


RAID Systems						RAID Systems				JBOD			
Product Series	YOTTA A Enhance		YOTTA III Tower Type Low Noise Design	YOTTA III E series Single controller supported only		YOTTA III Single or Dual Active-Active Redundant Controller Supported				YOTTA III		YOTTA III Tower Type Low Noise Design	
Model Name	YA-08SAES3p YA-12SAES3p YA-16SAES3p	YA-08SAEF4p YA-12SAEF4p YA-16SAEF4p	Y3-12S6ES6-D Y3-12S6EF8-D Y3-12S6EPE-D	Y3-12S6ES6 Y3-16S6ES6 Y3-24S6ES6	Y3-12S6EPE Y3-16S6EPE Y3-24S6EPE	Y3-12S6SS6 Y3-16S6SS6 Y3-24S6SS6	Y3-12S6DS6 Y3-16S6DS6 Y3-24S6DS6	Y3-12S6SF8 Y3-16S6SF8 Y3-24S6SF8	Y3-12S6DF8 Y3-16S6DF8 Y3-24S6DF8	Y3-12S6JS6 Y3-16S6JS6 Y3-24S6JS6	Y3-12S6TS6 Y3-16S6TS6 Y3-24S6TS6	Y3-12S6JS6-D	
System Type	Rackmount		Tower	Rackmount		Rackmount						Tower	
Controller	Single					Single	Dual Redundant	Single	Dual Redundant	Single	Dual Redundant	Single	
Host Interface per Controller	2 x 3Gb Mini-SAS	2 x 4Gb Fibre	2 x 6Gb Mini-SAS 4 x 8Gb Fibre 1 x PCIe x8	2 x 6Gb Mini-SAS	1 x PCIe x8	2 x 6Gb Mini-SAS		4 x 8Gb Fibre		1 x 6Gb Mini-SAS			
Disk Interface	8 / 12 / 16bay x 3Gb SATA		12bay x 6Gb SAS/SATA	12 / 16 / 24bay x 6Gb SAS/SATA		12 / 16 / 24bay x 6Gb SAS/SATA						12bay x 6Gb SAS/SATA	
JBOD Expansion Port per Controller	N/A		1 x 6Gb Mini-SAS 2 x 6Gb Mini-SAS 1 x 6Gb Mini-SAS	1 x 6Gb Mini-SAS		2 x 6Gb Mini-SAS				2 x 6Gb Mini-SAS			
Tray Type	Short		Long	12/16:Short ; 24:Long		Long							
Cache Memory	Up to 4GB 240pins DDR2-533 with ECC SDRAM		Up to 4GB 240pins DDR2-800 with ECC registered SDRAM			Up to 4GB 240pins DDR2-800 with ECC registered SDRAM				N/A			
RAID Levels	0, 1, 10(1E), 3, 5, 6 and JBOD		0, 1, 10, 3, 5, 6, 30, 50, 60, Single Disk and JBOD			0, 1, 10, 3, 5, 6, 30, 50, 60, Single Disk and JBOD						N/A	
RAID Features	Multiple RAID selections Online array roaming Offline RAID set Online RAID level / stripe size migration Online capacity expansion and RAID level migration simultaneously Online volume set growth Support global and local hot spare (YOTTA A Enhance only supports global hot spare) Instant availability and background initialization Automatic drive insertion / removal detection and rebuilding . Greater than 2TB per volume set (64-bit LBA support), Greater than 2TB per disk drive Disk scrubbing / array verify scheduling for automatic repair of all configured RAID sets Login record in the event log with IP address and service (http, telnet and serial) Support NTP protocol to synchronize RAID controller clock over the on-board LAN port Max 122 devices (For Yotta III only) Max 128 LUNs (Volume set)					Multiple RAID selections Online array roaming Offline RAID set Online RAID level / stripe size migration Online capacity expansion and RAID level migration simultaneously Online volume set growth Support global and local hot spare Instant availability and background initialization Automatic drive insertion / removal detection and rebuilding . Greater than 2TB per volume set (64-bit LBA support), Greater than 2TB per disk drive Disk scrubbing / array verify scheduling for automatic repair of all configured RAID sets Login record in the event log with IP address and service (http, telnet and serial) Support NTP protocol to synchronize RAID controller clock over the on-board LAN port Max 122 devices (For Yotta III only) Max 128 LUNs (Volume set)				The HDDs in SAS expanders are parts of RAID set with main RAID unit			
Hot Swap Components	Power Supply, FAN, Disk Drive					Power Supply, FAN, Disk Drive,Controller				Power Supply, FAN, Disk Drive,Controller		Power Supply, FAN, Disk Drive	
