

# STSAFE-A1SX

## Optimized secure solution for Sigfox-enabled IoT devices



### The solution for Plug & Play secure connection and secure data exchange to the Sigfox network

Sigfox is the world's leading provider of connectivity for the Internet of Things (IoT). Its approach to device-to-cloud communications addresses the greatest barriers to the IoT adoption: cost, energy consumption, complementary technologies and security.

The STSAFE-A1SX secure element (SE), connected to the microcontroller of the Sigfox Ready™ IoT application, is based on a tamper-resistant Common Criteria EAL5+ certified SE technology that insures the integrity and confidentiality of data.



#### KEY FEATURES

- State-of-the-art security relying on a CC EAL5+ hardware
- Security functions
  - Sigfox frames signature & verification
  - Sigfox frames encryption & decryption
- Pre-loaded with Sigfox keys

#### KEY BENEFITS

- Full turnkey solution with secure OS and personalization services
- Optimized for power effective platforms
- Easy integration using libraries compatible with standard MCUs

#### KEY APPLICATIONS

- Smart Home & City
- Smart Grid, Industry 4.0 and Farming
- eHealth and various consumer IoT

## Secure turnkey solution for securing Sigfox network

STSAFE-A1SX is a tiny and cost-effective secure IC solution that connects to the microcontroller of the IoT application or module via an I2C connection. The chips are provisioned in ST's secure-personalization center with device ID and keys that allow plug-and-play secure connection to the Sigfox cloud, and further ensure data-exchange integrity and confidentiality. Whether the frame is an uplink or downlink message, the STSAFE-A1SX secure element generates or verifies payload proof of integrity as well as optional encryption or decryption. Keys and other secrets are always protected inside the secure element during manufacturing and over the end device's full life.

## STSAFE-A1SX, a turnkey solution for Sigfox Ready™ IoT devices

### System-on-chip

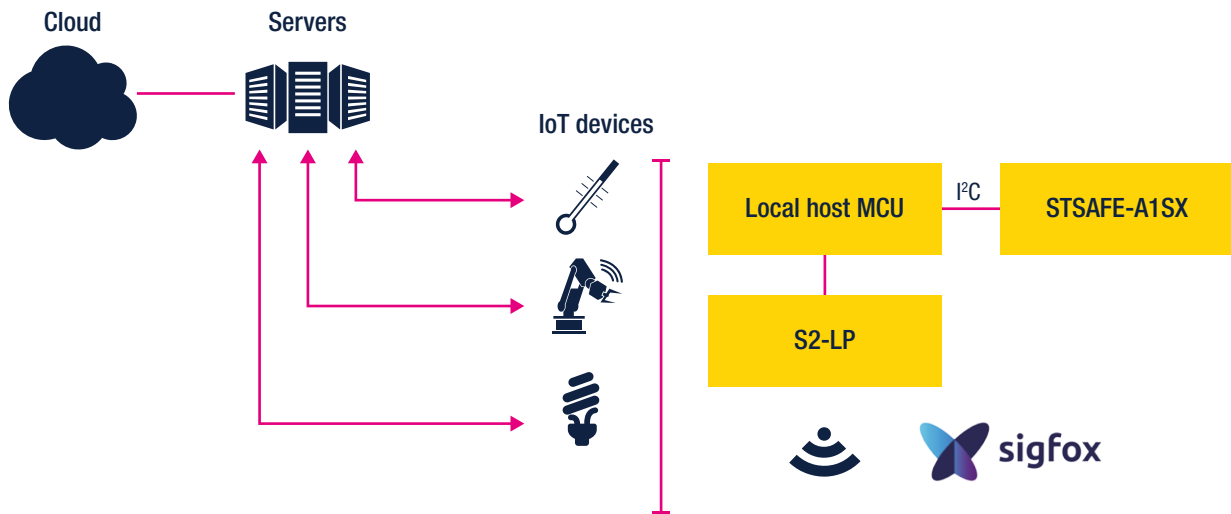
- Hardware
- Embedded software
- Pre-personalization

### Tools & demo kit

- Compatible with Nucleo expansion boards
- Comprehensive set of software libraries

### Host library

- Comprehensive set of software libraries



Like other members of the STSAFE\* family, the STSAFE-A1SX comes with a full ecosystem of tools and software to speed its adoption by developers with or without expertise in secure designs.

The device is available on expansion boards directly compliant with the popular STM32 Open Development Environment. Associated with the ST S2-LP sub-1GHz transceiver and STM32 MCUs, ST provides a complete reference design of a Sigfox Ready™ device:

- NUCLEO-L053R8, an STM32 Nucleo-64 development board with STM32L053R8 MCU
- STEVAL-FKI868V1 sub-1GHz development kit, equipped with a low-power STM32L MCU to control the S2-LP sub-1GHz transceiver and the ST-LINK/V2-1 debugger and programmer for firmware updating
- STSAFE-A1SX secure element

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