NXP Ramps Flagship 4D Imaging Radar Chip to Production, Adds New Product Tailored for Fast-Growing L2+ Market

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- NXP's flagship S32R45 and new S32R41 processors serve L2+ through L5 autonomy, enabling 4D imaging radar for 360-degree surround sensing
- Based on a common architecture, the S32R radar processors enable software reuse and scalable radar platform development across autonomous driving levels
- At CES, NXP will demonstrate imaging radar with CubTEK and introduce its upcoming radar Tech Day

LAS VEGAS CES, Jan. 04, 2022 (GLOBE NEWSWIRE) -- NXP® Semiconductors (NASDAQ: NXPI) has announced two updates to its industry leading automotive radar portfolio, now designed-in at 20 top global OEMs. The industry's first dedicated 16nm imaging radar processor , the NXP S32R45, has been released into mass production, with initial customer ramp-up starting in the first half 2022. Additionally, the new NXP S32R41 has been introduced to extend 4D imaging radar's benefits to a much larger number of vehicles. Together these processors serve the L2+ through L5 autonomy sectors, enabling 4D imaging radar for 360-degree surround sensing.

Imaging radar extends radar's ability beyond detecting bulky objects to "seeing" a vehicle's environment through fine resolution point clouds that enhance environmental mapping and scene understanding. These images enable the classification of objects, such as vulnerable road-users and vehicles, in complex urban scenarios, such as a motorcycle driving close to a large delivery truck or a child entering a roadway between parked cars. In addition, imaging radar needs to be able to simultaneously measure velocity and classify objects at distances of up to 300m, beyond the range of human eyesight. It also needs to identify fast-moving vehicles and distinguish them from slower ones or even static obstacles, like a lost tire, in the driver's path. NXP addresses these needs with its latest imaging radar processor updates.

NXP's 4D imaging radar is the first to deliver concurrent 3-in-1 multi-mode radar sensing across short-, mid- and long-range operation, enabling the simultaneous sensing of a very wide field of view around the car. To achieve this, NXP leverages an innovative architecture to boost performance beyond raw sensor hardware capabilities with a low-complexity sensor configuration utilizing 192 virtual antenna channels. The boost is enabled by the combination of proprietary radar hardware acceleration which can deliver up to 64x the compute performance of standard processors, super-resolution radar software algorithms to achieve sub-degree angular resolution and advanced MIMO waveforms that allow simultaneous operation of antenna channels. This architecture also helps overcome the limitations of other high-resolution sensors like LIDAR and high antenna count massive MIMO radar, whose cost and complexity limit their applications to a narrow set of use cases.

"NXP's new imaging radar processors are shaping the way vehicles understand the world around them by creating high resolution images that enhance the detection and classification of objects, a key step in improving road safety and saving lives," said Torsten Lehmann, EVP and GM, Radio Frequency Processing, NXP. "The extended S32R family line-up harnesses our leadership in radar processing, super-resolution algorithms and advanced MIMO waveforms to deliver the benefits of imaging radar to the rapidly growing L2+ vehicle segment."

NXP Imaging Radar Updates
The introduction of the S32R41 delivers the industry's first 16nm radar processor tailored for L2+ autonomous driving applications, which some industry analysts project could account for close to 50% of vehicle production by 2030. The L2+ segment, which was not well served by classical high-resolution sensors, will now benefit from 4D imaging radar sensing with up to six corner, front and rear radar sensors in 360-degree surround fashion.

The S32R45 radar processor is the flagship of NXP's 6th generation automotive radar chipset family. It helps to enable increasingly autonomous driving, from L2+ through the most demanding L5 use cases, where more than ten imaging radar sensors per vehicle may be required. It also addresses transportation, traffic management and other industrial applications where reliable high-resolution sensing is required.

The combination of NXP's S32R45 and S32R41 radar processors with the NXP TEF82xx RFCMOS transceivers delivers the fine angular resolution, processing power and range required for production-ready imaging radar solutions. The S32R platform offers a common architecture for software reuse and speedy development along with a highly performant hardware security engine, OTA update support and compliance with the newest cybersecurity standards.

NXP at CES 2022 {Booth [CP-18]}
Visitors to the NXP booth at CES can see a live demonstration of NXP's radar capabilities via an imaging radar sensor built in collaboration with radar platform and ADAS application expert CubTEK, showcasing enhanced 4D sensing capability with its ability to deliver image-like sensing and sub-degree angular resolution.

Due to the strict COVID-19 rules, NXP invites visitors to the booth to book an appointment slot for the live demonstration of the S32R45 imaging radar system. Please contact Alisha Perkins

Save the Date for NXP Imaging Radar Tech Day, February 23-24, 2022

Following CES, NXP invites radar and ADAS platform developers who wish to learn more about imaging radar technologies to join its virtual Imaging Radar Tech Day at the end of February. For more information, please contact Alisha Perkins

For more information about the S32R45 and S32R41 processors, please visit:

S32R45: www.nxp.com/s32r45

S32R41: www.nxp.com/s32r41

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.

About CubTEK
CubTEK, an ADAS total solution provider, is engaged in research, development, manufacturing, sales and marketing of millimeter-wave radar related sensors. As a top-tier manufacturer with a complete product line, CubTEK provides short, medium and long-range radar solutions to OE vehicle manufacturers. Applications include AEB (Automatic Emergency Braking), ACC (Adaptive Cruise Control), Turn Assist, Vital Sign Detection and Corner Radar with Parking Assist and Blind Spot Detection functionalities. CubTEK's state-of-the-art radar technology provides next generation radar products, including 4D imaging radar and related products that work to fill new international requirements. CubTEK has exponentially grown since 2018 with a substantial commercial vehicle base and capable to fit in application for virtually any motor vehicles. For more information, please visit www.cubtek.com.

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A photo accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/20613da6-6b4a-4c74-9798-aece6a63f727

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Source: NXP Semiconductors N.V.