



6Gb/s SAS/SATA Host Bus Adapters

ExpressSAS H6F0

ExpressSAS H60F

ExpressSAS H680

ExpressSAS H608

ExpressSAS H644

ATTO's first-to-market ExpressSAS 6Gb/s SAS/SATA Host Bus Adapters boast the highest available SAS and SATA performance for Direct Attached Storage infrastructures.

Industry Proven Technology

The ExpressSAS 6Gb/s host bus adapter product line was the first 6Gb/s-based family of HBAs available in the market. ExpressSAS 6Gb/s host bus adapters double the performance of 3Gb/s SAS/SATA host bus adapters and work seamlessly with a wide array of 3rd party products, including HDDs and SSDs, tape drives and many other SAS and SATA infrastructure products.

Flexible Connectivity Solutions

ExpressSAS 6Gb/s SAS/SATA HBAs are available in the widest selection of port configurations, providing the most flexible connectivity to SAS/SATA storage. With 8 external, 8 internal, 4 external/4 internal, or a two-host-adapters-in-one configuration with 16 external or 16 internal ports, users benefit from efficient scalability and more options from which to choose the best SAS/SATA HBA for their application.

Performance Engineered

ExpressSAS 6Gb/s host bus adapters combine 6Gb/s SAS speeds and x8 PCI Express 2.0 with powerful hardware and software elements to manage latency in real-time environments. Exclusive 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 Tools

ATTO's easy-to-use Configuration Tool features an intuitive GUI that simplifies the installation, management and monitoring of the host bus adapter. With advanced troubleshooting and performance tuning capabilities, ExpressSAS HBAs provide users with sophisticated diagnostics and the flexibility to control settings for specific applications.

Technical Features

- Port configurations include 16 external, 16 internal, 8 external, 8 internal, and 4 external/4 internal
- 1200 MB/s per port/phy throughput in full-duplex mode
- Features a high-performance x8 PCIe 2.0 host interface
- SAS 2.0, SAS, SATA and SATA II support
- Supports up to 512 SAS/SATA devices
- Driver support for Windows®, Linux, Mac® OS X, VMware® and more
- Exclusive Advanced Data Streaming (ADS™) Technology
- Proven interoperability with support for SNIA HBA API
- ATTO Configuration Tool for customized performance settings
- Low power consumption
- Target mode support
- 3-year standard product warranty

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Tech Sheet

Technical Specifications

Applications

ExpressSAS 6Gb/s SAS/SATA host bus adapters offer the fastest available connection to direct-attached SAS or SATA storage. The impressive speed of the ExpressSAS family of next-generation 6Gb/s HBAs delivers a future-proof solution for data-intensive IT and digital media applications such as tape backup, data warehousing, high-definition video, post-production, and digital film production.

Advanced Data Streaming (ADS™)

Latency-management technology that controls the acceleration of data transfers to move large amounts of data faster and more efficiently.

Key Features

- SAS 2.0, SAS, SATA and SATA II support
- Auto Negotiation between 6Gb/s, 3Gb/s and 1.5Gb/s devices
- Supports SSP, SMP, STP protocols
- SGPIO support
- PC BIOS bootability
- Global and dedicated hot spares
- SES, SNMP and S.M.A.R.T. support
- Initiator and target mode (OEM) support
- Flash ROM for easy field updates
- Wide-port end device support

User Benefits

- Highest available MB/s and IOPS performance
- Superior system performance with latest SAS/SATA technology
- Low power consumption
- Support for virtualized server environments

Management Tools

- Command Line Interface for advanced functionality
- ATTO Config Tool (w/GUI) BIOS-based management and configuration utility

Bus Specifications

- x8 PCI Express 2.0 host interface
- Supports PCI Express Base Spec 2.0
- Supports PCI Express CEM Spec 2.0

External Connectivity

- Low profile (H60F, H680, H608, H644) and full height (H6F0) bracket
- x4 MiniSAS Connectors
- External LEDs for on-line and speed status for each port

Operating System Support

- Windows® Server 2003, 2008,
- Windows XP, Vista, 7
- Red Hat & SUSE Linux
- Mac® OS X (10.4.x - 10.6.x)
- VMware® ESX Server 3.5
- VMware® ESX Server vSphere 4.1

Agency Approvals and Compliance

- FCC Part 15, Subpart B, Class A
- EN55024: 1998A + A1: 2001 & A2: 2003
- EN60825-1: 1994-2: 2004
- EN55022: 2006, Class B
- EN60950-1: 2001
- RoHS Compliant

Dimensions

- H6F0
- Length 6.600", Height 4.376"
- H60F
- Length 8.638", Height 2.846"
- H680
- Length 6.600", Height 2.731"
- H608, H644
- Length 5.600", Height 2.731"

Operating Temperature

- Hardware Environment
- Temperature: 0-40°C (34°-104°F)
 - Humidity: 10 - 90% non-condensing
- Storage Environment
- Temperature: -40°-70°C (-40°-157°F)
 - Humidity: 5 - 95% non-condensing

Operating Voltage

- H6F0, H60F
- 22W (typical)
- H680
- 7.8W (typical)
- H608, H644
- 8.3W (typical)

Airflow

- 100 lf/m (min) recommended

Warranty

- 3 Year



	ATTO ExpressSAS H6F0	ATTO ExpressSAS H60F	ATTO ExpressSAS H680	ATTO ExpressSAS H608	ATTO ExpressSAS H644
Ports	16 External	16 Internal	8 External	8 Internal	4 External/4 Internal
Bus Characteristics	x8 PCIe 2.0	x8 PCIe 2.0	x8 PCIe 2.0	x8 PCIe 2.0	x8 PCIe 2.0
Form Factor	Full Height	Low Profile	Low Profile	Low Profile	Low Profile
Connectors	4 Mini SAS (x4) SFF 8088 External	4 Mini SAS (x4) SFF 8087 Internal	2 Mini SAS (x4) SFF 8088 External	2 Mini SAS (x4) SFF 8087 Internal	1 Mini SAS (x4) SFF 8088 External 1 Mini SAS (x4) SFF 8087 Internal
Device Support	512	512	256	256	256
Part Number	ESAS-H6F0-000	ESAS-H60F-000	ESAS-H680-000	ESAS-H608-000	ESAS-H644-000

