



Toshiba Increases Performance, Doubles Capacity with New XG5-P NVMe SSDs

New “Premium” Client Series Offers 2TBs of Capacity and Optimized Performance for Workstation, Enthusiast and High-End PC/Notebook Applications

Düsseldorf, Germany, 1 December 2017 - Toshiba Memory Europe GmbH has expanded its widely-acclaimed XG5 lineup of NVMe solid state drives (SSDs) that are based on its 64-layer, 3D BiCS FLASH memory. The new XG5-P is a premium sub-series that doubles the capacity and is tuned to improve full access range random read/write performance by up to 55 percent^[1] over standard XG5 SSDs. The XG5-P series is designed to meet the needs of demanding PC, gaming and content delivery workloads and offers up to 2 terabytes (TB)^[2] of storage capacity while maintaining the characteristics of ultra-thin, high-speed storage with exceptional power efficiency.

To provide a comprehensive client SSD portfolio from basic laptop storage to read-intensive enterprise use cases, Toshiba optimised the XG5 series to further accelerate applications

requiring enhanced random I/O performance. Featuring a PCI Express (PCIe)^[3] Gen3 x4 lane and NVMe Revision 1.2.1 interface, XG5-P SSDs deliver outstanding performance, reaching up to 3000 MB/sec of sequential read and 2200 MB/sec of sequential write^[4], and up to 320,000 random read and 265,000 random write IOPS^[5]. Excellent power efficiency was maintained to achieve these data transfer rates - XG5-P SSDs consume less than 60mW^[6].

As Toshiba's first 2TB M.2 SSD, the XG5-P series utilizes an in-house developed 1TB package solution that offers up to twice the maximum storage capacity of the standard XG5 series on the same 2.23mm thick single-sided M.2 2280 module. By maintaining a single form factor for all capacities across the complete XG5 and XG5-P product family, Toshiba makes it easier to design platforms that need flexible storage.

Engineered with the reliability and stability that are hallmarks of Toshiba's SSDs, the XG5-P series will be available in 1TB and 2TB models. Self-encrypting drive (SED) models^[7] supporting TCG Opal Version 2.01 will also be offered, making the XG5-P series well-suited for a wide range of applications that prioritize performance, as well as business applications requiring security.

Notes:

[1] Comparing XG5-P 1TB model to XG5 1TB model on the state of "SLC cache=OFF"

[2] Definition of capacity: Toshiba Memory Corporation 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 1TB = 2⁴⁰ bytes = 1,099,511,627,776 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.

[3] PCI Express and PCIe are registered trademarks of PCI-SIG

[4] Toshiba Memory Corporation survey based on sequential read and write speeds of 128KiB units and the state of "SLC cache=ON" under Toshiba Memory Corporation test conditions. Read and write speed may vary, depending on the host device, read and write conditions, and file size. Toshiba Memory Corporation defines a megabyte (MB) as 1,000,000 bytes and a kibibyte (KiB) as 2¹⁰bytes, or 1,024bytes.

[5] Input Output Per Second (or the number of I/O operations per second)
Toshiba Memory Corporation survey based on random read and write speeds of 4KiB units and the state of "SLC cache=ON" under Toshiba Memory Corporation test conditions. Read and write speed may vary, depending on the host device, read and write conditions, and file size.

[6] Toshiba Memory Corporation survey using MobileMark 2014 under Toshiba Memory Corporation test conditions.

[7] Availability of the SED model line-up may vary by region.

* Information in this document, including product prices and specifications, content of services and contact information, is current and believed to be accurate on the date of the announcement but is subject to change without prior notice.

* Company names, product names, and service names mentioned herein may be trademarks of their respective registrants and/or owners.

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About Toshiba Memory Europe

Toshiba Memory Europe GmbH (TME) is the European business of the Toshiba Memory Corporation (TMC). Our company offers a broad product line of high-end flash memory products, including SD Cards, USB sticks, micro SDs and embedded memory components, in addition to solid state drives (SSD). TME maintains offices in Germany, France and the United Kingdom. The company's president is Masaru Takeuchi.

For more information on the full range of TME's memory and SSD products please visit <http://toshiba.semicon-storage.com>

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