



**Under Embargo: February 27, 2018, at 1:30 p.m. CET  
Technology Announcement**

## **NXP Leads Edge Computing Revolution – High-Performance Compute, Security, and Ecosystem**

*NXP delivers cutting-edge Machine Learning (ML) capable solutions to IoT developers for smart, secure, and aware edge nodes*

### **Highlights:**

- NXP introduces latest i.MX 8M family of cost-effective applications processors built in advanced 3<sup>rd</sup> generation 14LPC FinFET technology with scalable edge node computing from single, dual, to quad-core versions of Arm Cortex-A53.
- NXP debuts new high-performance IoT-on-a-Chip bringing Arm Cortex-A7 applications processor and high bandwidth Dual-band 802.11ac Wi-Fi and Bluetooth 4.2 together in an ultra-compact 14x14x2.7mm package targeted for edge devices.
- NXP is also announcing functionally verified MCUs in 28nm FD-SOI with break-through on-chip ultra-low leakage SRAM & MRAM solutions that can deliver up to 100x longer battery lifetime.
- Expanding NXP's popular crossover processor family, combining high-performance with real-time functionality, the new i.MX RT 1060 dramatically increases on-chip SRAM to 1MB.
- NXP's K32W0x dual-core MCU with host and dedicated multi-protocol wireless MCUs integrates leading-edge security and industry's highest density of on-chip memory for expanded secure mesh networks in a single chip, simplifying edge node compute and connectivity.

**NUREMBERG, GERMANY (Embedded World 2018) – February 27, 2018** –NXP Semiconductors N.V. (NASDAQ:NXPI), an embedded semiconductor leader serving customers across a broad spectrum of applications and markets, today at a press conference at Embedded World 2018, unfolded its robust edge-compute portfolio to strengthen and advance consumer and industrial IoT system solution development.

“The edge computing future demands high-performance compute together with secure data collection, management, and decision-making,” said Geoff Lees, senior vice president and general manager of microcontrollers at NXP. “With our track record of success in embedded processing and rapidly expanding ecosystem partnerships, we’ve got edge node computing covered.”

### **Compute Solutions for Smarter Edge Nodes**

NXP brings together the building blocks of high performance compute with its portfolio of scalable embedded processors that are optimal for thousands of edge nodes applications.

New devices include:

- i.MX 8M ‘Mini’ series: The new family is the company’s first embedded multi-core heterogeneous applications processors built using advanced 14 FinFET process technology, building upon the decade-long success of its i.MX 6 family of processors. At the heart is scalable core complex of up to four Arm Cortex-A53 cores running up to 2GHz plus Cortex-M4



based real-time processing domain at 400+MHz. Arm Cortex-A53 has become the industry standard for 32/64-bit applications requiring high performance in power-constrained environments. i.MX 8M core options are optimized for ultra-low-power, even sub-Watt in specific applications, but offers the breadth of processing power necessary for consumer, audio, industrial, machine learning training, and inferencing across a range of cloud providers.

- NXP's innovative ultra-compact IoT-on-a-Chip package design allows DDR memory direct connect via pass-through board layout, further reducing board space. NXP's custom inter-chip interface also allows optional discrete Secure Element (SE) for strong IoT security without increasing the package footprint. Customers will also benefit from the NXP's extensive high-performance i.MX Linux ecosystem and Wi-Fi pre-certification in close partnership with Murata, dramatically reducing time to market.
- NXP has demonstrated that its proprietary ultra-low leakage SRAM has 10x lower static leakage and can operate reliably across wider temperature and voltage range than conventional memories. Further, working with Samsung's industry-leading non-volatile STT-MRAM that has 1000x faster wake-up time, 400x lower write power than conventional embedded flash and 100x longer battery lifetime, NXP is making possible 'instant-on' IoT edge node products.
- i.MX RT1060 is the latest addition to the [i.MX RT crossover series](#) increases the on-chip memory to 1MB and expands connectivity options with high-speed GPIO and CAN-FD; dramatically expanding the range of edge node applications, including edge node inferencing that can derive the benefit of high-performance and real-time functionality.
- K32W0x is a highly secure, single chip device that combines Cortex®-M4 for high performance compute and sensor data processing, dedicated Cortex-M0+ for multi-protocol (Bluetooth 5 + Thread/Zigbee) low-power connectivity and industry's highest density of on-chip memory for expanded secure mesh networks. Included in NXP's MCUXpresso SW enablement environment is support for Bluetooth 5 and IEEE® 802.15.4 based secure mesh networking stacks for both Thread and Zigbee 3.0. For the fast-growing Smart Home applications, K32W0x also supports HomeKit over Bluetooth 5 connectivity with iCloud.

