BROADCOM®

Product Brief

MegaRAID™ 9520-2M2 PCIe Gen 4.0 Boot Storage Adapter

12Gb/s NVMe and SATA RAID Boot Adapter

Overview

The MegaRAID™ 9520-2M2 adapter provides a reliable boot solution based on the Broadcom® second-generation PCIe Gen 4.0 Tri-Mode SAS3808 I/O controller. The 9520-2M2 adapter supports two M.2 NVMe or SATA drives, enabling users to separate their OS drives from their primary data drives. By taking advantage of the unified Broadcom tool suite, users familiar with the Broadcom standard RAID and HBA controllers can easily integrate the 9520-2M2 adapter into their existing management application suite.

The 9520-2M2 adapter is a low-profile, half-length adapter that fits into a standard PCIe slot with two onboard M.2 drives. Customers who trust hardware RAID for critical data can expand this trust to their OS drives. There is no need to sacrifice two drive bays that can be used for user data. The 9520-2M2 adapter enables RAID 0 and RAID 1 using the trusted Broadcom MegaRAID stack.

Leveraging the MegaRAID iMR entry RAID firmware, the 9520-2M2 supports RAID 0 and RAID 1 without requiring the Reserved Memory Region Reporting (RMRR) structure. This means that upon startup, the 9520-2M2 does not claim host memory for the RAID functions and other background operations. Due to security concerns, platform limitations on using RMRR are always increasing, so the 9520-2M2 instead uses the SAS3808 on-chip memory to carry out the RAID and other necessary operations. This also allows for easy integration into system architectures that do not have a memory reservation capability to support a traditional iMR solution, such as the 9520-2M2.

Tri-Mode SerDes Technology

The 9520-2M2 adapter takes advantage of the Broadcom Tri-Mode SerDes technology, enabling the most flexibility for customers by supporting NVMe or SATA M.2 drives for OS boot applications. The adapter detects the drive type and negotiates between speeds and protocols to automatically recognize and work with either NVMe or SATA M.2 drives.

Hardware Secure Boot

The onboard controller incorporates advanced security through hardware secure boot. The hardware secure boot feature permits only authenticated firmware to execute on the adapter. The internal Boot ROM on the controller establishes an initial Root of Trust (RoT). Hardware secure boot authenticates and builds a Chain of Trust (CoT) with succeeding firmware images using the RoT. This CoT means that only authorized firmware is executed on the adapter. Broadcom provides the signed firmware images, which make the use of hardware secure boot transparent to customers and also provide confidence in the security of the solution.
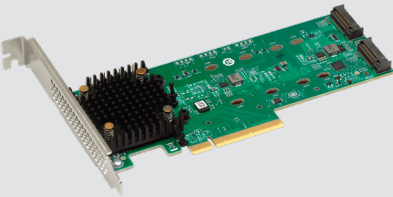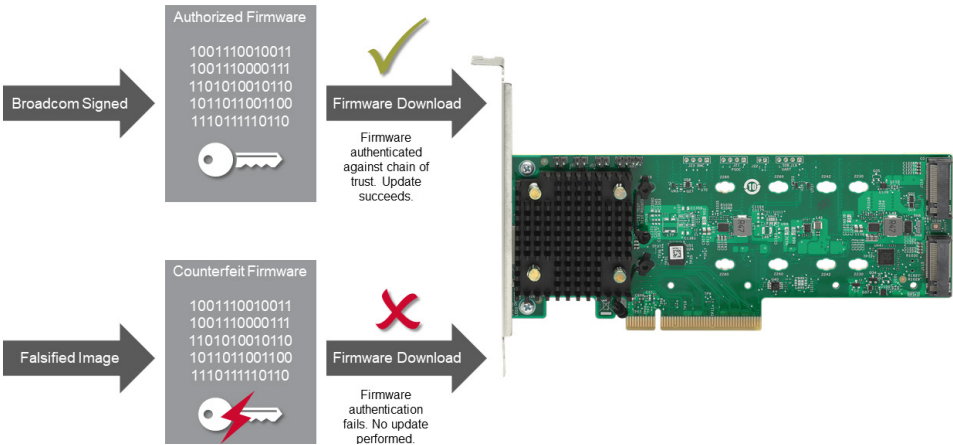
Key Features

- Tri-Mode Storage Interface
  - 6Gb/s SATA
  - Gen 4.0 PCIe (NVMe)
- Hardware Secure Boot
- No host memory reservation requirements
- RAID 0 and RAID 1
- x8 PCIe Gen 4.0 host interface
  - Supports x8, x4, x2, and x1 PCIe lanes
  - Up to 16.0GT/s per lane, full duplex
  - Lane and polarity reversal
- M.2 drive types
  - PCIe Gen 4.0 NVMe
  - 6Gb/s SATA
- M.2 drive lengths
  - 22110
  - 2280
  - 2260
  - 2242
  - 2230
- Drive activity LED
- PCIe low-profile, half-length form factor

Note: M.2 drives are not included.

Hardware Secure Boot

MegaRAID 9520-2M2 Adapter

Feature	
Connectors	Two M.2
Host Interface	x8 PCIe Gen 4.0
Storage Interface	6Gb/s SATA, Gen 4.0 NVMe (x1, x2, x4) Refer to the *HBA and MegaRAID Adapter Compatibility Reports* for the latest drive interoperability information: techdocs.broadcom.com/us/en/storage-and-ethernet-connectivity/adapter.html.
Controller	SAS3808
RAID Levels	0, 1
Drives per Controller	Two M.2 NVMe drives or two M.2 SATA drives
RAID Features	• Auto resume after loss of system power during array rebuild • Fast initialization for quick array setup • Check consistency for background data integrity • SSD support with SSD Guard™ technology • Patrol read for media scanning and repairing • DDF-compliant Configuration on Disk (COD) • S.M.A.R.T. support • Shield state drive diagnostic technology • MegaRAID SafeStore software for SED key management
Management Utilities	• LSI Storage Authority (LSA) • StorCLI (command-line interface) • HII (UEFI Human Interface Infrastructure)
OS Support	Microsoft Windows, VMware vSphere®/ESXi, Red Hat Enterprise Linux, SuSE Linux, Ubuntu Linux, Citrix XenServer, CentOS Linux, Debian Linux, Oracle Enterprise Linux, Fedora, FreeBSD Refer to www.broadcom.com/support/download-search for details on versions.
Dimensions	167.51 mm (±0.13 mm) x 68.77 mm (±0.13 mm)
Operating Conditions	Operating: 0°C to 55°C, 5% to 90% RH non-condensing Storage: −40°C to 70°C, 10% to 95% RH non-condensing
Typical Power	Refer to the user guide for power requirements.
Operating Voltage	12V ±8%; 3.3V ±9%
MTBF (Calculated)	>5,000,000 hours at 40°C
Hardware Warranty	3 years

Ordering Information	
Single Pack	05-50148-03