

Microsemi Adaptec® HBA 1000 Series: 1000-16i/16e/8i8e/8i/8e

12 Gbps PCIe Gen3 SAS/SATA Host Bus Adapter

Smart Storage and Connectivity

Today's data centers and enterprises need storage solutions that can keep pace with their rapid data expansion. The HBA 1000 is the first product in the new Smart Storage Solutions family that is being forged through the convergence of Microsemi SAS/SATA protocol controller expertise, more than 30 years of Microsemi board innovation, and acquired Smart IP technology. The HBA 1000 Series delivers the smart connectivity that businesses are looking for with an optimal mix of resiliency, efficiency, and ease of use. It's an ideal solution for server-based storage systems that require maximum bandwidth and I/O connectivity, low power consumption, and high reliability.

Resiliency and Efficiency

The new unified Smart Storage Stack delivers resiliency by combining the best of the eighth-generation Microsemi Adaptec RAID code (ARC) software and drivers with the acquired Smart IP of the most broadly deployed server storage stack. Combined with the SScI (16x12G/8x12G) SmartIO SAS/SATA protocol controller from Microsemi, the HBA 1000 Series provides a robust and stable solution that can handle the toughest system workloads and configurations. It is fully compatible with existing and future Microsemi HBA, RAID, and expander solutions.

Available in five different 12 Gbps configurations with up to 16 internal or 16 external SAS/SATA ports, the HBA 1000 Series offers the highest port count in a low-profile/MD2 form factor. Additionally, it consumes 60% less power than competing HBAs.

Maximum Performance

The HBA 1000 Series provides the highest levels of storage performance and scalability for next-generation data centers by connecting numerous state-of-the-art 12 Gbps storage devices that can aggregate their performance to the limits of the PCIe Gen3 host bus at 6600 Mbps and achieve up to 1.3M IOPs with minimal overhead or additional latency.

Ease of Use

The HBA 1000, with its broad operating system support and ecosystem compatibility, is easy to implement and easy to scale when directly connecting up to 16 storage devices or scaling out with full compatibility using expanders. The unified management tools and drivers across the Microsemi HBA, RAID, and expander solutions enable easy manageability across the entire product line.



Benefits

- Ideal for high-performing I/O solutions supporting SAS/SATA HDDs and SSDs requiring maximum connectivity.
- Provides I/O connectivity that offers the highest bandwidth, lowest latency, and highest I/O performance paired with broad operating system support, including 6 Gbps systems.
- Performance of up to 1.3M IOPS, low latency, and bandwidth fully saturating the PCIe Gen3 bus.

Highlights

- 8 or 16 native SAS/SATA ports; low-profile/MD2 form factor
- 12 Gbps SAS data rates with mini-SAS HD connectors
- Lowest power consumption and total cost of ownership (TCO) of any HBA
- Unified, hardened Smart Storage Stack
- Proven compatibility with existing Microsemi Adaptec solutions, multiple operating systems, servers, enclosures, SSDs, HDDs, and LTO tape drives
- SmartIO SAS/SATA protocol controller that drives efficiency of higher performance, maximum port count, and 60% less power consumption on average than competing HBAs

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Key software features	<ul style="list-style-type: none"> Support for up to 256 SAS/SATA target devices (238 SSD/HDDs maximum support and remainder are reserved for expanders and enclosure management) Multi-LUN support SAS expander support TLR SATA NCQ Hot plug drive S.M.A.R.T. 	<ul style="list-style-type: none"> MPIO support Multi-initiator (host)/clustering for SAS Enclosure management <ul style="list-style-type: none"> SES-2, SES-3 SFF-8485, SGPIO SFF-8489, IBPI BMC support
Management utilities	maxView Storage Manager <ul style="list-style-type: none"> Web-based GUI management utility OS Support: Windows, Linux, VMware Remote configuration, monitoring, and notification Remote firmware updates SMI-S support SMTP ARCCONF <ul style="list-style-type: none"> Command Line Interface 	BIOS Configuration Utility (CTRL+A) <ul style="list-style-type: none"> Legacy configuration utility Flashable BIOS support uEFI BIOS Configuration Utility <ul style="list-style-type: none"> Flashable BIOS support HII GUI support
Operating systems	Microsoft Windows, Red Hat, SuSE, CentOS, Ubuntu, VMware ESXi. The latest drivers and OS support are at storage.microsemi.com/en-us/support/start	
Physical dimensions	2.535" H x 6.6" L (64 mm x 167 mm)	
Operating temperature	0 °C to 55 °C with 200 LFM airflow. Note: This adapter contains a powerful I/O processor that requires adequate airflow to operate reliably. Please install this card only into server or PC chassis with at least 200 LFM airflow. Temperature measured 1 inch from adapter.	
Regulatory certification	CE, FCC, UL, C-tick, VCCI, KCC, CNS	
Environmental compliance	RoHS	
Warranty	3 years	
Accessories	Serial Attached SCSI (SAS) cables (http://www.microsemi.com/products/storage/cables-accessories/cables-accessories)	

HBA 1000 Series	HBA 1000-16i	HBA 1000-16e	HBA 1000-8i8e	HBA 1000-8i	HBA 1000-8e
Order part number	2288400-R	2288200-R	2288500-R	2288300-R	2288100-R
Host bus interface	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3
Form factor	Low-profile/MD2	Low-profile/MD2	Low-profile/MD2	Low-profile/MD2	Low-profile/MD2
Ports	16 Internal	16 External	8 Internal/8 External	8 Internal	8 External
Connectors	4 (x4) SFF-8643	4 (x4) SFF-8644	2 (x4) SFF-8643 2 (x4) SFF-8644	2 (x4) SFF-8643	2 (x4) SFF-8644
Operating current	0.3 A at 3.3 V; 0.9 A at 12 V	0.1 A at 3.3 V; 0.9 A at 12 V	0.1 A at 3.3 V; 1 A at 12 V	0.3 A at 3.3 V; 0.7 A at 12 V	0.1 A at 3.3 V; 0.7 A at 12 V
MTBF	2 million hours	2 million hours	2 million hours	2 million hours	2 million hours
Typical power	11.8 W	11.1 W	12.3 W	9.4 W	8.7 W



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