

At the heart of storage

ARC - 5010
IDE to IDE Subsystem**ARC - 6010**
SCSI to IDE Subsystem**ARC - 6020**
SCSI to SATA Subsystem

The Internal RAID Subsystem features a choice of Parallel ATA / Serial ATA (PATA / SATA) or LVD SCSI host attachment and IDE/SATA device attachment. Each system model allows one HDD failure without impact on the existing data and failed drive rebuild is transparent to the host. Environmental information is accessible either via the control panel or through serial port. The RAID controller is most cost-effective IDE/SATA disk drive RAID subsystems with completely integrated high performance and data protection capabilities, which are easily integrated into entry level servers. It can also meet the rapidly growing demand from the small to medium enterprise and SOHO markets.

HIGHLIGHTS

- ★ Provide PATA/SATA or Ultra 160/320 SCSI Channel Host Attachment and IDE/SATA channel device compatibility
- ★ PATA and SATA host channel can concurrently access different volume sets
- ★ Support RAID level 0, 1, (0+1), 3, 5 and JBOD
- ★ Ultra ATA/133 speed at all 5 ATA drive ports (ARC-5010/6010)
- ★ SATA II 300 speed at all 5 SATA drive (ARC-6020)
- ★ Online Capacity expansion, RAID level/stripe size migration
- ★ Online Dynamic Volume Set Capacity expansion
- ★ Redundant flash image for adapter availability
- ★ Hot swap, Hot spare and auto rebuilding function support
- ★ Web browser-based RAID manager via ArcHttp Proxy for Windows, Linux & FreeBSD environment
- ★ Fit 5 *1" IDE/SATA HDD in 3 consecutive (Free of wires and other obstructions) 5.25" driver bays(half-height bays)

Benefits of High Performance

The ARC-5010/6010 controller uses Toshiba 4927 I/O processor, a 66MHz/32-bit PCI, and PC-100 SDRAM memory architecture. The controller default supports 64MB on-board cache. The ARC-6020 controller new high-performance architecture comes from Intel 80321 I/O processor, a 133MHz/64-bit PCI-X, and DDR200 memory architecture. The data flow at 133MHz/64 bit PCI-X bus and 64-bit 200Mhz ECC DDR SDRAM makes its high data throughput. Data can be transferred between the controller and the drives through a high-speed 133MHz/64-bit path at a burst rate up to 1000MB/S. The system's overall performance can support up to one Ultra320 SCSI host channels. The controller default supports 128MB on-board cache.

The ARC-5010 (IDE-RAID-IDE) provides a cost-effective storage subsystem by using the main board IDE port; it can free a PCI slot. With Intel Accelerated Hub Architecture and VIA Link Architecture, the IDE bus bandwidth is independent of the PCI bus in the newer chip set design, freeing the best PCI performance for Ethernet Card. The ARC-5010 provides PATA and SATA host attachment. Both PATA and SATA channel can concurrently access different volume sets

Benefits of High Data Availability

The subsystem provides RAID levels 0, 1 (0+1), 3, 5 and JBOD RAID configurations. It can be managed either through the LCD control panel or RS232 port. Its high data availability and protection derives from the following capabilities: Online Capacity Expansion, Array Roaming, Online RAID Level / Stripe Size Migration, Global Online Spare, Automatic Drive Failure Detection, Automatic Failed Drive Rebuilding, Disk Hot Swap, and Online Background Rebuilding, Disk Hot Swap and Instant Availability/Background Initialization.

When the controller detects a hard drive

failure in a RAID 1(0+1), 3 and 5 logical drive, the disk array will automatic rebuild using hot-spare drive. Data is reconstructed into the hot-spare drive during normal operation without having to take the array off-line. The hot-swap function allows users to remove the failed drive, install a new drive, and automatic rebuild the data on the new drive, all without interrupting system operations.

During the controller firmware upgrade flash process, it is possible for a problem to occur resulting in corruption of the controller firmware. With our Redundant Flash feature the controller will revert back to the last known version of firmware and continue operating. This reduces the risk of system failure due to firmware crash.

The NVRAM store the data on the current configuration of the controller and its attached disk drives, and lists of pending write operation issued to any drives. These data are checksum protected so that after a power failure, the controller will recall the configuration and consistency for all check outstanding writes on region.

