



SELECTION GUIDE

Storage Solutions



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The amount and variety of data produced by content-rich Internet, cloud and enterprise applications poses unprecedented challenges for data centers of all sizes.

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New approaches and technologies are needed to manage this deluge of data: to store it, protect it, and maximize the value from it. These challenges present opportunities to help the world make the most from its data.

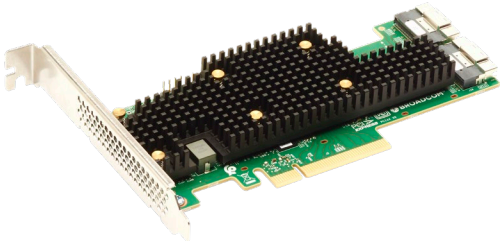
Broadcom is focused on helping customers in wireless communications, wired infrastructure, enterprise storage and industrial and other markets solve their challenges. Broadcom has the industry's broadest portfolio of storage solutions, backed by decades of experience and trusted by the world's leading server and storage suppliers. Broadcom provides the building blocks for storage solutions that help customers understand, prioritize, store and protect critical data.

Whether you need to protect data, power your storage solutions, or deliver the performance needed by critical applications, Broadcom's 24G and 12Gb/s SAS/SATA/NVMe Tri-Mode MegaRAID™ controller cards and Host Bus Adapters (HBAs), and Advanced Software Options are the smart choice.



Host Bus Adapters (HBAs)

Equip storage solutions with the connectivity needed to meet any scaling needs from the smallest SMBs to the largest data centers. Broadcom HBAs can enable an easy, longterm storage growth strategy in practically any direct-attached storage scenario. Whether solutions use SAS or SATA, NVMe (PCIe), hard disk or flash, or even internal or external storage elements, our HBAs are designed to create the fabric tying any or all of those components together into a unified storage effort.



HBA Specifications

Product Name	MPN (SGL)	Form Factor Ports	Ports	Connectors	Bus Interface	Max Devices Supported		RAID Levels
						SAS/SATA	NVMe	
24G SAS/SATA/NVMe								
9620-16i	05-50111-02	LP-MD2	16	Two SFF-8654	x8 PCIe Gen 4.0	32*	32*	0/1/10/JBOD
9600-24i	05-50111-01	LP-MD2	24	Three SFF-8654	x8 PCIe Gen 4.0	240*	32*	JBOD
9600-16i	05-50111-00	LP-MD2	16	Two SFF-8654	x8 PCIe Gen 4.0	240*	32*	JBOD
9600W-16e	05-50108-00	LP-MD2	16	Four SFF-8644	x16 PCIe Gen 4.0	240*	32*	JBOD
9600-16e	05-50118-00	LP-MD2	16	Four SFF-8644	x8 PCIe Gen 4.0	240*	32*	JBOD
9600-8i8e	05-50145-00	LP-MD2	16	One SFF-8654, Two SF-8644	x8 PCIe Gen 4.0	240*	32*	JBOD
12Gb/s SAS/SATA/NVMe								
9500-16i	05-50077-02	LP-MD2	16	Two SFF-8654	x8 PCIe Gen 4.0	1024	32	JBOD
9500-8i	05-50077-03	LP-MD2	8	One SFF-8654	x8 PCIe Gen 4.0	1024	32	JBOD
9500-16e	05-50075-00	LP-MD2	16	Four SFF-8644	x8 PCIe Gen 4.0	1024	32	JBOD
9500-8e	05-50075-01	LP-MD2	8	Two SFF-8644	x8 PCIe Gen 4.0	1024	32	JBOD

* For a configuration requiring more than 240 SAS/SATA or more than 32 NVMe devices, contact your sales representative.

MegaRAID Entry (iMR)

MegaRAID SAS/SATA/NVMe entry controller cards provide trusted MegaRAID data protection and reliability for non-business critical applications. Offering the same management features and OS support as the mainstream MegaRAID lineup at an affordable price point, the entry controllers are great solutions for small and medium businesses (SMB) deploying entry-level server platforms and workstations.

