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ST25 NFC / RFID solutions for home appliance applications

Brown goods, white goods, induction cooker, air conditioning...

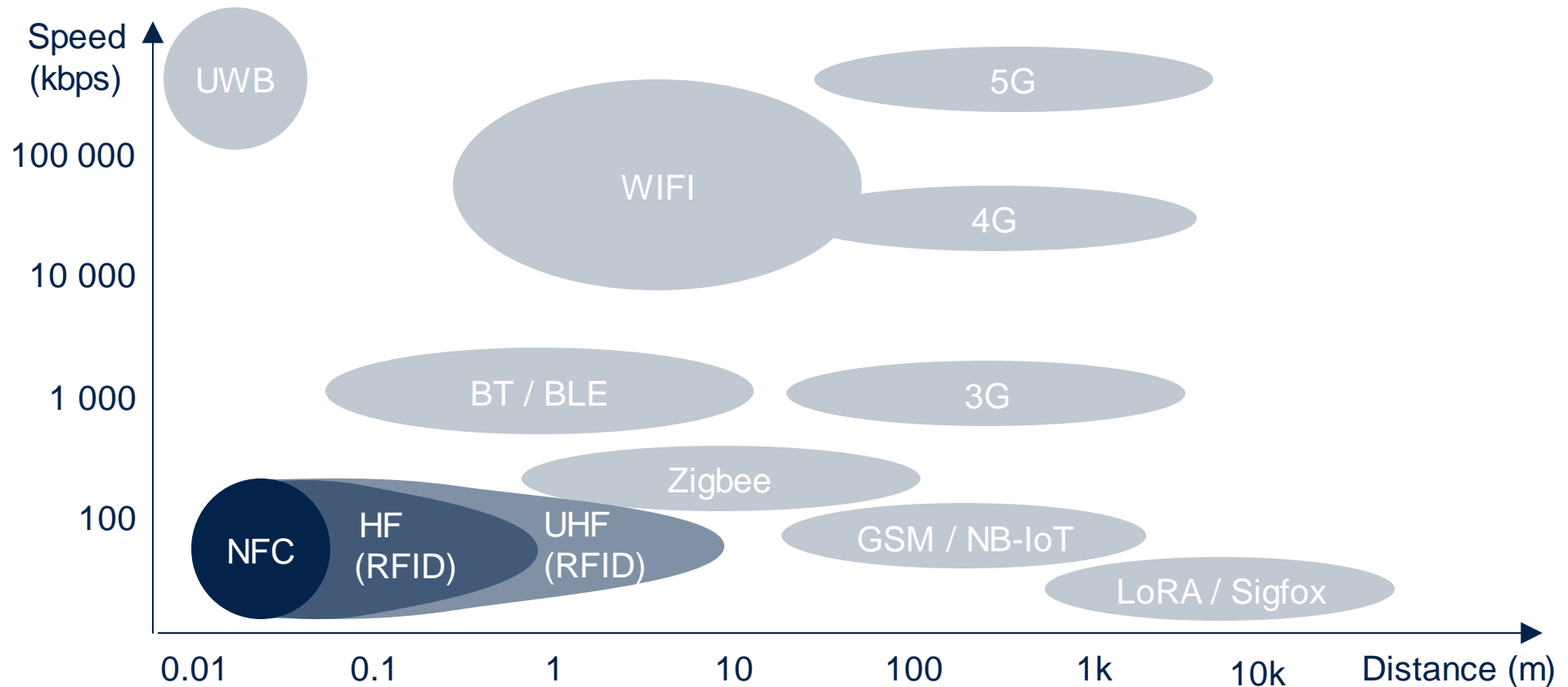
MMY division





NFC, RFID HF & UHF technologies

Complementary solutions to Wireless Technologies



Communication from 1cm (NFC) to up to 10m (RFID UHF)

Home Appliance applications



NFC technology

Near Field Communication



- Short range contactless communication
- Technology operating at 13.56MHz frequency
- Based on RFID HF ISO14443 & ISO15693 standards

Interactive and zero power



- NFC tags powered by phone or RFID reader
- Enabling convenient connection to the Cloud for IoT
- NFC-enabled mobile phone can engage with items by a simple tap

NFC is developed by NFC Forum



- Interoperability between devices with NFC Forum certified products
- Standardized use cases (URL web link, Bluetooth handover...)

