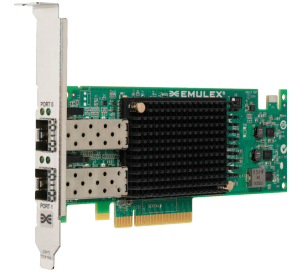




# OneConnect® OCe11102-F

## 10Gb Ethernet Universal Converged Network Adapter

Simplified Networking, Trusted SAN Interoperability and Increased Business Agility



### Overview

The Emulex OCe11102-F is a dual-port 10Gb Ethernet (10GbE) adapter that consolidates network and storage traffic with high-performance CPU offloads for Fibre Channel over Ethernet (FCoE) and Internet Small Computer System Interface (iSCSI) protocols. A member of the Emulex OneConnect® Universal Converged Network Adapter (UCNA) family, the OCe11102-F adapter supports a common infrastructure for networking and storage, reducing capital expenditure (CAPEX) for adapters, switches and cables, and operational expenditure (OPEX) for power, cooling and IT administration.

### Optimized Network and Storage Connectivity

#### FCoE offload

The OCe11102-F adapter supports FCoE offload using the same field-proven Emulex drivers that work with Emulex LightPulse® Fibre Channel Host Bus Adapters (HBAs).

#### iSCSI offload

The OCe11102-F supports iSCSI offload, providing performance that is superior to iSCSI solutions based on software initiators and standard NICs.

#### 10GbE offload

The OCe11102-F adapter optimizes 10GbE network performance with support for stateless TCP/IP offload.

#### Universal Multi-Channel

Universal Multi-Channel (UMC) allows multiple PCI functions to be created on each adapter port. With the OCe11102-F, each port enables one FCoE or iSCSI function and three NIC functions. Ideal for virtualized servers, bandwidth can be allocated to support storage, virtual machine (VM) migration, management and I/O intensive applications.

#### Boot from LAN/SAN

Fibre Channel SAN, iSCSI and Preboot eXecution Environment (PXE) boot support make the OCe11102-F an ideal solution for blade servers and other diskless deployments.

### Key Features

One platform for network and storage connection

- 10GbE FCoE and iSCSI offload
- Simplifies I/O hardware choices

Superior performance

- FCoE offload
- iSCSI offload
- TCP/IP stateless offloads

Energy-efficient design

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

Easy to deploy and manage with OneCommand® Manager application

- One management console for network and storage
- Integrated management of UCNAs and HBAs
- More than 12 million ports administered with Emulex management software
- VMware vCenter plug-in module increases productivity for ESX deployments

### Key Benefits

Maximum return on investment

- Converges network and storage I/O with high-performance 10GbE connectivity
- One network infrastructure reduces CAPEX
- One management console reduces OPEX
- Leverages existing IT investments

Optimized for server virtualization

- Multiple NIC and storage functions for each physical port
- More VMs per server with Emulex vEngine™ technology

Secure management

- Role-based administration integrated with Light Directory Access Protocol (LDAP) and Active Directory (AD) services

Enterprise-ready

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



OneConnect®



OneCommand®

## Powerful Management Software for Maximum Data Center Efficiency

The Emulex OneCommand® Manager enterprise class management application features a multiprotocol, cross-platform architecture that provides centralized management of all adapters provided by Emulex. This enables IT administrators to manage network connectivity with one tool for maximum efficiency. OneCommand Manager also features:

- **OneCommand® Manager plug-in for VMware vCenter Server**—enables comprehensive control of Fibre Channel HBAs and network (FCoE, iSCSI and TCP/IP NIC) connectivity solutions provided by Emulex from VMware's vCenter Server management console. Emulex OneCommand Manager plug-in for VMware vCenter Server supports both the new VMware vSphere 5.1 Web Client and the VMware vCenter Server desktop client with an identical feature set regardless of the client.

## Quality of service

Using the OneCommand Manager application, administrators can allocate portions of the 10GbE bandwidth to network or storage traffic.

## Highest Performance and Reliability

### Enterprise-ready

Leveraging ten generations of advanced, field-proven HBA technology, the OCe11102-F meets the robust interoperability and reliability requirements of corporate data centers.

**More VMs per server with vEngine technology**  
Protocol offloads for TCP/IP, iSCSI and FCoE enable more VMs per server, providing greater cost savings for server virtualization.

### Power savings

The OCe11102-F uses the BladeEngine 3 controller with integrated Network Controller Sideband Interface (NC-SI) and KR (Backplane Ethernet) Serializer/Deserializer (SerDes) interfaces to minimize power usage.

### 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.

**Note:** Some of these products may not be available in the U.S.  
Please contact your supplier for more information.

## Controller

- BladeEngine 3

## Standards

- ANSI INCITS T11 FC-BB-5 2.0, FC-PI-2, FC-GS-4, FC-TAPE, and FCP-3
- PCI Express base spec 2.0
- PCI Bus Power Management Interface, rev. 1.2, Advanced Error Reporting (AER)
- IEEE 802.3ae (10GBASE Ethernet Ports)
- IEEE 802.1q (Virtual LANs)
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3x (Flow Control)
- IEEE 802.1p (Quality/Class of Service)
- IEEE 802.1Qaz (Enhanced Transmission Selection)
- IEEE 802.1Qaz (Data Center Bridging Capabilities Exchange)
- IEEE 802.1Qbb (Priority-based Flow Control)
- IEEE 802.1ab (Link Layer Discovery Protocol)
- PHP hot plug-hot swap

## Architecture

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

## FCoE Features

- Common driver for UCNAs and HBAs
- 64 N\_Port ID Virtualization (NPIV) interfaces (total for adapter)
- Support for FIP and FCoE Ether Types
- Fabric Provided MAC Addressing (FPMA) support
- 1024 concurrent port logins (RPIs) per port
- 1024 active exchanges (XRIs) per port

## iSCSI Features

- Target discovery methods
- Authentication mode
- INT 13 Boot

## Ethernet Features

- IPv4/IPv6 TCP, UDP checksum offload; Large Send Offload (LSO); Large Receive Offload; Receive Side Scaling (RSS); TCP Segmentation Offload (TSO)
- VLAN insertion and extraction
- Jumbo frames up to 9000 Bytes
- 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 and IEEE 802.3ad

## Comprehensive OS Support

- Windows Server
- VMware ESX
- Red Hat Enterprise Linux Server
- Novell SUSE® Linux Enterprise Server
- CentOS
- Oracle Solaris (FCoE only)

## Hardware Environments

- x86, x64 servers
- Sun SPARC servers

## Interconnect

- Copper
  - SFP+ Direct Attached Twin-Ax Copper interface
  - Standards compliant passive copper cables up to 5m and active copper cables up to 10m
- Optical
  - Optics: 10GBASE-SR short wave lasers with LC type connector supported up to 100m

## Physical Dimensions

- Low profile with standard bracket (low-profile bracket 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

North America:

- FCC Class A
- UL/CSA Recognized

Europe:

- CE Mark
- EU RoHS compliant
- TUV Bauart Certified

Japan:

- VCCI Class A

Taiwan:

- BSMI Class A

Korea:

- MSIP (formally KCC/MIC) Class A

China:

- China RoHS Compliant

(Please refer to the product page on [www.emulex.com](http://www.emulex.com) for further details)

## Ordering Information

- OCe11102-FM
  - Dual-channel, 10GBASE-SR (short reach optical)
- OCe11102-FX
  - Dual-channel, 10GBASE-CR (direct attach copper)



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