FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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Analog Devices Announces Combination With Maxim Integrated, Strengthening Analog Semiconductor Leadership

NORWOOD, Mass. & SAN JOSE, Calif.--(BUSINESS WIRE)--Analog Devices, Inc. (Nasdaq: ADI) and Maxim Integrated Products, Inc. (Nasdaq: MXIM) today announced that they have entered into a definitive agreement under which ADI will acquire Maxim in an all stock transaction that values the combined enterprise at over $68 billion2. The transaction, which was unanimously approved by the Boards of Directors of both companies, will strengthen ADI as an analog semiconductor leader with increased breadth and scale across multiple attractive end markets.

"Maxim is a respected signal processing and power management franchise with a proven technology portfolio and impressive history of empowering design innovation. Together, we are well-positioned to deliver the next wave of semiconductor growth, while engineering a healthier, safer and more sustainable future for all."

Under the terms of the agreement, Maxim stockholders will receive 0.630 of a share of ADI common stock for each share of Maxim common stock they hold at the closing of the transaction. Upon closing, current ADI stockholders will own approximately 69 percent of the combined company, while Maxim stockholders will own approximately 31 percent. The transaction is intended to qualify as a tax-free reorganization for U.S. federal income tax purposes.

Dialog Semiconductor And TDK To Deliver World's Smallest Point Of Load DC-DC Converter Solutions (News With Additional Features)

London, United Kingdom - July 21, 2020 - Dialog Semiconductor plc (XETRA:DLG), a leading provider of power management, charging, AC/DC power conversion, Wi-Fi and Bluetooth(R) low energy technology, today announced a collaboration with TDK Corporation, a global leader in electronic solutions for the smart society, to include Dialog's GreenPAK technology with TDK's latest series of µPOL(TM) power solutions to create the world's first single-integrated system power sequencing solution.

Traditional discrete solutions currently available on the market require an extensive array of components, which reduces board space availability, impacts system reliability and drives up manufacturing costs. Combining Dialog's scalable, flexible GreenPAK technology with TDK's small, high-density power module solution reduces the number of required components and ensures a more compact, reliable, robust solution for powering advanced industrial embedded control, IoT and 5G applications.

Dialog's GreenPAK technology reduces production lead time to just four-to-six weeks, supporting high volume fulfillment and expediting the development of complex system boards. The µPOL solution leverages advanced technology packaging techniques such as semiconductor embedded in substrate (SESUB), for cohesive 3D system integration in a smaller size and lower profile. This integration allows TDK to deliver higher power density and ease of use at a lower total system cost compared to what is currently available today. For example, TDK's FS1406 6A power module can deliver 15 Watts in a 3.3mm x 3.3mm x 1.5mm height power module, 4-times higher current density than that of the closest competitor.

Extremely Small Power-Saving 3D Magnetic Sensor Opens Up New Design Options

Munich, Germany – 20 July, 2020 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) will expand its XENSIV™ 3D magnetic sensor family TLx493D. At its in-house digital trade show "Virtual Sensor Experience", the chipmaker will present a new device for industrial and consumer applications: the TLI493D-W2BW. It uses the latest 3D Hall generation from Infineon and is housed in an extremely small wafer-level package. With an 87 percent smaller footprint and 46 percent less height than previous comparable products, the sensor opens up new design options.

Due to the small WLB-5 package (1.13 mm x 0.93 mm x 0.59 mm) and its low current consumption of 7 nA in power-down mode, the new magnetic sensor is also suitable for use in applications that previously used resistor-based or optical solutions. Magnetic sensors offer numerous advantages here, such as their high accuracy or robustness against dust and moisture. In addition, magnetic sensors are easier to assemble and offer more design options.

In particular, the low height of the TLI493D-W2BW is helpful in extremely space-critical applications such as BLDC commutation in micromotors or control elements such as joysticks or game consoles. It enables designs with double-sided PCBs or positioning of the sensor between two PCBs. This allows optimal use of the available space; for example, additional components can be placed above the sensor.

ST Buys Two Companies To Add UWB And Cellular IoT To MCUS

STMicroelectronics today announced two separate deals, one to acquire ultra-wideband (UWB) technology specialist BeSpoon and the other to buy the assets of Riot Micro, which was developing cellular Internet of things (IoT) connectivity. With the acquisitions, ST aims to strengthen its wireless connectivity capabilities, especially in support of its STM32 microcontrollers and secure MCUs.

BeSpoon, based in Le Bourget du Lac, France, is a fabless semiconductor company, founded in 2010, that specializes in UWB communications technology, developed over time in partnership with CEA-Leti in Grenoble, France. At CES in Las Vegas in 2014, BeSpoon showed a smartphone concept equipped with UWB, called the SpoonPhone.

