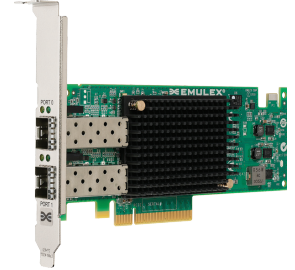# OneConnect® OCe11102-F

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

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
· 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)
  - EN55022:2010, Class A
  - EN55024:2010
· 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-FM
  - Dual-channel, 10GBASE-SR (short reach optical)

· OCe11102-FX
  - Dual-channel, 10GBASE-CR (direct attach copper)

EMULEX®

World Headquarters 3333 Susan Street, Costa Mesa, CA 92626 +1 714 662 5600
Bangalore, India +91 80 40156789 | **Beijing, China** +86 10 84400221
Dublin, Ireland+35 3 (0) 1 652 1700 | **Munich, Germany** +49 (0) 89 97007 177
Paris, France +33 (0) 158 580 022 | **Tokyo, Japan** +81 3 5325 3261
Wokingham, United Kingdom +44 (0) 118 977 2929

www.emulex.com