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KITRA 710

Developed by  **Fae++**
innovationthroughdesign

Powered by  **ARTIK**™

Christian Raineri
Nov./Dec. 2016

SLUSH 2016 Helsinki

Product presentation



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R&D Development process

- | | | |
|----------------------|---|---------------------------|
| 1. Needs | → | Idea |
| 2. Feasability | → | Prototype |
| 3. Industrialization | → | Engineering sample |
| 4. Validation | → | Product |

Evaluation board & help from market...



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...FOR STEP 1 ONLY!

A lot of open hardware and evaluation board that are PROTOTYPE ACCELERATOR *but*, how to move fast to product also?

RUSHUP: PRODUCT ACCELARTORS



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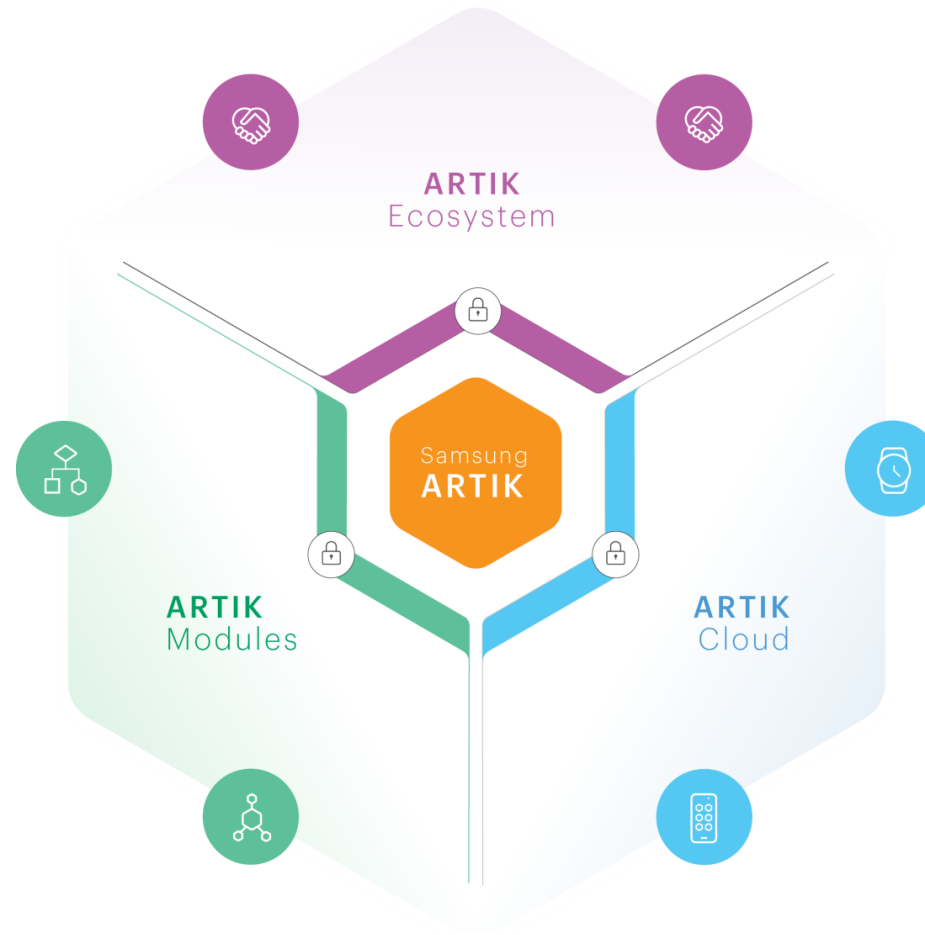
RUSHUP creates PRODUCT ACCELERATORS and is the answer when makers, developers and high mix low volume industry want to turn on in a fast way the idea in a product!

RUSHUP

Introducing Samsung ARTIK: Complete end to end IoT platform



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Speed up the delivery of secure, interoperable, and intelligent IoT products and services



Samsung ARTIK IoT Platform



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 Samsung ARTIK™ Ecosystem

ARTIK MODULES



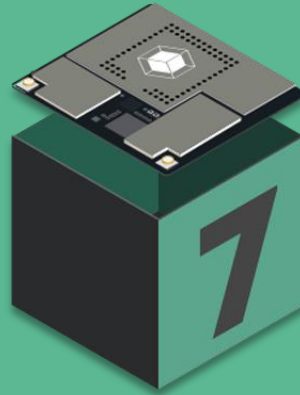
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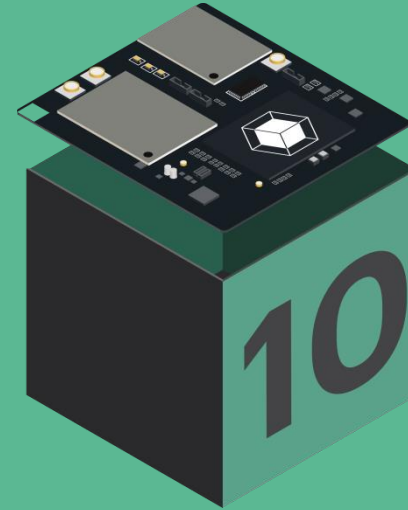
ARTIK 0



