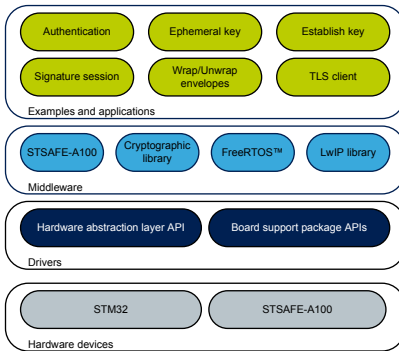


STSAFE-A100 software expansion for STM32Cube™



Features

- STMicroelectronics framework with the **STSAFE-A100** middleware application programming interface (API) for STM32 microcontroller applications using the **STSAFE-A100** secure element.
- Compatible with the **X-NUCLEO-STSA100** expansion board
- Easy portability across different STM32 microcontroller series thanks to the use of the STM32Cube™ and STM32CubeMX
- Free, user-friendly license terms.
- Application example code for:
 - Authentication (of peripheral, internet of things (IoT) and USB Type-C devices)
 - Data management within the signature session
 - Secure channel establishment with remote host including transport layer security (TLS) handshake
 - Wrapping and unwrapping of local or remote host envelopes
 - Pairing and secure channel with host application processor
 - On-chip key pair generation

Description

The **STSW-STSA100** software package is an expansion for STM32Cube associated with the **X-NUCLEO-STSA100** expansion board for STM32 Nucleo.

The source code of this package is based on STM32Cube and is designed to ease portability and code sharing across different STM32 MCU families.

The **STSAFE-A100** is a highly secure solution that acts as a secure element providing authentication and data management services to a local or remote host. It consists of a full turnkey solution with a secure operation system. It can be integrated in IoT devices, consumer electronics devices, consumables and accessories as well as smart-home, smart-city and industrial applications.

Product status link

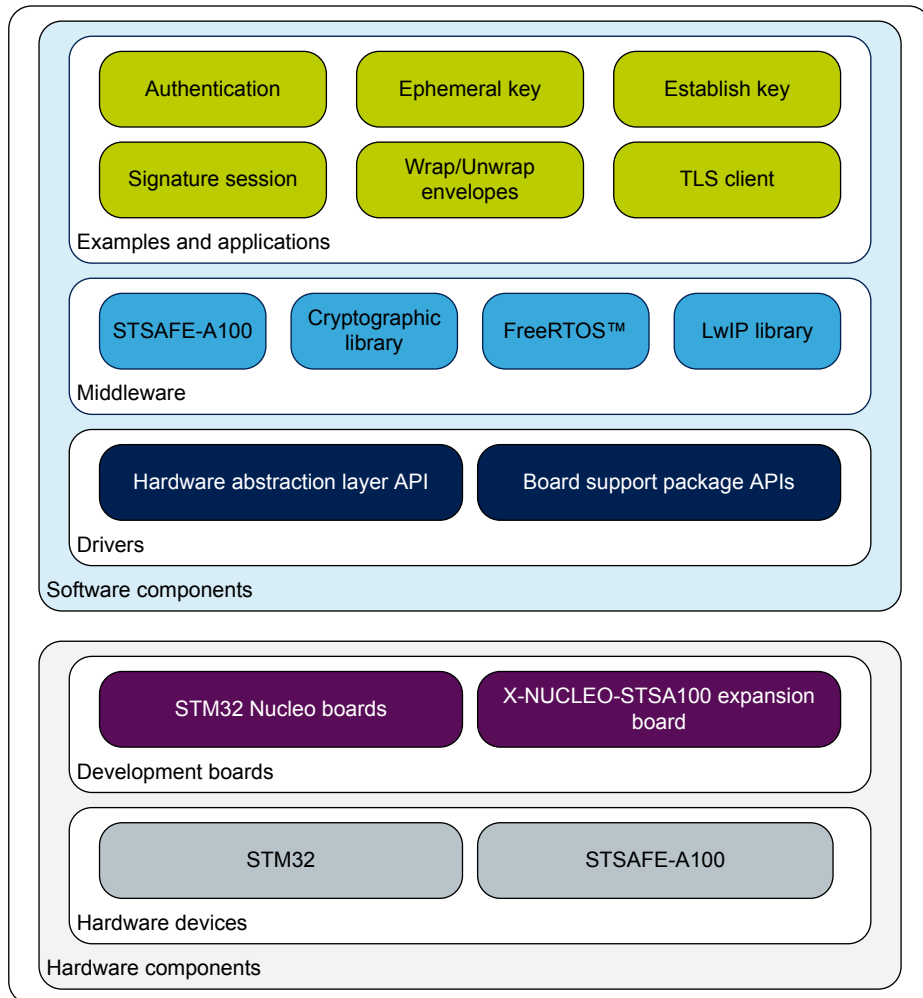
[STSW-STSA100](#)



1 Software architecture

The figure below shows the top-level architecture of the STSW-STSA100 expansion package.

Figure 1. STSW-STSA100 architecture



2 License

STSW-STSA100 is delivered under STMicroelectronics' *STSAFE software package license agreement* (SLA0087).

The table below shows the different license schemes delivered with the software components provided in this package.

Software components	Owner	License
STM32F4 Nucleo board support package (BSP)	STMicroelectronics	BSD-3-Clause ⁽¹⁾
STM32L4 Nucleo board support package (BSP)	STMicroelectronics	BSD-3-Clause
STSAFE-A100's board support package (BSP)	STMicroelectronics	SLA0088
Cortex [®] -M Cortex Microcontroller Software Interface Standard (CMSIS)	Arm [®]	BSD-3-Clause
STM32F4 hardware abstraction layer (HAL)	STMicroelectronics	BSD-3-Clause
STM32L4 hardware abstraction layer (HAL)	STMicroelectronics	BSD-3-Clause
FreeRTOS [™]	Real Time Engineers Ltd	Modified GNU General Public Licence (GPL) ⁽²⁾
STSW-STSA100's application programming interface (API)	STMicroelectronics	SLA0088
STM32 USB's application programming interface (API)	STMicroelectronics	SLA0044
X509 certificate parser for X CUBE CRYPTOLIB	STMicroelectronics	SLA0044
LwIP	Swedish Institute of Computer Science (SICS)	BSD-3-Clause
Mbed [™] transport layer security (TLS)	Arm [®]	Apache 2.0
Project examples	STMicroelectronics	SLA0044
Utilities	STMicroelectronics	SLA0044

1. BSD stands for Berkeley Software Distribution.

2. The FreeRTOS[™] source code is licensed by a modified GNU General Public License, the modification taking the form of an exception. The exception allows the source code of applications that use FreeRTOS[™] and are distributed as executables, to remain closed-source, thus permitting the use of FreeRTOS[™] in commercial applications without necessitating the whole application to be open-sourced.

Note: Arm and Mbed are registered trademarks or trademarks of Arm Limited (or its subsidiaries) in the US and/or elsewhere.

Revision history

Table 1. Document revision history

Date	Version	Changes
04-Feb-2019	1	Initial release.

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