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Covid Lockdown in China Threatens DRAM Supply Hiccup

Samsung and Micron have slowed operations at their memory chip facilities in Xi'an after a Covid outbreak forced the city of 12 million to enter lockdown on Dec. 23. Due to the ongoing Covid-19 situation, we have decided to temporarily adjust operations at our manufacturing facilities in Xi'an," Samsung announced in a three-sentence statement on its website.

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TALK TO US



4D Radar Improves Safety and Accuracy in Automotive and Industrial Applications

There has been a lot of interest recently in the development of next generation radar sensors for automotive and industrial applications. Unlike first-generation radar systems, which collected only speed, range, and angle-of-arrival, state-of-the-art 4D radar systems can determine an object's position in range, azimuth, elevation, and relative speed, providing more detailed information.

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Edge Computing, Artificial Intelligence, and the Cloud

There is certainly a buzz around the idea of digitalization — for its ability to deliver the benefits offered by greater visualization and analysis of data and to gain a greater understanding of the root causes of unexpected downtime and production bottlenecks. But what are the options, and how can they best be employed?

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Compared to PCIe 4.0 NVMe storage devices, Samsung claims its PM1743 can provide a bandwidth of 32 GT/s — doubling what current PCIe 4.0 drives can offer. The chipmaker also said its new PM1743 can provide a 2,500K IOPS random read speed, which combined with its 13,000 MB/s read speed offers 1.9x and 1.7x faster speeds compared to PCIe 4.0 drivers.

To reach such speeds, Samsung had to develop a proprietary controller for its PM1743 device. The chipmaker then enlisted the help of Intel to test the technology, according to Intel's director of technology initiatives, Jim Pappas.

Synthetic Quantum Systems Help Solve Complex Real-World Applications

Simulation using synthetic quantum systems is a potential tool for addressing challenging NP-Hard problems (non-deterministic polynomial-time hardness), which is a task where traditional numerical approaches frequently fail. Pasqal, a French company founded in 2019 by five scientists — Christophe Jurczak, Alain Aspect, Antoine Browaeys, Thierry Lahaye, and CEO Georges-Olivier Reymond — developing a quantum processing unit (QPU) particularly suited for simulation. Pasqal also announced a collaboration with Nvidia to build a Quantum Computing Center of Excellence, featuring a cluster of 10 Nvidia DGX A100 systems with Nvidia InfiniBand networking to enhance its portfolio of solutions. Moreover, they received Usine Nouvelle's Start-Up of the Year 2021 prize, during the Assises de L'Industrie event in Paris, which focused on the theme "Rebuilding the French Industry."

Covid Lockdown in China Threatens DRAM Supply Hiccup

Samsung and Micron have slowed operations at their memory chip facilities in Xi'an after a Covid outbreak forced the city of 12 million to enter lockdown on Dec. 23.

"Due to the ongoing Covid-19 situation, we have decided to temporarily adjust operations at our manufacturing facilities in Xi'an," Samsung announced in a three-sentence statement on its website.

"The city's closure has reduced Micron's team member and contractor workforce at our Xi'an site, resulting in some impact to output levels of our DRAM assembly-and-test operations there," Micron said on its website.

Near-term delays in product shipments are possible as Micron activates its supply chain of contractors to make up for any shortfalls, according to the company. New or more stringent restrictions affecting operations in Xi'an may be increasingly difficult to mitigate, Micron added in a statement.

4D Radar Improves Safety and Accuracy in Automotive and Industrial Applications

There has been a lot of interest recently in the development of next generation radar sensors for automotive and industrial applications. Unlike first-generation radar systems, which collected only speed, range, and angle-of-arrival, state-of-the-art 4D radar systems can determine an object's position in range, azimuth, elevation, and relative speed, providing more detailed information.

4D radar sensors provide better resolution than previous radar versions and equal the performance of a LiDAR system, which is a much more expensive solution and suffers in poor visibility conditions such as rain and fog. By offering all-weather sub-degree horizontal and elevation spatial resolution on long-range around a wide field of view, 4D enhanced resolution and sensitivity unlock the potential of market-proven commercial radars.

The technology on which 4D radar systems are based can tell when and how fast a vehicle is moving in all types of weather and environmental conditions. Cameras can be harmed by strong sunlight or darkness, and depth and contrast issues can arise. In bad weather, standard radar works fine, but it can't detect objects in great detail. LiDARs are excellent for identifying objects in space. However, they are hampered by adverse weather.

Edge Computing, Artificial Intelligence, and the Cloud

There is certainly a buzz around the idea of digitalization — for its ability to deliver the benefits offered by greater visualization and analysis of data and to gain a greater understanding of the root causes of unexpected downtime and production bottlenecks. But what are the options, and how can they best be employed?

One benefit of digitalization — in addition to offering greater connectivity of devices at plant level — is its potential to escalate data to other systems and to make it possible to monitor plants remotely, in more depth, and over wider distances and longer periods than has been possible in the past.