Secure Automotive solutions
Smart Driving connected services

Ensuring security in all automotive connected services

- Vehicle to network
- Digital key system
- Electrical Vehicle charging
- Wireless Qi charging
- Vehicle to Vehicle ADAS
Connected services threats

Connected vehicles become more vulnerable to attacks

Vehicle-to-Cloud
- Diagnostics
- Software Upgrades
- Traffic information
- Payment services
- Internet services

Service and network access corruption
Device cloning and counterfeiting
Data eavesdropping and corruption

Vehicle-to-Infrastructure
- Emergency Call (eCall)
- Real-time traffic information
- Infotainment

Vehicle-to-Vehicle
- Advanced Driver Assistance System (ADAS)

In-car security
- Smartphones / Tablets Qi Charging
- Vehicle access
- In-car data sensors privacy

Electrical Vehicle (EV) Charging
- Plug & Charge

Vehicle-to-Cloud threats:

- Service and network access corruption
- Device cloning and counterfeiting
- Data eavesdropping and corruption

Vehicle-to-Infrastructure threats:

- Emergency Call (eCall)
- Real-time traffic information
- Infotainment

Vehicle-to-Vehicle threats:

- Advanced Driver Assistance System (ADAS)

In-car security threats:

- Smartphones / Tablets Qi Charging
- Vehicle access
- In-car data sensors privacy

Electrical Vehicle (EV) Charging threats:

- Plug & Charge
Making driving smarter and safer

- Guarantee vehicle behavior
- Ensure secure car access
- Prevent device cloning
- Ensure secure connectivity
- Guarantee sensitive data remains confidential
- Prevent data corruption & eavesdropping

**INTEGRITY**
- Root of Trust
- Platform integrity
- Secure firmware update

**CONFIDENTIALITY**
- Secure communication
- Secure storage

**AUTHENTICATION**
- Genuine device
ST Secure automotive solution

Scalable offer from eHSM to dedicated secure solutions

STSAFE-V and ST4SIM-A secure solutions based on ST33-A certified secure MCU
- Platform and SW integrity check
- Secure storage
- Cryptographic services
- Secure connectivity (eSIM)
- CC EAL5+ tamper resistance

SPC5x Gateway and Telemaco telematics solutions
- eHSM security
- Secure boot
- Cryptographic services
- Platform and SW integrity check
ST’s secure certified automotive solutions
ST33-A, STSAFE-V & ST4SIM-A

ST33-A
for security & safety
- Hardware Secure ICs
- Set of software libraries
- AEC-Q100 & CC EAL5+ certified
- User guide support

STSAFE-V
for security & safety
- Secure network connectivity
- Digital key access
- Secure autonomous driving
- New services (EV & Qi charging)

ST4SIM-A
for eSIM connectivity
- Connecting everything everywhere anytime
- Real-time asset management
- Improved coverage
- Flexible connectivity
Secure element benefits

A proven and deployed solution for secure vehicle

**Proven**
More than 1.5 Bu ST33 sold

**Selected**
ST33-A adopted by Tier-One car makers

**Quality**
10ppm target without wear leveling

**Certified**
Common Criteria EAL5+

**Compliant**
ISO 15118 WPC 1.3
ST33-A hardware IC overview

A certified secure element

- Robust flash technology
  - In-house embedded Flash 80 & 40nm
  - Target low ppm without HW wear leveling
  - Continuous Improvement Program (CIP) strategy
- Proven field quality with billions of ST33 ICs deployed
- Set of software libraries (cryptography & flash management)
- EAL5+ Common Criteria certified
- Automotive grade (AEC-Q100 grade 2 and 0)
STSAFE-V solution overview

A scalable secure solution for connected vehicles

- Scalable STSAFE-V family from dedicated to flexible and TPM solutions on connected vehicles
- Complete ecosystem solution
- Based on proven CC EAL5+ hardware Secure Element ST33-A
- Automotive AEC-Q100 grade 2 and 0
- In-house personalization factory
- CCC V3.0 specification compliant
- Qi wireless charging WPC1.3 compliant
- PKI solution for Plug & Charge ISO15118
ST4SIM-A solution overview

Secure cellular connectivity solutions

- Wide range of SIM/eSIM solutions based on Classic, Advanced and GSMA SGP.02 configurations
- GSMA eSIM certified and interoperable with MNOs & Subscription Management platforms
- Complete ecosystem with trusted partners for connectivity & Subscription Management Platforms
- Automotive grade solutions (T° & reliability)
- Multiple packages (MFF2, WLCSP)
ST’s ecosystem for an end-to-end digital key system

ST is everywhere to ensure Secure NFC Car Access

In the digital key

ST54 combines an eSE and an NFC Controller in a Mobile Phone

ST31 eSE enables NFC-A card emulation and energy harvesting

In the door-handle

ST25R3920 Automotive NFC Reader detects and communicates with the key

Information is transmitted to STM8-A Automotive MCU

In the car

SPC58 Automotive MCU receives information from the door-handle

ST33-A Secure Element authenticates the user to enable car access
Secure automotive takeaways

- Scalable ST security offers (from eHSM to certified secure element)
- Hardware and System-on-chip solution
- Complete cellular connectivity solution with trusted partners