TECH SPEC

ATTO

ATTO XstreamCORE® ET 8200

ATTO XstreamCORE® *i*ntelligent Bridges add Ethernet connectivity to SAS, JBOD, JBOF, RAID and tape storage[1] to provide remote connectivity, sharing and common services with minimal added latency.

Technical Features

- Connects two 40 GbE ports to four X4 12Gb HD mini-SAS (SFF-8644) connectors
- Integrates with up to 960 devices per bridge[1]
- Individually map drives to a host or multiple drives to multiple hosts
- Integrate shared and remote storage capabilities for automatic failovers over a 30-mile radius
- Uses iSER (iSCSI extensions for RDMA) for deterministic latency over Ethernet
- ATTO's hardware accelerated iSCSI maximizes interoperability
- ATTO SpeedWrite™ technology improves SAS tape write performance up to 20%
- LTFS support for simplified access to data stored on LTO Ultrium
- Adds less than two microseconds of latency
- ATTO eCORE offload processor virtualizes a common set of services and features
- ATTO 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 XstreamCORE® ET 8200/8200T

40Gb Ethernet to 12Gb SAS *i*ntelligent Bridge

Extend the Reach of Storage from Servers

ATTO XstreamCORE® intelligent Bridges act as external adapters adding a common set of services and features to SSD- and HDD-based JBOD, JBOF or RAID storage and SAS tape devices[1]. XstreamCORE then remotely shares this storage over long or short distances using high speed Ethernet technology. Use cases for these bridges include the remoting of storage from servers or other storage mediums over an Ethernet network, sharing a pool of high-speed flash to multiple Ethernet connected systems, and connecting SAS tape over Ethernet networks. Storage can be disaggregated from servers to independently scale compute and storage.

Engineered to Provide Deterministic Latency

Higher storage latency slows real-world performance, while 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.

ATTO XstreamCORE features a more efficient architecture that separates data traffic from services, removing any non-data request from the data path to maintain a consistent level of latency and performance.

ATTO xCORE™ Hardware Data Acceleration

ATTO xCORE™ acceleration processor was developed 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 eCORE control engine to manage commands which do not require acceleration. xCORE technology enables XstreamCORE to achieve up to 1.1M 4K IOPS or 6GB/s throughput with iSER per bridge while adding a consistent sub two microseconds of latency.

[1]XstreamCORE ET 8200T only supports tape storage and a maximum of 16 tape drives per bridge

About ATTO

For over 35 years, ATTO Technology, has been a global leader across the IT and media & entertainment markets, specializing in network and storage connectivity and infrastructure solutions for the most data-intensive computing environments. ATTO works with partners to deliver end-to-end solutions to better store, manage and deliver data.

ATTO xCORE Acceleration Processor

ATTO xCORE™ data acceleration technology features multiple parallel I/0 acceleration engines with end-to-end I/0 processing, hardware buffer allocation management and real-time performance and latency analytics.

- 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 bridge and also enables max login management capabilities
- Eliminates bottlenecks with parallel processing for up to a 10X performance improvement over standard protocol conversion
- Maximizes large block transfer sizes from Ethernet to SAS/SATA devices for optimal streaming performance (GB/s)

ATTO eCORE Offload Processor for Management and Storage Services

ATTO eCORE™ control engine technology provides command processing for management services, storage services and integration with third party IP. eCORE has full access to all on-chip resources to add common, open storage services, storage routing, diagnostics, one pane of glass interfacing and host mapping functions while managing all performance metric reporting and data mover functions. With direct access to hardware drivers and enclosure management I/O signals and busses, eCORE is an efficient tool that virtualizes services and features.

- Provides common services such as multi-initiator access, data mover, reservations and vendor specific commands
- Maintains priority for data transfers while providing management of memory and cooperative multi-tasking capabilities

OEM Customization

- Hardware configuration options allow for unique board ID to define initialization and characteristics of the OEM product
- eCORE capabilities can be extended with ATTO OEM integration programs to take advantage of available ATTO XstreamCORE® processing cores and a Linux based operating system to add OEM IP for unique features

Connectivity

Ethernet Connections

- Two 40Gb optical Ethernet connectors
- Supports iSCSI Extensions for RDMA (iSER)
- Supports ATTO hardware accelerated iSCSI
- DHCP, IPv4, IPv6
- Auto negotiates to 40Gb/10Gb

Ethernet Specifications

- IEEE 802.3ba, 802.3ae, 8023az, 802.3ap, 802.ad
- 802.1Q, 802.1p, 802.1Qau, 802.1Qaz, 802.1Qbb,
- 802.1Qbq

SAS Connections

- Four 12Gb x4 HD mini-SAS (SFF-8644) connectors
- Auto negotiates to 12Gb/6Gb/3Gb
- Supports SAS Tape Drives and Libraries

SAS Specifications

- SAS-1.1, SAS-2, SAS-3

Management Tools

- ATTO XstreamVIEW™ system manager GUI
  - SNIA Swordfish™
  - DTMF Redfish
- 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
- Performance and temperature monitoring
- Real time performance metrics
- Identify devices by LED indicators
- Core dump error analysis

Data Routing Fabric Topology

- Incorporates advanced ASIC, firmware and interface technologies that enable users to fine tune ATTO bridges for specific applications
- ATTO Embedded Operating System (AEOS) provides an integrated, multitasking enviroment that self optimizes to changing I/0 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 bridge firmware, clear the event log, clear port and phy statistics and to also write messages to the event log

Product Dimensions

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

Operating Environment

Bridge Operation (expected)

- Temperature 5 to 40° C at 10,000 feet
- Humidity 10 to 90% non-condensing

Bridge Storage

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

Power and Airflow

- 64W typ and 69W max
- Input 100-240 VAC, 1.0A 50-60 Hz
- 11 CFM (Ambient Air not to exceed 40° C)
- Front to rear cooling

Agency Approvals and Compliance

Safety

- 60950, BSMI, cTUVus

Electromagnetic Compatibility (EMC)

- FCC Part 15 Class A, CE
- RoHS Compliant 2011 /65/EU
- Battery-free design

• Available Form Factors

- 1U Rackmount

ATTO XstreamCORE	ET 8200	ET 8200T
Input Connectors	(2) 40Gb Ethernet	(2) 40Gb Ethernet
Output Connectors	(4) 12Gb HD mini-SAS (x4) (SFF-8644)	(4) 12Gb HD mini-SAS (x4) (SFF-8644)
Architecture Latency	< 2 microseconds	< 2 microseconds
SAS/SATA disks supported	Up to 960 per bridge*	Up to 16 tape drives only per bridge
Tape Drive Support	Yes	Yes
Optical Drive Support	Yes	No
Memory Type	ECC	ECC
Form Factor	1U rackmount	1U rackmount
Power Supplies	2	2
Power Supply Type	Hot Swap	Hot Swap
Product SKU	XCET-8200-002	XCET-8200-TP2

**For qualified customers*