



# SiI 4726 SATA to 5-Port SATA Device SteelVine™ Storage Processor



## Applications

- Video Editing
- Digital Video Recording Systems
- Nearline DAS Storage
- External Storage Enclosures
- Protected SOHO/SMB Storage

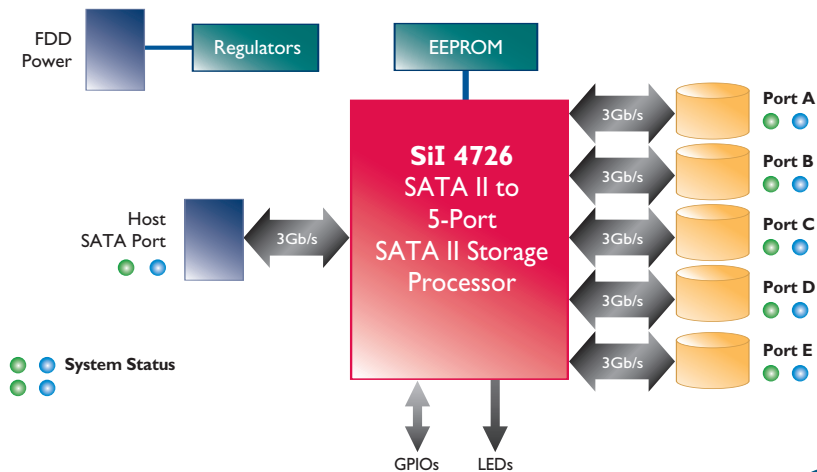


Based on the proven SteelVine Storage Processor Architecture, the SiI 4726™ provides a new level of affordable storage for professional users. The SiI 4726 provides 3Gb/s SATA performance over the single host SATA link as well as the five device SATA links, and can be configured for internal or external (eSATA) applications. Until now, transfer rates of 3Gb/s and hardware RAID features, were only available to enterprise class applications. SiI 4726 allows OEMs and system integrators to offer high-end features for price-sensitive professional market applications.

Users of the SiI 4726 can eliminate CPU loading by using the embedded RISC storage processor, which was developed by Silicon Image, and tuned for the needs of storage applications. This storage processor completely frees up the main CPU and provides the enhanced RAID modes<sup>3</sup>. The device can be configured using the GUI, to provide reliable data mirroring, data performance striping, or just plain capacity expansion.

The SiI 4726 modes are; 1) SAFE or Data Mirroring (RAID 1) — allows device to automatically copy primary hard drive without any CPU loading<sup>3</sup>. The SiI 4726 provides automatic rebuild on device replacement and auto-failover, to eliminate any workflow interruptions. 2) FAST or Data Striping (RAID 0) — allows the device to performance stripe the drives, to provide maximum throughput to the direct attached PC/Server. 3) BIG or Drive Spanning — allows the device to make any two drives (same or different sizes) appear as one large drive to the host, for extra capacity (also called concatenation). 4) JBOD or Port Multiplier — this allows the direct attached PC/Server to see each drive as just a bunch of drives. 5) FAST&SAFE or Data Striping and Mirroring (RAID 10) — allows the device to improve data availability beyond RAID 5 or RAID 6 with large SATA drives, due to rebuild vulnerability. 6) BIG&SAFE Drive Spanning and Mirroring — allows for large capacity with protection.

The SiI 4726 works with any Serial ATA compliant host port, although some features such as JBOD access require a port multiplier aware host controller such as SiI 3124-2™ or SiI 3132™. For more details, please contact your local Silicon Image sales representative.





