



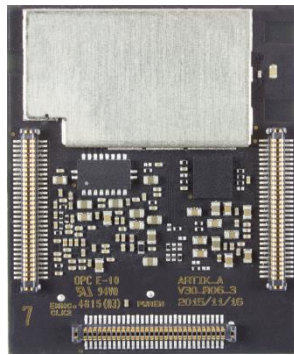
Samsung
ARTIK™

5

PRODUCT BRIEF

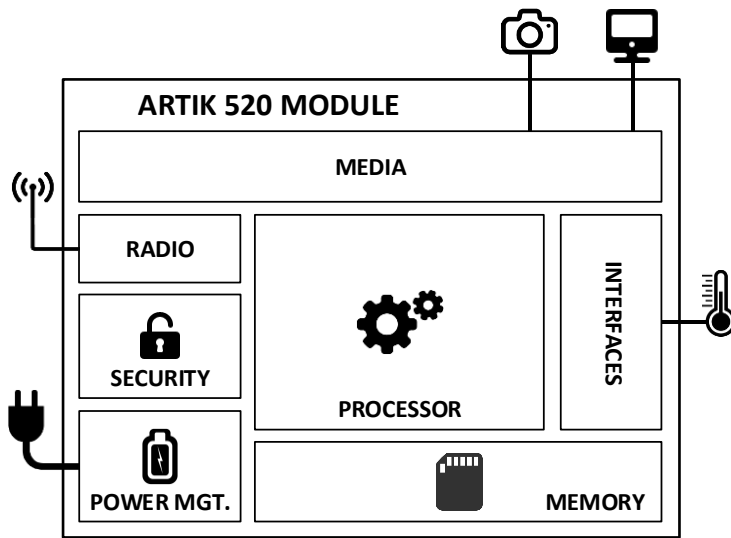


TOP VIEW



BOTTOM VIEW

Samsung's ARTIK™ 520 Module is a highly-integrated System-in-Module that utilizes a dual core ARM® Cortex®-A7 processor packaged DRAM and Flash memories, a Secure Element and a wide range of wireless communication options such as 802.11a/b/g/n/ac, Bluetooth® 4.1, Bluetooth Low Energy (BLE), and 802.15.4/ZigBee communications all into a 30x25mm footprint. The many standard digital control interfaces support external sensors and higher performance peripherals to expand the module capabilities. With the combination of Wi-Fi, Bluetooth and ZigBee, the ARTIK 520 Module is the perfect choice for home automation and home hub devices, while also supporting a rich UI/UX capability with the camera and display options. 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.

