RAIDON iR5740M: 4-Bay M.2 SATA SSD Internal Hardware RAID Module

High-Density, Front-Serviceable M.2 SATA RAID Storage in One Standard 3.5-Inch Bay

Four M.2 SATA SSDs. One 3.5-inch bay. Built-in hardware RAID.

The RAIDON iR5740M consolidates four M.2 SATA SSDs into a single standard 3.5-inch drive bay, maximizing storage density in systems where internal space is limited.

Combining built-in hardware RAID, front-accessible removable SSD trays, active cooling, and system-status monitoring, the iR5740M provides configurable, serviceable internal storage without requiring a separate RAID card or host-based RAID software.

It is designed for industrial PCs, embedded platforms, edge-computing systems, compact workstations, data-logging equipment, and local storage appliances.



Key Advantages

Highlight	Customer Benefit
High-Density Storage	Four M.2 SATA SSDs in one standard 3.5-inch drive bay
Built-In Hardware	No separate RAID card or host-based RAID software required

Highlight	Customer Benefit
RAID	
Flexible Storage Modes	Configure for performance (RAID 0), RAID protection (RAID 5), capacity aggregation (BIG), or independent-drive access (JBOD).
Front-Serviceable Design	Hot-swap capable, tool-free locking SSD trays
Simple Host Integration	Single SATA III 6Gb/s host connection
Multi-Module Deployment	Deploy multiple compatible RAIDON internal RAID modules to support independent storage volumes and different SATA drive formats in one system.
Active Thermal Management	Full-metal chassis with a 20 mm cooling fan and high/low speed settings
System Monitoring	Drive-status, temperature, and fan-failure alerts
Windows GUI Support	RAIDON STATUSGUARD monitoring

Features

1. **Four M.2 SATA SSDs in One 3.5-Inch Bay**

   The iR5740M fits four M.2 SATA SSDs in 2230, 2242, 2260, or 2280 sizes into one standard 3.5-inch drive bay, maximizing storage density while preserving internal system space.

   Supported Drive Type: M.2 SATA SSD only. M.2 NVMe and PCIe SSDs are not compatible.

2. **Built-In Hardware RAID**

The built-in RAID controller requires no separate RAID card or host-based RAID software.

RAID 0: Maximum performance

RAID 5: Balanced capacity and protection against the failure of one installed SSD.

BIG: Combined storage capacity.

JBOD: Independent-drive access

RAID operation is independent of STATUSGUARD.

3. **Performance Architecture**
   All four SSDs connect to the host through a single SATA III 6Gb/s interface.
   The iR5740M is optimized for storage density, RAID protection, and serviceability rather than maximum throughput. All installed SSDs share the available bandwidth of the host connection.
4. **Multi-Module RAID Expansion**
   Compatible systems can accommodate multiple RAIDON internal RAID modules, including mixed models such as the iR5740M and iR5440. Each module operates independently and requires its own compatible drive bay, SATA host connection, power connection, and adequate cooling.
5. **Hot-Swap Capable, Tool-Free Locking Trays**

Each M.2 SATA SSD is installed in an individual removable tray featuring:

- Tool-free SSD installation
- Automatic latch mechanism
- Key-lock protection
- Front-accessible drive replacement
- Simplified servicing and maintenance

The trays are designed for hot-swap operation when supported by the selected RAID mode, host SATA controller, operating system, and system configuration.

6. **Full-Metal Chassis with Active Cooling**

The full-metal enclosure provides structural durability and supports efficient heat dissipation.

A built-in 20 mm cooling fan with high and low speed settings helps maintain stable operating temperatures in compact system environments. The separated SSD arrangement also supports airflow around the installed drives.

7. Clear Status and Alert Monitoring

The iR5740M provides front-panel indications for drive activity, drive failure, high enclosure temperature, and cooling-fan failure. A one-touch mute function allows the audible alarm to be silenced after the condition has been acknowledged.

8. RAIDON STATUSGUARD for Windows

RAIDON STATUSGUARD provides a graphical interface for supported RAID and device-status monitoring on Windows systems.

It complements the front-panel indicators by allowing users to review supported device information directly from the host system.

RAID Mode Guide

RAID Mode	How It Works	Best Fit
RAID 0	Stripes data across the installed SSDs for maximum available performance. It provides no drive-failure protection.	Scratch storage, caches, and temporary performance-focused data
RAID 5	Uses distributed parity and provides protection against the failure of one installed SSD.	Important local data requiring a balance of capacity and protection
BIG	Combines the installed SSDs into one large logical volume without redundancy.	Simple capacity aggregation
JBOD	Presents each SSD independently when	Individual drive access, testing, or

RAID Mode	How It Works	Best Fit
	the host controller supports SATA Port Multiplier operation.	separate storage volumes

Applications

1. Industrial PCs and Edge Computing

Add compact hardware RAID storage to industrial automation, machine-vision, edge-processing, and control systems where internal space is limited.

2. Embedded and Compact Systems

Increase SSD density in embedded computers, networking appliances, compact servers, and specialized industrial platforms equipped with a standard 3.5-inch bay.

3. Professional Workstations

Support CAD files, engineering projects, application data, media ingest, development environments, and local project backup within a compact internal storage module.

4. Data Logging and Acquisition

Provide serviceable local storage for laboratory equipment, monitoring platforms, scientific instruments, and continuous data-collection systems.

5. Local Protected Storage

Create a compact RAID volume for application data, system logs, local backup, and other information requiring protection against the failure of one installed SSD.

iR5740M vs. iR5440

Which Model Should You Choose?

Choose the **iR5740M** when M.2 SATA SSD density and installation in a standard 3.5-inch bay are the main priorities.

