FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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Industry News By Company

Semiconductor Industry Had The Worst Year Since 2001

Donald Trump's trade war with China has been blamed for the semiconductor industry suffering its worst slump in 20 years.

According to Bloomberg, the industry was walloped by the trade war between the largest chip producer, the US, and the largest consumer, China.

Revenue fell 12 percent to $412 billion in 2019, the Semiconductor Industry Association said Monday in a statement. That's the biggest drop since 2001, when industry sales slumped 32 per cent as the dot-com bubble burst. The rate of decline last year abated with sales growing slightly in the fourth quarter from the preceding three month period, the industry association said. For that to continue, China and the US need to build on the phase one trade agreement announced last month.

Memory chips were the hardest hit. Prices of those commodity chips fell as production outran demand. Memory revenue dropped 33 percent from 2018 led by declines in computer memory. All regions experienced a decline in demand. Sales in China, whose consumers and factories that supply finished products to the rest of the world account for more than one-third of global consumption of the electronic components, fell 8.7 percent, according to the SIA.

Infineon Partnering With Rompower: Expansion Of The Competence For System Solutions Of Universal Chargers

Munich, Germany – 09. January 2020 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) expands with Rompower its expertise for the development of universal chargers with high efficiency and compact design. These USB-PD chargers (Power Delivery) with the universal USB-C connector enable the power supply of e.g. monitors or smart speakers and charge the batteries of mobile devices such as smartphones or tablets. Today, these plugs already perform other functions, such as fast charging smartphones. Using the USB-PD technology, smartphones can be fully charged in less than an hour. USB-PD is made possible by the universal USB-C connector, which allows for higher data transfer and higher power transfer compared to widely established micro-USB and USB-A/B connectors.

The next development stage for all these functions will be permanently installed USB-PD wall outlets. With a maximum power output of 100 W made possible by the USB-PD standard, they not only support fast charging of mobile devices, but also function as permanently installed adapters. In the medium term, USB-PD charging sockets will be used in public buildings, such as airports and hotels, as well as in private households and will reduce the need for adapters and chargers.

Intel Officially Axes Nervana

In a move widely speculated to have been looming, Intel has axed Nervana's NNP-T and NNP-I training and inference chips for the data center in favor of Gaudi and Goya chips from recent acquisition Habana Labs.

A statement emailed to EETimes said that Intel will cease development on Nervana's NNP-T AI training chip (Spring Crest) for the data center, while merely honoring existing customer commitments to the NNP-I inference chip (Spring Hill), following "customer feedback".

"After acquiring Habana Labs in December and with input from our customers, we are making strategic updates to the data center AI acceleration roadmap. We will leverage our combined AI talent and technology to build leadership AI products," Intel's statement said. "We will bolster the current and next generation of Habana Goya and Gaudi with Intel's AI hardware and software innovations. The Habana product line offers the strong, strategic advantage of a unified, highly programmable architecture for both inference and training. By moving to a single hardware architecture and software stack for data center AI acceleration, our engineering teams can join forces and focus on delivering more innovation, faster to our customers."

NXP Turns Up Audio Quality

The purpose of a home theater is to bring a theater-like experience to the comfort of your home. For audiophiles and general home theater enthusiasts, the system should not only provide a high-quality video experience but also an immersive audio experience to enjoy dialogue, sound effects and music.

Every room, and all the objects in it, will react differently to frequencies of sound. Room correction software can be used to reduce the distortions and improve audio clarity thanks to precise measurements of the room's shape, size, furnishings, reflective surfaces and listeners' locations.

NXP Semiconductor announced it has concluded an agreement with Swedish audio technology provider Dirac to provide the consumer market with higher quality audio across the entire product spectrum, including smart speakers and soundbars. NXP's i.MX 8M family of chipsets is now equipped with Dirac's audio digital platform so that OEMs can enable their products with digital room correction technology.

Flagship Qualcomm Snapdragon 865 5G Mobile Platform Powers The Samsung Galaxy S20 Series

Qualcomm Technologies, Inc. announced that its latest flagship Qualcomm® Snapdragon™ 865 5G Mobile Platform is powering Samsung Electronics Co., Ltd.'s latest and most cutting-edge smartphones, the Samsung Galaxy S20 series (S20, S20+ and S20 Ultra), for select regions. Snapdragon 865 is the world's most advanced mobile platform featuring the industry-leading 5G Modem-RF System, the Qualcomm® Snapdragon™ X55, and it is designed to deliver the unmatched connectivity and performance required for the next generation of immersive mobile devices.

"We are very proud to continue our longstanding collaboration with Samsung Electronics, which allows us to develop and deliver the most groundbreaking mobile technologies to consumers," said Alex Katouzian, senior vice president and general manager, mobile, Qualcomm Technologies, Inc. "The Galaxy S20 series, powered by the flagship Snapdragon 865 mobile platform in select regions, provides the most advanced connectivity and sophisticated capabilities available, and are raising the bar for what mobile devices should be."

