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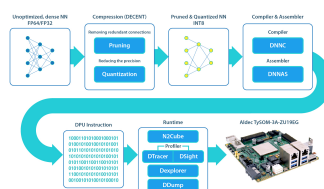
DEVELOPMENT TOOLS & OPERATING SYSTEMS FEATURE

Embedded OS: Real-Time or Not?

COLIN WALLS

It is unusual for a modern embedded design, with any degree of sophistication, to be implemented without an operating system of some sort. There are plenty of reasons for this: scalability of the multi-tasking model, availability of standard software components (IP ? like drivers, protocols etc.) and the fact that the majority of developers are most comfortable programming in an OS-supported environment. This means that an early decision to be made is which OS to utilize.

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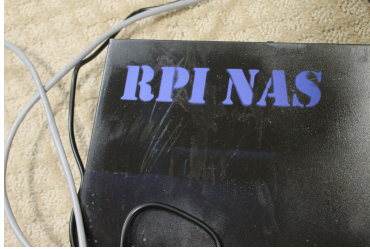
AI & MACHINE LEARNING FEATURE

How to Develop High-Performance Deep Neural Network Object Detection/Recognition Applications for FPGA-based Edge Devices

FARHAD FALLAH, ALDEC

Machine learning is the process of using algorithms to parse data, learn from it, and then make a decision or prediction. Instead of preparing program codes to accomplish a task, the machine is "trained" using large volumes of data and algorithms to perform the task on its own.

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Personal Network Attached Storage Options

JEREMY S. COOK, CONTRIBUTING EDITOR

At your place of work, you there?s a good chance you have an ?M: drive? or something similar, where you can store documents that you and other company members need to use. While this is convenient, with the technical details of how it functions most likely handled by IT behind the scenes, you might have wondered if this kind of remote always-accessible storage could be accomplished at home ? or anywhere else for that matter.

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EMBEDDED PROCESSING FEATURE

European Processor Initiative Reports on First Year of Activities

ALIX PAULTRE, EUROPEAN CORRESPONDENT

The European Processor Initiative is finishing its first year, and has released an EPI Common Platform and an updated roadmap.

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WDL Systems Offers Long-Range LoRa® Modules: MultiTech mDot® and MultiTech xDot®

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DEVELOPMENT TOOLS & OPERATING SYSTEMS

FEATURE

Yocto is Your Friend

RICH NASS, EXECUTIVE VICE PRESIDENT OF EMBEDDED
COMPUTING DESIGN

As an open source software (OSS) platform, Linux requires a bit of management on your part to use. First, there's the operating system itself. As changes to Linux arise, you decide whether you want to keep abreast of them. There are also many sources available for optional extensions to Linux that you might want to use and therefore need to manage as well.

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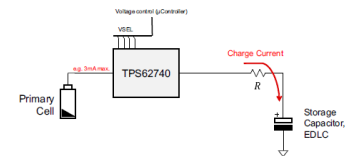
POWER ELECTRONICS FEATURE

Obtaining Hands-Off, Long-Life Power: No Easy Options

BILL SCHWEBER, JAFFA ENGINEERING

The design assignment is clear: build a small datalogger which will be inaccessible once in place, yet must operate for a minimum of 20 years. Battery replacement is not an option, so you do the basic math on the current requirements of the unit times lifetime objective, add a 2% safety factor, and select a primary non-rechargeable battery with the calculated milliamp-hour (mAh) capacity rating. The problem of providing power for two decades or more is solved, right?

[Tune in for More +](#)



POWER ELECTRONICS FEATURE

Low-Battery Self-Discharge: The Key to Long-Life Remote Wireless Sensors

SOL JACOBS, TADIRAN BATTERIES

Remote wireless devices increasingly require industrial-grade lithium batteries to deliver long-term power for applications ranging from system control and data automation (SCADA) to automated process control, AI, and machine learning.

