



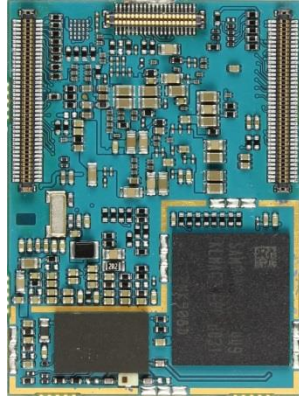
Samsung
ARTIK™
MAKE EVERYTHING SMARTER

ARTIK
10

April, 2016



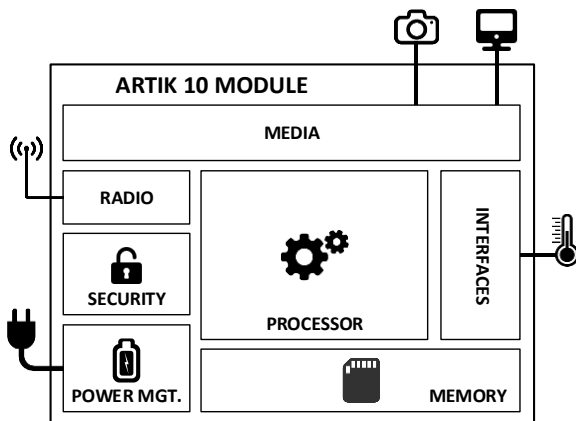
TOP VIEW



BOTTOM VIEW

Samsung's ARTIK™ 10 Module is the world's highest performance Internet-of-Things (IoT) module. It is based on an octa-core architecture, containing quad ARM® Cortex®-A15 and ARM® quad Cortex®-A7 cores, DRAM and flash memory, camera and display interfaces, a full complement of digital I/O and analog inputs, and world class connectivity with IEEE802.11a/b/g/n/ac, Bluetooth 4.1 + LE and a ZigBee/Thread* radio inside a package that is just 29x39x1.3mm. The scalable processing power of the ARTIK 10 makes it ideally suited for video and image processing tasks like autonomous vehicle navigation, intensive 3D graphics or large immersive displays. Alternatively, the small size of the ARTIK 10 enables servicing application domains with a high local computation requirement, like model-based robotic control, virtual reality or image processing.

The hardware based Secure Element works with the ARM® TrustZone® and Trustonic's Trusted Execution Environment (TEE) to provide "bank level" security end-to-end.

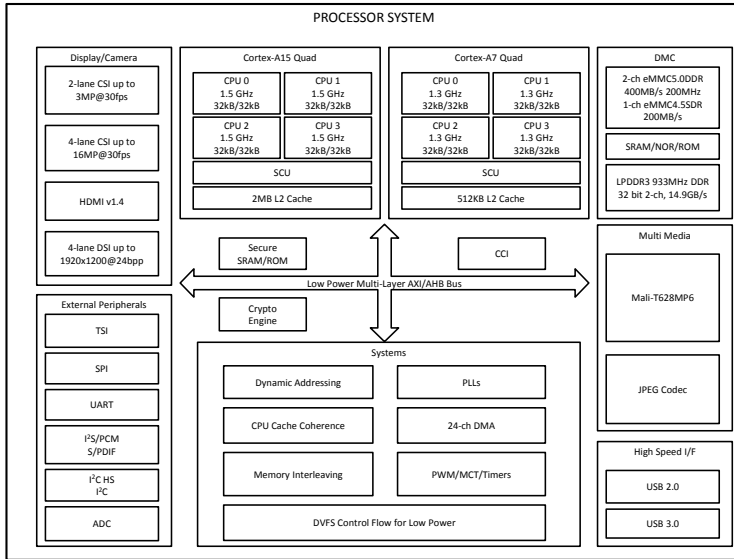


ARTIK 10 Module Block Diagram

Processor	
CPU	Quad core Cortex® A15@1.5GHz, Quad core Cortex® A7@1.3GHz
GPU	Mali™-T628 MP6
Media	
Camera I/F	1x 2-Lane MIPI CSI up to 3MP@30fps 1x 4-lane MIPI CSI up to 16MP@30fps (Supports YUV and MJPEG)
Display	4-lane MIPI DSI up to FHD 1920x1200@24bpp simultaneous HDMI 1920x1080@60fps
Audio	1x channel PCM and 2-channel I ² S audio interface, supporting 5.1 channel audio
Memory	
DRAM	2GB LPDDR3
FLASH	16GB eMMC
Security	
Secure Element	Secure point to point authentication and data transfer
Trusted Execution Environment	Trustonic TEE (NDA required)
Radio	
WLAN	IEEE802.11a/b/g/n/ac
Bluetooth	BT, BLE
IEEE802.15.4	ZigBee, Thread*
Power Management	
PMIC	Provides all power of the ARTIK 10 module using on board bucks and LDO's
Interfaces	
Analog and Digital I/O	GPIO, Analog Input, UART, I ² C, I ² S, SPI, USB 2.0, USB 3.0, SDIO, JTAG

