

# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

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### Chipmaking Giant Samsung Reveals 3nm Semiconductor Prototype

In mid-December, Intel revealed that the company expects to design 2nm and 1.4 nm semiconductors by 2029. During the same timeframe, regional sources reported Canaan and Bitmain will reveal new mining rigs this year equipped with TSMC-based 5nm chips.

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### Qorvo Partners With Nordic Semiconductor

GREENSBORO, NC -- Qorvo (QRVO), a leading provider of innovative RF solutions that connect the world, today announced it is expanding its IoT portfolio with two RF front-end (RFFE) modules that support the NB-IoT and LTE-M cellular standards

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### NXP Launching Auto Network Processor

NXP's S32G is "a single-chip version" of two processors — an automotive microprocessor and an enterprise network processor — combined, said Ray Cornyn, vice president and general manager, Vehicle Dynamics Products. The S32G functions as a gateway processor for connected vehicles, as it offers enterprise-level networking capabilities.

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## TALK TO US



### Intel Cryogenic Chip for Quantum Computing

Intel has unveiled a new hardware solution focused on quantum computing: Horse Ridge is the first cryogenically-controlled processor designed to accelerate the development of full-stack quantum computing systems.

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## EVENTS

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

-11 Nov 2019- London UK

### [Industry Forecast Briefing](#)

- 17 Sept 2019 - London UK

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### Wi-Fi 6 Proven for Industry 4.0 in UK Trials

The next generation of Wi-Fi technology, version 6, has been demonstrated in an industry 4.0 environment for the first time. The trial, at the Mettis Aerospace factory in the UK, demonstrated features such as 4k video streaming, large file transfers, and mixed reality in a particularly hostile environment for wireless signals.

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## Chipmaking Giant Samsung Reveals 3nm Semiconductor Prototype

In mid-December, Intel revealed that the company expects to design 2nm and 1.4 nm semiconductors by 2029. During the same timeframe, regional sources reported Canaan and Bitmain will reveal new mining rigs this year equipped with TSMC-based 5nm chips. Now, competition is growing stronger as Samsung has disclosed that the chipmaker succeeded in creating the first 3nm (GAAFET) prototype. Samsung has shown it is ahead of the 5nm process and the company hopes to be the most dominant chipmaker by 2030.

While TSMC Is Heavily Invested in the 5nm Process, Samsung's 3nm Semiconductor Prototype Emerges

During the latter half of 2019, bitcoin mining rig manufacturers produced a series of new high-powered mining rigs. News.Bitcoin.com reported on how 2019's mining devices are 5x faster than the predecessors.

## Qorvo Partners With Nordic Semiconductor

GREENSBORO, NC -- Qorvo (QRVO), a leading provider of innovative RF solutions that connect the world, today announced it is expanding its IoT portfolio with two RF front-end (RFFE) modules that support the NB-IoT and LTE-M cellular standards. Featuring the industry's smallest integrated dual-band module, Qorvo's expanded portfolio accelerates global connectivity by helping manufacturers add cellular IoT capability to a range of new devices.

Qorvo has partnered with Nordic Semiconductor to develop cellular IoT solutions using Qorvo's RFFE modules. Svein-Egil Nielsen, Chief Technology Officer at Nordic Semiconductor, said, "We are very impressed by the features and performance of Qorvo's new modules. With their high integration level, extensive band coverage, and support for both NB-IoT and LTE-M, they enable truly global products—while providing industry-leading power consumption and robust design margins."

## NXP Launching Auto Network Processor

LAS VEGAS — NXP Semiconductors is coming to the Consumer Electronics Show to launch a new "Automotive Network Processor."

NXP's S32G is "a single-chip version" of two processors — an automotive microprocessor and an enterprise network processor — combined, said Ray Cornyn, vice president and general manager, Vehicle Dynamics Products. The S32G functions as a gateway processor for connected vehicles, as it offers enterprise-level networking capabilities. It also enables the latest data-intensive ADAS applications while providing vehicles with secure communication capabilities, he explained.

Among the wishes are: over-the-air software updates — à la Tesla — to make vehicles "software upgradeable," a shift to new domain-based vehicle architectures (i.e., consolidation of ECUs), beefed-up security features (including intrusion detection/monitoring), the vehicle's ability to analyze data on the edge without constantly depending on the cloud, and upgraded safety to ASIL D.

## Intel Cryogenic Chip for Quantum Computing

Intel has unveiled a new hardware solution focused on quantum computing: Horse Ridge is the first cryogenically-controlled processor designed to accelerate the development of full-stack quantum computing systems.

Quantum computers promise to address problems that conventional computing solutions cannot handle. The underlying technology is quantum physics; since a quantum bit (or qubit) can exist simultaneously in multiple states, it can be used to conduct a large number of calculations at the same time, significantly speeding up the resolution of complex problems.

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Wi-Fi 6 (802.11ax) promises improvements in performance and power efficiency. This includes OFDMA (orthogonal frequency division multiple access), which shares channels to lower latency in high demand environments, and multi-user MIMO (multiple input, multiple output) technology which will allow access points to handle larger numbers of devices concurrently. OFDMA plus wider channel utilization increase bandwidth for time-sensitive applications such as industry 4.0.