Benefits of Setup /Status Monitoring

Manual configuration and monitoring can also be done through the LCD Control Panel. The firmware also contains an embedded terminal-emulation & HTTP browser-based program that can support the RS-232 (Serial Console) port out-of-band management. The controller can use the interface to simplify the setup and management of their associated disk drives. The hardware monitor can monitor system voltage, temperature and FAN. The warning message will show in the LCD, alarm buzzer and respect LED indicators.

ARC-5010/6010/6020

SPECIFICATIONS

IDE to IDE SubSystem, SCSI to IDE SubSystem, SCSI to SATA SubSystem

Adapter Architecture

ARC-5010/6010

- ★ Toshiba TMPR4927ATB 200MHz 64-bit RISC processor
- ★ 64MB on-board cache memory with ECC protection
- ★ Areca 5 channels IDE controller (ARC600-66) with enhanced H/W XOR engine

ARC-6020

- ★ Intel FW80321 400MHz I/O processor
- ★ 128MB on-board DDR200 SDRAM with ECC protection
- ★ Marvell 8 channels SATA-II controller

ARC-5010/6010/6020

- ★ NVRAM for RAID configuration & transaction log
- ★ Write-through or write-back cache support
- ★ Firmware in Flash ROM for easy upgrades

RAID Features

- ★ RAID level 0, 1 (0+1), 3, 5 and JBOD
- ★ Multiple RAID selection
- ★ Online Array roaming
- ★ Online RAID level/stripe size migration
- ★ Online capacity expansion and RAID level migration simultaneously
- ★ Online Dynamic Volume set capacity expansion
- ★ Instant availability and background initialization
- ★ Automatic insertion/removal detection and rebuild
- ★ Greater than 2TB per volume set

Monitors/Notification

- ★ Push Buttons and LCD Display Panel for setup and configuration (option)
- ★ 5 drive LED indicators and 3 environment LED indicators
- ★ Environment and drive failure indication through LCD, LED and alarm buzzer

Disk Bus Interface

ARC-5010/6010

- ★ Ultra ATA/133 compatible

ARC-6020

- ★ SATA II compatible

ARC-5010 Host Connectivity

- ★ Dual ATA interface-Ultra ATA/133 & Serial ATA 1.0
- ★ Ultra ATA/133 compatible; Transfer rate up to 133MB/sec
- ★ Serial ATA 1.0 - 1.5Gbps(150 MB/sec)

ARC-6010 Host Connectivity

- ★ Ultra 160-Wide LVD SCSI; Transfer rate up to 160MB/sec
- ★ Tagged Command Queuing
- ★ Concurrent I/O commands

ARC-6020 Host Connectivity

- ★ Ultra 320-Wide LVD SCSI; Transfer rate up to 320MB/sec
- ★ Tagged Command Queuing
- ★ Concurrent I/O commands

RAID Management

- ★ Bootable CD VT-100 utility for X86-based system initialization
- ★ Field-upgradeable firmware in flash ROM via RS-232 port
- ★ Web browser-based RAID management via Archttp proxy through RS-232 port for windows, Linux & FreeBSD enviroment
- ★ Firmware-embedded manager via RS-232 port (platform independent)
- ★ Firmware-embedded Browser-based RAID manager, STMP manager, SNMP agent, and Telnet function via Ethernet port(ARC-6020)
- ★ Support controller's API library for customer to write its own AP

Mechanical

- ★ Form Factor
 - ★ 3 consecutive 5.25" driver bays
- ★ Dimension(W x H x D)
 - ★ 148 x 128 x 244 mm
 - ★ 148 x 128 x 220 mm(ARC-6020)
- ★ Weight
 - ★ 5.95 lbs/2.7 kg (w/o disk drive)

Operating System

- ★ OS Independent

ARECA Internal SATA RAID SubSystem

	ARC-5010	ARC-6010	ARC-6020
PATA Host Channel Adapter Port	1		
SATA Host Channel Adapter Port	1		
SCSI Connector Input		1	1
SCSI Connector Output		1	
High Density SCSI Connector			1
Ethernet LAN Connector			1
RS232 Connector	1	1	1
Power Input Connector	2	2	2
LCD Module Connector	1	1	1
			

areca® Areca Technology Corporation.

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2F., No. 47, Lane 3, 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



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