40Gb/s, QSFP, 100m
40GbE	MC2210411-SR4E	NVIDIA optical module, 40Gb/s, QSFP, MPO, 850nm, up to 300m
40GbE	MC2609125-005	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 5m
40GbE	MC2609130-001	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 1m
40GbE	MC2609130-003	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 3m
40GbE	MCP1700-B001E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1m, black pull-tab
40GbE	MCP1700-B002E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 2m, black pull-tab
40GbE	MCP1700-B003E	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 3m, black pull-tab
40GbE	MCP1700-B01AE	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 1.5m, black pull-tab
40GbE	MCP1700-B02AE	NVIDIA passive copper cable, ETH 40GbE, 40Gb/s, QSFP, 2.5m, black pull-tab
40GbE	MCP7900-X01AA	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 1.5m, blue pull-tab, customized label
40GbE	MCP7904-X002A	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 2m, black pull-tab, customized label
40GbE	MCP7904-X003A	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 3m, black pull-tab, customized label
40GbE	MCP7904-X01AA	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 1.5m, black pull-tab, customized label
40GbE	MCP7904-X02AA	NVIDIA passive copper hybrid cable, ETH 40GbE to 4x10GbE, QSFP to 4xSFP+, 2.5m, black pull-tab, customized label

Speed	Part Number	Marketing Description
40GbE	MMA1B00-B150D	NVIDIA transceiver, 40GbE, QSFP+, MPO, 850nm, SR4, up to 150m, DDMI

8.8 25GbE Cables

Speed	Part Number	Marketing Description
25GbE	MAM1Q00A-QSA28	NVIDIA cable module, ETH 25GbE, 100Gb/s to 25Gb/s, QSFP28 to SFP28
25GbE	MCP2M00-A001	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 1m, 30AWG
25GbE	MCP2M00-A001E30N	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 1m, black, 30AWG, CA-N
25GbE	MCP2M00-A002	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 2m, 30AWG
25GbE	MCP2M00-A002E30N	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 2m, black, 30AWG, CA-N
25GbE	MCP2M00-A003E26N	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 3m, black, 26AWG, CA-N
25GbE	MCP2M00-A003E30L	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 3m, black, 30AWG, CA-L
25GbE	MCP2M00-A004E26L	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 4m, black, 26AWG, CA-L
25GbE	MCP2M00-A005E26L	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 5m, black, 26AWG, CA-L
25GbE	MCP2M00-A00A	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 0.5m, 30AWG
25GbE	MCP2M00-A00AE30N	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 0.5m, black, 30AWG, CA-N
25GbE	MCP2M00-A01AE30N	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 1.5m, black, 30AWG, CA-N
25GbE	MCP2M00-A02AE26N	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 2.5m, black, 26AWG, CA-N
25GbE	MCP2M00-A02AE30L	NVIDIA passive copper cable, ETH, up to 25Gb/s, SFP28, 2.5m, black, 30AWG, CA-L
25GbE	MFA2P10-A003	NVIDIA active optical cable 25GbE, SFP28, 3m
25GbE	MFA2P10-A005	NVIDIA active optical cable 25GbE, SFP28, 5m
25GbE	MFA2P10-A007	NVIDIA active optical cable 25GbE, SFP28, 7m
25GbE	MFA2P10-A010	NVIDIA active optical cable 25GbE, SFP28, 10m
25GbE	MFA2P10-A015	NVIDIA active optical cable 25GbE, SFP28, 15m
25GbE	MFA2P10-A020	NVIDIA active optical cable 25GbE, SFP28, 20m
25GbE	MFA2P10-A030	NVIDIA active optical cable 25GbE, SFP28, 30m
25GbE	MFA2P10-A050	NVIDIA active optical cable 25GbE, SFP28, 50m

Speed	Part Number	Marketing Description
25GbE	MMA2P00-AS	NVIDIA transceiver, 25GbE, SFP28, LC-LC, 850nm, SR, up to 150m

