

## ARC-1886-8I/8X/4X8I

(8/12 Ports PCIe Gen 4.0 Tri-Mode RAID Adapters)

## ARC-1886-8X8I/16I/4X12I

(16 Ports PCIe Gen 4.0 Tri-Mode RAID Adapters)

The new fourth generation ARC-1886 family offers advanced technology for increased performance and improved enterprise data protection. They were designed with 1.6 GHz dual core ROC processor, DDR4-2666 memory and PCIe 4.0 interface for the most performance-hungry database and IT applications. Based on the ARM A15 PCIe 4.0 x8 to SAS/SATA/PCIe RAID on Chip (ROC) controller, the ARC-1886 series RAID adapters can offer both PCIe Gen 4.0 host and 12Gb/s SAS/SATA/PCIe (NVMe) tri-mode storage interfaces.



### Highlights

- Tri-mode interface at each drive ports-12Gb/s SAS/SATA/ Gen 4.0 PCIe (NVMe)
- x8 PCIe Gen 4.0 host interface
- Support up to 8GB DDR4-2666 cache
- Support for SAS tape devices and transport layer retries (TLR) for error handling
- Hardware secure boot ready
- Universal Bay Management (UBM) management
- SFF-9402 compliant connector pin-out
- Cache backup module (CBM) ready (optional)
- Controller based hardware encryption for security
- SED support for hardware encryption capable drives
- Redundant flash image for adapter availability
- Multiple RAID 0 and RAID 10 (1E) support (RAID 00 and RAID100)
- Broad operating support including Windows, Linux (open source), FreeBSD (open source), Mac and VMware

### Unparalleled Performance

The ARC-1886 series RAID adapters raise the standard to higher performance levels with several enhancements including new high performance 1.6GHz dual core ROC processor, a DDR4-2666 memory, 12Gb/s SAS/SATA/PCIe (NVMe) tri-mode storage and high performance PCIe 4.0 interface bus interconnection. The low profile adapters by default support on-board 8GB of ECC DDR4-2666 SDRAM memory. The ARC-1886 series RAID adapters are compatible with existing PCI Express SFF-8639 Module (U.2) backplanes allowing users to boost performance for increasing bandwidth requirements. The ARC-1886 RAID adapters will provide maximum read/write performance improvements for the most performance-hungry database, IT applications and streaming digital media environments.

### Guaranteed Data Protection

Designed and leveraged with Areca's existing high performance RAID solution, ARC-1886 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. The optional cache backup module provides power to the cache if it contains data not yet written to the drives when power is lost. Controller based hardware encryption manages any kinds of drives attached to ARC-1886 RAID adapters for higher levels of security. API code for third-party Enterprise Key Management systems integrates and manages encryption function. The on-board ROC incorporates advanced security through hardware secure boot. Hardware secure boot helps ensure that the firmware code running on ARC-1886 hardware platforms is authentic and unmodified.

### Maximum Interoperability

SFF-TA-10001 Specification (U.3), which defines a common bay type for SAS, SATA and NVMe. This provides for a Tri-mode host connection to the backplane that will accept a SAS/SATA or PCIe (NVMe) devices. The ARC-1886 RAID adapter can operate in all three modes concurrently servicing NVMe, SAS or SATA drives that offers the operation of NVMe, SAS or SATA storage devices in a single drive bay. With a single ARC-1886 series RAID adapter, system integrators can take full advantage of SAS, SATA and x1, x2, and x4 NVMe drives in existed U.2 / U.3 based backplane. Universal Backplane Management (UBM) defines a common backplane control and management framework for a host to determine SAS/SATA/PCIe backplane capabilities. The ARC-1886 series adapters are UBM ready, and customers can immediately integrate these adapters into their U.3 backplanes utilizing UBM. They support broad operating system including Windows, Linux (Open Source), FreeBSD (Open Source), Mac, VMware and more, along with key system monitoring features such as enclosure management (UBM, SES2, SMP, & SGPIO) and SNMP function.

### Intuitive RAID Management

The McBIOS RAID is a BIOS based utility used to simplify configure and manage RAID adapter via hot key at M/B BIOS boot-up screen. Without having to deploy an agent, you can also configure, deploy, update, and monitor the ARC-1886 series, via the GUI or through CLI utility. Customers can launch the firmware browser-based McRAID GUI through on-board Ethernet port or ArcHttp proxy server. Additionally, Areca ArcSAP storage manager allows the user to scan multiple RAID units in the network and perform GUI management operations across multiple RAID units. The API package defines a higher level of commands and functions for developers who want to configure Areca RAID adapters with their own utility.

