EMULEX

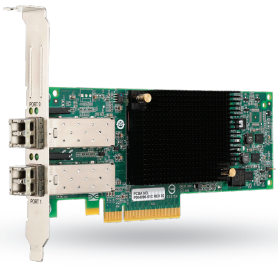
Hitachi Data Systems

OneConnect™

OCe10102-F

High-performance 10Gb/s FCoE Converged Network Adapter

SIMPLIFIED NETWORKING, TRUSTED SAN INTEROPERABILITY AND INCREASED BUSINESS AGILITY



OneConnect™

OneCommand™

HIGH PERFORMANCE 10GbE FCoE

Overview

The Emulex OCe10102-F is a high-performance 10Gbps Fibre Channel over Ethernet (FCoE) adapter that consolidates traffic for networking, Fibre Channel and FCoE storage. A member of the Emulex OneConnect™ Universal Converged Network Adapter (UCNA) family, the OCe10102-F FCoE adapter supports a common 10 Gigabit Ethernet (10GbE) infrastructure for networking and storage, reducing capital expense (CapEx) for adapters, switches and cables, and operational expense (OpEx) for power, cooling and IT administration.

Optimized Network and Storage Connectivity

FCoE offload
The OCe10102-F FCoE adapter supports FCoE offload using the same field-proven Emulex drivers that work with Emulex LightPulse® Fibre Channel Host Bus Adapters (HBAs) and CNAs.

10 Gigabit Ethernet offload
New multi-core server platforms, server virtualization and high-demand applications are driving the need for low-latency, high-bandwidth networks. The OCe10102-F adapter meets these requirements with full 10GbE network performance using an 8-lane PCI Express Gen 2 architecture and support for stateless TCP/IP and TCP Chimney offloads.

Boot from LAN/SAN
Fibre Channel SAN and Preboot eXecutive Environment (PXE) boot support make the OCe10102-F an ideal solution for blade servers and other diskless deployments.

Simplified Management

OneCommand Manager application
The OneCommand™ Manager application provides centralized management of Emulex One Connect UCNAs and LightPulse® HBAs and CNAs throughout the data center from a centralized

Key Features

One platform for network and storage connection
- 10Gbps Ethernet and FCoE offload
- Simplifies I/O hardware choices for IT managers

Superior performance
- FCoE offload
- TCP/IP stateless offloads
- TCP Chimney offload

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
- Over 7 million ports administered with Emulex management software

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 with vEngine™ technology
- More virtual machines (VMs) per server

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

For More Information on Emulex and HDS solutions, please visit www.emulex-hds.com.

OneConnect™ OCe10102-F
High-performance 10Gb/s FCoE Converged Network Adapter

management console. The OneCommand Manager application provides a graphical user interface (GUI) and a scriptable command line user interface (CLI), which drives administration efficiency.

Quality of service
Using the OneCommand Manager application, administrators can allocate portions of the 10Gb Ethernet bandwidth to network or storage traffic.

Streamlined installation
A single installation of drivers and applications for Windows servers eliminates multiple reboots and ensures that each component is installed correctly and OneConnect UCNAs are ready to use.

Highest Performance and Reliability

Enterprise-ready
Leveraging ten generations of advanced, field-proven HBA technology, the Emulex OneConnect family meets the robust interoperability and reliability requirements of corporate data centers.

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

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 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.

SPECIFICATIONS

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 (10Gb/s Ethernet), 802.1q (VLAN), 802.1p (QoS/CoS), 802.3ad (Link Aggregation), 802.3x (Flow Control)
- Enhanced Ethernet (draft): Enhanced Transmission Selection, ETS (P802.1Qaz); Priority-based Flow Control, PFC (P802.1Qbb); Data Center Bridging Capabilities eXchange Protocol, CIN-DCBX and CEE-DCBX (P802.1Qaz)
- PHP hot plug-hot swap

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

FCoE Features
- Common driver for UCNAs and HBAs
- N_Port ID Virtualization (NPIV)
- Support for FIP and FCoE Ether Types
- Fabric Provided MAC Addressing (FPMA) support
- 1024 concurrent port logins (RPIs)
- 1024 active exchanges (XRIs) per port

Ethernet Features
- IPv4/IPv6 TCP, UDP checksum offload; Large Send Offload(LSO); Large Receive Offload; Receive Side Scaling (RSS); IPV4 TCP Chimney Offload
- VLAN insertion and extraction
- Jumbo frames up to 8000 Bytes
- Preboot eXecutive 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 2008, Windows Server 2003
- Red Hat Enterprise Linux Server
- Novell SUSE® Linux Enterprise Server
- VMware ESX

Hardware Environments
- x86, x64 processor family

Interconnect
- Copper
  - SFP+ Direct Attached Twin-Ax Copper interface
  - Standards compliant passive and active copper cables supported up to 5m
- 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
- CUR recognized to CSA22.2, No. 60950-1-07
- Bauart-certified to EN60950-1
- 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
- **OCe10102-FM**
  - Dual-channel, 10GBase-SR (short reach optical)
- **OCe10102-FX**
  - Dual-channel, 10GBase-CR (direct attach copper)

RoHS 2002/95/EC COMPLIANT

For More Information on Emulex and HDS solutions, please visit www.emulex-hds.com.

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