

Microsemi Adaptec® Series 7 RAID: 71605/Q, 7805/Q, 78165, 72405, 71685, 71605E 6 Gbps PCle Gen3 Product Family Highest Port Count, Low-Profile SAS/SATA RAID Adapters

Maximum Connectivity in a Low-profile/MD2 Form Factor

With 24-port native connectivity, the Series 7 RAID triples storage connectivity by replacing up to three 8-port RAID adapters. It more than doubles the performance of competing solutions, significantly reducing cost and power. The Series 7 family includes entry-level and high-performance adapters available in 8, 16, and 24 native port configurations, with high-density Mini SAS connectors and cables. With the Series 7 RAID adapters, Microsemi brings to market a number of breakthroughs for the most performance-intensive applications and dense server environments.

Series 7Q with maxCache 3.0

Advancing the performance capabilities of SSD caching to a broader set of application workloads, the Series 7Q with maxCache 3.0 supports 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.

Full PCIe Gen3 Bandwidth Utilization

While the PCle Gen3 interface doubles bandwidth to the host when compared to PCle Gen2, it requires at least sixteen 6 Gbps SAS/SATA ports to double the bandwidth to the storage devices. Competing 6 Gbps solutions have only eight ports and cannot leverage that advantage.

Flash-based Cache Protection

The Series 7 family continues Microsemi's battery-free portfolio. Series 7 adapters can be combined with the AFM-700 flash-based cache protection module to enable instant cache protection. Series 7Q adapters with maxCache 3.0 include the AFM-700 module.

Advanced Data Protection and Ease of Use

Microsemi's 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. maxView provides an HTML5 web interface, which can be used in standard desktops and mobile browsers, for all storage configuration and management needs.



Benefits

- Ideal for space-limited entry-level server to high-end server platforms and high-performance workstations without compromising robust
 6 Gbps performance and with proven reliability.
- High I/O transaction and high bandwidth processing provide solutions that reduce energy consumption and maintenance costs.
- Low-profile form factor.

Product Highlights

- Up to 24 native SAS ports
- maxCache 3.0 software (Series 7Q only)
- Complete portfolio of SAS HD cables available
- LP/MD2 form factor for up to 24 SAS/SATA ports
- Third-generation ZMCP (AFM-700) optional (78165, 72405, 71685, 71605, 7805)



















Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information is entirely by information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.



Microsemi Adaptec® Series 7 RAID: 71605/Q, 7805/Q, 78165, 72405, 71685, 71605E 6 Gbps PCle Gen3 Product Family Highest Port Count, Low-Profile SAS/SATA RAID Adapters

Software features	- maxCache 3.0 (Series 7Q) - Flexible Configuration: HBA Mode & Auto Volume Mode for automatic deployment - Optimized Disk Utilization (multiple arrays per disk) - Up to 256 SATA/SAS devices using SAS expanders - Support for native 4K sector SAS and SATA devices in addition to 512 byte sector devices - Hybrid RAID 1 and 10 - Quick initialization - Online capacity expansion	 Copyback hot spare Dynamic caching algorithm Native command queuing Background initialization Hot-plug drive support RAID level migration Hot spares — global, dedicated, & pooled Automatic/manual rebuild of hot spares SES and SAF-TE enclosure management Configurable stripe size S.M.A.R.T. support Multiple arrays per disk drive 	Dynamic sector repair Staggered drive spin-up Bootable array support Support for tape devices and autoloaders MSI-X support for device drivers on all supported operating systems Secure boot support for uEFI host BIOS USB image available on storage. microsemi.com/en-us/support/start to boot maxView GUI from any USB device for enhanced GUI-based setup and offline maintenance						
Management utilities	maxView Storage Manager - Web-based GUI management utility - OS Support: Windows, Linux, Solaris VMware - Remote configuration, monitoring, and notification	 Remote firmware updates SMI-S support SMTP ARCCONF Command line interface; SMI-S support for VMware 	Adaptec BIOS Configuration Utility - Legacy configuration utility; flashable BIOS support Adaptec uEFI BIOS Configuration Utility - HII-based configuration utility; flashable BIOS support						
Operating systems	Microsoft Windows, Red Hat Linux, SUSE Linux, Fedora, Debian Linux, Ubuntu Linux, Sun Solaris, FreeBSD, VMware ESX. The latest drivers are available at storage.microsemi.com/en-us/support/start.								
Physical dimensions	71605Q, 7805Q, 78165, 71605, 7805, 71605E : 2.535" H x 6.6" L; 72405, 71685 : 4.198" H x 6.6" L								
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 card contains a powerful RAID processor which requires adequate airflow to operate reliably. Please install this card only into server or PC chassis with recommended airflow (200 LFM).								
Operating current	7805/7805Q: 0.1 A at 3.3 VDC and 1.5 A at 12 VDC; 71605/71605Q: 0.1 A at 3.3 VDC and 1.6 A at 12 VDC; 71605E: 0.1 A at 3.3 VDC and 1.5 A at 12.0 VDC; 71685/72405: 0.1 A at 3.3 VDC and 1.8 A at 12.0 VDC; 78165: 1.1 A at 3.3 VDC and 1.3 A at 12 VDC measured on PCle Gen3 systems with 6G drives								
Regulatory certification	CE, FCC, UL, C-tick, VCCI, KCC, CNS								
Environmental compliance	RoHS								
MTBF (at 40 °C)	645,612 hours								
Warranty	3 years								

RAID adapter	71605Q	7805Q	78165	72405	71685	71605	7805	71605E
Order part number	2274600-R (Single)	2274300-R (Single)	2280900-R (Single)	2274900-R (Single)	2274700-R (Single)	2274400-R (Single)	2274100-R (Single) 2274200-R (Kit)	2274500-R (Single)
RAID levels	0, 1, 1E, 5, 6, 10, 50, 60	0, 1, 1E, 10						
Form factor	MD2 – Low Profile	MD2 – Low Profile	MD2 – Low Profile	Half Length-Full Height	Half Length-Full Height	MD2 – Low Profile	MD2 – Low Profile	MD2 – Low Profile
Ports	16 Internal	8 Internal	8 Internal/ 16 External	24 Internal	16 Internal/ 8 External	16 Internal	8 Internal	16 Internal
Connectors	4 X SFF-8643	2 X SFF-8643	2 X SFF-8643 4 X SFF-8644	6 x SFF-8643	4 X SFF-8643 2 X SFF-8644	4 X SFF-8643	2 X SFF-8643	4 X SFF-8643
Bus interface	8-Lane PCle Gen3	8-Lane PCle Gen3	8-Lane PCle Gen3					
Processor	6 Gbps RoC	6 Gbps RoC						
Cache	1024 MB	256 MB						
Cache protection	AFM-700 (included)	AFM-700 (included)	AFM-700 (optional)	AFM-700 (optional)	AFM-700 (optional)	AFM-700 (optional)	AFM-700 (optional)	Not supported
SAS HD cables	Not included	ACI-I-HDmSAS- 4SATA-SB8M (Kit)	Not included					



Microsemi Corporate Headquarters

One Enterprise, Aliso Viejo, CA 92656 USA Within the USA: +1 (800) 713-4113 Outside the USA: +1 (949) 380-6100 Sales: +1 (949) 380-6136 Fax: +1 (949) 215-4996 email: sales.support@microsemi.com www.microsemi.com

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions, security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, Calif., and has approximately 4,800 employees globally. Learn more at www.microsemi.com.