FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

June 2020

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Industry News By Company

Arm Unveils Latest Phone Processor, New Custom Core Program

Arm announced its next top-of-the-line CPU for smartphones – the A78, along with its latest Mali graphics processing unit (GPU) and Ethos neural processing unit (NPU). It also revealed a program in which the company is customizing its leading-edge cores for customers.

Arm's new Cortex-A78 delivers a 20% increase in sustained performance over its predecessor, the A77. That should be no surprise; the company built its reputation on power efficiency, and remains focused on that metric. Part of the performance gain comes from jumping down a node. The A77 was built in a 7nm process; the A78 at 5nm. Delicate tuning is also required to achieve that kind of a boost. Arm says the A78 has greater on-device machine learning (ML) performance, and manages compute workloads more efficiently.

Dialog Semiconductor Adds New Features To Bluetooth(R) Low Energy Socs To Reduce Spread Of COVID-19

London, United Kingdom - May 18, 2020 - Dialog Semiconductor plc (XETRA:DLG), a leading provider of battery management, AC/DC power conversion, Wi-Fi(R), Bluetooth(R) low energy and Industrial ICs, today announced a new Wireless Ranging (WiRa(TM)) Software Development Kit (SDK) that adds highly accurate and reliable distance measurement capabilities to its DA1469x family of BLE SoCs.

The need for more accurate and reliable distance measurement and tracing technology has become even more critical in the wake of COVID-19. With businesses across the globe planning a controlled reopening of their workplaces, they are looking for solutions that will help guarantee safe distances between employees and improved contact tracing capabilities, to ensure safe working environments and peace of mind for employees.

Current Bluetooth low energy market solutions for distance measurement and positioning are based on measuring the strength or power of the received radio signal, known as Received Signal Strength Indicator (RSSI) measurements. However, these received power measurements may be inherently flawed due to the sensitivity of objects in the radio path blocking or reflecting the radio signals.

Infinera Leverages Tower Semiconductor Sige Technology In Its Industry-Leading 800Gbs Optical Engine

MIGDAL HAEMEK, Israel, May 27, 2020 –Tower Semiconductor (NASDAQ/TASE: TSEM), the leader in high-value analog semiconductor foundry solutions, today announced Infinera's selection of Tower's high performance Terabit SiGe BiCMOS platform for use in Infinera's industry-leading 800G sixth-generation Infinite Capacity Engine (ICE6). ICE6 provides 800 gigabits per second single wavelength with unparalleled performance providing significant cost, power, and fiber capacity advantages to network operators, enabling them to cost-effectively address the relentless bandwidth demand on their networks.

"Infinera always leverages best-in-class technologies to achieve industry-leading system performance. This includes Infinera's industry-leading indium phosphide (InPh) photonic integrated circuits and Tower's advanced silicon-germanium (SiGe) for high bandwidth driver and receiver circuitry," said Dr. Ray Milano, Senior Vice President, Optical Module Development at Infinera.

Infinera's ICE6 optical engine is the latest innovation from Infinera's Optical Innovation Center and designed in a compact digital coherent optical (DCO) package that can be easily integrated into a variety of networking platforms. Supporting two 800G wavelengths and boasting ground-breaking optical feature, the 1.6Tbs optical engine demonstrated significantly superior performance than competing solutions providing incremental value to network operators.

Nordic Semiconductor: New Cellular Products Will Accelerate Revenue Growth And Margin Expansion

Nordic Semiconductor (NOD.NO) is a best of breed fabless semiconductor designer based in Tondheim, Norway. The company specializes in chips for wireless communications, with products focused on Bluetooth Low Energy, ZigBee, Thread, ANT, and most recently, cellular chips focused on LTE Cat M1 and NB-IoT. The Bluetooth Low Energy, ZigBee, Thread, and ANT are short-range wireless standards while Cat M1 and NB-IoT are long range protocols. The company has grown mostly at mid-teens rates over the past five years but we feel this rate is poised to accelerate going forward.

Nordic is a leader in the Bluetooth Low Energy space. An industry expert, DNB Markets, tracks the number of design wins in the space and in Q1 2020, Nordic had 142 wins representing 49% market share in the market. The rest of the market share is fragmented between competitors such as Texas Instruments, Dialog Semiconductor, Qualcomm, Infineon, and Silicon Labs.