## Adapter Architecture

- Dual Core RAID-on-Chip (ROC) 1.6GHz processor
- x8 PCIe Gen 4.0 host interface
- 8GB on-board DDR4-2666 SDRAM with ECC
- Write-through or write-back cache support
- Support read/write cache allocation by policy
- Support up to 8/16 internal or 8 external 12Gb/s SAS/SATA/PCIe Gen 4.0 (NVMe) ports
- Support backplanes based on the SFF-TA-1005 specification (UBM)
- Multi-adapter support for large storage requirements
- BIOS boot array support for greater fault tolerance
- Supports up to 512 SATA or SAS devices using SAS expanders
- Boot support for the uEFI host BIOS
- NVRAM for RAID event & transaction log
- Redundant flash image for adapter availability
- Cache backup module (CBM) ready (optional)
- Hardware secure boot ready
- SFF-9402 compliant connector pin-out
- Support for SAS tape devices and transport layer retries (TLR) for error handling

## Monitors/Notification

- System status indication through global HDD activity/fault connector, individual fault connector, LCD/I<sup>2</sup>C connector and alarm buzzer
- SMTP support for email notification
- SNMP support for remote manager
- Enclosure management (UBM, SES2, SMP and SGPIO) ready

## RAID Management

- Field-upgradeable firmware in flash ROM
- Support Out-of-Band management via Ethernet port
- Hot key "boot-up" McBIOS RAID manager via M/B BIOS
- Web browser-based McRAID storage manager
- Support command-line interface (CLI)
- API library for developers to configure RAID adapters with their own utility
- Single Admin Portal (SAP) storage manager
- Support push button and LCD display panel (optional)

## 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 UNMAP command
- S.M.A.R.T. support
- Multiple pairs SSD/HDD disk clone function
- SSD automatic monitor clone (AMC)
- Controller based hardware encryption function
- SED support for hardware encryption capable drives
- Support NTP protocol synchronize RAID adapter clock over the onboard Ethernet port

## Operating System

- Windows 10 / Server 2019 / Server 2016
- Linux / FreeBSD / XenServer / unRAID
- VMware (Driver 7.x/6.7 support CLI in-band management)
- macOS

For more information & latest supported OS listing visit [www.areca.com.tw](http://www.areca.com.tw)

## Environmental Specifications

Operating Voltage	12V
Power Consumption(8/16 ports)	Approximately 12/14 Watts
Temperature	Operating: 0°C to +55°C Storage: -40°C to 70°C
Humidity	Operating: 10-85%, relative humidity Non-operating: 5-90%, relative humidity
Compliance Certification	CE, FCC, RoHS

Model Name	ARC-1886-8I	ARC-1886-8X	ARC-1886-8X8I	ARC-1886-16I	ARC-1886-4X8I	ARC-1886-4X12I
I/O Processor	Tri-Mode Dual Core ARM A15 1.6GHz ROC					
On-Board Cache	8GB on-board DDR4-2666 SDRAM					
Drive Connector	1 x SFF-8654 [x8]	2 x SFF-8644 [x4]	1 x SFF-8654 [x8] 2 x SFF-8644 [x4]	2 x SFF-8654 [x8]	1 x SFF-8654 [x8] 1 x SFF-8644 [x4]	2 x SFF-8654 [x8] 1 x SFF-8644 [x4]
Drive Support	12Gb/s SAS, 6Gb/s SATA, Gen 4.0 PCIe (NVMe)					
Cache Protection	ARC-1886-CBM					
Enclosure Ready	SGPIO, Serial Bus, Fault Header ,SMP, SES2and UBM					
Management Port	In-Band: PCIe / Out-of-Band: LCD and LAN Port					
Form Factor (H x L)	LP-MD2 : 64.41(H) x 167.65(L) 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](mailto:support@areca.com.tw) Sales Information: [sales@areca.com.tw](mailto:sales@areca.com.tw)

Areca is a registered trademark of Areca Technology Corporation. Other brand names and product names are trademark or registered trademarks of their respective companies. This specification may be changed at any time without prior notice.