ST Q2 Sales, Profits Crimped By Automotive Woes

STMicroelectronics N.V. reported a drop in second quarter revenue and net income on continued weakness in the automotive market partly offset by strong contributions from component distributors and higher demand for analog, discrete and microcontroller products.

With disruptions from Covid-19 finally subsiding, the company sees improvements in the third quarter and expects double digit revenue growth and better margins during the period. Sales are projected to increase sequentially at a double-digit clip in the third quarter, to $2.45 billion, from $2.1 billion in the second quarter, and $2.2 billion in the year-ago comparable period.

"Looking at the third quarter, we expect sequential revenue growth of 17.4 percent at the mid-point," said Jean-Marc Chéry, president and CEO of STMicroelectronics, in a statement. "This growth will be driven by engaged customer programs, new products and improved market conditions. Gross margin is expected to be 36 percent at the mid-point, including about 200 basis points of unsaturation charges."

Industry News & Trends

Long-Range Wireless Power Transfer For Industrial Iot

More than 60% of the costs associated with an industrial IoT (IIoT) set-up are estimated to be for cabling and installation. Wireless data transfer is an obvious means for eliminating some cabling, but even more could be avoided by also using wireless technology for power transfer.

TransferFi is a start-up that is working on new wireless charging solutions for industrial IoT sensor networks at a distance of 50 meters (roughly 165 feet).

The wireless technology is well known, but the design of transmitters, their location, the possibility of maximizing efficiency, and validating the behavior of the entire system represent complex challenges that require the use of complex engineering solutions. The inevitable cost of cabling adds to the barriers not only to the IIoT and Industry 4.0, but also smart grids and smart cities. Large scale sensor installations require a complex wiring infrastructure that is costly, takes a long time to install.

MEMS Design Automation Tool Models Wider Range Of Geometries

For engineers designing and integrating for microelectromechanical systems (MEMS) devices such as motion sensors, microphones, timing devices and energy harvesters into other systems and circuits, Coventor, a Lam Research company, has released a new version of its MEMS design automation platform. Its CoventorMP 1.3 software extends the range of geometries that can be accurately modeled, with new features including enhanced device construction and modeling capabilities, simulation and results performance improvements, and additional self-help features.

The CoventorMP platform provides a unified environment for MEMS design, starting from fully parametric design entry to the production of functional models that can be simulated at all levels of abstraction. Within this platform, the MEMS+ software enables users to assemble advanced finite elements, or fundamental MEMS-specific building blocks, into a completed design. The design outputs, which can be directly included in MathWorks system models and Cadence circuit designs, provide simulation results up to 100 times faster than conventional finite element analysis tools.

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LG Innotek Claims Smallest BLE Module For Iot

LG Innotek has claimed the industry's smallest Bluetooth Low Energy (BLE) module, measuring 6 mm (width) x 4 mm (height), which is 75% of the previous model. Thanks to ultra-precision, high-density, and ultra-fine processing technologies, the communication module for IoT devices packs more than 20 components including communications chips, resistors, and inductors, in a grain-sized package

The smaller size combined with improved communication performance opens up design opportunities for new and smaller form factors. The module is well suited for IoT devices that require limited power supply, such as small wearable devices, thanks to its low power consumption. Applications include glucose measuring patches, smart lighting, outlets, switches, wireless earphones, and hearing aids.

The New Tech Cold War

The decline of the U.S. semiconductor industry has as much to do with decades of American inaction as with China's aggressive industrial policy. We are falling into a new kind of cold war: a tech cold war.

The U.S. trade war against China's technology ambitions has coalesced around intellectual property, with disputes ranging from Chinese abuse of western IP to the very legal concepts underpinning international IP protections. Hard-liners have decided to draw a line at IP theft, with chip know-how heading the list.

U.S.-China tensions mount by the day, with a steady drumbeat of American allegations of industrial espionage. Washington takes provocative steps like shuttering the Chinese consulate in Houston, an alleged nest of spies and intellectual property thieves.

East European News & Trends

New Silicon-Based Technology Helps Medicine

Scientists at Moscow Lomonosov State University (MSU) have come up with a new silicon nanoparticles synthesis method and proven the possibility of using the nanoparticles in biomedical diagnostics, visualizing inhomogeneity in tissue structure, Indicator.ru reported.

Nanostructured silicon (Si) has long been in broader use than the original application in microchips and solar cells. One of the new and promising applications is diagnostics of tissue and body cells. A competitive technique that brings about such nanostructured Si is pulse laser ablation of silicon in liquids and gases.