Sony Semiconductor Solutions And Microsoft Partner To Create Smart Camera Solutions For Enterprise Customers

TOKYO — May 19, 2020 — Sony Semiconductor Solutions (Sony) and Microsoft Corp. (Microsoft) today announced they are partnering to create solutions that make AI-powered smart cameras and video analytics easier to access and deploy for their mutual customers.

Sony logoAs a result of the partnership, the companies will embed Microsoft Azure AI capabilities on Sony's intelligent vision sensor IMX500, which extracts useful information out of images in smart cameras and other devices. Sony will also create a smart camera managed app powered by Azure IoT and Cognitive Services that complements the IMX500 sensor and expands the range and capability of video analytics opportunities for enterprise customers. The combination of these two solutions will bring together Sony's cutting-edge imaging & sensing technologies, including the unique functionality of high-speed edge AI processing, with Microsoft's cloud expertise and AI platform to uncover new video analytics opportunities for customers and partners across a variety of industries.

TSMC’s US ExpansiDialog Semiconductor Adds New Features to Bluetooth(R) low energy SoCs to Reduce Spread of COVID-19on Plan May be Accompanied by 12-inch Supply Chain

TSMC announced on May 15 that it will construct a new 12-inch wafer fab specializing in advanced process nodes in Arizona. The fab is expected to break ground in 2021 and enter mass production in 2024. TSMC will be manufacturing semiconductor chips with 5nm process technology, at a capacity of 20k wafer starts per month. Funding for the project is expected to reach about US$12 billion, to be invested across nine years starting in 2021.

The DRAMeXchange research division of TrendForce estimates annual CAPEX for the project to be about $1.3 billion on average. Given that TSMC’s annual CAPEX for 2019 and 2020 is about $15 billion on average, the Arizona project would account for less than 10% of TSMC’s overall CAPEX.

TrendForce indicates that TSMC currently operates 12 fabs in total, including 6-inch, 8-inch, and 12-inch wafer fabs; its 12-inch wafer capacity sits at about 800k wafer starts per month. The company’s sole U.S.-based 8-inch fab is located in Camas, Washington, with a monthly capacity of 40k wafer starts, which occupies about 1-2% of TSMC’s overall wafer capacity.

Industry News & Trends

Scientists Develop Mobile Indoor Disinfection Sprayer

Scientists at CSIR-Central Mechanical Engineering Research Institute (CMERI), Durgapur, have developed two mobile indoor Disinfection Sprayer units. These units can be used for cleaning and disinfecting pathogenic micro-organism effectively, especially in hospitals.

Called Battery Powered Disinfectant Sprayer (BPDS) and Pneumatically Operated Mobile Indoor Disinfection (POMID), these units can be used to clean and disinfect frequently touched surfaces such as tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, and cardboards. Intermittent usage of these disinfecting units can help minimize the risk of transmitting coronavirus to people who inadvertently come in contact with those surfaces.

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Alpha And Omega Semiconductor Releases New 1200 V Asic Mosfets

Alpha and Omega Semiconductor Limited, a designer, developer and supplier of power semiconductors and power ICs, has unveiled the new 1,200 V silicon carbide (SiC) αSiC metal–oxide semiconductor field-effect transistor (MOSFET) technology platform. Specifically targeting the industrial and automotive market, this next-generation technology will enable customers to achieve higher levels of efficiency and power density compared to existing silicon solutions.

Optimized for minimizing both AC and DC power losses through a low gate resistance design combined with the low increase in on-resistance over temperature, the αSiC technology can achieve the highest efficiencies across a wide range of application switching frequencies and temperatures. This higher efficiency can result in significantly reduced system costs and total bill-of-materials for the many industrial uses, including solar Source: Alpha and Omega Semiconductor Limited

Semiconductor Market | Smart Technologies Are Changing In Industry

Silicon carbide (SiC) technology has evolved as a foremost successor to conventional silicon in the power electronics field owing to its exceptional benefits. It enhances the efficiency of semiconductor devices and also simplifies the usage of devices with a much smaller form factor. Its chemical and electronic properties translate to features that are useful for semiconductors, particularly in high power applications. The SiC semiconductor market in India is expected to surge in the coming years as the technology is applicable for various industries, such as energy &power, military and defense, and automotive. The players invest substantial amounts in adopting newer and robust technologies to optimize their products.