Fast growing employment in Mobile phone



- More than 70% of new phones come with NFC
- NFC is used for Mobile Payment with Android and iOS (ApplePay)
- Apple added in 2019 support of NFC reader / writer mode from iOS13 onward



NFC main use cases & benefits

Product configuration

NFC



- Smooth product personalization during production flow
- « In the box programming » thanks to long range capability (up to 1 m)
- Parameter settings
- Tracking and identifying

Maintenance & Security

NFC



- Contactless access to maintenance & usage records
- Update parameters no matter if device is powered thanks to NFC phone
- Firmware upgrade via Fast Transfer Mode
- Brand recognition

End user experience

NFC



- Bluetooth / Wifi extended pairing
- Customer and warranty registration
- Device control with a mobile phone
- User identification & personalized settings
- Accessory authentication & parameter settings

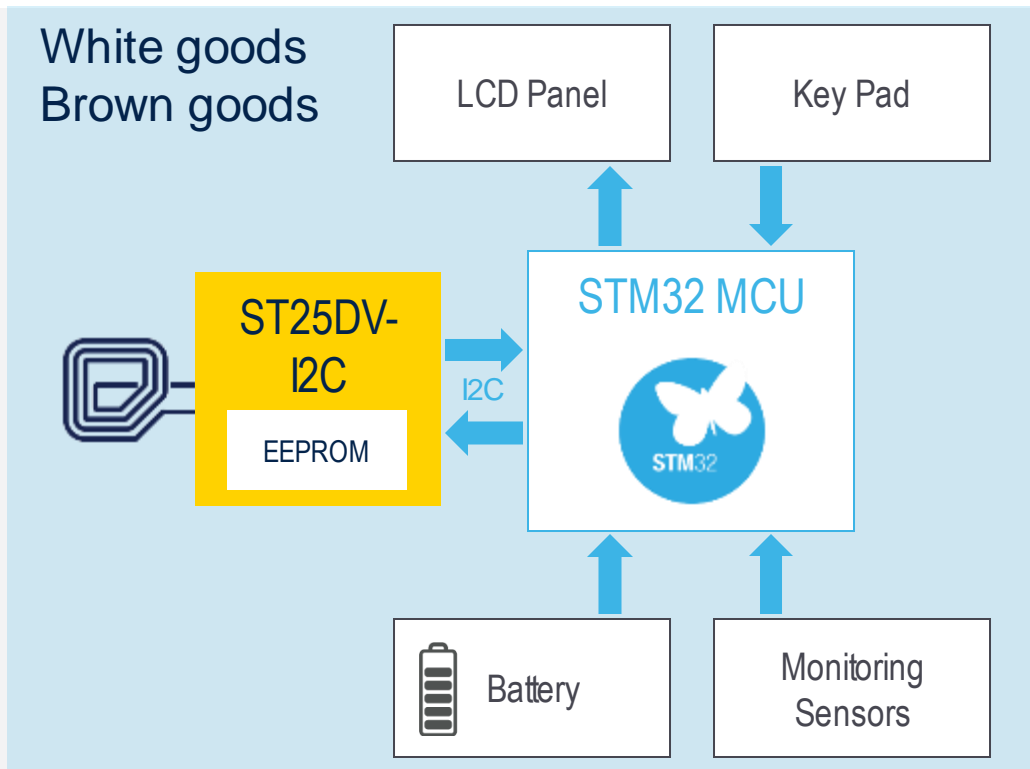
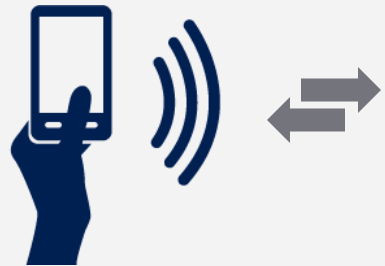


