

LSI53C825AE PCI-SCSI CONTROLLER

The Communications Company™

SINGLE-CHIP PCI-SCSI CONTROLLER



OVERVIEW

The LSI53C825AE controller is a cost effective I/O solution for host adapter, workstation and server designs. A drop-in replacement for the LSI53C825, the LSI53C825AE features performance upgrades and performs fast and wide SCSI synchronous data transfers at up to 20 MBps in single-ended or differential modes. The device improves SCSI system performance by reducing the PCI bandwidth required to perform I/O operations. It is designed to connect gluelessly to the Peripheral Component Interconnect (PCI) bus, and supports PCI extended access cycles, enabling the system architect to take advantage of PCI's performance potential. The LSI53C825AE provides full SCSI-2 capabilities, and features LSI Logic's TolerANT® SCSI driver and receiver technology for reliable operation in all cabling environments.

The LSI53C825AE and the Storage Device Management System (SDMS™) software comprise a complete PCI to SCSI solution. LSI Logic's SCSI SCRIPTS™ software tools are also available for programming the customized SCSI software applications.

Performance-enhancing features on the LSI53C825AE include a 4 KB internal static RAM for SCRIPTS instruction storage which allows tailored SCSI sequences to be executed locally—saving the PCI bus bandwidth for other system tasks. A 536-byte DMA FIFO increases system performance by allowing burst lengths of up to 128 transfers. Other PCI performance-enhancing features include:

- SCRIPTS instruction prefetch, permitting fetching of four or eight double words of instructions or instruction operands
- Support for PCI extended access cycles: Memory Read Multiple, Memory Read Line, and Memory Write and Invalidate

BENEFITS

- Builds upon proven SCSI technology — a drop-in replacement for the wide SCSI industry standard LSI53C825
- Reduces PCI bandwidth requirements for execution of I/O operations
- Provides new features for enhanced PCI performance and flexibility

FEATURES

- Performs wide high-speed SCSI bus transfers in single-ended and differential mode up to:
 - 20 MBps synchronous
 - 7 MBps asynchronous
- SCRIPTS Instruction Prefetch
- 536-bytes buffer allows burst length of up to 128 transfers
- Load and Store instruction
- 4 KB static RAM for SCRIPTS instruction storage
- 32 additional scratchpad registers for user-defined functions

LSI LOGIC®

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EASE-OF-USE

- Pin-to-pin replacement for the LSI53C825
- Compact 160-pin PQFP reduces board space requirements
- Direct PCI to SCSI connection
- Fully supported by SDMS software for complete PC-based operating system support

FLEXIBILITY

- Supports single-ended and differential modes
- 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

- Compiler-compatible with existing LSI53C7XX and LSI53C8XX SCRIPTS
- Full complement of LSI Logic 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®

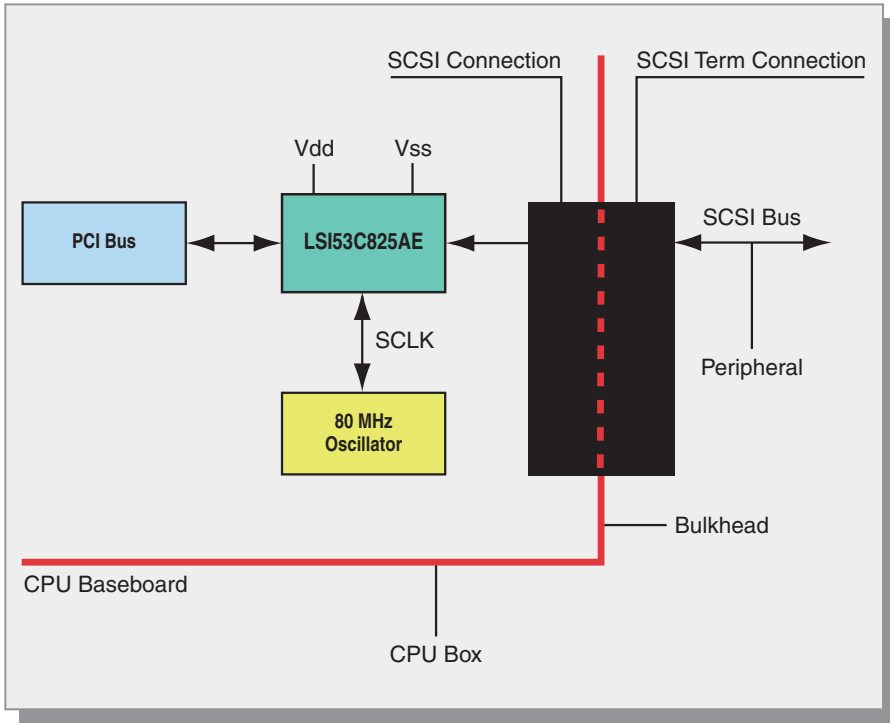


Figure 1: LSI53C825AE system diagram

LSI53C825AE PCI-SCSI Controller

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

<http://storageio.lsilogic.com>

LSI Logic Corporation

North American Headquarters
Milpitas, CA
Tel: 800 574 4286

LSI Logic Europe Ltd.

European Headquarters
United Kingdom
Tel: 44 1344 426544
Fax: 44 1344 481039

LSI Logic KK Headquarters

Tokyo, Japan
Tel: 81 3 5463 7165
Fax 81 3 5463 7820

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