ATTO TECHNOLOGY
TECHNICAL SPECIFICATIONS

ATTO XstreamCORE™ FC 7500 and FC 7550

16Gb Fibre Channel to 12Gb SAS storage controllers

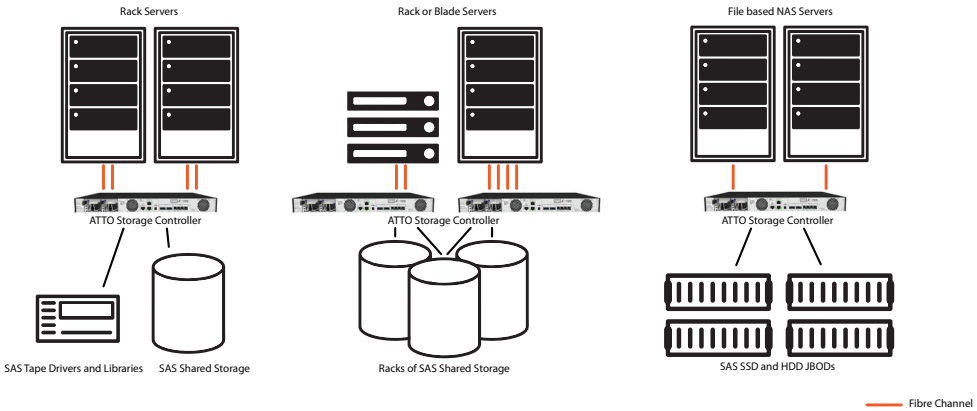
The ATTO Technology Inc. XstreamCORE™ FC storage controller family adds Fibre Channel connectivity at direct attached storage speeds to SAS JBOD, JBOF, RAID and Tape storage.

Technical Features

- Connects two (7500) or four (7550) 16 Gb Fibre Channel ports to four x4 12Gb mini-SAS connectors
- Adds sharing, remote connectivity, mapping and common services to SAS/SATA storage
- Adds enterprise Fibre Channel features to SAS SSD and HDDs
- Adds enterprise Fibre Channel features to SAS Tape and SATA optical devices (7500)
- Integrates with up to 960 devices* per controller
- Individually map drives to a host or multiple drives to multiple hosts
- Adds less than four microseconds of latency
- I/O Acceleration with ATTO xCORE technology featuring multiple hardware acceleration engines
- eCORE virtualizes a common set of services and features
- Patented Drive Map Director™ simplifies mapping and reduces maintenance costs for storage
- ATTO Data Mover technology improves storage performance while reducing compute, memory and network utilization
- ATTO control processing provides intelligence and features not found in direct attached technologies to add functionality for improved productivity
- Management capable through RS-232, Ethernet or in-band
- Available in standard 1U 19″ rackmount

Extend the reach of Storage from Servers

ATTO XstreamCORE storage controllers act as external adapters adding a common set of services and features to flash SSD and HDD based JBOD, JBOF or RAID storage devices. XstreamCORE then remotely shares this storage over long or short distances using Fibre Channel technology. Use cases for these controllers include the remoting of storage from servers or other storage mediums over a Fibre Channel SAN, sharing a pool of high speed flash to multiple connected systems, connecting data centers for business continuity via a stretch cluster and disaggregating storage from servers to independently scale compute and storage.



Engineered to Provide Deterministic Latency

Higher storage latency slows real-world performance, server based storage architectures depend on general purpose processors to transfer data, manage storage and add services and features to storage. When services and features are added, the CPU has to process each command in software which increases overall latency. XstreamCORE features a more efficient architecture that separates data traffic from services and features removing any non-data request from the data path to maintain a consistent level of latency and performance.

xCORE Hardware Data Acceleration Engine

ATTO developed the xCORE Acceleration Engine to handle the majority of I/O operations in a hardware processing pipeline without software intervention. xCORE manages all I/O, command routing and decoding, buffer allocation, reservations, access controls and provides real time data analytics. Any exception is off-ramped to the eCORE Control Engine to manage commands which do not require acceleration. ATTO xCORE technology enables the ATTO XstreamCORE to achieve up to 1.2M 4K IOPS or 6GB/s throughput per controller while adding a consistent sub two microseconds of latency.

ATTO TECHNOLOGY
SOLUTION BRIEF

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16Gb Fibre Channel to 12Gb SAS storage controllers

xCORE Acceleration Technology

xCORE Data Acceleration technology features multiple parallel I/O acceleration engines with end to end I/O processing, hardware buffer allocation management and real-time performance and latency analytics. These features combine to provide very high, reliable throughput and IOPS while adding less than four microseconds of latency.