Interactive and zero power technology (Tag powered by Reader)
Convenient product configuration and maintenance
Simple and flexible



Dynamic NFC tag

Typical Dynamic NFC Tag Block Diagram & Usage in Home Appliance



ST25DV04K / 16K / 64K



I2C fast interface
Fast Transfer Mode
Large memory storage

Product configuration
Servicing & Security
End user experience



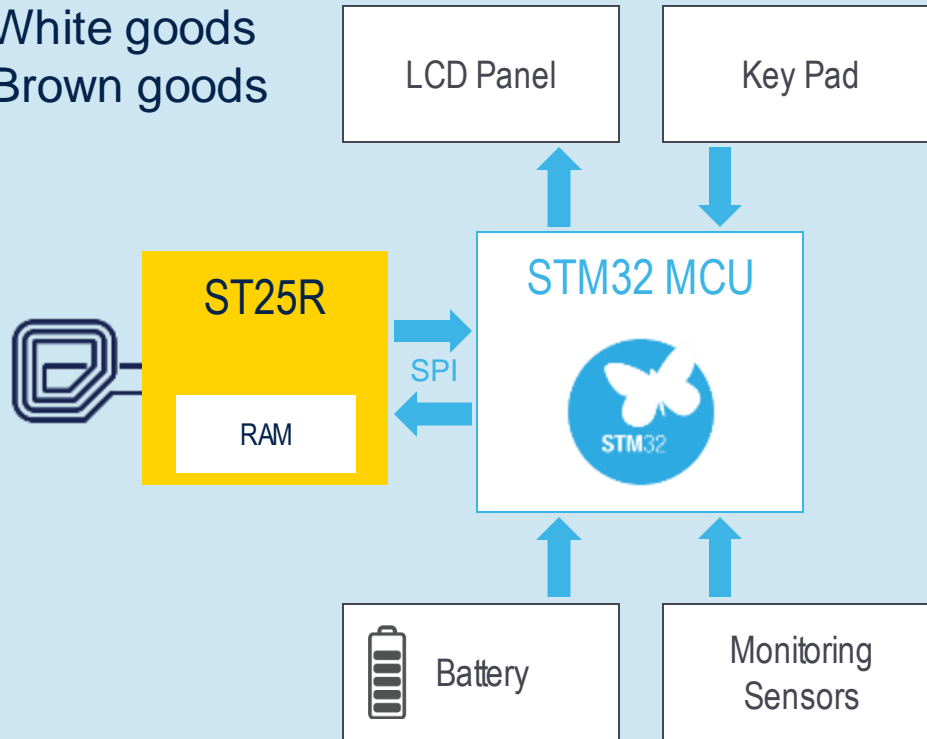


HF / NFC reader

Typical NFC Reader Block Diagram & Usage for Home Appliance



White goods
Brown goods



ST25R3911B / ST25R95



High output power
Low power consumption
Automatic antenna tuning

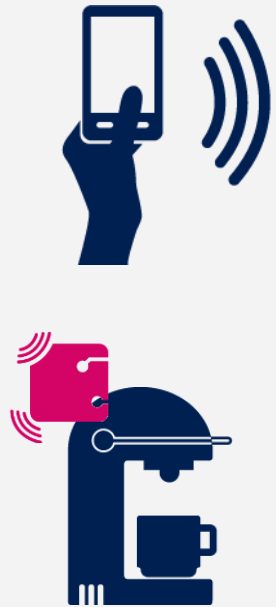
Product configuration
Servicing & Security
End user experience





NFC tag

Typical NFC Tag (+ Reader) Block Diagram & Usage in Home Appliance



Consumable



ST25T

EEPROM

ST25TV02K / ST25TA02KB



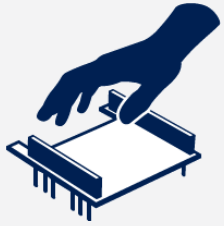
TruST25 digital signature
Passwords
Easy & fast data transfer

