# ARC-1883i/1883x/1883LP

(8 Ports 12Gb/s SAS RAID Adapters)

ARC-1883ix-12/16/24

(16-28 Ports 12Gb/s SAS RAID Adapters)

The new third generation ARC-1883 family offers advanced technology for increased performance and improved enterprise data protection. They were designed with 1.2 GHz dual core ROC processor, DDR3-1866 memory architecture and PCIe 3.0 interface for the most performance-hungry database and IT applications. The ARC-1883 family includes 8 ports low profile as well as full height 12/16/24 internal ports with additional 4 external ports with mini SAS HD connectors for 12Gb/s throughput on each port.
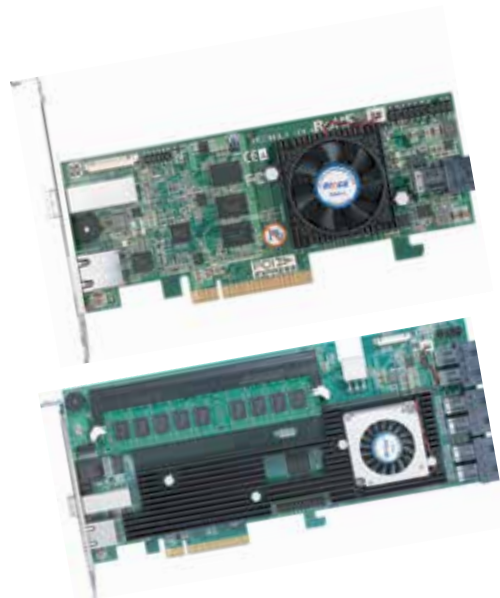
Highlights

- Supports up to (256) 12Gb/s SAS, SATA or SSD drives using SAS expanders

- 12Gb/s throughput at each drive ports

- Support up to 8GB DDR3-1866 cache (ARC-1883ix-12/16/24)

- DataBolt™ Bandwidth Optimizer for balance faster hosts and slower SAS or SATA devices. (For ARC-1883ix)

- Support flash-based backup module (FBM)

- Controller level hardware encryption for security

- SES2, SMP and SGPIO enclosure management

- Redundant flash image for adapter availability

- Multiple RAID 0 and RAID 10 (1E) support (RAID 00 and RAID100)

- Online capacity expansion, RAID level/stripe size migration

- Broad operating support including Windows, Linux (open source), FreeBSD (open source), Soaris (open source), Mac and VMware

Unparalleled Performance

The 12Gb/s SAS RAID controllers raise the standard to higher performance levels with several enhancements including new high performance 1.2 GHz dual core ROC processor, a DDR3-1866 memory architecture and high performance PCIe 3.0 interface bus interconnection. The low profile controllers by default support on-board 2G of ECC DDR3-1866 SDRAM memory. ARC-1883ix-12/16/24 RAID controllers each include one 240-pin DIMM socket with default 2GB DDR3-1866, single rank, 1Rx8, upgrade to 8GB or 8GB DDR3-1600, duak rank, 2Rx8, ECC SDRAM. The 12Gb/s SAS is designed for backward compatibility with 6Gb/s and 3Gb/s SAS and SATA hard drives. Regardless of the drive speed, 12Gb/s SAS RAID controllers will provide maximum read/write performance improvements for the most performance-hungry database and IT applications. The ARC-1883ix includes one 12Gb/s SAS expander that incorporates the latest enhancements in SAS along with new LSI DataBolt bandwidth optimizer technology. This is designed to help facilitate the industry transition to 12Gb/s SAS-enabled systems by allowing users to take advantage of 12Gb/s speeds while utilizing existing 6Gb/s drives and backplanes. Using DataBolt, the ARC-1883ix buffers 6Gb/s data and then transfers it out to the host at 12Gb/s speeds in order to match the bandwidth between faster hosts and slower SAS or SATA devices.

Maximum Interoperability

The 12Gb/s SAS RAID controller support broad operating system including Windows, Linux (Open Source), FreeBSD (Open Source), Solaris (Open Source), Mac, VMware and more, along with key system monitoring features such as enclosure management (SES-2, SMP, & SGPIO) and SNMP function. Our products and technology are based on extensive testing and validation process; leverage ARC-1880/1882 series controller field-proven compatibility with operating systems, motherboards, applications and device drivers.

