FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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Industry News By Company

Chip Demand to Drop 5% to 15% in 2020

With each passing week of what the IMF has taken to calling the Great Lockdown, the semiconductor industry has been adjusting its economic forecasts downward. McKinsey is the latest to chime in; it said it expects sales demand in the global chip market will decline between 5% and 15% in 2020, with steep declines anticipated for some IC market segments that will overwhelm the gains it still expects in others. That's the most dire projection thus far.

The pandemic is taking its toll on the global economy, and each successive estimation of the potential damage is more pessimistic. The International Monetary Fund (IMF) on April 14 said it now expects global gross domestic product to shrink by 3% in 2020; in January, the IMF was predicting growth in global GDP of 3.3%. "This makes the Great Lockdown the worst recession since the Great Depression, and far worse than the Global Financial Crisis," the IMF said.

and analog capabilities will enable a holistic approach to hardware-based cybersecurity.

Infineon Technologies AG completes acquisition of Cypress Semiconductor Corporation

Munich, Germany, and San Jose, California – 16 April 2020 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) announced today the Closing of the acquisition of Cypress Semiconductor Corporation. The San Jose-based company has become part of Infineon effective as of the Closing.

"The acquisition of Cypress is a landmark step in Infineon's strategic development," said Infineon CEO Reinhard Ploss. "Together, we offer our customers the industry's most comprehensive portfolio for linking the real with the digital world and shaping digitalization, one of the most important global trends. We serve as a trusted partner for customers and distributors and we are evolving from a leader in components to a leader in system solutions for the automotive, industrial and IoT markets. Furthermore, customers can benefit from our increased global reach and enhanced design-in support tailored to their needs. We welcome our new colleagues from Cypress to Infineon".

The addition of Cypress lets Infineon further strengthen its focus on structural growth drivers and on a broader range of applications. This will accelerate the company's path of profitable growth. Cypress adds a differentiated portfolio of microcontrollers, connectivity components, software ecosystems and high-performance memories. All this is highly complementary to Infineon's leading power semiconductors, automotive microcontrollers, sensors and security solutions. Combining these technology assets enables advanced solutions for high-growth applications such as ADAS/AD, IoT and 5G mobile infrastructure. The addition of Cypress' strong R&D capabilities and its foothold in the U.S. and Japan strengthen Infineon's connections with customers around the world.

uMCPs Ready Smartphones For 5G

TORONTO — The coming of 5G is a chicken-and-egg scenario for smartphones and those that provide the memory content — do device makers proactively release new hardware that's ready for faster networks or wait for broad adoption?

Memory makers such as Micron Technology are opting to be ahead of the curve. It recently began sampling a universal flash storage (UFS) multichip package (uMCP) with low-power DDR5 (LPDDR5) DRAM. Designed to fit on slim and compact midrange smartphone designs, the company's uMCP provides the high-density and low-power storage that will allow users to benefit from the applications and capabilities that come with 5G, including augmented and virtual reality.

MCPs combine DRAM with NAND and an onboard controller. They're common in today's smartphones because they reduce power consumption and the overall footprint of the memory, thereby enabling smaller devices. Micron's uMCP5 uses advanced 10 nm DRAM process technology and a 512 Gb 96L 3D NAND die. The 297-ball grid array (BGA) package supports two-channel LPDDR5 with speeds up to 6,400 Mbps, a 50 percent performance increase over the previous-generation interface, according to Christopher Moore, vice president of marketing for Micron's mobile business unit. Storage and density-wise, the uMCP provides 256 GB and 12 GB, respectively, while using 40 percent less space than a two-chip solution.

Qualcomm and BOE Announce Collaboration to Develop Innovative Display Products Featuring Qualcomm 3D Sonic Sensors

SAN DIEGO and BEIJING — April 14, 2020 — Qualcomm Technologies, Inc. and BOE Technology Group Co., Ltd., a global leader in the semiconductor display industry, announce their plans to establish a strategic collaboration to develop innovative display products featuring Qualcomm® 3D Sonic ultrasonic fingerprint sensors. This collaboration is expected to extend from mobile and associated 5G technologies to XR and IoT. Qualcomm Technologies' broad product portfolio combined with BOE's expertise in interface devices and smart IoT systems, makes this an ideal collaboration for the 5G era, in which consumers can expect extraordinary performance improvements resulting from the tight integration of both Companies' multiple key technologies, including sensors, antennae, display picture processing, etc.

