SteelVine™ Device Bridge

Serial ATA (SATA) to Parallel ATA device bridge

The SiI3811 is a single-chip Serial ATA to Parallel ATA device bridge solution that combines the transport, link, and PHY layers of Serial ATA with a Parallel ATA interface. The SiI3811 enables manufacturers to connect widely available, low-cost Parallel ATA devices like DVD/CD-ROM and hard disk drives to industry standard Serial ATA controllers such as those available in the PC's south bridge. As a member of Silicon Image's SteelVine family of Serial ATA products, the SiI3811 has undergone extensive interoperability testing and provides the industry's most robust device bridge solution.

The SiI3811 supports Serial ATA transfer rates of 1.5 Gbps (150 MB/s) with its on-board serializer / de-serializer. It features an ultra ATA/133 Parallel ATA port to interface with devices such as hard disk and DVD/CD-ROM drives. The SiI3811 accepts Serial ATA commands from the host's Serial ATA interface, decodes the commands and converts them to parallel ATA device commands. Device responses through the parallel ATA bus are deciphered, processed, converted to the Serial ATA protocol and sent to the SATA host controller.

At the physical layer, the SiI3811 leverages much of the circuit innovation of Silicon Image's proprietary reduced overhead Multi-Layer Serial Link (MSL™) architecture, pioneered and proven through the company's market-leading HDMI and SATA products. MSL technology is a multi-layer approach to providing robust, cost-effective, multi-gigabit semiconductor solutions on a single chip for high-bandwidth applications.

SiI3811

Applications

- **Disk drives**
- **Storage systems**
- **PC motherboards**
- **DVD and cable box system boards**
- **CD/DVD RW drives**

Key Features

- **Serial ATA to Parallel ATA bridge**
- **Supports ATA queued commands**
- **Serial ATA, 1.5Gbps**
- **Small 64-pin package**
- **Low power**

System Diagram - SiI3811 in a PC
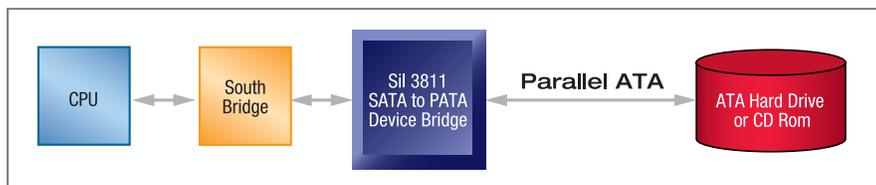
System Diagram - SiI3811 in an External Device
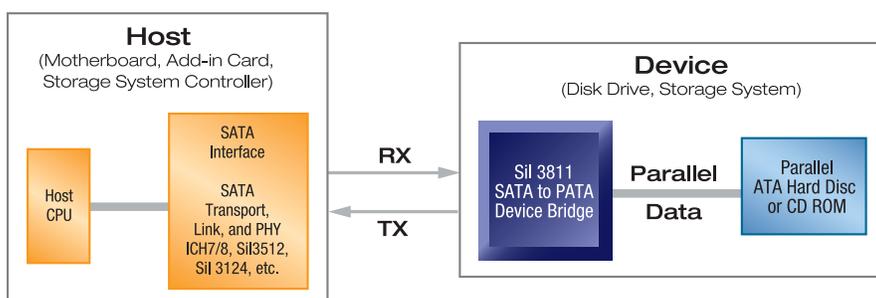
SiI3811 Starter Kit

The CP3811SATA150 Starter Kit includes hardware and documentation to quickly design and launch a SATA bridge solution.

Contents include:

Hardware
- SiI3811 evaluation board
- Serial ATA cable

Documentation
- SiI3811 data sheet
- SiI3811 evaluation board
- User's guide

General
- Serial ATA – 1.5 Gbps (150 MB/s)
- Compliant with the Serial ATA 1.0a specification
- Integrated Serial ATA transport, link logic, and PHY layers
- Ultra ATA/133 compatible parallel interface
- Supports ATA queued commands
- Supports ATAPI devices with multiple options for DMA direction
- 48-bit sector addressing
- Supports spread spectrum clocking in receiver to reduce EMI
- Single digital PLL architecture with low jitter
- Full ESD tolerance to 2kV
- Minimal power draw maximizes battery life in laptop applications
- Supports SATA power managements partial and slumber
- Small 64-pin package
- Supports SATA device hot plug
- Improves performance through efficient link layer handling of FIS traffic and minimizes delay cycles on PATA bus during data transfer

Power
- Core: 1.8V
- I/O: 3.3V operating voltage with 5V tolerance

Package
- 64-Pin, 9x9mm QFN (quad flat no-lead)

SiI3811 Block Diagram
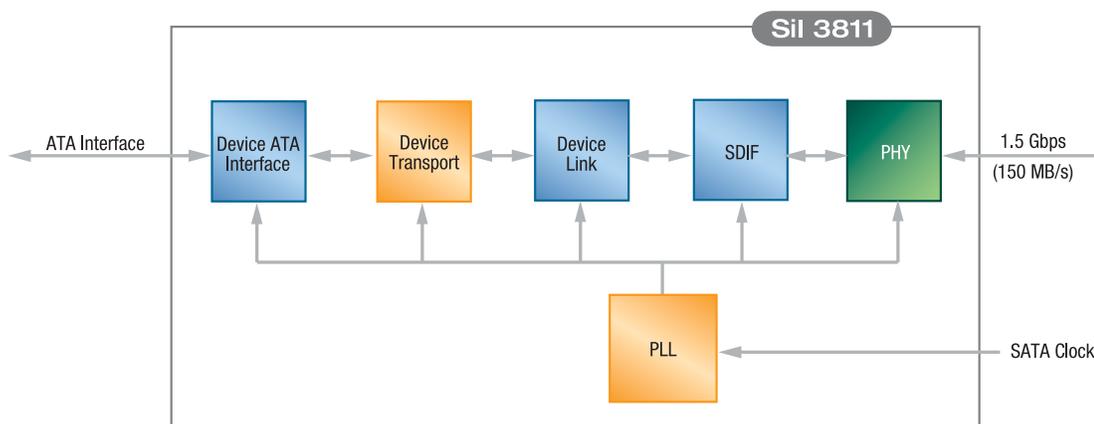
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