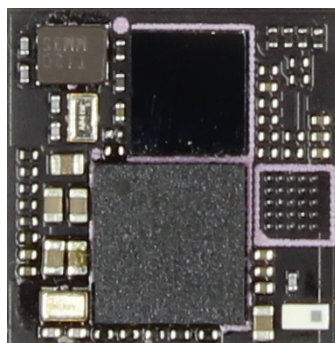




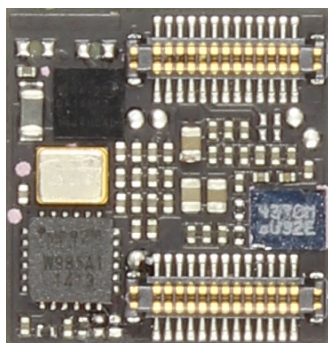
**ARTIK™**  
MAKE EVERYTHING SMARTER



**NOVEMBER, 2015**



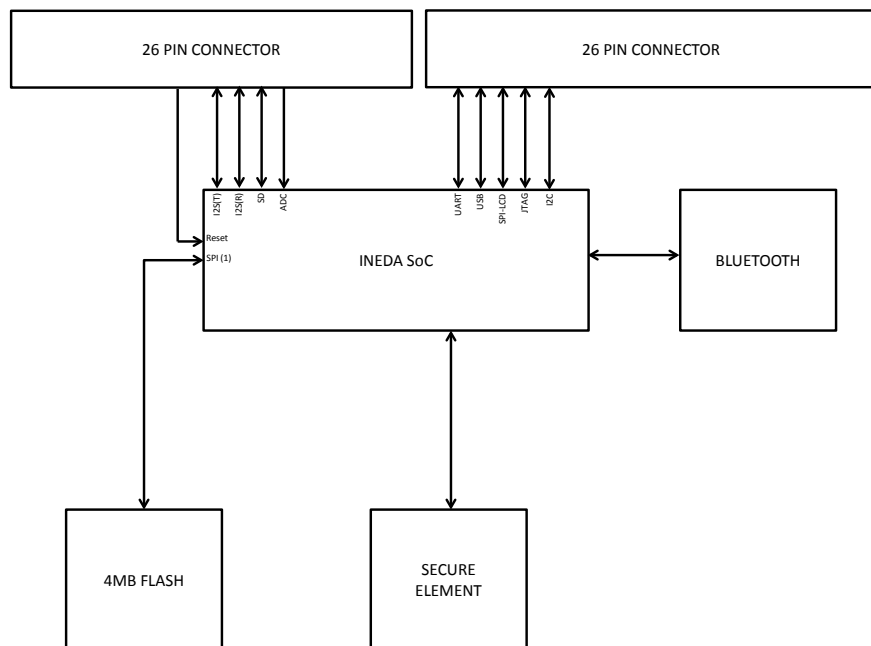
**TOP VIEW**



**BOTTOM VIEW**

Samsung's ARTIK™ 1 Module is a highly integrated combination module for the Internet of Things (IoT) that utilizes dual MIPS® processors, embedded memories and power management. In addition the module is packaged with flash memory, a crypto engine and communication using Bluetooth V4.1 (BLE). All this capability is packaged in a 12mm x 12mm footprint the world's smallest form factor in its class.

Aimed especially at power-sensitive devices, ARTIK 1 provides excellent performance in a portable environment. With a feature set tailored for wearable's and IoT end nodes, ARTIK 1 is a mobile workhorse.

