

# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

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### Q'comm Feels Smartphone Squeeze

Apple is suing Qualcomm for \$1 billion in damages from unfair patent practices. The suit filed January 20 in the U.S. District Court for the Southern District of California was widely reported by Reuters and other sources

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### 5G Calls for Silicon in 2017

2017 will be a big year for 5G cellular. Engineers will start silicon development in earnest and pick architectures to support massive MIMO antenna technologies, according to Mike Murphy, chief technologist for Nokia in North America, in an interview with EE Times

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### 2G Sunset a Slow Burn

In the U.S., all three major carriers have announced dates and plans to shut off 2G. But there are surprising differences in their strategies. Last October when AT&T Mobility confirmed it would shutter its 2G network as of the turn of this year, which they duly did, other nimble operators promptly said they would "throw a lifeline" to subscribers

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### TALK TO US



### ARM builds open-source momentum

With its processor cores installed in practically every automotive chip used in vision SoCs, sensor fusion ICs and secure microcontrollers, ARM has not only witnessed the automotive industry's evolution, but has become an integral part of the story.

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### EVENTS

#### [Silicon Chip Industry Seminar](#)

– 13 March 2017 – London UK

#### [Industry Forecast Briefing](#)

– 19<sup>th</sup> September – London UK

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### Dual-camera designs bring DSLR quality to phone

Today's consumers aren't only using their smartphones for selfies and simple snapshots. They expect the images they take to be of the same quality they can achieve with complex DSLR cameras and optical lenses.

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## **Q'comm Feels Smartphone Squeeze**

Apple is suing Qualcomm for \$1 billion in damages from unfair patent practices. The suit filed January 20 in the U.S. District Court for the Southern District of California was widely reported by Reuters and other sources.

In a press statement quoted in a Forbes article, Apple said, “after years of disagreement over what constitutes a fair and reasonable royalty we have no choice left but to turn to the courts.”

Companies hate to go to court. It's expensive and business details they would prefer to remain confidential get revealed to the public. But as growth slows, the pressure for profits rises so it was perhaps just a matter of time before royalties became a battleground.

## **5G Calls for Silicon in 2017**

SAN JOSE, Calif. — 2017 will be a big year for 5G cellular. Engineers will start silicon development in earnest and pick architectures to support massive MIMO antenna technologies, according to Mike Murphy, chief technologist for Nokia in North America, in an interview with EE Times.

Carriers will continue to explore virtualized radio access networks (RANs) and expand work in hot frequency bands such as 3.5, 28, 37, and 39 GHz. Separately, operators will turn on LTE-based Category M and Narrowband IoT services, said Murphy, who meets a few times each year with executives from his carrier customers.

Among the hot topics in those meetings, “5G is certainly at the top; virtualization of the RAN has become a hot topic recently; and Wi-Fi/cellular integration with Licensed Assisted Access will be important in 2017,” he said.

## **2G Sunset A Slow Burn**

Subscribers around the world rely on 2G cellular, a still-vital technology for machine-to-machine (M2M) communications and network availability in rural parts of many countries--and that won't change for some time.

In the U.S., all three major carriers have announced dates and plans to shut off 2G. But there are surprising differences in their strategies.

Last October when AT&T Mobility confirmed it would shutter its 2G network as of the turn of this year, which they duly did, other nimble operators promptly said they would “throw a lifeline” to subscribers. The most aggressive has been T-Mobile, which promptly announced it would offer free SIM cards and clever service bundles to users of IoT services on AT&T's 2G network.

The country's third largest operator is attempting to lure subscribers by offering up to 50MBytes of 2G connectivity per device per month through the end of the year. T-Mobile's plan uses its “new spectrum-efficient 2G GSM optimization.”

## **ARM Builds Open-Source Momentum With Twizy EV**

With its processor cores installed in practically every automotive chip used in vision SoCs, sensor fusion ICs and secure microcontrollers, ARM has not only witnessed the automotive industry's evolution, but has become an integral part of the story.

Advancements in electrification and automation in driving technology have brought fundamental changes to the automotive industry. ARM sees these as prelude to even bigger challenges awaiting automakers and tier ones.

In an interview with EE Times during the Consumer Electronics Show, Richard York, vice president of Embedded Marketing at ARM, noted that the next big solutions will involve open vehicle platforms, software-defined cars, security and built-in connectivity for over-the-air software updates.

## **Dual-Camera Designs Bring DSLR Quality To Phone**

Today's consumers aren't only using their smartphones for selfies and simple snapshots. They expect the images they take to be of the same quality they can achieve with complex DSLR cameras and optical lenses.

At the Consumer Electronics Show, Omnivision Technologies introduced three dual-camera module reference designs to bring DSC/DSLR-quality capabilities—such as 10x zoom, Bokeh-effect portrait imaging and improved low-light imaging—to smartphone cameras. The designs combine Omnivision's OV12A10 image sensor with the OV12A1B, OV13880 and OV20381 to provide smartphone manufacturers the flexibility to choose an ideal option based on compatibility with device designs and product targets.

According to a market report from Yolé Développement, dual-camera penetration into the mobile market is expected to reach roughly 20% by 2020, driven largely by increasing consumer demand for the advanced features and image-quality improvements offered by this technology.