Battery Backup Module	Optional, supporting 72 hours battery backup time					Optional, supporting 72 hours battery backup time				N/A			
RAID Management	Firmware embedded Web browser-based RAID manager via built-in 10/100 Ethernet port Firmware embedded manager via RS-232 port / McBIOS (PCIe RAID only) Firmware embedded manager through LCD control panel Field-upgradeable firmware from flash ROM					Firmware embedded Web browser-based RAID manager via built-in 10/100 Ethernet port Firmware embedded manager via RS-232 port Firmware embedded manager through LCD control panel Field-upgradeable firmware from flash ROM				Managed by RAID controller or HBA			
Monitors & Notifications	All system status can be monitored via Firmware-embedded Web browser-based RAID manager System status indication through LCD, LED and alarm buzzer All system events can be sent to multiple user via emails alerts SNMP agent already embedded in the firmware allows remote to monitor events through LAN					All system status can be monitored via Firmware-embedded Web browser-based RAID manager System status indication through LCD, LED and alarm buzzer All system events can be sent to multiple user via emails alerts SNMP agent already embedded in the firmware allows remote to monitor events through LAN				Monitored & noticed by RAID controller, JBOD status LED, LCD(YOTTA III Tower Type only) indicators			
Operation Systems	OS independent and transparent (PCIe Raid needs drivers)					OS independent and transparent							
Power Supply	Redundant by dual 375W power modules with PFC feature, loading sharing type and cableless design: YOTTA A 8/12 bays system, YOTTA III E series 12 bay system Redundant by dual 460W power modules with PFC feature, loading sharing type and cableless design: YOTTA A, YOTTA III 16 bay system Redundant by three 460W power modules with PFC feature, loading sharing type and cableless design: YOTTA III 24 bay system Redundant by dual 400W power modules with PFC feature, loading sharing type, cableless and low noise design: YOTTA III 12 bay Tower type and 12 bay Redundant version					Redundant by dual 460W power modules with PFC feature, loading sharing type and cableless design: YOTTA III 16 bay system Redundant by three 460W power modules with PFC feature, loading sharing type and cableless design: YOTTA III 24 bay system Redundant by dual 400W power modules with PFC feature, loading sharing type, cableless and low noise design: YOTTA III 12 bay Tower type and 12 bay Redundant version							
Electrical	AC Voltage 110~230 VAC/AC frequency 50-60Hz					AC Voltage 110~230 VAC/AC frequency 50-60Hz							
Temperature	Operating temperature: 5 ~ 35 degree Celsius		Non-Operating temperature: -40 ~ 60 degree Celsius			Operating temperature: 5 ~ 35 degree Celsius		Non-Operating temperature: -40 ~ 60 degree Celsius					
Relative Humidity	20% ~ 80% non-condensing					20% ~ 80% non-condensing							
Dimension (mm) W x D x H	08/12Bay: 446.6 x496 x 2U 16Bay: 446.6 x477 x 3U		214 x 426 x 439	12Bay: 446.6 x520 x 2U 16Bay: 446.6 x520 x 3U 24Bay: 446.6 x560 x 4U		12Bay: 446.6 x560 x 2U 16Bay: 446.6 x560 x 3U 24Bay: 446.6 x560 x 4U				214 x 426 x 439			
Weight (kg) (w/o HDD)	8Bay: 14.8; 12Bay:15.6; 16Bay:20		19.6	12Bay :15.6; 16Bay:22.7; 24Bay:28.4		Single 12Bay :15.8; 16Bay:25; 24Bay:32		Dual 12Bay:17.4; 16Bay:26.6; 24Bay:34			19.6		
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YOTTA III / A Enhance RAID Sub-Systems

