

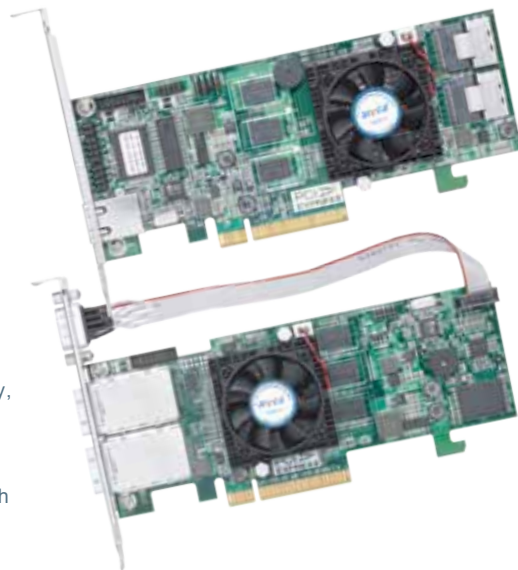
ARC-1213-4i/1223-8i

(4/8-Port PCIe 2.0 Internal SAS/SATA RAID Controllers)

ARC-1213-4x/1223-8x

(4/8-Port PCIe 2.0 External SAS/SATA RAID Controllers)

SAS builds on parallel SCSI by providing higher performance, improving data availability, and simplifying system design. The SAS interface supports both SAS disk drives for data-intensive applications and Serial ATA (SATA) drives for low-cost bulk storage of reference data. The ARC-1213-4i/ARC-1223-8i support directly attach 4/8 SAS ports via 1/2 internal SFF-8087 connector. The ARC-1213-4x/ARC-1223-8x support directly attach 4/8 SAS ports via 1/2 external SFF-8088 connector. Each port on the SAS controllers supports SAS and/or SATA devices.



Highlights

- PCIe 2.0 x8 lane host interface
- Great that 2TB capacity per disk drive support
- Support greater than 2TB per volume set and battery backup module (BBM)
- Enclosure management (SES-2, SMP and SGPIO) ready
- Support intelligent power management to save energy and extend service life
- Support NTP protocol synchronize RAID controller clock over the on board Ethernet port
- Broad operating support including Windows, Linux (open source), FreeBSD(open source), Soaris(open source), Mac and VMware

Unparalleled Performance

The 6Gb/s SAS RAID controllers raise the standard to higher performance levels with several enhancements including new high performance ROC Processor, a DDR2-800 memory architecture and high performance PCIe 2.0 x8 lane host interface bus interconnection. The low profile controllers by default support on-board 512MB of ECC DDR2-800 SDRAM memory. The optional battery backup module provides power to the cache if it contains data not yet written to the drives when power is lost. The test result is against overall performance compared to other 6Gb/s SAS RAID controllers. The powerful new ROC processors integrated 8 6Gb/s SAS ports on chip delivers high performance for servers and workstations.

Unsurpassed Data Availability

As storage capacities continue to rapidly increase, users need greater level of disk drive fault tolerance, which can be implemented without doubling the investment in disk drives. The RAID 6 can offer fault tolerance greater than RAID 1 or RAID 5 but only consumes the capacity of 2 disk drives for distributed parity data.

The 6Gb/s SAS RAID controllers with extreme performance RAID 6 engine installed provide the highest RAID 6 feature to meet this requirement. The controller can concurrently compute two parity blocks and get very similar RAID 5 performance.

The 6Gb/s SAS RAID controllers can also provide RAID levels 0, 1, 1E, 3, 5, 6, 10, 30, 50, 60, Single Disk or JBOD for maximum configuration flexibility. Its high data availability and protection derives from the following capabilities: Online RAID Capacity Expansion, Array Roaming, Online RAID Level / Stripe Size Migration, Global Online Spare, Automatic Drive Failure Detection,

Automatic Failed Drive Rebuilding, Disk Hot-Swap, Online Background Rebuilding, Instant Availability/Background Initialization, Auto Reassign Sector, Redundant Flash Image and Battery Backup Module. Greater than Two TB Support allows for very large volume set application in 64-bit environment such as data-mining and managing large databases.

Maximum Interoperability

The SAS RAID adapter supports broad operating system including Windows 2008/Vista/2003/XP/2000, Linux (Open Source), FreeBSD (Open Source), VMware, Solaris (Open Source), Mac and more, along with key system monitoring features such as enclosure management(SES2, SMP & SGPIO) and SNMP function. Our products and technology are based on extensive testing and validation process; same as Areca SATA II RAID adapter field-proven compatibility with operating systems, motherboards, applications and device drives.