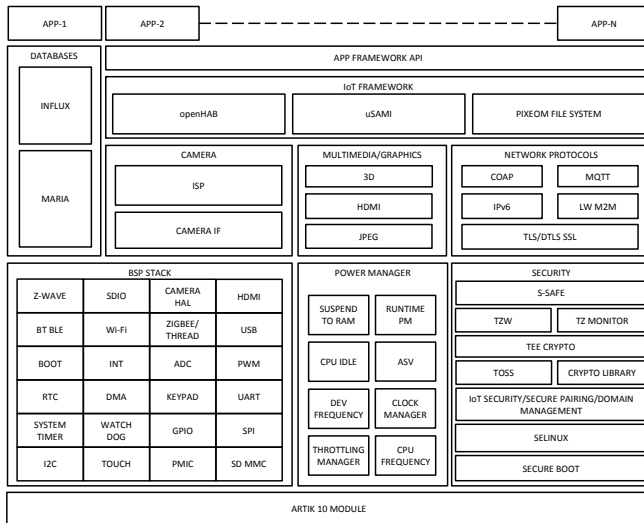
*Thread : Under development

SAMSUNG ELECTRONICS RESERVES THE RIGHT TO CHANGE PRODUCTS, INFORMATION AND SPECIFICATIONS WITHOUT NOTICE.
Products and specifications discussed herein are for reference purposes only. All information discussed herein is provided on an "AS IS" basis, without warranties of any kind. This document and all information discussed herein remain the sole and exclusive property of Samsung Electronics. No license of any patent, copyright, mask work, trademark or any other intellectual property right is granted by one party to the other party under this document, by implication, estoppel or other-wise. Samsung products are not intended for use in life support, critical care, medical, safety equipment, or similar applications where product failure could result in loss of life or personal or physical harm, or any military or defense application, or any governmental procurement to which special terms or provisions may apply. For updates or additional information about Samsung products, contact your nearest Samsung office. All brand names, trademarks and registered trademarks belong to their respective owners.



ARTIK 10 Module Processor Sub System

Processors	Quad core Cortex® A15@1.5GHz 32KB I\$ and 32KB D\$ per core Shared 2MB L2 Cache. Quad core Cortex® A7@1.3GHz 32KB I\$ and 32KB D\$ per core Shared 512MB L2 Cache
Display/Camera	Camera I/F up to 16MP@30fps 2-ch/4-lane MIPI CSI@1.5Gbps D-PHY (Supports YUV and MJPEG) HDMI v1.4 1x 4-lane DSI FHD@60fps
DMC	2-channel eMMC5.0 DDR@400MB/s Support for SRAM/NOR/ROM LPDDR3 interface @ 933MHz DDR 32b 2-channel 14.9GB/s
External Peripherals	1xSPI, 1xUART (4-pin), 1xUART (2-pin), 2xI2S/PCM, 4xHS I2C, 4xI2C, 6-channel ADC, 95xGPIO
Multi Media	Mali™-T600 graphics accelerator, JPEG Codec
High Speed Interfaces	1xUSB2.0 Host, 1xUSB2.0 Device 1xUSB3.0, 1-channel SD/SDIO eMMC5.0
Security	Secure Hash



ARTIK 10 Module Software Stack

ARTIK 10 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 built 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 10 module has the ability to authenticate its boot image using a secure hash, and to 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 10 module. Finally, secure execution can be performed in Trustonic’s Trusted Execution Environment (TEE) using ARM® TrustZone®.

The ARTIK 10 software stack as described facilitates total security starting from authenticated adoption of an ARTIK 10 IoT node into the cloud to secure communication and remote software updates.

Samsung’s commitment to security gives developers the ability to create secure user experiences using the ARTIK 10 platform.

ORDERING INFORMATION

Evaluation kits are currently available from Digi-Key. For volume ordering, please contact a sales representative in your area or email sales@artik.io.