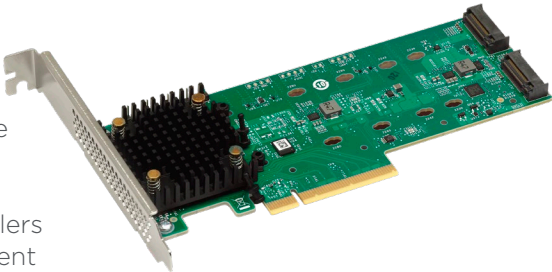


MegaRAID Entry (iMR) Specifications

Product Name	MPN (SGL)	Form Factor Ports	Ports	Connectors	Bus Interface	Max Devices Supported		RAID Levels
						SAS/SATA	NVMe	
12Gb/s SAS/SATA/NVMe								
9540-8i	05-50134-03	LP-MD2	8	One SFF-8654	x8 PCIe Gen 4.0	63	2	0/1/10/JBOD

MegaRAID (iMR) Boot Protection

The MegaRAID boot adapter provides a reliable boot solution based on the Broadcom® second-generation PCIe Gen 4.0 Tri-Mode SAS3808 I/O controller. The 9540-2M2 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 9540-2M2 adapter into their existing management application suite.

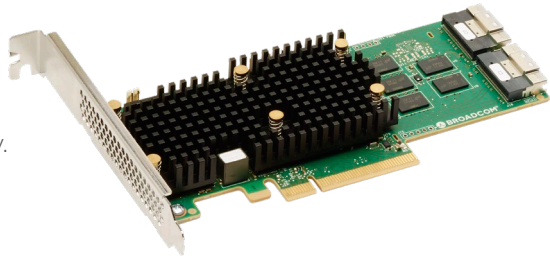


MegaRAID Entry (iMR) Specifications

Product Name	MPN (SGL)	Form Factor Ports	Ports	Connectors	Bus Interface	Max Devices Supported		RAID Levels
						SATA	NVMe	
12Gb/s SATA/NVMe								
9540-2M2	05-50148-00	LP-MD2	16	Two M.2	x8 PCIe Gen 4.0	2	2	0/1/JBOD

MegaRAID

Ensure critical data is protected and available with the most widely deployed RAID data protection architecture. Broadcom enables high performance storage connectivity and flexible system designs that support any combination of NVMe, SAS and SATA devices with the industry’s first hardware RAID adapter with Tri-Mode SerDes technology.



The MegaRAID Tri-Mode storage adapters bring NVMe performance benefits to the storage tier by providing connectivity and data protection that MegaRAID technology has offered for over 20 years for SAS/SATA interfaces.

Broadcom’s Tri-Mode SerDes technology enables operation of NVMe, SAS or SATA devices in a single drive bay. A single controller can operate in all three modes concurrently servicing NVMe, SAS or SATA devices. Tri-Mode support provides a non-disruptive way to evolve existing data center infrastructure.

MegaRAID Specifications

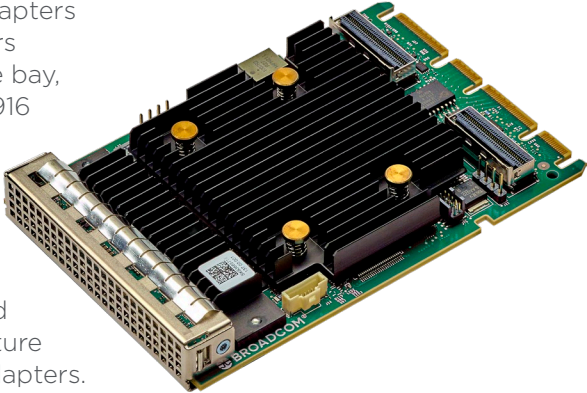
Product Name	MPN (SGL)	Form Factor	Ports	Connectors	Bus Interface	Max Devices Supported		Cache Memory	Cache Protection*
						SAS/SATA	NVMe		
24G SAS/SATA/NVMe									
9670W-16i	05-50113-00	FH-MD2	16	Two SFF-8654	x16 PCIe Gen 4.0	240	64	8 GB	CVPM05
9670-24i	05-50123-00	FH-MD2	24	Three SFF-8654	x8 PCIe Gen 4.0	240	64	8 GB	CVPM05
9660-16i	05-50123-00	LP-MD2	16	Two SFF-8654	x8 PCIe Gen 4.0	240	64	4 GB	CVPM05
12Gb/s SAS/SATA/NVMe									
9560-16i	05-50077-00	LP-MD2	16	Two SFF-8654	x8 PCIe Gen 4.0	240	32	8 GB	CVPM05
9560-8i	05-50077-01	LP-MD2	8	One SFF-8654	x8 PCIe Gen 4.0	240	32	4 GB	CVPM05
9580-8i8e	05-50076-00	LP-MD2	16	Two SFF-8654, Two SFF-8644	x8 PCIe Gen 4.0	240	32	8 GB	CVPM05

* CacheVault Kit/Power Module sold separately

OCP Adapters

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.



