

FutureHorizons



The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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Industry News By Company

[Dialog Semiconductor Adds Industry's Lowest Power Flash Devices to its IoT Portfolio](#)

LONDON, UK / ACCESSWIRE / April 26, 2021 / Dialog Semiconductor plc(XETRA:DLG), a leading provider of battery and power management, Wi-Fi(R), Bluetooth(R) low energy (BLE) and Industrial edge computing solutions, today announced the launch of the AT25EU family of SPI NOR Flash devices, to support the development of power-conscious, size-constrained connected devices. The AT25EU focuses on achieving the lowest power consumption and the fastest operation in order to achieve the lowest energy.

Lower total energy consumption without sacrificing performance is a key differentiation of the AT25EU product family when compared to existing SPI NOR Flash solutions. Offering industry-leading low-power high-speed read operation, the family also boasts significantly faster erase times at a fraction of the power.

For example, the 2Mbit AT25EU0021A can perform a full-chip erase in under 10ms while consuming less than 1 percent of the energy demanded by competing devices, which can take a full second, or longer, to perform the same operation. The ability to achieve faster, lower energy erase operations improves the efficiency of functions such as Over-the-Air updates (OTA), event tracking, and data logging activities.

[Foxconn, Yageo to form semiconductor JV](#)

Foxconn (Hon Hai) Technology Group and Yageo have announced plans to form a joint venture for the development and sale of semiconductors.

The venture, XSemi, will be based in Hsinchu, Taiwan and consolidate the strengths and resources of the two market leaders, in addition to the upcoming multifaceted collaborations with leading semiconductor companies in product design, process and capacity planning, and sales channel, they said.

They said XSemi will create a complete semiconductor supply chain and provide customers with total solution services.

Yageo and Foxconn said they have developed a partnership through innovation and integration of services and resources, and XSemi will deepen their footprint in semiconductor, focusing on the development of semiconductor chips with average selling prices (ASP) lower than US\$2.00, which they call "small IC." They added they have started discussions with several globa

[IBM Unveils World's First 2 nm Chip](#)

IBM has unveiled the world's first 2 nm chip, built at its R&D facility in Albany, New York. The test chip features gate-all-around transistors built with IBM's nanosheet technology. Overall, IBM says the new process technology will enable 2 nm chips to achieve 45% higher performance or 75% lower power consumption than state-of-the art 7 nm chips in production today.

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IBM was also first to demonstrate 7 nm and 5 nm test chips. The test chip IBM showed today features about 50 billion transistors and uses nanosheet structures as part of a gate-all-around (GAA) transistor, the new transistor architecture heralded as the solution to the scaling limitations of its predecessor, the FinFET.

[Infineon's XDPS2201 Hybrid Flyback Controller Delivers Ultra-High-Power Density And Outstanding Efficiency For USB PD Charger And Adapter Applications](#)

Munich, Germany – 3 May 2021 – Rapid technology and market developments in the fast charger and adapter market continuously challenge designers of power supply systems. To meet the increasing demand for higher power density and energy efficiency, Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) expands its XDP™ family by adding the first application-specific standard product based on an asymmetric half-bridge flyback topology. Available in a DSO-14 SMD package, the XDPS2201 is a highly integrated, multi-mode, digital and configurable hybrid flyback controller targeting high-density AC-DC power supplies, including USB PD fast charger and adapter applications.

The XDPS2201 combines the simplicity of a traditional flyback topology with the performance of a resonant converter. This combination allows natural soft switching, which reduces switching losses associated with high switching frequency designs. The controller enables zero voltage switching (ZVS) and zero current switching (ZCS) across AC line inputs, load conditions and variable output voltages. This feature is highly beneficial for high-frequency designs with a planar transformer that can typically be found in USB PD charger applications.

[Infineon Signs Two-Year Deal to Secure SiC Wafer Supply](#)

Infineon Technologies has concluded a supply contract with the Japanese wafer manufacturer Showa Denko K.K. for an extensive range of silicon carbide material (SiC) including epitaxy.

The deal is part of a multi-sourcing strategy for Infineon to secure more base material to address a growing demand for SiC-based products. The contract between Infineon and Showa Denko has a two-year term with an extension option.

SiC enables highly efficient and robust power semiconductors that are particularly useful for photovoltaic, industrial power supply, and charging infrastructure for electric vehicles. “Our broad and fast growing portfolio demonstrates Infineon’s leading role in supporting and shaping the market for SiC-based semiconductors which is expected to grow 30 to 40% annually [according to analyst firm Yole Développement] over the next five years,” said Peter Wawer, president of the industrial power control division at Infineon.

