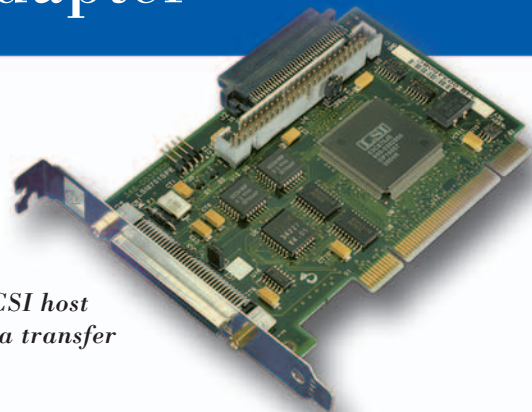


LSI8751SPE SCSI Host Adapter



The LSI8751SPE PCI-to-Ultra SCSI host adapter combines Ultra SCSI data transfer rates with reliable data integrity.

OVERVIEW

The LSI8751SPE host adapter combines high performance and Ultra SCSI data transfer rates with the speed of a PCI system bus. As part of the LSI Logic host adapter family built around the LSI53C875E PCI-SCSI controller, the LSI8751SPE supports 8-bit (narrow) and 16-bit (wide) legacy SCSI and SCSI-2 (Fast) devices. It also supports Ultra SCSI devices. The LSI8751SPE is the next generation of the LSI8751SP PCI-Ultra SCSI host adapter. It provides all the functionality of its predecessor and adds Microsoft PC97 compliance.

To connect up to 15 SCSI devices in standard systems, simply plug in the host adapter and load the drivers. Setting up hard drives, scanners,

CD-ROMs, CD-recorders, CD jukeboxes, tape backups, and removable media peripherals (MO, SyQuest™ or Iomega Zip™ drives) is fast and easy with the LSI8751SPE's built-in SCAM (SCSI configured automatically) and SCSI bus configuration utilities. The board's PCI bus interface provides Plug-and-Play installation with no jumpers, switches, IRQs, system DMA or addresses to set. For the greatest flexibility, the LSI8751SPE can be configured for clustered systems applications or external 8-bit peripherals, all the while maintaining industry standards with Microsoft PC97 compliance.

The LSI8751SPE provides scalability and flexibility and does not limit the entire SCSI bus performance to the slowest device on the bus. Whether connecting SCSI, Fast or Ultra SCSI devices, the LSI8751SPE matches its transfer rates to the highest rate of each device on the bus. The host adapter is flexible and grows as the system is upgraded and expanded.

For critical data handling applications, LSI Logic host adapters offer data and product reliability, software and hardware compatibility and easy installation. Extensive host adapter and software testing by LSI Logic and its technology partners ensures OEM compatibility with all major operating systems and SCSI, Fast SCSI-2, and Ultra SCSI devices.

KEY APPLICATIONS

- High performance desktop PCs and workstations
- Intersystem connections: server and workstation to RAID, network management
- Adding Ultra SCSI hard drives to servers, clustered servers, workstations and RAID

Bus Interface:

3/5V PCI

PCI Mode:

Bus Master

Plug-and-Play:

Yes

SCSI Rate:

40 MBps synchronous
14 MBps asynchronous

SCSI Bus:

8-bit, 16-bit Single-Ended (SE)

FIFO Size:

536 bytes

Bootable:

Yes



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FEATURES AND BENEFITS

Performance

- Synchronous:
 - up to 40 MBps Ultra SCSI
 - up to 10 MBps Fast SCSI
- Asynchronous: up to 14 MBps
- PCI bus
- Direct (bus master) memory access for low overhead with 32-bit burst data transfers at 133 MBps PCI data transfer rates
- Zero wait state PCI transfers
- Up to 64-bit PCI burst size to maximize the PCI data transfer rate

HARDWARE FEATURES

- Factory pre-configured as direct replacement or upgrade for LSI8751SP

PCI Bus Support

- PCI 2.1 compliant
- PCI Extended Access Cycles
- 32-bit, 33-MHz PCI bus
- Functions as full 32-bit PCI DMA bus master
- Operates on 3.3V or 5V PCI buses

SCSI Bus Support

- Improved support for large block transfers at Ultra SCSI speeds
- Supports wide variety of 8-bit and 16-bit SCSI peripherals simultaneously

The powerful LSI Logic SCSI Device Management System (SDMS) software, on-board BIOS and configuration utility make SCSI I/O subsystem installation easy and virtually automatic.

SCSI DEVICE MANAGEMENT SOFTWARE (SDMS)

SDMS Software Features

- Multiple host adapter support
- Scatter/gather
- Tagged command queuing for peak performance in multi-tasking environments
- Supports SCSI SCRIPTS load and store instructions, for more efficient moving of data between memory chip register space
- Power management for DSSPM support
- Shared interrupts and shared memory to allow multiple PCI devices in a single-interrupt system
- Autoscan for ease of SCSI configuration
- Multiple LUNs per SCSI ID for RAID and media changer capability
- Supports hard drives > 8 GBytes
- ASPI interface support
- Multi-initiator in most operating systems
- Disconnect/reselect support
- Target initiated negotiation
- CD-ROM, tape backup, hard disk, scanner and removable media support
- On-board, field upgradeable BIOS
- On-board NVRAM for SCSI Plug-and-Play (SCAM) support

SDMS Software Support

Operating systems supported are: DOS (with ASPI support), Windows 3.1, Windows for Workgroups 3.11, Windows 95, Windows NT 3.51 & 4.0, Novell NetWare 3.1 & 4.x, SCO UNIX Open Server 5.0, UNIXWare, and OS/2 (including WARP). Utilities: Install and FLASH (DOS only), SCSI format, SCSI configuration, verify.

