Embedded COMPUTING DESIGN

E-Letter
OCTOBER 2020

SUPPLY CHAIN MANAGEMENT FEATURE

Supply Chain Management in the Days of Coronavirus

MAX MAXFIELD, CONTRIBUTING EDITOR

There is a visual joke circulating the internet. The caption is, ?Worst Purchase Ever!? The accompanying photograph is of a 2020 Day Planner. Unfortunately, while this may elicit a wry smile, trying to make plans in the middle of a pandemic is no laughing matter.

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CYBERSECURITY FEATURE

The History and Evolution of DDoS Attacks

DAVID BALABAN, FREELANCE TECHNOLOGY WRITER

Distributed denial-of-service (DDoS) is one of the oldest and the most dynamically advancing vectors of cybercrime. Having taken root in the mid-1990s as a rudimentary instrument for electronic vandalism, hacktivist protest, or script kiddies? ego boost, this phenomenon has matured and embraced more detrimental uses over the last 25 years.

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DATA STORAGE FEATURE

Wear Levelling and How it Impacts SSD Life Expectancy

AXEL MEHNERT, VP MARKETING AT HYPERSTONE

Data in flash memory is arranged in a hierarchy of cells, pages, and blocks, with data written a page at a time. NAND flash memory architecture is such that erasing can only occur at the block level. Also, access to the data in a solid state drive (SSD) is usually localized. There will be some data that is rarely used, or only accessed for reading, and other data that is frequently updated.

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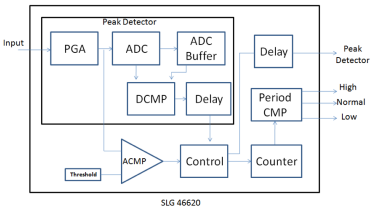
SIGNAL PROCESSING FEATURE

Peak-to-Peak Frequency Monitoring

ANAS AJAJ, DIALOG SEMICONDUCTOR



Frequency monitoring circuits are addressed in several varieties. A "zero-crossing detector" is considered one of the most common methods due to its simplicity of design for periodic and regular signals. However, if the signal is aperiodic or irregular (contains a non-instantaneous zero period between pulses) zero-crossing cannot be used. In such cases a peak to peak frequency monitor is a desired alternative.

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ADVANCED DRIVER ASSISTANCE SYSTEM FEATURE

Technologies Combine to Combat Distracted Driving

A.J. LASLEY, APTIV?S GLOBAL DIRECTOR OF AS&UX ADVANCED ENGINEERING

There are two primary ways a vehicle could reduce risks associated with distracted driving. The first is for the

vehicle to maintain its own awareness of the environment around it and take emergency actions if necessary. The second is to monitor the state of the driver to ensure the driver is attentive.

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SMART CITY APPLICATION FEATURE

What Do You Know About Smart Cities?

EMMA WILLIAMS, CONTENT MANAGER, IOTERRA

With the inception of the Internet of Things (IoT) technology, smart city initiatives have become a reality in many parts of the world. To begin with, IoT is not dependent on geographical locations or complexity ratios like population and per unit area of a city. In fact, with increased migration towards developed landscapes, there is an ever-increasing need for cities to effectively accommodate the surging population.

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EMBEDDED EXECUTIVES PODCAST

Embedded Executive: Stephen Rizzone, President and CEO, Energous

RICH NASS

Did you know there were standards established for wireless charging? In fact, they?re up to Rev. 2.0 of the standard. This was news to me. Stephen Rizzone, the President and Chief Executive Officer of Energous Corp. joined me to fill in the gaps, which in my case, were fairly wide. With the new spec, the distance the device can be from the charger is now measured in feet. Hear more in to this week?s Embedded Executives podcast.

Tune In +

EMBEDDED COMPUTING DESIGN'S PRODUCT OF THE WEEK: 10/5 TO 10/11

Product of the Week: Microchip PolarFire SoC FPGA Icicle Kit

ECD STAFF

Microchip?s PolarFire SoC FPGA Icicle Kit is an evaluation platform for the company?s mid-range PolarFire SoC FPGA family, a portfolio of RISC-V-based devices that contain secure hardware features, are capable of running off-the-shelf Linux and/or real-time operating systems

(RTOS), and consume up to 60 percent less power than competing FPGA solutions, according to the company.

