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The Global Semiconductor Industry Analysts

FH MONDAY

19 July 2021

Multitasking, Sensors Drive
Smartphone Memory Requirements

Smartphone memory and storage requirements continue to be driven forward by 5G networking, but it's not the only trend putting pressure on mobile DRAM and flash.

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5G designs push RF front-end
modularization closer to reality

Early 5G implementations began at the end of 2019, and since then, RF front-end (RFFE) designs have come a long way in terms of higher integration and support for multimode operation ranging from 5G to 2G radios. For instance, data converters in these RFFEs now support the channel bandwidths available in millimeter-wave (mmWave) bands.

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New Market Opportunities
in the Grid

Global electricity consumption continues to grow at a consistent 3.5 percent annual rate over the last five years, according to a survey of the energy and utilities sector by the International Energy Agency. In 2020, apparent consumption was estimated to be 16 gigawatt hours by the top 12 countries, with China, the U.S. and India accounting for 60 percent of total.

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Digital transformation is sweeping through every aspect of society in India, driving unprecedented technological, social, governance and economic transformation in the country. New digital infrastructures—from connectivity, IoT, 5G, social, financial, ecommerce, online education, and e-government platforms—are enabling the rapidly rising demand for digital services from the country's citizens.

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Synaptics Expands Into
Edge AI

At one time, Synaptics Inc. was best known for its interface products, including fingerprint sensors, touchpads, and display drivers for PCs and mobile phones. Today, propelled by several acquisitions over the past several years, the company is making a big push into consumer IoT as well as computer-vision and artificial-intelligence solutions at the edge.

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Multitasking, Sensors Drive Smartphone Memory Requirements

Smartphone memory and storage requirements continue to be driven forward by 5G networking, but it's not the only trend putting pressure on mobile DRAM and flash.

Bigger bandwidth and faster speeds open the door for significantly large file sizes, including the adoption of 8K video. That nearly doubles the file size of video, said Itzik Gilboa, Western Digital's head of mobile segment marketing. The company recently announced its second-generation UFS 3.1 storage solution for 5G smartphones, the iNAND MC EU551. It's also aimed at supporting emerging applications such as gaming, augmented reality/virtual reality, and ultra-high-resolution cameras for burst mode photography. The new storage offering is the first to be built on Western Digital's UFS 3.1 platform, which leverages faster NAND along with a faster controller and improved firmware.

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For instance, data converters in these RFFEs now support the channel bandwidths available in millimeter-wave (mmWave) bands. That, in turn, will open the doors for the generalization of RF architectures and potentially reduce RF circuitry's complexity by moving the digital-analog divide closer to the antenna.

RFFEs are also known as front-end modules. These parts use smart partitioning architectures to integrate high-speed amplifiers, receive analog-to-digital converters, and transmit path digital-to-analog converters along with ever-shrinking high-frequency filter designs. Integration is the name of the game in 5G radio designs, as discrete RF solutions no longer suffice.

New Market Opportunities in the Grid

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In 2020, apparent consumption was estimated to be 16 gigawatt hours by the top 12 countries, with China, the U.S. and India accounting for 60 percent of total. Though the consumption rate plummeted by 5 percent in 2020 due to pandemic-induced lockdowns, a rebound is expected to occur this year, driven by a "V-shaped" recovery and pent-up demand.

The value of the electricity transmission infrastructure market is projected to reach \$350 billion by 2030, fueled by public and private investment projected to grow 3.8 percent annually through the end of the decade.

Arm to Hold Webinar on Successful Deployment of Cloud Data Centers

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At the heart of this digital transformation is the data center infrastructure needed to deliver secure, scalable leading-edge performance, with efficiencies to cut cost and create competitive advantages.

Arm's Neoverse Platform is the foundation for the next generation cloud-to-edge infrastructure, delivering high-performance, secure, and scalable computing solutions along with a robust hardware and software ecosystem.

Synaptics Expands Into Edge AI

At one time, Synaptics Inc. was best known for its interface products, including fingerprint sensors, touchpads, and display drivers for PCs and mobile phones. Today, propelled by several acquisitions over the past several years, the company is making a big push into consumer IoT as well as computer-vision and artificial-intelligence solutions at the edge. Synaptics sees opportunities in computer vision across all markets and recently launched edge-AI processors that target real-time computer-vision and multimedia applications.

The company's recent AI roadmap spans from enhancing the image quality of high-resolution cameras using the high-end VS680 multi-TOPS processor to serving battery-powered devices at a lower resolution with the ultra-low-power Katana Edge AI system-on-chip (SoC).