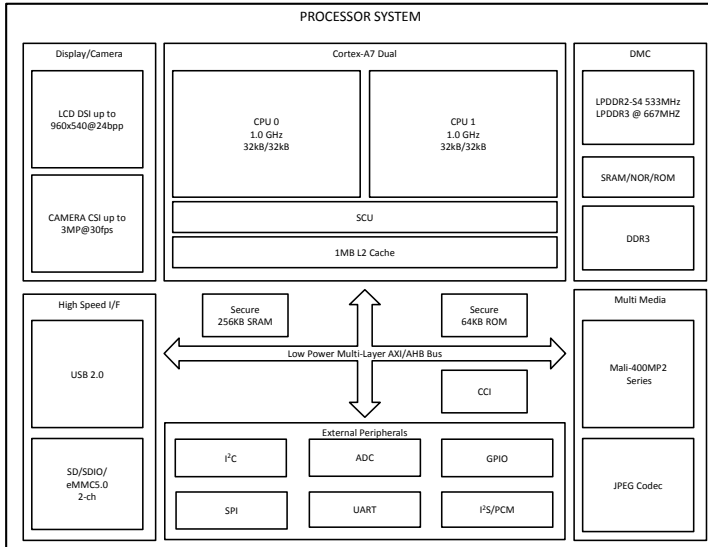


ARTIK 520 Module Block Diagram

Processor	
CPU	Dual core ARM® Cortex®-A7@1.0GHz
GPU	Mali™-400MP2 core
Media	
Camera I/F	1x 2-Lane MIPI CSI up to 3MP@30fps (Supports YUV and MJPEG format)
Display	2-Lane MIPI DSI up to qHD 960x540@24bpp
Audio	1-channel PCM and 1-channel 24-bit I2S audio interface
Memory	
DRAM	512MB LPDDR3
FLASH	4GB eMMC
Security	
Secure Element	Secure point to point authentication and data transfer
Trusted Execution Environment	Trustonic TEE (NDA required)
Radio	
WLAN	IEEE 802.11a/b/g/n/ac
Bluetooth	BT/BLE
IEEE802.15.4	ZigBee
Power Management	
PMIC	Provides all power of the ARTIK 520 Module using on board bucks and LDO's
Interfaces	
Analog and Digital I/O	GPIO, I²C, SPI, UART, SDIO, USB 2.0, JTAG, Analog Input

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ARTIK 520 Module Processor Sub System

Processors	Dual core ARM® Cortex® A7@1.0GHz 32KB I\$ and 32KB D\$ per core Shared 1MB L2 Cache
Display/Camera	Camera I/F 3MP@30fps 1-channel, 2-lane MIPI CSI@1Gbps D-PHY (Supports YUV and MJPEG format) 1-channel, 2-lane MIPI DSI@qHD
DMC	Support for SRAM/NOR/ROM LPDDR2 interface@533MHz LPDDR3 interface@667MHz
External Peripherals	2xSPI, 2xUART (4-pin), 1xUART (2-pin) 6xI2C+1xI2C (Camera), 1xI2S/PCM 2-channel ADC 100xGPIO (multiplexed)
Multi Media	Mali™-400 graphics accelerator JPEG Codec
High Speed Interfaces	1xUSB2.0 1-channel SD/SDIO eMMC5.0
Security	Secure Hash

ARTIK 520 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.

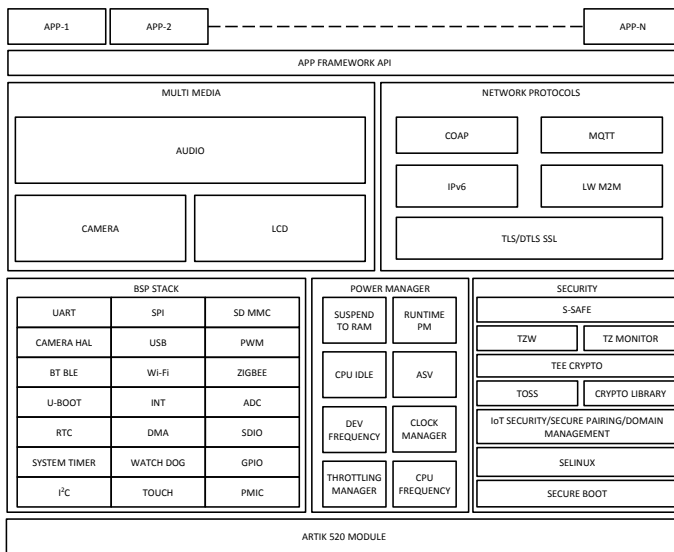
Every ARTIK 520 Module has the ability to authenticate its boot image using a secure hash and execute a secure boot once the boot image has been authenticated. Secure communication and key management is facilitated by the Secure Element as part of any ARTIK 520 Module. Finally secure execution can be performed in Trustonic’s Trusted Execution Environment (TEE) using ARM® TrustZone®.

The ARTIK 520 Module software stack as described facilitates total security starting from authenticated adoption of an ARTIK 520 Module 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 520 Module.

ARTIK 520 MODULE ORDERING INFORMATION

For volume ordering of the evaluation kits, please contact a sales representative in your area or email sales@artik.io.



ARTIK 520 Module Software Stack