NXP Unveils Advanced TSN-Enabled SoC for Industrial IoT

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Integrating Time-Sensitive Networking (TSN) Enables Standardized, Real-time Industrial Ethernet Networks for Industry 4.0

NUREMBERG, Germany, March 14, 2017 (GLOBE NEWSWIRE) -- **(EMBEDDED WORLD 2017) --** NXP Semiconductors™ N.V.(NASDAQ:NXPI), a worldwide leader in advanced connectivity solutions, today announced its newest QorIQ® Layerscape SoC, the LS1028A, integrating Time-Sensitive Networking (TSN) capabilities based on the IEEE 802.1 standards.

As industrial OEMs design solutions for Industry 4.0, they must converge the operations technology (OT) domain with their information technology (IT) infrastructure. However, OT networks require guaranteed and timely delivery of packets, not the typical best-effort approach used in IT networks today. At the same time, current technologies in the OT domain are often limited to 10-100 Mbps, and do not have the bandwidth to support new technologies that are being applied to manufacturing, such as high-definition video. Time-sensitive networking supports legacy IT equipment and OT equipment on the same network, enabling Gigabit bandwidth while simplifying network deployment and management.

To provide deterministic Ethernet for industrial applications, IEEE defined TSN to support real-time, reliable networking. TSN represents the next step in the evolution of Ethernet as a ubiquitous networking technology and TSN-enabled Ethernet will play an important role in the Internet of Things (IoT) and the Industry 4.0 revolution. GE estimates that the industrial internet market could reach $225 billion by 2020[i].

The LS1028A builds on NXP's Layerscape family of SoCs while adding significant capabilities, including upgraded 64-bit ARM® Cortex v8 processor cores, an integrated 3D GPU and LCD controller, a four-port TSN switch and two separate TSN Ethernet controllers. The combination of time sensitive networking with a GPU enable the SoC to address industrial human machine interface and control applications. The device is built on NXP's Trust Architecture, which provides a root of trust, securing applications and services. It is designed to support both TSN bridging applications as well as TSN endpoint applications and will be offered with a 15-year manufacturing promise.

"TSN is the foundation of the Industrial IoT and Industry 4.0, enabling the convergence of information and operational technology networks," commented Noy Kucuk, vice president, Digital Networking at NXP. "Building on NXP's decades of industrial experience, the LS1028A solves important challenges in processing, connectivity, and low-power design."

Robust Reference Design Platform for Rapid Productization

OEMs can begin developing TSN-enabled systems today using NXP's TSN reference design platform, accelerating prototyping and the deployment of next-generation industrial solutions. The reference design provides four switched Gigabit Ethernet TSN ports, combined with the processing and security capabilities of NXP's Layerscape processors. The platform includes an open-source, industrial Linux SDK with real-time performance, TSN configuration support, and the IEEE 1588 Precision Time Protocol. Developers can quickly show the benefits of TSN time-aware shaping and per-stream policing using the configuration software included with SDK. Developer's applications written for the reference design will be forward compatible with the LS1028A SoC through standard APIs.

Availability

- For more information on the LS1028A, please visit nxp.com/LS1028 or contact NXP Sales.
- The NXP TSN reference design platform will be demonstrated at Embedded World 2017 in NXP's booth (4A-220) and is available now. More information can be found by visiting www.nxp.com/LS1021ATSN.

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 31,000 employees in more than 33 countries and posted revenue of $9.5 billion in 2016. Find out more at www.nxp.com.

[i] https://www.ge.com/digital/blog/everything-you-need-know-about-industrial-internet-things

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