Symbios MiniHAB

Introducing the Symbios® SYM22902 Low Profile Host Adapter Board

Dual-Channel Ultra2 SCSI MiniHAB™ Host Adapter Board Designed for 1U and 2U High Rackable Servers

The Symbios SYM22902 is a dual-channel Ultra2 SCSI host adapter board based on the Low Profile PCI form factor. The SYM22902 host adapter provides two independent Ultra2 SCSI channels offering increased connectivity without utilizing additional PCI slots. The external channels support LVD and single-ended SCSI while the internal channel supports LVD SCSI.

The SYM22902 leverages the SYM53C896 PCI dual-channel Ultra2 SCSI controller a single-chip, true multi-function PCI device that connects directly to a 64-bit PCI bus, presenting one electrical load, while functioning as a single 64-bit PCI DMA bus master.

The SYM22902 includes an easy-to-use on-board configuration utility, which allows the viewing and changing of default configuration settings for the host adapter and SCSI devices.
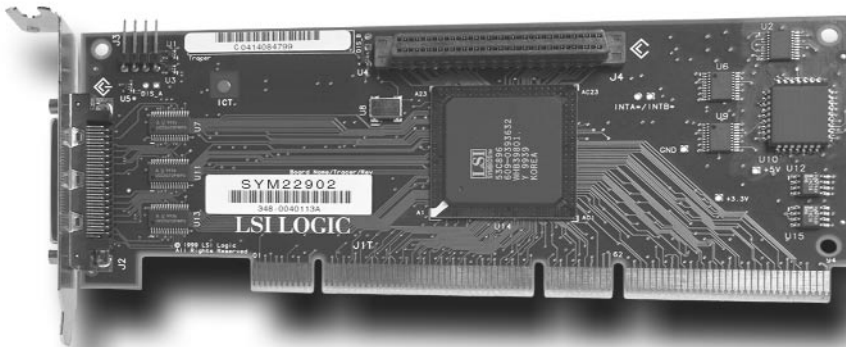

Figure 1: SYM22902 Dual Channel Ultra2 SCSI MiniHAB Host Adapter Board

Description
Figure 2 below shows the major components on the SYM22902 host adapter board.

SYM53C896
The SYM53C896 dual-channel Ultra2 controller contains the PCI and SCSI functionality for the SYM22902 host adapter board. The host PCI interface implements a 64-bit/33 MHz PCI bus. It is backward compatible with 32-bit/33 MHz buses. Additionally, support is provided for Dual Address Cycle (DAC), PCI power management, Subsystem Vendor ID and Vital Product Data (VPD). Extended access cycles (MRL, MRM, MWI) are also supported. The implementation is PCI 2.2 compliant.

Applications
- Servers, Internet/Intranet, Network, video, e-mail, printing, database management
- Workstations, CAD/CAM, industrial simulation
- Host Attach for RAID and JBOD mass storage subsystems—anywhere data access is the bottleneck

PCI Interface
- 64-bit, 33 MHz 3.3 V PCI Interface
- Maximum burst rate of 264 MBps
- 64-bit addressing (DAC) support
- PCI 2.2 compliant
- PCI Power Management 1.1 compliant
- PC99 Compliant
- Compliant to PCI Hot Plug electrical specification

SCSI Interface
- Two independent Wide Ultra2 SCSI Channels
- Supports up to 80 MBps SCSI per channel

Connectors
- 68-pin high density for internal connection
- 68-pin VHDCI for external connection
- Supports fast, Ultra, and Ultra2 SCSI

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Board Characteristics

- 64-bit PCI edge connector
- Board Size: 6.6 " x 2.53 "
- Brackets: Low Profile PCI or ISA/EISA Style

Termination

- Software termination Enable/Disable
- Universal (SE/LVD)Termination on external channel and LVD on internal channel

Visual Indicators

- SCSI Bus Active 4-pin header for off-board Channel A and B LEDs

Software Support

- NT 4.0 SP4, Windows 2000
  - Nextreme™ Host Based RAID Option
- NetWare 4.11 & 5.0
- UnixWare 2.12 & Gemini
- Solaris 2.6, 2.7 - X86
- Linux
- Fully supported in SDMS Release 4.6
- Server Management support for DMI 2.0
  - NT 4.0, NetWare 4.11, UnixWare 2.12
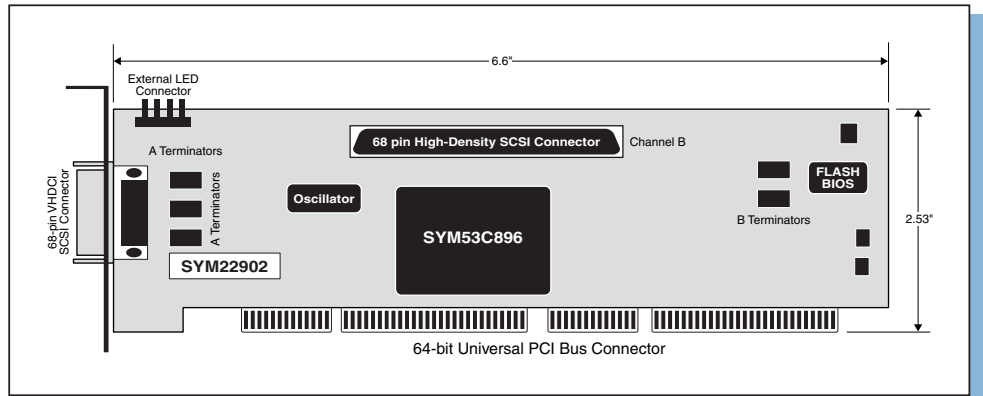 - Snap-in Java Browser

Figure 2: SYM22902 HAB Diagram

Flash Memory
The SYM22902 board provides up to 128K x 8 flash memory device for storing the SCSI BIOS.

Serial EEPROM
The SYM22902 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 SYM22902. Termination can be automatically enabled or disabled for each SCSI channel via a configuration utility.

Environmental Specifications
- Size: 6.6" x 2.53"
- Electrical : 5V ±5% (3.0 A max) 3.3V ±5%
- PCI Maximum Power Dissipation: 7.5 Watts
- Operating temperature range: +5°C to + 55°C
- Relative Humidity: 5% to 90% non-condensing
- Maximum dew point temperature: +32°C

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Nextreme RAID

The SYM22902 MiniHAB board supports Symbios 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 SYM22902 is ideal for applications where full-size RAID adapters are impractical. Plus, Nextreme RAID offers easy installation, an intuitive user interface, high-performance caching, and remote management capabilities.

Warrantee

For more than 15 years, Symbios 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, Symbios host adapters 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.

Utilities
- Install and BIOS Upgrade Utility
- SCSI Format
- Configuration Utility

Certification
- PC98/99 Compliant
- Microsoft Cluster Server tested

RAID BIOS Option

A RAID enabled BIOS is available as an upgrade option for those applications requiring RAID functionality. For use with Symbios Nextreme RAID.

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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 Symbios branded 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. To find out more, please visit our web site at *http://symbios.lsilogic.com.*

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