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Authentication & IoT secure solutions

STSECURE

Consumer & Industrial market segments

Hardened security your product and business

Consumables, printers, accessories,
computers, connected objects

Environmental sensors, actuators, factory automation,
Gateway, base station, utilities

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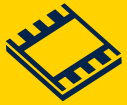
Threats and countermeasures

Threats	Security services	Benefits
Device cloning or counterfeiting	• Authentication, unique ID • Secure communication • Platform integrity • Usage monitoring • Secure storage	Brand protection
Device integrity or Data corruption		Trusted Device
Loss of confidential information		Privacy



- EAL5+ CC certified secure MCU
- Secure operating system, secure handling of cryptographic keys

- Customer secure keys and certificates loading at ST in a security certified environment

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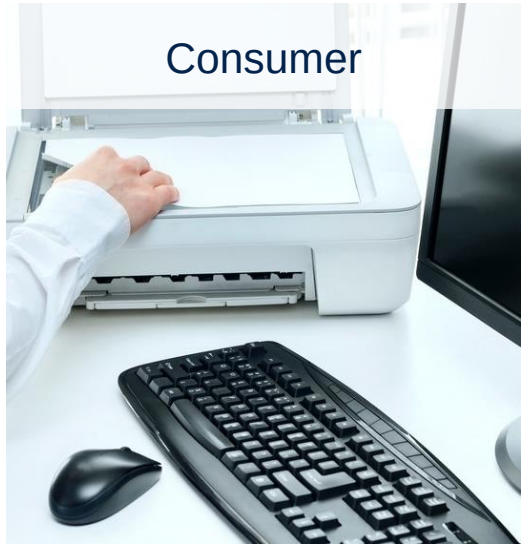
STSAFE* solution overview

A scalable secure solution for consumer & industrial devices



STSAFE

- Developed to ensure devices authentication, platform integrity, data confidentiality and availability
- Scalable STSAFE family from optimized to flexible and standardized TPM solutions
- Based on proven CC EAL5+ hardware Secure Element
- Provided within a complete ecosystem
- With in-house pre-personalized secrets and certificates

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STSAFE* mapping in market segments

Consumables, accessories, printers, computers

Sensors, actuators, factory automation

Gateways, base stations, utilities

Optimized (**STSAFE-A**)

Tuned for brand protection and secure connection

Flexible (**STSAFE-J**)

Flexible Java™ platform

Standardized (**STSAFE-TPM**)

TCG-standardized platform

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STSAFE* family secure element

Security-certified solutions from IoT nodes to IoT infrastructure

HW CERTIFIED CC EAL5+

Optimized

STSAFE-A

- Fixed features set:
  - Authentication
  - Secure connection establishment
  - Secure storage
  - LPWAN LoRa / Sigfox compliant
- Personalization services
- Seamless integration with STM32 ODE package

CERTIFIED CC EAL5+, BSI

Flexible

STSAFE-J

- Javacard-based OS
- Applet specific features set:
  - Authentication
  - Secure connection establishment
  - Secure storage
- Personalization services
- Linux-based MPU Development kit

CERTIFIED CC EAL4+, TCG 2.0, FIPS140-2

Standardized

STSAFE-TPM

- Platform integrity
  - Secure Boot
  - Secure Firmware upgrade
- Trusted network access
- Secure storage
- Linux-based MPU Development kit

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Secure your design with STSAFE-A110

STSAFE-**A110**

Secure Authentication

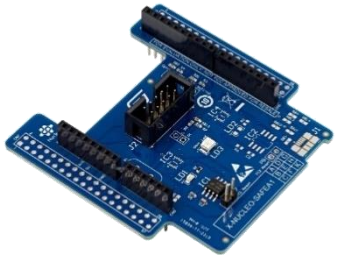
Unique ID

Authentication

Ecosystem

X-NUCLEO-SAFEA1

X-CUBE-SAFEA1



Secure Provisioning

Customer credentials

LPWAN, USB Type-C,
QI charging

Cloud Attachment

AWS, AZURE

aws

Microsoft Azure

STSAFE-A110

Secure Element for Brand Protection & IoT

Protect your brand
consumables / peripherals

Secure the connected devices
IoT nodes / gateways

- Authentication with personalized certificate
- Secure connection establishment (TLS)
- Secure data storage
- Signature verification
- EAL5+ Common Criteria certified

Available @ distribution www.st.com/STSAFE-A

STSAFE-A110
Enriched secure connection & LPWAN

- Customer certificate & keys personalization at ST secure factory
- **Seamless integration** with GP MCU
  - **STM32 ODE Nucleo** expansion board
  - **STM32Cube** Software package

