STSAFE-L010 Authentication solution

STSECURE

Authentication market

Prevent product cloning

- Protect business model revenues
- Keep control over products' image

Protect brand reputation

Authentication application – Examples

Consumables

- Ink cartridges
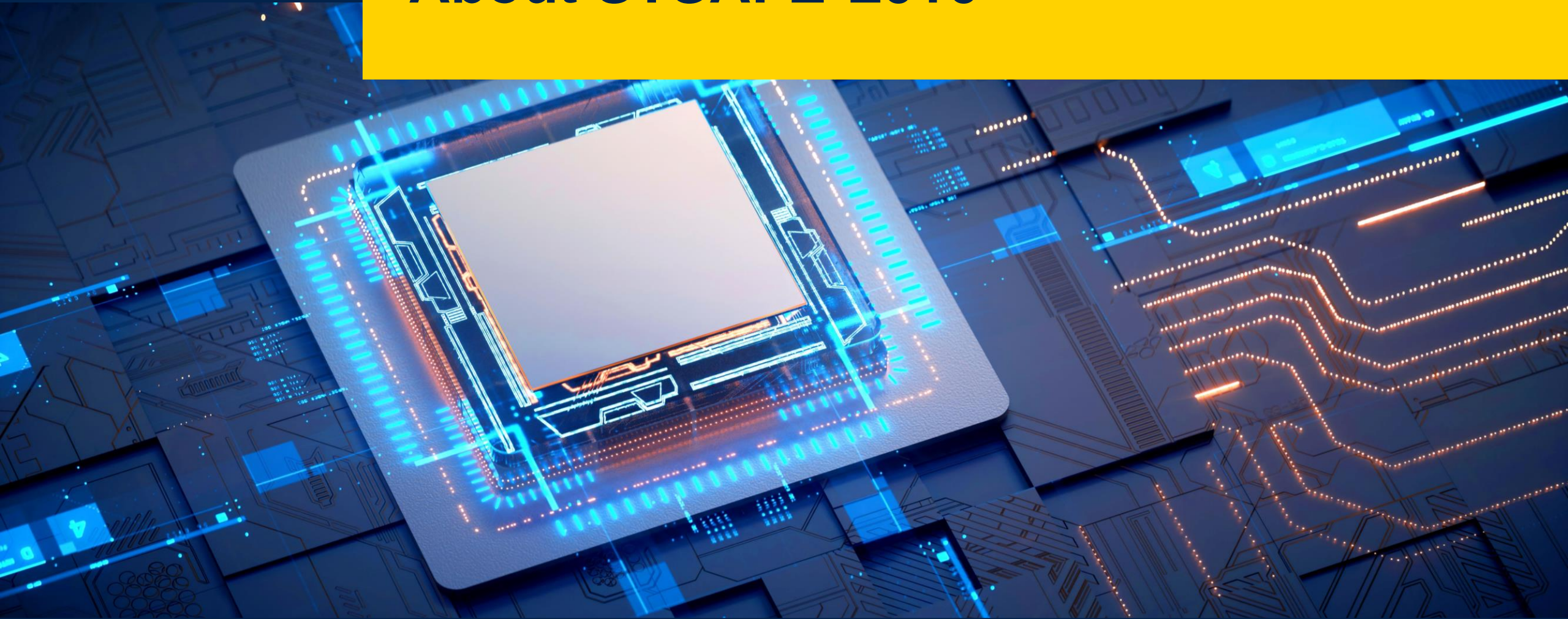- Medical consumables
- And more…

Batteries

- Consumer goods: mobile, computers, toys…
- Tools and industrial equipment
- Medical devices
- And more…