UltraSoC and Agile Analog Collaborate to Detect Physical Cyber Attacks

UltraSoC and Agile Analog today announced a collaboration that aims to deliver the industry's most comprehensive hardware-based cybersecurity infrastructure by combining UltraSoC's embedded on-chip analytics with Agile Analog's advanced on-chip analog monitoring IP. The combination will enable the detection and prevention of 'analog interference' cyber attacks that circumvent traditional security measures by tampering with underlying systems such as power supply levels or clock signals.

UltraSoC's recently-announced cybersecurity products monitor the functional behavior of digital circuitry, adding an extra layer of defense-in-depth to the security landscape, and detecting and mitigating cyber threats at hardware speed. Agile Analog offers a parallel

range of “smart” monitors in the analog domain, such as voltage, temperature and timing sensors to detect side-channel attacks or anomalous behavior that could indicate a cyber attack. The combination of system-level digital monitoring

Industry News & Trends

FCC Expected to Open Up 6 GHz Band for Wi-Fi 6

With forecasts suggesting nearly 60 percent of mobile data traffic worldwide will be offloaded to Wi-Fi by 2022, the Federal Communications Commission (FCC) this week circulated proposed draft rules to make 6 GHz of spectrum available for Wi-Fi use. The proposal is set for a vote at the FCC's open meeting on 23 April. The wireless broadband industry contends that this move will unleash the potential of Wi-Fi 6 and boost Industry 4.0 uptake.

However, the FCC push to bestow 6 GHz on unlicensed devices such as Wi-Fi is alarming in some quarters. The proposal goes beyond just 1,200 MHz spectrum in the 6 GHz band that the FCC plans to give to Wi-Fi. The FCC has also mentioned stripping away much of the 75 MHz of the adjacent 5.9 GHz band, originally set aside for the automotive industry to enable vehicle safety communications (including Vehicle-to-Infrastructure and Vehicle-to-Vehicle).

It's Time to Take Advantage of 3D Printing

Over the last decade, awareness of the value of AM has grown significantly within the manufacturing community, explains Rajeev Kulkarni, VP, Strategy, 3D Systems. "The AM industry has made a dramatic transition – moving from being used primarily for prototyping to production solutions. AM is now considered a step within the manufacturing process and is part of multiple manufacturing workflows," says Kulkarni. "We have seen evidence of this in the most recent E&Y study that confirms the adoption of additive is ramping – moving from the researching and prototyping phase to production – with nearly 75% of companies embracing the technology."

This adoption has been facilitated by a combination of innovations – not only in printing technologies, but also in materials science. As the technology has continued to mature, the focus has moved from feeds and speeds to applications and materials, indicating a level of comfort across the growing customer base. Kulkarni tells IndustryWeek, the latest materials in-market possess mechanical properties that enable creation of durable, end-use parts. "We will see materials innovation accelerate - continuing to open up new applications and solutions," he says.

Chipset Ready for IoT Expansion

Qualcomm Technologies Inc recently announced its 212 LTE IoT Modem, the world's most power-efficient single-mode NB2 (NB-IoT) chipset to drive the growth of cellular IoT

Power efficiency is a top concern for IoT devices that have to last for years in the field. Requiring less than one micro-amp (1uA) of sleep current, the Qualcomm 212 LTE IoT Modem's cutting-edge power-efficient chipset architecture allows for extremely low average power consumption. To support wide range of batteries and longer life span of the device in the field, the modem couples ultra-low system-level cut-off voltage with

provisions for adapting power usage according to varying source power levels – allowing end devices with power supply levels as low as 2.2 volts.

RISC-V Lets Us Start with a Clean Slate

One of the great things about working in tech is that we're always moving forward. In fact, we're rewarded for moving forward. Innovation breeds success. Paradoxically, it's also true that engineers are highly inclined to stick to what they know: to carry on "doing what works". This is natural – phrases like "if it ain't broke, don't fix it"; and "keep it simple, stupid" are our stock-in-trade.

But sometimes, we get an opportunity to sweep away all the baggage and start from scratch. To replace a Frankenstein monster, cobbled together over years, with a fresh, bouncing new-born.

This is where we stand with the advent of RISC-V.

RISC-V represents a clean slate. It offers a fantastic opportunity to build a platform that's fit for 21st century products. Technically, because it has been architected from the ground up "to be better". Commercially, because it's based on an open source model that will break the current hegemony within the processor field. And creatively, as it allows us to develop products in areas we haven't even thought about yet.