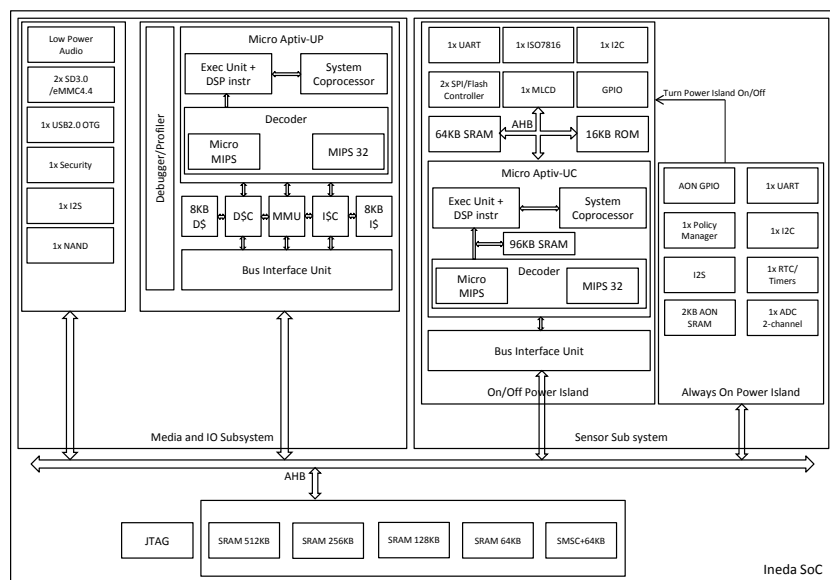


**ARTIK 1 Module Block Diagram**

<b>Main CPU</b>	MIPS® microAptiv™-UP@240MHz.
<b>Sensor CPU</b>	MIPS® microAptiv™-UC@80MHz.
<b>Power Management</b>	Single wide input supply with 6 LDO's.
<b>Secure Element</b>	Samsung's leading Secure Element (SE) technology.
<b>SRAM</b>	1MB embedded static memory.
<b>FLASH Memory</b>	4MB.
<b>Bluetooth</b>	Bluetooth Low Energy (BLE) V4.1.
<b>Media IO Subsystem</b>	USB controller, crypto engine, audio MP3 decoder.
<b>Analog and Digital I/O</b>	GPIO, Analog Input, UART, SPI-LCD, I²S, I²C, JTAG.
<b>Deployment</b>	Mass Production Ready module with Nucleus® RTOS.

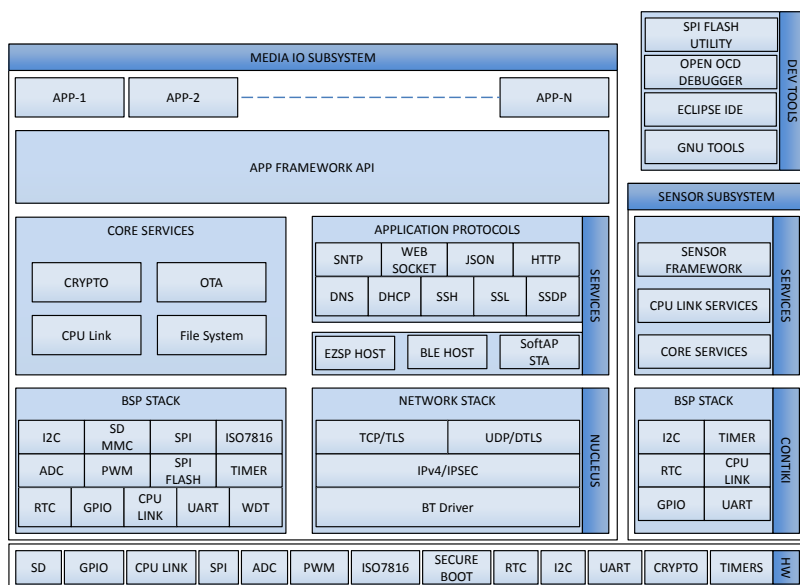
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ARTIK 1 Module Ineda Sub System

<b>Main CPU</b>	MIPS® microAptiv™- UP 32-bit Address & Data Paths @240MHz (360DMIPS). 8K I\$ and 8K D\$. 5- stage pipelining architecture. DSP extensions.
<b>Sensor CPU</b>	MIPS® microAptiv™- UC 32-bit Address & Data Paths @80MHz (100DMIPS). 5- stage pipelining architecture. DSP extensions.
<b>Media Interfaces</b>	Low Power Audio 1x SPI- LCD 1x SD3.0/eMMC4.4 1x USB OTG 1x I²S (T), 1x I²S (R)
<b>Sensor Interfaces</b>	1x UART 1x ISO7816 (connected to SE) 1x I²C 1x SPI controller GPIO
<b>Always ON Sensor Interfaces</b>	2- channel ADC 1x UART 1x I²C 1x I²S GPIO



ARTIK 1 Module Software Stack

## ARTIK 1 MODULE SECURITY FEATURES

Samsung considers world class security as one of the most important requirements when adding IoT nodes into the cloud. As such Samsung build its IoT ARTIK product family with a security architecture in mind. To assure a secure environment for all IoT nodes, the ARTIK family has dedicated security hardware and software components in place.

Every ARTIK 1 module has the ability to authenticate its boot image using a secure hash and execute a secure boot once the boot image has been authenticated. Secure communication and key management is facilitated by the Secure Element as part of any ARTIK 1 module. Samsung's commitment to security gives developers the ability to create secure user experiences using the ARTIK 1 platform.

## ARTIK 1 MODULE ORDERING INFORMATION

For more information, please contact a sales representative in your area or e-mail [customer@artik.io](mailto:customer@artik.io).