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The Global Semiconductor Industry Analysts

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Intel Teams Optane with OLC NAND

TORONTO—Intel frontloaded its latest Optane product announcements with a few new flash-based offerings, even as the sale of its NAND business to SK Hynix is pending. The latest Optane drives are aimed at both data center and the client, with the latter also leveraging the company's NAND flash.

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Future Horizons Ltd, • 44 Bethel Road • Sevenoaks • Kent TN13 3UE • England
Tel: +44 1732 740440 • Fax: +44 1732 740442
e-mail: mail@futurehorizons.com• http://www.futurehorizons.com/
Affiliates in Europe, India, Israel, Japan, Russian, San Jose California, USA

Renesas Acquires Dialog Semiconductor in $6 Billion Deal

Japanese leader in microcontrollers and automotive chips, Renesas, will buy Dialog Semiconductor, one of Apple's suppliers, in an all-cash deal.

The announcement of the agreement comes following recent speculation that the two companies were in talks, saying yesterday that the acquisition has been approved by the boards of directors of both companies. It's also the first big acquisition to be announced following what was a blockbuster year for the semiconductor industry in terms of high-profile mergers as global semiconductor sales continue to rise.

Both companies' shares fell shortly after the announcement due to concerns about Renesas' balance sheet. Renesas, which is one of the world's largest suppliers of automotive systems-on-chip (SoC), spent $7.2 billion on its acquisition of IDT in 2019.

TSMC to Set up Semiconductor Development Company in Japan

TSMC is expected to set up a semiconductor development company in Tsukuba, Japan by investing 20 billion yen. Earlier, the Taiwanese company decided last year to build a 5-nanometer fab in Arizona by investing US$12 billion. The company's new facilities in the United States and Japan are likely to enhance the three countries' cooperation in the global semiconductor industry to keep China in check.

Tsukuba is a well-known hub of semiconductor material and component R&D. It is home to a number of leading research facilities, including the semiconductor research institute of the University of Tsukuba and the National Institute for Materials Science.

Flash Wearout Drives Tesla Recall

TORONTO—Tesla's latest recall due to NAND flash wearing out in an eMMC device may be a reflection that the company thinks more like a software company than automaker.

The recall was prompted by problems with the 8GB eMMC NAND flash memory device that Tesla used in its massive touchscreen displays on most 2012–2018 Model S sedans and 2016–2018 Model X SUVs. These chips eventually wear out, a problem previously reported by Motherboard back in 2019, which leads to the entire "media control unit" being bricked and cutting off access to not only the backup camera, which is now federally required, and affects everything else routed through the touchscreen, including HVAC controls and even turn signal lights.

Micron Pulls Ahead on DRAM

DRAM nodes are going back to the beginning of the alphabet.

Micron Technology has unveiled its 1-alpha node DRAM, which the company said offers a 40% improvement in memory density over its 1z node DRAM, as well as a 15% improvement in power-savings for mobile devices. This latest memory node supports densities from 8Gb to 16Gb, and Micron has started volume production of DDR4 memory for compute customers and Crucial consumer PC DRAM products on the new process node, while LPDDR4 is being sampled to mobile customers for qualification.

Aside from mobile devices, the company sees the density, reliability, and power efficiency its 1-alpha DRAM appealing to customers who value longevity, including embedded automotive solutions, industrial PCs, and edge servers as they typically have longer lifespans, said Thy Tran, Micron's vice president of DRAM Process Integration in a briefing with EE Times. The 1-alpha moniker reflects perceived scaling limitations of the 10-nanometer class process node that ended up being dubbed "X," she said. "The scaling path was unclear."

Intel Teams Optane with QLC NAND

TORONTO—Intel frontloaded its latest Optane product announcements with a few new flash-based offerings, even as the sale of its NAND business to SK Hynix is pending. The latest Optane drives are aimed at both data center and the client, with the latter also leveraging the company's NAND flash.

The Intel Optane Memory H20 for clients combines 3D Xpoint technology with the company's 144-layer QLC 3D NAND; it is part of the company's strategy to "exceed" user expectations, said David Lundell, general manager of the Intel Optane group's client division. Those needs include instant on, responsiveness, worry-free battery life, seamless multitasking, and ample data storage. Optane addresses the instant on and responsiveness demands so that users can search and find files faster and start applications quicker, while frequent tasks are sped up through software that learns a user's computing behaviors.