AI-Based Soft-Switching Controller Enables More Efficient Power Converters

Reliable power converters can reduce the costs of an entire system. New digital control techniques help engineers and device manufacturers improve conversion efficiency, reduce power loss, weight, and costs. Pre-Switch, Inc., has developed what it claims is the first AI-based DC/AC, AC/DC soft-switching controller to deliver that reliability and efficiency.

Pre-Switch uses artificial intelligence to constantly adjust the relative timing of elements within the switching system required to force a resonance to offset the current and voltage waveforms — thereby minimizing switching losses.

Over time, the focus for power devices has been directed towards leakage removal, and using higher performance semiconductor materials than silicon, such as SiC and GaN.

East European News & Trends

Russian Software Comes To Match Russian Computer Hardware

A Russian Linux-based operating system has been developed to power computers driven by the Baikal chips from a domestic company called Baikal Electronics.

In this project, Baikal Electronics teamed up with Bazalt-SPO, the developer of the Alt family of operating systems.

"We are glad to watch our partnerships in promoting a national hardware ecosystem bear fruit and generate operating systems compatible with our processors. The doors are being opened to creating 100% domestic products in a near future. We hope to already see examples of 100% Russian items based on both Russian hardware and Russian software emerge in the market in Q3 2020," Baikal Electronics CEO Andrei Evdokimov said in a comment to the news.

New Virus Detector Requires No Special Equipment

A Russian start-up called Troitsk Engineering Center (part of TechnoSpark Group and a portfolio company of Rusnano's Infrastructure Fund) has developed a special device, the Indicator-BIO, to diagnose viral infections, Nanonewsnet.ru reported.

Their partners in the project, biologists and physicians from the Federal Medical-Biological Agency (FMBA), have, in their turn, come up with advanced chips and reagents to go with the device, which are said to take within 15 minutes to pinpoint in biological fluids an array of dangerous viruses, including the COVID-19.

COVID-19 Makes Mobile Business Apps 80% More Popular

The Russian portal Firrma.ru published excerpts from a report by an analytical company called AppAnnie on Russians using mobile apps between January and April 2020.

As the Russian populations increasingly self-isolate and shift to work from home, mobile apps for business communication have grown significantly more popular; users downloaded them 80% more often in the first week of April than in January. Zoom Cloud Meetings, Microsoft Teams and Hangouts Meet led AppAnnie's list of the most sought-for apps.

The runner-up by downloads were edtech apps; users downloaded them 65% more often than in January. Apps containing educational materials and platforms to conduct classes were the most popular. According to AppAnnie, the leader was an edtech app called Dnevnik.ru, followed by PhotoMath, a service that offers photos to solve mathematical problems. Google Classroom and Chatium crowned AppAnnie's preference list of services that enable students and teachers to communicate

Russia's Yandex Grows On Ride-Hailing And Iot Despite Crisis

Yandex, the company behind Russia's largest search engine, reported a $70.7m net profit in Q1 2020, up a hefty 76% yoy in the COVID-19 crisis period.

Two categories outlined in the firm's official report, Taxi Business Segment Revenue and Other Revenues, are worth highlighting here:

"Revenues related to Taxi segment grew 49% in Q1 2020 compared with Q1 2019 and accounted for 24% of total revenues, compared with 20% of total revenues in Q1 2019. This increase was mainly attributed to the growth of our ride-hailing business, driven by an increase in the number of rides, solid performance of our food tech services, including the contributions from Yandex.Lavka and Yandex.Meal, as well as growth of our corporate Taxi business."

Russia's IT And Electronics Market May Shrivel 30% In 2020

Analysts from IDC predict a sag in Russia's IT and electronics market as demand for IT services and telecom equipment from companies and individuals affected by COVID-19 is going down. The market may end up shrinking this year by a painful 30% yoy.

In 1Q 2020, imports of mobile phones dropped 28% yoy, PCs and tablets by 10%, and computer servers by 12%, IDC thinks. Low demand is one reason for that; another is an international supply factor. IT and electronic equipment manufacturing sites in Southeast Asia have been suspended and international supply chains disrupted due to COVID-19.

World Economic Round Up

The head of the International Monetary Fund has signalled a possible downward revision of global economic forecasts, and warned the United States and China against rekindling a trade war that could weaken a recovery from the coronavirus pandemic. Kristalina Georgieva, the IMF's managing director, told an online event hosted by the European University Institute that recent economic data for many countries was coming in below the fund's already pessimistic forecast for a 3% contraction in 2020.

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 – 15th June 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 15th June 2020
AND
INDUSTRY FORECAST BRIEFING
TUESDAY 15th September 2020

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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