



SiI 3114 | SATALink 4-Port PCI Host Controller

Based on the proven architecture of the Sil 3112™ SATALink™ PCI host controller, the Sil 3114™ is a single-chip PCI to 4-port Serial ATA (SATA) host controller. The chip is ideal for applications such as servers, workstations, and storage systems featuring peripherals with this new storage interface standard. Based on a 32-bit/66 MHz PCI interface, the Sil 3114 provides support for four independent Serial ATA devices and may be incorporated into motherboard or PCI add-in card designs.

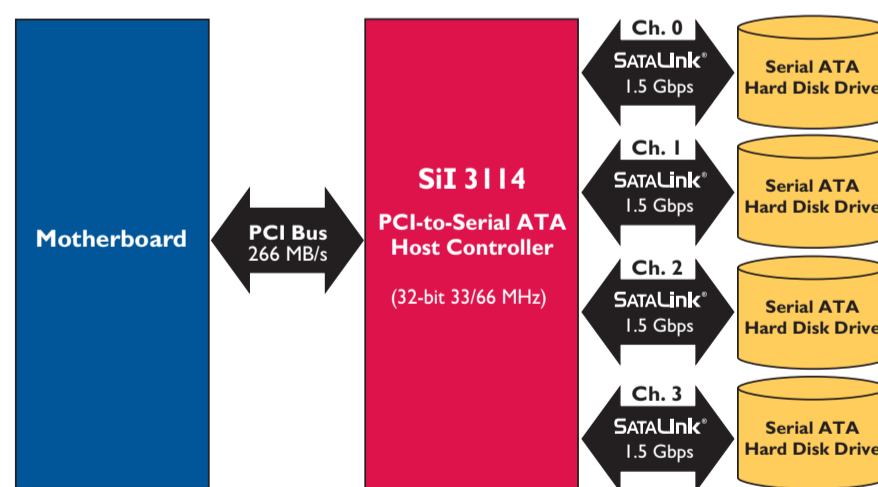
With support for up-to four devices on a single chip, the Sil 3114 is the best price/performance solution for applications that require up to four SATA devices connected simultaneously. In addition, multiple Sil 3114 controllers may be used in the same application when connections to more than four devices are required.

With the Sil 3114, Silicon Image provides customers with drivers for the Windows, Linux and Novell Netware operating systems for both RAID and non-RAID operations. Software RAID 0 (striping), RAID 1 (mirroring), and RAID 1+0 (mirrored stripe) functions are supported through Silicon Image's SATARaid™ RAID management software utility.

The Sil 3114 is designed for optimum performance and price. It leverages much of the circuit innovation at the physical layer of Silicon Image's industry leading serial link architecture, pioneered and proven through its Panellink® products and extended to the SATALink and Fibre Channel SerDes storage products. This 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





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SiI 3114 Features

SATALink™ PCI to 4-Port Serial ATA Host Controller

General

- Serial ATA (SATA) – 1.5 Gbps (150MB/s)
- Compliant with SATA 1.0 specification
- Integrated SATA Transport, Link logic, and PHY layer
- 48-bit sector addressing
- Four independent DMA channels with 256B FIFO per channel
- Virtual DMA in PCI with serial link in legacy PIO mode
- Supports command buffering for ATA TF shadow registers
- Supports up to 4MB external FLASH
- Supports ATAPI devices: CD-ROM, DVD-ROM, etc.
- Hot-Plug capable
- Supports SATA active signal for 4 separate LEDs
- Selectable drive strength on Tx for backplane applications
- Supports spread spectrum clocking to reduce EMI
- Single, digital PLL architecture with 1 PLL for all 4 channels

Transfer Rates

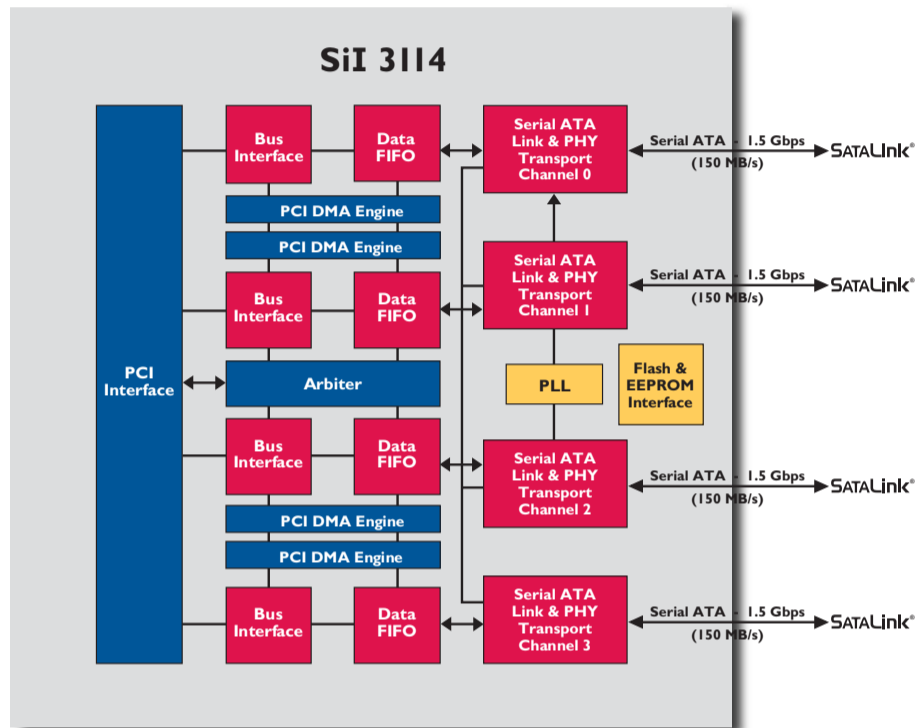
- Supports PIO and DMA modes
- Supports SATA Gen. I transfer rates of 1.5 Gbps

PCI Features

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

Part Number - SiI3114CT176

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Power

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

Package

- 176-pin TQFP (Thin Quad Flat Pack)
- 20x20 mm (0.4 mm pin pitch)

Silicon Image's SiI 3114 Starter Kit

The CP3114SATA150 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 3114 reference design board
- Serial ATA cables

Software

- Base OS Drivers: Windows 98, ME, NT4, 2000, XP, Linux and Netware
- SiI Configuration Utility
- Flash Utility
- Base BIOS

Documentation

- SiI 3114 Reference Board User's Guide
- SiI 3114 Data Sheet
- Serial ATA PCB design guide
- SiI 3114 reference board schematics

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