

## THE LOW-DOWN ON EMBEDDED SECURITY



Embedded  
COMPUTING DESIGN

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## RF testing: The basis for automotive V2X



Dr. Thomas Bruggen, Rohde & Schwarz

Automated vehicles can safely navigate the road only if they have precise knowledge of the environment and traffic situation. A wide variety of sensors and cameras already provide some of this information. Additional information is supplied by using wireless technologies to connect vehicles. To ensure that safety-related data messages are received even under poor transmit conditions, the transmitter and receiver must adhere to minimum standards. Adherence can be verified using RF tests. Road safety has improved steadily as a result of many inventions. Mechanical... [Continued...](#)



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### **The developer's secret: How SOMs improved the IoT design process for Zero Emissions vehicle technology.**

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## Big Data enables preventative healthcare



Aaron Watts, InfiSIM

Big Data is here and over the last few years it's begun to become more and more prominent within our society. We seem to be tracking everything and making predictions based on the data we collate. We've become more analytical, more interested in the facts and figures, and more interested in how we can use data to improve the way we do business. This is especially true in healthcare. Big Data is not only used in healthcare to reduce waste and maximize financial gain... [Continued...](#)

## The Embedded Experts Podcast: Inside TrustZone for Cortex-M with Reinhard Keil



Brandon Lewis, Technology Editor *and* Rich Nass, Embedded Computing Brand Director



ARM's TrustZone technology has been available in higher end Cortex-A-class processors for some time, affording developers in the mobile industry the ability to secure their designs by isolating critical system functions from non-critical programs in secure,

memory protected regions. However, just because the technology has been available doesn't necessarily mean that it's been put to use. In this week's Embedded Experts Podcast, Embedded Computing Design editors Rich Nass and Brandon Lewis hash out some of the roadblocks of TrustZone technology with Reinhard Keil, Senior... [Continued...](#)

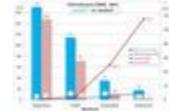


## Asking the right questions when selecting flash memory devices for industrial applications



Ulrich Brandt, Swissbit

Selecting flash memory devices, or solid-state drives (SSDs), for industrial applications is complex. Price-performance comparisons are of little use because the demand-driven definition of performance hinges on a host of factors. When it comes to standard IT applications, price-per-GB is a perfectly good purchase criterion for flash memory. In some cases, write and read speed is also considered. But if you have a need for flash memory devices for industrial applications, or you require memory cards for outdoor telecom applications, then your priorities are... [Continued...](#)



## 2017 embedded processor report: At the edge of Moore's Law and IoT



Brandon Lewis, Technology Editor

With the benefits of Moore's Law waning and the Internet of Things (IoT) targeting an untold number of lower end devices, embedded processor vendors are now tailoring solutions to the specific needs of end customers and applications more than ever before. The result? An emphasis on power efficiency, security, development tools, and cost. Forces at work in the electronics industry have reshaped the embedded processor landscape in recent years, among them, the slowing of Moore's Law and the realization that most IoT devices will... [Continued...](#)



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## A look at NB-IoT and LP-WAN from the top



Brandon Lewis, Technology Editor

The low-power, wide-area networking (LP-WAN) market is beginning to take form, with technologies such as LoRa, Sigfox, and LTE Cat-NB1 (formerly NarrowBand-IoT (NB-IoT)) looking to fill the void left by sunseting 2G networks that connected a variety of Industrial Internet of Things (IIoT) devices. While this sector promises to be a significant contributor to the number of overall IoT connections in coming years thanks to the comparatively low cost of the enabling network technologies, exactly which of these will emerge as viable large-scale solutions... [Continued...](#)



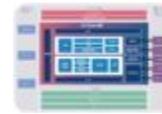
# Single-core, low-footprint NB-IoT design challenges



Emmanuel Gresset, CEVA *and* Denis Bidinost, NextG-Com



While the traditional mobile operators industry has focused on high end, high throughput application for the booming smartphone market, it's accumulated delays in standardization of a technology, which allows long range, low cost, and a massive number of low power devices in the operator-licensed spectrum. Competing technologies, such as LoRA, Sigfox, and others, have been successful in filling this gap, and the threat these are posing have hugely accelerated the push for a 3GPP standard that would counteract these competitive forces. As a result... [Continued...](#)

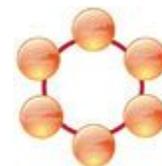


## IoT security starts with secure boot



Abhijeet Rane, Sequitur Labs

Securing Internet of Things (IoT) devices is at the top of everyone's list – or so it seems. Wherever you look there is a new story of more compromised devices that reminds everyone, once again, of the seriousness of the problem. There is also, it seems, a lot of confusion about how to properly secure such devices. Clearly, it cannot be accomplished with PC era practices. There is no antivirus (AV) software solution for IoT devices unless the device has a powerful processor and... [Continued...](#)



## Secure device design for IoT



Andrew Howard, Kudelski Security

In early January, D-link, a manufacturer of home wireless routers and webcams, was sued by the Federal Trade Commission (FTC) for not taking the necessary steps to secure their products, leaving them open to attacks such as the recent botnet events that compromised hundreds of thousands of home and enterprise devices. This suit will hopefully serve as a wakeup call to Internet of Things (IoT) device manufacturers about the ramifications of building and deploying poorly secured systems. It's obvious to my colleagues and I...

[Continued...](#)

## I3C: An upgraded interface for a world of sensors



Brandon Lewis, Technology Editor

Shortly after the 10 year anniversary of the iPhone, Ken Foust, Chair of the MIPI Alliance Sensor Working Group reflected on how that platform catapulted the use of sensors in smartphones to new highs, but also the challenges that increased sensor integration brought for legacy interfaces like SPI, UART, and I2C in terms of cost, power, and performance. Enter the Improved Inter-Integrated Circuit (I3C), a next-generation chip-to-chip interconnect capable of supporting not only mobile devices, but Internet of Things (IoT), wearables, and automotive sensor...



[Continued...](#)

# Automotive Ethernet for vision-based ADAS: Loss, cost, and latency



Brandon Lewis, Technology Editor

Automotive Ethernet is slowly but surely making its way into next-generation vehicle designs, but increasingly those designs also include advanced safety systems that require minimal latency. For the camera systems associated with these advanced driver assistance system (ADAS) functions, the image buffering, encoding, and decoding requirements of Ethernet could potentially have negative consequences on these real-time systems, despite the technology's increased bandwidth. In this interview with Marco Jacobs of IP vendor videantis GmbH, we discuss the pluses and minuses of Ethernet, and explore video... [Continued...](#)



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