ARTIK 5



ARTIK 7



ARTIK 10

Samsung ARTIK Ecosystems



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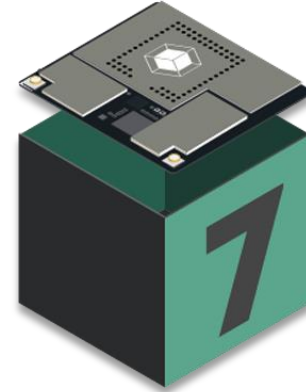
KITRA: FAMILY OF SAMSUNG ARTIK PRODUCT ACCELERATORS



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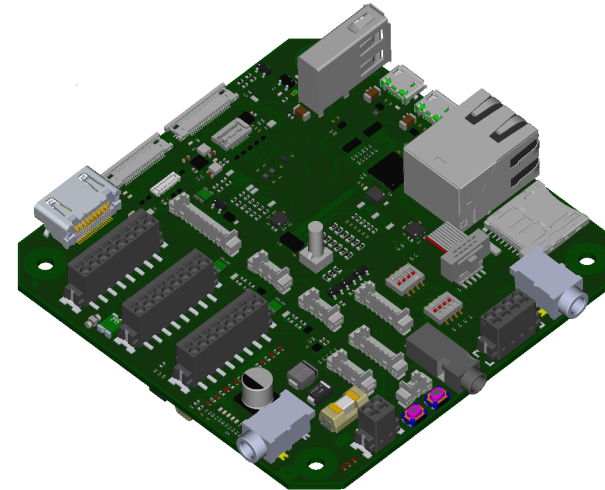
ARTIK 5



ARTIK 7



KITRA 520



KITRA 710

KITRA 710: ARTIK 710 product accelerator



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Ultra High Performance configurable electronics platform

- Multi-core processing, communications, memories, I/O & sensors
- Small KITRA form factor (only 90x90mm)
- Product accelerator for:
 - High performance multimedia system
 - Digital Signage
 - HMI
 - Industrial process and PLC
 - Home gateway
 - Fog computing & IoT
 - ARTIK 710 ideas
- Usable from makers to professional engineers with different technical approach
- Customer & market oriented design

TOP SIDE



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RGB LED &
Proximity sensor

USB 2.0

USB dbg

USB OTG

Gbe

Ethernet

uSD card

MIPI camera

MIPI display

HDMI

Headphone

Stereo Speakers

Microphone

ON/OFF & Reset

Power supply

Expansions: UARTs, I2C,
I2S, PWM, CAP keys,
CTRL keys

Analog
Inputs

Digital
Input

Digital
Output

IR IN RC

BOTTOM SIDE



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LVDS display

Samsung ARTIK 710

Backlight display

6 Axys IMU, temperutre & humidity sensors

HW FEATURES

5/12V Power supply

SAMSUNG ARTIK 710 MODULE

- Octacore 8x ARM® Cortex®-A53@1.4GHz GPU Mali-400 MP2 Core, Scalers and JPEG accelerator
- Mali T400, 3D graphics accelerator
- 1GB DDR3 @ 800MHz
- 4GB eMMC v4.5
- Secure point to point authentication and data transfer. Trustonic TEE
- Wi-Fi IEEE802.11b/g/n/ac
- *Bluetooth 4.1 (Classic+LE)*
- *ZigBee/Thread*
- *Secure element*