8.9 10GbE Cables

Speed	Part Number	Marketing Description
10GbE	MAM1Q00A-QSA	NVIDIA cable module, ETH 10GbE, 40Gb/s to 10Gb/s, QSFP to SFP+
10GbE	MC2309124-005	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 5m
10GbE	MC2309124-007	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 7m
10GbE	MC2309130-001	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 1m
10GbE	MC2309130-002	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 2m
10GbE	MC2309130-003	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 3m
10GbE	MC2309130-00A	NVIDIA passive copper hybrid cable, ETH 10GbE, 10Gb/s, QSFP to SFP+, 0.5m
10GbE	MC3309124-004	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 4m
10GbE	MC3309124-005	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 5m
10GbE	MC3309124-006	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 6m
10GbE	MC3309124-007	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 7m
10GbE	MC3309130-001	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m
10GbE	MC3309130-002	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m
10GbE	MC3309130-003	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m
10GbE	MC3309130-00A	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 0.5m
10GbE	MC3309130-0A1	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1.5m
10GbE	MC3309130-0A2	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2.5m
10GbE	MCP2100-X001B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m, blue pull-tab, connector label
10GbE	MCP2100-X002B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m, blue pull-tab, connector label

Speed	Part Number	Marketing Description
10GbE	MCP2100-X003B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m, blue pull-tab, connector label
10GbE	MCP2101-X001B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m, Green pull-tab, connector label
10GbE	MCP2104-X001B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1m, black pull-tab, connector label
10GbE	MCP2104-X002B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2m, black pull-tab, connector label
10GbE	MCP2104-X003B	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 3m, black pull-tab, connector label
10GbE	MCP2104-X01AB	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 1.5m, black pull-tab, connector label
10GbE	MCP2104-X02AB	NVIDIA passive copper cable, ETH 10GbE, 10Gb/s, SFP+, 2.5m, black pull-tab, connector label
N/A	MFM1T02A-LR	NVIDIA SFP+ optical module for 10GBASE-LR
N/A	MFM1T02A-SR	NVIDIA SFP+ optical module for 10GBASE-SR

8.10 1GbE Cables

Speed	Part Number	Marketing Description
1GbE	MC3208011-SX	NVIDIA optical module, ETH 1GbE, 1Gb/s, SFP, LC-LC, SX 850nm, up to 500m
1GbE	MC3208411-T	NVIDIA module, ETH 1GbE, 1Gb/s, SFP, Base-T, up to 100m

9 Release Notes History

9.1 Changes and New Feature History

Feature/Change	Description
32.39.2048	
Socket Direct Single netdev Mapped to Two PCIe Devices	Enabled Single Netdev mapping to two PCIe devices (Socket Direct). Now multiple devices (PFs) of the same port can be combined under a single netdev instance. Traffic is passed through different devices belonging to different NUMA sockets, thus saving cross-NUMA traffic and allowing apps running on the same netdev from different NUMAs to still feel a sense of proximity to the device and achieve improved performance. The netdev is destroyed once any of the PFs is removed. A proper configuration would utilize the correct close NUMA when working on a certain app/CPU. Currently, this capability is limited to PFs only, and up to two devices (sockets). To enable the feature, one must configure the same Socket Direct group (non zero) for both PFs through mlxconfig SD_GROUP.
ACL	Added support for egress ACL to the uplink by adding a new bit to the Set Flow Table Entry: allow_fdb_uplink_hairpin.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
24.39.2048	
NC-SI Channels	Added support for two passthrough channels on dual-port adapter cards.
Expansion ROM	Added a caching mechanism to improved expansion ROM performance and to avoid any slow boot occurrences when loading the expansion ROM driver.
Live Migration Support for Image Size above 4GB	Added support for image size above 4GB when performing a live migration by splitting the image to chunks.
Crypto Algorithms	Extended the role-based authentication to cover all crypto algorithms. Now the TLS. IPsec. MACsec. GCM, mem2mem, and NISP work when `nv_crypto_conf.crypto_policy = CRYPTO_POLICY_FIPS_LEVEL_2,` meaning all cryptographic engines can also work in wrapped mode and not only in plaintext mode.
DSCP (priority) of ACK Packets	Added the ability to configure the DSCP (priority) of ACK packets using the ROCE_ACCL access register.
Performance Improvements	Added support for large MTU for force loopback QPs to improve performance (using the `aes_xts_tweak_inc_64` parameter). This capability is enabled by mlxconfig LARGE_MTU_TWEAK_64 parameter.
DDR Poison: DDR Uncorrectable Error	When there is DDR poison (uncorrectable ECC error), firmware reports the health syndrome `ICM_FETCH_PCI_DATA_POISONED_ERR (0x14)`, and triggers the FLR on the the function causing this error. Due to this error, the DDR data is mostly corrupted therefore, the firmware blocks other operations on this function.
Live Firmware Patch	Added support for Live Firmware Patch.
Reserved mkey	Added new support for reserved mkey index range. When enabled, a range of mkey indexes is reserved for mkey by name use.

