

OPTIGA™ Trust E Security Shield2Go

Quick Start
V1.0.0



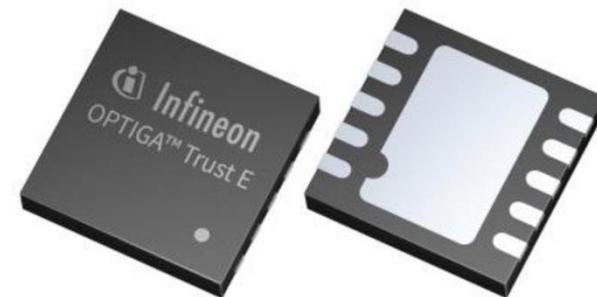
Introduction

OPTIGA™ Trust E is a high-security solution for industrial automation systems, smart homes, consumer or medical devices, providing enhanced protection of services, business models and user experience. Based on its 1-way authentication mechanism, it uniquely identifies objects and protects PKI networks.

The turnkey set-up with full system integration and all key material preprogrammed aims to minimize your efforts in order to maintain a fast and easy integration. The high-end security controller comes with OS, embedded application and complete host side integration support and is moreover compliant to the new USB Type-C standard.

Features include a high-end security controller with advanced cryptographic algorithms implemented in hardware (ECC256), a turnkey solution with OS, Applet and complete host-side integration support as well as full system integration support with up to 3 kBytes user memory.

The communication interface is I2C and the device supports ECC 256 bit and SHA-256.



Link to [Datasheet](#) and [Product Page](#)

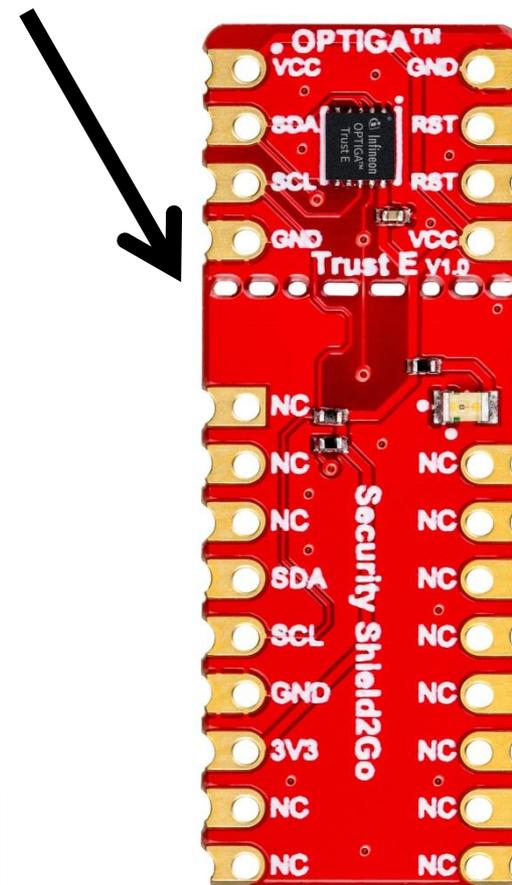
Evaluation Board Notes

Information

- Supply voltage VCC is max. 7 V, please refer to the [OPTIGA™ Trust E](#) datasheet for more details about maximum ratings
- Pin out on top (head) is directly connected to the pins of the OPTIGA™ Trust E
- If head is broken off, only one capacitor is connected to the OPTIGA™ Trust E
- Software compatible with Arduino and library fully integrated into the Arduino IDE
- Sales Name S2Go Security OPTIGA E and OPN S2GOSECURITYOPTIGAETOB01

Breakable

Head



Ensure that no voltage applied to any of the pins exceeds the absolute maximum rating of $VCC + 0.3 V$

Link to [Board Page](#)