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AI & MACHINE LEARNING FEATURE

Add Voice Recognition to Your TV Remote

SCOTT HAYLOCK, QUICKLOGIC AND SRINIVAS PATTAMATTA, ATMOSIC TECHNOLOGIES

Virtual assistants continue to be integrated into more devices in our homes. Amazon recently announced that it is bringing Alexa to a variety of new devices, including earbuds, glasses, and a ring, giving consumers even more ways to access information.

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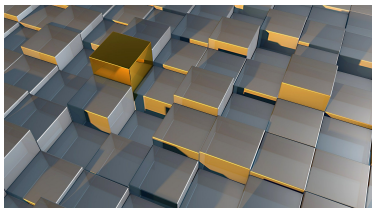
DEVELOPMENT TOOLS & OPERATING SYSTEMS FEATURE

What Are You Going to Build?

RICH NASS, EXECUTIVE VICE PRESIDENT OF EMBEDDED COMPUTING DESIGN

Today's grandfathers might remember sending punch cards through a reader. From the stories that are told about punch cards, those days are best forgotten. Then CRT-based computers arrived on the scene. You could change code, compile, run, and step through code with a debugger in minutes.

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EMBEDDED SENSING FEATURE

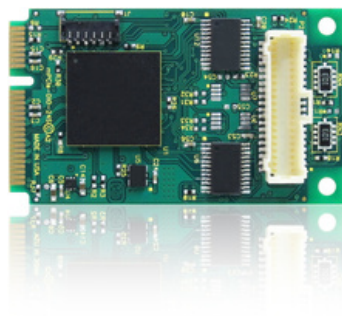
Wide Spectrum GeSi Technology Overcomes Major Hurdles in 3D Sensing

NEIL NA, CO-FOUNDER AND CHIEF SCIENCE OFFICER, ARTILUX INC.

3D sensing is becoming vital technology and has been adopted as an integral part of applications such as Apple's Face ID, for unlocking phones and making payments. In the coming years, the technology will further penetrate into markets such as augmented reality and autonomous driving.

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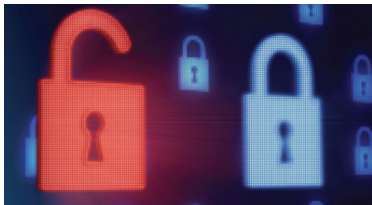
SPONSORED WHITE PAPER

Use EMRs to Build an IoT-Enabled, AI-Powered Hospital

WINCOMM

Imagine a smart hospital where MRIs or ultrasound images can be streamed wirelessly to mobile panel PCs or monitors used by nurses and doctors. And that these images or videos could be decoded and processed by AI algorithms in real-time to detect abnormalities and assist in diagnosis.

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Security Awareness

BLACKBERRY | QNX

The most secure system in the world is powered off, embedded in concrete, and mined with tamper-sensitive explosives. Unfortunately, it is also the most useless system in the world. In order for a system to be useful, it needs to interact with the environment and provide some level of functionality.

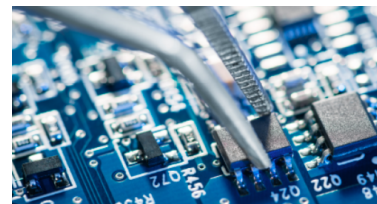
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How to reduce the bill of material costs with digital signal processing

ARM

The need to decrease the bill of material (BOM) costs in embedded products is being driven by the need for high volume, low-cost sensor systems. As IoT devices become more sophisticated, they require developers to utilize digital signal processing (DSP) to handle more features within the product, such as device provisioning.



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IoT Security Top 20 Design Principles

UL

In a competitive market, it is important to find a differentiator for your products, and often a competitive advantage is sought through adding smart features and connecting products to business networks or the internet. However, as new features and connections are added, the security of such systems is often degraded.

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Seven Fatal Mistake to Avoid When Choosing an Embedded OS

BLACKBERRY | QNX

How would you go about choosing an embedded Operating System (OS) for the next generation of your product? As long as you do not have to actually do it, you may think that the choice should be based on the objective evaluation of various criteria, such as features, cost, support options, etc. In reality, however, there are seven completely different aspects that push executives, directors, managers and engineers towards fatal traps.

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