# LSI8955U
# HOST ADAPTER BOARD

## SINGLE-CHANNEL ULTRA160 SCSI HOST ADAPTER BOARD FOR WORKSTATIONS

The LSI8955U is a single-channel Ultra160 SCSI host adapter board built with the LSI53C1000 controller.  It supports the Ultra160 initiative with support for double transition clocking, Cyclical Redundancy Check (CRC) and SureLINK™ enhanced domain validation. Domain validation tests link integrity and ensures that the system is adequate for Ultra160 SCSI data transfers, which provide robust system operation.

## OVERVIEW

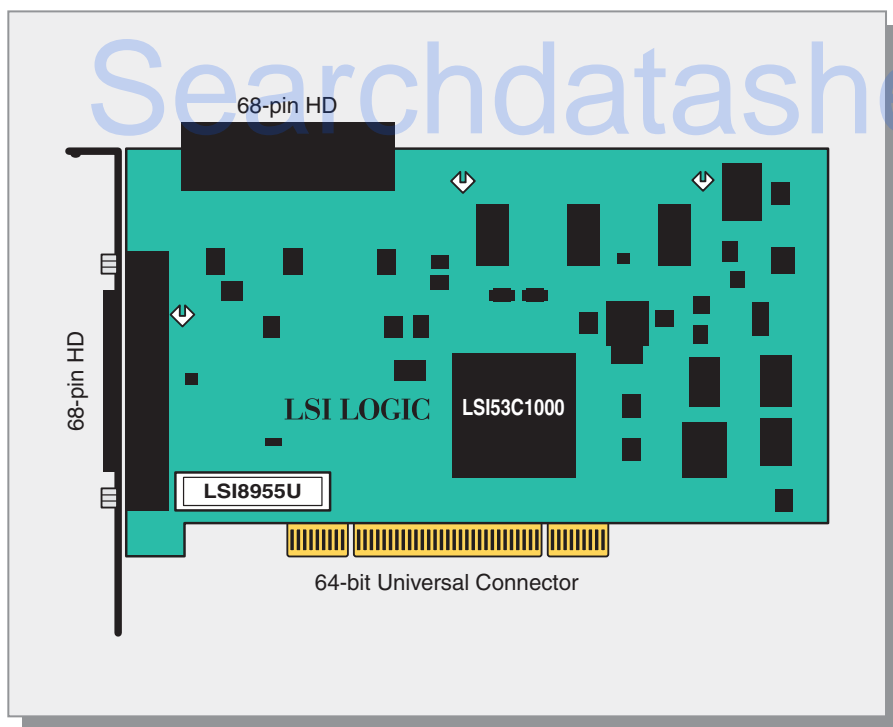Figure 1 below shows the major components on the LSI8955U host adapter board.



*Figure 1: LSI8955U host adapter board*

## APPLICATIONS

• Internet/Intranet, network, video, e-mail, printing, database management, etc.

• Workstations, CAD/CAM, industrial simulation, etc.

• Host Attach for RAID and JBOD mass storage subsystems — anywhere data access is the bottleneck

## PCI INTERFACE

• 64-bit, 66 MHz PCI interface, 528 MBps zero wait state transfer rate

• 64-bit addressing (DAC) support

• PCI 2.2 compliant

• PCI Power Management 1.1 compliant

• PC99 compliant

• Supports PCI Hot Plug electrical specification

• Vital Product Data Option

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## SCSI INTERFACE

• One Ultra160 SCSI channel

• Supports Ultra160 MBps SCSI

  • Double transition clocking for 160 MBps throughput

  • CRC (Cyclical Redundancy Check) provides complete end-to-end protection of the SCSI I/O

  • SureLINK domain validation technology

• Connectivity

  • Fast, Ultra, Ultra2, and Ultra160 SCSI data transfer capability

  • 68-pin HD internal

  • 68-pin HD external

## BOARD CHARACTERISTICS

• Universal, 32-bit PCI edge connector

• Board Size: 7.0" x 3.8"

• Bracket:  ISA/EISA Style SCSI Termination

• Automatic or manual termination

• Cable connection sensing option

• Universal (SE/LVD) termination on Channel A

• GPIO line disable termination feature

## LSI53C1000 CONTROLLER

The LSI53C1000 single-channel Ultra160 controller provides the PCI and SCSI functionality for the LSI8955U host adapter board.

## PCI INTERFACE

The LSI8955U host adapter board has a 64-bit PCI interface which is backward compatible with 32-bit/66MHz PCI.  Dual Address Cycle (DAC) support allows for increased addressability.  The LSI8955U host adapter board is PCI 2.2 compliant and provides support for PCI power management, Subsystem Vendor ID, Vital Product Data (VPD), and Extended access cycles (MRL, MRM, MWI).

## SCSI INTERFACE

The LSI8955U supports the Ultra160 SCSI initiative including double transition clocking, CRC (Cyclic Redundancy Check) and domain validation. Double transition clocking refers to transferring data on both polarity edges of the clock signal.  It is used in the data phases to perform data transfers on both edges of the REQ or ACK.  CRC is a 32-bit error correction scheme to ensure robust error from data transfers at Ultra160 speeds.

