Media Inquiries:
Rachel Austin
Waggener Edstrom Worldwide
(512) 527-7018
raustin@waggeneredstrom.com

TOSHIBA ANNOUNCES NEW GENERATION OF HIGH-PERFORMANCE SOLID STATE DRIVES

The HG6 SSD series offers the capacity, performance and power efficiency for read-intensive and power-sensitive applications

IRVINE, Calif. — February 18, 2014 — The Storage Products Business Unit of Toshiba America Electronic Components, Inc., a committed technology leader, announces the next generation of Toshiba's award-winning HG series of high performance solid state drives (SSDs) – the HG6 SSD series. This newest addition to the HG family offers high performance, power efficiency, and is suitable for a wide range of applications from Ultrabooks®[1] to data center servers.

The HG6 series is available in a variety of standard form factors including 2.5-inch (7mm/9.5mm heights) and thin, space-saving mSATA™[2] and M.2, and is available in capacities of up to 512GB[3]. With 6Gbit/s[4] SATA interface speeds, these drives are optimized for fast boot ups and application starts and offer lower power consumption to help improve battery life in mobile devices. The HG6 SSD is optimized for notebook PCs, workstations, thin clients, server boot drives, and read-intensive enterprise applications.

Engineered with enterprise class technology for data integrity, the HG6 series incorporates Toshiba's proprietary QSBC® (Quadruple Swing-By Code) error-correction technology[5], a highly efficient error correction code (ECC), which helps protects customer data from corruption caused by NAND wear, thus improving the

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[1] Ultrabook is a registered trademark of Intel Corporation.

[2] mSATA™ is an unregistered trademark of Serial ATA International Organization.

[3] 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 = 230 = 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."

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

[5] QSPC is a registered trademark of Toshiba Corporation in the United States.

reliability of and extending the usable life of the SSD. The series also includes end-to-end data path protection and a self-encrypting feature option that is compliant with Trusted Computing Group (TCG)[6] Opal 2.0, the TCG specification for self-encrypting drive function. This is the first mainstream SSD product to use state of the art Toshiba A19nm Toggle 2.0 MLC NAND media.

"With the HG6 series, customers can trust they are using a storage solution with high performance and power efficiency that is ideal for a wide range of applications," said Don Jeanette, senior director of marketing at Toshiba Storage Products Business Unit. "As inventors of NAND technology, we leverage our NAND expertise to optimize the performance and data integrity of this series, and truly give customers the power of choice with a broad selection of capacities and form factors."

Product of the HG6 series will begin shipping in March 2014. For more information on Toshiba's line of industry-leading SSDs, HDDs and SSHDs, visit www.toshibastorage.com. To connect with Toshiba Storage, visit the corporate blog at http://storage.toshiba.com/corporateblog/ and follow @ToshibaStorage on Twitter.

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Specifications

Form Factor	**2.5-inch Case (9.5 mmH)**	**2.5-inch Case (7.0 mmH)**	**mSATA™ Module**	**M.2. 2280 (Double-Sided)**	**M.2. 2280 (Single-Sided)**
Connector Type	Standard SATA	Standard SATA	mSATA	M.2 B-M	M.2 B-M
Model Number[7]	THNSxJyyyGBSU	THNSxJyyyGCSU	THNSxJyyyGMCU	THNSxJyyyG8NU/DNU[8]	THNSxJyyyGVNU
Memory	TOSHIBA A19 nm MLC NAND Flash Memory				
Interface[9]	ACS-2, SATA revision 3.1 1.5/3/6 Gbit/s				
Capacity	60/128/256/512 GB		60/128/256/512 GB	60/128/256/512 GB	128/256 GB
Performance[10]	Sequential Read (max): 534 MB/s{510 MiB/s} (2.5-inch 512 GB Model) Sequential Write (max): 482 MB/s{460 MiB/s} (2.5-inch 512 GB Model)				
Supply Voltage	5.0 V ±5 %		3.3 V ±5 %	3.3 V ±5 %	3.3 V ±5 %

[6] The Trusted Computing Group (TCG) is a not-for-profit organization formed to develop, define and promote open, vendor-neutral, global industry standards, supportive of a hardware-based root of trust, for interoperable trusted computing platforms.