Evaluation Board PCB Details

The

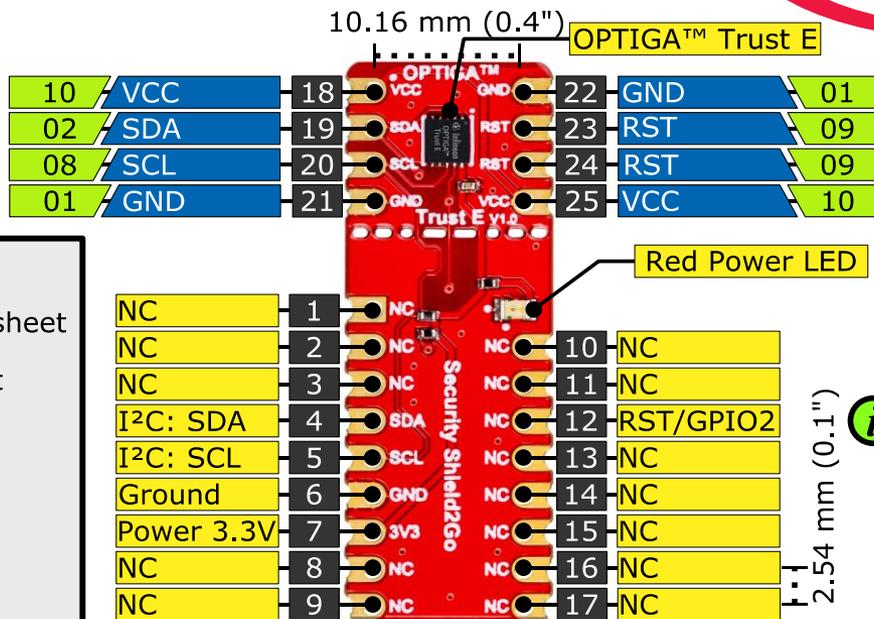
OPTIGA™ Trust E Security Shield2Go



i Ground pins on board connected with each other.

Legend

| | |
|--|--------------------------------|
| | Information |
| | Labelling of Pins in Datasheet |
| | Pin Number in Datasheet |
| | Physical Pin Number |
| | Warning |
| | Additional Information |
| | Not Connected |



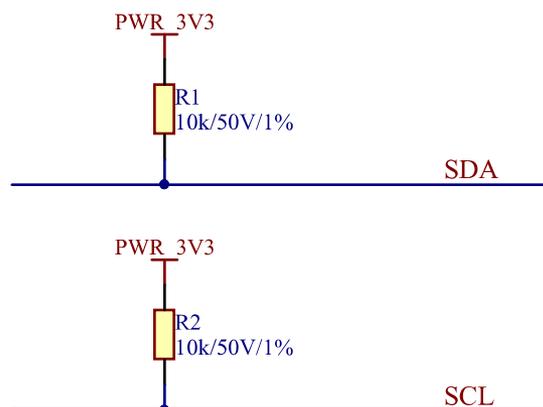
i Although labelled as NC, RST is connected to pin 12. This is a mistake of the labelling.

! The maximum voltage on VCC pin is 7 V, any other pin VCC+0.3 V.