Feature/Change	Description
24.39.2048	
Admin Queue	Added support for admin queue in virtio device object.
Enhanced NIC Mode: GGA Modules	Enabled GGA modules for all working modes (except for RXP) when using Enhanced NIC Mode.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
24.38.1002	
INT Packets	Added support for forwarding INT packets to the user application for monitoring purposes by matching the BTH acknowledge request bit (bth_a).
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

Feature/Change	Description
24.37.1300	
Precision Time Protocol (PTP)	Added support for Precision Time Protocol (PTP), the protocol used to synchronize clocks throughout a computer network as part of 5T Technology.
Mergeable Buffer	Added mergeable buffer support (VIRTIO_NET_F_MRG_RXBUF 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 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.
NVME Device Emulation	Enables the firmware to generate a Device Change Event upon any change in the NVME Device Emulation object (BAR change, HotPlug power state change, NVME Function reset, etc).
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.
Bug Fixes	See *Bug Fixes in this Firmware Version* section.

9.2 Bug Fixes History

Internal Ref.	Issue
3634184	**Description:** Changed HW ETS (QETCR RL) default to be per host-port instead of per physical port to avoid bandwidth degradation.
	Keywords: HW ETS

Internal Ref.	Issue
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3728130	**Description:** Fixed an issue that resulted in `DESTROY_GENERAL_OBJECT(0xa03)` and `MODIFY_GENERAL_OBJECT(0xa01)` getting timeout when performing a host power cycle with an independent-power-supplied BlueField-2 on which the virtio devices are hotplugged.
	Keywords: Virtio full emulation, Bluefield-2
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3708035	**Description:** Fixed an issue with Selective-Repeat configuration which occasionally caused retransmission to wait for timeout instead of out-of-sequence NACK.
	Keywords: RoCE, SR
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3695219	**Description:** Enabled the lowest minimum rate for SW DCQCN to enable congestion control to hold a larger amount of QPs without pauses or drops.
	Keywords: Congestion control, PCC, DCQCN
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3609404	**Description:** Redirected multicast traffic to loopback only on MNG PF port using PT Tx loopback CAM HW mechanism.
	Keywords: Multicast traffic, loopback, MNG PF
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3629353	**Description:** Fixed the cr_space in port configuration to prevent wrong timestamp of cqes.
	Keywords: Hardware timestamp
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3547022	**Description:** Fixed an issue that resulted in reset failure when unloading network drivers on an external host and the sync1 reset is still reported as 'supported' although it is not.
	Keywords: sync1 reset
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3534774	**Description:** Fixed an issue that prevented the Power Controller Control bit in the Slot Control register from returning to default when forcing the Unplug sequence.
	Keywords: Power Controller Control
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000

