FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

October 2018

Contents Page

Industry News By Company

Alibaba starts Pingtogue Semiconductor

Pingtogue will start off as an amalgamation of C-Sky Microsystems, the China design house acquired by Alibaba in April, and the IC R&D team at Alibaba's DAMO (Discovery, Adventure, Momentum and Outlook) Academy.

The company, to be called Pingtogue Semiconductor, is to target AI SoCs and embedded processors.

The idea is to use Pingtogue proprietary ICs in Alibaba's cloud and IoT activities.

It will be a neural network chip called Ali-NPU, for image analysis and machine learning.

The second product, also due next year, will be its CK902 series of embedded network security ICs.

Ampere Ships Arm-Based Server SoC To Lenovo

Ampere, a developer of Arm-based server platform led by former Intel President Renée James, is rolling out this week the company's first product called eMAG.

With this action, the company keeps a promise made earlier this year.

Ampere's first-generation Arm v8-A 64-bit processors for data centers "passed validation, testing, and performance requirements just last week," Matthew Taylor, senior vice president of worldwide sales and business development at Ampere, told EE Times in a phone interview.

He explained that Lenovo and several unnamed ODMs have already agreed to deploy Ampere's new Arm-based processor.

It's far from clear, though, if Ampere's eMAG represents the industry shake-up sought by James or just a case of windmill-tilting in a server market heavily dominated by Intel.

Cadence AI Core Hits 12 TMACs

SAN JOSE, Calif. — Cadence announced an inference core with up to four times the multiply-accumulate units and up to 12 times the performance of its Vision C5 launched last year. The DNA 100 core supports sparsity in weights and activations and can prune neural networks to deliver higher levels of performance.

To date, high-end smartphones have led the way in adopting deep learning for inference jobs with handset SoC vendors, such as Mediatek using Cadence's Vision P6 core. Designers are now working on AI acceleration in SoCs for surveillance cameras, smart speakers, cars, and AR/VR and IoT devices, said Lazaar Louis, a senior director of product management in Cadence's Tensilica group.

Cadence clocked a 16-nm DNA 100 with 4,000 MACs at up to 2,550 frames/second and up to 3.4 TMACs/W on ResNet-50. A single 16-nm core running at 1 GHz can deliver up to 8 TMACs (12 TMACs using network pruning), and multiple cores can be embedded in an SoC to hit hundreds of TMACs.

GF Grabs AI Wins With FD-SOI

SANTA CLARA, Calif. — In its first annual conference since halting work on 7 nm, Globalfoundries described a handful of enhancements to its existing nodes. It also showcased a new customer making at least three embedded deep-learning chips in its 22-nm fully depleted silicon-on-insulator process.

GF promised to squeeze out 10% to 22% area, performance, and power gains from its 12-/14-nm FinFET and planar nodes. That's roughly in line with the kind of gains that its much larger rival, TSMC, is reporting in bleeding edge nodes as Moore's Law slows.

Synaptics announced that it taped out at GF a low-power 22-nm FD-SOI accelerator for neural networking. It sports tera-operations/second performance using AI technology licensed from an unnamed source. The company plans to tape out in the node a second voice/video chip before the end of the year and a third for AR/VR in early 2019.

Qualcomm Accuses Apple Of Stealing Trade Secrets

Qualcomm took its legal dispute with Apple another step higher on Tuesday, after it accused the iPhone maker of stealing its trade secrets and sharing them with rival chipmaker Intel.

The two tech companies are already embroiled in a wide-ranging battle over patents and royalties, after Apple first accused the mobile chipmaker of overcharging for its intellectual property and of anticompetitive behaviour in January 2017.

Qualcomm's lawsuit on Tuesday seeks to build on an earlier case filed in San Diego last November that accused Apple of breach of contract. The suit centred on the "master software agreement" that governs how chip customers handle its tools and intellectual property when developing new products.

Renesas To Pitch Baby-step AI For Factories

TOKYO — Every company that has pledged its faith to "smart manufacturing" is pledging its hopes for AI.

This brave new world requires a big investment in high-cost AI systems, along with the cost of setting up a "learning" platform and contacting cloud service providers. The grand plan starts with big data collection so that the machine can learn and figure out something previously unknown.

That's the theory.

In the real world, however, many companies are finding AI hard to implement. Some blame their inexperience in AI, or a shortage of in-house data scientists cable of making the most of AI. Others complain that they have not been able to establish the proof of concept of their installed AI systems. In any case, manufacturers are beginning to realize that AI is not an "if you build it, they will come" deal.

