TECH SPEC

ATTO ExpressSAS®12Gb/s SAS GT Model host bus adapters (HBAs) provide high-performance direct attach connectivity for server storage, JBOD and RAID arrays.

Technical Features

- Capable of 3 million 4K IOPS
- 12Gb/s per SAS lane, PCIe Gen 4.0
    - Up to 15GB/s aggregate bandwidth
- RAID 0, 1, 1e and 10 levels supported
- Configurable for supporting up to 2048 target devices
- Low-profile, power-efficient design optimized for enterprise-grade storage performance and simplified platform integration
- Sustained transfer speeds and reliable data delivery even at peak load
- High density connectors with robust cable management support
- Wide-port support allows bandwidth aggregation for higher throughput and scalable architecture design
- Driver support for the latest Windows®, Linux®, macOS®, VMware®, FreeBSD and illumos operating systems
- Deliver dense and efficient block storage connectivity for enterprise infrastructure, media production systems, professional workstations, video surveillance, and ruggedized/edge platforms
- Three year standard product warranty

ATTO ExpressSAS® 12Gb SAS GT Model HBAs

12Gb/s SAS PCIe 4.0 Host Bus Adapters

Industry Proven Technology

ATTO ExpressSAS® 12Gb/s SAS GT Model host bus adapters (HBAs) provide high-performance data protection to direct-attached SAS and SATA storage. With a wide variety of port configurations and built-in ATTO PowerCenter Pro RAID 0, 1, 1e and 10 for performance and protection, these adapters offer flexibility for every range of application. For over 35 years, ATTO has been at the forefront of the latest innovations in storage connectivity.

Flexible Connectivity Solutions

ExpressSAS 12Gb/s SAS GT Model HBAs are available with a wide selection of port options to support a dense and efficient connection to storage from rack-mounted servers and workstations in datacenter, data warehousing, video on demand and other high-availability, high-performance applications.

Performance Engineered

ExpressSAS 12Gb/s HBAs combine 12Gb/s SAS speeds and x8 PCI Express 4.0 with powerful hardware and software elements to manage latency in real-time environments. Additionally, all 12Gb HBA adapters includes ATTO PowerCenter Pro, an integrated software RAID solution that brings the performance and protection of RAID to attached storage devices.

ATTO Advanced Data Streaming (ADS™) Technology maximizes CPU processes to deliver smooth and reliable data transfers and the highest consistent performance. ATTO pays close attention to detail in board design and signal integrity to minimize transmission errors and data corruption. These differentiating capabilities make ATTO the premier choice for high-performance direct-attached SAS/SATA storage connectivity.

Advanced Management

ATTO offers a broad range of comprehensive management and diagnostic tools designed from the ground up to help optimize performance, simplify configuration, and maximize efficiency without any complexity.

Bringing state-of-the-art storage management capabilities to modern data center and enterprise ecosystems, ATTO360™ Storage leverages real-time metrics and unique intelligence derived from the field and industry to enable one-click performance boosts, ensure round-the-clock device monitoring, and provide proactive suggestions to keep your storage backbone up and running without hiccups.

Take advantage of built-in ATTOExpert AI™ to instantly troubleshoot and fix issues before they even occur - saving valuable IT hours and resources.

+1.716.691.1999 | atto.com

TECH SPEC

Applications

- The impressive speed of the 12Gb/s SAS interface, coupled with a x8 PCI Express 4.0 host interface, delivers a dense and efficient connection to all types of storage— from rack-mounted servers and workstations in data center, data warehousing, VOD and other high-availability, high-performance applications.
- ATTO Advanced Data Streaming (ADS™) Technology controls the acceleration of data transfers to move large amounts of data faster and more efficiently.

