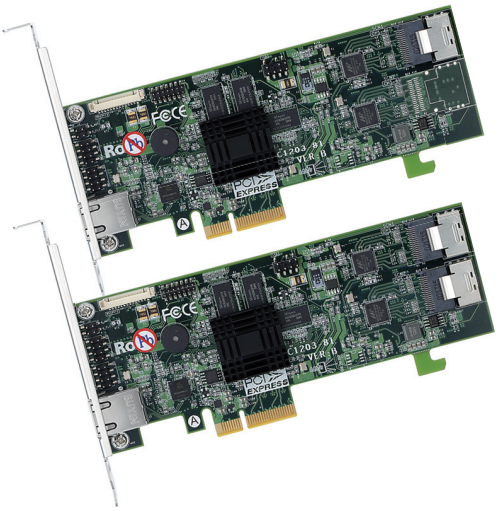
areca® At the Heart of Storage

ARC-1203-4I/8I

(4/8-Port PCIe 2.0 Internal 6Gb/s SATA RAID Controllers)



ARC-1203 series internal PCIe 2.0 host RAID controllers are the cost-effective solutions for connecting 4/8 6Gb/s SATA peripherial devices. Areca's ARC-1203 series entry-level RAID controllers cover the spectrum of wild range storage requirements for cost-sensitive applications that require robust data protection. The 4/8 port configurations are aimed at high-availability and capacity oriented applications, such as security systems, surveillance, multimedia content generation, large-volume data capturing, mail servers and entry-level database systems.

Highlights

- PCIe 2.0 x4 lane host interface
- Greater than 2TB capacity per disk drive support
- Support greater than 2TB per volume set and battery backup module (BBM)
- Enclosure management (Serial bus & 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
- In-box (Native) host driver support for Windows, Linux, FreeBSD and more

Unparalleled Flexibility

Embedded with ARM-based storage I/O processor makes those products a pure hardware RAID controller and raise the standard to higher performance levels with several enhancements including 6Gb/s SATA ports, on-board 1GB SDRAM memory and high performance PCIe 2.0 x8 lane host interface bus interconnection. The ARC-1203 series RAID card with a dedicated processor and cache memory that offloads the parity calculations from the CPU, as this means you can pair it with a slow, lower power processor, the cost to benefit ratio for this cost-effective RAID adapter is negligible. ARC-1203 series RAID can be easily integrated into a variety of hardware and software platforms, and are ideal for cost-effective, high-capacity NAS, DVR and cold storage market.

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 that RAID 1 or RAID 5 but only consumes the capacity of 2 disk drives for distributed parity data. Areca entry-level RAID controllers incorporate onboard storage processors to deliver true hardware RAID. Hardware RAID cards have their own local RAID processor onboard, plus dedicated onboard cache for full hardware offloading of RAID-processing functions. The ability of hardware RAID controllers to rebuild an array in the event of a drive failure is superior to what software RAID controllers offer.

The ARC-1203 series 6Gb/s SATA 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 Areca Technology's advanced features: 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. The optional battery backup module provides power to the cache if it contains data not yet written to the drives when power is lost.

Maximum Interoperability

The ARC-1203 series 6Gb/s SATA RAID adapters support broad operating system including Windows , Linux (Open Source), FreeBSD (Open Source), VMware, Solaris (Open Source), Mac and more, along with key system monitoring features such as enclosure management (Serial bus & SGPIO) and SNMP function. Our products and technology are based on extensive testing and validation process; same as Areca 3Gb/s and 6Gb/s SAS/SATA RAID adapter field-proven compatibility with operating systems, motherboards, applications and device drives. It can also work with with any standard Windows (10 or above), Linux(Kernel 3.10 or above), FreeBSD or VMware inbox NVMe drivers. You do not need a special driver to install the OS or data on it.

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) quick manager can support one application to scan multiple RAID units in the local and remote for easy installation, configuration and operation.