Choose the **iR5440** when standard 2.5-inch HDD or SSD compatibility and larger removable trays are preferred.

Feature	iR5740M	iR5440
Primary Positioning	High-density M.2 SATA RAID storage	Front-accessible 2.5-inch SATA RAID storage
Supported Drives	4 × M.2 SATA SSDs	4 × 2.5-inch SATA HDDs or SSDs
Supported Drive Form Factors	M.2 SATA 2230 / 2242 / 2260 / 2280	Standard 2.5-inch SATA
Installation Space	Standard 3.5-inch drive bay	5.25-inch bay / 1U ODD-form-factor space
Host Interface	SATA III 6Gb/s	SATA III 6Gb/s
RAID Modes	RAID 0 / RAID 5 / BIG / JBOD	RAID 0 / RAID 5 / BIG / JBOD
Cooling	20 mm fan	40 mm fan
Best Fit	Maximum M.2 SATA SSD density in a standard 3.5-inch bay	Broader 2.5-inch HDD and SSD compatibility

Installation Essentials

1. JBOD Host Requirement

Accessing all four SSDs independently in JBOD mode requires a SATA controller with Port Multiplier support.

Most motherboard SATA ports do not support this function and may detect only one SSD. Use a compatible PCIe SATA expansion card with explicit Port Multiplier support when four independent drives are required.

2. Clear Previous RAID Metadata

Clear previous RAID metadata and disk information using RAIDON **Clear Disk Info** or the disk-initialization procedure specified in the installation guide.

3. RAID Configuration

Select and initialize the required RAID mode before installing the module in the chassis. Changing the RAID mode erases the existing array. Back up all important data and refer to the latest Quick Installation Guide for the complete configuration procedure.

Basic RAID Setup

Refer to the latest Quick Installation Guide for the exact switch positions, LED sequence, and Reset-button timing.

1. Back up all data stored on the SSDs.
2. Set the rear selector to JBOD as required by the initialization procedure.
3. Power off the host system.
4. Select RAID 0, RAID 5, BIG, or JBOD.
5. Hold the Reset button while powering on the system.
6. Release the button when the drive LEDs indicate that the setting has been accepted.
7. Power-cycle the system.
8. Partition and format the new volume through the operating system.

Frequently Asked Questions

Q1: What SSDs does the iR5740M support?

A: It supports four M.2 SATA SSDs in 2230, 2242, 2260, and 2280 sizes. M.2 NVMe and PCIe SSDs are not supported.

Q2: Can multiple RAIDON RAID modules be installed in one computer?

A: Yes. Multiple compatible RAIDON internal RAID modules, including mixed models such as the iR5740M and iR5440, can be installed in one computer. Each module operates independently and requires its own compatible drive bay, SATA III connection, power connection, and sufficient system cooling.

Q3: Is additional RAID software required?

A: No. RAID operation is handled by the built-in hardware controller. RAIDON STATUSGUARD is an optional Windows monitoring utility.

Q4: Does the iR5740M support hot-swap operation?

A: The iR5740M includes front-accessible, hot-swap capable SSD trays. Actual hot-swap operation depends on the RAID mode, host SATA controller, operating system, and system configuration.

Q5: Why can the host detect only one SSD in JBOD mode?

A: The connected SATA controller may not support Port Multiplier operation. Use a compatible PCIe SATA expansion card with explicit Port Multiplier support to access all four SSDs independently.

Q6: Is STATUSGUARD available for Linux or macOS?

A: RAIDON STATUSGUARD is available for Windows only. Linux systems may use supported operating-system tools for host-level disk monitoring. macOS support is not specified.

Q7: Is RAID 5 a replacement for backup?

A: No. RAID 5 provides protection against the failure of one installed SSD, but it does not protect against accidental deletion, malware, corruption, theft, physical damage, or multiple drive failures.

Important files should also be stored in a separate backup location.

Product Specifications

Specification	Details

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Model Number	iR5740M
Product Type	4-bay M.2 SATA SSD internal hardware RAID module
Installation Form Factor	Standard 3.5-inch drive bay
Host Interface	1 × SATA III 6Gb/s, 7-pin connector with locking latch
Supported Drives	4 × M.2 SATA SSDs
Supported SSD Sizes	2230 / 2242 / 2260 / 2280
RAID Modes	RAID 0 / RAID 5 / BIG / JBOD
RAID Architecture	Built-in hardware RAID controller
Power Input	15-pin SATA power connector
Drive Trays	Front-accessible, removable, lockable, and hot-swap capable
System Monitoring	Drive activity, drive failure, overtemperature, and fan-failure indications
Audible Alert	Buzzer with mute function
Cooling System	20 mm fan with high and low speed settings
Operating-System Support	Windows and Linux
GUI Monitoring	RAIDON STATUSGUARD for Windows
Certifications	CE / FCC / RoHS
Dimensions	101.6 × 146 × 25.6 mm
Weight	Approximately 0.8 kg, excluding SSDs

Specification	Details
Carton Quantity	10 units per carton
Package Contents	• iR5740M × 1 • SATA data cable × 1 • Tray keys × 4 • Accessory kits × 3 • Quick Installation Guide × 1

Product Summary

The RAIDON iR5740M is a compact, front-serviceable M.2 SATA RAID module designed for industrial, embedded, and workstation systems where storage density, RAID protection, and simplified maintenance matter more than maximum throughput.

With four M.2 SATA SSD bays, built-in hardware RAID, hot-swap capable trays, active cooling, and a single SATA III host connection, it delivers high-density internal storage in one standard 3.5-inch drive bay.