



## ExpressSAS Host Adapter 6 Gb v1.30 – Windows

### 1. General Release Information

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These product release notes define the new features, changes, known issues and release details that apply to the ExpressSAS Host adapter products v1.30 that was released on 10/29/2009. This information pertains to Windows.

### 2. Changes

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- **Version 1.30 (Released 10/29/2009)**

- **Note:** It is recommended that firmware dated 10/22/09 be utilized with this driver release.
- The following applies to release v1.30
- **New Features, Enhancements and Changes**
  - CSMI support added.
  - Descriptive strings for sense keys to SCSI error event logging added.
  - Failed task management commands which may have been reported to the OS as successful, were corrected
  - Enhanced discovery process after an expander routing failure detection.
  - The Immediate bit in the Start Unit command enhanced for SATA device support.
  - SATA drive enhancement when transferring I/O in multiple segments.
  - Improved device wait count setting when handling power cycle devices.
  - SMP API direct attached target discovery report enhanced.
  - Bus reset processing enables devices for I/O after reset completion.
  - Discovery resource management enhanced for improved expander PHY routing accuracy.
  - Data overruns for expander discovery commands are enhanced to support inaccuracies with expanders sending an invalid response length.

- **Version 1.20 (Released 07/31/2009)**

- **Note:** It is recommended that firmware dated 07/27/09 be utilized with this driver release.
- The following applies to release v1.20
- **New Features, Enhancements and Changes**
  - Enhanced firmware which contributed in an up to 25% increase in throughput.
  - The supported expander chain depth was increased from 8 to 10.
  - Transport layer retries are explicitly enabled on all commands for SAS 2.0 compliant devices instead of being enabled in the device's mode pages.
  - All command retries are disabled for sequential (e.g. tape) devices.
  - SMP PHY Control command for clearing SATA affiliations improved. Uses the hard reset function instead of the clear affiliation function.
  - Expander enhancements which include discovery process reorganization for clearing SATA affiliations. All devices reported to the OS will have sequential target IDs starting with zero.
  - The heartbeat mechanism has been redesigned to improve I/O resources allocation.

- Confirmation of I/O completion to the OS prior to reporting a device removal.
  - SCSI check status for data phase errors and other bus events that occur due to signal integrity problems are now retried
  - When a port is reset due to a task management command timeout, the aborted collateral is retried.
  - Enhanced event logging to include retried commands
  - Added support to the SMP API for discovering direct attached devices. A SAS address can be associated with all target IDs.
  - Changed the scatter/gather allocation to improve performance and conserve memory.
  - Added the WindowsFix520 registry setting to correct the length of 512 byte SCSI READ 10 commands for devices with sector sizes between 513 and 767 bytes.
  - Documented support for Windows 7.
  - Improved optimizations and memory allocation to expander discovery process to increase number of drives that can be discovered.
  - Stability fixes in discovery processing when commands timeout or need to be retried due to bus errors.
  - Fixes to SATA NCQ error and head-of-line blocking recovery mechanisms to ensure commands are properly aborted and retried.
  - Task management processing correction for when a discovery is in progress for the same port.
  - When a device rejects an OPEN address, it is infinitely retried to account for devices that stop responding to commands for extended periods of time.
  - The OPEN REJECT RETRY interval is set to 5  $\mu$ s.
- **Version 1.10 (Released 03/24/2009)**
    - **Note:** It is recommended that firmware dated 03/20/09 be utilized with this driver release.
    - The following applies to release v1.10
    - **New Features, Enhancements and Changes**
      - Added the Device Name field to the SAS Identify Address Frame (an optional field added in SAS 2.0).
      - Resolved an issue during initial device discovery that could result in a driver crash if the device rejects a discovery command.
      - Resolved issues with discovery processing when a discovery command timed out
      - SATA devices behind expanders are no longer reset during discovery
      - Improved SATA NCQ processing so performance is maintained as the queue depth increases
      - Improved port down cleanup to ensure all I/O is completed before destroying devices when multiple ports are instantiated
      - Resolved an issue with SCSI-to-ATA translation of the WRITE AND VERIFY commands that would allow NCQ commands to be started between the write and verify phases
      - Now support SMP API
      - Added timeout processing for commands issued through the SMP API
      - SATA NCQ is disabled in NVRAM by default
- **Version 1.01 (Released 02/18/2009)**
    - **Note:** It is recommended that firmware dated 01/28/09 be utilized with this driver release.
    - The following applies to release v1.01
    - **New Features, Enhancements and Changes**
      - Resolved issues that may cause the driver to crash or hang if a device rejects a discovery command on initial load.
      - Resolved any unexpected target ID changes after a cable pull and reinsertion, when a SATA device is connected behind an expander.

- **Version 1.00 (Released 12/11/2008)**
  - **Note:** It is recommended that firmware dated 12/05/09 be utilized with this driver release.
  - The following applies to release v1.00
  - **New Features**
    - Initial release of ExpressSAS H608 and H680

### 3. Known Issues/Advisements

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- Please refer to the DOS release notes for any known firmware issues.
- SAT exceptions: (SCSI-to-ATA Translation for SATA support). The following SCSI commands are not translated: FORMAT UNIT, REASSIGN BLOCKS, SECURITY PROTOCOL IN, and SECURITY PROTOCOL OUT.

### 4. Affected Products

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Product Name	SKU
ExpressSAS H680 Host Adapter	ESAS-H680-000
ExpressSAS H608 Host Adapter	ESAS-H608-000
ExpressSAS H6F0 Host Adapter	ESAS-H6F0-000
ExpressSAS H60F Host Adapter	ESAS-H60F-000
ExpressSAS H644 Host Adapter	ESAS-H644-000

### 5. Contacting ATTO Support

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ATTO Technology, Inc. is renowned for its technical support services. ATTO's goal is to provide you the quickest response possible for your technical support needs, and is available Monday-Friday, 8:00 AM to 8:00 PM EST (except holidays and plant closings).

ATTO Technical Support can be contacted via phone or email:

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- E-Mail: [techsupport@attotech.com](mailto:techsupport@attotech.com)