ARTIK
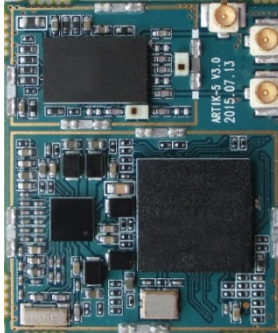## MAKE EVERYTHING SMARTER

ARTIK 5

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 (SE) and a wide range of wireless communication options such as 802.11b/g/n, Bluetooth 4.0, 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 Samsung's Trusted Execution Environment (TEE) to provide "bank level" security end-to-end.
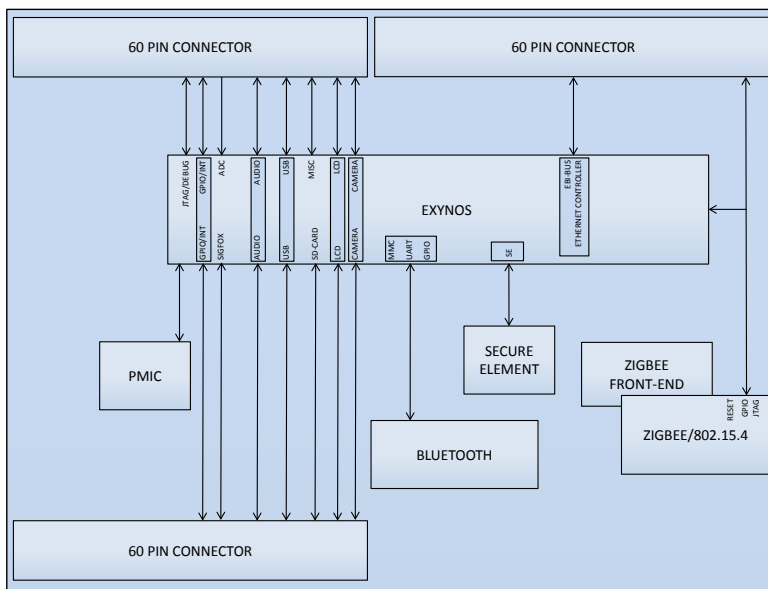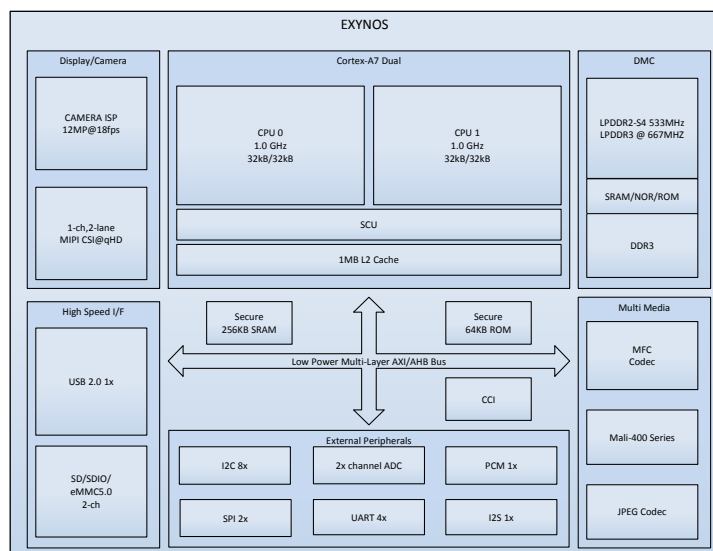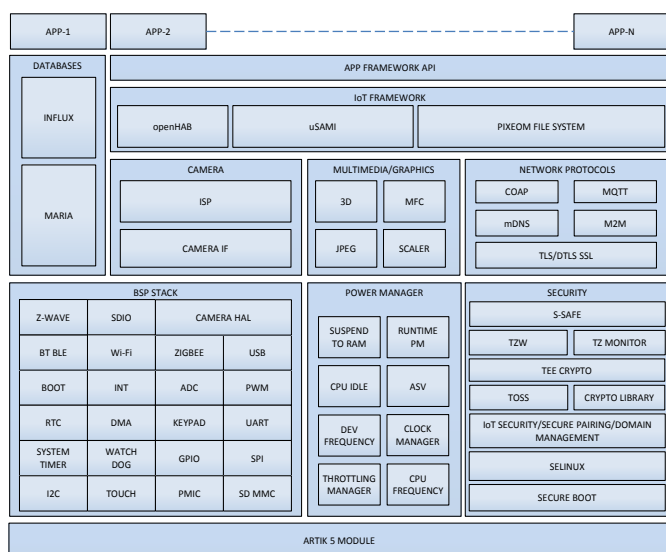

ARTIK 5 Module Block Diagram

Exynos Processors	Dual core Cortex-A7@1.0GHz.
GPU	Mali-400MP2 core including scalers and JPEG accelerator supports 3D and 2D graphics hardware OpenGL ES 1.1/2.0 and OpenVG 1.1.
Camera ISP	2-Lane MIPI CSI up to 3MP@30fps. H.264 codec supports 720p@30fps.
Display	2-Lane MIPI DSI v1.01r11, Up to qHD 960x540@24bpp.
DRAM	512MB LPDDR3.
Flash Memory	4GB eMMC.
Secure Element	Secure point to point authentication and data transfer.
Audio	1-channel PCM and 1-channel 24-bit I²S audio interface.
IEEE802.11b/g/n /ac	Up to 433.3Mb/s, single antenna.
Bluetooth 4.0 + LE	Class 1 or 2 transmitter operation, Extended Synchronous Connections (eSCO), Adaptive Frequency Hopping (AFH).
ZigBee	IEEE802.15.4.
PMIC	Provides all power of the ARTIK 5 module using 5 bucks and 25 LDO's.
Analog and Digital I/O	GPIO, I²S, I²C, SPI, UART, SDIO, MMC, USB 2.0, JTAG, Analog Input.

ARTIK 5 Module Exynos Sub System

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

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 Samsung's Trusted Execution Environment (TEE) using ARM® TrustZone®.

Samsung's commitment to security gives developers the ability to create secure user experiences using the ARTIK 5 platform.

The ARTIK 5 software stack as described in the above diagram 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 e- mail customer@artik.io.