NXP Unveils Advanced i.MX Applications Processors with Easy-to-Deploy Security, Energy Efficiency and Scalability for the Industrial and IoT Edge

March 1, 2021

- Expands its popular i.MX applications processor continuum with ultra-low power i.MX 8ULP, Microsoft Azure Sphere-certified i.MX 8ULP-CS and the next generation of scalable, high-performance i.MX 9 applications processors
- Provides a giant leap in security for edge processors with integration of EdgeLock™ secure enclave – a self-managed, autonomous on-die security subsystem that simplifies deploying state-of-the-art security technologies
- Maximizes energy efficiency in edge devices with innovative Energy Flex architecture

EINDHOVEN, The Netherlands, March 01, 2021 (GLOBE NEWSWIRE) -- NXP Semiconductors N.V. (NASDAQ: NXPI) today announces the expansion of its EdgeVerse™ portfolio with its crossover applications processors, including i.MX 8ULP and i.MX 8ULP-CS (cloud secured) Microsoft Azure Sphere-certified families, as well as next-generation i.MX 9 series of high performance intelligent applications processors. The expansion includes new innovations with EdgeLock secure enclave to enhance edge security and Energy Flex architecture to maximize energy efficiency.

"The next evolution of the edge will be driven by distributed intelligence across billions of devices, and that requires profound innovations in processing, energy efficiency, and security," said Ron Martino, senior vice president and general manager, Edge Processing Business, NXP Semiconductors. "Our announcements today, including Microsoft Azure Sphere, mark an industry milestone in ultra-low power processing and trusted cloud-to-edge security."

EdgeLock secure enclave – self-managed, autonomous on-die security subsystem
Building on its strong history of providing turnkey security solutions, NXP introduces the EdgeLock™ secure enclave, a pre-configured security subsystem that simplifies implementation of complex security technologies and helps designers avoid costly errors. It enhances protection to the edge device by autonomous management of critical security functions, such as root of trust, run-time attestation, trust provisioning, secure boot, key management, and cryptographic services, while also simplifying the path to industry-standard security certifications. The EdgeLock secure enclave intelligently tracks power transitions when end-user applications are running to help prevent new attack surfaces from emerging.

The secure enclave will be a standard integrated feature across the i.MX 8ULP, i.MX 8ULP-CS with Azure Sphere, and i.MX 9 applications processors, providing developers with a wide range of compute scalability options to easily deploy security on thousands of edge applications.

Security peace of mind with Azure Sphere
Keeping an edge device secure long after initial deployment is a challenge that requires nonstop trusted management services. NXP partnered with Microsoft to bring this capability to its customers with Azure Sphere chip-to-cloud security in the i.MX 8ULP-CS (cloud secured) applications processor family. The i.MX 8ULP-CS with Azure Sphere incorporates Microsoft Pluton enabled on EdgeLock secure enclave as the secured root of trust built into the silicon itself, and as a key step toward enabling highly secured devices for a vast range of IoT and industrial applications. In addition to the secured hardware, Azure Sphere includes the secured Azure Sphere OS, the cloud-based Azure Sphere Security Service, and ongoing OS updates and security improvements for over ten years. Azure Sphere chip-to-cloud security will be enabled on specific products within the i.MX 9 series, giving developers an even broader set of processor options to implement managed device security across more of their products.

"This collaboration is going to empower a whole new class of connected devices supported by ongoing security improvements. The i.MX 8ULP-CS with Microsoft Azure Sphere will provide security, productivity, and opportunity for partners," said Dr. Galen Hunt, Distinguished Engineer and Managing Director, Microsoft Azure Sphere. "By combining the power and flexibility of the NXP i.MX family of chips with intelligent, responsive Azure Sphere security at scale, customers can transform products, services, and experiences with confidence, knowing that Microsoft has their back."

Energy Flex architecture for tailored application-specific power-performance profiles
Optimizing energy use at the chip level is becoming an increasingly crucial part of designing energy-efficient edge systems. NXP's implementation of innovative Energy Flex architecture is designed to extend battery life and reduce energy waste in portable or plugged-in devices.

In the i.MX 8ULP and i.MX 8ULP-CS families, the Energy Flex architecture delivers as much as 75% improved energy efficiency than its predecessor by uniquely combining heterogeneous domain processing, design techniques and 28nm FD-SOI process technology. Embedded in these processors is a programmable power management subsystem that can govern more than 20 different power mode configurations to deliver exceptional energy efficiency – from full power to as low as 30 microwatts. Using this range of flexible configurations, OEMs and developers can customize application-specific power profiles to maximize energy efficiency.

Advanced intelligent applications processors for multi-sensory data

Building on the market-proven i.MX 6 and i.MX 8 series of applications processors, NXP's i.MX 9 series debuts a new generation of scalable, high-performance processors. Scalable i.MX 9 families bring together higher performance applications cores, an independent MCU-like real-time domain, Energy Flex architecture, state-of-the art security with EdgeLock secure enclave, and dedicated multi-sensory data processing engines (graphics, image, display, audio and voice). The i.MX 9 series integrates hardware neural processing units across the entire series for acceleration of machine learning applications. It also marks NXP's first implementation of the Arm Ethos U-65 microNPU, which makes possible building low cost, energy-efficient edge machine learning (ML). The first families in this series will be built in 16/12nm FinFET class of process technology with specific

low power optimization.

For more information on these products and technologies please visit NXP.com or contact NXP Sales worldwide.

About NXP Semiconductors
NXP Semiconductors N.V. (NASDAQ: NXPI) enables secure connections 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 automotive, industrial & IoT, mobile, and communication infrastructure markets. Built on more than 60 years of combined experience and expertise, the company has approximately 29,000 employees in more than 30 countries and posted revenue of $8.61 billion in 2020. Find out more at www.nxp.com.

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NXP i.MX 9 Applications Processors

NXP's Next-Generation i.MX 9 Applications Processors Redefine Security and Productivity at the Edge

NXP's EdgeLock secure enclave

NXP's Innovative EdgeLock™ Secure Enclave Simplifies the Complexity of Securing Billions of IoT Devices

NXP i.MX 8ULP

NXP Elevates Security and Energy Efficiency for the Edge with i.MX 8ULP and the Microsoft® Azure Sphere-certified i.MX 8ULP-CS Applications Processor Families

Source: NXP USA, Inc.