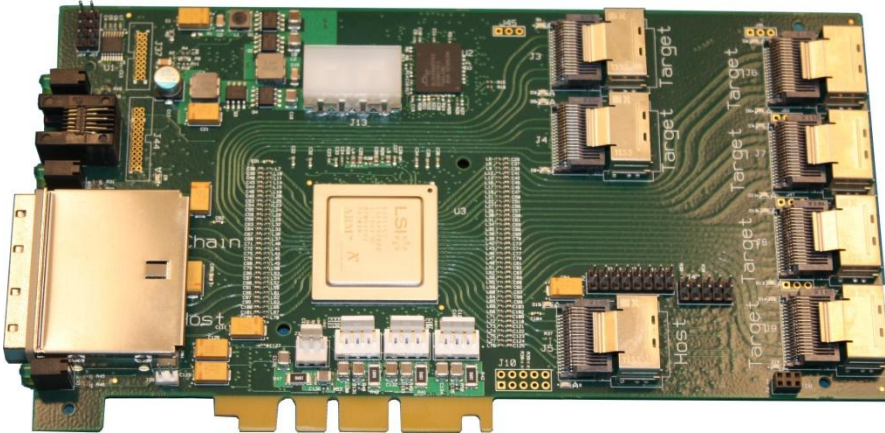


## High-performance SAS expander that fits your enclosure

The A33606-PCI-60-6A is a 36-port 6Gb/s SAS/SATA expander in a PCIe form factor. The A33606-PCI-60-6A comes pre-configured with a sanitization algorithm that will sanitize up to 16 Self-Encrypting Drives (SED) that support the Cryptographic Erase Functions “Key Erase” (SBC-3, Sections 5.24/2/4) and “Block Erase” (SBC-3, Section 5.24.2.3).

This complete subsystem incorporates everything system vendors need to add next-generation storage support for JBOD and RBOD systems that need to support SAS and SATA target disks. The A33606-PCI-60-6A supplies 36 lanes of 6Gb/s SAS connectivity. Each lane can connect to a disk, a host bus adapter (HBA) or cascade to another expander device. To maximize performance, lanes can be aggregated into a 'wide' port connecting an HBA to the A33606-PCI-60-6A or an A33606-PCI-60-6A to another A33606-PCI-60-6A.

The A33606-PCI-60-6A includes a number of enclosure management features that allow system vendors to monitor temperatures, control fan speeds, and monitor sensors mounted elsewhere in a chassis.



## Support for SATA devices

The A33606-PCI-60-6A supports direct connection of low-cost Serial ATA (SATA) target disks. The expander chipset transparently bridges SATA to SAS and allows system designers to use either high-reliability enterprise class SAS disks, or select lower cost SATA devices to maximize storage density.

## A33606-PCI-60-6A Ordering Information

A33606-PCI-60-6A -01	x36 lanes of 6Gb/s SAS, w/ no mounting bracket
A33606-PCI-60-6A -01P	x36 lanes of 6Gb/s SAS, w/ PCIe bracket

A33606-PCI-60-A-01D	x36 lanes of 6Gb/s
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## KEY APPLICATIONS

- Cryptographic Erase Storage enclosures
- SAN fabric switch

## PRODUCT FEATURES

- Cryptographic Erase Functions “Key Erase”
- 6Gbps per port, 36 ports
- Supports multi-lane aggregation for wide-port configurations up to 48Gbps
- Can be cascaded to allow a single initiator to control hundreds of target disks
- Supports connection to multiple initiators allowing Storage-Area-Networking and system redundancy
- Supports SCSI Enclosure Services (SES-2).
  - On-board and external thermal monitoring
  - 3 connections for fan control and monitoring
  - GPIO Header for additional inputs and outputs
- SFF-8485 compliant SGPIO connections on each mini-SAS
- Connects to both SAS and SATA hard disk drives
- T-10 and Phy-based zoning
- PCIe slot mount or chassis mount
- 1 year limited warranty



## Product Brief A33606-PCI

### Technical Specifications

<b>Host Bus Type</b>	n/a	
<b>Compliance</b>	ANSI T10 SAS specification 2.1-r4	
<b>Drives</b>	Self-Encrypting Drive (SED)	
<b>Modes</b>	Standalone fabric switch, Storage Enclosures	
<b>Supply Voltage</b>	12V* +/- 10%	
<b>Supply Power</b>	18 Watts	
<b>SAS Bus</b>	Thirty-six 6Gb/s SAS/SATA ports	
<b>SAS Bandwidths</b>	<div>1.5Gb/s (SAS/SATA-I) Single lane - 150 MB/s Wide Port (4 lanes) - 600 MB/s Wide Port (8 lanes) - 1200 MB/s</div> <div>3.0Gb/s (SAS/SATA-II) Single lane - 300 MB/s Wide Port (4 lanes) - 1200 MB/s Wide Port (8 lanes) - 2400 MB/s</div> <div>6.0Gb/s (SAS-2/SATA-III) Single lane - 600 MB/s Wide Port (4 lanes) - 2400 MB/s Wide Port (8 lanes) - 4800 MB/s</div>	
<b>Connectors</b>  <b>A33603-PCI-01</b>	<b>External</b>	<b>Internal</b>
	8 lanes routed through two SFF-8088 mini-SAS connectors.	28 lanes routed through two SFF-8087 mini-SAS connectors.
<b>Form Factor</b>	PCIe full-height card (supports placing in PCI-X or PCI slots too)	
<b>Protocols</b>	SAS-2, SES-2, SAS, SATAI, SATA II	
<b>Device Support</b>	Effectively unlimited (limited by HBA controller)	
<b>Cryptographic Erase Functions</b>	Key Erase" (SBC-3, Sections 5.24/2/4 Block Erase" (SBC-3, Section 5.24.2.3	
<b>Agency Approval</b>	RoHS Compliant (lead-free), FCC Class A, Safety EN60950-1	
<b>Environments</b>	<b>Operating</b>	<b>Storage</b>
<b>Temperature</b>	0° to 55° C	-40° to +85° C
<b>Relative Humidity</b>	5 to 90% non-condensing	5 to 90% non-condensing

\* 5V and 18V configurations are available with certain limitations. Contact Astek for specific details.

### WARRANTY

Astek products are assembled and tested in world-class facilities to assure superior product reliability and performance. Astek's expander board products carry a one-year limited warranty.

### About Astek Corporation

Astek manufactures storage products for embedded markets including medical, telecommunications and military applications. In addition to Host Bus Adapters, Astek also supplies Serial Attached SCSI solutions including edge and fan-out expanders.

For more information please visit the Astek web site at:

[www.astekcorp.com](http://www.astekcorp.com)

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