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MAKERPRO FEATURE

Raspberry Pi Connect

JEREMY S. COOK, CONTRIBUTING AUTHOR

If you bought a Raspberry Pi computer, you probably first installed NOOBS/Raspbian and tried it out as a relatively simple desktop. This is all well and good of course, but the real power of Raspberry Pi systems isn't for replacing your desktop, but as a system that can be embedded anywhere.

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IoT SECURITY FEATURE

Fundamentals of IoT Security

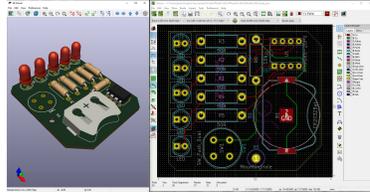
ERIC HEISER, HEAD OF SERVICES/SECURITY, U-BLOX

As IoT applications become mission critical, security is paramount. By their very nature, IoT ecosystems are vulnerable to security threats at multiple levels. Faced with a constantly evolving landscape, an agile approach to security is required by developers of IoT ecosystems, in order to respond rapidly to emerging threats. Both device manufacturers and ecosystem developers must have simple, scalable and sustainable IoT security strategies in place to achieve short- and long-term business objectives.

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DEV TOOLS & OPERATING SYSTEMS FEATURE

Take the Plunge into PCB Design



JEREMY S. COOK, CONTRIBUTING AUTHOR

While I've been experimenting with circuits for years, decades even, my projects tend to be filled with a rat's nest of wires. These snake about with the constant possibility of disconnection or other problems. They are a pain both to assemble and troubleshoot. Breadboards and perfboards are one possible solution, but I don't particularly enjoy working with them, and they also tend to be quite messy in my case.

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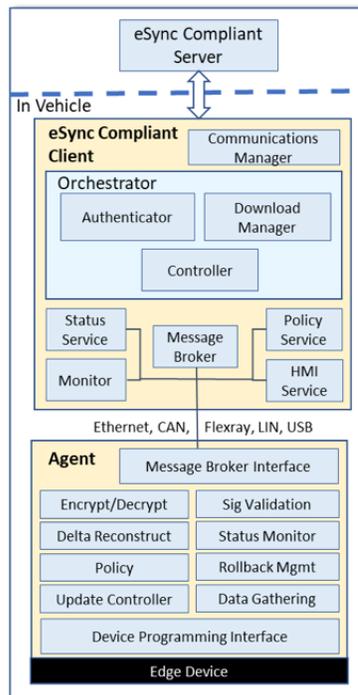
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AUTOMOTIVE NETWORKING FEATURE

In-Vehicle Networking Requirements for OTA Updates

GARY MANCHESTER, DIRECTOR NEW PRODUCTS AND TECHNOLOGIES, MOLEX, CONNECTED MOBILITY SOLUTIONS BUSINESS UNIT

Over-the-air (OTA) technology is becoming increasingly common in today's cars. With a bidirectional wireless connection to a server in the cloud, it handles both updates and data gathering.

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5G NETWORKING FEATURE

The 5G Infrastructure Race is On

NIR SHAPIRA, BUSINESS DEVELOPMENT DIRECTOR - MOBILE BROADBAND BU AT CEVA



For a while Huawei seemed to have a lock on much of the world's initial 5G infrastructure build-out across the

radio access network. Then geo-political concerns threw that into question. Now, all indications are that we're back to a level playing field as long as the other players can ramp up quickly on the radio technology. The doors are wide open, however 5G creates significant new demands on baseband systems.

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IoT SECURITY FEATURE

Why IoT Solutions Need Hardware-Based Security

SHARON HAGI, CHIEF SECURITY OFFICER, SILICON LABS

Security continues to be paramount for any electronics-based design, and this is especially the case for IoT deployments where complexity, resource constraints, and a high degree of connectivity exist. While extensively discussed, the approach to IoT security needs to rely on established security principles as well as careful consideration of the ever-changing threat landscape.

