

# ACS-8990/89230/89200/89180

## Serial ATA RAID/JBOD Controller

### PRODUCT HIGHLIGHTS

- Dual 2Gbps Fibre or Ultra320 SCSI Host Channels
  - Transfer rate up to 200MB/sec for each 2Gbps Fibre channel
  - Transfer rate up to 320MB/sec for each Ultra320 SCSI channel
- Supports up to 16 x Serial ATA (SATA) drives
- RAID level 0,1, 0+1, 3, 5, 30, 50, JBOD and NRAID
- JBOD with software S.E.S. emulation(ACS-89180)
- Up to 8 x RAID configurations, each RAID with a different RAID level
- Background initialization
- Automatically detect disk drive status, rebuilding data
- Hot spare and hot-swap capability
- Intelligent Drive Management
  - Bad blocks management
  - Support disk S.M.A.R.T. function
  - Scheduled data re-scan and rebuild maintenance
  - Data clone before disk drive failure
- Up to 1GB DDR memory
- ACSView GUI management
- Battery backup support

### OVERVIEW

Accusys 89-series – a high-performance U320 SCSI or 2G Fibre Channel(FC) to SATA RAID controller, designed for easy integration and smooth data expansion for applications like data base servers, e-mail servers, web servers, streaming video, and part of a disk-to-disk data migration application to provide maximum data protection and exceptional performance.

Accusys 89-series products bring enterprise features combined with cost-effective, continuous data protection and advanced storage management features. The series, which includes both FC to SATA and SCSI to SATA models, reduces the cost and complexity of supporting data-intensive applications while easing storage management challenges, allows businesses both large and small to benefit from its robust functionality and flexibility.

### Optimize Data Availability

Accusys 89-series supports RAID level 0, 1, 0+1, 3, 5, 30, 50, NRAID and JBOD, one can select the level that best meets application demands. If a drive fails, ACS-89 series automatically rebuilds the data on the global hot spare drive without impacting system performance resource.

Its powerful 64-bit IO processor is built dedicated XOR engines to calculate parity and distribution data which can be optimized with the association between individual logical arrays and different optimization setting. So the Parity-protected data buses, LUN masking/LUN mapping and Error Correcting Code(ECC) protected memory provide maximum availability and continuous data

access.

### High Performance

ACS-89 series's architecture is designed for the most demanding applications, such as Data warehousing, E-Commerce, Web hosting, Media streaming which are just few of the applications. It's a Double Data Rate (DDR) memory bus makes high data throughput more than sufficient for small to high end size servers or workstations. The advance PCI-X 133MHz bus design with which data can be distributed at a burst rate up to 1024MByte/s and virtually eliminate all imminent bottleneck on I/O traffic, providing sufficient throughput for wide range of applications on any mission critical platforms.

### Intelligent Drive Management

Accusys's smart intelligent drive management functions repair and retrieve from the damaged and affected blocks/sectors in routine smart media verification, and through S.M.A.R.T intelligent drive handling which the unhealthy drive data can be transferred to the dedicated drive in advance before unhealthy drive fail. The intelligent drive management features include global hot-spare, power-failure management of swapping drive and smart failure drive management during RAID capacity expansion.

### Comprehensive Management

Accusys ACSView software is a cross-platform RAID management interface that can be run on any locally platform remotely over a LAN on a Java Applet opened by a web browser. ACSView allows to manage Accusys's product lines from the same console anywhere in the world, takes the cost and complexity out of supporting a variety of service levels across many locations.

## Technical Specifications

### Host interface

- **Fibre Channel**
  - Two independent Fibre Channel host ports
  - 1 or 2Gbit/sec transfer rate(selectable or automatic detection)
  - FC-AL, Point-to-Point and Switch Fabric topologies
- **Ultra320 SCSI**
  - Two independent Ultra320 SCSI host ports
  - Up to 320MB/sec transfer rate

### Serial ATA disk interface

- Up to sixteen(16) Serial ATA channels
- Independent 150MB/sec point-to-point to each Serial ATA drive

### RAID controller specifications

- Intel i80321 64-bit RISC processor
- Hardware XOR engine
- Up to 1GByte DDR memory
- ECC memory support
- 32KB NVRAM with real-time clock(RTC)
- Beeper build-in

### RAID features

- RAID level 0,1, 0+1, 3, 5, 30, 50, JBOD and RAID
- Up to eight(8) independent logical arrays configurations
- Each logical array can have an independent RAID level
- Background initialization
- Write back and write through cache selection
- Variable strip size
- Up to 128 LUNs
- Online RAID group capacity expansion
- Drive hot-swapping
- Global hot-spare drive
- Automatic data rebuilding
- Intelligent Drive Management
- Battery backup support

### Management

- In-band and Out-of-band capability
  - Out-of-band system monitoring through Ethernet or RS-232
- ACSView management software for all major platforms via Ethernet port
- Event notification via an independent ACSView client utility
- Firmware upgradeable through In-band or Out-of-band interface

## Physical and Environment Specifications

### Board Form Factor

#### (with Host Daughter Board)

72.2 (L) x 53.6(W) x 15.8 (H) inch  
183.54(L) x 136(W) x 40(H) mm

### Backplane Mating

Compact-PCI 330-pin

### Power Requirements

+ 5.0Vdc: 10A / 500ms, tolerance : ±5%  
+ 12.0Vdc : 1A / 500ms, tolerance : ±5%

### Temperature

Operation mode : 0°C to 50°C  
Non-operation mode : -20°C to 70°C

### Humidity

Operation mode : 5% to 75%  
Non-operation mode : 5% to 95%

### Ordering Information

#### RAID controllers

- **ACS-8990** : Sixteen(16) SATA channels
- **ACS-89230** : Twelve(12) SATA channels
- **ACS-89200** : Eight(8) SATA channels
- **ACS-89180** : Sixteen(16) SATA channels for FC-SATA JBOD with software S.E.S. emulation

#### Host Interface Daughter Board

- **ACS-7145** : Dual 2G FC host board
- **ACS-7485** : Dual Ultra320 SCSI host board

#### Fibre Channel SFP Interface board

- **ACS-5160 Kit** : support dual 2G FC optical or cooper (SFP) connectors, with link and activity LEDs, connection cable with ACS-7145.  
Dimension: 77(L) x 55(W) x 14(H) mm

#### Out-of-band Ethernet Interface board

- **ACS-1170 Kit** : Provide one Ethernet port connects to LAN to monitor RAID status.  
Dimension: 80(L) x 80(W) x 17.5(H)mm

#### Battery Backup Module

- **ACS-1161 Kit** : Smart battery backup module, integrated lithium cells. With one fully charged battery module used, cached data will be kept for around 72 hours. (Estimated time based on using 1GB DDR SDRAM memory module)  
Dimension: 130(L) x 80(W) x 28.35(H) mm