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AI Could Be the Answer to the Spectrum Squeeze

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Silicon III-V Chips Needed to Enable 5G Devices

In most current devices, silicon-based CMOS chips are used for computing. Silicon in advanced communications systems is driven to its limits — limits that translate into thermal problems. This is why the current 5G mobile devices on the market become very hot during use and turn off after a short time.

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TALK TO US

The Story Behind Pixel 4's Motion Sense

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16 March - 2020 – London UK

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Xilinx Envisions its Future Without Huawei

Xilinx Inc. is planning a future that does not include Huawei Technologies, CEO Victor Peng told analysts yesterday. The chip maker has not received the necessary approvals to ship products to the Chinese networking giant, which the U.S. government has deemed a security risk.

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Renesas Electronics Corp. has launched a new family of microcontrollers (MCUs) targeting secure, scalable Internet of things (IoT) applications with an open software platform enabling customers to develop IoT endpoints with a wide range of partners or leveraging existing legacy software platforms.

The Renesas Advanced (RA) family of 32-bit Arm Cortex-M MCUs deliver a combination of optimized performance, security, connectivity, peripheral IP, and flexible software package (FSP).

Renesas has assembled an ecosystem of 34 partners to deliver an array of software and hardware building blocks that will work out of the box with its MCUs. These will help engineers develop IoT endpoint and edge devices for a range of industrial and building automation, metering, healthcare, and home appliance applications.

AI Could Be the Answer to the Spectrum Squeeze

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Every 10 years, a new wireless generation fundamentally changes the wireless landscape with each demanding more spectrum than the last. But 5G, the next wireless generation, will be the last to spur a spectrum land grab.

From the earliest days of wireless, the dominant way of managing the spectrum has been through an exclusive license, where a government grants access of a certain range of frequencies to a single licensee. As the wireless spectrum is indelibly finite, this makes spectrum a scarce and valuable commodity.

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Various organizations, including IBM, the Hong Kong University of Science & Technology, and MIT, have been experimenting with integrating silicon with compound semiconductors to get around such problems.

The electronic devices of the near future will have to contain sensors and transmit data wirelessly to a control center (possibly communicating over a 5G network). This means that they will have to combine RF, low operating power, and a small form factor. A clean and promising approach to achieve all these objectives is to create single chips that combine the capabilities of silicon CMOS with III-V semiconductors.

The Story Behind Pixel 4's Motion Sense

Google last week rolled out its Pixel 4 smartphone, whose claim to fame is a radar-based technology that makes it the first smartphone featuring “Motion Sense” capabilities.

Under a project named “Soli,” Google’s Advanced Technology and Projects (ATAP) group embarked on the development of a miniature radar chip five years ago. Google wanted to design a radar technology that tracks human gestures, everything from a finger-tap to whole body movement.

For Google, the goal of Project Soli isn’t just embedding the radar technology inside smartphones. Thinking bigger, Google saw its mission as making radar a foundational technology for “the language of non-verbal communication.

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Xilinx shipped $50 million worth of product to Huawei in its first fiscal (June) quarter -- just prior to U.S. trade restrictions imposed in May. “Considering the continued trade restrictions with Huawei and the uncertainty presented to our business, we believe it is prudent to remove all remaining revenue expectations related to Huawei from our fiscal 2020 outlook,” Peng said.

Huawei was placed on the United States “entities list” in May, restricting technology sales to the networking giant. Suppliers have been able to apply for special licenses that allow them to ship components to Huawei.