

FlashDisk® Rugged Removable Canister RR2P™ Series

**Lightweight, Rugged Dual-Pluggable Canister RAID with 2.5" SFF Disks
Perfect for Airborne, Shipboard and Ground Mobile Data Recorder**

Designed as transportable data storage for mobile field use aboard planes, ships and ground transport, the RR2P is a lightweight aluminum 2U RAID disk array, weighing 48 pounds fully loaded, featuring two secure, yet easily removable disk canisters. Each canister holds 10 compact 2.5" Small Form Factor (SFF) disk drives with capacity up to 1 TB each and total system capacity to 20 TB. For speed, capacity and economy a variety of SAS and Solid State Disks (SSDs) are available in the 2.5" SFF size to meet varying needs. The RAID controller delivers up to 2,000 MB per second write throughput for rapid data recording and up to 2,200 MB per second for data reading and transfer from SAS disks.



For rapid field re-deployment of critical surveillance vehicles including planes, ships and Humvees, the RR2P dual canister systems enables recorded data to be removed and replaced immediately with fresh canisters in under two minutes.



Pluggable canisters are easy to insert and remove.

In a typical surveillance application, the post-mission canisters with the critical images are easily removed and plugged into a ground station. Fresh canisters are immediately loaded into the mobile unit for rapid redeployment. All 10 disks in a canister are carried as a single unit by a handle for safe transport. Each canister locks into place with a positive locking lever. Reliable canister connectors are military grade for field usage. For personnel safety during deployment, the canisters are held by secure restraints for crash protection impact to 200G.

The RR2P is a configurable Fibre Channel 8 Gb hosted product, with two ports per canister, that offer options including AC or DC power supplies variety of disk and SSD storage alternatives. It is conveniently only 17" wide to mount with a variety of standard rackmount rails and offers optional base plate mounting screws for secure lockdown to the vehicle.

The RR2P is designed to facilitate rapid data transfer from mobile vehicles to ground stations. Importantly, the RR2P will operate at 40° C and at 10,000 foot pressurized altitudes. Variable speed fans provide cooling on demand while reducing noise and vibration at moderate ambient temperatures. A front-mounted LCD on each canister provides power, activity and status information.

RR2P Series

Pluggable Canister RAID

- Two canisters per 2U rackmount shelf
- Canister holds ten 2.5" SFF disks or SSDs
- Quick insertion/removal
- Positive canister locking mechanism
- Canister restraints for crash protection
- Four 8 Gb Fibre Channel ports
- 5° to 40° C operating temperature
- 2,200 MB read/2,000 MB write throughput

Connectivity, Capacity & Scalability

- Supports 20 SAS or SSD 2.5" SFF disks
- 17" wide x 22" deep for ease of mounting
- Rackmount rail kits available
- AC or DC power input
- 2 GB controller cache

Reliability & Serviceability

- RAID 0, 1, 5, 6, 10, 50, 60 data protection

Centralized & Remote Management

- Manage via IP, SMTP, SNMP, RS-232, CLI

Designed to Meet Military Standards

- MIL-STD-810F - Environmental
- MIL-STD-901D - Shock and Vibration
- MIL-STD-461E - EMI/RFI
- MIL-STD-1686A - ESD

RR2P Pluggable Canisters Front and Rear Views



Sturdy lightweight, milled-aluminum canister records up to 10 TB and is designed for quick data transfer to ground stations from mobile vehicles. Interior view at right shows the 10 disk drives in the canister.

Rear view of canister shows high speed SAS 6 Gb connectors and four variable speed, high performance cooling fans.



RR2P System Status



RR2P monitors status with easy to recognize fault indicators.

RR2P Logical Drive Status

ID	Status	RAID Level
LD 0	Green checkmark	RAID0
LD 1	Red X (Offline)	RAID0
LD 2	Yellow warning (Rebuild)	RAID1
LD 3	Green checkmark	RAID1
LD 4	Green checkmark	RAID5
LD 5	Green checkmark	RAID5
LD 6	Green checkmark	RAID5
LD 7	Green checkmark	RAID5

RR2P logical drives displays online, offline and rebuild status.

2U RAID Disk Array

RAID Controller
 Canisters
 RAID levels supported
 Host interface
 Drive interface
 Number of drives/Total capacity
 On-line capacity expansion
 Cache memory capacity
 Non-volatile cache
 Maximum LUNs
 LUN masking
 Port mapping
 Multipathing (MPIO)

Canisters

Capacity
 Weight
 Display
 Keying
 Connectors
 Latch
 Restraints
 Cooling fans

Disk Drives

2.5" SAS disk drives, 15k rpm
 2.5" SAS disk drives, 10k rpm
 2.5" SAS disk drives, 7.2k rpm
 SSD disk drives

Single RAID controller
 2, each with 10 SFF 2.5" disks or SSDs
 0, 1, 5, 6, 10, 50, 60
 8 Gb Fibre Channel
 6 Gb SAS
 20 drives/20 TB maximum capacity
 Automatically adds new drives to existing array
 2 GB
 Optional battery backup option with 72 hour protection
 1024 LUNs
 Configurable for each host LUN on FC SAN
 Map ports to servers for direct attach environments
 MPIO supported for Windows and Linux

10 SAS or SSD disks
 10 lbs with HDDs; 8 lbs with SSDs
 Center mounted LCD with status information
 Keyed left/right canisters optional
 Military grade for high field reliability
 Individual canister latching lever for secure insertion
 Crash resistant canister restraints for personnel safety
 4 variable speed cooling fans per canister

73, 146, 300 GB
 300, 450, 600 GB
 500 GB, 1 TB
 50, 100, 200 GB SLC; 100, 200, 400 GB MLC

Controls and Indicators

Firmware embedded manager
 Firmware embedded web browser
 Firmware embedded CLI
 Firmware embedded SMTP
 Firmware embedded SNMP
 Indicators

Access via RS-232 port
 Use standard web browser on 10/100 Gb LAN port
 Command Line Interface for text management
 Monitor system events via email
 Monitor system events via SNMP without agent
 Front panel power and status indicators

Compatibility

Operating systems
 Platforms supported
 Remote monitoring ports

Supports industry standard operating systems
 Supports Fibre Channel and embedded FPGA hosts
 RS-232 and 10/100 Ethernet

Storage Management

Event notification
 Manage out of band
 Centralized management

Automatic event and problem alert notification
 Ethernet
 Manage from any LAN workstation with web browser
 and no additional software

General

AC power
 AC connector
 Power consumption
 RAID unit dimensions
 RAID unit weight
 Temperature
 Cooling system
 Compliance

Single 100-240 VAC Inlet, 47-63 Hz
 3-prong AC plug or military circular, capped connector
 750 Watts; 550 Watts peak, 350 Watts operating
 3.5" (2U) high x 17" wide x 22" deep
 48 lbs. with HDDs; 44 lbs with SSDs
 5° to 40° C operating; -40° to 60° C non-operating
 2 high volume cooling fans on rear panel
 FCC, UL, CE pending

Warranty

Standard Warranty
 Service Contracts

One year warranty and toll-free hotline
 Extend standard warranty for subsequent years,
 Upgrade to on-site service in continental US