[Marvell Launches 802.3ch 10G Ethernet PHY](#)

Marvell Technology Inc. has launched its IEEE 802.3ch-based multi-gig automotive Ethernet PHY that will enable the high-speed transfer of data in tomorrow’s connected cars. Next generation vehicles that deploy advanced features such as driver assistance systems, 5G connectivity, and autonomous driving will require that massive amounts of

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data be moved quickly and efficiently within the car's in-vehicle network (IVN). By providing up to 10Gbps throughput data transmission for IVNs, Marvell's new PHY addresses the demand for ultra-high speed, secure and low latency data exchange on standards-based networks. The new solution extends Marvell's market-leading position in automotive networking, following the company's 2018 introduction of the industry's first pre-standard, multi-gig automotive Ethernet PHY solution.

"To support the future of smarter and connected cars on the road, multi-gig Ethernet PHYs will enable high speed data transfer that is essential to powering advanced ADAS features in the vehicle," said Amir Bar-Niv, vice president of Marketing, Automotive Business Unit at Marvell. "We remain dedicated to delivering best-in-class solutions that meet the needs of the in-vehicle networking market, and we're proud to be one of the first suppliers to offer an 802.3ch capable Ethernet PHY with 2.5G, 5G and 10G Base-T1 support. In addition, with integrated 802.1AE MACsec, our newest PHY is securing these high-speed connections in next-generation automobiles."

Rockley Photonics Technology Puts a "Clinic on a Wrist"

Rockley Photonics, which recently announced a \$1.2 billion listing on the New York Stock Exchange via a special purpose acquisition company (SPAC), is thought to be developing advanced health monitoring features for smartwatches including for Apple.

Apple began purchasing products from Rockley in 2017; it is now Rockley's largest customer with \$70 million of NRE commitment to date.

The company plans to go public through the SPAC, and via a merger with NYSE-listed SC Health Corp. In an SEC filing last month supporting the maneuver, Rockley said that Apple is the largest of six customers with which it has entered into contracts with or engaged with, developing health and wellness devices. These companies are developing smartwatches and medical devices that measure advanced biomarker detection for chronic diseases, including the holy grail of wearables, continuous glucose monitoring.

Industry News & Trends

[Vodafone Opens Lab to Smooth Open RAN Adoption](#)

Vodafone has made good on its promise of late last year that it would establish Test and Integration Laboratories across Europe to promote deployment of the disruptive open radio access network (RAN) technology.

The initial facility will be based at Newbury, the group's UK headquarters and technology hub, and when fully staffed is expected to employ about 30 engineers. It will work with a wide range of potential but yet unidentified partners and suppliers to ensure seamless interoperability.

The Newbury center will be the first of several in Europe scheduled to focus on Open RAN issues ahead of the company deploying the technology. The operator is one of the keenest within Europe to accelerate the use of Open RAN. Earlier this year, it signed up to a joint effort with Deutsche Telekom, Orange and Telefonica to advance that ambition.

[Facial Recognition On The Rise To Verify Payments](#)

Let's face it, facial recognition is on the rise as a biometric identification technique for verifying mobile payments, driven by applications like Apple's FaceID implementation.

But those who track the payment authentication sector say facial recognition will continue to lag current biometric techniques like fingerprint sensors until more robust hardware implementations hit the market.

The inflection point appears to be 2025, according to Jupiter Research, which forecasts software-based facial recognition technology will by then exceed 1.4 billion users. If accurate, that prediction represents a 120 percent increase over five years.

[XR Optics Trains Spotlight Back on Fiber Networks](#)

Infinera is trialing a point-to-multipoint coherent transmission technology it calls XR Optics that the company expects will prove a significantly more efficient way to support hub-and-network networking architectures than the existing point-to-point approach.

Even if XR Optics works as well as Infinera hopes, the company will still have to prevail over rivals who are developing competitive innovations.

Optical fiber communications for the past few years has taken a back seat while mobile technologies, in particular 5G, have enjoyed all the hype. Fiber communications suffer from being considered legacy networks, yet network operators continue to invest heavily in optical as the importance and value of architectures such as long-haul, metro, fixed access and packet transport continue to grow. Many have reassessed their plans as fixed broadband has been a vital lifeline for both businesses and even more importantly, to those working from home.

Foundry Expansion, Wafer Shipments Reflect Global Chip Boom

While global semiconductor manufacturers are stingy with details about fab expansion and capacity utilization, forecasters are nevertheless predicting steady growth in installed “front-end” capacity driven largely by a resurgence in demand for memory.

Asian chip makers benefitting from generous government incentives remain the biggest spenders on new foundry capacity, according to the industry group SEMI. Meanwhile, Intel Corp. and other western IC manufacturers are hustling to catch up with Taiwan Semiconductor Manufacturing Co. (TSMC), Samsung and a host of Chinese upstarts.

For instance, as part of Intel’s \$20 billion foundry expansion plan, the chip maker just announced a \$3.5 billion expansion at its Rio Rancho, N.M., facility. Intel said this week the investment would expand its advanced IC packaging operations, particularly its Foveros 3D packaging technology.

DRAM Destined to be 3D

TORONTO — It may take a few years, but DRAM is likely to follow the footsteps of NAND and go 3D, which means it will need new manufacturing equipment and materials to do it cost-effectively.