Key Features

- Automatic link negotiation:
  - 12Gb/s, 6Gb/s and 3Gb/s SAS targets - 6Gb/s and 3Gb/s and SATA targets
- Supports up to 2048 targets
- Onboard ATTO PowerCenter Pro RAID 0, 1, 1e and 10 included for performance and data protection for Mac, Windows, and Linux
- Supports Serial SCSI Protocol (SSP), SATA Tunneling Protocol (STP), SMP, SAT and direct attached SATA protocol
- Supports T10-DIF/PI standards
- 16MB on-board flash memory to store persistent parameters
- Dynamic drive insertion and removal support
- Wide-port end device support
- Support for advanced format storage media: 512e, 4Kn
- Supports ATAPI devices
- Dual port SAS support for high availability configurations
- Support for SAS tape devices and transport layer retries (TLR) for error handling
- SGPIO, SCSI Enclosure Services (SES), and ATTO Virtual SES support to manage connected storage device status and activity
- Target mode driver development kit available for building specialized storage solutions

Management Tools

- Management APIs via CSMI and IOCTLs
- Scriptable Command Line Interface (CLI) for advanced functionality, including phy and cable management
- ATTO360™ Storage GUI support for management and configuration
- Extensive event and trace logging
- External locate LED on bracket
- Onboard temperature monitoring

Bus Specifications

- x8 PCI Express 4.0 host interface
  - Backward compatible with x8 PCI Express 3.0 host interface
- PCIe low profile form factor
- Supports PCI Express Base Spec 4.0
- Supports PCI Express CEM Spec 4.0

Connectivity

- SFF8644 x4 Mini SAS HD connectors externally
- SFF8643 x4 Mini SAS HD connectors internally
- Full cable management and reporting
- Supports cable lengths up to 1m (SATA), 10m at 12Gb (passive copper) and 100m (active optical)
- Easy-to-install full height and low profile connection brackets included
- Designed to support 12Gb/s SAS signaling

Boot Support

- UEFI v2.3.1 with HII support

Reliability

- Average MTBF >7,400,000 hrs *(calculated)*

Operating System Support

- Windows® / Windows® Server
- macOS®
- SUSE Linux® Enterprise Server (SLES)
- Red Hat Enterprise Linux (RHEL)
- Cent OS
- Fedora Linux
- VMware ESXi Server®
- FreeBSD
- illumos

Safety & Environmental Compliance

- CE and IEC 62368-1
- RoHS Compliant (2011/65/EU) EU (2015/863)
- EMC Compliance
- FCC Part 15, Subpart B 2018 (Class A)
- ICES-003 (Canada)
- EN55032:2015, CISPR 32-1:2015 (Class A)
- VCCI CSPR32-1
- AS/NZ CISPR32.2015

Operating Temperature

Hardware Environment:

- Airflow: 200 LFM (min) recommended (H12F0 GT, H120F GT); 100 LFM (min) recommended (H1280 GT, H1208 GT, H1244 GT)
- Temperature: 0-55° C
- Humidity: 10 - 90% non-condensing

Storage Environment:

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

Dimensions

- Low profile:
  - Length = 6.600"
  - Height = 2.713"

Power

- H1280GT - 6.05W
- H1208GT - 6.09W
- H12F0GT - 8.7W
- H120FGT - 8.6W
- H1244GT - 6.09W

Warranty

- Three Year (standard product)

For OEM configurations contact ATTO sales for details

ATTO ExpressSAS®	H1280 GT	H12F0 GT	H1208 GT	H120F GT	H1244 GT
Ports	8 External	16 External	8 Internal	16 Internal	4 External, 4 Internal
Bus Characteristics	x8 PCIe 4.0	x8 PCIe 4.0	x8 PCIe 4.0	x8 PCIe 4.0	x8 PCIe 4.0
Connections	2 Mini SAS HD (x4) SFF 8644 External	4 Mini SAS HD (x4) SFF 8644 External	2 Mini SAS HD (x4) SFF 8643 Internal	4 Mini SAS HD (x4) SFF 8643 Internal	1 Mini SAS HD (x4) SFF 8644 External
					1 Mini SAS HD (x4) SFF 8643 Internal