Peripherals

- Game console accessories
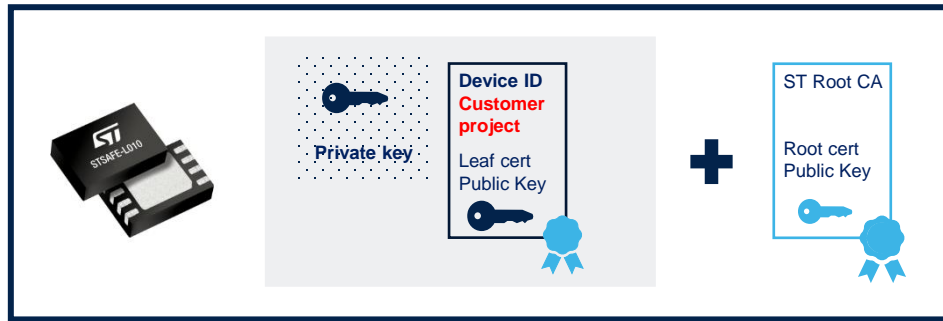- Scooter / e-bike parts and motors
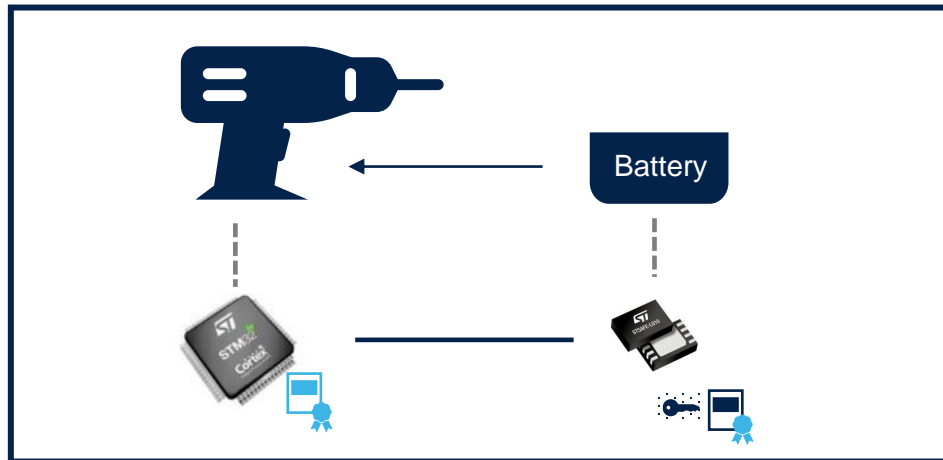- And more…

About STSAFE-L010

Introducing the STSAFE-L010

Optimized for consumables, batteries & peripherals

Deliverable

Integration

Main features:

- Authentication with personalized certificate(s)
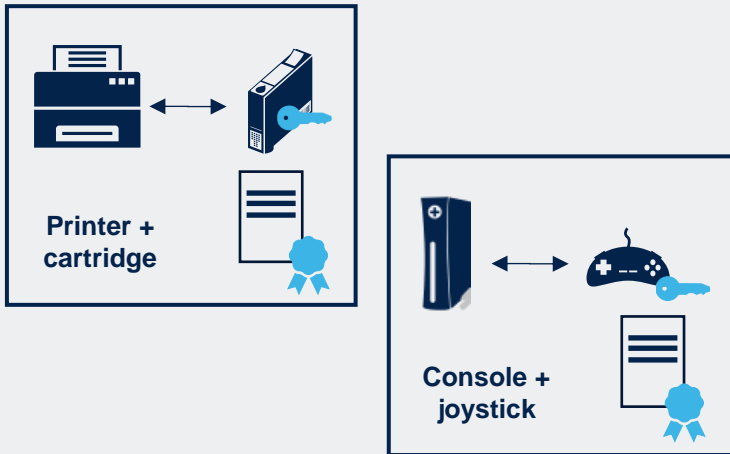- Secure counters
- Secure data storage

Personalization at ST's secure manufacturing site:

- Certified by independent parties
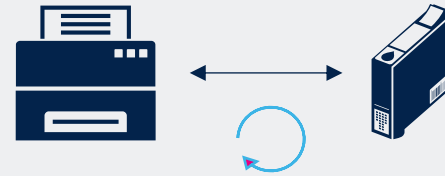
Authentication

Verify that a consumable or a peripheral is genuine

Usage monitoring

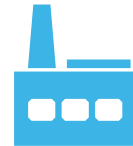Track and control the number of uses

Secure data storage

Securely store object data such as configuration files, maintenance reports, …
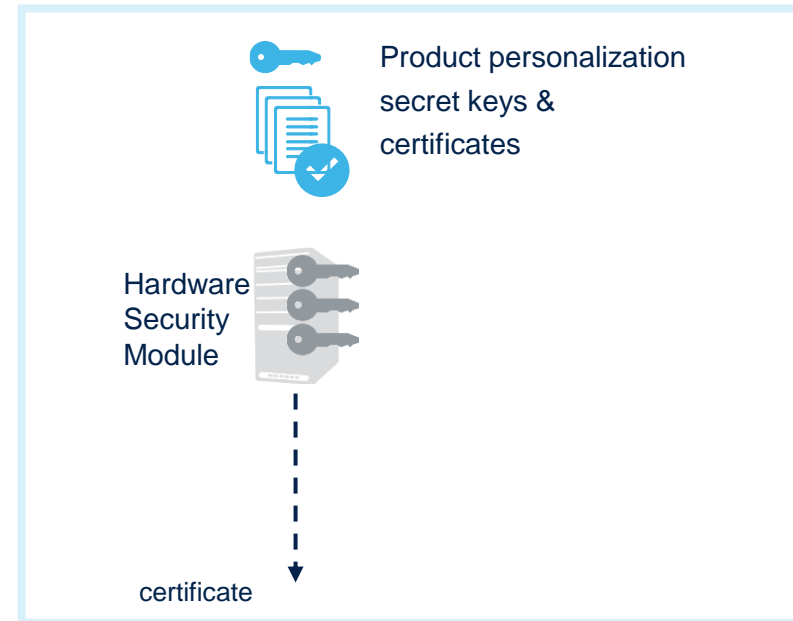
STSAFE-L provisioning at ST factory

