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Technical University of Košice, Slovakia

21.05.2015

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What is a Linux Board? Where did it come from?

I don't have time for this!

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A "single board" computer

SBC Pioneers

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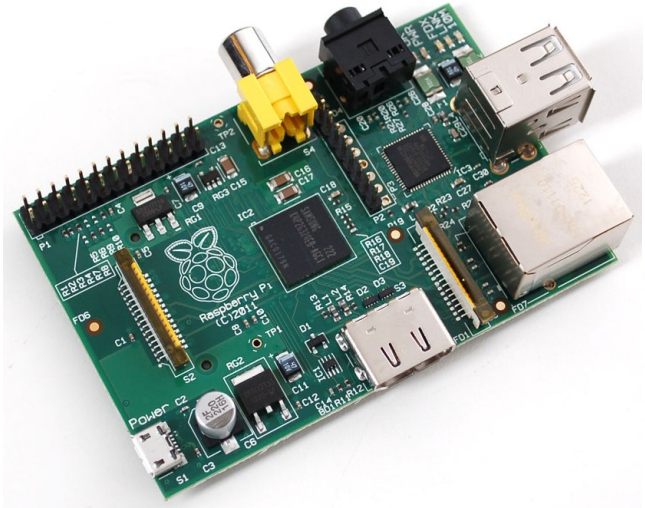

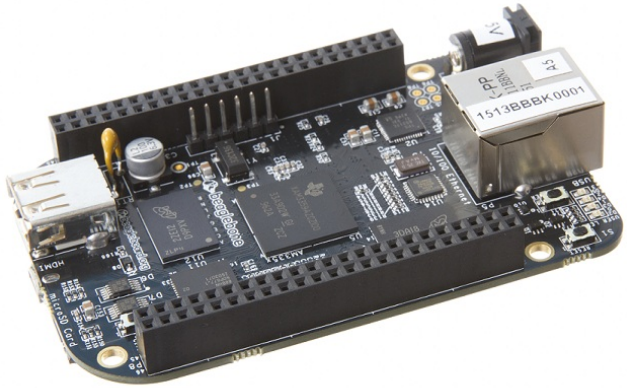

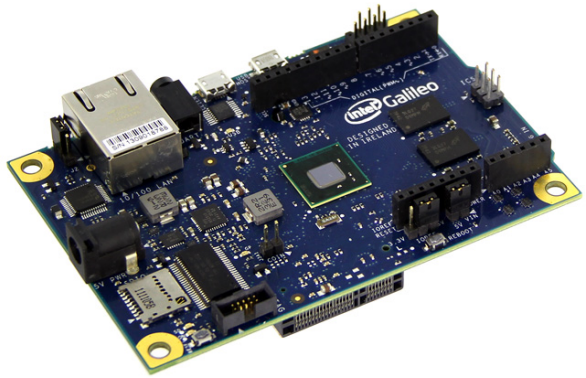

Why are SBC useful?

