# NXP Extends Industry-First 28 nm RFCMOS Radar One-Chip Family to Enable ADAS Architectures for Software-Defined Vehicles

January 9, 2024 at 12:00 PM EST

- *New radar one-chip targets distributed radar architectures and is designed to deliver a seamless transition path from today's smart sensors to future streaming sensors*
- *NXP's full system solution enables software-defined radar, including 360-degree sensor fusion, better sensor resolution and AI-based object classification*
- *HELLA, as a leading supplier of automotive electronics, will leverage NXP's SoC family as the foundation for its 7 th generation radar portfolio*

LAS VEGAS, Jan. 09, 2024 (GLOBE NEWSWIRE) -- **CES** – NXP Semiconductors N.V. (NASDAQ: NXPI) today announced an extension of its automotive radar one-chip family. The new SAF86xx monolithically integrates a high-performance radar transceiver, a multi-core radar processor and a MACsec hardware engine for state-of-the-art secure data communication over Automotive Ethernet. Combined with NXP's S32 high-performance processors, vehicle network connectivity and power management, the full system solution paves the way for advanced, software-defined radar.

The highly integrated radar SoC (System-on-Chip) is intended for streaming rich low-level radar sensor data at up to 1 Gbit/s. It helps carmakers optimize next-generation ADAS partitioning for software-defined vehicles, while providing for a smooth transition to new architectures. Additionally, OEMs will be able to easily introduce new software-defined radar features during the lifetime of the vehicle through Over-the-Air (OTA) updates.

It also shares a common architecture with the SAF85xx introduced last year and leverages 28 nm RFCMOS performance for significantly improved radar sensor capabilities, compared to prior-generation 40 nm or 45 nm products. It enables Tier-1 suppliers to build more compact and power-efficient radar sensors. Drivers and other road users will benefit from extended detection range beyond 300 m, along with more reliable detection of small objects like curb stones as well as vulnerable road users including cyclists and pedestrians.

HELLA, a leading supplier of automotive electronics, will leverage NXP's SoC family as the foundation for its 7 th generation radar portfolio, including variants for front, rear, corner, and side radar. Dr. Dietmar Stapel, Vice President, Radar Program Management at HELLA, stated: "After initiating our collaboration with NXP on the development of RFCMOS-based radar sensors approximately 10 years ago, we can now look back and confidently say that choosing this collaboration was the right decision. Leveraging NXP's RFCMOS TEF81xx and TEF82xx automotive radar transceivers, we have become a leading provider of automotive 77/79 GHz corner radar sensors. With NXP's radar SoC family, we are now prepared to expand our market position and offer radar solutions for all relevant radar-supported functions, up to level 4 automated driving."

The new radar one-chip supports NCAP safety functions including emergency braking and blind-spot detection. It also supports advanced ADAS and autonomous driving applications, including advanced comfort features for SAE levels 2+ and 3 such as traffic jam assist, highway pilot and park assist, front and rear cross-traffic alerts, as well as lateral and rear collision avoidance.

"Using our new SAF86xx radar one-chip family, OEMs can quickly and easily migrate their current radar platforms to new software-defined vehicle architectures," said Steffen Spannagel, SVP and GM, ADAS, NXP Semiconductors. "A network of connected radar sensors with software-defined functions on a dedicated S32R radar processor in a distributed architecture can enhance radar-based perception to support advancements in autonomous driving. That includes 360-degree sensing, more powerful AI-based algorithms and secure OTA software updates."

The comprehensive SAF8xxx family featuring the new SAF86xx and SAF85xx can be tailored for individual OEM use cases. It supports a range of sensor outputs, including object, point cloud-, or range-FFT-level data for smart sensors in today's architectures and streaming sensors in future distributed architectures.

**Extending NXP's 3 rd generation RFCMOS radar platform**

- Built on the proven RFCMOS automotive radar expertise of NXP, which was the first to ramp to high volume series production and has already shipped tens of millions of units
- The highly integrated 76 to 81 GHz SAF86xx radar SoC is optimized for streaming sensors and include a Gigabit Ethernet interface and enhanced MACsec security
- The SAF86xx is developed in accordance to ISO 26262 Safety Element out of Context (SEooC) methodology supporting ASIL Level B, in accordance to ISO/SAE 21434 (as a component-out-of-context) and meets the latest security requirements through its HSE security engine

**Availability**
The SAF86xx radar SoC family is sampling now for alpha customers.

For more information, please visit: www.nxp.com/saf86xx

**NXP at CES 2024**
CES is the perfect time of the year to connect and take innovation to the next level -- together. Come join us at the LVCC, booth CP-18 and experience our scalable radar portfolio.

**NXP's Radar Portfolio**
Already sampling to lead customers and targeting next-generation OEM platforms, NXP's new SAF86xx radar family builds upon NXP's complete suite of radar sensor solutions designed to surround vehicles in a 360-degree safety cocoon. The scalable suite of sensing solutions is tailored to cover car OEMs' ever-diversifying use cases and architectures, from corner radar to high-resolution 4D imaging radar. The S32R platform offers a common architecture for software reuse and speedy development along with a high-performance hardware security engine, OTA update support and compliance with the newest cybersecurity standards.

**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.

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. All rights reserved.
© 2023 NXP B.V

**For more information, please contact:**

| **Americas & Europe** | **Greater China / Asia** |
| --- | --- |
| Andrea Lempart | Ming Yue |
| Tel: +49 175 610 695 1 | Tel: +86 21 2205 2690 |
| Email: andrea.lempart@nxp.com | Email: ming.yue@nxp.com |

NXP-Corp
NXP-Auto

A photo accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/361593ed-b0ca-46be-9547-e32c612c624d

**NXP Extends Industry-First 28 nm RFCMOS Radar One-Chip Family to Enable ADAS Architectures for Software-Defined Vehicles**

**NXP announced an extension of its automotive radar one-chip family. The new SAF86xx monolithically integrates a high-performance radar transceiver, a multi-core radar processor and a MACsec hardware engine for state-of-the-art secure data communication over Automotive Ethernet.**

Source: NXP USA, Inc.