## SURELINK DOMAIN VALIDATION TECHNOLOGY

Available exclusively from LSI Logic, SureLINK domain validation is an advanced technology that detects the configuration of the SCSI bus and automatically tests and detects marginal cable environments and adjusts the SCSI transfer rate to ensure system reliability. SureLINK technology exceeds Ultra160 SCSI by providing not only Basic (Level 1) and Enhanced (Level 2) domain validation, but adds Margined (Level 3) domain validation. This enhancement margins LVD drive strength and clock signal timing characteristics to test for and identify marginal Ultra160 systems.

## FLASH MEMORY

The LSI8955U board provides up to 128K x 8 flash memory device for storing the SCSI BIOS. A RAID enabled BIOS is available as an upgrade option for those applications requiring RAID functionality.

## ADVANCED SDMS SOFTWARE GIVES YOU A COMPLETE ULTRA160 SCSI SOLUTION

The LSI8955U comes complete with a suite of SDMS™ drivers and utilities, so you get a total Ultra160 SCSI solution. Based on the software that has enabled generations of SCSI solutions, SDMS is now enhanced to fully enable the advanced capabilities of Ultra160 boards. SDMS maximizes system resources and performance by providing support for increased data speed, improved bus utilization, and AIP and CRC management.

A recent addition to the SDMS suite, SureLINK domain validation technology is available exclusively from LSI Logic. This technology ensures data integrity by intelligently testing the network before completing negotiation.

SDMS supports all major operating systems, including DOS with ASPI support, Windows 95/98, Windows NT, UNIXware, SCO UNIX, OS/2, Novell NetWare, Solaris and Linux. A complete set of SCSI utilities rounds out the software, including DMI 2.0-based system management software for Windows NT, NetWare, UNIXware, Solaris and Linux, and a stand-alone or snap-in DMI browser applet.

## SERIAL EEPROM

The LSI8955U has a 16K x 1bit serial EEPROM memory device for storing the configuration information for each channel. The SDMS software will utilize this device automatically.

## TERMINATION

Active termination is provided on the LSI8955U. Termination can be automatically enabled or disabled via an auto-termination circuit feature. The cable sensing option implemented on the LSI8955U provides the means for which termination is automatically

## NEXTREME RAID

The LSI8955U host adapter board supports Nextreme™ RAID, which includes a RAID BIOS option. Nextreme RAID delivers a cost-effective, fault-tolerant, bootable solution, which meets the increased performance and data protection needs of Window NT and Windows 2000 workstations.

Nextreme RAID combined with the LSI8955U is ideal for applications where high-performance, robust data protection is required. Nextreme RAID offers easy installation, an intuitive user interface, high-performance caching, and remote management capabilities.

## VISUAL INDICATORS
- Termination power indicator
- SCSI activity indicator
- SCSI bus active 4-pin header for off-board LEDs

## SOFTWARE SUPPORT
- Fully supported in SDMS Release 4.6
- Microsoft® Windows® 98, NT® 4.0, Windows® 2000
- Novell® NetWare® 4.11 and 5.0
- Nextreme RAID
- Solaris® 2.6, 2.7 - X86
- Server management support for DMI 2.0
  - NT 4.0, NetWare 4.11, UnixWare™ 2.12
  - Snap-in Java® Browser
- UnixWare 2.12® and Gemini

## UTILITIES
- Install and BIOS upgrade utility
- SCSI format
- Configuration utility
- SureLINK domain validation utilities

# LSI8955U Host Adapter Board

## ENVIRONMENTAL SPECIFICATIONS

### Operation
- Temperature range: 0° to 55°C (dry bulb)
- 5% to 90% non-condensing relative humidity
- 32°C maximum dew point

### Storage and Transit
- Temperature range: -45° to 105°C (dry bulb)
- 5% to 90% non-condensing relative humidity

## WARRANTEE

For more than 15 years, LSI Logic host adapter boards have been providing high-performance SCSI solutions to leading server, disk array and computer systems corporations worldwide. Each host adapter carries a powerful chip built in LSI Logic's ISO 9001-certified fabrication facilities. Using only the highest quality components, LSI Logic host adapter boards are assembled and tested in world-class facilities to assure superior product reliability and performance. Because of stringent quality management programs, our host adapters carry a five-year limited warranty.

## ABOUT LSI LOGIC

LSI Logic Corporation's Storage Standard Products Division is a leading supplier of high-performance I/O solutions for servers, workstations, desktops, storage systems and SAN technologies such as SCSI, Fibre Channel, PCI-RAID and Channel I/O technologies.  LSI Logic's integrated circuits, host adapters, expanders and software use leading-edge I/O technology for today's network computing applications.  Our proven, reliable products enable customers to meet market demands by lowering system costs and accelerating time to market.

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