Applied Materials’ latest materials engineering solutions are all about supporting DRAM scaling in the near term and positioning customers for the longer term. Aimed at accelerating improvements in chip performance, power, area, cost, and time to market, the company’s new offerings target three areas of DRAM chips: storage capacitors, interconnect wiring, and logic transistors.

Applied Materials’ Draco is a new hard mask material that has been co-optimized to work with the company’s Sym3 Y etch system in a process monitored by its PROVision eBeam metrology and inspection system. It can take nearly half a million measurements per hour, said Sony Varghese, director of strategic marketing for the company’s memory, semiconductor products group. This new material increases etch selectivity by more than 30%, which enables a shorter mask. The combination of Draco and the Sym3 Y etch system uses advanced RF pulsing to synchronize etching with by-product removal to enable patterning holes that are perfectly cylindrical, straight, and uniform, he said.

East European News & Trends

New VC Fund Launched To Back Russian-Founded Start-Up Teams

A new venture fund has emerged in Russia, called NRG Ventures. The founders are Andrei Taburinsky, the former Vice President of Mail.ru Group, a Russian Internet giant, and Roman Tyan, the ex-Director for Investment of FortRoss Ventures, an international Russian-founded VC fund, Firms.ru reported.

The new fund has reportedly brought on board 20 out of 40-50 investors planned for participation at the inception phase. Those are expected to each invest anything between \$50,000 and \$5m. NRG Ventures' overall goal is to put a total of \$25m in start-up teams founded by Russians.

The fund owners want to support 50 companies over the next three years; each of those may expect to receive approximately \$500,000.

Server Cluster Sprouts In St. Petersburg

Marvel-Distributsiya, one of Russia's biggest electronics distributors, has launched a production cluster in St. Petersburg to manufacture servers, data storage systems (DSS) and network equipment under its own brand name F+. Also on the table is the manufacture of smartphones and tablets for corporates, as well as printers and multifunctional devices.

In DSS production, Marvel is teaming up with the U.S.' Hitachi Vantara; in multifunctional devices production with Lexmark, another American manufacturer; and in servers, the Russian company partners with China's Lenovo. Total investment in the project has yet to be announced.

Some product lines may be localized in Russia for the first time; yet the depth of localization will depend on "specific terms of agreements," Marvel was quoted as saying. The current production capacity is up to 5,000 servers and data storage systems a year, with plans to triple the capacity by the end of 2021.

New R&D Hub Aims To Advance Hydrogen Energy Tech

AFK Sistema, a large Russian private technology company, and the Institute for Problems of Chemical Physics shook hands earlier this spring on a new joint Hydrogen Energy Center.

Their agreement calls for the launch in the town of Chernogolovka outside Moscow of an advanced R&D hub where scientists will be able to work on hydrogen energy solutions.

The parties have also agreed to build a production site to manufacture pilot products, including advanced hydrogen storage systems, electrolytic cells, and hydrogen fuel cells for transport and other applications. The site is expected to enable the scaling-up and further commercialization of the products.

[New Material From Moscow University Promises “Breakthrough In Optoelectronics”](#)

Chemists and material science specialists at the Moscow Lomonosov State University (MSU) have partnered with colleagues from several Russian research institutes in developing vanadium dioxide films with properties that may be very useful in optoelectronics.

The interim results of the research have been published in a few English-language scientific journals, including *Neramics International*.

“Today, devices based on terahertz waves control are too large and bulky to find broad practical applications, especially if we take into consideration the growing demand for increasingly miniaturized solutions,” Artem Makarevich, PhD, one of the project developers and an MSU chemist, said in a comment on the core focus of his team’s effort.

World Economic Round Up

A year ago, as the pandemic ravaged country after country and economies shuddered, consumers were the ones panic-buying. Today, on the rebound, it's companies furiously stocking up. Mattress producers to car manufacturers to aluminum foil makers are buying more material than they need to survive the breakneck speed at which demand for goods is recovering and assuage that primal fear of running out. The corporate buying and hoarding is pushing supply chains to the brink of seizing up. Shortages, transportation bottlenecks and price spikes are nearing the highest levels in recent memory, raising concern that a supercharged global economy will stoke inflation.

The latest economic news by country to include USA, Europe, UK, Japan, China, Asia Pacific and India can be found each month in our [Semiconductor Monthly Report](#).

Industry Events 2021

Future Horizons Events

- [Silicon Chip Industry Training Seminar](#) – London – November 2021
- [Industry Forecast Briefing](#), London – September 2021

To book your place on any of our events please contact us on:

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[Download Future Horizons Full Events Calendar Here](#)

Industry Events

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MARK YOUR CALENDER FOR THE NEXT

SILICON CHIP INDUSTRY WORKSHOP

MONDAY November 2021

AND

INDUSTRY FORECAST BRIEFING

TUESDAY September 2021

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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