NVIDIA ConnectX-5 InfiniBand/VPI Adapter Cards for OCP Spec 2.0 User Manual

About This Manual

This User Manual describes NVIDIA® ConnectX®-5 and ConnectX®-5 Ex VPI adapter cards for Open Compute Project (OCP), Spec 2.0. It provides details as to the interfaces of the board, specifications, required software and firmware for operating the board, and relevant documentation.

Ordering Part Numbers

The table below provides the ordering part numbers (OPN) for the available ConnectX-5 VPI adapter cards for OCP Spec 2.0.

IC Model	OPN	Marketing Description
ConnectX-5	MCX545A-ECAN	ConnectX®-5 VPI network interface card for OCP , with host management, EDR IB (100Gb/s) and 100GbE, **single**-port QSFP28, PCIe **Gen3.0 x16**, no bracket
	MCX545B-ECAN	ConnectX®-5 VPI network interface card for OCP, with host management, EDR IB (100Gb/s) and 100GbE, **single**-port QSFP28, PCIe **Gen3.0 x16**, no bracket, Type-1 Heat Sink
	MCX545M-ECAN	ConnectX®-5 VPI network interface card for OCP with Multi-Host, with host management, EDR IB (100Gb/s) and 100GbE, **single**-port QSFP28, P**CIe Gen3.0 x16**, no bracket
ConnectX-5 Ex	MCX546A-EDAN	ConnectX®-5 **Ex** VPI network interface card for OCP, with host management, EDR IB (100Gb/s) and 100GbE dual-port **belly-to-belly** QSFP28, PCIe **Gen4.0 x16**, no bracket

Intended Audience

This manual is intended for the installer and user of these cards. The manual assumes basic familiarity with Ethernet network and architecture specifications.

Technical Support

Customers who purchased NVIDIA products directly from NVIDIA are invited to contact us through the following methods:

- URL: MyMellanox Customers Portal
- E-mail: Networking-support@nvidia.com
- Tel: +1 408.916.0055; Toll-free (USA only) 86-Mellanox (8663552669)

Customers who purchased NVIDIA Global Support Services, please see your contract for details regarding Technical Support.
Customers who purchased NVIDIA products through an NVIDIA-approved reseller should first seek assistance through their reseller.

Related Documentation

NVIDIA OFED for Linux User Manual and Release Notes	User Manual describing OFED features, performance, band diagnostic, tools content and configuration. See NVIDIA OFED for Linux Documentation.
WinOF-2 for Windows User Manual and Release Notes	User Manual describing WinOF-2 features, performance, Ethernet diagnostic, tools content and configuration. See WinOF-2 for Windows Documentation.
NVIDIA VMware for Ethernet User Manual and Release Notes	User Manual describing the various components of the NVIDIA ConnectX® NATIVE ESXi stack. See http://www.nvidia.com Products > Software > Ethernet Drivers > VMware Driver
NVIDIA Firmware Utility (mlxup) User Manual and Release Notes	NVIDIA firmware update and query utility used to update the firmware. See http://www.nvidia.com > Products > Software > Firmware Tools >mlxup Firmware Utility
NVIDIA Firmware Tools (MFT) User Manual	User Manual describing the set of MFT firmware management tools for a single node. See MFT User Manual.

IEEE Std 802.3 Specification	IEEE Ethernet specification at http://standards.ieee.org/
PCI Express Specifications	Industry Standard PCI Express Base and Card Electromechanical Specifications at https://pcisig.com/specifications
NVIDIA LinkX Interconnect Solutions	NVIDIA LinkX InfiniBand cables and transceivers are designed to maximize the performance of High-Performance Computing networks, requiring high-bandwidth, low-latency connections between compute nodes and switch nodes. NVIDIA offers one of industry's broadest portfolio of QDR/FDR10 (40Gb/s), FDR (56Gb/s), EDR/HDR100 (100Gb/s) and HDR (200Gb/s) cables, including Direct Attach Copper cables (DACs), copper splitter cables, Active Optical Cables (AOCs) and transceivers in a wide range of lengths from 0.5m to 10km. In addition to meeting IBTA standards, NVIDIA tests every product in an end-to-end environment ensuring a Bit Error Rate of less than 1E-15. Read more at https://www.nvidia.com/products/interconnect/infiniband-overview.php
Open Compute Project 2.0 Specification	https://www.opencompute.org/
InfiniBand Architecture Specification Release 1.2.1, Vol 2 - Release 1.4, and Vol 2 - Release 1.5	InfiniBand Specifications

Document Conventions

When discussing memory sizes, MB and MBytes are used in this document to mean size in mega Bytes. The use of Mb or Mbits (small b) indicates size in mega bits. In this document PCIe is used to mean PCI Express.