

# LSI53C810AE PCI-SCSI CONTROLLER

The Communications Company™

## SINGLE-CHIP PCI-SCSI CONTROLLER



## OVERVIEW

The LSI53C810AE controller is a single-chip high-performance Fast SCSI I/O processor. It is designed to connect gluelessly to the Peripheral Component Interconnect (PCI) bus. A drop-in replacement for the industry standard LSI53C810, the LSI53C810AE transfers 8-bit SCSI data at speeds as high as 7 MBps asynchronous and 10 MBps synchronous, while adding features to further improve performance and enhance flexibility. The device performs burst transfers on the PCI bus in excess of 110 MBps. The LSI53C810AE provides full SCSI-2 capabilities, including command queuing, and features LSI Logic's TolerANT® SCSI driver and receiver technology, for reliable operation in all cabling environments.

The LSI53C810AE controller along with the SDMS™ software, provides a total SCSI solution in PC and workstation environments. LSI Logic's SDMS software package supports the entire LSI53C8XX family of PCI to SCSI controllers, plus a wide range of SCSI peripheral devices.

PCI performance enhancements on the LSI53C810AE include the SCRIPTS (the LSI Logic developed SCSI programming language) instruction prefetch, which when enabled, permits fetching four or eight double words of instructions or instruction operands. By pre-fetching instructions, the LSI53C810AE makes more efficient use of the PCI system bus by reducing the PCI bus overhead requirements. In addition, the part supports the PCI Cache Line Size Register with programmable alignment logic and automatic burst sizing, allowing system architects to maximize their cache-based system performance through efficient use of PCI Memory Read Line, Memory Read Multiple, and Memory Write and Invalidate access cycles. Other selectable features that can be activated include:

- IRQ disable, allowing users to better control the times when their system

## BENEFITS

- Builds upon proven technology — a drop-in replacement for the industry standard LSI53C810
- Integrates a high-performance SCSI core and a PCI bus master DMA core with a SCSI SCRIPTS™ processor for maximum capability
- Provides new features for enhanced PCI performance and flexibility

## FEATURES

- SCRIPTS Instruction Prefetch
- Load and store instruction
- Support for PCI Cache Line Size Register
- Performs high-speed single-ended SCSI bus transfers up to:
  - 10 MBps synchronous
  - 7 MBps asynchronous
- Functions as full 32-bit PCI DMA bus master
- Bursts 2, 4, 8, or 16 dwords of data across PCI bus using 80-byte DMA FIFO

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can receive interrupts.

- SCSI Selected as ID register, improving SCRIPTS coding and system tracking.
- Load and Store instruction allows the programmer a new, efficient instruction option to load data directly to/from memory and from/to an internal register, reducing the number of I/O instructions to implement a SCRIPTS task.

## **EASE-OF-USE FEATURES**

- Drop-in replacement for LSI53C810 device
- Compact 100-pin PQFP reduces board space requirements
- Direct PCI to SCSI connection
- Compiler-compatible with existing LSI53C7XX and LSI53C8XX SCRIPTS
- Fully supported by SDMS software for complete PC-based operating system support

## **FLEXIBILITY FEATURES**

- Selectable IRQ disable
- SCSI Selected as ID register
- Support for both 3.3 volt and 5 volt PCI interfaces
- High-level programming interface (SCSI SCRIPTS)
- Allows tailored SCSI sequences to be executed from main memory
- Accommodates changes in the logical I/O interface definition
- Low-level access to all registers and all SCSI bus signals

## **COMPATIBILITY FEATURES**

- Full complement of LSI Logic's SCSI SCRIPTS development tools available
- BIOS and driver support for hard disk, tape, CD-ROM, and removable media peripherals for all of the major operating systems, including:
  - Windows® NT® 4.0
  - Windows® 95/98
  - DOS
  - Linux®
  - NetWare®
  - SCO UnixWare™
  - OS/2 Warp
  - Solaris®

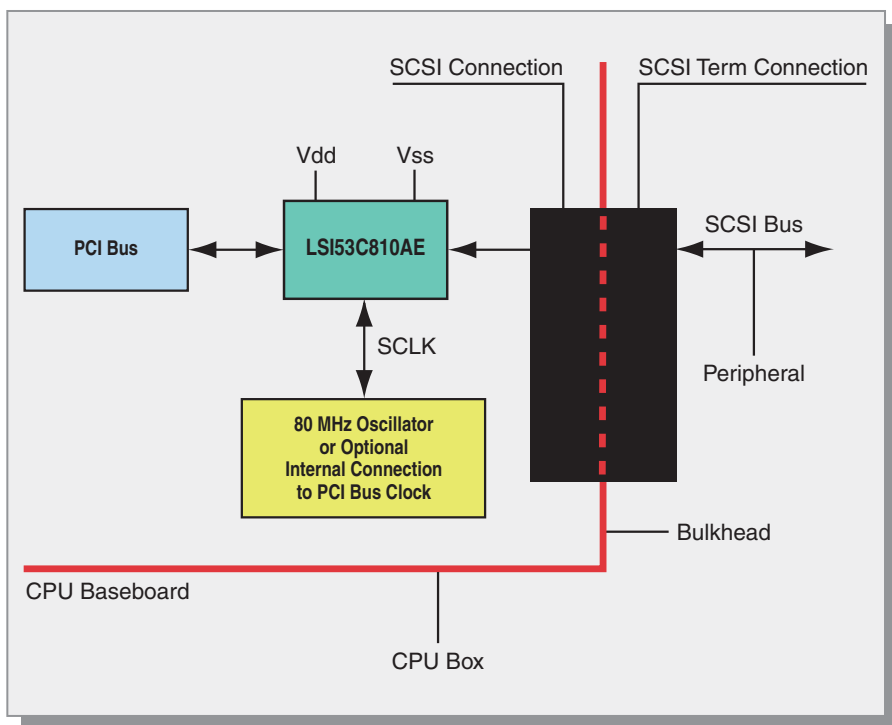


Figure 1: LSI53C810AE system diagram

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For more information please visit  
the LSI Logic web site at:

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