RAID Feature Highlights



Convenient Modularized Designs

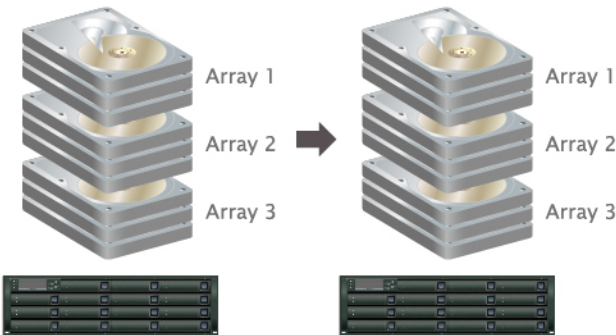
Fully modularized design that replaces all the cables with connectors. RAID controller, cooling fans, disk drives, and power supplies can be easily hot swapped, to eliminate the down time of RAID service.

EZSecure Lock

The disk cartridges come with user-friendly, keyless and secure 2-step safety design, to prevent accidental removal of the hard drives.

Array Roaming

Allows the administrators to move the complete RAID set to another system without losing RAID configuration and data stored in a RAID set. If a RAID subsystem fails to work, the RAID set disk drives can be moved to another RAID system and inserted in any order and then the data will restore back to the new system.



Online Capacity Expansion

Make it possible to add one or more physical drive to a volume set while the server still in operation, eliminating the need of store or restore after reconfiguring the RAID set.

Before Array Expansion

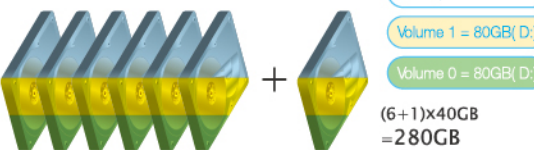
Array-A 240GB



After Array Expansion

(Adding One Disk)

Array-A 280GB



S.M.A.R.T

Self-Monitoring Analysis and Reporting Technology is an "early warning system" that the disk manufacturers incorporate logic into their drives. YOTTA RAID S.M.A.R.T. function detects and reports the status of hard drives health, thus improve the data availability.

Easy Management

Configure or maintain the RAID via RS232 port, LCD control panel or Web browser-based manager. RAID configuration, system monitoring and error alert can be done at your finger tips.

Instant Availability/Background Initialization

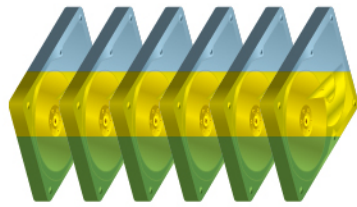
The operating system can instantly access the newly created arrays without requiring a reboot or waiting for the initialization to be completed.

Multiple RAID Selection

Multiple volume sets with different or same RAID levels, can coexist on a group of disks in a RAID Set. It provides a selective storage presentation, facilitating flexible LUN mapping.

Raid Set 1

(6 Individual Disks)



Online RAID Level and Stripe Size Migration

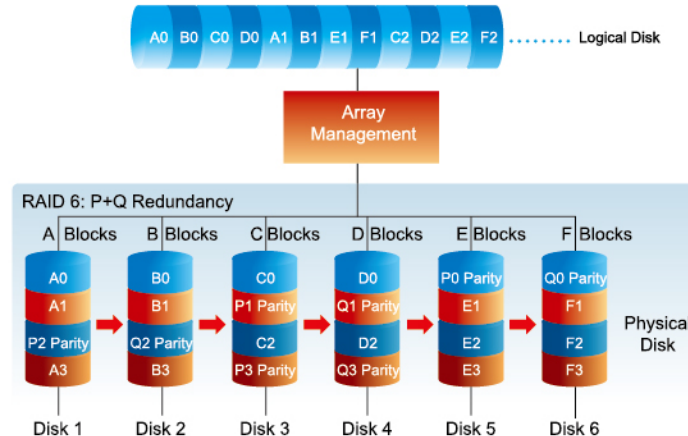
The feature makes the RAID configuration change easier during performance tuning or adding extra physical disks.

