NXP Announces Safe and Secure Automotive Ethernet Switch for Time Sensitive Networking (TSN)

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New Ethernet Switch is key component of NXP Vehicle Networking Solution that offers high levels of performance, safety and security

LAS VEGAS, Jan. 06, 2020 (GLOBE NEWSWIRE) -- NXP Semiconductors N.V. (NASDAQ: NXPI), the world's largest supplier of automotive semiconductors, has announced a multi-gigabit Ethernet switch designed to help automakers deliver the high-speed networks required for evolving connected vehicles. The NXP SJA1110 is the first automotive Ethernet switch with safety capabilities built in, offering integrated 100BASE-T1 PHYs, hardware-assisted security as well as multi-gigabit interfaces. Optimized for integration with NXP's S32G vehicle network processor, the SJA1110 switch is also part of an overall networking solution which includes the VR5510 power management IC. Together, this solution addresses the biggest challenges facing vehicle networking today including scalability, safety, security and high-speed traffic engineering.

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Sophisticated new Service-Oriented Gateways and domain controllers are required to accommodate connected services such as Over-The-Air updates and emerging data-driven applications, while also supporting the underlying Ethernet-based web sensors, actuators and processing unit. These networks must be scalable and move data quickly and securely without posing dangers to the car, the passengers or their personal data. Additionally, these car networks must deliver the functional safety needed to ensure that if vehicles fail, they do it safely.

The SJA1110 Ethernet switch helps carmakers obtain the scalability, security and performance with the right mix of hardware features and a balanced number of ports for high and low-port-count ECUs. The SJA1110 is aligned to the latest TSN standards and offers integrated 100BASE-T1 PHYs, hardware-assisted security and safety capabilities along with multi-gigabit interfaces.

Safety
The SJA1110 enables customers to meet their ASIL requirements and enrich the safety capabilities of the vehicle by implementing dedicated failure-detection mechanisms that can enable predictive maintenance solutions. Such approaches can then significantly contribute to the comfort of the final vehicle owner and reduce cost and improve efficiency for large fleet management firms.

Security
NXP's heritage in bank cards and e-passports has been incorporated into the SJA1110 as part of a layered security approach complete with hardware assisted secure boot, denial-of-service prevention and distributed Intrusion-detection capabilities. The SJA1110 switch processes every Ethernet frame reaching the ECU by validating it against HW-based security rules which in turn collect statistics and can trigger escalations if something is not conformant to specification. Such mechanisms are the basis for building best-in class firewall and intrusion detection systems.

Scalability
Available in four hardware (HW) and software (SW) compatible variants, with a rich set of NXP original SW, an open integrated controller, and several BOM optimization options, the SJA1110 switch provides a solid foundation for scalable ECU designs for complex gateways, advanced driving assistance systems and infotainment units.

NXP Automotive Network System Solution
The SJA1110 multi-gigabit safe and secure automotive Ethernet switch is optimized for integration with S32G vehicle network processors as part of an automotive network system solution that includes the VR5510 PMIC. Together, S32G processors and SJA1110 enable the automotive industry shift to

high performance domain-based vehicle architectures and provide reduced software complexity and enhanced security and safety. Adopted by top global OEMs, the S32G processors' primary role will be in service-oriented gateways that will help transform OEMs from carmakers into vehicle data-driven service providers with expanded business opportunities.

About NXP Semiconductors
NXP Semiconductors N.V. 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 30,000 employees in more than 30 countries and posted revenue of $9.41 billion in 2018. Find out more at www.nxp.com

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