

ATTO Accelerates Business with SSD

HIGH SPEED. HIGH BANDWIDTH. LOW POWER COSTS.

SOLUTION COMPONENTS

ATTO: ExpressSAS® 12Gb host bus adapters

- ESAH-12F0-000 — 16 port internal
- ESAH-120F-000 — 16 port external
- ESAH-1280-000 — 8 port internal
- ESAH-1208-000 — 8 port external
- ESAH-1244-000 — 4 port ext, 4 port int
- ESAH-1248-000 — 4 port ext, 8 port int
- ESAH-1288-000 — 8 port ext, 8 port int

Toshiba: PX02SM Series Solid State Drives**

- PX02SMF020 — 200 GB Capacity
- PX02SMF040 — 400 GB Capacity
- PX02SMF080 — 800 GB Capacity
- PX02SMB160 — 1600 GB Capacity

ABOUT ATTO TECHNOLOGY

ATTO Technology is a global leader of storage connectivity and infrastructure solutions for data-intensive computing environments. ATTO provides solutions that help customers store, manage and deliver data more efficiently. Visit www.attotech.com/solutions for more information.

ABOUT TOSHIBA

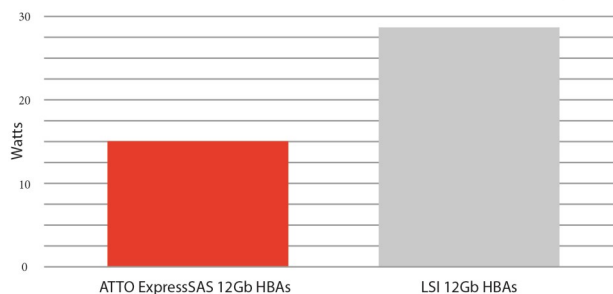
Toshiba is a leading storage provider offering a comprehensive range of storage technologies from hard disk drives (HDDs) and solid state drives (SSDs) to NAND flash memories. Toshiba is the only storage supplier that owns design, development, and manufacturing functions spanning the enterprise and mobile environments for HDD and SSD products. Visit www.toshibastorage.com for more information.

Big data analytics and applications running in mixed environments require fast, low-latency access to direct attached storage. To address this need, ATTO Technology, Inc., is providing a pre-qualified* solution that delivers high performance, along with effective resource utilization for improved ROI. The solution leverages reliable SAS storage connectivity combined with two next-generation storage technologies: high-speed PCI Express 3.0 and 12Gb/s*** solid state drives.

ATTO's 12Gb ExpressSAS® host bus adapter (HBA) taps the power of x8 PCIe 3.0 to ensure maximum throughput and minimal latency in high-performance applications, while Toshiba solid state drives (SSDs) provide high levels of I/O operations per second compared with traditional hard disk drive technology. ATTO's HBA also consumes up to 40 percent less power than competitive offerings. Over time, that factor will mean an increase in your bottom line.

THE ATTO/SSD ADVANTAGE

- **High Performance:** Pre-qualified solution that unlocks the potential of SAS storage connectivity, PCIe 3.0, and 12Gb/s SAS SSD technologies for big data analytics and other high IOPS business applications.
- **Highest Port Density:** Native 16-port IO controller enables highest port density and redundant connections without relying on performance-degrading bridging or switching.
- **Data Protection:** Built-in Power Center Pro RAID (0, 1, 1e, 10) to accelerate applications and protect data. Toshiba SSDs protect data integrity by committing to NAND flash cached user data in volatile memory in the event SSD power drops below a certain threshold.
- **Power Saving:** The high transfer speeds, large capacity and inherent power-saving capabilities of SSD technology complimented by ATTO 12Gb SAS HBAs, which draw up to 40 percent less power than competition. Combined solution delivers a significant reduction in data center electric and cooling costs.



Comparing ATTO's 12Gb ExpressSAS HBA to LSI's 16-port HBA, the ATTO draws 15 watts versus the LSI's 28.6 watts—48% less.

*Disclaimer: The ATTO Interoperability Matrix is a general guideline that is not specific to firmware, version, revision, specification level or test configuration of ATTO or third-party products. ATTO Technology tests products on an ongoing basis and new equipment is constantly being added. The Interoperability Matrix may not reflect the most current information.

** One Gigabyte (1GB) means 10⁹ = 1,000,000,000 bytes using powers of 10. A computer operating system (OS), however, reports storage capacity using powers of 2 for the definition of 1 GB = 2³⁰ = 1,073,741,824 bytes. Available storage capacity will be less if the computer includes one or more pre-installed OS, pre-installed software applications, or media content. Actual formatted capacity may vary.

***Read and write speed may vary depending on the host device, read and write conditions, and the file size. Write: Drive at steady state (preconditioned with 4KB random writes), Queue depth=32, 4KB-aligned LBA.

Toshiba does not attempt to validate the quality of, and does not warrant, any 3rd party products, including the subsystem components mentioned above. The use of such products is entirely at the user's own discretion and risk, and Toshiba is in no way responsible for such use.