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IoT OPERATING SYSTEMS FEATURE

Why is the IoT Devouring Embedded RTOSs?

DAVE HUGHES, HCC EMBEDDED

First, FreeRTOS was swallowed by Amazon to support IoT development for its Amazon Web Services (AWS) cloud platform and last month Express Logic was gobbled up by Microsoft for its competing Azure cloud services. The short summary would be that these behemoths are extending their reach from the cloud to edge devices that collect and distribute data. This seems like a straightforward idea, but is it really that simple?

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IoT OPERATING SYSTEMS FEATURE

As RTOSs Disappear, RTOS-Independent Applications Keep You in Control

DAVE HUGHES, HCC EMBEDDED

The embedded RTOS vendors are being removed from the embedded market at an alarming rate, with three major players absorbed in the last couple of years: Express Logic by Microsoft, FreeRTOS by Amazon and Micrium by Silicon Labs. By my estimations there were about 50 similar companies 12 years ago; now, at most, a handful remain. How does this affect the embedded industry overall and developers in particular?

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IoT POWER MANAGEMENT FEATURE

Smart World of IoT ? Smart System-



Level Power Management for Smart Devices

JAYA KATHURIA BINDRA & NIDHIN M S, CYPRESS SEMICONDUCTOR CORPORATION

For optimizing power consumption at a system level, the power draw of these components must be controlled as well. Many peripherals, such as memories and sensors, come with an option to shut them down when their use is not required.

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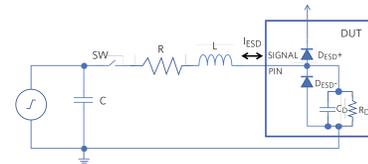
POWER ELECTRONICS FEATURE

Fundamentals of HBM, MM, and CDM Tests

BONNIE C BAKER, MAXIM INTEGRATED

There are many established models that test the reliability of semiconductor devices against an ESD event to insure effectiveness and reliability. The primary ESD tests are the human-body model (HBM), the machine model (MM), and the charged-device model (CDM).

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STORAGE & MEMORY FEATURE

Security in Storage Systems

DAMIEN COL, HYPERSTONE

Microprocessors are now an everyday part of our lives, integrated into all kinds of devices from phones to cars, and computers to TVs. These microprocessors will all contain flash memory and in the modern world of hacks and data breaches, security is a growing concern.

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IoT DEVELOPMENT TOOLS FEATURE

The AWS Serverless Platform

AARTI PARIKH, VOLANSYS TECHNOLOGIES

AWS serverless compute services enable the building and deployment of applications on the AWS cloud without having to manage the servers.

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Fig 1 - AWS Serverless Services



SENSOR HARDWARE FEATURE

Optimizing System Performance with Precision Current Sensing

KHAGENDRA THAPA, ACEINNA

Because of its vital nature, power is ubiquitous in electronics, as nothing happens until energy moves through a circuit. Power density, energy efficiency, and reliable operation are all critical factors to consider in modern electronics.

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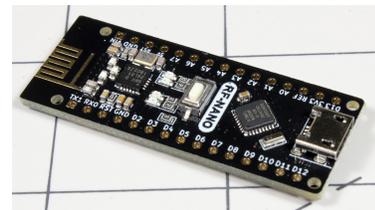
DEVELOPMENT KITS FEATURE

For the Professional Maker: Getting Started with the RF-Nano Arduino/NRF24L01+ Combo

JEREMY S. COOK

The NRF2401+ is a very capable wireless unit, allowing for data transfer between two Arduinos or similar boards with a fairly straightforward setup programming-wise. Unfortunately, the wiring involved in attaching an Arduino and an NRF24L01+ is less than straightforward, and after struggling with questionable adapters and pasta-like wire arrangements, I happened upon the RF-Nano which I immediately purchased.

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AI & MACHINE LEARNING FEATURE

Gaining an Edge with AI

DAN ZHANG, MOUSER ELECTRONICS

AI is starting to move from the cloud to the Edge. AI research now offers the intriguing possibility of using thousands of hours of powerful computing resources to train and refine a neural network that will then be able to run on cheap, low power devices.

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5G NETWORKING FEATURE

Bring on 5G: A Look at Some of the New Use Cases and

Business Opportunities

SYLVIA LU, U-BLOX

5G networks will be faster than their 4G predecessors ? in some cases by more than 10x ? but this is only part of the story. The bigger impact is likely to be elsewhere, with 5G able to provide exceptionally reliable low-latency services, and support very high device densities across wide areas. This promises to unlock the door to a new range of applications.

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FIVE MINUTES WITH ... PODCAST

Five Minutes With?Alan Grau, VP of IoT, Sectigo

EMBEDDED COMPUTING DESIGN

Embedded developers need to protect their systems after they are deployed. That?s not always easy to do, as you sometimes don?t know exactly where deployment is taking place. So, what to do? That?s the question I asked of Alan Grau, the Vice President of IoT and Embedded Solutions for Sectigo in this week?s Five Minutes With?discussion.

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Sensor Network for the Smart Factory

KONTRON

Smart automation and digital transformation are among the trend topics worldwide. Industry 4.0 and the Industrial Internet of Things are changing production and logistics processes in the long term.

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The Insider's Guide to Excellent UX for Non-UX People

THE QT COMPANY

User experience (UX) is a term you can?t avoid these days. That?s because an excellent UX can more easily provide something that most other facets of your business cannot ? a direct path to the customer?s heart.

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Implement High-Resolution Smart Vision Systems With Complete Ecosystem Available in New Development Kit

MICROCHIP



Today's video and imaging processing involves developing complex computer algorithms that enable systems to capture and display information and high-resolution images.

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Essential guide to select an integrated COM Express system

NVENT/SCHROFF

The performance increase of modern processors, the integration of graphics solutions into processors and the integration of countless interfaces into processor chipsets are driving the trend away from 19" systems and towards solutions with a smaller form factor.

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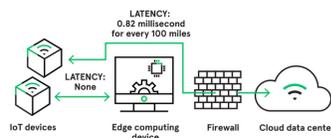
SPONSORED BLOG

Perform Your AI at the Edge of the IoT

AVNET

You've heard it before?artificial intelligence (AI) at the edge is the coolest thing since sliced bread, and if you're not taking advantage of it, you're missing the boat. For better or worse, there is a lot of truth to those statements.

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System Selection: Right Size for Your Application

DEDICATED COMPUTING

Buying generic doesn't cut it. Why waste your time, energy, and dollars on hardware and software that fits your application as well as the next guy's? OEMs and ISVs can benefit from deeper conversations and planning sessions with their ODM of choice around their overall platform design.

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Panel Discussion: IIoT/Industry 4.0 Workload Consolidation

Sponsored by: Dell Technologies, Hewlett Packard Enterprise, Wind River

Date: June 25, 2:00 p.m. ET

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