



APRIL 2019

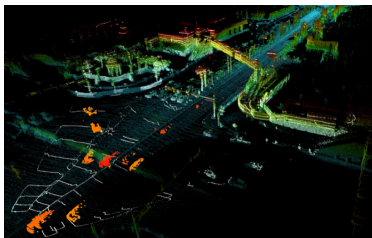
## Next-Generation Networking

PCIe 3.1 Ethernet Bridge Enables Power Savings for Embedded and Automotive Platforms

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### FEATURE



## FM Lidar Versus the Alternatives: Comparisons and Design Tradeoffs

STEPHEN CROUCH, BLACKMORE SENSORS AND ANALYTICS, INC.

The need for lidar in the autonomous vehicle sensor stack led to an explosion of investment from OEMs between 2016 and 2018. More than 70 companies received a total of over \$1 billion to bring competing lidar approaches to the market. Frequency modulation (FM) is a measurement technique borrowed from modern radar systems now being applied to automotive lidar.

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### BLOG

## Achieving Effective Verification and Validation Of Vehicle E/E Systems ? Part 2

LANCE BROOKS, MENTOR GRAPHICS, A SIEMENS BUSINESS

With respect to the design of electrical/electronic (E/E) systems, development methodologies and verification & validation (V&V) tools have advanced significantly over the past few decades. Today, the model-driven development (MDD) methodology and ?X?-in-the-loop (XIL) verification approaches are well established as effective means to develop safe and secure vehicle E/E systems.

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### BLOG



## Why the U.S. is Falling Behind in AI and Autonomous Drive Tech, Part 2

BRANDON LEWIS, EDITOR-IN-CHIEF

A few years ago the U.S. led the world in wireless vehicle-to-vehicle and vehicle-to-infrastructure (V2X) technology. Pilots were popping up around the country based on the IEEE 802.11p protocol (also known as wireless access in vehicular environments (WAVE) or

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## TE Connectivity's / DEUTSCH HD Harsh Environment Connectors

Rugged and reliable connector system primarily used for diagnostic applications.

## BLOG



## Using ADASIS Version 3 for Precision Localization in Highly Automated Driving, Part 2

DR. ING. SEBASTIAN OHL AND OLAV KOSKA, ELEKTROBIT  
AUTOMOTIVE GMBH

A major prerequisite for highly automated driving systems using high-definition map data is the knowledge about the vehicle's position. This position needs to have a much higher precision than can be achieved with a GNSS sensor alone. Therefore, various other sensor systems like gyroscopes or odometers can be used to enhance the position estimation. This contribution describes a system using another input, ADASISv3 map data, to improve the positioning.

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## BLOG

# Tesla's Latest Smart Move

ALIX PAULTRE, SENIOR TECHNOLOGY EDITOR

Tesla's acquisition of Maxwell in a \$218M all-stock deal shows how Elon Musk is still playing chess, making canny moves that will secure Tesla's future.

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## BLOG

## Where Infotainment Design is Headed in 2019

MAJEED AHMAD, CONTRIBUTING EDITOR

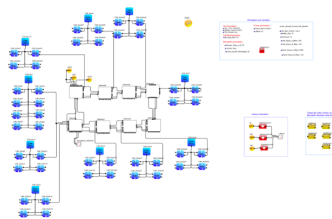
At CES 2019, while much of the limelight was inevitably



centered around autonomous vehicle initiatives like robocars and robotaxis, the show floor also displayed some exciting stuff for the next-generation infotainment, encompassing multiple digital assistants, voice navigation, virtual cockpit, and immersive entertainment.

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## BLOG



## Accurate Measurement of Latency and Throughput of Time Sensitive Networks

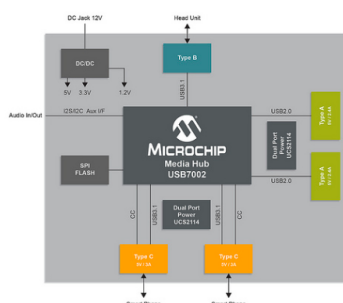
TOM JOSE, ELC LABS

Ethernet is non-deterministic with a degree of uncertainty in Quality of Service (QoS), potential packet losses and wide range latency. Time Sensitive Networking (TSN) can effectively change the scenario with its traffic shaping protocol IEEE802.1Qbv. It improves the end-to-end latency, which guarantees constant latency for time-critical Control Data Traffic (CDT) and makes Ethernet deterministic.

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## NEWS



## Microchip Releases First Automotive USB 3.1 SmartHub with Type-C Support

LAURA DOLAN, TECHNOLOGY EDITOR

Microchip Technology Inc.'s USB7002 SmartHub IC has hit the market, offering up to 10 times faster data rates and USB Type-C connector interfaces.

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## Toshiba Starts Sample Shipments of Automotive DC Motor Driver IC

KATELYN ALBANI, CONTRIBUTING AUTHOR

Toshiba Electronics Europe GmbH has started sample shipments of an automotive DC motor driver IC with LIN slave function that can communicate with a LIN 2.0 master IC for in-vehicle networks.

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## Micron and Qualcomm Launch 5G Automotive Platform

LAURA DOLAN, TECHNOLOGY EDITOR

Micron Technology, Inc. and Qualcomm Technologies, Inc. are joining forces on an advanced automotive connectivity solution that uses 5G networks for autonomous driving and direct cellular vehicle-to-everything (C-V2X) communication.

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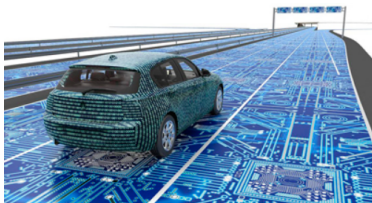
## Safety and Security ? A Common Theme for Mission-Critical Systems

**Sponsored by:** BlackBerry QNX

**Date:** April 30, 2pm ET

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## Qualified Code Generation Greatly Reduces Cost of Safety-Critical Automotive Software

ANSYS

As automobile electronics become more prevalent and sophisticated, ensuring the reliability of the embedded software code within those systems becomes critical to the safety of passengers and pedestrians.

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