ST SECURE FACTORY

Product personalization secret keys & certificates

Hardware Security Module

certificate

Personalization at ST secure factory

Cloud zero-touch provisioning

Chip development and packaging

Personalization

Customer delivery

certificate

Benefits for customer industrialization

- No secret or sensitive data to manipulate

- No need for specific investment on customer production line

- No need for specific investment in security skills

- No need for online data loading

- No risk of a production stoppage

- Select external partners or EMS without concern for security

STSAFE-L010 technical description

	STSAFE-L010 (generic)	STSAFE-L010 (high-volume)
Features	Authentication (one-way) Secure counters Secure data storage	Authentication (one-way, host binding) Secure counters Secure data storage
Personalization service at ST	No	Personalization by wafer
User NVM (kB)	32 kB	32kB
Crypto	EdDSA 25519	EdDSA 25519 & AES-128
Power consumption	Operating: 4 mA Hibernate: 2 µA (Typ)	Operating: 4 mA Hibernate: 2 µA (Typ)
Package	DFN8 2 x 3 mm	DFN8 2 x 3 mm QDFN6 1.4 x 1.6 mm, DFN3
Com. Interface	I²C (100 KHz) [HW] ST1Wire	I²C (100 KHz) [HW] ST1Wire
Supply voltage	1.62 V to 5.5 V	1.62V to 5.5 V
Temperature range	−25°C to 85 °C	−25°C to 85 °C

Takeaways

STSAFE-L010 takeaways

An entry-level authentication solution
- Optimized for consumables, batteries, and peripherals

A complete evaluation and development ecosystem
- Easy and flexible integration

Optional: Personalization at ST secure manufacturing site

Best-in-class secure element for authentication

Key applications
- Battery authentication
- Assets life cycle tracking
- Consumables: anticloning
- Accessories: anticloning

Rich feature set
- Authentication of peripherals like consumables or accessories
- Usage monitoring with secure counters
- Nonvolatile memory zones with user-defined access rights

Best-in-class hardware
- Secure MCU
- 32k Bytes user memory
- I²C, ST1Wire Interface (up to 100 kbps) on 1 IO
- 10 years of data retention, 100k cycles at 25°C
- Temperature range: -25℃ to 85℃
- DFN8 2 x 3 mm /
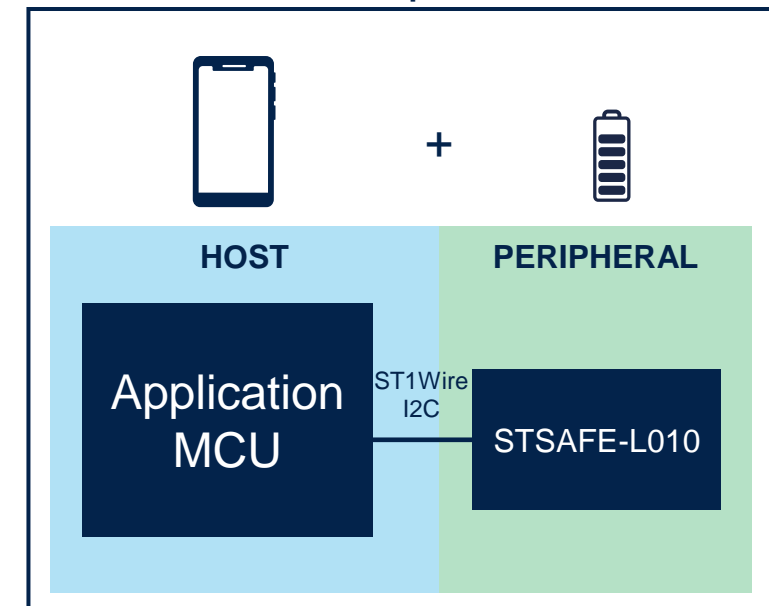 Under conditions: DFN6 1.4 x 1.6 mm, DFN3

Personalization
- Customer certificate and keys loading at ST secure factory

Standalone implementation

+

HOST | **PERIPHERAL**

Application MCU — ST1Wire I2C — STSAFE-L010

Our technology
starts with You

Find out more at www.st.com