

LSI8751D SCSI Host Adapter

KEY APPLICATIONS

- High-performance servers, clustered systems, workstations
- Intersystem connections - server and workstation to RAID and JBODs, and network management
- Adding Ultra SCSI hard drives to servers, workstations, RAID and JBODs
- Upgrading existing Fast SCSI hard disk systems to Ultra-level performance, while supporting legacy SCSI devices

Bus Interface:

3/5V PCI

PCI Mode:

Bus Master

Plug-and-Play:

Yes

SCSI Rate:

40 MBps synchronous
14 MBps asynchronous

SCSI Bus:

16-bit differential

FIFO Size:

536 bytes

Bootable:

Yes



The LSI8751D PCI-to-Fast/Ultra Wide Differential SCSI host adapter combines Ultra SCSI data transfer rates with reliable data integrity.

OVERVIEW

The LSI8751D host adapter combines Ultra SCSI data transfer rates with the reliable data integrity of High Voltage Differential (HVD) signaling and the high performance PCI system bus. The LSI8751D supports 16-bit SCSI-1 and -2 (Fast) devices as well as Ultra SCSI devices. As part of the LSI Logic brand of host adapters built around the LSI53C875 PCI-SCSI controller, the LSI8751D shares a common BIOS and operating system driver set.

Up to 15 other SCSI devices may be connected internally and/or externally. The PCI bus provides Plug-and-Play with no jumpers, switches, IRQs, system DMA or addresses to budget, making installation a matter of plugging in the host adapter, setting the termination and loading the drivers.

The LSI8751D does not shrink the entire SCSI bus performance to the slowest device on the bus. Whether you are connecting SCSI, Fast or Ultra SCSI devices, the LSI8751D matches its transfer rates to the highest rate of each device on the bus.

For critical data handling applications, LSI Logic offers data and product reliability, software and hardware compatibility, easy installation, and extensive host adapter and software testing. Rigorous quality management systems ensure OEM compatibility with all major operating systems and a wide variety of SCSI-1, Fast SCSI-2, and Ultra SCSI devices.

LSI8751D ORDERING INFORMATION

Part Number	Description
LSI00025	Individually packaged box with LSI8751D and CD with drivers, management utilities and user's guide



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FEATURES AND BENEFITS

Performance

- Synchronous:
 - up to 40 MBps Ultra SCSI
 - up to 20 MBps Fast SCSI
- Asynchronous: up to 14 MBps
- 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

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

Powerful 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

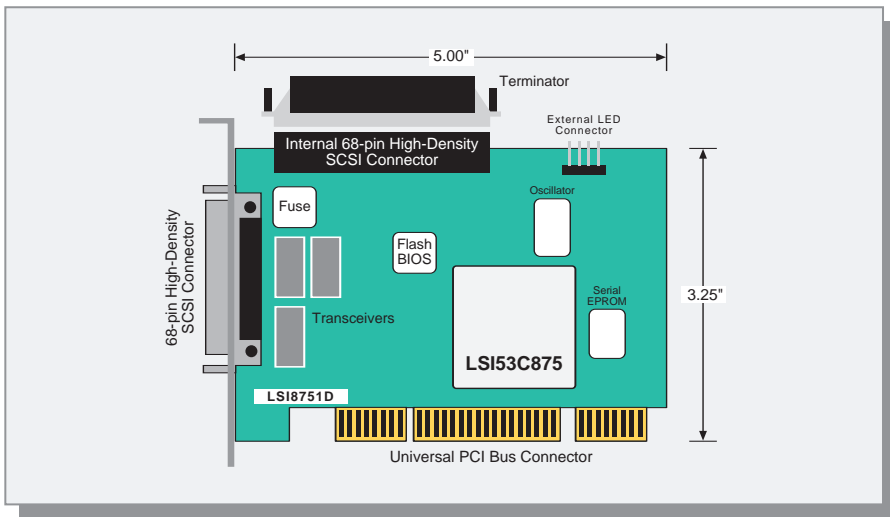
- Multiple host adapter support
- Scatter/gather
- Tagged command queuing for peak performance in multi-tasking environments
- Power management for DSSPM support
- Shared interrupts and shared memory to allow multiple PCI devices in a single-interrupt system
- Autoscan for ease of SCSI configuration
- 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
- On-board, field upgradeable BIOS in Flash ROM
- On-board NVRAM for SCSI bus configuration storage

SDMS Software Support

Operating systems supported are: DOS (with ASPI support), Linux, Windows 2000, Windows Server 2003, Novell Netware 5.1 & 6.X, SCO UNIX Open Server 5.0, UNIXWare, and OS/2 (including WARP). Utilities: Install and FLASH (DOS only), SCSI format, SCSI configuration, verify.

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.



LSI8751D host adapter diagram

SCSI Bus Support

- Prefetches up to 8 dwords of SCRIPTST instructions to save PCI bus overhead
- SCSI SCRIPTS load and store instructions, for more efficient moving of data between memory and chip register space
- Includes 4 KB internal RAM for SCRIPTS instruction storage, to reduce or eliminate instruction fetches over the PCI bus
- Improved support for large block transfers at Ultra SCSI speeds
- Manual, passive termination for utmost flexibility in system configurations
- Variety of 16-bit differential SCSI peripherals
- SCAM (SCSI Configured AutoMatically) Level 1 functionality
- Uses the LSI Logic LSI53C875 proprietary Ultra SCSI I/O RISC processor, an extension of the industry standard LSI53C8xx family
- Target disconnect and later reconnect with system interrupts
- Features the LSI Logic TolerANT™ active negation and input signal filtering on the SCSI receivers 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	3.25" x 5.0"	
Bracket	ISA/EISA	
Certification Level	PCI 2.1 compliant	
SCSI Bus	16-bit wide, High Voltage Differential (HVD)	
SCSI Processor	LSI53C875	
Connectors	External	Internal
	68-pin HD, latching	68-pin, LD, right-angle
Termination	Passive, manually inserted terminator	
Termination Power	Self-resetting	
LED Indicators	4-pin header for off-board LEDs	
Environments	Operating	Storage
	Temperature 5°C to 55°C	-40°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	Windows 95/98/ME/2000, NT 4.0, Server 2003
Linux	2.4 kernel distributions
NetWare	5.1 and 6.X
UnixWare	2.12 and 7.X
SCO Unix	5.X
OS/2	Including WARP
Utilities	Install, Flash (DOS only, SCSI format, SCSI configuration, verify

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

<http://lsilogic.com/storage>
<http://adapters.lsilogic.com>

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