Unsurpassed Data Availability

Designed and leveraged with Areca's existing high performance RAID solution, ARC-1883 provides superior levels performance and enterprise level data protection for the most demanding next-generation server and storage environments. It supports the hardware RAID 6 engine to allow two HDDs failures without impact the existing data and performance. It allows users to hot swap drive in the event of a drive failure with zero downtime. The optional flash-based backup module (FBM) provides power to the cache if it contains data not yet written to the drives when power is lost. ARC-1883 also supports traditional Lithium-ion (Li-ion) battery backup module (BBM) to protect cached data on RAID adapters.

Board-level hardware encryption manages any kinds of drives attached to ARC-1883 controller cards without impacting the performance for higher levels of security. API code support for third-party Enterprise Key Management systems to easy integrate and manage encryption function.

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 for all storage configuration and management needs from standard web browser. The Single Admin Portal (SAP) monitor utility can support one application to scan multiple Areca RAID units in the network.

Adapter Architecture

- Dual Core RAID-on-Chip (ROC) 1.2GHz processor
- PCIe 3.0 x8 lane host interface
- 2GB on-board DDR3-1866 SDRAM with ECC (ARC-1883LP/1883i/ 1883x)
- One 240-pin DIMM socket for 2GB(default) up to 8GB DDR3-1866, 1Rx8, ECC module or 8GB, DDR3-1600, 2Rx8, ECC module
- Write-through or write-back cache support
- Support up to 4/8/12/16/24 internal or 4/8 external 12Gb/s SAS ports
- Multi-adapter support for large storage requirements
- BIOS boot array support for greater fault tolerance
- Supports up to 256 SATA or SAS devices using SAS expanders
- Boot support for the uEFI host BIOS
- NVRAM for RAID event & transaction log
- Redundant flash image for controller availability
- Flash-based or battery backup module (FBM/BBM) ready (optional)
- RoHS compliant

RAID Features

- RAID level 0, 1, 10(1E), 3, 5, 6, 30, 50, 60, Single Disk or JBOD
- Multiple RAID 0 and RAID 10(1E) support (RAID 00 and RAID100)
- Multiple RAID selection
- Configurable stripe size up to 1MB
- Support HDD firmware update
- 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 for native 4K and 512 byte sector SAS and SATA devices
- Support intelligent power management to save energy and extend service life
- Support NTP protocol synchronize RAID controller clock over the on board Ethernet port
- Multiple pairs SSD/HDD disk clone function
- SSD automatic monitor clone (AMC) support
- Controller level hardware encryption function support

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

- 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 (optional)

Operating System

- Windows 8/server 2012/7/2008/Vista/XP/2003
- Linux
- FreeBSD
- VMware (only driver package available w/o in-band management)
- Solaris 10/11 x86/x86_64
- Mac OS X

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

• Electrical

Power Dissipation	12V
ARC1883i/x/LP	14.4W
ARC1883ix-12/16/24	37.2W

• 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-1883i	ARC-1883x	ARC-1883LP	ARC-1883ix-12	ARC-1883ix-16	ARC-1883ix-24
I/O Processor	Dual Core RAID-on-Chip 1.2GHz					
On-Board Cache	2GB on-board DDR3-1866 SDRAM			One 240-pin DIMM socket for 2GB(default) up to 8GB DDR3-1866, 1Rx8, ECC module or 8GB, DDR3-1600, 2Rx8, ECC module		
Drive Connector	2 x SFF-8643	2 x SFF-8644	1 x SFF-8643 1 x SFF-8644	3 x SFF-8643 1 x SFF-8644	4 x SFF-8643 1 x SFF-8644	6 x SFF-8643 1 x SFF-8644
Drive Support	Up to 256 12Gb/s SAS or 6Gb/s and 3Gb/s SAS/SATA HDDs/SSD, using 12Gb/s SAS Expander					
Management Port	In-Band: PCIe /Out-of-Band: BIOS, LCD and LAN Port					
Enclosure Ready	Individual Activity/Fault Header, SGPIO, SMP and SES2					
FBM/BBM Support	ARC-1882BA-T100 / ARC-6120BA-T121-12G			ARC-1882BA-T100 / ARC-6120BA-T121-12G		
Power Dissipation (12V)	14.4W			37.2W		
Form Factor(LxH)	Low Profile: 169.5 x 64.4 mm			Full Height: 254 x 98.4 mm		
Products View						