### **Intelligence at the Edge**

Simplifying end-to-end machine learning, NXP is assisting customers to build optimized neural networks for their specific machine learning challenges. In collaboration with Au-Zone, a leading supplier of Machine Learning and embedded Computer Vision tools, NXP customers can now use existing network topologies, or quickly design, train and optimize new networks for deployment across the breadth of NXP's portfolio. The networks generated by Au-Zone's easy-to-use DeepView ML toolkit and run-time inference engine can be directly integrated into the design flow of NXP's Software Development Kit (SDK).



## **New Security Devices and Solutions**

As a leading provider of security devices and solutions, NXP extends its expertise to provide end-end security from the edge node to the gateway and the cloud.

- NXP is raising-the-bar with new security platform for connected MCUs. The platform includes high throughput cryptographic sub-system, authenticated boot, threat detection & response, secure resource domain controller, and enablement for secure Over-the-Air (OTA) updates. Complementing on-chip security features, NXP and B-Secur, a leader in biometric authentication, are demonstrating an innovative authentication solution that uses individual's unique heart pattern (ECG) for identity, making systems more secure than using fingerprint or voice.
- New A71CH Secure Element (SE) a trust anchor, ready-to-use security solution for cloud onboarding, mutual device authentication, and edge node security
- Complementary secure device management suite, EdgeScale, is designed to enrich edge computing security and life cycle management capabilities for edge nodes from cloud services. EdgeScale provides both device firmware and cloud services that enable even small vendors to offer secure connectivity, device management, over the air (OTA) software update and cloud integration to their products.

## **Robust Ecosystem Support and IoT Enablement**

With over 20 years of success in applications processors, NXP has cultivated an extensive ecosystem of hundreds of trusted tool providers and ODM partners with experience in building application-specific solutions. Customers can leverage this proven, established ecosystem to migrate current designs or develop new applications to address the growing market opportunity.

New IoT enablement solutions include:

- Zephyr, an open-source collaborative RTOS project hosted by the Linux Foundation. NXP is a founding member of Zephyr and is also active in the Linaro IoT and Embedded group (LITE), which uses Zephyr as a main platform for IoT. Beyond the expected scheduling kernel, Zephyr OS includes networking, connectivity, and memory protection features developed by a diverse and growing open source community. Zephyr puts security first, by implementing auditable code bases and processes to address the security needs of connected IoT devices. Zephyr is now supported on select i.MX RT crossover processors, Kinetis connected MCUs and multi-core LPC MCUs.
- NXP Rapid IoT Development Kit accelerates development & deployment of IoT edge node designs by providing a power-optimized HW and SW prototype platform that provides compute, connectivity and security. With Rapid IoT's drag-and-drop style GUI-based programming, even innovators without embedded coding experience can easily create and



trial Proof-of-Concepts (PoC). Further, with over 400 Click boards™, RPK is expandable to most IoT end use cases, to create a virtually limitless number of applications.

### **Experience NXP's IoT Edge Corridor at Embedded World**

NXP will showcase its latest solutions for intelligent end-nodes, connected cars, and industrial systems at Embedded World 2018 at the NXP booth, #4A-220.

A highlight of the show will be the NXP IoT Edge Compute Experience, located at the entrance to exhibition hall 4A. To RSVP your personalized visit to the IoT Edge Compute Experience or schedule a meeting during Embedded World 2018, please contact [pr@nxp.com](mailto:pr@nxp.com).

To hear the latest news for NXP at the show visit the [NXP Embedded World 2018 press room](#).

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### **About NXP Semiconductors**

NXP Semiconductors N.V. (NASDAQ:NXPI) enables secure connections and infrastructure for a smarter world, advancing solutions that make lives easier, better and safer. As the world leader in secure connectivity solutions for embedded applications, NXP is driving innovation in the secure connected vehicle, end-to-end security & privacy and smart connected solutions markets. Built on more than 60 years of combined experience and expertise, the company has over 30,000 employees in more than 30 countries and posted revenue of \$9.26 billion in 2017. Find out more at [www.nxp.com](http://www.nxp.com).

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