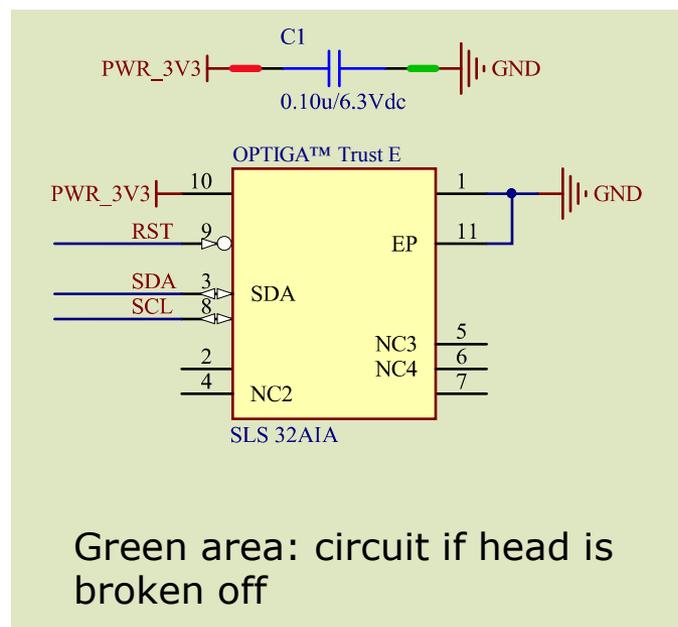
www.infineon.com

Evaluation Board Schematic

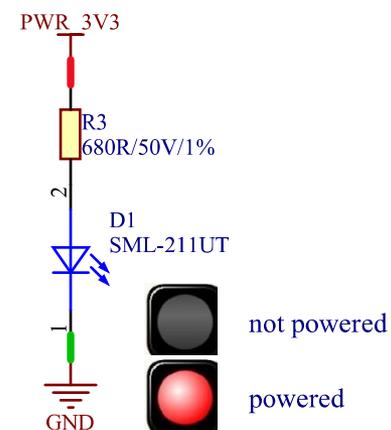
I2C Pull Up



OPTIGA™ Trust E



Power Status Indication



Arduino: The Arduino IDE

Arduino IDE



Arduino is a hardware-software prototyping environment IDE developed by arduino.cc:

- Installation Details for Windows:
Click [here](#)
- Installation Details for Linux:
Click [here](#)
- Installation Details for Mac OS:
Click [here](#)
- Installation Details for Portable IDE:
Click [here](#)