The resident, menu-driven, x86 BIOS configuration utility allows viewing and changing of the default settings for the host adapter and attached SCSI devices. The global settings affect the host adapter and all SCSI devices connected to it. The user may change the host adapter scan order if more than one LSI Logic SCSI host adapter is in the system.

HOST ADAPTER COMPATIBILITY AND QUALITY

LSI Logic is a key developer and contributor to the original committees that defined today's SCSI and PCI standards. Our continuing work with other industry leaders of core chip sets, processors, system providers, SCSI device peripherals, BIOS, and operating systems enables us to provide users with the utmost compatibility and interoperability. Product compatibility and interoperability are rigorously tested and our ISO-9001 certified fabrication facilities assures users of the highest levels of product quality and reliability.

PC97 COMPLIANCE

Microsoft's PC97 initiative addresses product identification on the PCI bus, PCI extended capabilities, and power management requirements. The LSI8751SPE adds the necessary features to meet PC97 compliancy requirements.

- Provides PCI subsystem ID (SSID) and subsystem vendor ID (SSVID). SSID identifies Lsi logic as the host adapter manufacturer and SSVID is the particular board adapter identifier
- Supports DO and D3 power management states. Reports DO (full power on) and D3 (minimum power or power off) states
- Extended capabilities register provide information on adapter capabilities reporting, including power status reporting, setting the power state, and system wake-up

LSI8751SPE KIT CONTENTS

- LSI8751SPE PCI-to-Ultra SCSI host adapter
- On-board SDMS BIOS with built-in, easy-to-use SCSI configuration utility
- SCSI Device Management System (SDMS) software with a full range of operating system support and SCSI configuration utilities
- LSI8751SPE Users Guide
- SDMS Users Guide
- 50-pin LD and 68-pin HD internal cables

SCSI Bus Support (Continued)

- Prefetches up to 8 dwords of SCRIPTS™ instructions to save PCI bus overhead
- Includes 4 KB internal RAM for SCRIPTS instruction storage to reduce or eliminate instruction fetches over the PCI bus
- On-board serial NVROM for SCSI configuration and supports SCSI SCRIPTS load and store instructions for more efficient moving of data between memory and chip register space
- Termination:
 - SCSI termination power supplied through self-resetting current limiting device
 - Auto termination determined by cabling environment provides increased ease-of-use for the OEM or end user
 - User's choice of automatic or manual control of termination
- Any drive in a disk array can be used as a boot device
- Available SCAM (SCSI Configured AutoMatically) Level I functionality for SCSI Plug-and-Play support
- Uses PC-97 compliant, proprietary LSI53C875E Ultra SCSI I/O RISC processor
- On-board, 128k FLASH ROM for field upgradable BIOS
- Features TolerANT™ active negation and input signal filtering on the SCSI signal lines for improved data integrity in unreliable cabling environments

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Technical Specifications

PCI Bus	32-bit, 3.3/5 V local bus (versions 2.0 and 2.1)	
PCI Modes	Bus master DMA	
PCI Transfer Rate	up to 133 MBps	
SCSI Asynchronous	up to 14 MBps	
SCSI Synchronous	up to 40 MBps	
PCI Voltage	+5V \pm 5% (1.5 A max), 12V \pm 5% (50mA max)	
PCI Form Factor	3.5" x 5.0"	
Bracket	ISA/EISA	
Certification Level	PCI 2.1 compliant	
SCSI Bus	16-bit wide, single-ended	
SCSI Processor	LSI53C875E	
Connectors	External	Internal
	68-pin HD, latching	68-pin HD 50-pin ribbon
Termination	Active, automatic or manual termination	
Termination Power	Self-resetting	
LED Indicators	4-pin header for off-board LEDs	
Environments	Operating	Storage
Temperature	5°C to 55°C	-55°C to +85°C
Relative Humidity	5 to 90% non-condensing	5 to 90% non-condensing
Max Dew Point Temp	32°C	
MTBP	>500,000 hours	
Compliances	CE , VCCI, FCC and CISPR class B, UL 94VO	

Software Support

OS Support	Versions
DOS	with ASPI support
Windows	95, 98, Me, 2000, NT4.0 SP4 and above
NetWare	4.2, 5.0 and 5.1
UnixWare	2.1 & 7.x
SCO Unix	Open Server 5.x
OS/2	Warp 4.x
Utilities	Install, Flash (DOS only), SCSI format, SCSI configuration, verify

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

<http://storageio.lsillogic.com>

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