[7] Model Number: x=N, Standard model, x=F, SED models. "yyy" indicates the capacity of the drive.

[8] Only the 512GB model is lined up for DNU, 50, 128 and 256HB models are lined up for 8NU.

[9] 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.

[10] 1 MiB (mebibytes) = 220 bytes = 1,048,576 bytes.

Power Consumption (Largest capacity Model)	Active: 3.3 W typ. Idle: 125 mW typ.		Active: 3.2 W typ. Idle: 65 mW typ.	Active:3.2 W typ. Idle: 65 mW typ.	Active: 2.5 W typ. Idle: 65 mW typ.
Temperature	Operating: 0 °C - 70 °C (case temperature) Non-operating: -40 °C – 85 °C		Operating: 0 °C - 80 °C (components temperature) Non-operating: -40 °C – 85 °C	Operating: 0 °C - 80 °C (components temperature) Non-operating: -40 °C – 85 °C	Operating: 0 °C - 80 °C (components temperature) Non-operating: -40 °C – 85 °C
Shock	14.7 km/s^2 {1500 G} at 0.5 ms				
Vibration	Operating / Non-operating: 196 m/s^2 {20 G} at 10-2,000 Hz				
Reliability	Mean Time to Failure (MTTF): 1,500,000 hours				
Size	100.0 mm x 69.85 mm x 9.5 mm	100.0 mm x 69.85 mm x 7.0 mm	50.95 mm x 30.0 mm x 3.95 mm	80.0 mm x 22.0 mm x 3.50 mm	80.0 mm x 22.0 mm x 2.15 mm
Weight	51-55 g typ.	49-53 g typ.	7.3-7.7 g typ.	7.0-9.3 g typ.	6.4-6.6 g typ.
More Features	• Translation mode which enables any drive configuration • 28-bit LBA mode commands and 48-bit LBA mode commands support • Multi word DMA, Ultra-DMA, Advanced PIO mode • Automatic retries and corrections for read errors • SED models are based on TCG OPAL version 2.0. SED models supports Wipe Technology.				

About Toshiba Storage Products
Toshiba Corporation and its affiliates offer one-of-a-kind global storage solutions, offering hard disk drives (HDDs), solid state drives (SSDs) and NAND flash memories — technologies that drive a wide range of consumer electronics, computer and automotive applications, as well as enterprise solutions for the global marketplace. Toshiba is a leader in the development, design and manufacture of mobile, consumer and enterprise hard disk drives and solid state drives. In North America, the Storage Products Business Unit of Toshiba America Electronic Components, Inc., markets high-quality storage peripherals to original equipment manufacturers, original design manufacturers, value-added resellers, value-added dealers, systems integrators and distributors worldwide. Inherent in the Toshiba storage family are the high-quality engineering and manufacturing capabilities that have established Toshiba products as innovation leaders worldwide. For more information, visit www.toshibastorage.com.

About Toshiba Corp. and Toshiba America Electronic Components, Inc. (TAEC)
Through proven commitment, lasting relationships and advanced, reliable electronic components, Toshiba enables its customers to create market-leading designs. Toshiba is the heartbeat within product breakthroughs from OEMs, ODMs, CMs, VARs, distributors and fabless chip companies worldwide. A committed electronic components leader, Toshiba designs and manufactures high-quality flash memory-based storage solutions, solid state drives (SSDs), hard disk drives (HDDs), discrete devices, advanced materials, medical tubes, custom SoCs/ASICs, imaging products, microcontrollers and wireless components that make possible today's leading smartphones, tablets, MP3 players, cameras, medical devices, automotive electronics, enterprise solutions and more.

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