



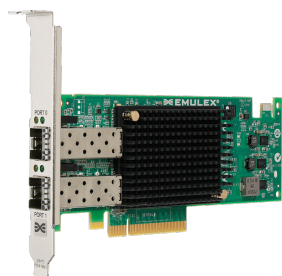
DATASHEET

CONNECTIVITY

OneConnect™ OCe11102-N

High-performance 10 Gigabit Ethernet Network Adapter

**SIMPLIFIED
NETWORKING,
MAXIMUM
PERFORMANCE
AND INCREASED
BUSINESS
AGILITY**



Optimized Network Connectivity

The OCe11102-N is a high-performance, dual-port network adapter for 10 Gigabit Ethernet (10GbE) networks. Protocol offload for stateless TCP/IP and TCP Chimney provide maximum bandwidth with minimum use of CPU resources.

Emulex OneConnect Universal CNA platform

The OCe11102-N is a member of the Emulex OneConnect Universal Converged Network Adapter (UCNA) platform that also includes support for Fibre Channel over Ethernet (FCoE) and iSCSI protocol offloads. By using a common infrastructure for Ethernet and storage networks, data centers can reduce capital expense (CapEx) for adapters, switches and cables, and operational expense (OpEx) for power, cooling and IT administration.

Greener data centers

The Emulex OneConnect UCNA platform delivers industry-leading performance and scalability per watt, reducing requirements for power and cooling. Protocol offload enables efficient use of computing resources, supports more virtual machine (VMs) per CPU, and reduces the number of servers required to support data center demands.

Advanced error checking

End-to-end data protection with hardware parity, CRC, ECC and other advanced error checking and correcting ensure that data is safe from corruption.

Virtualized I/O

New multi-core servers are enabling much higher virtualization ratios. OneConnect adapters support NetQueue for VMware and Virtual Machine Queue (VMQ) for Microsoft Windows Server 2008 Hyper-V to optimize performance and provide full 10b/s bandwidth per port.

Key Features

Superior performance

- TCP/IP stateless offloads
- TCP Chimney Offload

Energy-efficient design

- Industry-leading performance per watt
- Complements data center “green” initiatives

One platform for network and storage connection

- Part of OneConnect family that includes FCoE and iSCSI support

Easy to deploy and manage with OneCommand™ Manager application

- One management console for network and storage
- Integrated management of Emulex UCNA and Host Bus Adapters (HBAs)
- Over 7 million ports administered with Emulex management software

Key Benefits

Optimized for network consolidation

- Maximizes I/O bandwidth with high-performance 10GbE ports
- Multiple PCI NIC functions for each physical port
- Same firmware, drivers and management as OneConnect 10GbE blade and LOM solutions

Optimized for server virtualization with vEngine™ technology

- SR-IOV support improves I/O performance with virtual server deployments
- Support for NetQueue for VMware and VMQ for Hyper-V optimize performance for virtualized servers
- More VMs per server with full TCP offloads

Enterprise-ready

- Hardware parity, CRC, ECC and other advanced error checking
- Backed by field-proven Emulex reliability and support



OneConnect™



OneCommand™

OneConnect™ OCe11102-N

High-performance 10 Gigabit Ethernet Network Adapter



SPECIFICATIONS

Universal Multi-Channel

OneConnect Universal Multi-Channel (UMC) allows multiple PCI functions to be created on each adapter port. Each NIC function is presented to the operating system or hypervisor as a physical port with a separate MAC address and user-assigned bandwidth. This enables a single adapter port to provide specialized NIC functions for different uses, such as payload traffic, guest migration and console management for virtualized servers.

Single Root I/O Virtualization (SR-IOV)

With OneConnect support for SR-IOV, virtual machines can share adapter ports to optimize performance with up to 32 virtual functions per port. VM to VM communication is enabled with a Layer 2 switch that is embedded in the OneConnect adapter. OneConnect adapters are PCI-SIG compliant and will support SR-IOV as available with hypervisors.