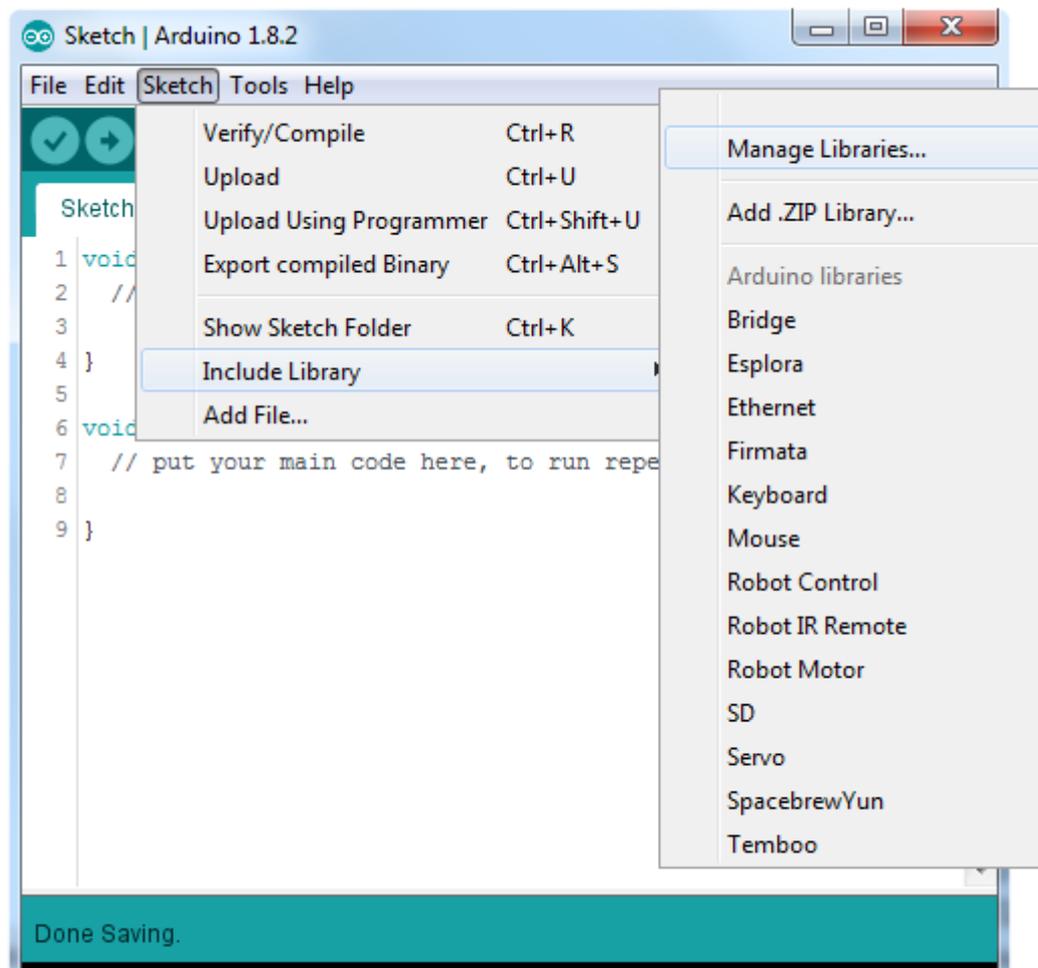
Arduino Quick Start

- What is Arduino? Click [here](#)
- Extended information about the Arduino environment. Click [here](#)
- How to import libraries? Click [here](#)
- How to install additional boards? Click [here](#)
- Problems related to Arduino? Click [here](#) for troubleshooting

How to download the library for Arduino - 1

Notes

- Open the Arduino IDE
- Navigate to *Sketch – Include Library – Manage Libraries*
- The Arduino library manager will be opened (see next slide for further instructions)
- Additional notes for installation can be found in the GitHub repository, e.g. if the library manager is not used



<https://github.com/Infineon/OPTIGA-Trust-E-Security-Controller>

How to download the library for Arduino - 2



Notes

- The Arduino library manager is a comprehensive tool to install external libraries for Arduino
- Search for *OPTIGA™ Trust E* in the *Filter your search...* field
- Select as *Type: All* and *Topic: All* when searching for *OPTIGA™ Trust E*
- As shown in the picture, please choose the respective library and install it
- Regularly check your installed libraries for updates
- In case of problems, please visit also our [GitHub repository](https://github.com/Infineon/OPTIGA-Trust-E-Security-Controller) and open an issue to get further help

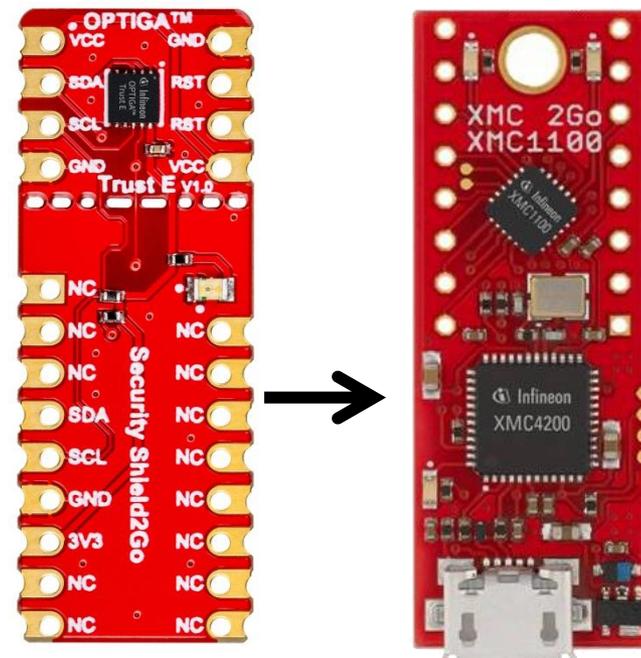


<https://github.com/Infineon/OPTIGA-Trust-E-Security-Controller>

Example with XMC 2Go

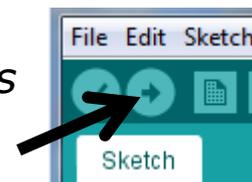
Notes

- The Shield2Go form factor of the Shield2Go evaluation board is directly compatible with the [XMC 2Go](#) board
- Stack the OPTIGA™ Trust E Security Shield2Go board on top of the XMC 2Go as shown in the picture
- The additional pin on the left-top side (designated with NC) is left floating
- Using the [XMC-for-Arduino](#) Arduino integration, the [Arduino library](#) for the OPTIGA™ Trust E can be directly used