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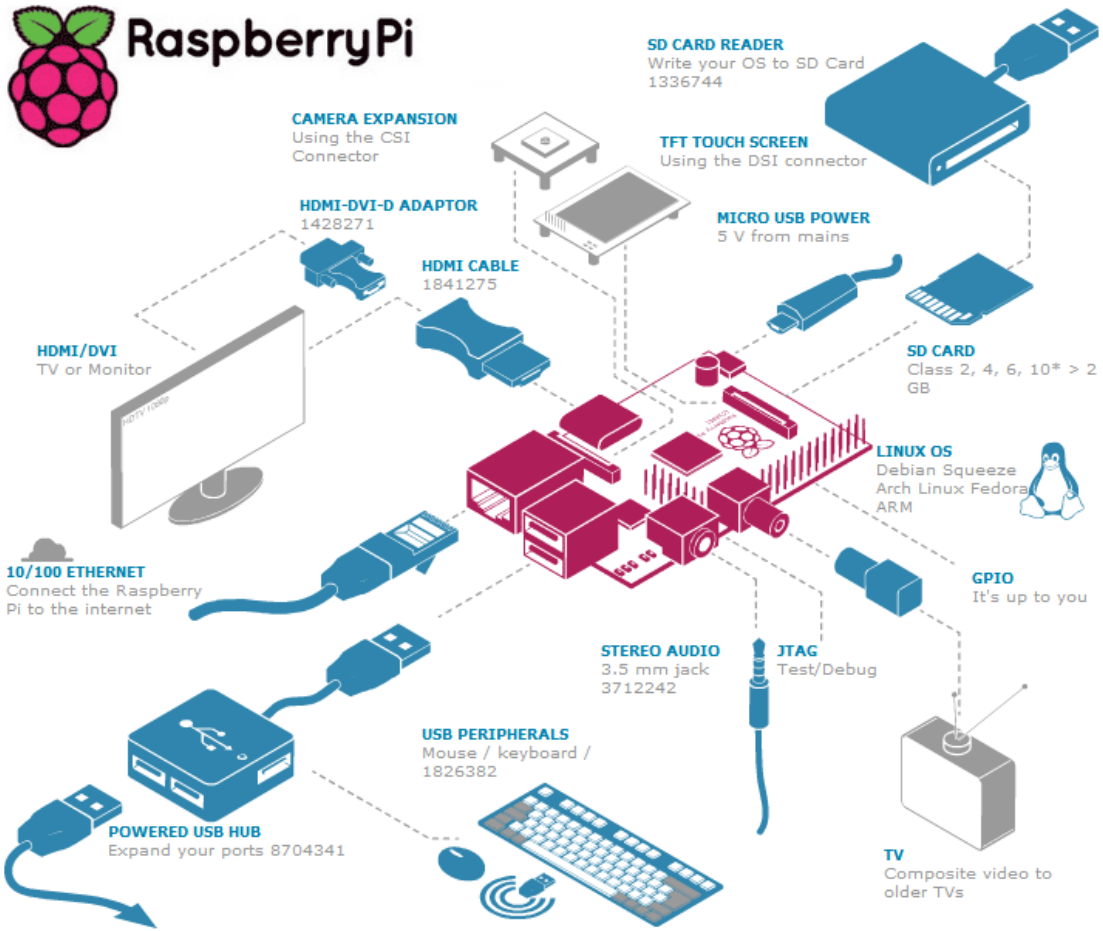

Raspberry Pi with a range of available peripherals

Done by others

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- CNC and 3D printer controllers
- Clusters, parallel computers
- Handheld game devices
- Computer console emulators (MAME)
- Vending machine controllers
- Various robots
- Bitcoin miners
- Educational tools

CHIP - 9 dollar computer

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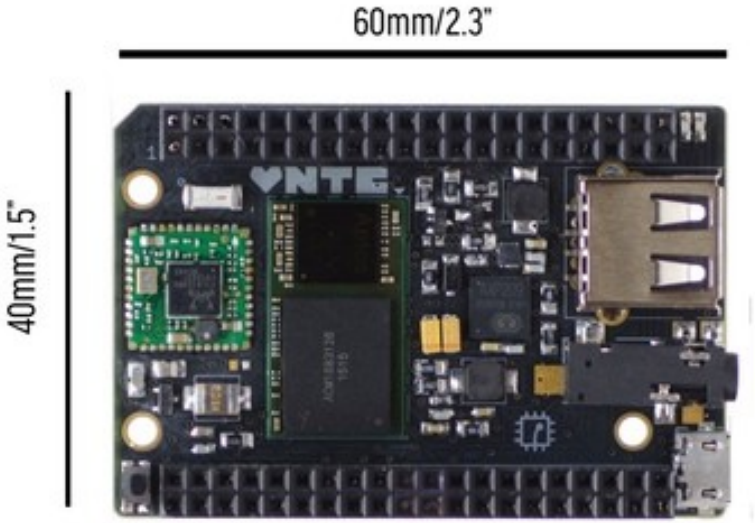

Too good to be true?

