

9500 Series PCIe Gen 4.0 Tri-Mode RAID and HBA OCP Adapters

16-Port, OCP 3.0 SFF Tri-Mode NVMe/SAS/SATA Storage Adapters

Overview

Broadcom offers a series of PCIe Gen 4.0-based OCP 3.0 storage adapters that utilize Broadcom® Tri-Mode SerDes technology. The OCP adapters enable the operation of NVMe, SAS, or SATA devices in a single drive bay, allowing for endless design flexibility. Based on the Broadcom SAS3916 and SAS3816 eight-lane host PCIe to SAS/SATA/PCIe ROC/IOC controllers, the 9562 and 9502 series OCP 3.0 adapters offer both PCIe Gen 4.0 host and PCIe Gen 4.0 storage interfaces.

Providing storage adapters in the OCP 3.0 NIC small form factor (SFF) gives users more flexibility for integrating storage into the server. By using an OCP slot for storage, users can free up a standard PCIe adapter slot for other uses. The adapters support the same feature set and provide the same performance as the standard 95xx PCIe adapters.

Broadcom continues to offer the industry's broadest portfolio of storage solutions, backed by decades of experience and trusted by the world's leading server and storage suppliers. Broadcom provides the building blocks for storage solutions that help customers understand, prioritize, store, and protect critical data.

Tri-Mode SerDes Technology

The Broadcom Tri-Mode SerDes technology enables the operation of NVMe, SAS, and SATA storage devices in a single drive bay. A single RAID or HBA OCP adapter can operate in all three models concurrently servicing NVMe, SAS, or SATA drives. The adapter can negotiate between speeds and protocols to seamlessly work with any of the three types of storage devices. Tri-Mode support provides a nondisruptive way to evolve existing data infrastructure. By upgrading to a Tri-Mode adapter, users can expand beyond SAS/SATA and use NVMe without major changes to other system configurations.

Hardware Secure Boot and Attestation

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 controller's Internal Boot ROM 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, meaning only authorized firmware is executed on the adapter. Broadcom provides the signed firmware images making the use of hardware secure boot transparent to customers, while providing confidence in the security of the solution.

9562-16i



9502-16i

Applications

- Flexible solutions for cloud computing
- Server and external storage applications

Key Features

- x8 PCIe Gen 4.0 Host Interface
- Tri-Mode Storage Interface
 - 16 GT/s PCIe (NVMe)
 - 12Gb/s and 6Gb/s SAS
 - 6Gb/s SATA
- Hardware Secure Boot
- Universal Bay Management (UBM) ready (SFF-TA-1005)
- SFF-9402 Compliant Connector Pinout

Performance

- MegaRAID™ adapter
 - Up to 3M IOPS (4K RR - JBOD)
 - Up to 3.5M RAID 0/1 IOPS (4K RR)
 - Up to 240K RAID 5 IOPS (4K RW)
- HBA
 - Up to 3M IOPS (4K RR)
 - Up to 13.7K MBs (246K Seq Rd)

9500 Series Tri-Mode MegaRAID Adapters and HBA OCP Adapters

Feature	9562-16i	9502-16i
Adapter Type	MegaRAID	HBA
Ports	16 internal	
Storage Controller	SAS3916	SAS3816
PCIe Host Interface	x8, Gen 4.0	
Storage Interface	Gen 4.0 PCIe (NVMe), 12Gb/s SAS, 6Gb/s SATA	
RAID Levels	0, 00, 1, 10, 5, 50, 6, 60	—
Cache Size	8 GB	—
Connectors	2 x 8 SFF-8654 (Vertical)	
Form Factor	OCP 3.0 NIC SFF	
Dimensions	115.00 mm (±0.13 mm) x 76.00 mm (±0.13 mm)	
Bracket	Internal lock	
Typical Power	13W	9W
OCP Thermal Tier	Tier 5	Tier 4
Energy Backup	CVPM05 (FBU345)	—
Operating Conditions	Operating: 0°C to 55°C, 5% to 90% non-condensing Storage: -45°C to +105°C, 5% to 95% non-condensing	
Security	HW Secure Boot	
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 broadcom.com/support/download-search for version details.	
Regulatory Certifications	USA (FCC 47 CFR part 15 Subpart B, class B); Canada (ICES -003, Class B); Taiwan (CNS 13438); Japan (VCCI V-3); Australia/New Zealand (AS/NZS CISPR 22); Korea (RRA no 2013-24 and 25); Europe (EN55022/EN55024); Safety: EN/IEC/UL 60950; RoHS; WEEE	

Ordering Information	9562-16i	9502-16i
Single Pack	05-50137-00	05-50137-02
Bulk Pack	03-50137-00	03-50137-02
CVPM05	05-50039-00	—

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