OCP Adapter Specifications

Product Name	MPN (SGL)	Form Factor	Ports	Connectors	Bus Interface	Max Devices Supported		Cache Memory	Cache Protection*
						SAS/SATA	NVMe		
12Gb/s SAS/SATA/NVMe									
9562-16i	05-50137-00	OCP 3.0 NIC SFF	16	Two SFF-8654	x8 PCIe Gen 4.0	240	32	8 GB	CVPM05
9502-16i	05-50137-02	OCP 3.0 NIC SFF	16	Two SFF-8654	x8 PCIe Gen 4.0	1024	32	--	--

* CacheVault™ Kit/Power Module sold separately

Cache Protection Options

RAID caching is a cost-effective way to improve I/O performance by writing data to a controllers' cache before it is written to disk. In write-back mode, data written to cache is vulnerable until it is made permanent on disk. To help avoid the possibility of data loss or corruption during a power or server failure, Broadcom offers the CacheVault flash cache protection module or the battery backup units for MegaRAID SAS controller cards.

Cache Protection Product Specifications

Cache Protection Option	MPN	Compatible Controller Cards
CVPM05	05-50039-00	MegaRAID 9560, 9580, 9660 and 9670 Series
BBU-BRACKET-05	L5-25376-00	MegaRAID Remote Mounting Board for LSI BBUs and CacheVault Power Modules

For additional details, view the Cache Protection Options Matrix.



Tri-Mode Cables

Cable Specifications

These cables enable connection from 95xx and 96xx series MegaRAID and HBA Tri-Mode adapters to SAS, SATA, and PCIe (NVMe) devices.

MPN	Description	Length	Side Bands Supported	To Controller	To Devices/Backplane	Compatible Controllers (i = internal, e = external connectivity)
05-60001-00	Cable, x8 8654 to 2x4 8612, AltWiring 1M	1m	Yes	SFF-8654 (SlimSAS)	2 x4 SFF-8612 (OCuLink)	9670-24i 9670W-16i
05-60002-00	Cable, x8 8654 to 2x4 8643 (W), SMC 1M	1m	Yes	SFF-8654 (SlimSAS)	2 x4 SFF-8643 Mini SAS HD (NVMe Connection)*	9620-16i 9600-24i 9600-16i
05-60003-00	Cable, x8 8654 to 2x4 8643, 9402 SAS 1M	1m	Yes	SFF-8654 (SlimSAS)	2 x4 SFF-8643 Mini SAS HD (SAS Connections)	9600-8i8e
05-60004-00	Cable, x8 8654 to 2x4 8654, 9402 1M	1m	Yes	SFF-8654 (SlimSAS)	2 x4 SFF8654 SlimSAS	9560-16i 9560-8i 9580-8i8e
05-60005-00	Cable, x8 8654 to 2xU.2 Direct, 1M	1m	Yes	SFF-8654 (SlimSAS)	2xU.2 Direct Connect	9500-16i 9500-8i
05-60006-00	Cable, x8 8654 to 8xU.3 Direct 1M	1m	Yes	SFF-8654 (SlimSAS)	8xU.3 Direct Connect	9540-8i
05-60007-00	Cable, x8 8654 to 1x8 8654, 9402 1M	1m	Yes	SFF-8654 (SlimSAS)	1 x8 SFF8654 SlimSAS	
05-60010-00	Cable, Cable, x8 8654 to 8x1 SATA, 1M	1m	Yes	8 SFF-TA-8654 (SlimSAS)	8x1 SATA	

*Cable 05-60002-00 is designed for SuperMicro NVMe enabled backplanes using white Mini SAS HD connectors for the NVMe connections.

Connecting everything®



Broadcom Inc. is a global infrastructure technology leader built on 50 years of innovation, collaboration and engineering excellence.

Broadcom Inc. (NASDAQ: AVGO) is a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Broadcom's category-leading product portfolio serves critical markets including data center, networking, enterprise software, broadband, wireless, storage and industrial. Our solutions include data center networking and storage, enterprise, mainframe and cyber security software focused on automation, monitoring and security, smartphone components, telecoms and factory automation.



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