



SteelVine™ Host Controller

Ultra ATA/133 PCI-to-ATA Host Controller

Silicon Image's SiI0680 is a standalone Ultra ATA/133 host controller designed to accommodate the transfer of large amounts of content-rich data common in today's multimedia applications. The SiI0680 provides OEMs with a fast, new interface incorporating the latest advancements in hard disk technology. Based on the Ultra ATA/133 interface specification, the SiI0680 supports a 133 MB/s burst transfer rate and features 48-bit sector addressing, thereby enabling the utilization of drives with capacities greater than 137 GB.

The SiI0680 is a single-chip solution for designs based on chipsets without an integrated ATA host controller, or those requiring a greater number of ATA channels to accommodate the growing number of storage peripherals with an ATA interface. By simply adding a card with the SiI0680 and loading the accompanying driver, any system with a PCI bus interface may upgrade to the Ultra ATA/133 interface.

The SiI0680 enables PC manufacturers to support as many as four drives and incorporate the newest drive standards—all at a lower cost. With the

SiI0680, other manufacturers, such as motherboard, add-in card and embedded application companies, can incorporate a cost-effective, hard disk drive solution without sacrificing performance or flexibility.

For enhanced performance, the SiI0680 can be packaged with Silicon Image's robust Medley™ ATA software RAID, which optimizes throughput and data redundancy. Supporting RAID sets of up to four hard disk drives, Medley enables RAID 0 Striping, RAID 1 Mirroring and RAID 0+1 Mirrored Striping.

SiI0680

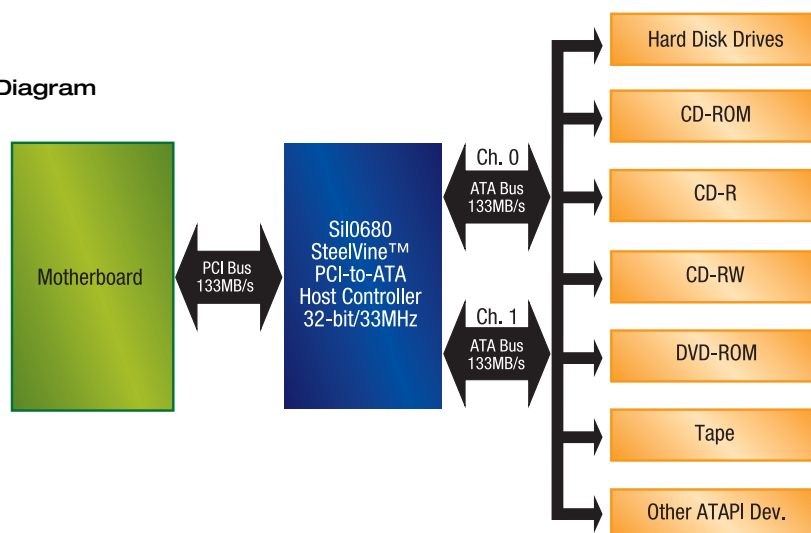
Applications

- PC motherboards
- PC add-in card
- Embedded storage applications

Key Features

- Supports ATA/133
- Provides 48-bit addressing
- Supports external flash
- Includes Windows OS drivers

SiI0680 System Diagram



Sil0680 Features

Sil0680 Starter Kit

The starter kit includes hardware, software and documentation to quickly bring ATA/133 and 48-bit sector-addressing compliance to computer systems, motherboards, add-in cards and embedded solutions. Contents Include:

Hardware

- Reference design board
- Two ATA cables

Software

- Operating system drivers for DOS, Windows 95/98, ME, NT4, 2000 and XP
- Configuration utility
- Flash utility
 - Base BIOS
 - Medley RAID BIOS
- RAID operating system drivers for Windows 98, ME, NT4, 2000, and XP

Documentation

- Sil0680 install guide
- Medley ATA software RAID users guide
- Sil0680 data sheet

General

- ATA/133
- 48-bit sector addressing
- Dual independent DMA channels with 256B FIFO per channel
- Virtual DMA
- Read ahead
- Command buffering
- Supports temperature from 0°C to 70°C
- Supports external Flash
- Supports external BIOS
- 80-pin cable detect

Transfer Rates

- PIO-0, 1, 2, 3, 4
- MDMA Mode 0, 1, 2
- Ultra 33, 66, 100 and 133
- Supports bus master DMA at 133 MB/sec burst rate

PCI Bus

- 32-bit, 33 MHz
- PCI 2.2 compliant

Power

- 3.3V Operating Voltage with 5V tolerant I/O
- ACPI: PCI Bus Power Management Spec 1.1 compliant

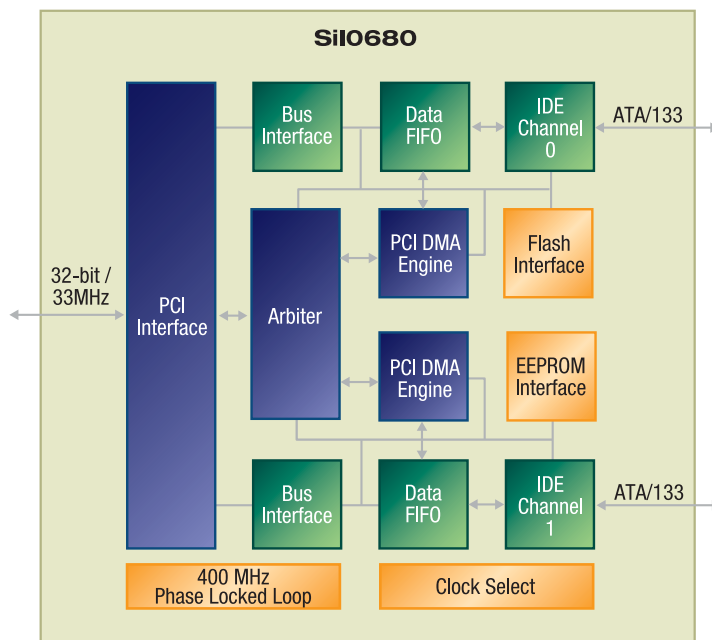
Package

- 144-pin, 20x20 mm LQFP (Low profile Quad Flat Pack)

RAID (with Silicon Image's Medley™ ATA software RAID)

- RAID 0 (Striping)
- RAID 1 (Mirroring)
- RAID 0+1 (Mirrored-Striping)

Sil0680 Circuit Diagram



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