STM32 Open Development Environment

STM32 Cube

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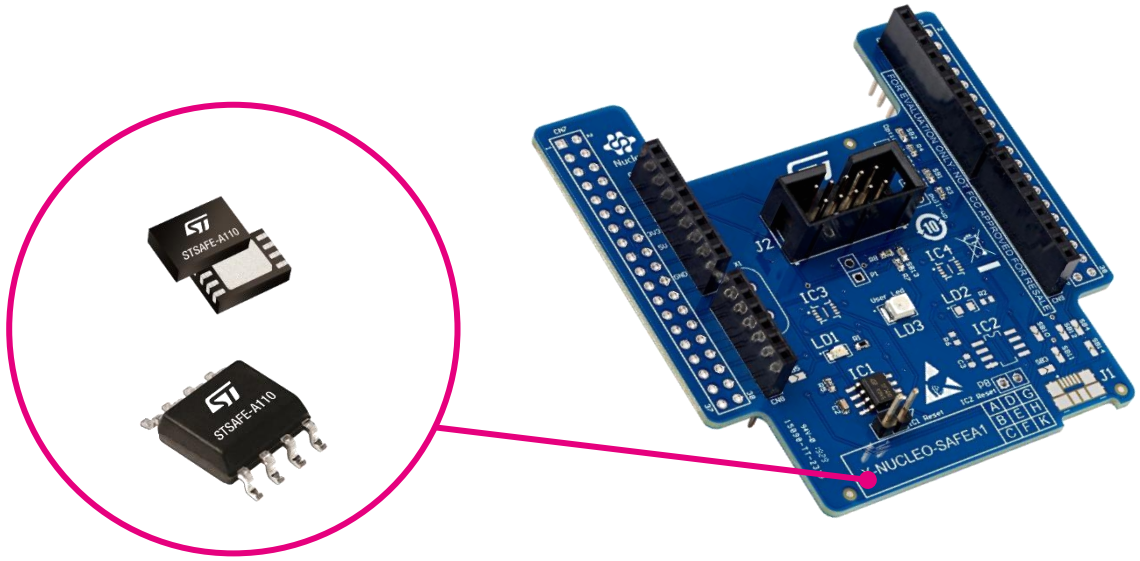
STSAFE-A110 evaluation tools

Complete set of tools for a seamless integration



- ODE STM32 expansion board
- Pre-personalized STSAFE-A110
- Arduino™ interface
- STM32 Cube development ecosystem
- Drivers and examples source codes

STSAFE-J

Flexible Java Card platform solution

ST generic or customer specific applet

Secure the connected devices
IoT nodes / Connected equipment / Gateways

Java 3.0.4, GP 2.1.1, HW CC EAL5+ certified

Generic ST applet:

- Authentication
- Secure connection
- Secure data storage
- Personalization service

Customer specific applet

STSAFE-J110

- STSAFE-J100 JavaCard OS for customer-specific applet
- STSAFE-J100 with Spinel generic applet
- Arduino-compliant expansion board
- PKCS11 Software package (driver and code examples)

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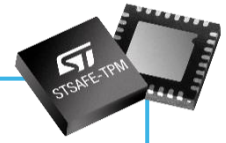
STSAFE-TPM

Expanding standardized trust from personal computing to connected devices



Ensure platform integrity
computer, connected devices

Secure the connected devices
IoT nodes / gateways

- TCG TPM 1.2 and TPM 2.0 rev1.38
- Available in consumer, automotive and industrial qualifications
- Upgradable firmware
- Linux Open source ecosystem (driver, Software stacks, Linux open source)
- Provisioning service
- Common criteria EAL4+ & FIPS 140-2 level 2 certified

Available

ST33TPHF20/2E

- Consumer equipment
- 2E: TCG TPM 1.2 / TPM 2.0
- 20: TCG TPM 2.0

Available

ST33TPHF2X

- Consumer equipment
- TCG TPM 2.0
- Extended cryptography
- Enhanced security support

Available

ST33GTPMA

- Automotive environment (AEC-Q100)
- TCG TPM 2.0
- Enhanced cryptography
- Enhanced security support

Available

ST33GTPMI

- Industrial environment (JEDEC)
- TCG TPM 2.0
- Enhanced cryptography
- Enhanced security support

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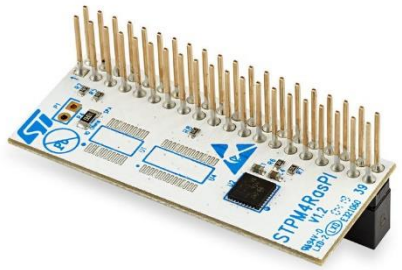
STSAFE-TPM expansion board

For seamless integration



Raspberry PI ® & STM4RasPI expansion board

- STPM4RasPI expansion board for Raspberry PI ® and STM32-MP1
  (I²C, SPI TPM compatible serial interface / 40-pin female connector)
- Software package with driver and examples
  (ST Drivers SPI & I²C, Plug & Play 3rd party TPM Software Stacks)
- Databrief on st.com

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Consumer & Industrial authentication takeaways

- Product family covering end-to-end security
- STSAFE-A & STSAFE-TPM full ecosystem available
- In-house personalization services

Learn more at www.st.com/stsafe

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Our technology starts with You

Find out more at www.st.com/stsafe

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