Embedded Computing

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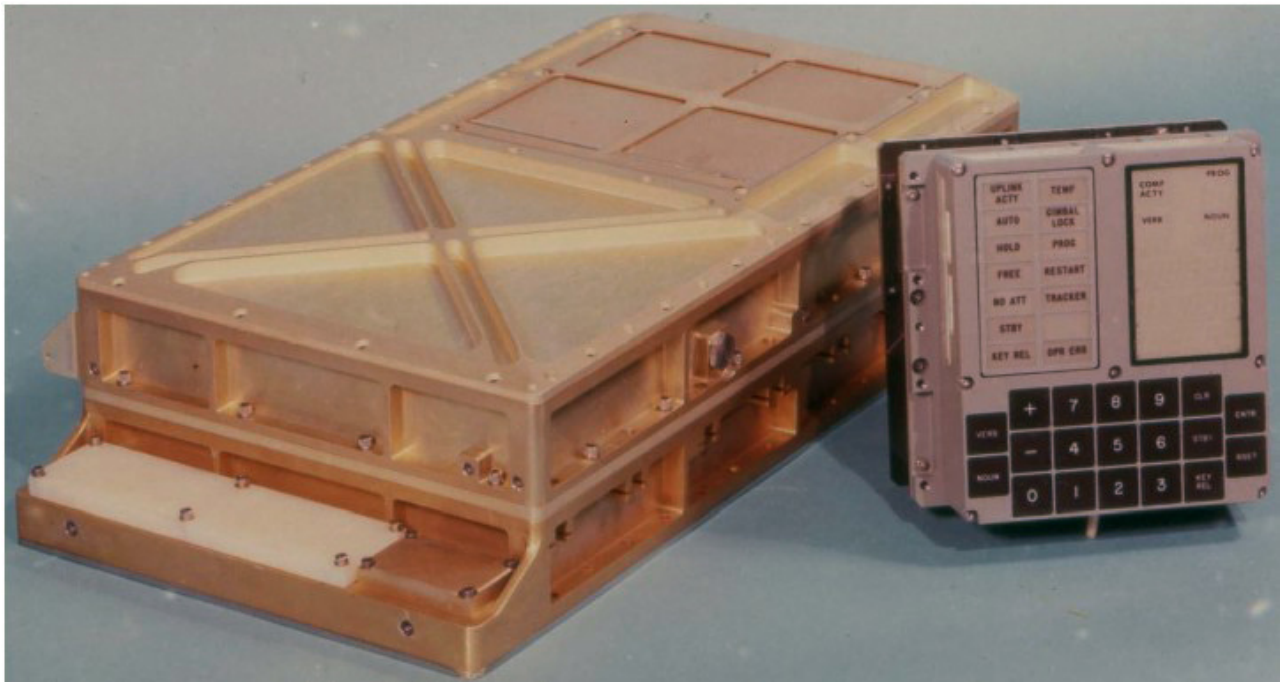

Apollo Guidance Computer and Numeric Display with a Keyboard

Embedded Confusion

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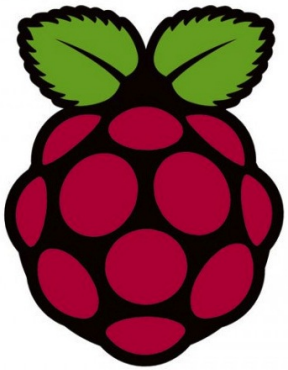
Question

Is Raspberry Pi an embedded system?



Question

Is Arduino an embedded module?