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EMBEDDED COMPUTING DESIGN'S PRODUCT OF THE WEEK: 10/12 TO 10/18

Product of the Week: Winmate M133K 13.3" Rugged Tablet PC

ECD STAFF

Winmate?s industrial-grade M133K 13.3" Rugged Tablet PC is designed for operation in harsh outdoor environments. Powered by Intel?s ?Kaby Lake? Core i5-7200U processor that clocks in at 2.50 GHz (with turbo speeds up to 3.10 GHz) and Microsoft?s Windows 10 IoT Enterprise operating system, M133K Rugged Tablet PCs can serve as a real-time, cloud connected control point in environments like a factory floor.

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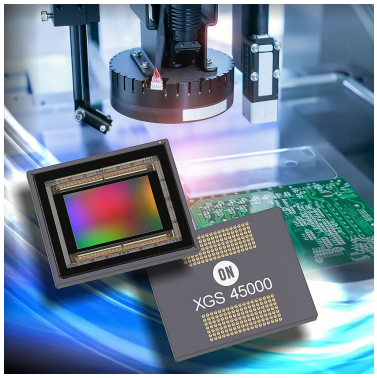

INDUSTRIAL IMAGING NEWS

ON Semiconductor Expands XGS Family of CMOS Image Sensors for High-Resolution Industrial Imaging

TIERA OLIVER, EDITORIAL INTERN, EMBEDDED COMPUTING DESIGN

All XGS devices feature a 3.2 ?m pixel size providing ideal resolution while the advanced pixel design ensures low noise performance and image quality that is suitable for IoT applications such as machine vision and Intelligent Transportation Systems (ITS).

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mPCIe-DIO Series: PCI Express Mini Cards for Easy and Flexible Digital I/O Expansion

View Product

Fujitsu Components America, Inc.

Bluetooth 5.0 Dual-Mode Modules Supporting Classic BR/EDR

View Product

SPONSORED WHITE PAPER

Serial Memory Technology

MICROCHIP

This white paper focuses on the Open Memory Interface (OMI) and how it addresses the needs of near memory. Innovations in memory infrastructure are poised to significantly improve the performance and cost effectiveness of mainstream data center applications. Business applications are under significant pressure to collect, analyze, store and deliver time-sensitive value to end customers while simultaneously driving down costs.

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SPONSORED WHITE PAPER

Data Acquisition Design Considerations - Part 2 - Harsh Environments

NUVATION ENGINEERING

Over the past two decades Nuvation Engineering has developed data acquisition systems for a wide range devices and market applications. Based on our experience performing hundreds of engineering design projects, our engineers have identified several key considerations that require special attention during the planning, design, and development of data acquisition systems in harsh environments.

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SPONSORED WHITE PAPER

Protecting your Assets: IP Protection ? essential to protect your business and your customers

IAR SYSTEMS

This white paper addresses how you can protect your application?s IP with development tools that integrate seamlessly into your design workflow, potentially eliminating man years of engineering time while keeping your end products safe and secure.

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SPONSORED WHITE PAPER

Accelerate Innovation: How Adopting a Scalable Platform Architecture Can Speed Product Development

BLACKBERRY QNX

OEMs in nearly every industry are becoming software-driven. But while software can provide differentiation, inefficiencies in internal development teams can throttle product innovation and lengthen time to market. These inefficiencies are often based on a growing array of one-off design decisions, each leading to different hardware and software technology choices that need to be managed and supported by some of the company?s most valuable development resources.

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SPONSORED ARTICLE

Cybersecurity for the Intelligent Edge: A Micro Web Tech Series

WIND RIVER

According to IDC, there will be an estimated 42 billion connected devices by 2025. Each of these devices represents a point of entry that can be exploited by a cyberattack. For devices and systems with safety-critical functionality, a security breach can have catastrophic consequences. Security becomes even more paramount than safety.

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SPONSORED WHITE PAPER

Important Design Considerations for Electronic Devices - Part 3: Off the Shelf Solutions vs. Custom Hardware

NUVATION ENGINEERING

Nuvation Engineering has designed and developed numerous electronics products. Over the course of these projects, we have identified several key considerations when deciding between Off the Shelf (OTS) hardware versus custom hardware.

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Maximize Sensing Accuracy Using RADAR

SOCIONEXT

A sensor device that triggers a certain function when an object is either present or not may sound

simple. But in reality, there are numerous factors to consider in order to avoid false positive readings or detection errors. These can include failure to detect object presence and false positives when the sensor mistakenly senses a presence within the alert zone even when there is no actual object.

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