



10GbE FCoE Converged Network Adapters

FastFrame™ CS14

FastFrame™ CS12

FastFrame CNAs combine ATTO's renowned Fibre Channel stack, featuring Advanced Data Streaming (ADS™), with proven Intel Ethernet technology. FC-BB-6 VN2VN support plus ATTO Target Mode* enables FCoE without expensive converged switches. Fibre Channel reliable, Ethernet-easy. Dual, and Quad port; Windows, Linux, and Mac support.

Industry Proven Technology

FastFrame™ CNAs combine ATTO's Fibre Channel expertise, including ADS™, which eliminates peaks and drops to smooth data transfer for latency-sensitive applications, with Intel's Ethernet platform—one of the most widely deployed in the world. Together, these are extensively tested and optimized by ATTO for high performance in demanding, low-latency content creation, streaming media, medical imaging, oil & gas, and many other applications with similar profiles.

Innovative Converged Networking

FastFrame CNAs feature exclusive VN2VN support, which unlocks the value of converged networks by increasing flexibility while reducing infrastructure cost. While CNAs allow customers to save time and money by using a single network to run both Fibre Channel SAN traffic and Ethernet general file system/application traffic on the same lossless Ethernet network, the expense of converged (FCF) switches for any connection has confined FCoE to large data centers. With VN2VN, a feature of FCoE standard FC-BB-6, and ATTO Target Mode, selected OEMs can build FCoE solutions at half the cost. End customers reap the benefits of FastFrame's simultaneous FCoE and iSCSI support for future-proofing and flexibility, with up to 75% fewer cables per server.

Full Range of Products for Flexible Design

ATTO FastFrame™ CNAs are available in an industry-leading breadth of port configurations (dual, and quad), connectivity options (SFP+ and Direct Attach Copper), and supported operating systems (the latest OS X versions, Windows, and Linux - workstation and server). Using up to 60% less power than competitors, FastFrame's lower power rating means fewer heat-related hardware issues, as well as lower data center maintenance fees.

*Target Mode is available to selected OEMs - please contact ATTO for more information.

Technical Features

- Quad, and dual port configurations
- Up to 10Gb/s throughput per port
- High-performance x8 PCIe 2.0 bus
- Driver support for Windows®, Linux® and Mac OS® X
- Simultaneously supports multiple networking and storage protocols: 10GbE, FCoE, iSCSI
- 400,000 IOPs per port delivers high-throughput for critical applications
- Fibre Channel over Ethernet (FCoE) built on ATTO's field-proven Fibre Channel stack
- Interoperable with a broad range of LAN and SAN infrastructures including targets, switches and initiators
- Supports Data Center Bridging; Priority-Based Flow Control (PBFC), Enhanced Transmission Selection (ETS) and DCB Exchange (DCBX) protocol
- FC-BB-6 support, including VN2VN
- Support for Target Mode*
- Industry's lowest power consumption maximizes benefits of convergence
- 3-year standard product warranty

Technical Specifications

Applications

As virtualization and high-availability requirements increase server density and cabling complexity, network and storage professionals are under pressure to decrease costs and improve efficiency. Along with increased data storage requirements, applications such as HD Video editing, streaming video, medical imaging, and Video on Demand (VoD) are driving the need for higher bandwidth and faster access to both Fibre Channel and Ethernet-based storage.

Ethernet Features

- Intel Ethernet Controller 82599
- Data rate per port: 10Gb/s
- Jumbo frame support up to 9,000 bytes
- Tx/Rx IP, TCP & UDP checksum offloading (IPv4, IPv6) capabilities, Transmission control protocol (TCP), User datagram protocol (UDP), Internet protocol (IP)
- Tx/TCP segmentation offload, Large send offloads (LSO)
- Data Center Bridging (DCB) support
 - Priority-Based Flow Control 802.1Qbb rev.0
 - Enhanced Transmission Selection 802.1Qaz rev.0
 - Data Center Bridging (DCBX) protocol
- Low latency interrupts
- Ability to create multiple VLAN segments
- Support for iSCSI initiators, including ATTO Xtend SAN for OS X

FCoE Features

- Support for FC-BB-6, including VN2VN
- Target Mode support*
- Advanced Data Streaming (ADS) technology
- Simultaneous block-level & file-level I/O
- Concurrent Logins 2048
- Active Exchanges/port 2048
- FC Class 3 support
- Protocol - FCP (SCSI-FCP)
- 400,000 IOPS per port
- FC-FDMI
- FC-GS-2/3/4
- FC-FS
- FCoE Initialization Protocol (FIP) Version 1

External Connectivity

- 10Gb Four, two or one LC fiber-optic connectors
- Supports 10Gb SFP + Cu for Direct Attach Copper
- 2 LED indicators per port
- LED Indicators: LINK (solid), ACTIVITY (blinking), LINK SPEED (green = 10Gb, yellow = 1Gb)
- Easy-to-install full height bracket for all cards and low profile connection bracket for dual-port cards

Bus Specifications

- x8 PCI Express 2.0
- Supports PCI Express Base 2.0 and CEM Spec 2.0

User Benefits

- Lowers total cost of ownership (TCO) by routing LAN and SAN traffic over a single fabric
- Simultaneous multi-protocol support (FCoE, iSCSI, TCP/IP) for flexible and easily scalable connectivity
- ADS, a proprietary technology that manages latency by providing controlled acceleration for consistent high performance.
- Exclusive VN2VN and Target Mode extend the range of solutions & topologies available to OEMs
- Multiple offloads for lower processor usage and increased throughput
- Up to 60% lower power utilization than competitive cards
- Reduces cabling up to 75% per server

Operating System Support

- Windows® Server
- Windows
- Mac OS® X
- SUSE Linux® Enterprise Server (SLES)
- Red Hat Enterprise Linux (RHEL)

Environmental and Physical Specifications

- Operating environment: 0°C to 55°C (32°F to 131°F)
- Non operating environment: -40°C to 70°C (-40°F to 157°F)
- Airflow required: 100 lf/m
- Humidity: 5% to 95% non-condensing
- Power Consumption
 - FFRM-CS14: 15.7W
 - FFRM-CS12: 5.9W

Network Standards

- IEEE802.3ae: 10GBASE-SR, 10GBASE-LR
- SFF-8431: 10GSFP+Cu (a.k.a Direct Attach)
- 802.1 Qbb: Priority Flow Control
- 802.1 Qaz: Enhanced Transmission
- DCBX Protocol

Agency Approvals

- FCC Part 15.107(b), Class B
- FCC Part 15.109(g), Class B
- EN55022: 2006, Class B
- EN55022: 2006 + A1: 2007, CISPR22, Class B
- EN55024: 1998 + A1: 2001 & A2: 2003

Compliance

- EN60950-1: 2001, IEC 60950-1: 2001
- EN60825-1: 2007, IEC 60825-1: 2007
- EN60825-2: 2004, IEC 60825-2: 2004
- RoHS

Management Tools

- ATTO ConfigTool management and configuration utility



ATTO FastFrame CS14

Ports	Quad Port
Bus Characteristics	x8 PCIe 2.0
Connector	Optical LC SFP+
Form Factor	Full Height
Max Transfer Rate	5.0GB/s
Part Number	FFRM-CS14-000



ATTO FastFrame CS12

Ports	Dual Port
Bus Characteristics	x8 PCIe 2.0
Connector	Optical LC SFP+
Form Factor	Low Profile
Max Transfer Rate	2.5GB/s
Part Number	FFRM-CS12-000

