# Digital key system for secure NFC car access

STSECURE

ST25

# ST’s ecosystem for an end-to-end digital key system

## ST is everywhere to ensure Secure NFC Car Access


**ST54** combines an eSE and an NFC Controller in a mobile phone


**ST31** eSE enables NFC-A card emulation and energy harvesting

**In the digital key**


**ST25R501** Automotive NFC Reader detects and communicates with the key

Information is transmitted to Automotive MCU

**In the door handle**


**SPC58** Automotive MCU receives information from the door handle

**STSAFE-V500** Secure Element authenticates the user

**ST25R500** communicates with the key in the center console

**In the car**

# STSECURE solutions
## for smartphones & smartcards

## A complete offer for digital keys

a smartphone based on **ST54**

an NFC card based on **ST31**

**ST54** NFC/eSE (+eSIM) for multiple applications and devices

- A reference solution in Android ecosystem
- #1 Felica, MIFARE® integration in Android framework
- Best-in-class RF performance, reduced bill of material & power consumption

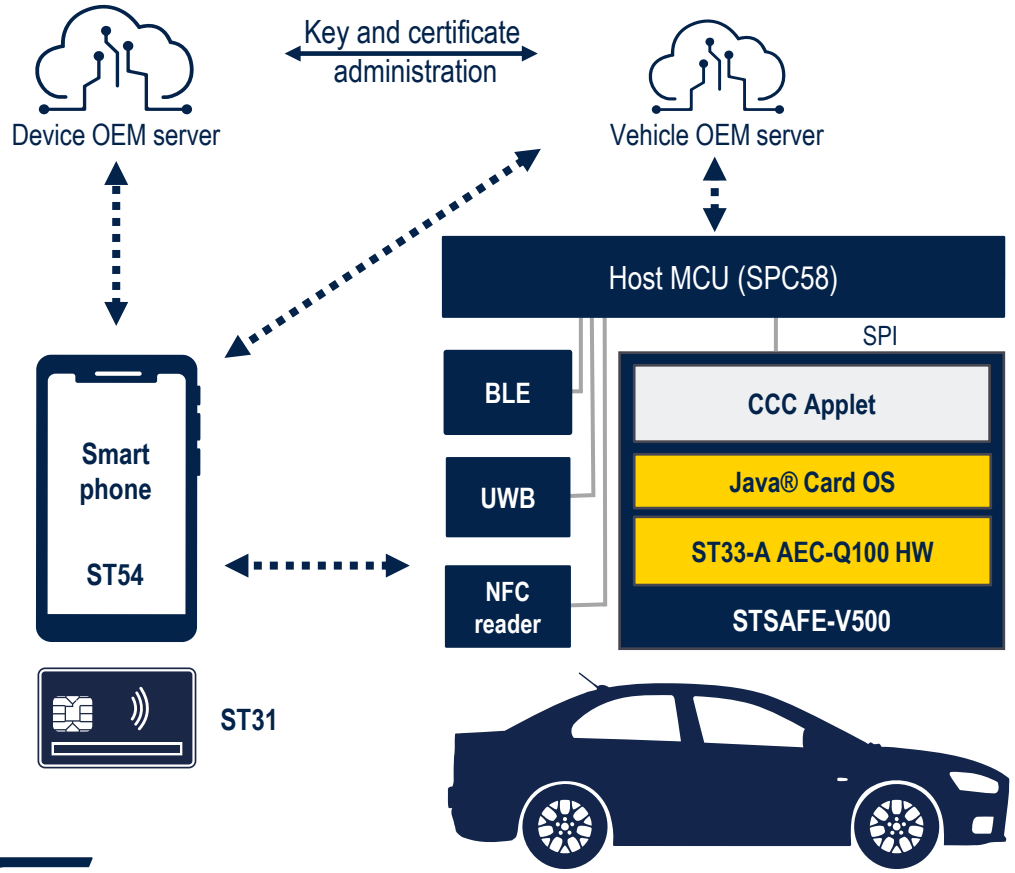
**ST31** eSE enables NFC-A card emulation

- Common criteria, EMVCo®, CUP, FIPS security certified
- Low power design and energy harvesting enabled
- An enhanced performance and fully interoperable with market readers

# STSAFE-V500

## Flexible solution for secure car access & car start

**A discrete eSE in the vehicle's center console**




- SoC solution based on Java Card™ (3.0.5 classic edition, GP 2.3)
- CCC R2 and R3 specification compliant
- Based on ST33-A hardware / AEC-Q100 Grade 2, CC EAL6+ certified
- Password verifiers and digital key secure storage
- Owner pairing secure protocol / Mutual authentication car to phone
- Secure OTA software update following SCP03 or SCP11.c protocol

# ST25R500
## High-performance NFC reader

**Enhanced connectivity for an improved user experience**

### Low-power consumption
- Inductive low-power wakeup for key detection

### Large key detection range
- High output power for large communication range
- Dynamic power output
- Highest sensitivity in the market

### Fast time-to-market
- MISRA-C:2012-compliant software library
- Low-noise output drivers
- Excellent noise immunity to pass injection tests
- CR13 compliance (required by CCC)

# ST25R501
## Size-optimized NFC reader

**Enhanced connectivity in a smaller package**

### Smallest package

- 4 x 4 mm with 36% smaller footprint compared to ST25R500

### Large key detection range

- High output power for large communication range
- Dynamic power output

### Fast time-to-market

- MISRA-C:2012-compliant software library
- Low-noise output drivers
- Excellent noise immunity to pass injection tests
- CR13 compliance (required by CCC)

# SPC58
## Automotive microcontroller

**The ideal MCU for keyless access solutions**

### Unprecedented scalability

- From single core 64 MHz up to triple core 200 MHz
- 512 Kbit Flash, up to 10 Mbit Flash
- QFN48, and QFP64 up to BGA386

### Isolated hardware security module

- Secure boot
- Crypto accelerator (Symmetric and asymmetric algorithms)
- Evita Medium and Full

### Full support ecosystem

- Dedicated software packages for security

# Our technology starts with You

Find out more at st.com/secure-auto