

Axio-Builder™

AXIO-DK-MS500

Device Security Development Kit

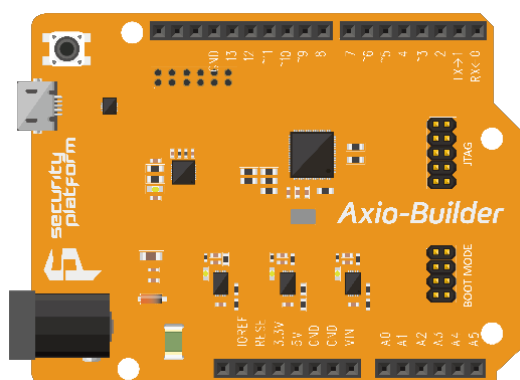
1. Introduction

- *Arduino compatible board with Security built-in MCU*
- *Common environment for IoT device development*
- *Various Arduino compatible shields for rapid prototyping*

Axio-Builder™ Axio-DK-MS500 is a complete IoT device development platform designed with a security built-in SoC, eWBM® MS500 RISC Microcontroller based on the ARM® Cortex-M0™ and a hardware security block for embedded applications featuring a high level of integration and low power consumption.

Axio-Builder™ Axio-DK-MS500 is fully compatible with the Arduino and various Arduino shields. It is just ideal to design many IoT (Internet of Things) applications along with the embedded security during the prototyping or manufacturing stage of production for a security-by-design (intrinsic) implementation.

Along with its low-power and high performance features, Axio-Builder™ Axio-DK-MS500 provides rich set of libraries and APIs of embedded security features to make easy enough to implementation at a very low cost and even without security expertise.



Security Measures

- ✓ *Hardware unique ID certification*
- ✓ *No illegitimate copy*
- ✓ *No system modification*
- ✓ *Data & Message Protection*
- ✓ *Communication Security*
- ✓ *Secure updates*

Hardware Features

Cortex M0 CPU core
100MHz Clock
64KB SRAM
4MB Flash Memory
5V Supply Voltage
68 x 53mm Dimension

Peripheral Features

Micro SD socket
USB (Micro, Power, Serial)
Arduino compatible sockets

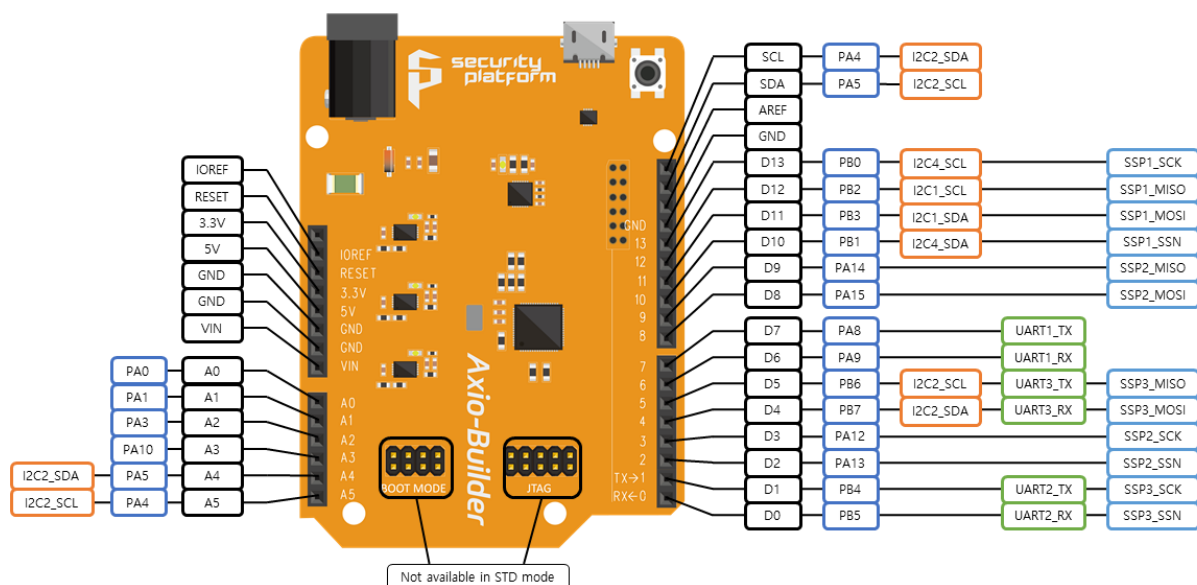
- 3 x UART
- 2 x SPI
- 3 x I²C
- 20 x GPIO

2. Security Features

Feature	Description
Asymmetric Crypto Accelerator	<ul style="list-style-type: none"> Offloads asymmetric algorithm processing RSA up to 2048 ECC up to 512
Symmetric Crypto Accelerator	<ul style="list-style-type: none"> AES 128/256 ARIA 128/192/256
TRNG (True Random Number Generator)	<ul style="list-style-type: none"> Designed for compliance with FIPS 140-2 and IPS 140-3 High-speed operation
Cryptographic Hash Accelerator	SHA1/SHA256
Encrypted Storage	Sensitive Data are securely stored encrypted
Secure Boot	Module firmware's integrity-check at boot time
eFuse	Internal BootROM

3. Board Description

Axio-Builder™ Axio-DK-MS500 is fully compatible with all available standard Arduino shields as shown in the figure below. Please note that BOOT MODE and JTAG jumpers are not available in STD mode.



4. SDK Features

Feature	Description
Open SDK Release	Arduino Compatible API
Development support	<ul style="list-style-type: none"> ▪ FreeRTOS, mbedOS* ▪ Ethernet, WiFi, BLE*, Zigbee* ▪ Communication (SSL, TLS) ▪ CoAP*, MQTT*, HTTP(s)*, etc.

5. Applications

Applications	Examples
OEM products	Smart Lock, Smart Streetlight, Smart Home Appliance, IP Camera, Smart Factory Sensor Module, etc.
Security + RF module	<ul style="list-style-type: none"> ▪ Security built-in LoRa ▪ Security built-in Sigfox ▪ Security built-in WiFi ▪ Security built-in BLE, etc.
IoT Platform Connectivity	<ul style="list-style-type: none"> ▪ ThingPlug, GiGA IoT Makers ▪ AWS, Azure, Thingworx, etc.
Hardware VPN Client	<ul style="list-style-type: none"> ▪ SSL/TLS VPN (Single Chanel)

Copyright © 2017 Security Platform Inc. All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent or other industrial or intellectual property right.