

# ATTO Celerity FC-22XH Storage Adapter

## Dual-channel 2-Gigabit Fibre Channel Storage Adapter with Four External Hub Ports Featuring ADS™ Technology

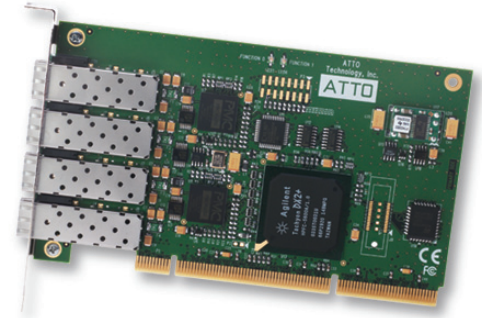
ATTO Celerity storage adapters are an integrated family of advanced storage connectivity solutions. The Celerity FC-22XH uses embedded hub technology that provides four external connections from two independent FC ports. It simplifies SAN fabric design and provides more capabilities than other dual-channel adapters.

The Celerity FC-22XH provides high performance and reliability through award-winning hardware design. When using the FC-22XH in SAN configurations, precise signal quality and low emissions improve the data link and reduce overall consumption of fabric bandwidth. Additionally, the FC-22XH automatically bypasses unused / malfunctioning ports, increasing fabric integrity.

Unique FC-22XH hardware features extend the capabilities of other SAN software and hardware, relieving them from their data management burdens. The onboard hub provides four external connections. This allows the adapter to be used as a standard dual channel product, or users can take advantage of the extra ports to increase the number of available connections per expansion slot. This decreases the cost of connectivity. This exclusive design eliminates the need for fabric hubs, simplifies the fabric design and reduces hardware costs.

The FC-22XH is part of ATTO's Celerity family of storage connectivity products. These products are designed to provide reliable connectivity, intelligence and scalability. Meeting tomorrow's connectivity needs today, Celerity FC adapters extend the capabilities of software and hardware, relieving them from their data-management burdens.

*Increase overall system performance and drive intelligence all the way to the edge of the SAN. Celerity, a platform for advanced storage connectivity.*



## TECHNICAL HIGHLIGHTS

- Dual-channel 2.125-Gigabit Fibre Channel storage adapter
- 400 MB/sec. throughput per channel in full-duplex mode
- Onboard hub provides connectivity, design flexibility and scalability
- Unique four-port, dual-channel design maximizes value of expansion slots
- Exclusive Advanced Data Streaming (ADS™) Technology
- Proven industry interoperability with support for SNIA HBA API
- Driver support for Linux, Windows® and Mac® OS X
- On-demand, automatic negotiation between 2-Gig and 1-Gig Fibre Channel
- 2-year standard product warranty

Storage Adapter

ATTO

ATTO Technology, Inc.  
attotech.com

*celerity*

*a platform for advanced storage connectivity*

155 CrossPoint Parkway • Amherst, NY 14068 • 716.691.1999



ATTO Technology, Inc.

## Hardware Specifications

### Fibre Channel Interface

- Four external ports connect to two independent FC ports
- 2.125-Gigabit data-transfer rates per channel
- 400 MB/sec. maximum full-duplex throughput per channel
- Supports all FC topologies: direct fabric, arbitrated loop and point-to-point
- ANSI Fibre Channel: FC-PH, FC-FCP, FC FCP2, FC-AL, FC-AL2, FC-PLDA, FC-FLA
- Flash ROM for easy field upgrades
- FC Class 3 support
- Local management and diagnostics
- Buffer Credits: 8 @ 512 bytes; 8 @ 2k bytes

### Advanced FC Capabilities:

- Supports SNIA HBA API
- Supports Target and Initiator modes
- LUN masking
- Interrupt coalescing

### PCI Bus Specifications:

- 64-bit, 133 MHz PCI-X (backward compatible to 32-bit and 33MHz)
- PCI-X 1.0a compliant
- PCI 2.2 compliant
- 3.3V PCI signaling only

### External Connectivity:

- Easy-to-install full height connection bracket
- Up to four Short Wave optical LC SFP pluggable transceivers
- External LEDs for on-line and speed status for each channel
- Two (2) transceivers included

