ADVANSYS *Performance Connectivity…*

Ultra2 SCSI

Product Brief

Product Overview

ASC38C0800
ASB3940U2W-00
ASB3950U2W-00

Ultra2 SCSI means high bandwidth connectivity, up to 80 MB/s between a host and multiple high bandwidth SCSI devices. The Ultra2 SCSI Products from AdvanSys raise the bar for Ultra2 performance and value. The ASC38C0800 is a highly integrated single-chip Ultra2 SCSI controller, providing twice the raw processing power of any other product in the Ultra2 SCSI market. The AdvanSys Ultra2 SCSI host adapters use the AdvanSys ASC38C0800 to provide excellent high performance solutions for workstation, server, RAID, backup, and storage cluster applications. Whether you are pushing the limits of Ultra2 SCSI bandwidth or just want some bandwidth headroom for future expansion, these products deliver industry-leading performance.

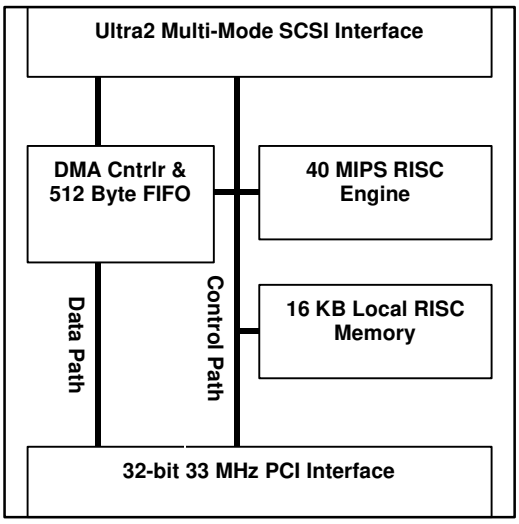
Highlights:

- Up to 80 Mbytes/sec data transfer rates
- Supports up to 15 devices on a 12 meter cable
- PCI 2.2 compliant
- Multimode I/O cells supporting both Ultra2 (LVD) and/or legacy single-ended devices
- PC99 compliant

ASC38C0800: PCI-to-Ultra2 Single-Chip Bus Master Controller

Product Highlights

The ASC38C0800 combines Ultra2 data transfer rates of up to 80 MB/s with PCI burst rates of up to 133 MB/s to provide excellent I/O performance for high-end desktop, workstation, and server systems. At the heart of the ASC38C0800 is a patented hardware architecture, utilizing a 40 MIPS application specific RISC processor. This RISC processor, supporting full multi-threading capability, has the capability of processing up to 60,000 I/O commands per second. Through a DMA bus master PCI architecture and the use of this RISC processor, the ASC38C0800 can transfer data while significantly reducing host CPU involvement in I/O transfers, requiring a maximum of only one interrupt per I/O operation. This results in sequential I/O that is 50% faster than is typically found in competitive products.



Finally, the AdvanSys software architecture provides software portability across system platforms. This architecture dramatically simplifies driver software requirements while also ensuring driver transparency through new product generations. Therefore, once developed, drivers remain largely unchanged between 8-bit Fast SCSI, 16-bit Fast SCSI, Ultra SCSI, Ultra2 SCSI and Ultra 3 SCSI. Whereas others may take months in porting software to new platforms, the AdvanSys architecture takes only weeks in comparison.

Features

SCSI Interface:

- Up to 80 Mbytes/sec to handle demanding applications such as digital video, real time simulation, data warehousing, data mining on workstations, servers, RAID, and cluster configurations
- 40-MIPS application specific RISC processor for SCSI command processing
- 16 KB of integrated RISC program memory
- Capable of processing up to 60,000 I/O operations per second
- Scatter/gather supported by RISC engine
- Supports command tag queuing for optimized out of order command execution
- Disconnect/reconnect support to eliminate wait between host and target
- Supports both auto and programmable SCSI termination
- Connection for up to 15 SCSI devices
- Using a transceiver to divide the SCSI bus into independent single-ended and LVD segments, the ASC38C0800 can support legacy devices without limiting performance and cable length on the LVD segment.
- Multi-mode I/O cells supporting both Ultra2 (LVD) and/or legacy single-ended devices
- Up to 12 meters cable length for Ultra2 devices; 25 meters for point-to-point connections