A team at MSU's Department of Physics, Femtosecond Nanophotonics Lab, experimented with ablation techniques and has shown that porous silicon films serve perfectly as ablation targets.

Russia Ponders New Incentives For IT Sector

The Russian Government last week announced a new stimuli package to develop the IT sector between now and 2024, the USRBC reported, citing the Russian business daily Kommersant.

Earlier this summer a "tax maneuver" was proposed, reducing IT firms' social security contributions from 14% to 7.6% and income tax from 20% to 3% while re-imposing a 20% VAT on certain IT products. The new program expands that to include $564.5m in grants for R&D and start-ups; developing Public Private Partnerships (PPPs) in "digital government"; and subsidies to Russian higher education institutions to triple the total number of IT students to 150,000.

By 2024, the program envisions a doubling of IT sector employment to 750,000 workers; a doubling in domestic demand for Russian IT products to $18.3bn per year; an annual increase in IT product exports to $9.9bn; and a doubling of the IT sector's share in GDP to 2%.

Start-Up Offers Computer Vision To Support Merchandising

A Russian start-up called Intelligence Retail employs computer vision in merchandising.

Intelligence Retail uses computer vision to help companies step up the efficiency of shelf utilization in stores. Its software scans assortments, prices and other relevant information in real time. It reportedly takes the service 10 seconds to generate an e-report on one retail section audit with an image recognition accuracy of as high as 99%.

The software recognizes up to 2.5 million photos a month; its image library contains about 100,000 items of various FMCG assortments. The technology is said to save 80% of staff's physical labor in a store section. Intelligence Retail claims its solution helps boost sales by 2-5%.

With New Technology, Quantum Encryption Gets Less Costly And More Accessible

Scientists at ITMO University in St. Petersburg appear to have discovered a way of modifying quantum key distribution (QKD) protocols. The technology is expected to reduce the cost of and facilitate access to mass QKD networks. With the new approach, the conventional fiber optic communications infrastructure is believed to be quite enough to have the above achieved.

Quantum key distribution, or simply quantum encryption, is apparently one of the most reliable ways of encoding data known today. In a network that uses the technology, a quantum signal intruders would find tough to intercept is used as the data carrier.

"To make QKD possible, deliberately weakened laser light is used, as a rule, in which the average number of photons is below one. The emission demonstrates quantum effects that prevent a third party from penetrating the channel, cracking data, and walking away unpunished," said Eduard Samsonov of ITMO's Department of Photonics and Optoinformatics, one of the researchers.

Russians In Silicon Valley Raise Fund To Boost Start-Ups In Eastern Europe

Untitled Ventures, a California-based VC firm of Russian origin, is raising ˆ50m for a fund that will invest in early growth stage tech companies from Eastern Europe, EU-Startups reported.

The future fund will reportedly focus on B2B AI, robotics, agritech, medtech, and data management. The backing of European institutions is expected.

"We target Eastern Europe talents for a reason. Given that Silicon Valley is filled with them, we are looking in the right place. Education system still has a strong focus on STEM [science, technology, engineering, mathematics—editor's note] and it is not a coincidence that Belarusian, Russian, Ukrainian university teams consistently win global programming competitions. Additionally to companies that are still located in Russia, Belarus, and Ukraine, we target those companies that came to the West, but have not yet developed a true presence in the market. We suspect the number of companies under this description is large," says Oskar Stachowiak, the Untitled Ventures co-founder.

World Economic Round Up

The US and the euro zone have already been confirmed in recession as the global economy grapples with the sharpest downturn since the Great Depression of the 1930s. However, China, at the heart of the original outbreak, avoided recession after it returned to growth in the second quarter. The COVID-19 pandemic poses a once-in-a-generation threat to the world's population. Although this is not the first disease outbreak to spread around the globe, it is the first one that governments have so fiercely combated. Mitigation efforts—including lockdowns and travel bans—have attempted to slow the rate of infections to conserve available medical resources.

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 2020

Future Horizons Events

- Silicon Chip Industry Training Seminar – London – 9th November 2020
- Industry Forecast Briefing, London – 15th September 2020

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

Telephone: +44 1732 740440
Email: mail@futurehorizons.com

Download Future Horizons Full Events Calendar Here

Industry Events

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MARK YOUR CALENDER FOR THE NEXT

SILICON CHIP INDUSTRY WORKSHOP
MONDAY 9th November 2020
AND
INDUSTRY FORECAST BRIEFING
TUESDAY 15th September 2020

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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