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INDUSTRIAL HARDWARE FEATURE

Four Types of Industrial Robots for Advanced Manufacturing

JEREMY S. COOK, CONTRIBUTING AUTHOR

When you hear the word "industrial robot" thrown around, you might think of robot arms welding cars as they travel down an assembly line, or a robotic cell quickly arranging computer chips. There are, of course, a wide variety of robot configurations to suit various manufacturing needs. While it would be impossible to discuss all of them in this article, here are a few robots that you may encounter in manufacturing, or perhaps implement to solve a problem yourself.

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IN-VEHICLE INFOTAINMENT FEATURE

How Automotive Infotainment Can Benefit from OTA Updates

CAMERON HOSNER, VICE PRESIDENT AND GENERAL MANAGER, OEM BUSINESS UNIT, ALPINE ELECTRONICS

In-vehicle infotainment (IVI) is an increasingly important factor for car manufacturers as they seek to differentiate their vehicles from the competition. When all cars are safe, comfortable, and efficient, IVI can become a significant reason for buyers to prefer one model over another.

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AUTOMOTIVE DEVELOPMENT TOOLS FEATURE

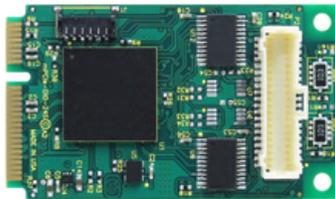
How smart is your car?

BRANDON LEWIS, EDITOR-IN-CHIEF, EMBEDDED COMPUTING DESIGN

What an ambiguous, loaded question that has become? These days, if someone asks you "How smart is your car?" it could mean almost anything. Is it a compact electric vehicle (recently discontinued in the U.S.)? Or, can your car drive itself? Does it speak to your equally-smart home? Or is it simply a shrewd investment?

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How to secure network equipment using Infineon OPTIGA? TPM hardware-based security solutions, the TPM Software Stack and Laner security expertise

INFINEON

Networks, servers and IT infrastructure function as the brain and backbone of any IoT system. Though invisible to the naked eye, they have the power to connect devices, equipment and, in some instances, entire factories. Due to the increasing connectivity and dependence on networks, network equipment has become a frequent target for attacks.



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Make Your Factories Smarter By Harnessing Industry 4.0

KEYSIGHT TECHNOLOGIES

The Internet of Things (IoT) is changing the way industries handle procurement, processing, distribution of materials, and their final products. The introduction of intelligent sensors, mission-critical communications, and automation into the manufacturing environment ushers in a fourth industrial revolution: Industry 4.0. Learn how to enable a new era of manufacturing intelligence with Industry 4.0.

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Selecting an Approach to Build Flexible, Cost-Effective ECU Production Test Systems

NATIONAL INSTRUMENTS

Modern vehicles can contain over 100 ECUs controlling everything from the drivetrain to the ADAS systems. Each ECU needs to be tested individually as well as in conjunction with other components. This white paper discusses the five main tester design challenges and five common approaches to ECU production test to give you the background and potential strategies to follow the right one for your project.

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The Benefits of RF Testing for Mission-Critical IoT Designs

ANRITSU

IoT brings a diverse array of technologies, multiple standards and minimal compatibility, as well as a new set of challenges for design and manufacturing, particularly in mission-critical IoT applications like health care, factory automation and transportation. With the stakes high it's crucial that designers have confidence in their chipsets, modules, end devices and networks, especially

in the RF domain, where environments significantly change once they reach the end users.

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Why IoT Solutions Need Hardware-Based Security

SILICON LABS

Security continues to be paramount for any electronics-based design, and this is especially the case for IoT deployments where complexity, resource constraints and a high degree of connectivity exist. While much talked about, the approach to IoT security needs to rely on established security principles as well as careful consideration to the ever-changing threat landscape.

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Optimize Power Distribution Networks for Flat Impedance

KEYSIGHT TECHNOLOGIES

A single rogue wave can kill a power distribution network (PDN) in high-speed digital design. Optimize your PDN to achieve a target impedance, while avoiding high Q resonances that can cause rogue waves. Learn how from the application note ?Optimize Power Distribution Networks for Flat Impedance?.

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