Adaptec PCIe Gen3 6Gb/s SAS and SATA HBA Family with Hardware Data Encryption
(71605He, 70165He)

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

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

Ideal for securing data in data centers, Series 7He adapters ensure that customer sensitive data is encrypted and protected by secure 256 bit AES encryption — as soon as the unique maxCrypto™ key associated with a specific HBA is removed, data is unreadable.

Secure, Removable Hardware Key Encryption

Series 7He adapters feature maxCrypto asymmetric cryptographic encryption engine — on-the-fly hardware data encryption at line speed enabled with HW encryption key. The act of physically inserting and detecting the maxCrypto key into the connector triggers the encryption. Each key is unique to each board and accessible only inside the server. A pairing mechanism protects the data, warning before overwriting data if the key is installed or removed. Utilizing non-volatile memory and a single wire interface, maxCrypto allows for up to 192 bits protected non-volatile memory (NVM) read-only space for customer specified information which cannot be modified by the end user.

Flexible, Scalable, Customizable

Utilizing PMC's PM8019 16x6G SAS protocol controller, Series 7He 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 7He 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. [1]

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 Debian Linux.

Compatibility, Reliability, and Support
Series 7He 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 7He HBAs are backed by a three year warranty and the company's technical support team.

Product Highlights

- Industry's only encrypted HBA with maxCrypto

- Designed to deliver maximum 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 16 6Gb/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

[1] Encryption is not provided to tapes

Adaptec Series 7He Family	
Why to buy?	Most secure, highest performing I/O solution supports SAS and SATA HDDs, SSDs, removable media and SAS tape drives. Using maxCrypto, secures customer data with the industry's only encrypted HBA.
Customer Needs	I/O connectivity with hardware encryption for maximum data security. Also offers 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 (71605He, 70165He) 6Gb/s ports — PMC PM8019 SAS protocol controller supports SAS and SATA HDDs, SSDs and SAS tape drives — Up to 800,000 IOPS at 4 KB 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 Gen3 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, SUSE Linux Enterprise Server, Debian Linux, VMware. 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-71605He	ASA-70165He
Order Part Number	2278100-R	2278200-R
Form Factor	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
Connectors	4 SFF-8643	4 SFF-8644
Host Bus Interface	8-Lane PCIe Gen3	8-Lane PCIe Gen3
Processor	PMC PM8019	PMC PM8019

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