IOT DEVICE SECURITY FEATURE

Yes, It?s Possible to Protect Home Doorbells and Cameras Against Hackers

ALAN GRAU, VP OF IOT/EMBEDDED SOLUTIONS, SECTIGO

Ring doorbells and cameras have joined the ever-growing list of IoT devices that have been compromised by hackers. According to reports, credentials to 3000 Ring accounts have been compromised, resulting in a number of alarming attacks.

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DEVELOPMENT TOOLS AND OPERATING SYSTEMS FEATURE

The Buffer/Driver: What Is It, and Do I Need One?

BILL SCHWEBER, TECHNOLOGY EDITOR

The answers to that double question are simple: first, ?it depends? and second, ?almost certainly.?.

Let?s start with definitions: ?buffer? has many definitions in electronics hardware and software. It can be a reserved software area; a set of internal IC registers; or it can be a circuit function interposed to interface between two subcircuits.

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DEVELOPMENT TOOLS AND OPERATING SYSTEMS FEATURE

Inside the Black Box

COLIN WALLS, CONTRIBUTING AUTHOR

Broadly speaking, RTOS products are either supplied as a linkable binary of some form (which is a “black box” ? the user has no visibility of its internal function) or come in source code form, which may be perused and/or modified at will. Many developers feel strongly that
having source code is essential and may cite some clear advantages.

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**CES FEATURE**

**The Worst of CES**

ALAN E. BROWN, MARCOM MANAGER, TECHNOLOGIC SYSTEMS

There are tons of articles for the "Best of" at CES, and there were some great things to see this year: Robots, AI, Smart Cars, and millions of USB chargers. However, I'm taking a different approach in this article and talking about four things that happen every year that diminish, or at least impede, my CES experience.

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**IoT MEMORY FEATURE**

**Easier Memory Management in UVM**

SIDDHARTH NAIR, CONTRIBUTING AUTHOR

A typical SOC consists of multiple interfaces that can access the memories within the design. When we are verifying such a design, we need to ensure that the memory accesses by various interfaces do not overlap, resulting in data integrity loss.

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**DEVELOPMENT TOOLS AND OPERATING SYSTEMS FEATURE**

**End of Support Coming for Windows 7**

PERRY COHEN, ASSOCIATE EDITOR

According to Microsoft, support for Windows 7 will ended on Jan. 14. The end of support will be in effect for Windows Home, Pro, Enterprise, and other Windows applications. End of support does not imply that Windows 7 will be cleared from a computer. Although, you run the risk of malware attacks and viruses if unsupported programs continue to be used.

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EMBEDDED VOICE ASSISTANCE FEATURE

Voice Assistants Going Embedded

TODD MOZER, PRESIDENT & CEO, SENSORY

Everyone knows that the use of voice assistants is exploding. Just returning from CES, it was amazing to see the number of booths that support Amazon's Alexa and Google's Assistant. Nevertheless, recent research from Edison-NPR is showing that US household adoption of voice assistant applications is slowing down.

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AUTOMOTIVE TOUCHSCREENS FEATURE

Synaptics Launches New TD7850 Automotive TDDI Solution for Touchscreens

TIERA OLIVER, EDITORIAL INTERN

Synaptics announced that its new TD7850 family of automotive touchscreen products are now sampling and have been selected by global display manufacturers, Tier-1s and OEMs for upcoming vehicle launches.

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ARTIFICIAL INTELLIGENCE FEATURE

NVIDIA Enables Era of Interactive Conversational AI with New Inference Software

TIERA OLIVER, EDITORIAL INTERN

NVIDIA, a technology company that designs graphics processing units for gaming and professional markets, and system on a chip units for the mobile computing and automotive market, introduced inference software that developers can use to deliver conversational AI applications, inference latency, and interactive engagement.

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IoT SECURITY FEATURE

Over-the-air Firmware Upgrades for Internet of Things devices

RICH DHAM, CYPRESS SEMICONDUCTOR

The scale of the Internet of Things (IoT) brings many challenges to deployment. In our homes alone, we’ve seen a dramatic increase in the number of connected devices from just a router and a couple of personal computers to multiple smart devices that remotely lock doors, activate window blinds, control lighting, manage temperature and humidity, and more.

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Energy availability to support the rapidly-growing number of sensors and transceivers is a growing issue in the IoT. Energy Harvesting is a possible solution, but where should we start? Download a guide here detailing what you need to know about Energy Harvesting, and getting started with incorporating it in your applications.

SPONSORED WHITE PAPER
Getting Started with Energy Harvesting
ON SEMICONDUCTOR

Companies looking to deliver value in the AIoT marketplace will be faced with extreme design requirements. Many of these systems will be deployed in rugged outdoor conditions, harsh climates, explosive environments, and wet or dusty settings, and therefore need a significant amount of customization. To succeed, these AIoT vendors must carefully consider their entire system design, from hardware to software to integration. Selecting the right end-to-end design partner can help avoid early pitfalls while adding value to end customers.
Analysis of Power Dissipation and Thermal Considerations for High Voltage Gate Drivers

ON SEMICONDUCTOR

Gate drivers used to switch MOSFETs and IGBTs at high frequencies can dissipate significant amount of power depending on the operating conditions. It is important to determine the driver power dissipation and the resulting junction temperature in the application to ensure that the part is operating within acceptable temperature limits. Read about our analysis of power dissipation and thermal considerations for high voltage gate drivers here!

Software-Defined Radio Handbook

PENTEK

The inner workings of the Software Defined Radio will be explored with an in-depth description of the internal structure and the devices used. Finally, some actual board- and system-level implementations and available off-the-shelf SDR products and applications based on such products will be presented.

Power Conversion in Mild Hybrid Electric Vehicles

ON SEMICONDUCTOR

Modern Mild Hybrid Electric Vehicles (MHEV) are designed to provide many of the fuel economy benefits of full hybrid electric vehicles with only modest increments in cost and complexity. This topic is of interest to engineers wishing to understand the complexities of incorporating a superior converter design into a MHEV.
Analog and Digital Discovery Tools Address the Demands of Professional Engineers
DIGILENT

Tools that were originally targeted at engineering students and educational facilities, hobbyists, enthusiasts, and makers have evolved into accurate, dependable, and reliable devices that can handle the demands of professional engineers. In this whitepaper, two such tools will be introduced?Digilent?s multi-function Analog Discovery and Digital Discovery instruments?along with examples of their deployment to address real-world design and test tasks.

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Challenges in the development of an industrial PC based on COM
NVENT SCHROFF

The Computer-On-Module market is flourishing like never before. Tremendous growth rates are expected in the coming years, specifically due to implementation of the IIoT (the Industrial Internet of Things). But why is computer-on-module (COM) technology so appealing to the industrial sector? Every application is different and demands dedicated electronics for recording, processing and displaying process data as a result.

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