NXP Introduces Multisensory Automotive eCockpit Platform to Advance Multimedia Experiences in Future Cars

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First i.MX 8 offerings deliver exceptional combinations of security, performance and scalability for car manufacturers

DETROIT, Oct. 05, 2016 (GLOBE NEWSWIRE) -- **(NXP FTF Connects Forum) --** NXP Semiconductors N.V. (NASDAQ:NXPI) today unveiled the first members of its latest i.MX series of applications processors with three new devices designed to redefine the secure, automotive eCockpit. With the move to fully digital eCockpit, car manufacturers and their tier one suppliers must deliver solutions that combine stunning graphics and automotive-grade reliability for the display of safety-critical information, as well as outstanding performance to support multisensory features like intuitive gesture control, natural speech recognition and audio acceleration. NXP's newest i.MX processors are specifically designed to meet these demanding market requirements.

The new family, which is based on up to six 64-bit ARM®v8-A technology processor cores and includes a HiFi 4 DSP, LPDDR4 and DDR4 memory support as well as dual Gigabit Ethernet with audio video bridging (AVB) capability, is designed to advance automotive dashboard graphics such as instrument clusters, infotainment visuals, heads-up displays, rear-seat screens and more. Capable of driving four HD screens with independent content or a 4K screen, the new devices introduced today include:

- i.MX 8QuadMax which integrates two ARM Cortex®-A72 cores, four Cortex-A53 cores, two Cortex-M4F cores and two GC7000XS/VX GPUs
- i.MX 8QuadPlus which integrates one ARM Cortex-A72 core, four Cortex-A53 cores, two Cortex-M4F cores and two GC7000LiteXS/VX GPUs
- i.MX 8Quad which integrates four Cortex-A53 cores, two Cortex-M4F cores and two GC7000LiteXS/VX GPUs

"The rising interest in connected vehicles is exciting for everyone in the automotive industry, especially semiconductor suppliers," said Geoff Lees, general manager and senior vice president of microcontrollers at NXP. "We align ourselves closely with the latest automotive industry technology and security trends, with uncompromising quality. As the number one provider for automotive ICs, we are in the forefront of defining and driving the enablement of digitally advanced, secure, connected multisensory experiences for future cars and their drivers."

Many Platforms, One Chip
NXP's new i.MX 8 series greatly simplifies developing, testing and deploying multi-OS platforms on a single processor. The i.MX 8 family in particular is built with full-chip, hardware based virtualization and domain protection. Every IP resource, from GPUs to serial ports, has resource protection, ownership rights and access permissions built right into its hardware. This helps ensure an OS only accesses those resources assigned, greatly increasing platform reliability and reducing the inherent risks associated with software-based sharing techniques. Operating systems can be deployed 'out of the box' by utilizing the i.MX 8 split GPU and display controller architecture, assigning one GPU and display controller to each OS, providing both with deterministic performance without risking the complexity inherent to paravirtualizing a monolithic GPU and display controller pipeline.

Multi-Display, Safely, Securely
i.MX 8 can drive four HD displays with independent content and helps ensure those screens 'stay up' even in the event of a system crash and is critical to the design of ASIL-B compliant systems. The i.MX 8 supports up to 16 hardware-based firewall domains engineered to isolate crashes, external attacks and other system level issues. In addition, the SafeAssure® Fail-Over capable display controllers monitor the system's graphics pipeline and if a failure is detected, will automatically fail-over to a fully isolated display path. Users continue to see critical information on every display, even if the processor is fully rebooted. With i.MX 8, if an infotainment or other connected sub-system is compromised, the hardware-based i.MX 8 partitioning architecture ensures that all other eCockpit subsystems – including safety-critical displays – remain up and functioning.

In addition, the new i.MX 8 processors incorporate advanced security technologies and standards, including encrypted boot, elliptical curve cryptography, secure key storage, as well as support for AES, SHE and other automotive security standards – all in a single AEC-Q100 Grade 3 qualified device.

Exceptional scalability
Carrying forward the i.MX portfolio's hallmark of cross-portfolio compatibility, the three new i.MX 8 devices feature fourth generation scalability, delivering pin-, package- and power-compatibility with copy-exact IP for optimal software reuse and fast time-to-market. With a single platform to support a vast array of systems and end-devices, customers can design a single PCB platform, single system software build and utilize different i.MX 8 processors to address a broad spectrum of specifications and requirements.

Outstanding Vision Performance, Outstanding Experiences Everywhere

Enabling high performance vision processing at low power is an extremely difficult challenge. The i.MX 8 solves this by featuring GPUs with dedicated, software-agnostic vision processing hardware instructions enabling up to 800% better efficiency than a non-optimized GPU.

The new i.MX 8 devices will ship with extensive reference software, solutions and tools, to more-fully unlock its exceptional 4x screen capable

graphics processing, 4K video playback, integrated speech and complex vision processing capabilities. These open new ways to develop true multisensory human machine interfaces, help mobile service robots to "see and hear," enable autonomous flight of personal drones, build wearable devices that scan and speak, and enhance modern industrial automation efficiency in many ways we are only now beginning to imagine.

Availability
NXP plans sample availability for its first three i.MX 8 processors in Q1 of 2017. Please contact NXP sales for details. For more information, please visit www.nxp.com/iMX8.

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 44,000 employees in more than 35 countries and posted revenue of $6.1 billion in 2015. Find out more at www.nxp.com.

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