

ES-501

IOT System on module ■ Based on Atmel SAMA5D3 processor

ES-501 is a perfect system on module (SOM) for IOT applications such as remote IOT gateway, featuring high performance, ultra low power consumption, enhanced security, and wide variety of interfaces and communications options.

Based on Atmel SAMA5D3 ARM CortexA5 application processor running at 536MHz, it enables to utilize the robustness of full operating systems such as Linux and Windows in a variety of demanding applications. Long battery operation time is achieved due to the processors' low power consumption and multiple power modes coupled with a low power DDR2 memory.

Thanks to its standard SMARC interface, ES-501 users are free to employ multi-sourcing strategies and enjoy multiple possibilities of future hardware upgrade. Enhanced security so important in IOT applications includes anti-cloning and secure communications through a secure boot mechanism and streaming AES encryption

The ES-501 is available with Linux and Windows OS.



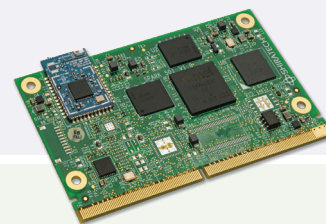
High performance ARM CortexA5 processor

Lowest power SOM running full OS

Standard SMARC interface

Secure boot and secure communications

On board WiFi/BT radio



MAIN FEATURES

HARDWARE

SYSTEM

- Processor Cortex A5 @ 536MHz
- using Atmel SAMA5D3x eMPUs,
- Supporting SAMA5D31 or SAMA5D36 options
- Floating Point Unit VFPv4
- Memory: 32bits wide @166Mhz, 512MB LPDDR2.
- NAND Flash expendable up to 1GB, 4GB eMMC

WIRELESS INTERFACE (OPTIONAL)

- Atmel WILC3000, combo chip W-Fi and BT/BLE
- IEEE 802.11 b/g/n (1x1) for up to 72Mbps PHY rate
- 2.4GHz ISM, Wi-Fi Direct and Soft-AP

CONNECTIVITY

- 10/100/1000 Ethernet with IEEE1588 and 10/100 port on board Phys (D36 option)
- 10/100 Ethernet on board Phy (D31 option)
- Up to 3 USART ports (Tx, Rx, CTS, RTS)
- Up to 2 UART (Tx, RX)
- 3 USB V2.0 interfaces (2 Host, 1 Host/Device)
- Up to 3 I2C interfaces
- Up to 2 SPI interface (4 CS)
- Up to 102 GPIO 3.3V
- Up to 5 ADC lines
- 1 HS SD Card/SDIO/MMC interfaces
- 1 CAN interface (D36 option)

DISPLAY

- RGB (optional LVDS), up to 18 bit per Pixel, 1280x720 pixels
- Touch screen 4 or 5 wires resistive

MULTIMEDIA

SSC - For audio support

SECURITY

TRNG: True Random Number Generator
Encryption Engine: AES, TDES, SHA
Atmel® Secure Boot support

DEBUG

Dedicated debug UART

POWER

Single input power 3.3-5V

ENVIRONMENT

Commercial temperature. 0° to 70° C
Industrial temperature. -45° to 85° C

MECHANICAL

- Standard SMARC® ("Smart Mobility Architecture") form factor
- Dimensions: 82 x 50mm

OS SUPPORT

Linux Debian, Windows