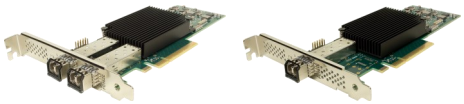
ATTO TECHNOLOGY
TECHNICAL SPECIFICATIONS

ATTO Celerity™ 16Gb Fibre Channel HBAs

16Gb Gen 5 Fibre Channel Host Bus Adapters



ATTO Celerity™ 16Gb Gen 5 Fibre Channel host bus adapters provide the highest performing SAN storage connectivity for physical and virtual infrastructures.

Technical Features

- Single-, and Dual- Channel configurations
- 3200 MB/s per channel throughput in full-duplex mode
- Driver support for Linux®, macOS®, Windows®, VMware®, FreeBSD and more
- Exclusive Advanced Data Streaming (ADS™) technology
- ATTO ConfigTool™ for customized performance settings
- Proven interoperable with leading storage hardware and software vendors
- Support for N_Port ID Virtualization and Virtual Fabric
- Target mode (Developer and SCST) support
- Protection against silent data corruption with T10 Protection Information (T10 PI)
- Low power consumption
- Three-year standard product warranty

MultiPath Director™

- Multiple paths to storage for improved data integrity and reliability
- High-performance shared storage for workgroups
- Load-balancing and failover in heterogeneous OS environments

Industry Proven Technology

ATTO has over 25 years of experience developing and delivering reliable first-to-market Fibre Channel storage connectivity solutions to customers. Celerity™ Fibre Channel connectivity solutions are consistently the highest performing host bus adapters (HBAs) for server virtualization deployments, faster backups, and scalable cloud initiatives. Offering performance to match new multi-core processors and faster PCIe 3.0 server host bus architectures, the integrated family of Celerity 16Gb Gen 5 Fibre Channel HBAs boast an extensive list of customer design wins and certifications with respected industry partners.

Flexible Connectivity Solutions

With single-, and dual-channel configurations, Celerity 16Gb Fibre Gen 5 Channel HBAs are an ideal solution for users looking to achieve the highest I/O and data throughput from advanced streaming media to enterprise-class IT applications. Celerity 16Gb Gen 5 HBAs offer driver support for Linux®, macOS®, Windows®, VMware® and more, providing a single connectivity solution for customers with heterogeneous operating system environments.

Performance Engineered

Celerity HBAs are designed to provide fast, redundant and highly available connectivity to Fibre Channel storage, and are engineered to manage latency for real-time applications. ATTO exclusive, Advanced Data Streaming (ADS™) technology provides controlled acceleration of data to deliver the highest consistent performance and reliable data transfers. ATTO pays close attention to detail in board design and signal integrity to minimize transmission errors and data corruption. Specialized Fibre Channel drivers with support for multiple OS platforms and OEM-specific solutions, such as target mode and multipathing, make ATTO the premier choice for high-performance Fibre Channel storage area network (SAN) connectivity.

Advanced Management Tools

The ATTO ConfigTool™ simplifies HBA administration with ease of installation, centralized management and advanced diagnostic features supported on local and remote hosts. Centralized discovery, monitoring and reporting help optimize performance and improve infrastructure efficiency. In addition to ATTO's easy-to-use GUI interface, management functions are available through our Command Line Interface (CLI).

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Applications

- Celerity™ Fibre Channel host bus adapters (HBAs) deliver high-performance and reliable connectivity solutions for the most demanding storage environments, including physical and virtual datacenters, tape streaming and backup, rich content delivery and server clustering. Celerity HBAs enable users to achieve the ultimate in I/O performance for real-time and transactional applications.
- Advanced Data Streaming (ADS™)

Latency-management technology that controls the acceleration of data transfers to move large amounts of data faster and more efficiently.

Key Features

- Auto Negotiation to 16Gb, 8Gb and 4Gb devices
- Supports point-to-point and direct fabric/switch attach
- ANSI Fibre Channel: FC-FS, FCP, FC-AL, FC-AL2, FC-PLDA, FC-FLA
- Flash ROM for easy field upgrades
- FC Class 3 Support
- Buffer Credits: 80
- Software RAID support with ATTO's Power Center software
- Pluggable optical LC SFP+
- Initiator and target mode (OEM) support
- Supports FDMI and WMI
- Supports NPIV and Virtual Fabric
- Supports T10 Protection Information (T10 PI)
- Supports Thunderbolt™

User Benefits

- Superior performance for enterprise applications
- Enhanced protection against silent data corruption
- Increased switch port availability
- Seamless integration into existing FC SANs
- Extensive certification with SAN infrastructure components
- Support for virtualized server environments
- Quad port card maximizes usage of server slots

Management Tools

- ATTO ConfigTool™ (w/GUI) BIOS-based management and configuration utility

Bus Specifications

- x8 PCI Express 3.0 host interface
- Supports PCI Express Base Spec 3.0
- Supports PCI Express CEM Spec 3.0
- PCI Hot Plug spec 1.0

External Connectivity

- Standard size brackets installed with spare low profile brackets for FC-162E, FC-161E
- Single (1), or Dual (2) pluggable 16Gb optical LC SFP+ modules included
- External LEDs for on-line and speed status for each port

Operating System Support

- Windows®
- Windows Server®
- macOS®
- Linux ®
- VMware ESXi Server®
- FreeBSD

Agency Approvals

- FCC Part 15, Subpart B, Class B
- EN55024: 2010 +A1: 2007 & +A2: 2010
- EN55022: 2010

Compliance

- IEC 60950-1
- RoHS (2011/95/EC)

Operating Temperature

- Hardware Environment
  - Temperature: 0-55° C
  - Humidity: 10 - 90% non-condensing
- Storage Environment
  - Temperature: -40°-70°C (-40°-157°F)
  - Humidity: 5 - 95% non-condensing

Dimensions

- FC-162E, FC-161E
  - Length 6.600", Height 2.731"

Operating Voltage (typical)

- FC-162E
  - 12W
- FC-161E
  - 10.97W

Warranty

- Three Years

ATTO Celerity	FC-162E	FC-161E
Ports	2	1
Bus Characteristics	X8 PCIe 3.0	X8 PCIe 3.0
Form Factor	Low Profile	Low Profile
Max Transfer Rate	3200 MB/s	1600 MB/s
Part Number	CTFC-162E-000	CTFC-161E-000