SNMP

YOTTA RAID system firmware-embedded Simple Network Management Protocol (SNMP) allows users to monitor the RAID system remotely.

RAID 6

It is an essential extension of a RAID 5 array with a second independent distributed parity scheme. RAID 6 provides an extremely high fault tolerance, and can sustain two simultaneous drive failures without downtime or data loss.



MPIO

Multi-Path solutions are designed to provide failover through the use of redundant physical path components.

YOTTA III Series RAID System

New generation YOTTA III Series is a high performance enterprise class storage solution. This new generation storage solution is built upon on high performance LSI 800MHz RAID-on-Chip storage processor with x8 PCI Express® 2.0, 800MHz DDR2 memory, and 16 ports of 6Gb/s SAS integrated. It incorporates flexibility host interface connections; 6Gb/s SAS or 8Gb/s fibre channels or PCIe x8 Gen.2 host providing a dramatically performance enhancement and increasing the speed up to twice more than previous generation.

When YOTTA III series expander port is used with SAS 6Gb/s expander, the YOTTA III series can provide up to (122) devices through one or more 6Gb/s SAS JBODs.

YOTTA III Dual Active-Active Redundant RAID subsystems offer the full redundancy that is expected of an enterprise solution. Dual Active-Active controller modules with cache mirroring over a PCIe Gen 2 link, allows redundant data paths to ensure data availability, while redundancy power supplies, cooling fans are in place to minimize downtime and any disruption to business continuity.

YOTTA III series, with its unique combination of features, makes it an ideal solution for applications demand for higher performance, networking bandwidth and support for virtualization applications, especially for cloud storage, near-line backup, digital media editing, post production and broadcasting.

YOTTA III Advanced Feature Highlights

SAS 6G
Support 6Gbps and 3Gbps SAS & SATA drives simultaneously

Greater than 3TB
Support HDD greater than 3TB

6Gb/s Serial Attached SCSI
One or two SAS-wide host interface ports per controller

PCI EXPRESS
PCIe x8 Gen 2 Host Connection

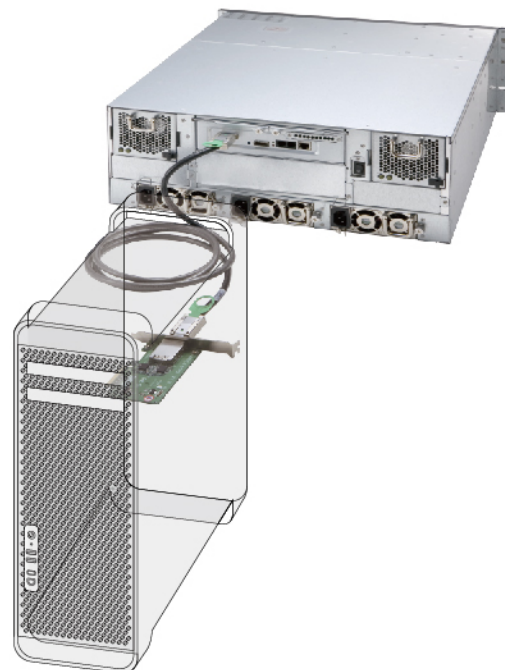
Fibre 8G
Quad 8Gbps FC ports per controller provides maximum system throughput

Redundant Controller
Active-Active redundant controller support with ALUA architecture

