TOSHIBA

Leading Innovation

OCZ

RD400/400A Series

PCIe® NVMe® M.2

The SSD for enthusiasts and hardcore gamers

June 2016

Overview

Introducing a new breed of enthusiast storage, the OCZ RD400 NVM Express® M.2 solid state drive series, designed to propel high-end computing into a new realm of possibilities. The OCZ RD400 PCIe Gen3 x4 outperforms SATA SSDs by over 4.5 times in sequential read (up to 2,600 MB/s) , and over 3 times in sequential write performance (up to 1,600 MB/s) so your system won't be deprived of the storage bandwidth your data-intensive workload requires.* The OCZ RD400's next generation NVMe® interface provides a more responsive PC experience and shorter storage latency than that of today's traditional hard disk drives and SATA SSDs. Along with high performance, the OCZ RD400 is designed for mobile, desktop, or workstation applications.

* This reflects maximum performance of RD400 512 GB compared to VT180 480 GB.

Game-changing Storage

TOSHIBA's new OCZ RD400 SSD redefines high performance storage for enthusiasts and hardcore gamers that feel held back by commodity storage hardware. With over 200,000 IOPS @4 KiB of random read performance at your beck and call, the OCZ RD400 will be your next high-end system.

Get in the PCI Express Lane

Why keep using an interface that was designed for hard disk drives? PCI Express revolutionizes flash storage for tomorrow's high-speed computing age. The OCZ RD400 boosts bandwidth and puts your data in the fast lane leaving SATA SSDs in the dust.

NVM Express

Utilizing NVMe technology, the OCZ RD400 reduces latency in your system's I/O path between the drive and your CPU, resulting in smooth and responsive performance.

Good Things Come in Small Packages

The OCZ RD400's compact M.2 2280 form factor packs in high performance and up to 1024 GB of storage capacity enabling high-end desktop speeds to exist not only in your notebook, but directly on your motherboard without taking up a PCIe slot.

Flexibility for the Future

If you want to harness the power of NVMe now but don't want to upgrade your motherboard yet, the OCZ RD400 is available with an M.2 PCIe adaptor add-in-card. This option allows your investment to go the distance when you opt for an M.2 platform in the future.

Features

NVMe Compliant
Say good bye to legacy storage buses.

PCIe Performance
Surpass the SATA bottleneck once and for all.

M.2 2280 Compliant
Latest SSD form factor for your next gen system build.

Low Power Mode
Requires less power when drive is in standby mode.

Custom Drivers
RD400/400A utilizes custom high performance drivers.

1024GB Storage
Store loads of data on up to 1024GB of SSD capacity.

Advanced Warranty Program
A new approach to service that mitigates the hassle surrounding support and warranty claims consumers often have to deal with. This program provides advanced replacement with no return shipping costs. Advanced Warranty Program is limited by selected regions. Detailed warranty terms available at www.ocz.com

ADVANCED WARRANTY
PROGRAM

SSD Utility SSD Management Software
The SSD Utility was designed to help your OCZ drive thrive and lets you be in control of maintenance, monitoring, SSD tuning, OS tuning and more!

Specifications

Performance	128 GB	256 GB	512 GB	1024 GB
Sequential Read Speed[1]	Up to 2,200 MB/s	Up to 2,600 MB/s	Up to 2,600 MB/s	Up to 2,600 MB/s
Sequential Write Speed[1]	Up to 620 MB/s	Up to 1,150 MB/s	Up to 1,600 MB/s	Up to 1,550 MB/s
Random Read (4 KiB)[2]	Up to 170,000 IOPS	Up to 210,000 IOPS	Up to 190,000 IOPS	Up to 210,000 IOPS
Random Write (4 KiB)[2]	Up to 110,000 IOPS	Up to 140,000 IOPS	Up to 120,000 IOPS	Up to 130,000 IOPS

Endurance

TBW (Total Bytes Written)[3]	74 TB	148 TB	296 TB	592 TB
Daily Usage Guidelines[4]	40 GB/day	81 GB/day	162 GB/day	324 GB/day

[1] Sequential speeds are measured with ATTO v2.47.
[2] 4 KiB random performance is measured with IOMETER 2010, 4KiB file size, QD32 (100% Incompressible Data).
[3] Definition and conditions of TBW (Terabytes Written) are based on JEDEC standard; JESD218A, February 2011, and defined for the service life.
[4] Daily usage guidelines value is calculated by dividing TBW by 365 x 5.

