

ARC-1886-xNxl

(6Bays M.2 NVMe Tri-Mode RAID Adapter)

The ARC-1886-xNxl presents the advanced hardware RAID technology in enhanced performance of using 4/6 Bays M.2 NVMe and an improved enterprise data protection of using the additional SAS/SATA ports. The hardware RAID adapter accesses the data of NVMe disk array with a workload preset value. While the workload level stays within the preset value, the RAID adapter would constantly back up the data of NVMe disk array to the additional SAS/SATA ports hard disk arrays. This is designed in a 1.6 GHz dual-core ROC processor, DDR4-2666 memory and PCIe Gen 4.0 host/device interface and supports RAID levels 0, 1, 10, 3, 5, 6, 30, 50, 60, Single Disk or JBOD.



ARC-1886-4N8I



ARC-1886-6N2I

Highlights

- Supports up to 4/6 Bays M.2 slots and 1x SFF-8654[x8] / 2 x SATA connector
- Tri-mode interface at each M.2 bays - 12Gb/s SAS/SATA / Gen 4.0 PCIe (NVMe)
- x8 PCIe Gen 4.0 host interface
- Support up to 8GB DDR4-2666 cache
- Dynamically allocate storage 12Gb/s SAS/SATA/PCIe (NVMe) to slot1 and SAS/SATA ports on ARC-1886-6N2I
- Support off module power loss protection for Non PLP NVMe drive using CBM module (optional)
- RAID levels 0, 1, 10, 3, 5, 6, 30, 50, 60, Single Disk or JBOD
- Controller based hardware encryption for security
- Redundant flash image for adapter availability
- Hardware secure boot ready
- Capacity expansion, RAID level/stripe size migration
- Broad operating support including Windows, Linux (open source), FreeBSD (open source), Mac and VMware

NVMe Performance Gains for Fast Data

Based on the Broadcom SAS3916 x8 PCIe Gen 4.0 to SAS/SATA/PCIe RAID on Chip (ROC) controller, the ARC-1886-xNxl RAID adapter raises the standard to higher performance levels with several enhancements including a new high performance 1.6 GHz dual core ROC processor, a DDR4-2666 memory, outstanding performance PCIe Gen 4.0 host and 12Gb/s SAS/SATA/PCIe (NVMe) interface bus interconnection. The RAID adapter by default supports on-board 8GB of ECC DDR4-2666 SDRAM memory. The ARC-1886-xNxl, providing an extremely fast, reliable, and ultra-compact solution for companies that need storages, is especially designed and featured in the high-speed data recording and processing. This RAID adapter can back up to 4 or 6 NVMe on just one full high PCIe adapter, increasing the capacity/speed as more NVMe are added to it. The ARC-1886-xNxl supports both 2280 and 22110 form factor drives and combines them on a tri-mode RAID adapter to maximize I/O performance for database applications and streaming digital media environments. Damage in a software RAID is considered as the consumption of massive computation and memory bandwidth on the host. The ARC-1886-xNxl relieves the parity generation burden from the host and maximizes application processing performance.

Guaranteed Data Protection

In Areca's high-performance RAID solution, ARC-1886-xNxl brings PCIe NVMe to a superior performance hardware RAID at an elevated throughput, high IOPs and a low latency. It supports the hardware RAID 6 engine and allows two HDDs failures without impacting the existing data and performance. The ARC-1886-xNxl provides a dual disk array including a NVMe disk array and a hard disk array. The RAID firmware has a special mode to preset the value and backs up the data of M.2 NVMe disk array to the additional SAS/SATA ports hard disk array when the host workload level stays within the preset value. This has the advantages of fast access to data by the NVMe disk and scores high reliability of data storage on the hard disk. The ARC-1886-xNxl RAID adapter off module power loss protection (PLP) is optimized for datacenter environments. Its efficient PLP typically applies the capacitors on the NVMe SSD to provide hold-up power until the data is flushed from the NVMe internal DRAM to the NAND flash upon a sudden power off or any failure condition occurrence. ARC-1886-xNxl utilizes the optional CBM module to provide off module hold-up power, eliminating the need for capacitors on the NVMe SSDs which helps reduce cost. The CBM module or on-board battery (CR2032) supporting M.2 slot will show a fault LED status and easily be identified as a failed drive when it is removed from the system PCIe slot.

