Telsy Secure Microchip Shield

The Secure Microchip Shield is a development board based on the classical Arduino form-factor for the TYR32A5L Secure Microchip, providing a secure platform to be used as a shield as well as a secure host. The wide portfolio of cryptographic and security services provided by the TYR32A5L along with the flexibility of the Secure Microchip Shield creates the perfect platform for users to develop integrated secure applications and solutions.

Features

- TYR32A5L Secure Microchip in LGA-64 package
- Flexible power supply options:
    - USB-powered (with the possibility to exclude the USB-interface chip)
    - Arduino-compatible connector
    - External sources
- Dual-use:
    - standalone host able to interface with many commercial shields
    - stackable shield for other host boards to provide security services
- Mechanically and electrically compatible with most commercial sensor shields and MCU/MPU hosts with Arduino form factor
- Richful Software Development Kit compatible with the board
- Programmable 3.3V and 5V IO voltage with on-board jumper to select IOREF
- On-board TYR32A5L Secure Microchip programmer
- 2 user LEDs shared between the TYR32A5L Secure Microchip and the Arduino-compatible pin header
- 2 power status LEDs for the 5V and 3.3V rails
- Reset button
- Unique serial number

Interfaces

All pins on the standard Arduino-compatible pin header are 3.3V/5V tolerant.

- 4 programmable GPIOs with programmable pull-up
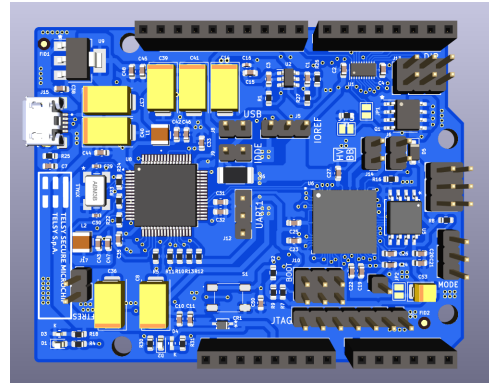- 2x I^2C controller/target
- 1x UART

Figure 1: Secure Microchip Shield.

- 1x SPI controller/target

The Secure Microchip Shield offers also USB 2.0 Micro-B connection to provide an interface towards a PC for programming and communication by means of:

- SPI controller
- 2x UART

The USB 2.0 interface can be disabled with an on-board jumper to keep the USB-interface chip under reset.

Development Tools

- tyr32-sdk: command line Linux-based OSA compiler and project creator
- tyr32-injector: command line Linux-based OSA encryption signature, injection and boot configuration

The TYR32A5L can be programmed directly on-board by means of UART connection through the USB Micro-B connector. For further details about Development Tools, please refer to the TYR32A5L Secure Microchip Datasheet.

Others

- Power consumption (USB-powered): <100mA
- Weight: approx. 50g