Internal Ref.	Issue
3602169	**Description:** Added a locking mechanism to protect the firmware from a race condition between insertion and deletion of the same rule in parallel which occasionally resulted in firmware accessing a memory that has already been released, thus causing IOMMU / translation error. **Note:** This fix will not impact insertion rate for tables owned by SW steering.
	Keywords: Firmware steering
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3612682	**Description:** Enabled live migration for virtio with mergeable buffer.
	Keywords: Virtio, Mergeable buffer, Live migration
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000
3571251	**Description:** Fixed an issue that resulted in migration data corruption when running parallel `save_vhca_state/load_vhca_state` commands on the same PF.
	Keywords: VF live migration
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.40.1000

Internal Ref.	Issue
3609404	**Description:** Redirected multicast traffic to loopback only on MNG PF port using PT Tx loopback CAM HW mechanism.
	Keywords: Multicast traffic, loopback, MNG PF
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.39.2048
3629353	**Description:** Fixed the cr_space in port configuration to prevent wrong timestamp of cqes.
	Keywords: Hardware timestamp
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.39.2048
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	Keywords: sync1 reset
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.39.2048
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	Keywords: Power Controller Control
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.39.2048

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	Discovered in Version: 24.38.1002
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	Discovered in Version: 24.38.1002
	Fixed in Release: 24.39.2048
3571251	**Description:** Fixed an issue that resulted in migration data corruption when running parallel `save_vhca_state/load_vhca_state` commands on the same PF.
	Keywords: VF live migration
	Discovered in Version: 24.38.1002
	Fixed in Release: 24.39.2048

Internal Ref.	Issue
3365411	**Description:** Fixed a link failure that occurred due to a wrong 'is_inphi_cable' indication.
	Keywords: Link failure
	Discovered in Version: 24.37.1300
	Fixed in Release: 24.38.1002
3435583	**Description:** Under certain configurations, during the loading of the PXE driver in Smart-NIC mode, the firmware attempts to lock the CMAS resources in ICMC sets that are full. This results in the failure of the locking and raises a health buffer indication. To prevent the above scenario, in this firmware version we improved the distribution of resource locking in ICMC.
	Keywords: ICMC locking
	Discovered in Version: 24.37.1300
	Fixed in Release: 24.38.1002
3331179	**Description:** Improved token calculation.
	Keywords: Token calculation
	Discovered in Version: 24.37.1300
	Fixed in Release: 24.38.1002
3491841	**Description:** Fixed a firmware assert that occurred when tried to verify if the module supported "swap".
	Keywords: Firmware assert
	Discovered in Version: 24.37.1300

Internal Ref.	Issue
	Fixed in Release: 24.38.1002

Internal Ref.	Issue
3432548	**Description:** Closed the attached QP doorbell to avoid any impact from the software side or the db_recovery mechanism
	Keywords: QP doorbell
	Discovered in Version: 24.35.2000
	Fixed in Release: 24.37.1300
3385129	**Description:** Fixed an issue that resulted in high PTP offset by changing the RST value to 200, and adjusting the PTP Tx offset in PTP4L configuration.
	Keywords: PTP glitch, PTP constant offset
	Discovered in Version: 24.35.2000
	Fixed in Release: 24.37.1300
3233113	**Description:** Disabled some HW optimization to prevent a HW race that caused an SQ to get stuck.
	Keywords: HW race, SQ
	Discovered in Version: 24.33.1048
	Fixed in Release: 24.37.1300
3306318	**Description:** Fixed the issue that caused the virtio PXE boot to fail due to virtio BLK controller being stuck in continuous host warm reboot.
	Keywords: virtio full emulation, PXE boot, warm reboot
	Discovered in Version: 24.35.2000
	Fixed in Release: 24.37.1300
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: 24.35.2000
	Fixed in Release: 24.37.1300

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