Arduino vs Arduino

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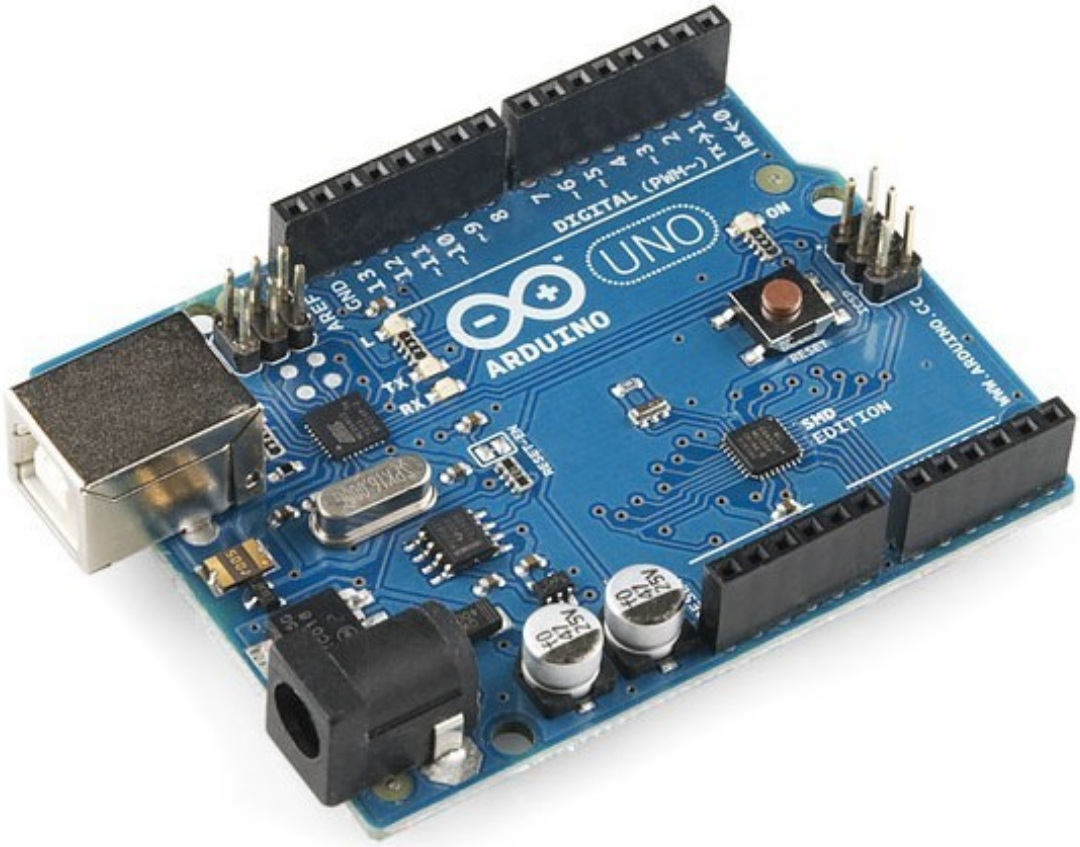

The mighty Arduino Uno

Symbiosis of the Two

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Linux board + micro-controller = versatility

Cheap and Common Embedded Boards

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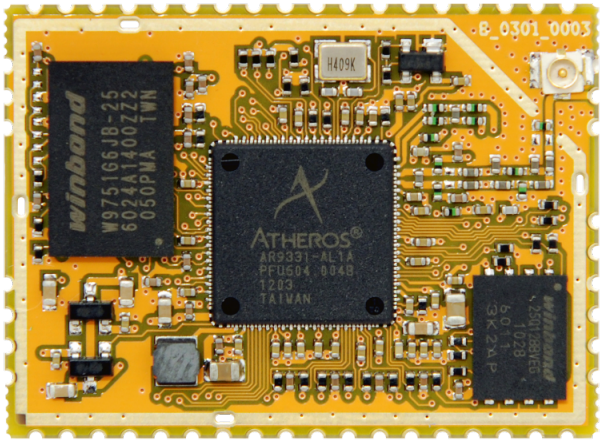

