ARC-1231ML/1261ML/1280ML/1280
12/16/24 ports PCI Express to SATA II RAID Adapters

Areca high-performance PCI-Express bus to SATA RAID host adapters support 12,16 and 24 SATA II peripheral devices on a single host adapter. SATA RAID controller has the same RAID kernel of its field-proven external RAID controllers. Applications that benefit most features from these controllers including NAS, server RAID solutions, web server, supercomputing, near-line backup, security systems and streaming and streaming applications server.

Unparalleled Performance

The SATA RAID controllers raise the standard to higher performance levels with several enhancements including Intel high-performance I/O Processor, a new DDR memory architecture (DDR2-533) and high performance PCI-Express bus interconnection. The controller delivers 1624MB/S Reads and 1295MB/S Writes All-in-Cache performance. The sustained rate performance is 846MB/S RAID 5 Reads and 816MB/S RAID 5 Writes. The controllers support one DIMM socket with default 256MB of ECC DDR2-533 SDRAM, upgrade to 2GB.

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. The SATA RAID controllers with extreme performance RAID 6 engine supported provide the highest RAID 6 feature to meet this requirement. The controller can concurrently compute two parity blocks and get sustained rate over 811 MB/S RAID 6 Reads and 776 MB/S RAID 6 Writes performance.

The SATA RAID controllers can also provide RAID levels 0, 1, 1E, 3, 5, 6 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 and Battery Backup and Redundant Flash Image. Greater than 2 TB support

allows for very large volume set application in 64-bit environment such as data-mining and managing large

Maximum Interoperability

The SATA RAID controllerS support broad operating system including Windows® Server 2003, Windows XP, Windows 2000, Linux (Open Source), FreeBSD (Open Source), Solaris,Mac and other operating systems, along with key system monitoring features such as I2C& SGPIO enclosure management and SNMP function.The controller firmware contains web Browser-basd RAID manager, SMTP manager and SNMP agent which can be accessed via on-controller Ethernet port with no agent software required.

Intergrated Solutions

The ML version comes with Min SAS 4i internal connector. This Min SAS 4i (SFF-8087) connector has eight signal pins to support four SATA drives and six pins for the SGPIO (Serial General Purpose Input/Output) side-band signals. The SGPIO bus is for efficient LED management and for sensing drive locate status, without any discrete fault & activity cable needed.

Easy RAID Management

The controllers contain an embedded McBIOS RAID manager that can access via hot key at BIOS boot-up screen. This pre-boot 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 Http Proxy server or on-controller Ethernet port in Windows, FreeBSD, Linux and more environments. The McRAID 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.

HIGHLIGHTS

- Supports up to 12, 16 and 24 Serial ATA II drives on a single host adapter

- All-in-Cache performance
  Read: 1624MB/S
  Write: 1295MB/S

- Sustained Transfer rate in RAID 5
  Read: 846MB/S
  Write: 816MB/S

- New Internal Min SAS 4i Connector for maximum reliability

- Intel RAID Engine to support highest speed RAID 6

- Online Capacity expansion, RAID level/stripe size migration

- Online Volume Set growth

- Redundant flash image for adapter availability

- Support Greater than 2TB per Volume set and battery backup module (BBM)

- Support spin down drives when not in use to extend service life (MAID)

- Broad operating system support including Windows, Linux (open source), FreeBSD (open source) and more.

ARC-1231ML/1261ML/1280ML/1280

Adapter Architecture

- Intel 800MHz IOP341 I/O processor
- PCI-Express X8 bus
- One DIMM socket with default 256MB of DDR2-533 SDRAM with ECC protection, Upgrade to 2GB. An ECC or non-ECC SDRAM module using X8 or X16 devices
- Write-through or write-back cache support
- Support up to 12/16/24 SATA II drives
- 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
- Intel RAID 6 inside to support extreme performance RAID 6
- NVRAM for RAID configuration & transaction log
- Redundant flash image for adapter availability Battery Backup Module(BBM) ready (Option)

RAID Features

- RAID level 0,1, 1E, 3, 5, 6 or JBOD
- Multiple RAID selection
- 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
- Automatic insertion/removal detection and rebuild
- Greater than 2TB per volume set
- Support S.M.A.R.T, NCQ and OOB Staggered Spin-up capable drives
- Support spin down drives when not in use to extend service life (MAID)

Monitors/Notification

- System status indication through HDD activity/fault connector, LCD Connector and alarm buzzer
- SMTP support email notification
- SNMP support for remote notification
- I2C& SGPIO Enclosure management ready

RAID Managment

- Field-upgradeable firmware in flash ROM

In-Band Manager
- Hot key boot-up McBIOS RAID manager via BIOS
- API library for customer to write its monitor utility
- Support Command Line Interface (CLI)
- Browser-based management utility via ArcHttp Proxy Server
- Single Admin Portal (SAP) monitor utility

Out-of-Band Manager
- Firmware-embedded Browser-based RAID manager,
- SMTP manager, SNMP agent and Telnet function via on-controller Ethernet port
- API library for customer to write its monitor utility Push Button and LCD display panel

Operating System

- Windows 2000/XP/Server 2003
- Linux (RedHat, SuSE, Debian, Mandrake,TurboLinux ,
- CentOS, etc.)
- FreeBSD
- Novell Netware 6.5
- Solaris 10 x86/x86_64
- SCO UnixWare 7.x.x

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

Environmental/Physical

Mechanical	
Dimension (HxL)	ARC-1231ML/ARC-1261ML/ARC-1280ML/1280: 98.4mm x 237.5mm
Environment	
Operating	Temperature: +5°c to +50°c Humidity:15-80%, non-condensing
Storage Temperature	Temperature: -40°c to 70°c Humidity:5-90%, non-condensing
Electrical	**PCI-Express**
Power Requirements	4.95W max.On 3.3V
	6.22W max.On +12V

ARECA PCI-Express RAID Card Comparison

Model Name	ARC-1231ML	ARC-1261ML	ARC-1280ML	ARC-1280
RAID Processor	Intel IOP341			
Host Bus Type	PCI-Express X8			
RAID 6 Support	YES	YES	YES	YES
Cache Memory	One DDR2 DIMM (Default 256 MB / Upgrade to 2GB)			
Ethernet Port	YES	YES	YES	YES
Driver Support	12*SATA II	16*SATA II	24*SATA II	24*SATA II
Connector Type	3*Min SAS 4i	4*Min SAS 4i	6*Min SAS 4i	SATA

Products View

ARC-1231ML	ARC-1261ML	ARC-1280ML	ARC-1280
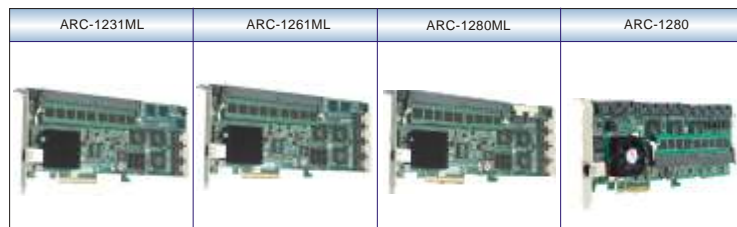
Performance View

RAID Level	R0 (MB/S)		R5 (MB/S)		R6 (MB/S)	
R/W	Read	Write	Read	Write	Read	Write
Sustained Rate	885	847	846	816	811	776
All-in-Cache	1624	1295	1624	1295	1624	1295

areca ®
At the heart of storage

8F., No. 22, Lane 35, Ji-Hu Rd, Nei-Hu., Taipei 114, 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

PCI-X 133

www.areca.com.tw