Maximum Interoperability

The ARC-1886-xNxl RAID adapter supports 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 and SNMP function. Our products and technology are based on extensive testing and validation processes, optimizing ARC-1883 series adapter in field-proven compatibility with operating systems, motherboards, applications, and device drivers.

Intuitive RAID Management

The McBIOS RAID is a BIOS based utility used to simplify configurations and manage RAID adapter via hot keys at M/B BIOS boot-up screen. Without deploying an agent, you can also configure, deploy, update, and monitor the ARC-1886-xNxl 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.

Adapter Architecture

- Dual Core RAID-on-Chip (ROC) 1.6GHz processor
- PCIe Gen 4.0 x8 lane host interface
- 8GB on-board DDR4-2666 SDRAM with ECC
- Support both 2280 and 22110 form factor M.2 drives
- Write-through or write-back cache support
- Support read/write cache allocation by policy
- Support up to 4/6 bays M.2 slots and 1x SFF-8654[x8] / 2 x SATA connector
- Tri-mode interface at each M.2 bay - 12Gb/s SAS/SATA / PCIe Gen 4.0 (NVMe)
- Dynamically allocate storage 12Gb/s SAS/SATA/PCIe (NVMe) to slot1 and SAS/SATA ports on ARC-1886-6N2I
- Multi-adapter support for large storage requirements
- Supports up to 256 SATA or SAS devices using SAS expanders
- BIOS boot array support for greater fault tolerance
- Device Interface per M.2 slot PCIe Gen 4.0 at 16GT/s per lane
- Boot support for the uEFI host BIOS
- NVRAM for RAID event & transaction log
- Redundant flash image for controller availability
- Support NVMe off module power loss protection using ARC-1886-CBM (optional)

Monitors/Notification

- System status indication through individual M2 fault LED and alarm buzzer
- SMTP support for email notification
- On-board battery (CR2032) to keep on M.2 fault LED status for troubleshooting
- SNMP support for remote manager
- Enclosure management (UBM, SES2, and SMP) ready

Operating System

- Windows 10/Server 2019/2016
- 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

RAID Features



- RAID levels 0, 1, 10(1E), 3, 5, 6, 30, 50, 60, Single Disk or JBOD
- Multiple RAID selections
- Configurable stripe sizes up to 1MB
- Array roaming
- RAID level/stripe size migration
- Capacity expansion and RAID level migration simultaneously
- Volume set growth
- Instant availability and background initialization
- Support global and dedicated hot spare
- S.M.A.R.T. support
- Support UNMAP command
- Multiple pairs SSD 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 controller clock over the on board Ethernet port

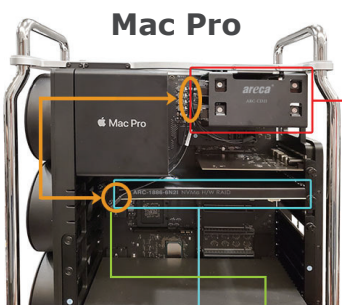
RAID Management

- 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 (ArcSAP) storage manager


Environmental Specifications

Operating Voltage	12V
Power Consumption	Approximately 14 Watts (without M.2 drive)
Temperature	Operating: +5°C to +60°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-1886-4N8I	ARC-1886-6N2I
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] 4 x M.2 Connector	2 x SATA 6 x M.2 Connector
Drive Support	12Gb/s SAS, 6Gb/s SATA, Gen 4.0 PCIe (NVMe)	
Cache Protection	ARC-1886-CBM	
Enclosure Ready	SGPIO, SMP, SES2 and UBM	
Management Port	In-Band: PCIe / Out-of-Band: LAN Port	
Form Factor (H x L)	107.2(H) x 205(L) mm	107.2(H) x 262(L) mm
Products View		




Mac Pro



Disk RAID
ARC-CD2I

Automatically backup
to Disk RAID
when workload does not
reach the preset values.



NVMe RAID ARC-1886-6N2I



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