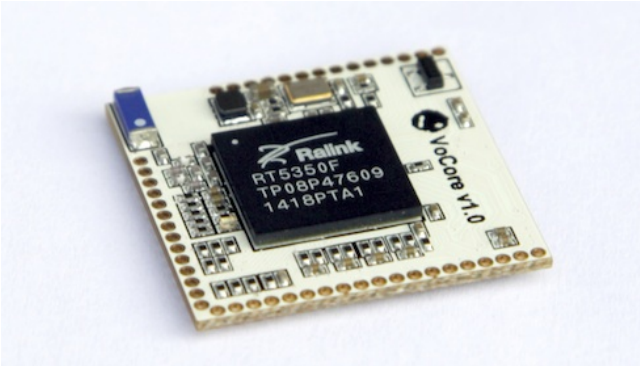

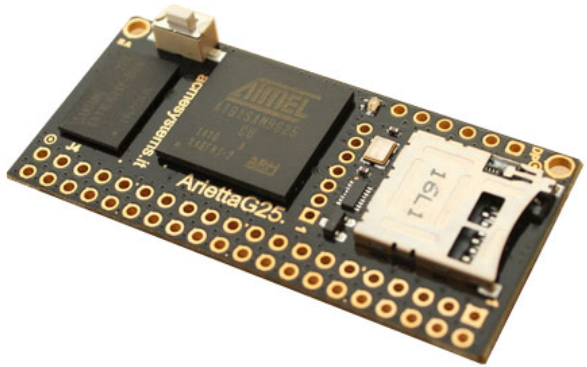

GL-Inet Smart Router

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The personal pavorite number 1

TP-Link WR703n

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The predecessor of a GL.Inet

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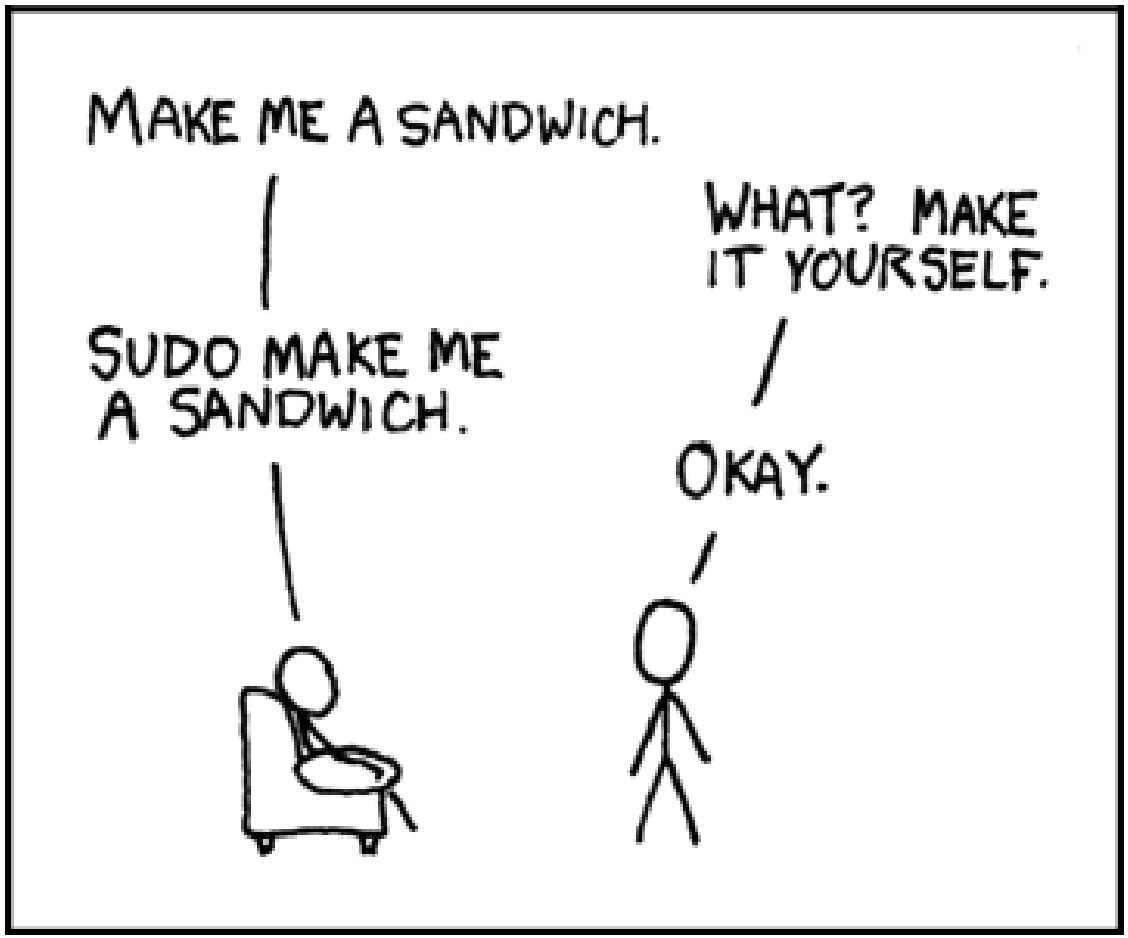

