

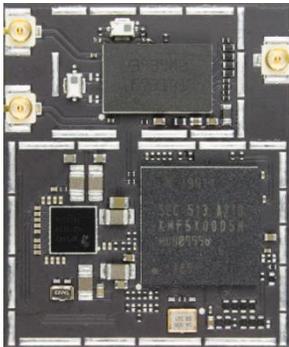


# ARTIK™

MAKE EVERYTHING SMARTER



February, 2016

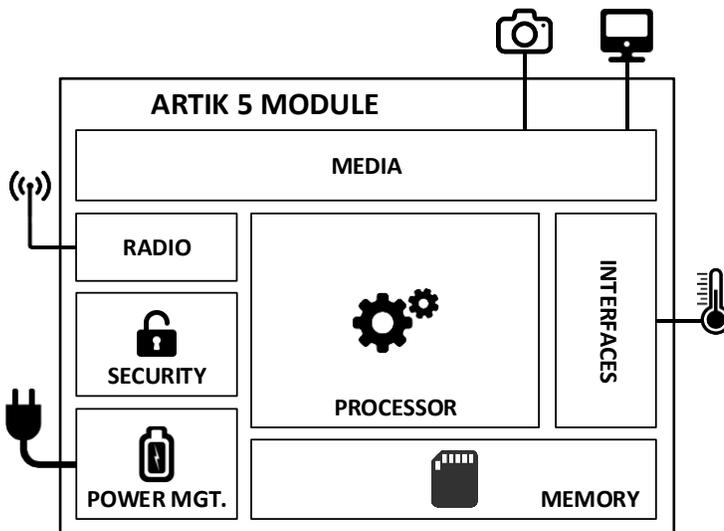


TOP VIEW



BOTTOM VIEW

Samsung's ARTIK 5 Module is a highly-integrated System-in-Module that utilizes the Exynos architecture with 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, 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 and ZigBee, the ARTIK 5 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.

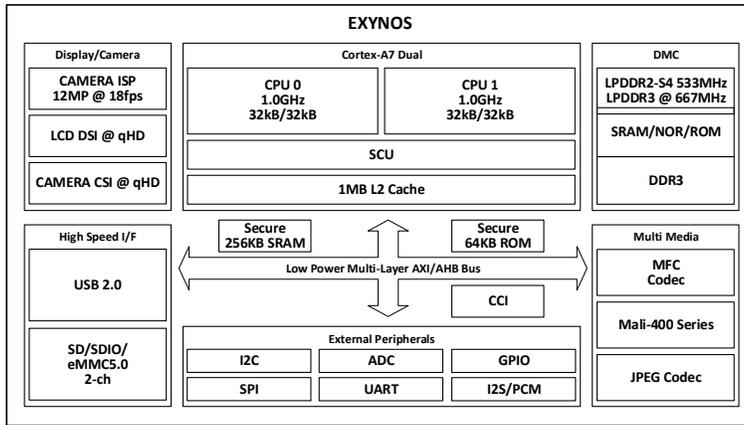


ARTIK 5 Module Block Diagram

|                        |                               |   |
|------------------------|-------------------------------|---|
| Processor              | Exynos                        | Dual core Cortex-A7@1.0GHz  |
|                        | GPU                           | Mali-400MP2 core including scalers and JPEG accelerator                 |
| Media                  | Camera I/F                    | 1x 2-Lane MIPI CSI up to 3MP@30fps                                      |
|                        | Display                       | 2-Lane MIPI DSI up to qHD 960x540@24bpp                                 |
|                        | Audio                         | 1-channel PCM and 1-channel 24-bit I <sup>2</sup> S 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   |
| Radio                  | WLAN                          | IEEE 802.11a/b/g/n standard compliant                                   |
|                        | Bluetooth                     | 4.1+LE  |
|                        | ZigBee                        | IEEE802.15.4  |
| Power Management       | PMIC                          | Provides all power of the ARTIK 5 module using on board bucks and LDO's |
|                        | Interfaces                    | GPIO, I <sup>2</sup> C, SPI, UART, SDIO, USB 2.0, JTAG, Analog Input    |
| Analog and Digital I/O |                               | GPIO, I <sup>2</sup> C, SPI, UART, SDIO, USB 2.0, JTAG, Analog Input    |

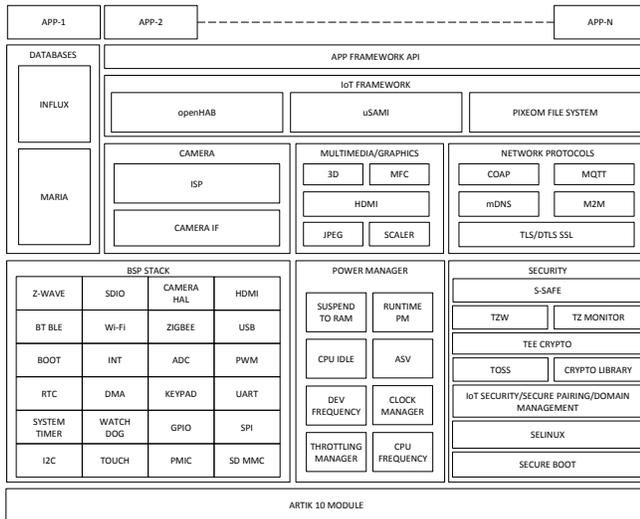
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|                              |  |
|------------------------------|--|
| <b>Exynos Processors</b>     | Dual core Cortex A7@1.0GHz<br>32KB I\$ and 32KB D\$ per core<br>Shared 1MB L2 Cache                  |
| <b>Display/Camera</b>        | Camera ISP 12MP@18fps<br>1-channel, 2-lane MIPI CSI@qHD<br>1-channel, 2-lane MIPI DSI@qHD            |
| <b>DMC</b>                   | Support for SRAM/NOR/ROM<br>LPDDR2 interface@533MHz<br>LPDDR3 interface@667MHz                       |
| <b>External Peripherals</b>  | 2xSPI, 2xUART (4-pin), 1xUART (2-pin)<br>7xI2C, 1xI2S/PCM<br>2-channel ADC<br>100xGPIO (multiplexed) |
| <b>Multi Media</b>           | Multi Format Codec<br>MALI-400 graphics accelerator<br>JPEG Codec                                    |
| <b>High Speed Interfaces</b> | 1xUSB2.0<br>1-channel SD/SDIO eMMC5.0  |
| <b>Security</b>              | Secure Hash  |

ARTIK 5 Module Exynos Sub System



ARTIK 5 Module Software Stack

ARTIK 5 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 5 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 5 module. Finally secure execution can be performed in Trustonic’s Trusted Execution Environment (TEE) using ARM® TrustZone®.

The ARTIK 5 software stack as described facilitates total security starting from authenticated adoption of an ARTIK 5 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 5 platform.

ARTIK 5 MODULE ORDERING INFORMATION

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