## Software Specifications:

### Driver Support:

- Windows Server 2003
- Windows XP
- Windows 2000
- Linux (Red Hat, SUSE)
- Mac OS X (10.4.x Tiger)
- Universal boot support
- Advanced Data Streaming (ADS™) Technology

## Agency Approvals

- FCC Rules, part 15, Class B
- CE Mark: CISPR 22:2002/EN55022:2002, Class B

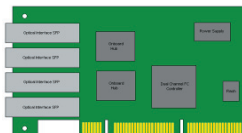
## Environmental & Physical Specifications

### Dimensions:

- Conforms to PCI standard height, half length form factor specifications
- Length: 6.600"
- Height: 3.800"

### Operating Environment:

- Temperature: 0-45°C (32°-113°F)
- Humidity: 5 to 95% non-condensing



### Storage Environment:

- Temperature: -40° to 70°C (40° to 158° F)
- Humidity: 5 to 95% non-condensing

**Power:** 3.3V @ 2.0A max

**Airflow:** 100 lf/m (minimum) recommended

### Optical Cabling:

- 50/125µm up to 300m @ 2-Gb
- 50/125µm up to 500m @ 1-Gb

## Celerity FC Product Family

PRODUCT FEATURES	FC-44ES	FC-42ES	FC-42XS	FC-41XS	FC-24XL	FC-22XH	FC-21PS
Fibre Channel Ports	4	2	2	1	4	4/2 <sup>1</sup>	1
Fibre Channel Protocol	4-Gb	4-Gb	4-Gb	4-Gb	2-Gb	2-Gb	2-Gb
Maximum Transfer Rate (half duplex)	1.6 GB/sec.	800 MB/sec.	800 MB/sec.	400 MB/sec.	800 MB/sec.	400 MB/sec.	200 MB/sec.
Maximum Transfer Rate (full duplex)	2 GB/sec.	1 GB/sec.	1 GB/sec. <sup>2</sup>	800 MB/sec.	1 GB/sec. <sup>2</sup>	800 MB/sec.	400 MB/sec.
Bus Type	PCIe	PCIe	PCI-X	PCI-X	PCI-X	PCI-X	PCI
Bus Characteristics <sup>3</sup>	8 lane	8 lane	64-bit, 133 MHz	64-bit, 133 MHz	64-bit, 133 MHz	64-bit, 133 MHz	64-bit, 66 MHz
Optical Interface	SFP LC	SFP LC	SFP LC	SFP LC	SFP LC	SFP LC	SFF LC
Maximum Cable Length	300m @ 2-Gb 150m @ 4-Gb	300m @ 2-Gb 150m @ 4-Gb	300m @ 2-Gb 150m @ 4-Gb	300m @ 2-Gb 150m @ 4-Gb	500m @ 1-Gb 300m @ 2-Gb	500m @ 1-Gb 300m @ 2-Gb	500m @ 1-Gb 300m @ 2-Gb
Advanced Data Streaming (ADS™) Technology	•	•	•	•	•	•	•
Software RAID Support <sup>4</sup>	•	•	•	•	•	•	•
Developer's Kit (Target Mode & API)	•	•	•	•	•	•	•
Developer's Kit (Advanced)	-	-	-	-	•	-	-
Integrated Offload & Processing Center (IOPC)	-	-	-	-	•	-	-
Onboard Memory for Direct Memory Transfers	-	-	-	-	•	-	-
Integrated Hub Technology	-	-	-	-	-	•	-
Windows Driver Support	•	•	•	•	•	•	•
Linux (Red Hat, SUSE) Driver Support	•	•	•	•	•	•	•
Mac OS X (Tiger) Driver Support	-	-	•	•	•	•	•

1 ATTO's onboard hub technology allows for up to four external connections to two FC channels

2 Performance ceiling is constrained by 133 MHz PCI-X bus transfer speed

3 Backward compatible to 32-bit and 33 MHz PCI; FC-24XL and FC-22XH are 3.3V; FC-21PS is 3.3V/5V Universal

4 ATTO ExpressStripe for OS X available; other software RAID supported

*celerity*

a platform for advanced storage connectivity

# Storage Adapter