Randall Munroe knew it before

The Linux Ecosystem

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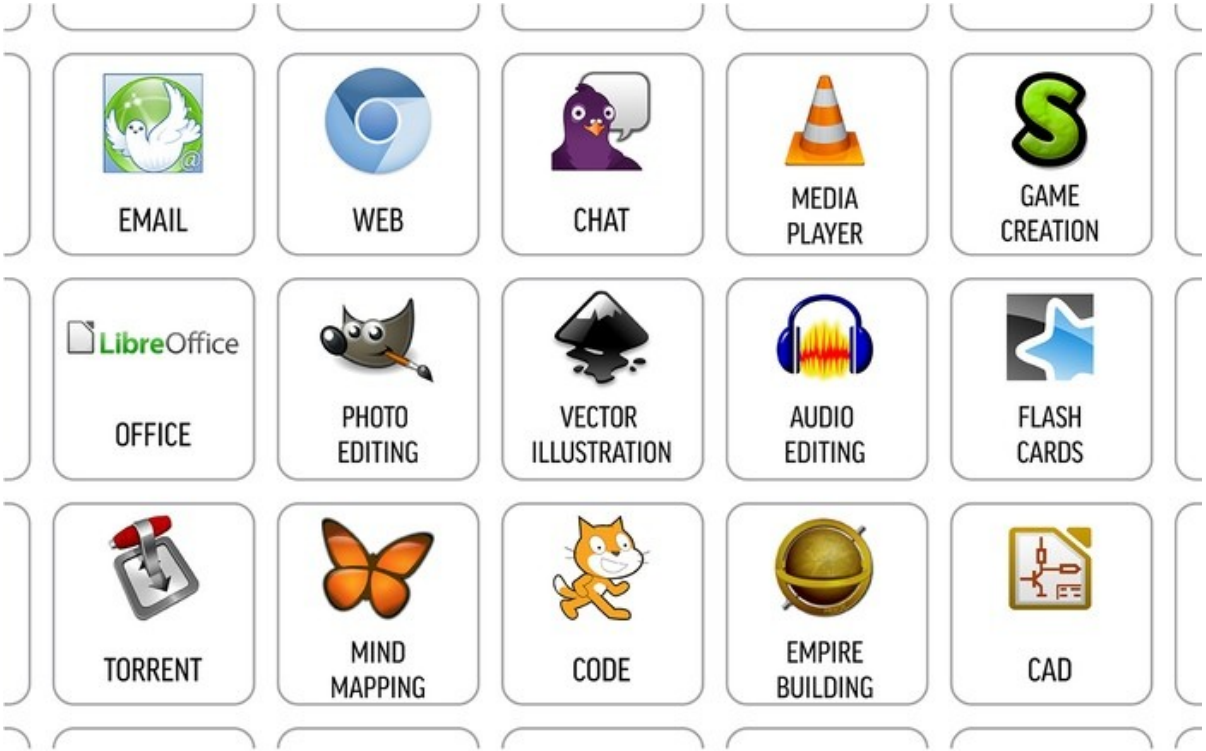

Marketing says: IT'S ALL FREE!