Easy RAID Management

The controllers contain an embedded McBIOS RAID manager that can access via hot key at M/B BIOS boot-up screen. This pre-boot McBIOS RAID manager can use to simplify the setup and management of RAID controller. The controller firmware also contains a browser-based McRAID storage manager which can be accessed through the Ethernet port or ArcHttp proxy server in Windows, Linux, FreeBSD and more environments. The McRAID storage manager allows local and remote to create and modify RAID set, volume set, and monitor RAID status from standard web browser. The Single Admin Portal (SAP) monitor utility can support one application to scan multiple RAID units in the network.

Controller Architecture





- 800MHz RAID-on-Chip (ROC) processor
- PCIe 2.0 x8 lane host interface
- Support up to 4/8 internal 6Gb/s SAS physical links
- ARC-1213-4i/4x supports up to 4 x 6Gb/s SAS/SATA HDDs
- ARC-1223-8i/8x supports up to 8 x 6Gb/s SAS/SATA HDDs
- Multi-adapter support for large storage requirements
- BIOS boot support for greater fault tolerance
- BIOS PnP (plug and play) and BBS (BIOS boot specification) support
- Support EFI BIOS for Mac Pro
- NVRAM for RAID event & transaction log
- Redundant flash image for controller availability
- Battery Backup Module (BBM) ready (Option)
- RoHS compliant

RAID Features

- RAID level 0, 1, 10(1E), 3, 5, 6, 30, 50, 60, Single Disk or JBOD
- Multiple RAID selection
- Online array roaming
- Offline RAID set
- Online RAID level/stripe size migration
- Online capacity expansion and RAID level migration simultaneously
- Online volume set growth
- Instant availability and background initialization
- Support global and dedicated hot spare
- Automatic drive insertion/removal detection and rebuilding
- Greater than 2TB capacity per disk drive support
- Greater than 2TB per volume set (64-bit LBA support)
- Support intelligent power management to save energy and extend service life
- Support NTP protocol synchronize RAID controller clock over the on board Ethernet port

• Environment

Operating	Temperature: +5°C to +60°C Humidity: 15-80%, non-condensing
Storage Temperature	Temperature: -40°C to 70°C Humidity: 5-90%, non-condensing

Model Name	ARC-1213-4i	ARC-1213-8i	ARC-1213-4x	ARC-1213-8x
I/O Processor	RAID-on-Chip 800MHz			
Host Bus Type	PCIe 2.0 x 8 Lanes			
Drive Connector	1 x SFF-8087	2 x SFF-8087	1 x SFF- 8088	2 x SFF-8088
Drive Support	4 x SAS/SATA	8 x SAS/SATA	4 x SAS/SATA	8 x SAS/SATA
RAID Level	0, 1, 10, 3, 5, 6, Single Disk or JBOD	0, 1, 10, 3, 5, 6, 30, 50, 60, Single Disk or JBOD	0, 1, 10, 3, 5, 6, Single Disk or JBOD	0, 1, 10, 3, 5, 6, 30, 50, 60, Single Disk or JBOD
On-Board Cache	512MB ECC DDR2-800 SDRAM			
Management Port	In-Band: PCIe Out-of-Band: BIOS, LCD and LAN Port		In-Band: PCIe Out-of-Band: BIOS and LCD (option)	
Enclosure Ready	Individual Activity/Faulty Header, Serial Bus and SGPIO		External Serial Bus	
Form Factor (H x L)	62 x 168 mm			
Products View				

Monitors/Notification

- System status indication through global HDD activity/fault connector, individual activity/fault connector, LCD/I2C connector and alarm buzzer
- SMTP support for email notification
- SNMP support for remote manager
- Enclosure management (SES-2, SMP and SGPIO) ready

RAID Management

- Field-upgradeable firmware in flash ROM

In-Band Manager

- Hot key "boot-up" McBIOS RAID manager via M/B BIOS
- Web browser-based McRAID storage manager via ArcHttp proxy server for all operating systems
- Support Command Line Interface (CLI)
- API library for customer to write monitor utility
- Single Admin Portal (SAP) monitor utility

Out-of-Band Manager (ARC-1213-4i and ARC-1223-8i)

- Firmware-embedded web browser-based McRAID storage manager, SMTP manager, SNMP agent and Telnet function via Ethernet port
- API library for customer to write monitor utility
- Support push button and LCD display panel (option)

Operating System

- Windows 7/2008/Vista/XP/2003
- Linux
- FreeBSD
- VMware
- Solaris 10/11 x86/x86_64
- Mac OS 10.5.x/10.6.x/10.7.x

-Important-

Be sure to update the ArcMSR.kext driver shipping with Mac OS X to V1.3.7 or later from the software CD or from the Areca website.

For more information & latest supported OS listing visit www.areca.com.tw

• Electrical

Power Dissipation	12V +3.3V
	ARC-12x3 series: 12.1W (9.6W+2.5W)



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