Controller Architecture

- ARM_based 1066MHz storage I/O processor
- 1GB on-board DDR3-1066 SDRAM with ECC protection
- PCIe 2.0 x4 lanes host interface
- Write-through or write-back cache support
- Support read/write cache allocation by policy
- ARC-1203-4/8 supports up to 4/8 x 6Gb/s 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
- Boot support for the uEFI host BIOS
- NVRAM for RAID event & transaction log
- Redundant flash image for controller availability
- Battery Backup Module (BBM) ready (optional)
- Firmware level self-diagnosis function

RAID Features

- RAID level 0, 1, 10(1E), 3, 5, 6, 30, 50, 60, Single Disk or JBOD
- Multi-level RAID 0 and RAID 10 (R00 and R100)
- Support up to 1MB stripe size
- Multiple RAID selection
- Online array roaming
- 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
- Support intelligent power management to save energy and extend service life
- Support for native 4K and 512 byte sector SATA devices
- Multiple pairs SSD/HDD disk clone function
- SSD automatic monitor clone (AMC) support
- Support HDD firmware update
- Verify the correctness of the RAID data
- Disk drive patrol function through Scheduled Volume Checking
- SED (self-encrypting drives) function support
- Drive SMART status monitoring for reliability

• Electrical

Power Dissipation:	12V ; ARC-1203-4I/8I: 10W / 11W

Monitors/Notification

- System status indication through global HDD activity/fault connector, individual fault connector, LCD/serial bus connector and alarm buzzer
- SMTP support for email notification
- SNMP support for remote manager
- Enclosure management (Serial bus & SGPIO) ready

RAID Management

- Field-upgradeable firmware in flash ROM

In-Band Manager

- Hot key "boot-up" McBIOS RAID manager via M/B BIOS
- Firmware built-in UEFI OS to launch McBIOS RAID manager
- Web browser-based McRAID storage manager via ArcHttp proxy
- Support Command Line Interface (CLI)
- API library for customer to write manager utility
- Single Admin Portal (ArcSAP) quick manager utility

Out-of-Band Manager

- Firmware-embedded web browser-based McRAID storage manager via Ethernet port
- Out-of-Band API sample and functional code for customer to quickly customize its AP.
- Support push button and LCD display panel (optional)

Operating System

Host Interface Mode=Areca Legacy Mode

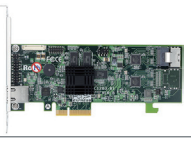
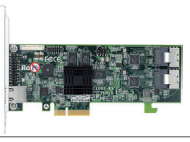
- Windows
- Linux
- FreeBSD
- VMware (Driver 6.x support CLI in-band management utility)

Host Interface Mode=NVME Mode

- OS Native (In-box) NVMe host adapter driver

• Environment

Operating	Temperature: +5˚c to +60˚c with 200 LFM airflow Humidity: 10-85%, non-condensing
Storage	Temperature: -40˚c to 70˚c Humidity: 5-90%, non-condensing
Regulatory Certification	CE, FCC

Model Name	ARC-1203-4I	ARC-1203-8I
I/O Processor	ARM_based 1066MHz storage I/O processor	
Host Bus Type	PCIe 2.0 x 4 Lanes	
Drive Connector	1xSFF-8087	2xSFF-8087
Drive Support	Up to 4x6Gb/s SATA HDDs/SSD	Up to 8x6Gb/s SATA HDDs/SSD
RAID Level	0, 1, 1E, 3, 5, 6, 10, 30, 50, 60, Single Disk, and JBOD	
On-Board Cache	1GB on-board DDR3-1066 SDRAM with ECC protection	
Management Port	In-Band: PCIe / Out-of-Band: LCD and LAN Port	
Enclosure Ready	Individual Faulty Header, SGPIO, and Serial Bus	
Form Factor (H x L)	Low Profile: 64.4 x 168 mm	
Products View		

areca® At the Heart of Storage
8F., No.22, Lane 35, Ji-Hu Rd., 114Taipei, Taiwan, R.O.C.
TEL: 886-2-87974060 FAX: 886-2-87975970 http://www.areca.com.tw
Technical Support: support@areca.com.tw Sales Information: sales@areca.com.tw