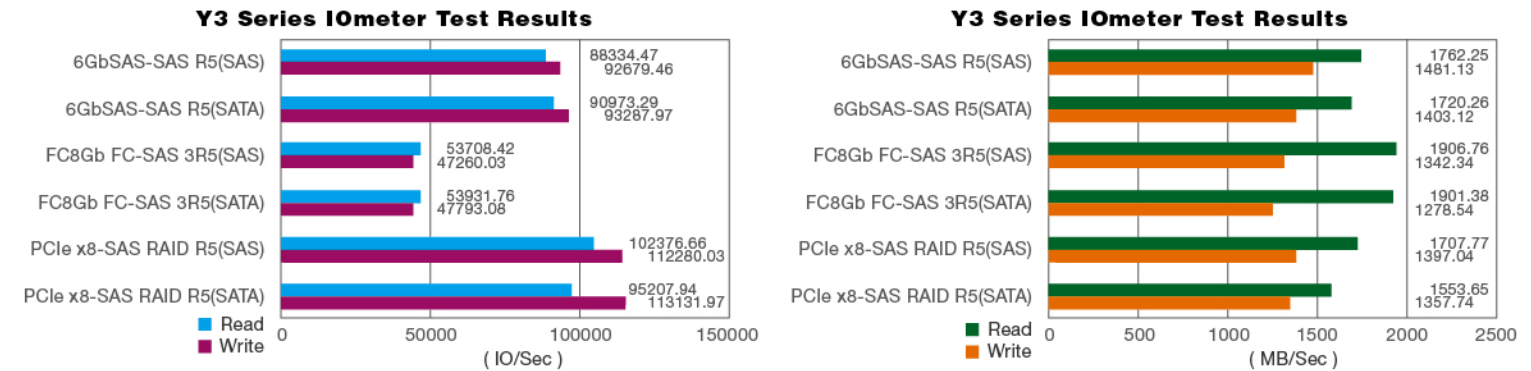
PCIe x8 Gen 2 Host Connection

YOTTA III PCIe attached RAID subsystem, known as PCIe RAID, takes high performance advantage of PCI Express bus with 4000MB/s (PCIe x8 Gen 2) bandwidth, and simplifies data transmission protocol directly from Memory to RAID via DMA scheme to minimum CPU overhead and conversion time, hence maximize throughput rate.

Compare PCIe RAID with traditional Fibre or SAS RAID, which need higher cost of Fibre or SAS HBA card installed on the host side, PCIe RAID ships with PCIe Re-Driver card as bundle providing the easy way for the installation and budget consideration. Moreover, sole vender solves the compatibility issue between storage and host by providing various drivers such as Windows 7/Vista/XP, Linux, Mac to meet the most popular platforms operation.