PCI Interface:

- PCI 2.2 Compliant, 33 MHz, 32-bit PCI burst transfer rates of 133 MB/s
- 512 byte DMA FIFOs for more efficient PCI bus utilization.
- Cache line streaming for improved PCI bus utilization
- Fully supports Microsoft PC 99 initiative without any external logic
- Dual Address Cycle (DAC) support for 64-bit system memory addressability
- Programmable PCI device ID and subsystem vendor ID
- PC99 and ACPI compliant Power Management support

Additional Features:

- Support for FLASH for easy BIOS upgrades
- Dual rail power supply: 3.3V / 5V PCI interface provide flexibility in design
- Enhanced Logical Unit Number (LUN) supports up to a maximum of 120 LUNs
- Windows NT Wolfpack clustering compliant
- JTAG boundary scan to support system level interconnect testing
- 272 -pin PBGA package
- 0.35u(micron) technology implementation

Software Support:

- BIOS support for DOS and Windows applications without driver involvement
- Microsoft Windows NT
- Windows® 95/98
- Novell NetWare
- SCO Openserver
- SCO UnixWare
- Linux
- Sun Solaris
- Apple OS 8.5
- OS/2 Warp ready
- I^2O ready
- Common RISC instruction set and subroutines

PCI Ultra2 SCSI Adapter Boards

Product Highlights

The AdvanSys Ultra2 SCSI Host Adapters provide industry leading performance and value for bandwidth intensive applications such as scientific modeling and simulation; real-time video and audio; and data mining. The exceptional performance of AdvanSys Ultra2 SCSI Host Adapters, along with Ultra2's ability to connect up to 15 devices with a cable length of 12 meters, make them ideal for server, RAID, clustering, and data striping configurations. Whether you are pushing the limits of Ultra2 SCSI bandwidth or just want some bandwidth headroom for future expansion, you should look for the AdvanSys advantage.

Based on our own ACS38C0800 chip technology the AdvanSys Ultra2 SCSI Host Adapters ensure a high level of integration and superior reliability. Featuring data transfer rates of up to 80Mbytes/sec, our Bus Master and RISC technology allows large blocks of data to be processed with minimum CPU utilization.

AdvanSys builds its host adapters to the highest level of quality standards in ISO-9002 Certified facilities. To ensure both software and hardware compatibility AdvanSys Ultra2 SCSI host adapters undergo extensive testing with all types of host systems, operating systems, and SCSI peripherals.

ASB3940U2W Single Channel Ultra2 SCSI Host Adapter

The ASB3940U2W single channel Ultra2 SCSI Host Adapter is ideal for applications that connect only Ultra2 SCSI devices or that have a separate SCSI host controller to connect single ended legacy SCSI devices. (Connection of a single ended legacy SCSI device to an Ultra2 LVD SCSI bus will default the performance of all devices on the SCSI chain to single ended SCSI bandwidth and cable length limitations.) The ASB3940U2W implements the features and performance of the AdvanSys ASC38C0800 SCSI controller and has both an internal and an external 68-pin high-density connector to connect up to 15 Ultra2 SCSI devices. The ASB3940U2W also supports both PC and Apple platforms, including boot capability for the new Apple G3s.

ASB3950U2W Dual Channel Ultra2 SCSI Host Adapter

The ASB3950U2W dual channel Ultra2 SCSI Host Adapter is ideal for applications that require the connection of both Ultra2 LVD and single ended legacy SCSI devices with one board (one PCI slot). The ASB3950U2W also supports both PC and Apple platforms, including boot capability for the new Apple G3s. The ASB3950U2W Host Adapter has both the AdvanSys ASC38C0800 Ultra2 SCSI host controller for Ultra2 LVD support and the AdvanSys ASC3550B UltraWide SCSI host controller for single ended legacy SCSI support. A PCI bridge connects the ASC38C0800 and ASC3550B on the host controller board and essentially gives you two boards in one. The ASB3950U2W has two internal 68-pin high-density connectors to connect up to 15 Ultra2 devices and one external 50-pin connector and one internal 50-pin connector to connect up to 15 single ended legacy devices.

