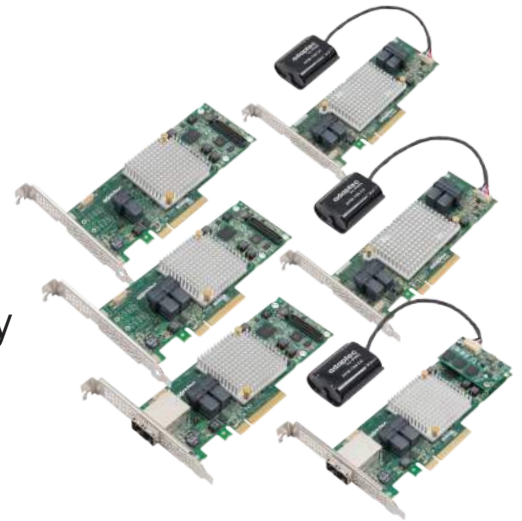**adaptec** by PMC

Product Brief | **Series 8 RAID**

# Adaptec 12Gb/s PCIe Gen3 Product Family High Port Count SAS/SATA RAID Adapters

(81605ZQ, 8885Q, 81605Z, 8885, 8805, 8405)

## Maximum Performance for 12Gb/s Ecosystems

Data center, IT, and general consumer server environments have a broad range of requirements — from basic connectivity to extreme data storage capacities. The effectiveness at which their data is accessed and protected is crucial to their ultimate success. Adaptec 12Gb/s PCIe Gen3 Series 8 RAID adapters, coupled with 12Gb/s SSDs, provide maximum read/write bandwidth and IOPS for the most performance-hungry transactional and database applications.

**The Series 8 family features:**

- PMC's 12Gb/s RAID-on-Chip (ROC), x8 PCIe Gen3 interface with 12Gb/s SAS ports to enable a new generation of performance

- 16 native SAS/SATA ports in a LP/MD2 design

- 12Gb/s throughput with mini SAS HD connectors

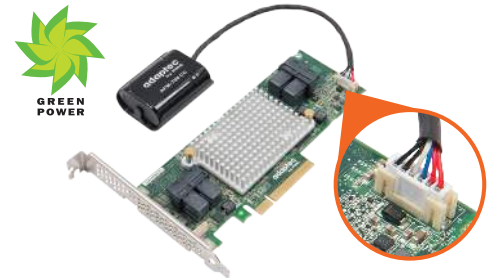- >700K IOPS; 6.6GB/s sequential reads, 6.2GB/s sequential writes

## Series 8Q with Adaptec maxCache 3.0

Advancing the performance capabilities of SSD caching to a broader set of application workloads, the Series 8Q with maxCache 3.0 supports read and write caching. By caching writes to a redundant SSD cache pool (RAID1, RAID1E or RAID5, maxCache 3.0 leverages the performance and latency capabilities of SSD technology for both read and write workloads. The read caching function is also improved with maxCache 3.0, with additional optimizations to the learned-path algorithm. Adaptec maxCache 3.0 SSD Caching software is the only caching solution that supports up to 2 TB of SSD cache.

## Integrated Cache Protection

The Series 8 family continues Adaptec by PMC's battery-free portfolio. Series 8 adapters can be combined with the AFM-700 flash-based cache protection module (sold separately) to enable instant cache protection. New with Series 8, the Adaptec 81605Z and 81605ZQ models have flash backup embedded on the board, eliminating the need for a daughterboard and further enabling Adaptec by PMC customers to do more with less.

## Advanced Data Protection and Ease of Use

Advanced data protection and ease of use have not been forgotten in Series 8. Adaptec RAID Code (ARC) delivers maximum reliability with an industry-leading feature set, including all of the RAID levels the industry has come to expect, plus unique features like Flexible Configuration modes for the adapter, Hybrid RAID, and Optimized Disk Utilization (ODU) where no available space is wasted. Adaptec's maxView provides an HTML5 web interface, which can be used in standard desktops and mobile browsers, for all storage configuration and management needs.