Performance chart for YOTTA III series with R5, 3R5 configurations



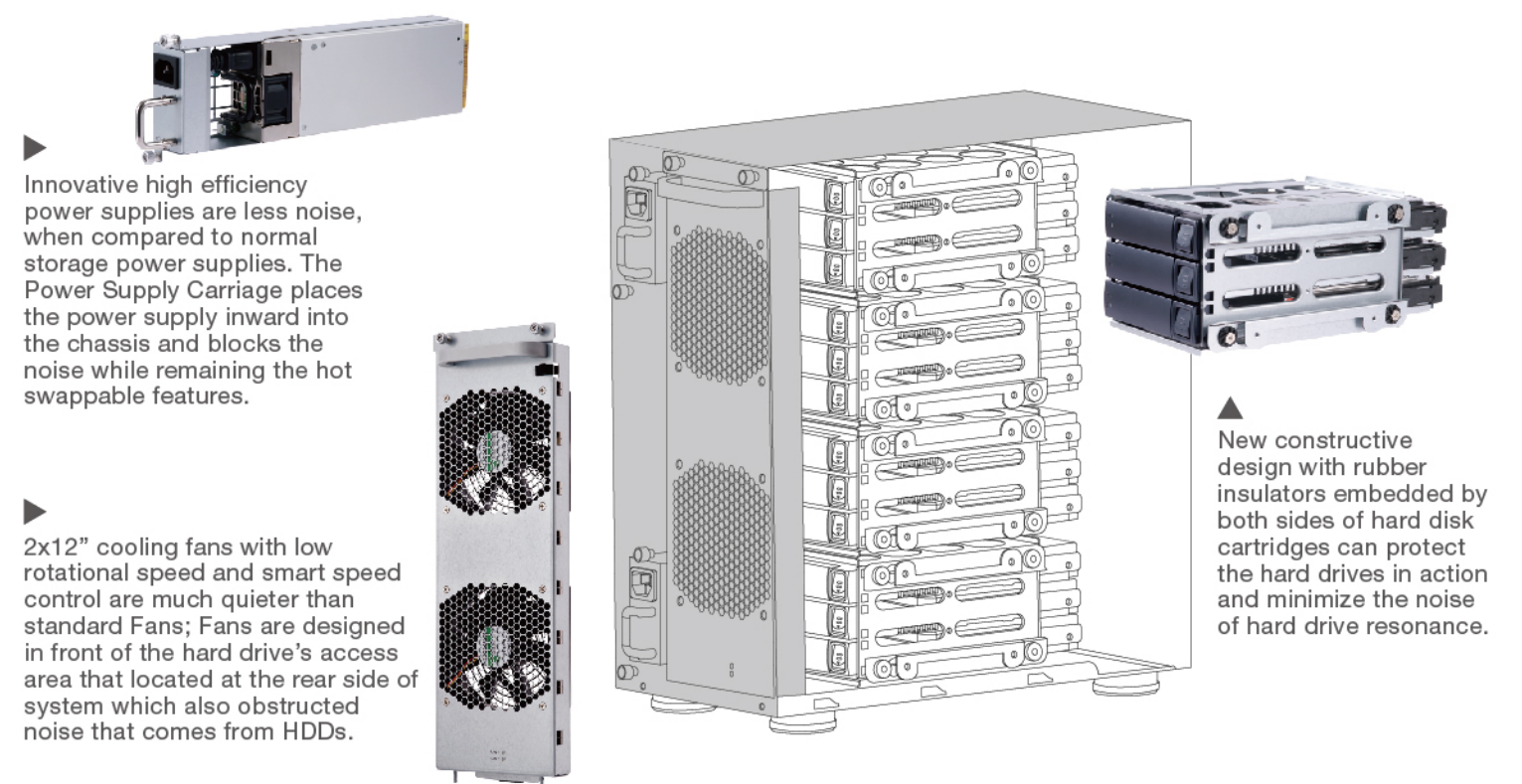
Performance measured by IOMeter_V 2008.6.22-Transfer request size 512 Bytes (32x/Os). OS: Windows Server 2008 Enterprise SP1

Performance measured by IOMeter_V 2008.6.22-Transfer request size 512K Bytes (32x/Os). OS: Windows Server 2008 Enterprise SP1

YOTTA III Tower Type RAID System Low Noise Designed

Low Noise YOTTA III Tower RAID subsystems are members of YOTTA III series. It was designed to offer a data storage with nominal noise. The ideas without annoying noise and offering superior performance provides the best choices in the field of professional and applications that noise cannot be tolerated in an environment such as audio/video editing, post production, broadcasting.

Advanced Quiet Design



Great Flexibility

This model can be setup either on the desktop next to the workstation in the tower type or on the rack with other professional equipment in the rack-mount type providing the flexibility to meet the customer needs.

YOTTA A Enhance Series

YOTTA A series, also known as Low Total-Cost-of-Ownership RAID solutions for entry level storage filed. YOTTA A Enhance version is built with Intel® IOP348 I/O Processor delivers a new level of storage performance, which is around two times higher than its previous version YOTTA A series. YOTTA A Enhance version inherited YOTTA A series' low cost advantage and brings you a way to meet up-to-date applications, which require higher data throughput rate. YOTTA A Enhance series equipped with 3Gb SAS or 4Gb Fibre host interface and cost-efficient SATA II hard drives deliver up to 700+MB/s data throughput rate. YOTTA A Enhance series starts from 2U 8 HDD Bay, 2U 12 HDD Bay to 3U 16 HDD Bay capacities.