SGTL5000 I2S AUDIO CODEC & 2 x 2,5W CLASS D POWER AMP

Microphone input

Headphone output

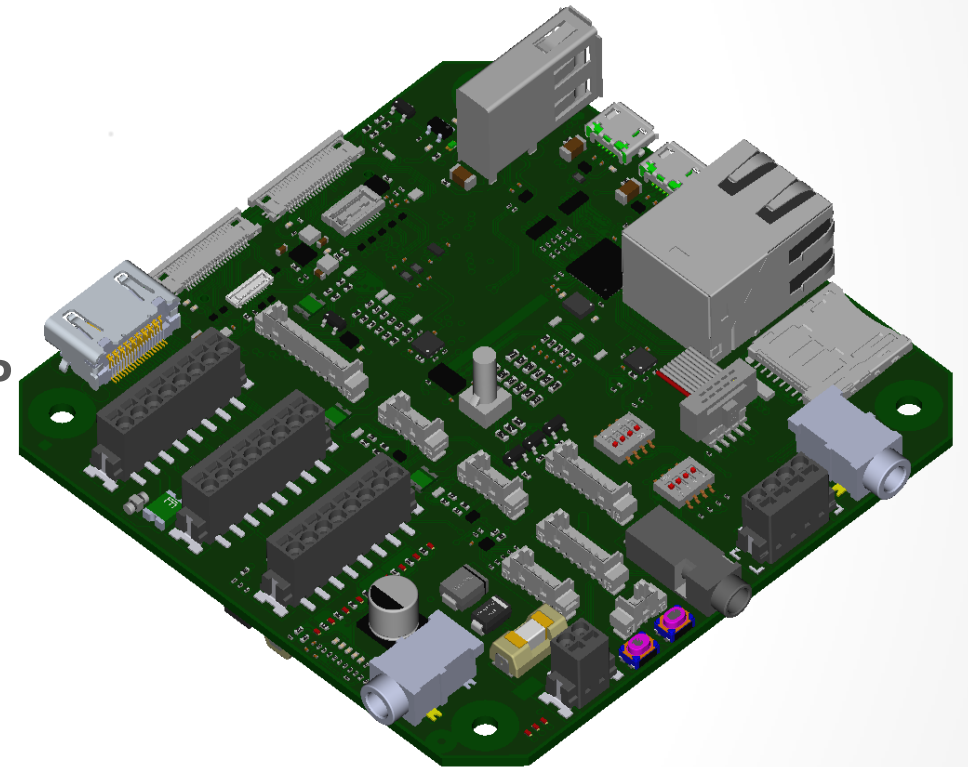
MIPI connectors for CAMERA (Raspberry & KITRA 520)

MIPI connectors for LCD (Raspberry & KIRA 520)

HDMI Type A connector

LVDS & backlight connectors for standard LDC panels

uSD card



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HW FEATURES (Cont'd)

Microswitches for boot options

2 x USB

One USB to UART converter integrated for Artik 710 monitor & debug

Gigabit Ethernet (10/100/1000 Mbps)

Jack connector for IR sensor (remote control)

Humidity & temperature sensor

Proximity sensor (up to 2m)

6-Axys IMU (Acceleration and Gyroscope)

6 Analog Inputs (0...10V range; 12 Bit resolution)

6 Digital Inputs (up to 30V, industrial PLC type)

6 Digital Outputs (up to 30V; up to 0,7A; industriale PLC type)

5 Capacitive touch inputs

RGB LED

Expansion connector for UART, I2C and SPI

Expansion connector for PWMs

Expansion connector for I2S digital audio I/F

Expansion connector for second UART

Expansion connector for ARTIK 710 KEYS



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KITRA 710 : FAST DEVELOPMENT



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IoT APPLICATION IN MINUTES:

- ✓ Resin.io (makes it simple to deploy, update, and maintain code running on remote devices).

ARTIK 710 DEVELOPMENT

- ARTIK IDE
- OS: Fedora
- *Development Environment:* Node-RED, Arduino® IDE, C, C++, Java, JavaScript, Python