Enter Renesas Electronics.

The Japanese chip company claims a leading position in the global factory automation market. It is proposing “real-time continuous AI” for the world of operational technology (OT). This approach contrasts sharply with “statistical AI,” often pitched by big data companies to promote automation in the world of information technology (IT).

Sino-Semiconductor Buys Aixtron Tool For VCSEL Production

Aixtron, a deposition equipment company, has announced that Chinese chipmaker Sino-Semiconductor has ordered an AIX 2800G4-TM MOCVD system for the production of laser diodes.The tool will be delivered in the course of Q4/2018.

Sino-Semiconductor's main products include 10G, 25G datacom VCSEL chips and 0.1mW-4W sensor VCSEL chips. They are mainly used in optical communication, mobile & non-mobile facial recognition modules, autonomous vehicles, LIDAR, security monitoring, laser TV, laser display, laser lighting and other fields.

Ling Yong Peng, general manager of Sino-Semiconductor commented: "In recent years the AIX 2800G4-TM platform has already succeeded in the market for the production of VCSELs or datacom lasers. This is the first time we order an MOCVD system from Aixtron and we are very much looking forward to benefit from the excellent performance of the AIX 2800G4-TM platform in terms of wafer homogeneity and maximum flexibility."

Industry News & Trends

German Exports Of Electrical Goods Reach Record Level

BERLIN, Sept. 20 (Xinhua) -- The volume of goods exported by the German electronics industry has continued to soar in 2018 in spite of global trade conflicts, according to a study published on Thursday by the country's Central Association of the Electrical Engineering and Electronic Industries (ZVEI).

According to the study, the industry sold goods worth 17 billion euros (19.9 billion U.S. dollars) to international customers in July alone. The figure marked an 8.6-percent increase compared to the same period last year and the highest ever monthly reading recorded by ZVEI.

Companies represented by ZVEI achieved a new exporting recorded for the period of the first seven months of 2018 as well. International sales rose by an annual rate of 4.9 percent to a total of 119.1 billion euros, the highest ever volume witnessed between January and July.

Why the iPhone Will Trail In 5G

After almost a week's worth of coverage of new Apple iPhone Xs, there was very little discussion on the cellular connectivity of these handsets. Probably, Apple is quite happy about this non-coverage as well, as they didn't have anything to show off.

During the launch event, "Gigabit-class LTE" was flashed on the screen and was gone before anybody could notice it. It was a letdown for many wireless buffs like me. For the people in the know, this is not new.

While the iPhone Xs was announced in Cupertino, the who's who of the smartphone and wireless world were screaming at the top of their lungs about 5G at the Mobile World Congress Americas event in Los Angeles. Verizon announced its 5G home residential broadband service, albeit using its proprietary specification called as 5GTF.

Miniaturization Rules Capacitor Innovation: A Pictorial Update

To-date, the evolution of electronic components such as capacitors, resistors, diodes, and RF filters has trended toward continued miniaturization while retaining as many parametrics as possible and, at times, adding functionality. Improvements across multiple scientific fields have contributed to these designs, but the most notable progress includes purer ceramic, tantalum, and thin-film materials and improved processes, such as closed-loop manufacturing (CLM).

These shifts have enabled extremely accurate computer-aided design (CAD) models which can be translated into marketable, real-world parts. Inventive combinations of other techniques, including packaging designs, fine copper terminations, and photolithography have further expanded components for miniature circuit designs. Key drivers

OEMs and their electronics designers are looking for miniaturized parts to optimize circuit and system performance, satisfy physical design requirements, and improve product aesthetics. Smaller parts also typically operate at higher speeds with lower parasitics, making them more compatible with integrated circuit (IC) advancements.

5G Specs Get Last-Minute Update

SAN JOSE, Calif. — The 3GPP released a set of at least eight change requests for its specification for 5G cellular networks. The updates are not expected to delay commercial rollouts expected in the next few weeks and months, but they underscore the intensity of the engineering going on quietly in the background as carriers race to turn on their first 5G networks.

The 3GPP marked the eight change requests released this month as non-backwards-compatible. So carriers and their suppliers will have to agree on whether they will standardize on the 3GPP's 5G spec released at its June 2018 plenary, the new spec from the September plenary, or a hybrid.

