ATTO XstreamCORE™ FC 7500 and FC 7550
16Gb Fibre Channel to 12Gb SAS Storage Controllers

Engineered to be Open with a Modular Design
The XstreamCORE™ has an advanced architecture that pushes the envelope on performance adding less than 4 microseconds of latency to storage. ATTO storage controllers do not alter the data path and improve data flow by creating a higher performing shared storage network using off-the-shelf SAS JBOD, JB0F and RAID Arrays. The XstreamCORE offloads compute, memory and network resources from client servers to allow those resources to process more transactions, dedicate more resources to application usage and better utilize server resources for virtualization. The XstreamCORE allows IT administrators to build a complete, modular, open storage solution using all flash SSDs, all capacity HDDs or a hybrid mix of SSDs and HDDs with faster flash storage shared among all attached clients.

Drive Map Director™ Storage and Host LUN Mapping
Drive Map Director™ storage mapping is patented technology which discovers the physical layout of storage devices and creates a virtual topology with device maps corresponding to the physical layout. This eliminates the need to remap storage if a shelf is moved for maintenance or experiences a failure. SAS drives are automatically assigned to a Fibre Channel LUN with a static, predictable configuration. XstreamCORE also gives the IT administrator the ability to identify LUNs by flashing the device LEDs so that they can match physical storage to the assigned map. ATTO’s host LUN mapping feature allows IT administrators to assign clients and servers to allow or deny access to SAS JBOD, JB0F or RAID storage attached behind the XstreamCORE. This provides security and gives administrators the ability to assign unique boot disks to physical server hardware.

XCORE Hardware Acceleration and Data Mover Technology
The XstreamCORE is a solid state plug and play controller that sits external to off-the-shelf storage. ATTO has developed the hardware acceleration engine that accelerates all read and write data to an extreme level. Higher storage latency slows real-world performance while smaller amounts of latency allows more completed transactions in the available performance footprint. ATTO’s xCORE Technology achieves up to 1.2 M 4K IOPS or 6.4GB/s throughput per controller pair while adding a consistent sub 4 microseconds of latency. Leveraging hardware acceleration for normal data transfers, the ATTO XstreamCORE also includes a hardware data mover that offloads read and write traffic from server CPU, storage fabric and network resources to move data in the background. Since the XstreamCORE is an open platform this technology can be used with any attached storage and overcomes limitations of data mover technology by allowing RAID array to RAID array data movement when installed behind ATTO storage controllers.

Data Center Ready for Reduced Maintenance Costs
ATTO’s storage controller products are engineered to lower data center maintenance costs and comply with international regulations while delivering high performance and low latency. XstreamCORE products save up to 25% in power over using native Fibre Channel components and feature a front to rear cooling flow to integrate with cooling systems that expel heat from the data center. The XstreamCORE enables users to manage storage infrastructures with features not found in direct connect technologies. XstreamVIEW™ system manager is a remote management interface for configuration, monitoring and management of ATTO storage controllers. Advanced tuning and troubleshooting features include a built-in PCIe analyzer, performance monitoring, diagnostic and troubleshooting capabilities, phone home email notification and robust trace and event logging. Several management interfaces are available including GUI, CLI, Telnet, SNMP and FTP.

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**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 log 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, JBQF 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 flash SSD storage
Supports SAS and SATA capacity disk

**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 Map Director and host group mapping
- SNMP, NTP, 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:**
- Temperature 5 to 40°C 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/NSZ, CISPR
- 22, EN55022: 2006, Class A, EN55024, EN61000
- RoHS Compliant 2011/65/EU
- Battery-free design

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**ATTO XstreamCORE™ FC 7500 FC 7550**

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<thead>
<tr>
<th>Input Connectors</th>
<th>(2) 16Gb Fibre Channel (SFP+)</th>
<th>(4) 16Gb Fibre Channel (SFP+)</th>
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</thead>
<tbody>
<tr>
<td>Output Connectors</td>
<td>(4) 12Gb miniSAS HD (x4)</td>
<td>(4) 12Gb miniSAS HD (x4)</td>
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<tr>
<td>Architecture Latency</td>
<td>&lt;four microseconds</td>
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<tr>
<td>Max 4K IOPS</td>
<td>735,000</td>
<td>1,200,000</td>
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<tr>
<td>Max Throughput</td>
<td>3.2 Gb/s</td>
<td>6.4 Gb/s</td>
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<tr>
<td>Initiators</td>
<td>Up to 64 supported</td>
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<tr>
<td>SAS/SATA HDDs supported</td>
<td>Up to 240 per controller</td>
<td>Up to 960 per controller</td>
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<tr>
<td>Form Factor</td>
<td>1U rackmount</td>
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<td>Power Supplies</td>
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