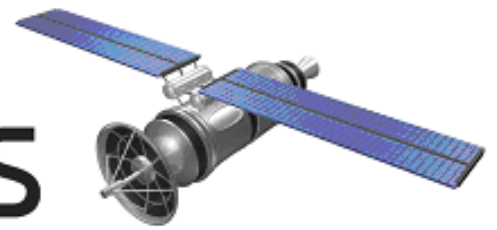


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The Global Semiconductor Industry Analysts

FH MONDAY

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Apple to Acquire Intel's Modem Business

SAN FRANCISCO — Apple will pay about \$1 billion to acquire Intel's smartphone modem business, signaling that, despite a settlement reached with longtime supplier Qualcomm in April, Apple still has designs on its own silicon for 5G

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Memory Makers Setting Up to Handle Hyperscale Demands

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Apple's Sales Rise as iPhone Slumps

Apple's iPhone receipts declined by 12%, accounting for less than half of the company's revenue in the fiscal third quarter. But despite the slumping iPhone sales and the effects of an ongoing trade war between the U.S. and China, Apple's overall sales improved slightly compared to the year-ago quarter thanks to growth in wearables and services revenue

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TALK TO US



Startup Claims Edge in Performance, Price, Size

SAN JOSE, Calif. — Startup InnoGrit debuted a set of three controllers for solid-state drives (SSDs), including one for data centers that embeds a neural-network accelerator. They enter a crowded market with claims of power and performance advantages over rivals.

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Transceiver Chip Enables Systems Beyond 5G

A group of researchers have created a wireless transceiver chip enabling transmission of signals beyond 100 GHz at lower cost and energy consumption than current systems. Those frequencies are far higher than anything considered for 5G cellular communications, meriting the researchers' description of the device as "beyond 5G."

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Apple To Acquire Intel's Modem Business

SAN FRANCISCO — Apple will pay about \$1 billion to acquire Intel's smartphone modem business, signaling that, despite a settlement reached with longtime supplier Qualcomm in April, Apple still has designs on its own silicon for 5G.

Roughly 2,200 Intel employees will join Apple as a result of the deal, which is expected to close in the fourth quarter, the companies said. The combination of acquired patents and Apple's own existing wireless technology patent portfolio will give Apple more than 17,000 wireless technology patents.

The deal was announced on the same day that Intel raised its sales estimate for the year after reporting better-than-expected second quarter results.

Memory Makers Setting Up to Handle Hyperscale Demands

There's never been more pressure on memory to meet the demands of new applications — everything from edge computing and the Internet of things (IoT) to increasingly smarter phones and smart cars. There's also artificial intelligence (AI) and machine learning, both of which are becoming a big part of next-generation platforms being developed by the major hyperscale players — the Googles, Facebooks and Amazons of the world.

All of them are expecting a great deal of innovation from the broad electronics industry and the memory makers, whether it's further improvements to incumbent memories such as DRAM and NAND flash — or making emerging memories that incorporate novel materials commercially viable as part memory devices for new computing architectures. But despite their deep pockets, it's unlikely any of the companies will ever invest in manufacturing equipment to make their own memory devices, and they're not interested in paying a premium price. If DRAM still does the job, they're not going to pay five dollars more per device for an emerging memory because at this scale, it adds up quickly.

Apple's Sales Rise As iPhone Slumps

SAN FRANCISCO — Apple's iPhone receipts declined by 12%, accounting for less than half of the company's revenue in the fiscal third quarter. But despite the slumping iPhone sales and the effects of an ongoing trade war between the U.S. and China, Apple's overall sales improved slightly compared to the year-ago quarter thanks to growth in wearables and services revenue.

Apple sold \$26 billion worth of iPhones in the fiscal quarter, accounting for 48% of the company's total sales. It was the first time in any quarter since 2012 that the iPhone didn't represent the majority of Apple's sales.

The fiscal third quarter — which closed June 29 — marked the third straight decline in iPhone revenue for Apple. In a conference call with analysts following the quarterly report, however, CEO Tim Cook played up the improvement in year-over-year sales as compared to the previous quarter, when iPhone revenue declined by 17% year-over-year.

Startup Claims Edge In Performance, Price, Size

SAN JOSE, Calif. — Startup InnoGrit debuted a set of three controllers for solid-state drives (SSDs), including one for data centers that embeds a neural-network accelerator. They enter a crowded market with claims of power and performance advantages over rivals.

The chips emerge as NAND flash prices are showing signs of bottoming out. OEMs and data centers are expected to take advantage of the lower prices to continue the shift from hard-disk storage in notebooks and servers that require performance, power, or size advantages.

In data centers, the adoption of SSDs is "happening fast, especially with last year's price drops," said Zining Wu, who co-founded InnoGrit in October 2016 after 17 years at Marvell, where he rose to be its chief technology officer. "When we talk to data center customers, all their new designs are flash-based.

Transceiver Chip Enables Systems Beyond 5G

A group of researchers have created a wireless transceiver chip enabling transmission of signals beyond 100 GHz at lower cost and energy consumption than current systems. Those frequencies are far higher than anything considered for 5G cellular communications, meriting the researchers' description of the device as "beyond 5G."

Their ultimate goal is more ambitious than merely going beyond 5G; it's to create a technological path that will enable wireless systems to compete with fiber optics.

The team from the Nanoscale Communication Integrated Circuits (NCIC) Labs at the University of California, Irvine (UCI), have created a 4.4 millimeter-square chip capable of processing digital signals significantly faster and being more energy-efficient than anything available today. It does this by utilizing a unique digital-analog architecture which significantly relaxes digital processing requirements by modulating the digital bits in the analog and radio-frequency domains. The researchers claimed that in using the approach they've overcome the limitations of Moore's Law"

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