Embedded Europe
Connecting Silicon, Software, and Strategies for Intelligent Systems
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Managing Internet connections on Linux devices with ConnMan

Harish Jenny K N, Mentor Graphics

Connection Manager (ConnMan) is a connection management daemon (connmand) for managing Internet connections within devices running the Linux operating system. It offers low memory consumption with a fast, coherent, synchronized reaction to changing network conditions. ConnMan has various plug-ins and is a fully modular system that can be extended to support all kinds of wired or wireless technologies. The plug-in approach allows for easy adaption and modification for various use cases. Configuration methods like DHCP and domain name resolving are implemented using plug-ins. All? **Continued...**

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Arty Z7-20 - Zynq power for Embedded Vision
Order Digilent Arty Z7-20 based on the popular Xilinx Zynq for high definition video processing at Trenz Electronic and receive a 10% discount! The voucher will be valid until 31.10.2017.
This low-power but powerful, programmable 32-bit microcontroller offers easy-to-use encryption, authentication, private and public key capabilities and allows customer programming flexibility to minimize customer risk. The CEC1702 also provides significant performance improvements when compared to firmware-based solutions.

Leti Coordinating European Project to Improve Drivetrains for Electric Vehicles to Boost Performance and Cut Costs

Leti

LETI COORDINATING EUROPEAN PROJECT TO IMPROVE DRIVETRAINS For Electric Vehicles To Boost Performance And Cut Costs CEA Tech?s Contribution Includes Liten?s Knowhow in Magnetic Materials and Simulation And Leti?s Expertise in Wide-bandgap Semiconductors GRENOBLE, France ? Oct. 20, 2017 ? Leti, a research institute of CEA Tech, today announced a new European Horizon 2020 project to develop innovative electric drivetrains for third-generation electric vehicles. Bringing together 10 European research institutes, key members of the automotive-industry value chain and universities, the ModulED project will focus? **Continued...**

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The role of heterogeneous systems

Daniel Lang, Toradex Group

For many years, Moore's law very accurately predicted improvements to CPU performance. You could expect a doubling in chip performance about every 18 months. Manufacturing improvements brought us smaller transistors, allowing more transistors to fit on a die without an increase in size. Currently, chips are available with structures as small as 10 nm, and foundries are preparing to introduce 7-nm technology. As transistors continue to shrink, new challenges appear which make it harder for the industry to continue progressing at this speed. But? **Continued...**

3rd Annual UK Robotics Week Returns from 21st to 29th June 2018

EPSRC UK-RAS Network

London, UK, 17th October 2017 ? Today marks the official launch of UK Robotics Week 2018, with robotics activities and competitions now open for early registration to schools, academic institutions and industry. The UK Robotics Week programme of activities will be taking place up and down the country from early next year, culminating in a national week of celebration held from 21st ? 29th June 2018. Any institutions or organisations planning to host their own robotics events can apply now to be included in? **Continued...**

How to hack IoT devices from your couch

Wilfred Nilsen, Real Time Logic

Hacking IoT devices is not as difficult as you may think. There are plenty of devices online that are vulnerable to external hacking over the Internet. Get comfortable on your favorite couch or chair with a phone, tablet, or laptop. This tutorial will show you how to eavesdrop on hundreds of IoT devices without even installing special software on your computer. A hacker typically performs the following steps: Reconnaissance, scan, and identify Penetrate, eavesdrop, and learn Active attack Active attack is a criminal offense,? **Continued...**

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CEC1702 Hardware Cryptography-Enabled Microcontroller from Microchip

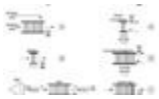
RTOS debugging, part 4: Priority inversion ? when the important stuff has to wait

Dr. Johan Kraft, Percepio AB

The central idea underlying an RTOS with a fixed-priority scheduler is that a high-priority task should be scheduled ahead of one with lower priority. If necessary, the RTOS can even pre-empt the running task, forcing it to yield the CPU to a higher priority task. Yet, as a developer you have to watch out for programming pitfalls that can result in a higher priority task having to wait for a lower priority task ? this condition is known as priority inversion. Priority inversions can? **Continued...**

The many uses of RTOS message queues

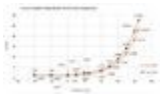
Jean Labrosse, Silicon Labs



An RTOS is software that manages the time of a central processing unit (CPU), a microprocessing unit (MPU), or even a digital signal processor (DSP) as efficiently as possible. Most RTOS kernels are written in C and require a small portion of code written in ASSEMBLY language to adapt the kernel to different CPU architectures. An RTOS kernel provides many useful services to a programmer, such as multitasking, interrupt management, inter-task communication through message queues, signaling, resource management, time management, memory partition management, and? **Continued...**

Energy consumption in modern microcontroller systems, part 1: A benchmark for ultra-low-power

Horst Diewald and Uwe Mengelkamp, ProJoule GmbH



An important factor in the selection, market positioning, and success of a product is the energy consumption of the entire system. However, traditional approaches for expressing efficiency in microampere (uA) or microwatt per megahertz (uW/MHz) aren?t sufficient anymore. Energy storage systems store neither uA nor uW, but Joules. Therefore, comparing the energy consumption of microcontroller (MCU) and system on chip (SoC) devices has become the prime focus of users. But is one benchmark enough to select an MCU, MCU family, or MCU manufacturer for? **Continued...**

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Jamie Leland
E-mail: jleland@opensystemsmedia.com

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