



Toshiba Memory Europe announces 96-layer BiCS FLASH™ development with QLC technology

Düsseldorf, Germany, 20 July 2018 – Toshiba Memory Europe GmbH today announced that it has developed a prototype sample of a 96-layer BiCS FLASH™, memory device using its proprietary 3D flash quad level cell (QLC) technology that boosts single-chip memory capacity to the highest level yet achieved.

QLC technology is pushing the bit count for data per memory cell from three to four, significantly expanding capacity. The new product achieves the industry's maximum capacity^[1] of 1.33 terabits for a single chip and was jointly developed with Western Digital Corporation.

This also realises an unparalleled capacity of 2.66 terabytes in a single package by utilising a 16-chip stacked architecture. The huge volumes of data generated by mobile terminals and the like continue to increase with the spread of SNS and the progress in IoT and the demand for analysing and utilising

that data in real time is expected to increase dramatically. This will require even faster HDDs and larger capacity storage and such QLC-based products, using the 96-layer process, will contribute to the solution.

Toshiba Memory will start to deliver samples to SSD and SSD controller manufacturers for evaluation from the beginning of September and expects to start mass production in 2019.

A packaged prototype of the new device will be exhibited at the 2018 Flash Memory Summit in Santa Clara, California, USA from August 6th to 9th.

Looking to the future, Toshiba Memory will continue to improve memory capacity and performance and to develop 3D flash memories that meet diverse market needs, including the fast expanding data center storage market.

Note:

[1] Source: Toshiba Memory Corporation, as of July 20, 2018.

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About Toshiba Memory Europe GmbH

We, Toshiba Memory Europe GmbH, are the European business of Toshiba Memory Corporation. Our company offers a broad product line of flash memory products, including SD Cards, USB flash drives, and embedded memory components, in addition to solid state drives (SSD). Our company maintains offices in Germany, France, Spain, Sweden and the United Kingdom. President is Masaru Takeuchi.

For more information on the full range of our memory and SSD products please visit:

<https://business.toshiba-memory.com/>; www.toshiba-memory.com

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