**www.adaptec.com**

# Adaptec 12Gb/s PCIe Gen3 Product Family
# High Port Count SAS/SATA RAID Adapters

## SPECIFICATIONS

| | |
|---|---|
| **Benefits** | Ideal for 12Gb/s performance-hungry server and workstation platforms, without compromising proven Adaptec reliability |
| **Key Differentiators** | — maxCache 3.0 caching software (Series 8Q only) — LP/MD2 form factor for up to 16 native SAS/SATA ports<br>— Third generation ZMCP; AFM-700 (optional for Series 8) — Integrated cache protection (81605Z and 81605ZQ) |
| **Customer Needs** | — High I/O transaction and high bandwidth processing; solutions that reduce energy consumption and maintenance costs. |
| **Key Software Features** | — maxCache 3.0 caching software (Series 8Q only)<br>— Flexible Configuration: HBA Mode & Auto Volume Mode for automatic deployment<br>— Optimized Disk Utilization (multiple arrays per disk)<br>— Supports up to 256 SATA or SAS devices using SAS expanders<br>— Support for native 4K sector SAS and SATA devices in addition to 512 byte sector devices<br>— Hybrid RAID 1 & 10<br>— Quick initialization<br>— Online Capacity Expansion<br>— Copyback Hot Spare<br>— Dynamic caching algorithm<br>— Native Command Queuing (NCQ)<br>— Background initialization<br>— Hot-plug drive support<br>— RAID Level Migration<br><br>— Hot spares - global, dedicated, and pooled<br>— Automatic/manual rebuild of hot spares<br>— SES and SAF-TE enclosure management<br>— Configurable stripe size<br>— S.M.A.R.T. support<br>— Multiple arrays per disk drive<br>— Dynamic sector repair<br>— Staggered drive spin-up<br>— Bootable array support<br>— Support for Tape Devices, Autoloaders<br>— MSI-X support for all device drivers for all supported Operating Systems<br>— Secure boot support for the uEFI host BIOS<br>— USB image available on **start.adaptec.com** to boot maxView GUI from any USB device for enhanced GUI-based setup and offline maintenance |
| **Management Utilities** | **Adaptec maxView Storage Manager**<br>— Web based GUI Management Utility<br>— OS Support: Windows, Linux, Solaris, VMware<br>— Remote configuration, monitoring & notification<br>— Remote firmware updates<br>— SMI-S Support<br>— SMTP<br><br>**ARCCONF**<br>— Command Line Interface<br>— SMI-S support for VMware<br>**Adaptec BIOS Configuration Utility (CTRL+A)**<br>— Legacy configuration utility<br>— Flashable BIOS support<br>**Adaptec uEFI BIOS Configuration Utility**<br>— HII based configuration utility<br>— Flashable BIOS support |
| **Operating Systems** | Microsoft Windows, Red Hat Linux, SUSE Linux, Fedora, Debian Linux, Ubuntu Linux, Sun Solaris, FreeBSD, VMware ESXi.<br>The latest drivers are available at **start.adaptec.com** |
| **Physical Dimensions** | 2.535"H x 6.6"L (64mm x 167mm) |
| **Operating Temperature** | 0°C to 55°C* (with 200 LFM airflow, without flash); 0°C to 50°C* (with 200 LFM airflow, with flash) *Note: This adapter contains a powerful RAID processor which requires adequate airflow to operate reliably. Please install this card only into server or PC chassis with at least 200 LFM airflow.*<br>*Temperature measured 1 inch from RAID adapter |
| **Operating Current** | 0.1A @ 3.3 VDC; 1.2A @ 12.0 VDC 8405, 8805, 8885, 8885Q; 1.0A @ 3.3 VDC; 1.1A @ 12.0 VDC 81605ZQ, 81605Z |
| **Regulatory Certification** | CE, FCC, UL, C-tick, VCCI, KCC, CNS |
| **Environmental Compliance** | RoHS |
| **MTBF** | 775,000 hours at 40° C |
| **Warranty** | 3 years |

| ADAPTEC RAID | SERIES 8Q | | SERIES 8 | | | |
|---|---|---|---|---|---|---|
| | 81605ZQ | 8885Q | 81605Z | 8885 | 8805 | 8405 |
| **Order Part Number** | 2281600-R (Single) | 2277100-R (Single) | 2287101-R (Single) | 2277000-R (Single) | 2277500-R (Single) | 2277600-R (Single) |
| **RAID Levels** | 0,1,1E,5,6,10, 50, 60 | 0,1,1E,5,6,10, 50, 60 | 0,1,1E,5,6,10, 50, 60 | 0,1,1E,5,6,10, 50, 60 | 0,1,1E,5,6,10, 50, 60 | 0,1,1E,5,6,10, 50, 60 |
| **Form Factor** | MD2 - Low Profile 2.535"H x 6.6"L (64mm x 167mm) | MD2 - Low Profile 2.535"H x 6.6"L (64mm x 167mm) | MD2 - Low Profile 2.535"H x 6.6"L (64mm x 167mm) | MD2 - Low Profile 2.535"H x 6.6"L (64mm x 167mm) | MD2 - Low Profile 2.535"H x 6.6"L (64mm x 167mm) | MD2 - Low Profile 2.535"H x 6.6"L (64mm x 167mm) |
| **Ports** | 16 Internal | 8 Internal/8 External | 16 Internal | 8 Internal/8 External | 8 Internal | 4 Internal |
| **Connectors** | 4 X SFF-8643 | 2 x SFF-8643 2 x SFF-8644 | 4 X SFF-8643 | 2 x SFF-8643 2 x SFF-8644 | 2 X SFF-8643 | 1 X SFF-8643 |
| **Bus Interface** | 8-Lane PCIe Gen3 | 8-Lane PCIe Gen3 | 8-Lane PCIe Gen3 | 8-Lane PCIe Gen3 | 8-Lane PCIe Gen3 | 8-Lane PCIe Gen3 |
| **Processor** | PMC 12Gb/s RoC | PMC 12Gb/s RoC | PMC 12Gb/s RoC | PMC 12Gb/s RoC | PMC 12Gb/s RoC | PMC 12Gb/s RoC |
| **Cache** | 1024MB | 1024MB | 1024MB | 1024MB | 1024MB | 1024MB |
| **Cache Protection** | Flash backup (embedded) AFM-700 (included) | AFM-700 (optional) | Flash backup (embedded) AFM-700 (included) | AFM-700 (optional) | AFM-700 (optional) | AFM-700 (optional) |

**adaptec** by PMC

**PMC-Sierra, Inc.**
1380 Bordeaux Dr.
Sunnyvale, CA 94089 USA
Tel: +1 (408) 239-8000

World Wide Web: www.adaptec.com
Pre-Sales Support: US and Canada: 1 (800) 442-7274 or (408) 957-7274 or adaptecsales@pmcs.com
UK: +44 1276 854 528 or uk_sales@pmcs.com
Australia: +61-2-90116787
Germany: +49-89-45640621 or adaptecsales.germany@pmcs.com
Singapore: +65-92351044