- Performance-critical commands and all reads/writes are accelerated in hardware
- End-to-end data protection in the acceleration technology and control functions to safeguard data throughout the controller and also enables max login management capabilities
- Eliminates bottlenecks with parallel processing for up to a 10X performance improvement over standard SAN storage
- Maximizes large block transfer sizes for optimal streaming performance (GB/s)

eCORE Control Engine

The eCORE Control Engine adds common, open storage services, integrates with industry standard APIs, handles reservations, storage routing and host and LUN mapping functions. The eCORE Control Engine also manages traffic for data mover offload functions with added error handling and diagnostic tools. These features add value to JBOD, JBOF or RAID storage while providing tight integration with server based software.

- Provides common services such as multi-initiator access, data mover, reservations and vendor specific commands that are applied to all attached enclosure and disk devices
- Maintains priority for data transfers while providing management of memory and cooperative multi-tasking capabilities

Data Routing Fabric Topology

- Incorporates advanced ASIC, firmware and interface technologies that enable users to fine tune ATTO controllers for specific applications
- ATTO Embedded Operating System (AEOS) provides an integrated, multitasking environment that self optimizes to changing I/O patterns for maximum performance while maintaining priority for data transfers
- Standard read buffer commands allow the collection of inquiry data, event logs, port statistics, phy statistics, SFP and SAS connector information, trace log, core dump, configuration and status information
- Write buffer commands are also supported to update controller firmware, clear the event log, clear Fibre Channel and SAS port and phy statistics and to also write a message to the event log

Connectivity

FIBRE CHANNEL CONNECTIONS:

- Two 16Gb SFP+ Fibre Channel connectors (7500)
- Four 16Gb SFP+ Fibre Channel connectors (7550)
- Optical SFP+ modules included
- Auto negotiates to 16Gb/8Gb/4Gb
- Full support for FC-AL, FC-AL2, FC-FLA, FC-FS, FCP-3, FC-PLDA
- Fibre Channel retry logic for FLOGI, PLOGI

SAS CONNECTIONS:

- Four 12Gb x4 mini-SAS HD connectors
- Auto negotiates to 12Gb/6Gb/3Gb
- Supports SAS and SATA devices

Management Tools

- Web based XstreamVIEW™ system manager
- Local diagnostics supported via Command Line Interface (CLI) via RS-232 and Ethernet
- Monitor SCSI Enclosure Services (SES) information provided by attached enclosures
- Persistent Event Log gathers at least 40,000 hardware, software and network events
- Dual firmware image support for protection from firmware update failures
- Performance and temperature monitoring
- Data Mover copy manager and performance metrics
- Identify LUN by flashing device LEDs
- Core dump error analysis
- Drive MapDirector and host group mapping
- SNMP, SNTP, Telnet, FTP, iCMP

Product Dimensions

- Height 1.735" - Length 9.90" -Width 17.31"
- Weight 9.7 pounds (unboxed)
  12.9 pounds (boxed)

Operating Environment

CONTROLLER OPERATION (EXPECTED):

- Temperature S to 40° at 10,000 feet
- Humidity 10 to 90% non-condensing

CONTROLLER STORAGE:

- Temperature -40°to 70°C
- Humidity 5 to 95% non-condensing

Power and Airflow

- Input 85-264 VAC, 0.5A, 47-63 Hz
- 11 CFM (Ambient Air not to exceed 40° C)
- Front to rear cooling

Agency Approvals and Compliance

SAFETY:

- EN 60950, CSA 60950, CB IEC 60950-1, UL
- 60950, BSMI

ELECTROMAGNETIC COMPATIBILITY (EMC):

- FCC Part 15 Class A, CE, VCCI, AS/NZS, CISPR
- 22, EN55022: 2006, Class A, EN55024, EN61000
- RoHS Compliant 2011 /65/EU
- Battery-free design

Warranty

- Two-year standard product warranty

ATTO XstreamCORE™	FC 7500	FC 7550
Input Connectors	(2) 16Gb Fibre Channel (SFP+)	(4) 16Gb Fibre Channel (SFP+)
Output Connectors	(4) 12Gb mini-SAS HD (x4)	(4) 12Gb mini-SAS HD (x4)
Architecture Latency	< 4 microseconds	< 4 microseconds
Max 4K IOPS	735,000	1,200,000
Max Throughput	3.2Gb/s	6.4Gb/s
Initiators	Up to 64 supported	Up to 64 supported
SAS/SATA Drives	Up to 240 per controller	Up to 960 per controller
Tape Drive Support	Yes	Future
Optical Drive Support	Yes	Future
Form Factor	1U rackmount	1U rackmount
Power Supplies	Two / Hot Swap	Two / Hot Swap
40Gb Product SKU	XCFC-7500-002	XCFC-7550-004

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