COVID-19 pandemic first broke out in Wuhan (China) in December 2019 and has now inflicted several countries across the globe. COVID-19 pandemic is affecting various industries in India, including electronics and semiconductor. The Government of India is taking possible steps to reduce its effects by announcing lockdown, which is severely impacting market revenue generation.

CXL Protocol Adds Capabilities Over PCIe

The Compute Express Link (CXL) protocol is rapidly gaining traction in data centers. It's an alternate protocol that runs across the standard PCI Express (PCIe). CXL uses a flexible processor port that can auto-negotiate to either the standard PCIe transaction protocol or the alternative CXL transaction protocols. The first generation of the protocol aligns to 32 Gbps PCIe Gen5.

High-performance computational workloads are stressing systems in new ways. System designers are re-thinking their architectures in response. Some of those response include the increasing use of persistent memory, the adoption of purpose-built processors and accelerators, and new approaches to computational storage. Another is CXL.

A group of hyperscalers, silicon providers and some of their allies formed the CXL Consortium to promote the development of the protocol.

Integrated RS-485 Transceivers Reduce Design Time

Analog Devices, Inc. (ADI) has launched the **ADM2867E** series of reinforced iCoupler isolated RS-485 + integrated isolated DC/DC converters. The integrated low-EMI isolated DC/DC converter eliminates the need for an external isolated power supply. Offering a simplified PCB layout and a small SOIC form factor, the transceivers offer higher functionality and space savings for space-constrained applications.

Designed for RS-485 data bus networks, the new devices are suitable for data rate transmission up to 25 Mbits/s. Applications include HVAC networks, industrial field buses, building automation, utility networks, and energy meters.

The isolated RS485 + integrated isolated power transceiver series includes smart features that reduce end-system installation and debug time. This allows for easy correction of installation-based connection errors, said ADI.

East European News & Trends

New IT Platform Designed To Help Retailers

BenefittY, a Russian IT developer, has launched a platform for retailers to exchange buyers' discounts and manage loyalty programs, Firrma.ru reported. The newsmaker opted not to disclose its investment in the project at this stage.

Unlike the current competition from discount aggregators that exist in the market, the new BenefittY project is said to enable users to gain from the shared use of loyalty cards, bonuses, coupon benefits, and special cash back offers.

The full-fledged BenefittY system was unveiled just a few months ago, and the platform currently accommodates around 3,500 customer loyalty programs and discounts from more than 700 companies and brand name owners.

Russia To Step Up Support For IT Industry

During a government meeting on the development of Russia's IT industry, President Putin instructed the government to "carefully analyze all the proposals which were raised today by business" in order to "prepare a multifaceted plan to support the industry."

Some of the proposals the USRBC quoted Mr. Putin as outlining included "a tax maneuver...which would stimulate the development of the IT sector," "experimental regulatory regimes, so-called regulatory sandboxes [a testing environment designed to adapt compliance with strict financial regulations to the growth and pace of the most innovative companies, in a way that doesn't smother the sector with rules, but also doesn't diminish consumer protection—Editor's note]," and further promotion of federal projects on developing artificial intelligence.

Moscow Buys Into Retail Tech Start-Up

Focus, a young company behind an interesting software solution for retail chains, raised $260,000+ from a Moscow City Government owned VC arm called Moscow Seed Fund.

Focus offers an off-the-shelf integrable solution that automatically collects sales and buyers' numbers data. At the heart of the approach are video analytics and Wi-Fi analytics technologies enabling recommendations for shopping malls and retail chains on how to boost revenue.

What started out in 2016 as an entry-level idea evolved by 2020 into a mature enough product currently used by Focus' 150+ corporate customers, which include some of the international majors (Ceetrus, Atrium, Heines, Tom Tailor, Levi's) and leading Russian players (Fort Group, TPS, Tervolina, Black Star).

World Economic Round Up

The Covid-19 pandemic and subsequent lockdown measures have thrown the world economy in turmoil. Even as countries are reopening, the World Bank predicts this year, the globe will have its deepest global recession in 80 years. The pandemic, which has infected some seven million people worldwide, led countries to order citizens to stay at home and business to grind to a halt. Worldwide Gross Domestic Product -- the broadest measure of economic growth -- will contract 5.2 percent in 2020, according to a report by the World Bank.

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

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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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