Physical

Usable Capacities	128 GB, 256 GB, 512 GB, 1024 GB
Form Factor	M.2 2280, M.2 2280+AIC
Interface	PCI Express Base Specification Revision 3.1 (PCIe) Maximum Speed: 32 GT/s (PCIe Gen3x4L) Command: NVM Express Revision 1.1b (NVMe)
NAND Flash Memory Type	MLC
Dimension (L x W x H)	128 GB, 256 GB, 512 GB: 80 x 22 x 2.23 mm 1024 GB: 80 x 22 x 3.58 mm AIC: 157.64 x 105.51 x 17.2 mm 128 GB: 6.8 g (typ.)
Drive Weight	256 GB, 512 GB: 7.2 g (typ.) 1024 GB: 8.6 g (typ.) AIC: 63 g (typ.)

Power Requirements

Supply Voltage	128 GB, 256 GB, 512 GB, 1024 GB: 3.3 V +/- 5% AIC: 12 V +/- 5%
Power Consumption (Active)	128 GB, 256 GB, 512 GB: 6.0 W (typ.) 1024 GB and AIC: 6.4 W (typ.)
Power Consumption (Power State 5)	128 GB, 256 GB, 512 GB, 1024 GB and AIC: 6.0 mW (typ.)

Environmental

Operating Temperature	0 °C to 70 °C
Storage Temperature	-40 °C to 85 °C
Shock Resistance	9.8 km/s^2 {1000 G} (0.5 ms)
Vibration	Operational 21 m/s^2 {2.17 Grms} (Peak, 7 to 800 Hz) Non-operational 30 m/s^2 {3.13 Grms} (Peak, 5 to 800 Hz)
Certifications	UL/cUL, FCC, CE, RCM, KC, BSMI, VCCI, and ISED

Reliability / Security

MTBF	1.5 Mhours
Product Health Monitoring	Self-Monitoring, Analysis and Reporting Technology (SMART) Support

Compatibility

PCI Express	Compatible with PCI Express® Base Specification Revision 3.1
Operating System[5]	Windows® 10, Windows® 8.1, Windows® 7; Linux® Fedora 21, Mint 17.1, ElementaryOS Freya, OpenSUSE 13.2, Ubuntu 14.04, Ubuntu 14.10
Connector Type	M.2: M.2 M key socket AIC: PCIe slot
Targeted Applications	Client desktops and laptops

[5] Compatible operating system for SSD is not the same as compatible operating system for SSD Utility or CLOUT

Additional

Performance Optimization	TRIM, Idle Time Garbage Collection
Service & Support	5-Year[6] Advanced Warranty Program[7], Toll-Free Tech Support
Software	SSD management software: SSD Utility and Command Line Online Update Tool (CLOUT)

[6] Warranty is 5 years or the max TBW (total bytes written) per model capacity, whichever occurs first.
[7] Available to limited regions and countries. Check availability.

Ordering Information	Model	Part Number	UPC
RD400	128 GB	RVD400-M22280-128G	842024037347
	256 GB	RVD400-M22280-256G	842024037354
	512 GB	RVD400-M22280-512G	842024037361
	1024 GB	RVD400-M22280-1T	842024037378
RD400A (with AIC)	128 GB	RVD400-M22280-128G-A	842024037538
	256 GB	RVD400-M22280-256G-A	842024037552
	512 GB	RVD400-M22280-512G-A	842024037569
	1024 GB	RVD400-M22280-1T-A	842024037545

Definition of capacity: Toshiba defines a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes and a terabyte (TB) as 1,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB = 2^{30} = 1,073,741,824 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

A kibibyte (KiB) means 2^{10}, or 1,024 bytes, a mebibyte (MiB) means 2^{20}, or 1,048,576 bytes, and a gibibyte (GiB) means 2^{30}, or 1,073,471,824 bytes.

IOPS: Input Output Per Second (or the number of I/O operations per second)

MTTF (Mean Time to Failure) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may be different from the MTTF.

Read and write speed may vary depending on the host device, read and write conditions, and file size.

Subject to Change: While Toshiba has made every effort at the time of publication to ensure the accuracy of the information provided herein, product specifications, configurations, prices, system/component/options availability are all subject to change without notice.

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Product image may represent design model.

OCZ RD400 comes with a 5-Year Advanced Warranty Program. Advanced Warranty Program is limited by selected regions. Detailed warranty terms available at www.ocz.com