Edit function node

Name

CLOUD CONFIG

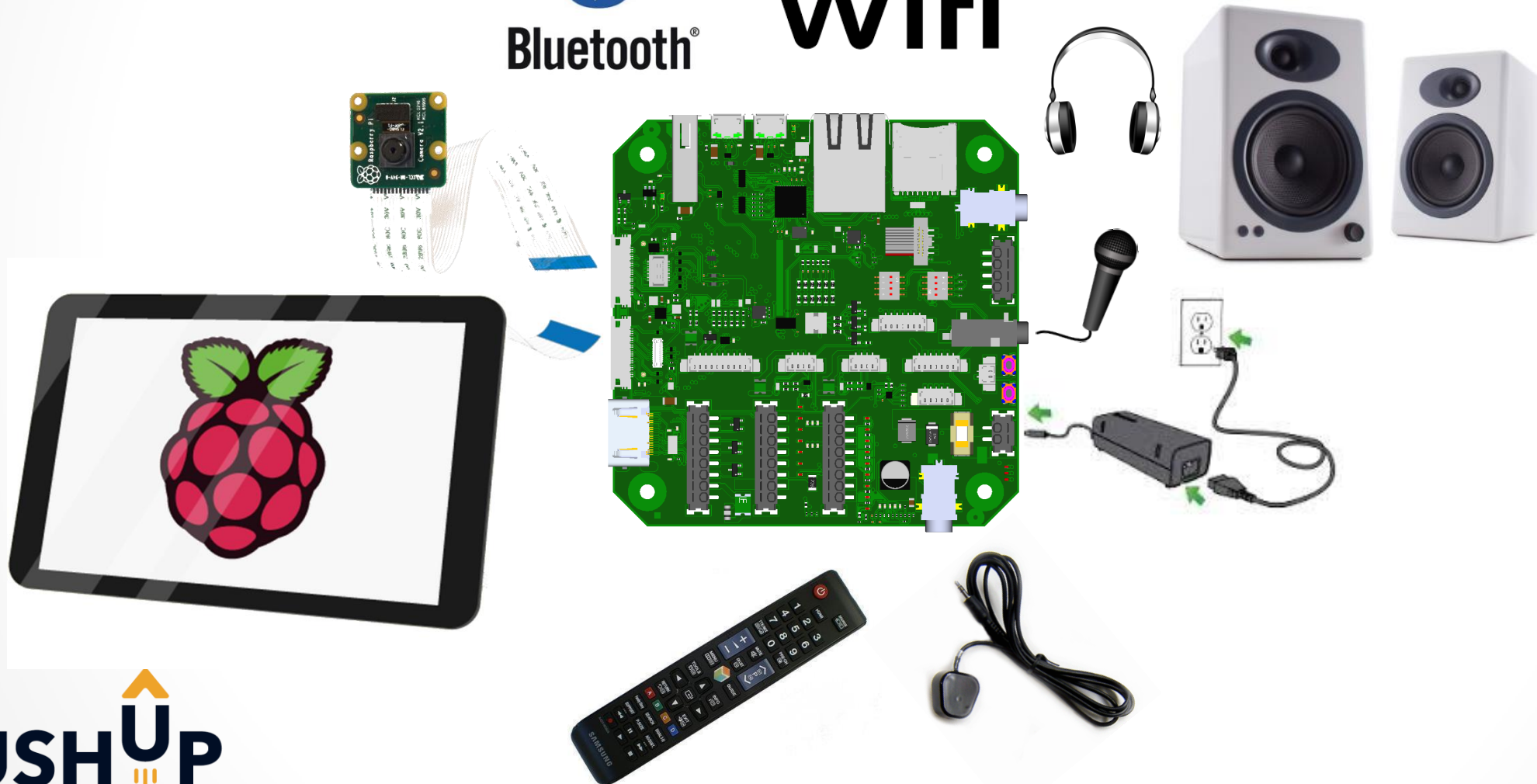
Function

```
1 msg.headers = {  
2   "Content-Type": "application/json",  
3   "Authorization": "Bearer <ID>"  
4 };  
5 msg.payload = {"data":  
6   {"steps": (flow.get('steps') || 0)},  
7   "ssid": "<ID>",  
8   "type": "message"  
9 };  
10 return msg;
```

Multimedia with standard off the shelf parts



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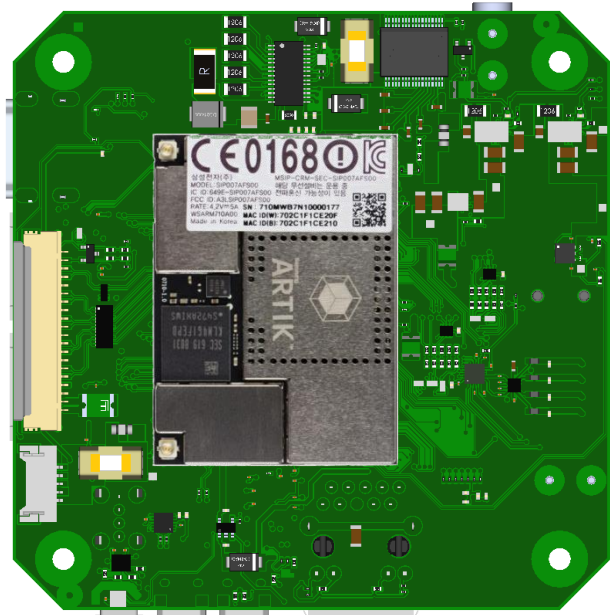


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Industrial HMI & PLC



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6 x 30V INPUT

6 x 30V/0,7A OUTPUT

Wifi



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