Based on the proven architecture of the industry-leading SiI 3112 SATALink™ PCI host controller, the SiI 3512 is a single-chip PCI to 2-port Serial ATA host controller. The chip is redesigned to fit in a smaller package (128 pin TQFP, 14x14mm) and to comply to the PCI 2.3 specification. Its compact size makes it ideal for space constrained applications. Like its predecessor, the chip is fully Serial ATA 1.0-compliant and is interoperable with all Serial ATA devices in the market. Based on a 32-bit/66 MHz PCI interface, the SiI 3512 provides support for two independent Serial ATA devices and may be incorporated into motherboard or PCI add-in card designs.
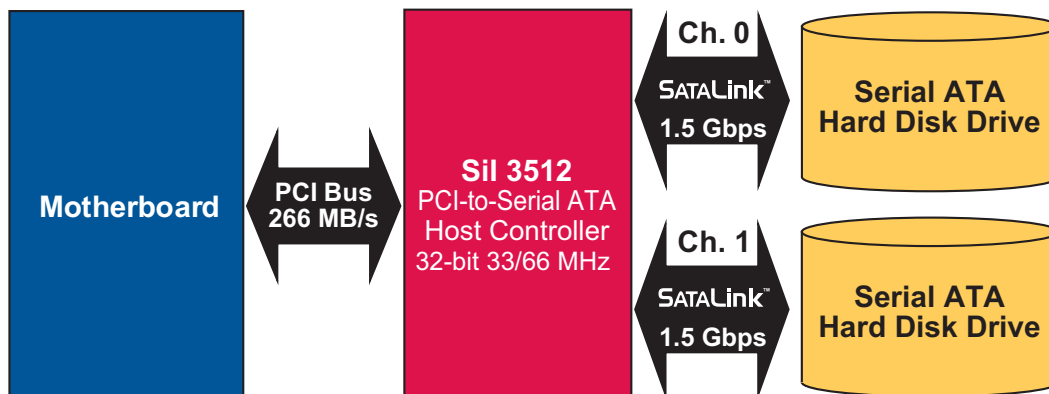
Users of the SiI 3112 can easily migrate to the SiI 3512 because its driver structure is similar to that of the SiI 3112. The SiI 3512 is the best price/performance Serial ATA device that is both flexible and robust for today's demanding storage applications. When connectivity to more than two devices is required, multiple SiI 3512 devices may be used in the same application.

With the SiI 3512, Silicon Image provides customers with drivers for the Windows, Linux and Netware operating systems for both RAID and non-RAID operations. Software RAID 0 (striping) and RAID 1 (mirroring) functions are supported through Silicon Image's SATARaid™ RAID management software utility.

The SiI 3512 is designed for optimum performance and price. It leverages much of the circuit innovation at the physical layer of Silicon Image's proprietary reduced overhead Multi-layer Serial Link (MSL™) architecture, pioneered and proven through its PanelLink® products and extended to the SATALink and Fibre Channel SerDes storage products. MSL technology is a multi-layer approach to providing cost-effective, multi-gigabit semiconductor solutions on a single chip for high-bandwidth applications.

**Target Applications**

- PC Motherboards
- PC Add-in Cards
- Server Motherboards
- Host Bus Adapters
- RAID Subsystems
- Embedded Applications

**SiI 3512**



## SiI 3512 Features

SATALink™ PCI to 2-Port Serial ATA Host Controller

### General

- Serial ATA - 1.5 Gbps (150 MB/s)
- Compliant with Serial ATA 1.0 specification
- Integrated Serial ATA Transport, Link logic and PHY layer
- Supports 48-bit sector address feature set
- Two independent bus master DMA channels with 256B FIFO per channel
- Supports Virtual DMA in PCI with serial link in legacy PIO mode
- Supports command buffering for ATA TF shadow registers
- Supports up to 4 MB external Flash or EPROM for BIOS expansion
- Supports ATAPI devices such as CD-ROM, CD-RW, DVD-ROM, DVD+R, etc.
- Hot-Plug capable
- Selectable drive strength for backplane applications
- LED support for each channel
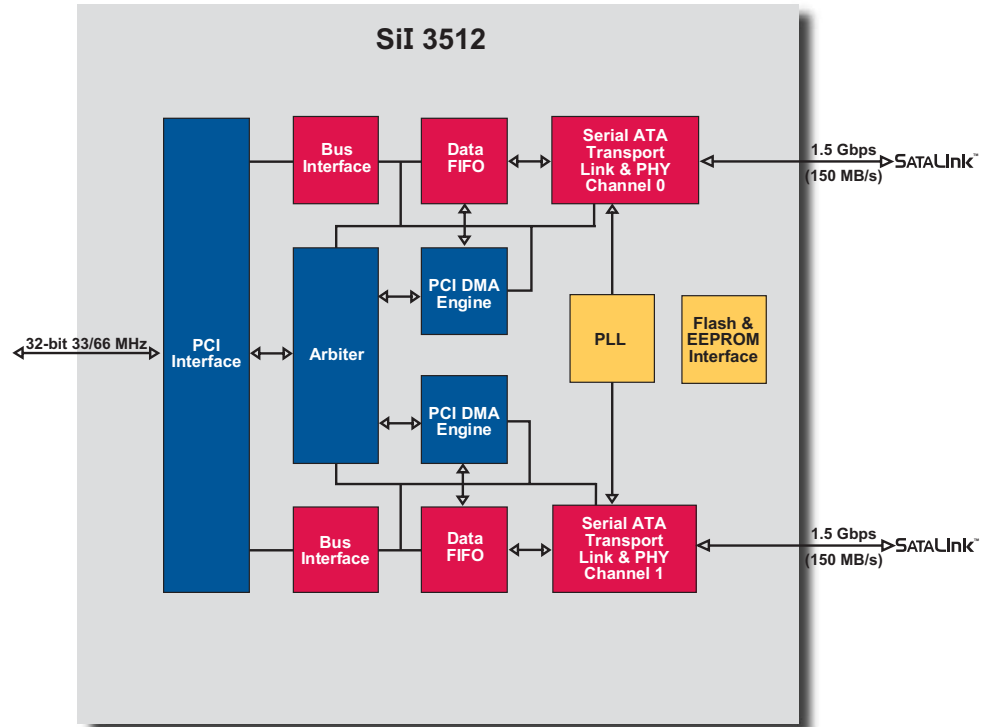- Supports spread spectrum clocking to reduce EMI

### Transfer Rates

- Supports PIO and DMA modes
- Supports Serial ATA Gen. 1 transfer rates of 1.5 Gbps

### PCI Features

- 32-bit, 33/66 MHz PCI
- PCI 2.3 compliant

### Power

- Core: 1.8V, I/O: 3.3V operating voltage with 5V tolerance
- ACPI: PCI Bus Power Management Spec 1.1 compliant

### Package

- 128-pin, 14x14 mm TQFP (Thin Quad Flat Pack)

## Silicon Image's SiI 3512 Starter Kit

The CP3512SATA150 Starter Kit includes hardware, software and documentation to quickly bring Serial ATA interface compliance to PC systems, server systems, motherboards, add-in cards and embedded solutions.

## Contents Include:

### Hardware

- SiI 3512 reference design board

### Software

- Base Operating System Drivers: Windows 98, ME, NT4, 2000 and XP
- SiI Configuration Utility
- Flash Utility
- Base BIOS

### Documentation

- SiI 3512 Reference Board User's Guide
- SiI 3512 Data Sheet
- Serial ATA PCB Design Guide
- SiI 3512 Reference Board Schematics

**Part Number - SiI3512CT128**