Adapter Board Configuration and Kits

Adapter Board	*External Connector*	*Internal Connector*	*Active/Pass Termination*	*BIOS*	*Bootable*	*OEM/ Bulk*	*System Int.*	*Brown Box*	*Retail Kit*
ASB3940U2W-00	68 pin HD	68 pin HD	Active	Flash	Yes	Yes	Yes	Yes	Yes
ASB3950U2W-00	50 pin Std.	2 - 68 pin HD; 1 – 50 pin Std.	Active	Flash	Yes	Yes	Yes	Yes	Yes

FEATURE	BENEFITS
Based on the AdvanSys ASC38C0800 chip	Industry leading performance and compatibility designed-in
SCSI management software	SuperSCSI™ for Win 95/98 CharisMac™ for Macintosh
Connectivity:	Ability to connect 15 Ultra2 peripheral devices (an additional 15 legacy single ended devices with the Dual Channel ASB3950U2W)
Platform Support:	PC, Apple, and Sun PCI based systems: One product handles all environments.
Mixed LVD/Single Ended Support:	The ASB3950U2W is a dual channel host controller supporting both Ultra2 LVD and single ended devices without sacrificing performance of the Ultra2 LVD SCSI chain.

Technical Specifications

PC Bus Type:	32-bit PCI Bus
Interface Transfer Method:	Bus Master DMA
Data Transfer Rate:	80 Mbytes/sec.
Device Support:	Up to 15 SCSI Ultra2 devices (additional 15 legacy single ended devices with ASB3950U2W)
Cable Length:	Up to 12 meters (25 meters in point to point) for LVD devices
Host Bus Data Transfer Rate:	Up to 133 Mbytes/sec. (burst mode)
Electrical Terminations:	Auto termination
Operating Temperatures:	0°C (32°F) to 55°C (131°F)
Storage Temperatures:	-40°C (-40°F) to 75°C (167°F)
Relative Humidity:	10% to 95% non-condensing

OS Compatibility

- DOS
- Windows (version 3.1x)
- Windows 95/98
- Windows NT (version 3.51, 4.0)
- Novell NetWare
- SCO Openserver
- SCO Unixware
- Sun Solaris
- Linux (version 1.2 and greater)

SCSI MANAGEMENT SOFTWARE

SuperSCSI for Win 95/98

In SuperSCSI, AdvanSys uses its experience gained from supporting SCSI products in the retail, VAR and OEM channels to create advanced SCSI management software. It includes:

SuperInstall – SuperInstall is intelligent software designed to check the host operating system and automatically install the right set of drivers. It supports all levels of users with speedy, error-free system setup, software and driver installation, and a diagnostic program to ensure all the necessary software is in place and ready to go.

SuperView – With SuperView users see how SCSI devices are organized and functioning. At the click of a mouse, users also see driver registration in the Device Manager, the IRQ assignments, or explanations of Windows 95/98 error codes. SuperView includes information on everything in the SCSI tree, from error messages to details about specific SCSI devices.

CharisMac Software For Macintosh

The AdvanSys SuperSCSI software offers a suite of CharisMac utilities including; CharisMac Anubis™ Utility software which allows users to format, initialize, partition and install Macintosh device drivers and test media for defects; and CharisMac CD AutoCache CD-ROM acceleration software, a universal CD-ROM device driver and caching utility.

Adapter Board Kit Contents

OEM/Bulk (5xxxxx-00):	Board and anti-static bag only
Integrator Kit (5xxxxx-01):	Board, installation diskette and quick install guide in a brown box
Brown Box Kit (5xxxxx-02):	Board, SuperSCSI CD, quick install guide and manual (as required) and cable(s) in a brown box
Retail Box Kit (5xxxxx-03):	Board, SuperSCSI CD, quick install guide and manual (as required) and cable(s) in a brown box with a retail sleeve, shrink wrapped

1150 Ringwood Court, San Jose, CA 95131
Phone: (408) 383-9400
Technical Support: (800) 525-7440

Internet:www.advansys.com
Information Desk: (800) 525-7443
Fax: (408) 383-9612

Version 0.3, February 22, 1999