Toshiba Ushers in UFS, Compares and Contrasts to e-MMC

Evolution of Embedded Storage Creates Multiple Options, Use-Case Scenarios

IRVINE, Calif., November 5, 2013 — Toshiba America Electronic Components, Inc., (TAEC)*, a committed leader that collaborates with technology companies to create breakthrough designs, shares with designers what they need to know when it comes to choosing an embedded memory device for mobile applications. e-MMC™ continues to be the solution of choice, offering gigabyte (GB) storage, low power, an attractive cost/performance ratio, and broad industry interface support. Universal Flash Storage® (UFS) is the next generation of embedded memory device to e-MMC, driving a significant boost in performance.

Toshiba, the industry leader in embedded memory, has achieved a number of important milestones and industry firsts. For example, the company recently announced the launch of its new embedded NAND flash memory modules featuring 19nm second generation process technology. In a new video, the second in a solution series that takes viewers inside memory design issues with straight talk from Toshiba’s memory experts, Scott Beekman, director of managed NAND memory products for TAEC, explores the differences between e-MMC and UFS.

e-MMC has been broadly adopted by numerous applications including smartphones, tablets, games, servers, printers, and many more. e-MMC supports half duplexing, allowing either reading or writing, but not both to occur between the host processor and an e-MMC device and supports an interface speed of up to 400 MB/s[3] for JEDEC standard Version 5.0.

UFS has a faster interface than e-MMC and more features to enhance overall system performance – with its key benefit being a significant boost in performance. UFS supports full
duplexing, allowing both reading and writing to occur between the host processor and the UFS device at the same time, and supports an interface speed of up to 720 MB/s initially, with faster interfaces soon to follow.

“The sheer momentum of e-MMC in the market will likely mean that these two solutions will continue to exist in parallel for some time, with UFS initially supporting the needs of applications demanding higher performance, and typically at higher densities, and e-MMC supporting the needs of applications driven to maintain the lowest cost,” Beekman noted. “Toshiba has been a leader in e-MMC from the beginning, and we will continue to innovate with both e-MMC and UFS as we look to the future.”

For more design insights into e-MMC and UFS from the memory experts at Toshiba, click here: https://vimeo.com/72052801. For additional company and product information, please visit http://www.toshiba.com/taec/ or http://www.toshiba.com/taec/adinfo/technologymoves.

*About Toshiba Corp. and TAEC

About 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, cameras, medical devices, automotive electronics, enterprise solutions and more.

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For additional company and product information, please visit http://www.toshiba.com/taec/.
[1] e-MMC is a trademark and a product category for a class of embedded memory products built to the JEDEC e-MMC Standard specification.

[2] Universal Flash Storage is a trademark and product category for a class of embedded memory products built to the JEDEC UFS standard specification.

[3] Read and write speed may vary depending on the read and write conditions, such as devices you use and file sizes you read and/or write. (For purposes of measuring data transfer and read-write speed in this context, 1 MB = 1,000,000 bytes)

Product density is identified based on the density of memory chip(s) within the Product, not the amount of memory capacity available for data storage by the end user. Consumer-usable capacity will be less due to overhead data areas, formatting, bad blocks, and other constraints, and may also vary based on the host device and application. Maximum read and write speed may vary depending on the host device, read and write conditions, and file size. For purposes of measuring read and write speed in this context, 1 megabyte or MB = 1,000,000 bytes.

Information in this press release, including product pricing 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. Technical and application information contained here is subject to the most recent applicable Toshiba product specifications. In developing designs, please ensure that Toshiba products are used within specified operating ranges as set forth in the most recent Toshiba product specifications and the information set forth in Toshiba’s “Handling Guide for Semiconductor Devices,” or “Toshiba Semiconductor Reliability Handbook.” This information is available at www.chips.toshiba.com, or from your TAEC representative.

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