ST Secures Additional SiC Wafers With new $120m SiCrystal Deal

STMicroelectronics has secured additional silicon carbide (SiC) wafer supplies by signing a new multi-year agreement with SiCrystal, a Rohm group company which said it has the highest share of SiC wafers in Europe. The agreement is for the supply of over $120 million of advanced 150mm silicon carbide wafers from SiCrystal to STMicroelectronics, to address the demand ramp-up for silicon carbide power devices.

Jean-Marc Chery, president and CEO of STMicroelectronics, said, "This additional long-term SiC substrate supply agreement comes on top of the external capacity we have already secured and the internal capacity we are ramping. It will enable ST to increase the volume and balance of the wafers we will need to meet the strong demand ramp-up from customers for automotive and industrial programs over the next years."

SiCrystal was founded in 1996 but its roots go back to 1994 when a successful federally-funded project on crystal growth of silicon carbide bulk crystals was launched. It made its first commercial wafers in 1997. It then merged with Siemens-owned SiC-supplier Freitronics Wafer GmbH, and was then acquired by Rohm in 2010.

Xilinx Cuts 300 Jobs As San Jose Chipmaker Sees Weakness In 5G Business

Xilinx shares plunged more than 10% Wednesday after the San Jose-based semiconductor company said it will cut about 300 jobs following a disappointing quarterly earnings report.

Xilinx said it will cut 7% of its staff as it deals with what Chief Executive Victor Peng called "greater than expected weakness in our wired and wireless business" due to slowing sales of chips used in 5G wireless infrastructure deployments. Xilinx announced the job cuts late Tuesday at the same time it delivered. . .

Industry News & Trends

Memory Goes a Little Greener

TORONTO — The impact of components of digital devices such as smartphones is often lost amongst all the discussion of how to mitigate climate change, but memory makers have their own initiatives for contributing to environmental sustainability.

Samsung Electronics' recently announced 512-gigabyte (GB) embedded Universal Flash Storage (eUFS) 3.0 was awarded Carbon Footprint and Water Footprint Certifications from the UK-based Carbon Trust, a globally accredited nonprofit certification body established by the British government to accelerate the move to a sustainable, low-carbon economy. The certifications are the result of Carbon Trust's thorough assessment of the environmental impact of carbon emissions and water usage before and throughout the production cycle of Samsung's technology, based on international standards — specifically PAS 2050 for carbon footprint and ISO 14046 for water footprint.

In simpler terms, it means the carbon footprint of Samsung 512 GB eUFS 3.0 is 13.4 kg CO2, which is comparable to the amount that is absorbed by two 30-year-old pine trees in a year, while its water footprint is 0.31 m3 H2O.

Lithium-Based Semiconductor Detects Thermal Neutrons

A new semiconductor made from lithium, indium, phosphorus, and selenium could lead the way to hand-held, portable, sensitive neutron detectors (Nature 2020, DOI: 10.1038/s41586-019-1886-8). Such instruments can spot nuclear materials and play key roles in national security, nuclear medicine, and scientific research.

Neutron detectors rely on the neutron-absorbing properties of a small number of nuclides including 3He, 10B, and 6Li. When materials containing these nuclides absorb a neutron, they produce high-energy charged particles that trigger secondary events that lead to detectable signals.

The most common detectors for thermal neutrons, ones with moderate energies, include so-called proportional counters—tubes filled with 3He or 10BF3 gases that generate electrical signals—and scintillation detectors, light-emitting devices typically based on 6Li compounds. These instruments tend to be large and have other shortcomings. For example, 3He is rare and the stockpile is dwindling, and boron trifluoride is toxic.

Energy Harvesting Underwater

I'm always interested in the creative approaches that engineers and others develop for energy harvesting. Of course, while there's great incentive to do so — energy harvesting has the glamour appeal of "something for nothing" — the reality is that it often takes a lot of work and cost to develop. Still, it can solve some otherwise intractable problems by providing power where primary batteries alone (or an AC line) are impractical.

That's why a recent study by a team at MIT is fascinating. Not only did the researchers use a clever "twist" to harvest the energy, but they also tightly integrated the harvesting scheme with the data reporting itself. The team combined two very different phenomena

— the piezoelectric effect and backscattering — to provide a modest data-rate, battery-free underwater sensor and data link, which they call a Piezo-Acoustic Backscatter (PAB) system. Backscatter itself is a well-known technique often used with passive RFID and other systems; it uses directed, impinging energy to stimulate, power, and provide a response, usually in the electromagnetic RF world.

Startup De-Identifies Data

How to win consumer trust when massive security breaches are announced by one consumer company or another seemingly every week? A startup in Taiwan has developed an IC that might restore that lost trust.

The consumer electronics industry loves talking about building trust and loyalty among consumers. The "consumer experience" is a veritable marketing mantra at every industry gathering.

Privacy and safety are two tenets vital to winning consumer trust, but they never (as usual) emerged as serious topics at CES 2020. Sure, CES offered privacy panels and roundtables during which privacy chiefs from Facebook, Apple and Procter & Gamble made appearances.

But given Boeing's deadly 737 Max accidents and a growing backlash against big tech platform companies, was it too much to ask for at least one keynoter addressing the huge CES tech crowd with a "calls-to-arm" speech on privacy and safety?