OpenWRT

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Question

What can you do with a full blown Linux, given only 16MB, 8MB or even 4MB RAM or Flash is available?

BusyBox (+ uClibc)

Where is it all going?

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KEEP CALM you have been hacked

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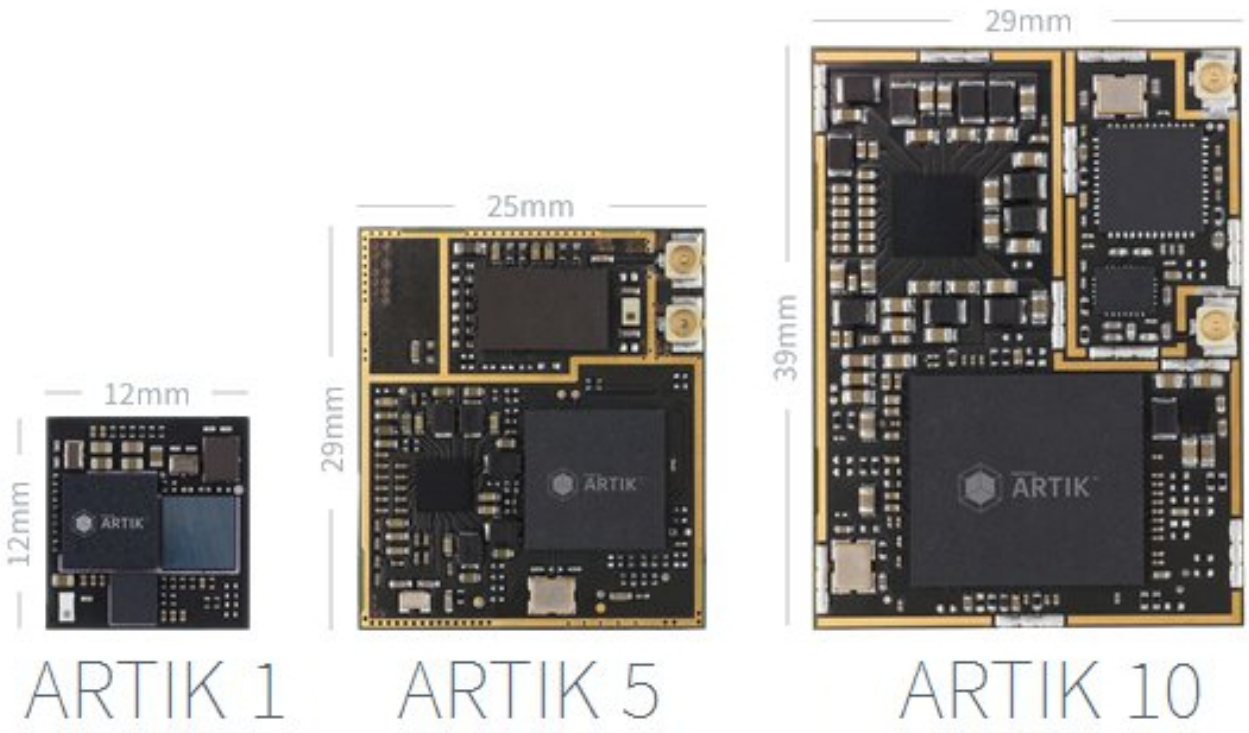

Can you (crypto)secure my computing?

ARTIK TrustZone

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*The secure element supports ARM TrustZone, and is supported with a machine learning based anomaly detection system that helps identify abnormalities and unusual behavior that may reflect hacking or intrusion activity, says **Samsung**.*

Internet of Things

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Definition

A network of physical objects or “things” embedded with electronics, software, sensors and connectivity to enable it to achieve greater value and service by **exchanging data with the manufacturer**, operator and/or other connected devices.

Intel's part of the IoT story

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The dedicated Instructables.com Intel IoT page

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Thank you · ¡Gracias! · Ďakujem

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