Steps

- Open one of the examples for the OPTIGA™ Trust E from *File – Examples* and select as board *XMC1100 XMC2Go*
- Connect the stacked boards to the PC and press the *Upload* button
- Select the related COM port from *Tools – Port* and open the serial monitor with the set baud rate (see sketch/code with `Serial.begin(<BAUDRATE>);`);



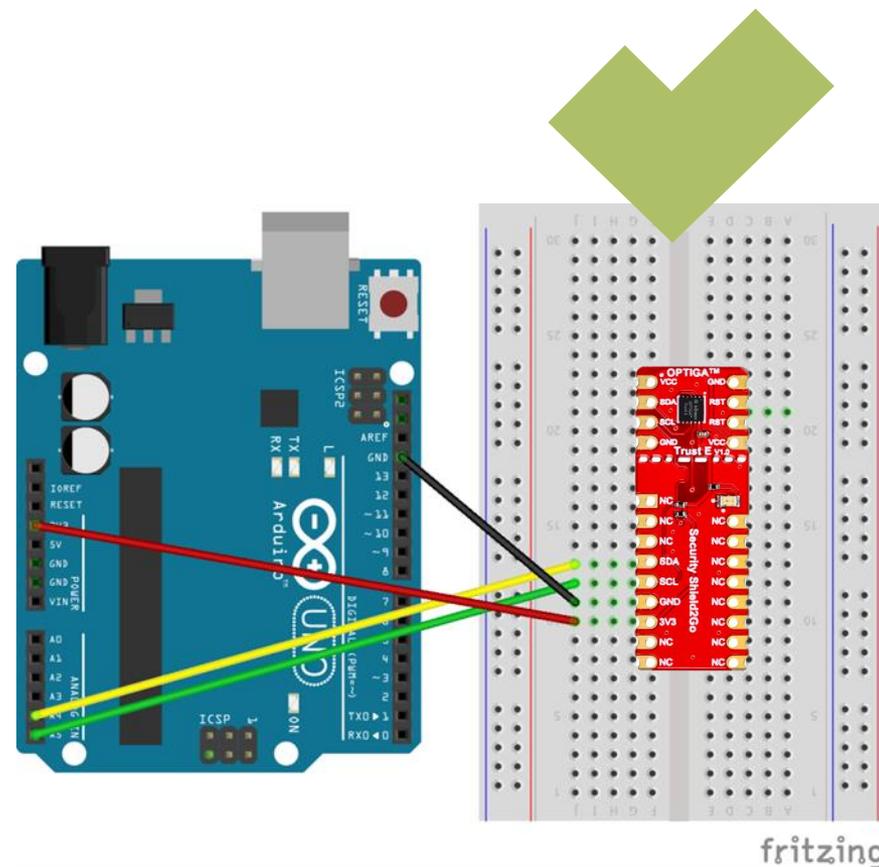
<https://github.com/Infineon/XMC-for-Arduino>

<https://github.com/Infineon/OPTIGA-Trust-E-Security-Controller>

Important Note

Important Note

- The OPTIGA™ Trust E has a maximum rating of 7 V on the VCC supply pin
- The input voltage on any pin should not exceed $VCC+0.3$ V
- Third party boards with 5 V logic, e.g. the Arduino Uno, can be connected to the OPTIGA™ Trust E Security Shield2Go directly



Possible



Part of your life. Part of tomorrow.