Put this omission in the "missed opportunities" file.

Nonetheless, we came across at CES a little gem – a startup building a chip designed for "de-identifying" private data. DeCloak, founded by two PhD's in Taiwan, is a spin-off of Etron Technology.

Ultrasound As A Treatment For Parkinson's Symptoms

There may be as many as 10 million people around the world with Parkinson's disease, an affliction that is often marked by tremors that can become quite severe. One of the few options to control such tremors requires a brain implant, but a growing body of research suggests that simple ultrasound might be an effective treatment.

The use of an ultrasound technique for the treatment of tremors was conducted by the Department of Biotechnology and Applied Clinical Sciences of the University of L'Aquila and involved 39 patients. The researchers found that 95% of the patients involved saw an immediate reduction in tremors after treatment with high-frequency sound waves.

This reinforces similar findings from other medical researchers. Some ultrasound devices have already received FDA approval for treating Parkinson's.

East European News & Trends

Government And Telcos Debate Plans For 5G Network Development

The Ministry of Digital Development, Communications and Mass Media is said to oppose a plan proposed by this country's largest telecom companies (MTS, MegaFon, VimpelCom, and Rostelecom) to establish a joint venture for developing Russia's fifth-generation mobile network (5G), the US-Russia Business Council reported, citing the Russian business daily RBC.

According to the plan, the telecom companies would allocate certain frequency ranges to the JV to be used for 5G, while the government would provide additional frequencies without auction. The JV would then distribute the frequencies among its participants.

Apple And Company To Be Held Accountable For Russian Regulation?

Russia's Federal Antimonopoly Service (FAS) is considering an amendment to new Russian telecom sector regulation that would require that the U.S.' largest operating systems (OS) developers—Apple, Google, and Microsoft—be held responsible alongside the manufacturers of smartphones, tablets and PCs for the pre-installation of Russian apps and programs on their products, the Russian business daily Kommersant reported, citing a source at FAS.

Also, the competition watchdog reportedly wants Apple, Google and Microsoft to enable complete deletion of all of their pre-installed software, including proprietary programs, at the full discretion of the customer, if that doesn't disrupt a device's operation.

Start-Up That Counters Fraudsters With AI Raises British Investment

A Russian start-up called Cybertonica raised £2m from Force Over Mass Capital, a London-based VC fund that led this investment round in a consortium which also included TrueSight Ventures and Springboard, Firrma.ru reported. The start-up is a resident of the IT Cluster at Moscow's Skolkovo Foundation.

Cybertonica helps its customers put together a comprehensive fraud monitoring process, reducing risks while improving conversion funnels. At the heart of the solution is a combination of adaptive authentication and transaction analysis technologies based on machine learning and artificial intelligence.

The start-up is marketing its services to large Internet retailers, mobile communications operators and neobanking operators across Russia, the U.S., and Europe.

New International Program To Back Russian B2B Start-Ups

Microsoft in Russia, Ernst & Young and Startupbootcamp are launching Global Pilots, a program to support Russian B2B start-ups, Vc.ru reported.

The doors to the program are open for mature enough B2B start-ups that develop solutions based on artificial intelligence, Internet of Things, virtual/augmented reality, and other technologies. The contenders are expected to have an off-the-shelf product and active sales.

Round One is slated for launch in March 2020; this will be a three-month program in Moscow, with up to 15 projects picked for free participation.

The program hosts say they will help the start-ups work with corporate customers, develop scalable IT infrastructure, put together marketing strategies, start international sales, keep up investor relations, etc. The selectees will also get assistance in a pilot project with an international customer.

Communicative AI Gets New Investment

Just AI, a developer of communicative artificial intelligence solutions, raised investment from Sovkombank, a Russian bank, and one of the major telecom companies in the country, MTS, Firrma.ru reported.

The new investors now own a total of 22.5% of Just AI at its current valuation of $40m. Both MTS and Sovkombank have also joined the Just AI board as supervisors.

Just AI is developing a platform to enable large companies to create extended assistants and bots; solutions for SMEs (its Aimylogic platform for communicative machine skills and smart bots development is reported to have more than 15,000 registered developers); as well as a special open source toolkit for developers and data scientists to control dialog and train semantic models based on advanced neural network algorithms.

World Economic Round Up

China, and the world, were already burdened by tariffs. Now, some say the coronavirus could undermine fragile growth. Last year's tit-for-tat trade war between China and the US, which involved both sides slapping import tariffs on hundreds of billions of dollars' worth of goods, knocked China's already ailing Gross Domestic Product (GDP) growth rate down to 6 percent in 2019 and helped depress global growth: it fell from 3.6 percent in 2018 to 3 percent last year.

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 – 16th March 2020
- Industry Forecast Briefing, London – 15th September 2020

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

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Industry Events

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MARK YOUR CALENDER FOR THE NEXT

SILICON CHIP INDUSTRY WORKSHOP
MONDAY 16th March 2020
AND
INDUSTRY FORECAST BRIEFING
TUESDAY 15th September 2020

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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