The changes come at a time when carriers are already deploying and testing infrastructure that will make up commercial offerings. In parallel, handset makers are finishing work on smartphones supporting the wide variety of bands, from 600 MHz to 39 GHz, expected to be used by 5G services turning on before April.

"We have not announced which version [of the 3GPP spec] our products will be based on … these changes are relevant to both base stations and [handsets], but there is no need for any new chipsets," said Lorenzo Casaccia, who oversees 3GPP standards work for Qualcomm.

ON Semiconductor Positioning Itself As A Leader In Self-Driving Car Technologies

I don't feel that I'm acting dramatic when I say that self-driving cars will be one of the most impactful technologies in the last 50 years. The capability will likely save millions of lives, will free up millions of driving hours, and hopefully, clear up some of the roadway congestion. Sure, there have been some fits and starts in getting there and we're not there yet, but that's to be expected in anything new and meaningful.

When you think of companies involved in self-driving cars, you might first think of Tesla, NVIDIA, and maybe even Intel's MobilEye division. Another company that needs to be looked at in this space is ON Semiconductor Corp, who I just added to my list of players in the space. I have been researching them recently and I wanted to share with you some of my findings.

East European News & Trends

Fintech Start-Ups To Get Support From Big Players

A special competition for promising fintech start-ups will be held next month as part of Finopolis 2018, the Russian-wide forum on innovative financial technologies.

Fintech Lab, a Russian company, is the key driver behind the effort; the Central Bank of Russia and a number of this country's largest financial companies are also supporting the event.

Eligible for participation in the competition are projects focused on blockchain, artificial intelligence, big data, customer service personalization, improved scoring, and other areas.

The winners may expect $15,900, $31,700 and $47,600 grants as the third, second and first prizes, respectively. Ten finalists will also be given a chance to present their solutions at the Finopolis 2018 forum in front of Russia's top financial market players.

New Industrial Scanner Focused On Global Markets

Russia's Internet Initiatives Development Fund (IIDF, aka FRII in Russian) has invested $265,000 in InSize, a Russian company that has developed and is offering a special industrial scanner that enables the measuring of the key parameters of goods (height, length, width, weight, etc.) of any shape.

FRII is reported to have been supported the company in two investment tranches, increasing its shareholding from its previous 7% to 17%. The InSize team was expected to use the money to strengthen its R&D and sales departments, scale up existing solutions, and introduce new ones to the market.

InSize's key competitive advantages are said to include the high speed of equipment maintenance and a very competitive price among systems used to gauge irregularly shaped items. With the Russian system, additional parameters can be taken into account when gauging goods, such as the type of material, storage conditions, allowance for one item being put inside another, etc.

Russian SDN/Nfvs Get Backing From National Telecom Titan

Brain4Net, a Russian developer of solutions in the field of software defined networks (SDN/NFV), earlier this year raised $2.5m in a funding round from a consortium of domestic investors.

The consortium included Commit Capital, a VC fund 100% owned by Rostelecom, the national telecom operator, and another venture fund, Typhoon Digital Development. That funding round increased Rostelecom's shareholding in B4N Group from 18.04% to 26.08%, raising the networks developer's valuation to almost $18m.

In March 2016, Commit Capital supported the development of Brain4Net with an initial $1.5m.

Start-Up Pushes Artificial Intelligence For Clothes Recognition

Sarafan Technology, a Russian start-up, is developing artificial intelligence enabled technology for the recognition of fashionable and beauty items on photos and videos.

Set up in 2016, Sarafan Technology Inc. can now process 300,000 images a day. A reported 300 vogue venues are linked to it both in Russia and internationally, including Cosmopolitan, 7 Days, Eva.ru, and Lifehacker.

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World Economic Round Up

Oil prices climbed above US$85 a barrel for the first time in nearly four years as renewed worries about US sanctions on Iran and optimism over global economic growth propelled the market higher. Hedge funds and other money managers have flocked to the benchmark Brent crude oil futures market in recent weeks on concern that Iran's looming supply curtailment, along with production shortfalls in Venezuela, could rapidly deplete stockpiles just as global demand hurtles towards 100m barrels per day. The economic threat posed by America's worsening trade war with China is unlikely to derail the Federal Reserve's (Fed) rate-raising plans as the US gathers momentum and stock markets surge.

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 2018

Future Horizons Events

- Silicon Chip Industry Training Seminar – London – 12th November 2018
- Industry Forecast Briefing, London – January 2019

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 12th November 2018
AND
INDUSTRY FORECAST BRIEFING
January 2019

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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