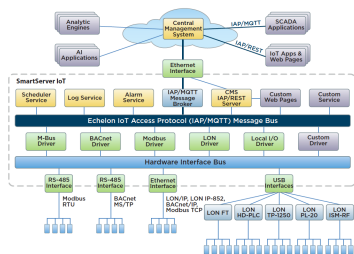


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BLOG

Graceful evolution amidst IoT disruption

CURT SCHWADERER

The IoT mash-up of cloud, gateway, and embedded sensor devices screams rip-and-replace. After all, when you're in the midst of a paradigm shift, you can discard the history, right?

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GUEST BLOG

Impressions from the recent RISC-V workshop in Barcelona

RUPERT BAINES, ULTRASOC



There's serious momentum gathering behind the RISC-V concept, and a growing commercial ecosystem surrounding it. But it's very clear that we've still a long way to go to make it truly pervasive; when I say pervasive, I'm comparing it with technologies like Bluetooth, USB, and Ethernet.

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Element	Power dissipation	Cost	Performance	Size	Communication Technique
Cloud	High	High	High	Large	Standard
Aggregator	Medium	Medium	Medium	Medium	Mixed
Smart Sensor	Low	Low	Low	Small	Ultra low power

GUEST BLOG

What is an aggregator?

GENE FRANTZ, OCTAVO SYSTEMS

At first glance, the aggregator appears to be the unnecessary component in the IoT. It seems to look like the cloud to the smart sensor and look like a smart sensor to the cloud.

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DESIGN ARTICLE

Low power solutions for always-on, always-aware voice command systems, part 1

PAUL BECKMANN, PHD, DSP CONCEPTS; AARON GRASSIAN, AMBIQ MICRO; AND MATT CROWLEY, VESPER

Recent advances in hardware and software have made it possible for compact, battery-powered products to include always-on voice command systems, which have already proven their reliability and appeal in tens of millions of smart speakers. This paper describes new applications, techniques, hardware, and software that will make these products possible.

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GUEST BLOG

On-device natural language processing is ready for prime time

MOSHE SHEIER, CEVA

A wide variety of automatic speech recognition technologies exists, each suited for different use cases. Undeniably though, the holy grail of ASR is natural

language processing (NLP), which lets users speak freely, as if they were talking to another person.

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GUEST BLOG

Redesigning security for fog computing with blockchain

SUSANTO IRWAN, XAGE, AND A MEMBER OF THE OPENFOG CONSORTIUM

As more connected devices come into use across the industrial IoT (IIoT), traditional cloud computing architectures are no longer sufficient. Current centralized systems simply don't hold up to the scale and security requirements of so many billions of IoT devices, including the secure storage, availability over intermittent network connections, access control, authentication, and real-time analysis of a near-constant data stream.

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BLOG

Intel offering combines AI and vision

RICH NASS

Intel recently announced the OpenVINO (Open Visual Inference and Neural Network Optimization) toolkit, which lets developers combine a graphics subsystem with the algorithms required to deployed a sophisticated AI/machine-learning platform at the edge of the IoT.

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American Portwell Technology, Inc.

4?4-inch Embedded Computing Board based on Intel Celeron processor J3455

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Extreme Engineering Solutions (X-ES)

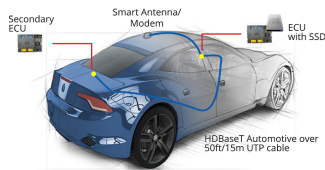
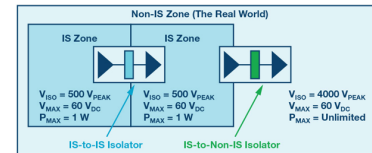
Extreme Engineering Solutions' XPand6211 is a Rugged Small Form Factor (SFF) COTS 24-Port Gigabit Ethernet Switch, Router with

DESIGN ARTICLE

Digital isolators can be used in intrinsic safety applications

MARK CANTRELL, ANALOG DEVICES

Designers of intrinsic safety equipment know the challenges of getting signals in and out of your equipment. New technologies are available that have tantalizing properties that would make a design smaller, simpler, lower power, faster, or all four, but it is not clear if or how you can use them.

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DESIGN ARTICLE

PCIe in the connected car

MICHA RISLING, VALENS

To cope with the increasing number of devices, features and services expected in today's cars, there are often more than 100 electronic control units in the most advanced models. This number will continue to grow to enable fully connected and autonomous cars.

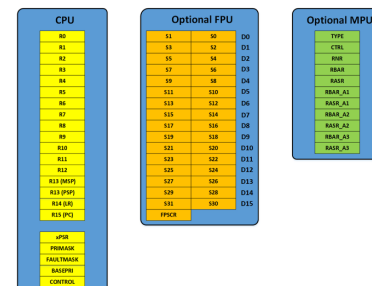
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DESIGN ARTICLE

Using a memory protection unit with an RTOS, part 2

JEAN LABROSSE, SILICON LABS

The Cortex-M was designed from the outset to be RTOS kernel friendly: dedicated RTOS tick timer, context switch handler, interrupt service routines written in C, tail-chaining, easy critical section management, and more. Many Cortex-M MCU implementations are complemented with a floating-point unit, DSP extensions, highly versatile debug port and an MPU.

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Engineering tomorrow's connected house today

AVNET, INC.

In the Internet of Things (IoT), connection isn't a luxury: it's a necessity. Luckily, even a single antenna can transmit and receive unprecedented amounts of data. Antennas are the unsung hero of the ever-changing world of IoT, from home automation to energy solutions and surveillance products.

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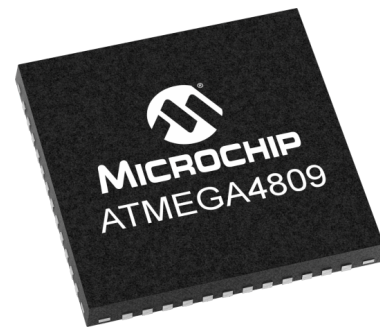
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ATmega4809: Let the Hardware Do the Hard Work

MICROCHIP

The ATmega4809 is a microcontroller featuring the 8-bit AVR[®] processor with hardware multiplier - running at up to 20MHz and with up to 48 KB Flash, 6 KB SRAM and 256 bytes of EEPROM in 48-pin packages. The series uses the latest Core Independent Peripherals with low power features. Including Event System, intelligent analog and advanced peripherals.

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Clarius Takes Ultrasounds Further

AVNET, INC.

Imaging technology that fits in a pocket and works with a smart phone is just the kind of tech to shake up the \$6 billion ultrasound industry. But only if it's executed to perfection. Clarius Mobile Health wanted to take on the challenge, partnering with a global distributor, Avnet, to bring the device to market.

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Precision Measurement: Take Control of Your World

MICROCHIP



The need to accurately measure and monitor the wide assortment of small analog signals that make up our world continues to grow. From patient monitoring to automated factories to the latest gaming systems, today's electronics demand ever increasing performance.

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How Compact Industrial PCs Solve Today's Automation and Control Challenges

BECKHOFF AUTOMATION

In this whitepaper, Beckhoff experts will explain how today's new compact Industrial PCs such as the C6030 IPC combine high performance and compact design at the same time to enable easy implementations of future-proof open automation systems and Industrie 4.0 concepts.

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Cybersecurity for Automobiles: BlackBerry's 7-Pillar Recommendation

BLACKBERRY/QNX

Auto cybersecurity is on national agendas because automobiles are increasingly connected to the Internet and other systems and bad actors can commandeer a vehicle and render it dangerous, amongst other undesirable outcomes.

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