Simplified Management

OneCommand Manager application

The OneCommand Manager application enables centralized management of Emulex OneConnect UCNAs and HBAs throughout the data center from a single management console. The OneCommand Manager application provides a graphical user interface (GUI) and a scriptable command line user interface (CLI), which drive administration efficiency and business agility.

Network boot

Support for Preboot eXecution Environment (PXE) makes the OCe11102-N an ideal solution for blade servers and other diskless deployments.

Standards

- PCI Express base spec 2.0, PCI Bus Power Management Interface, rev. 1.2, Advanced Error Reporting (AER)
- IEEE 802.3ae (10Gb/s Ethernet)
- IEEE 802.1q (VLAN)
- IEEE 802.1p (QoS/CoS)
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3x (Flow Control)
- PHP hot plug-hot swap
- Enhanced Error Handling (EEH)

Architecture

- Dual-channel, 10Gb/s Ethernet Link speed
- PCIe Express 2.0 (x8, 5GT/s), MSI-X support
- Integrated data buffer and code space memory

Ethernet Features

- IPv4/IPv6 TCP, UDP checksum offload; Large Send Offload (LSO); Large Receive Offload; Receive Side Scaling (RSS); TCP Segmentation Offload (TSO); IPv4 TCP Chimney Offload
- VLAN insertion and extraction
- Jumbo frames up to 9000 Bytes
- Priority Flow Control for Ethernet traffic
- Preboot eXecution Environment (PXE) 2.0 network boot support
- Interrupt coalescing
- Load balancing and failover support including adapter fault tolerance (AFT), switch fault tolerance (SFT), adaptive load balancing (ALB), teaming support, VMW NetQueue v2 and IEEE 802.3ad, VT-d / IOMMU support

I/O Virtualization

- PCI-SIG SR-IOV compliant
- On-chip VM to VM switching
- Quality of Service (QoS) across each Virtual and Physical Function

Comprehensive OS Support

- Windows Server
- VMware ESX
- Red Hat Enterprise Linux Server
- Novell SUSE® Linux Enterprise Server
- CentOS
- Ubuntu
- Oracle Solaris
- FreeBSD

Hardware Environments

- x86, x64 and PPC processor families

Interconnect

- Optical
 - Optics: 10GBASE-SR short wave lasers with LC type connector
- Copper Direct Attach
 - SFP+ Direct Attached Twin-Ax Copper interface
 - Standards compliant passive copper cables up to 5m and active copper cables up to 10m
- Copper Twisted Pair
 - Connectors: IEC 60603-7 8 Position 8 Contact (8P8C), commonly known as RJ45
 - Cables: Cat 6 up to 55m, Cat 6a up to 100m

Physical Dimensions

- Short, low-profile form factor card
- 167.64mm x 68.91mm (6.60" x 2.71")
- Standard bracket (low profile available)

Environmental Requirements

- Operating temperature: 0° to 55° C (32° to 131° F)
- Storage temperature: -40° to 70° C (-40° to 158° F)
- Relative humidity: 5% to 95% non-condensing

Agency Approvals

- Class 1 Laser Product per DHHS 21CFR (J) and EN60825-1
- UL recognized to UL 60950-1 2nd edition
- CUR recognized to CSA22.2, No. 60950-1-07
- Bauart-certified to EN60950-1 2nd edition
- FCC Rules, Part 15, Class A
- ICES-003, Class A
- EMC Directive 2004/108/EEC (CE Mark)
 - EN55022, Class A
 - EN55024
- Australian EMC Framework (C-Tick Mark)
 - AS/NZS CISPR22, Class A
- VCCI (Japan), Class A
- KCC (Korea), Class A
- BSMI (Taiwan), Class A
- EU RoHS Compliant (Directive 2002/95/EC)
- China RoHS Compliant

Ordering Information

- **OCe11102-NM**
 - Dual-channel, 10GBASE-SR (short reach optical)
- **OCe11102-NX**
 - Dual-channel, 10GBASE-CR (direct attach copper)
- **OCe11102-NT**
 - Dual-channel, 10GBASE-T (twisted pair copper)
- **OCe10100-OPT**
 - Dual-channel transceiver kit
- **OC-Storage-01A**
 - FCoE/iSCSI enablement



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