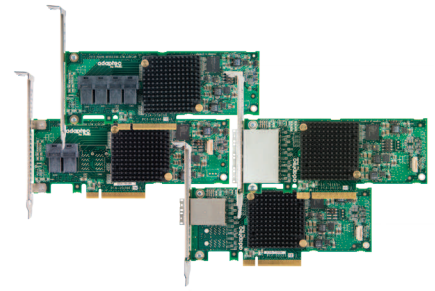# Adaptec PCIe Gen3 6Gb/s SAS and SATA HBA Family

(71605H, 70165H, 7805H, 7085H)

8- and 16-port PCIe Gen3 HBAs offer high-performance I/O and low latency with broad device compatibility, scalability and flexibility

The Series 7H family of Adaptec by PMC SAS/SATA host bus adapters (HBA) offers the ideal high performance solution for data centers requiring maximum I/O connectivity and low latency.

Flexible, Scalable, Customizable

Utilizing PMC's PM8018 16x6G SAS protocol controller, Series 7H HBAs support both Serial Attached SCSI (SAS) and Serial ATA (SATA) interfaces to provide the flexibility to use cost effective, high-capacity SATA drives and/or high-performance SAS drives.

Series 7H HBAs feature a low-profile MD2 form factor and mini SAS HD connectors that facilitate easy installation and cable connections in dense server environments.

The PCIe Gen3 x8 bus expands connectivity from high-end servers into workstation-class and industrial PC systems. Up to 16 SAS/SATA ports allow for maximum I/O throughput, and the OS drivers use MSI-X to leverage all available host CPU cores to achieve maximum performance.

The HBAs connect to hard disk drives (HDDs), solid-state drives (SSDs), removable media, SAS tape drives, and support the migration of disks from onboard SATA interfaces or other SATA/SAS I/O controllers.

Series 7H HBAs can directly connect up to 16 high-performance SSD/HDD devices without expanders to offer the highest performance and lowest latency I/O connection.

Compatibility with a multitude of storage devices enables system builders to develop server, storage, and backup solutions tailored to meet specific customer needs.

New mini SAS HD Connectors and SAS HD Cables

These connectors allow for greater flexibility in configuration options by supporting up to 16 native SAS/SATA ports in a low-profile MD2 form factor. The new connectors can be combined with a wide range of Adaptec SAS HD cables, including straight connectors or Adaptec's first to market right angle connectors.

Broad Operating System Support

Extensive operating system support includes major software releases for Windows 8, Windows 7, Windows Server 2012, Windows 2008R2 & SBS 2011, VMware 5.x, Red Hat Enterprise Linux, SUSE Linux Enterprise Server and Ubuntu Linux.

Compatibility, Reliability, and Support

Series 7H HBAs have been extensively tested with third-party systems and devices to deliver the utmost in compatibility. These HBAs are equipped with both uEFI and legacy BIOS options as well as a CTRL-A configuration utility and HII-based BIOS tools.

Series 7H HBAs are backed by a three year warranty and the company's technical support team.

Product Highlights

— Designed to deliver maxium performance and low latency

— 6Gb/s throughput at each port

— PCIe Gen3 x8 host interface

— Low-profile MD2 form factor using mini SAS HD connectors with up to 16 6 Gb/s SAS/SATA ports

— Up to 800,000 IOPS @ 4KB block size and up to 1 million IOPS @ 512Byte block size

— Up to 6600 MB/s sequential throughput (sustained)

— Supports SAS and SATA HDDs, SSDs and SAS tape drives

— New mini SAS HD connectors and SAS HD cables — for fit and function in dense server configurations

— Support for SAS expanders supporting up to 128 devices

— Enclosure management support via LED header and SES2/SGPIO

— Driver support for Windows, VMware and Linux

Adaptec Series 7H Family	
Why to buy?	Highest performing I/O solution supporting SAS and SATA HDDs, SSDs, removable media, SAS tape drives.
Customer Needs	I/O connectivity offers the highest bandwidth, lowest latency and highest I/O performance paired with broad compatibility, support for SAS expanders, and enclosure management; flexibility to install SAS and SATA drives.
Features	— Sixteen (71605H, 70165H) or eight (7085H, 7805H) 6Gb/s ports — PMC PM8018 SAS protocol controller supports SAS and SATA HDDs, SSDs, and SAS tape drives — Up to 800,000 IOPS at 4KB block size, up to 1 million IOPS at 512Byte block size — Up to 6600 MB/s sequential throughput (64KB blocks) — Support for SAS expanders — Enclosure management support via LED header and SES2/SGPIO — PCIe Gen 3 x8 host interface — Low-profile MD2 form factor
Management Utilities	Adaptec BIOS Configuration Utility (ACU) — Legacy configuration utility — Flashable BIOS support Adaptec uEFI BIOS Configuration Utility — HII based configuration utility — Flashable BIOS support
Operating Systems	Windows 8, Windows 7, Windows Server 2012, Windows 2008R2, SBS 2011, Storage Server, Red Hat Enterprise Linux, VMware, SUSE Linux Enterprise Server and Ubuntu Linux. The latest drivers are available at **www.adaptec.com/support.**
Physical Dimensions	2.535"H x 6.6"L (64mm x 167mm)
Operating Temperature	0°C to 55°C with 200 LFM airflow
Operating Current	0.17A@3.3V and 1.25A@12V
Regulatory Certification	FCC, C-tick, CE, VCCI, CNS, KCC, UL, BSMI
MTBF	1,000,000 hours at 40°C
Warranty	3 years
Accessories	Serial Attached SCSI (SAS) cables **(www.adaptec.com/cables)**

Adaptec by PMC HBA	ASA-71605H	ASA-70165H	ASA-7805H	ASA-7085H
Order Part Number	2278300-R	2278500-R	2280800-R	2278400-R
Form Factor	MD2-Low Profile 2.535"H x 6.6"L	MD2-Low Profile 2.535"H x 6.6"L	MD2-Low Profile 2.535"H x 6.6"L	MD2-Low Profile 2.535"H x 6.6"L
Ports	16 Internal	16 External	8 Internal	8 External
Connectors	4 SFF-8643	4 SFF-8644	2 SFF-8643	2 SFF-8644
Host Bus Interface	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3
Processor	PMC PM8018	PMC PM8018	PMC PM8018	PMC PM8018

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