



Western Digital Begins Sampling 1.33 Terabit, Four-bits-per-cell, 96-layer 3D NAND

July 19, 2018

World's Highest Density Monolithic 3D NAND Chip Affirms Continuing Technology Leadership

SAN JOSE, Calif.--(BUSINESS WIRE)--Jul. 19, 2018-- Western Digital Corp. (NASDAQ: WDC) today announced successful development of its second-generation, four-bits-per-cell architecture for 3D NAND. Implemented for the company's 96-layer BiCS4 device, the QLC technology delivers the industry's highest 3D NAND storage capacity of 1.33 terabits (Tb) in a single chip. BiCS4 was developed at the joint venture flash manufacturing facility in Yokkaichi, Japan with our partner Toshiba Memory Corporation. It is sampling now and volume shipments are expected to commence this calendar year beginning with consumer products marketed under the SanDisk brand. The company expects to deploy BiCS4 in a wide variety of applications from retail to enterprise SSDs.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20180719005968/en/>



Western Digital 3D NAND (Photo: Business Wire)

"Leveraging Western Digital's silicon processing, device engineering and system integration capabilities, the QLC technology allows 16 distinct levels to be sensed and utilized for

storing data," said Dr. Siva Sivaram, executive vice president, Silicon Technology and Manufacturing at Western Digital. "BiCS4 QLC is our second generation four-bits-per-cell device, and it builds on the learnings from our QLC implementation in 64-layer BiCS3. With the best intrinsic cost structure of any NAND product, BiCS4 underscores our strengths in developing flash innovations that allow our customers' data to thrive across retail, mobile, embedded, client and enterprise environments. We expect the four-bits-per-cell technology will find mainstream use in all these applications."

About Western Digital

Western Digital creates environments for data to thrive. The company is driving the innovation needed to help customers capture, preserve, access and transform an ever-increasing diversity of data. Everywhere data lives, from advanced data centers to mobile sensors to personal devices, our industry-leading solutions deliver the possibilities of data. Western Digital® data-centric solutions are marketed under the G-Technology™, HGST, SanDisk®, Tegile™, Upthere™, and WD® brand:

Financial and investor information is available on the company's Investor Relations website at investor.wdc.com.

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Forward-Looking Statements

This news release contains certain forward-looking statements, including statements concerning the expected availability, benefits, features, pricing and performance of Western Digital's 1.33 terabit, four-bits-per-cell, 96-layer 3D NAND device. There are a number of risks and uncertainties that may cause these forward-looking statements to be inaccurate including, among others: volatility in global economic conditions; business conditions and growth in the storage ecosystem; impact of competitive products and pricing; market acceptance and cost of commodity materials and specialized product components; actions by competitors; unexpected advances in competing technologies; our development and introduction of products based on new technologies and expansion into new data storage markets; risks associated with acquisitions, mergers and joint ventures; difficulties or delays in manufacturing; and other risks and uncertainties listed in the company's filings with the Securities and Exchange Commission (the "SEC"), including the company's Form 10-Q filed with the SEC on May 8, 2018, to which your attention is directed. You should not place undue reliance on these forward-looking statements, which speak only as of the date hereof, and the company undertakes no obligation to update these forward-looking statements to reflect subsequent events or circumstances.



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