



NXP Introduces the Next Generation of Automotive Ultra-Wideband ICs Combining Secure Ranging and Short-Range Radar

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- *NXP's next-generation single-chip Ultra-Wideband (UWB) solution, Trimension™ NCJ29D6B, delivers secure and precise real-time localization improvements for secure car access, with enhanced system performance, reduced system cost and higher security compared to previous generations*
- *Trimension NCJ29D6A is the first monolithic UWB chip for automotive markets that combines secure localization and short-range radar with an integrated MCU, allowing OEMs to utilize one UWB system for multiple use cases ranging from child presence detection to secure car access*
- *Selected by major OEMs and expected to be on the road by 2025, the single-chip Trimension UWB radar and ranging solution for both driver assistance and convenience applications is designed to maximize system value*

EINDHOVEN, The Netherlands, Nov. 28, 2023 (GLOBE NEWSWIRE) -- NXP® Semiconductors (NASDAQ: NXPI) today announced the Trimension™ NCJ29D6, a fully integrated automotive single-chip Ultra-Wideband (UWB) family combining next-generation secure and precise real-time localization with short-range radar to address multiple use cases with a single system, including secure car access, child presence detection, intrusion alert, gesture recognition and more. Integrated by major automotive OEMs, devices from this family are expected to be on the road in model year 2025 vehicles.



Part of one of the industry's broadest UWB portfolios, the new family includes the highly integrated NCJ29D6B, the next generation UWB device for secure car access, delivering enhanced ranging performance, reduced system costs, higher security and turn-key software. The family also includes the pin-to-pin compatible NCJ29D6A, the industry's first automotive device combining both ranging and short-range UWB radar into a single chip with an integrated MCU.

This enables OEMs to transform a single UWB-based car access system into a fully flexible, multi-purpose platform, enabling multiple use cases with the same hardware and allowing OEMs to eliminate redundant systems and reduce cost, space and weight. For example, OEMs can leverage their secure car access system to also deliver features like child presence detection, in compliance with the U.S. Hot Cars Act and European NCAP roadmap. This helps streamline development and allows OEMs and Tier 1s to add additional features through software updates, helping to reduce the total cost of ownership and accelerating time to market for new features.

"UWB will drive new advancements in the consumer automotive experience, and this is only the beginning of what it will enable," said Markus Staebelin, Senior Vice President and General Manager Secure Car Access, NXP Semiconductors. "Automotive OEMs and Tier 1s will benefit from a

single system that can deliver multiple new software-defined experiences enabled by Trimension NCJ29D6 UWB ICs over time. Building on our expertise and standardization efforts in bodies such as the Car Connectivity Consortium (CCC) and the FiRa Consortium, we are helping UWB become an essential part of the automotive ecosystem.”

Next Generation Secure Car Access Solution

The new NCJ29D6B enables enhanced secure car access, allowing users to access their car hands-free through a digital key on a UWB-enabled mobile phone. The NCJ29D6B delivers a number of performance enhancements to deliver maximum design flexibility for OEMs and help future-proof secure car access capabilities. Higher RF sensitivity and two simultaneous operating receiver chains support antenna diversity and angle of arrival concepts to detect small changes in distance or direction of movement of other UWB-enabled devices. With a focus on system cost, the NCJ29D6B features increased CPU performance, larger memory size and high levels of integration, including an integrated digital CAN transceiver. This allows the developer to reduce the number of components per anchor to a single chip.

Extending UWB Capabilities with Radar

The pin-to-pin compatible NCJ29D6A extends the location features of the NCJ29D6B with short-range UWB radar. The first automotive device to combine these features within a single chip with an integrated MCU, the NCJ29D6A is able to sense the environment around it. This allows OEMs to transform a single UWB-based system into a multi-purpose platform, enabling multiple use cases with the same hardware. In addition to secure car access, automotive OEMs can integrate in-cabin sensing for child presence detection and seat belt reminder, kick sensor for automatic trunk opening, as well as various kinds of smart gesture recognition, allowing them to maximize the value of UWB capabilities in automotive applications.

Security by Design

Designed with the expectation that the variety of physical and cyber security attacks on vehicles will increase over time, NXP’s new UWB family anticipates the need for integrated security capabilities. Both devices are designed to exceed the ISO21434 Cyber Security Requirements. In addition, CCC MAC and FiRa MAC offer standard-compatible UWB ranging protocols docking directly to the customer application software, enabling and simplifying AUTOSAR architectures.

Expanding Portfolio

The new Trimension IC family expands NXP’s portfolio of Connected Car Consortium-based smart access solutions, including KW45/47 wireless MCUs for Bluetooth Low Energy, NCx332x automotive NFC frontend, NCJ37x automotive secure element and FS24 family of automotive safety Mini CAN FD SBC.

For more information on the platform, please visit [nxp.com/UWB](https://www.nxp.com/UWB) or contact NXP Sales worldwide.

About NXP Semiconductors

NXP Semiconductors N.V. (NASDAQ: NXPI) brings together bright minds to create breakthrough technologies that make the connected world better, safer and more secure. As a world leader in secure connectivity solutions for embedded applications, NXP is pushing boundaries in the automotive, industrial & IoT, mobile, and communication infrastructure markets while delivering solutions that advance a more sustainable future. Built on more than 60 years of combined experience and expertise, the company has approximately 34,500 team members in more than 30 countries and posted revenue of \$13.21 billion in 2022. Find out more at www.nxp.com.

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Source: NXP USA, Inc.