## SiI 4726 Features

### SATA to 5-Port 3Gb/s SATA SteelVine Storage Processor

#### Host Port

- Supports one SATA host port, 3Gb/s
- Hot Plug support
- Supports Asynchronous Notification
- SATA Port Multiplier spec. compliant
- Supports PM aware hosts and non-PM aware
- Two detailed system status LEDs
- eSATA signal level support (1m and 2m PHY compliant)

#### Device Port

- Five SATA device ports, 3Gb/s
- Hot Plug support
- SATA Port Multiplier spec. compliant
- Compatible with NCQ drives
- Two LEDs for detailed status per port
- eSATA signal level support (1m and 2m PHY compliant)

#### Data Protection Features

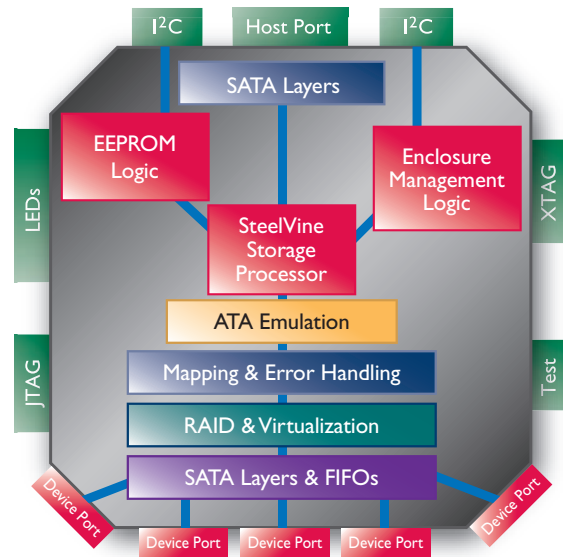
- Automatic-Mirroring (RAID 1 mode)<sup>3</sup>
- Self-healing storage (Auto-Rebuild/Hot Spare)<sup>3</sup>
- No down time (Automatic-Failover)<sup>3</sup>
- Less than 1% Host CPU loading during rebuild<sup>3</sup>
- Fast rebuild of 100GB/hour
- Easy configuration using GUI applet
- Drive Performance Aggregation (RAID 0)

#### RAID Level Modes

- FAST/RAID 0
- SAFE/RAID 1
- SAFE&FAST/RAID 10 with hot spare
- SAFE&BIG/Mirrored spanning with spare
- BIG/Spanning
- Port Multiplier/JBOD

#### System Features

- Four status LEDs for system functions
- Works without BIOS updates
- Max. performance greater than 220MB/s (RAID 0)



- Enclosure Management SEMB (I<sup>2</sup>C bus) support
- Automatic bad sector remapping
- OS Agnostic operation
- Bootable arrays and staggered spin-ups
- ATAPI device support in PM mode
- Spread Spectrum Clocking w/SSC clock
- Event logging from GUI
- Remote monitoring and management
- Email notification<sup>2</sup>
- Manage multiple devices via GUI
- Field-upgradeable firmware
- 7 Programmable GPIOs and 16 GPOs
- JTAG boundary scan and BIST support

#### Added Features with PM-Aware Host

When the SiI 4726 is used with a PM-aware host it can support the following additional features:

- JBOD/Port Multiplier mode
- Multi-Arrays per drive with drive and mirror splitting
- Supports more than 5 hard drives<sup>1</sup>

#### Power and Package

- 364 HSBGA
- 2.0 Watts @ 1.8V
- CMOS 0.18u

#### Hardware and OS Support

- SiI 4726 reference design board (PB4726LPSATA300)
- Windows XP, 2000, 2003, and Mac OS 10.3/10.4, and Linux RedHat, Fedora, SuSE 9.0 or later (see website for more updated list)

#### Documentation and Software Development Kit (CP4726001)

- SiI 4726 data sheet
- PB 4726 functional specification
- PB 4726 reference board schematics/design files
- GUI Management Applet and daemon/agent
- API programmers guide for custom GUI developers
- DOS SiI 4726 firmware download utility
- Example XML configuration scripts

#### GUI Management Tool and Advanced Mode

- Multi-Arrays per drive
- Drive and Mirror splitting
- Full management GUI interface

<sup>1</sup> Requires multiple SiI 4726 devices, and each secondary device must be in a virtual mode.

<sup>2</sup> Coming soon

<sup>3</sup> SAFE or RAID 1 modes require the daemon/agent to be running for automatic rebuild policy operation.



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