End user experience
Brand recognition





ST25 rich eco-system



- Discovery Kits based on STM32 MCU
- STM32 Nucleo boards ecosystem
- STM32Cube software ecosystem



- Antenna e-design tool
- Schematic, BOM, Gerber
- IBIS models



- PC software tool ST25 SDK
- Mobile Apps ST25 SDK (Android & iOS)

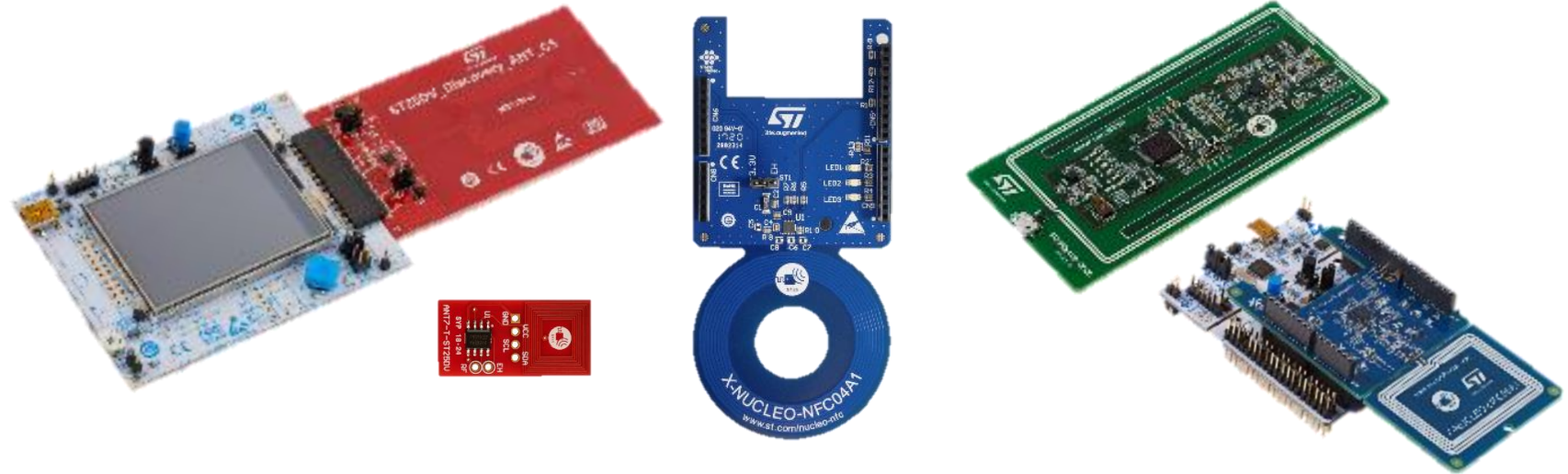
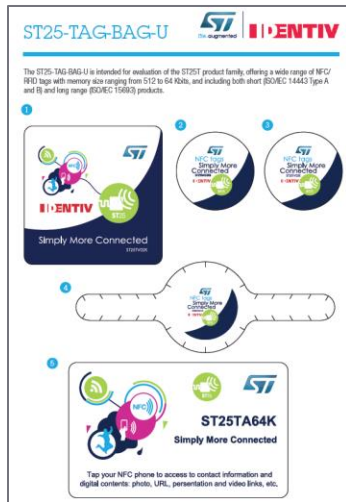


- Documentation
- Training
- Webinar
- MOOC



ST25 hardware solutions

Speed-up Evaluation, Prototyping and Design



NFC TAG KIT

- ST25-TAG-BAG-U

DYNAMIC NFC TAG KITS

- ST25DV-DISCOVERY
- ANT-1-6-ST25DV
- X-NUCLEO-NFC04A1
- ANT7-T-ST25DV04K

HF / NFC READER KITS

- ST25R3911B-DISCO
- X-NUCLEO-NFC05A1



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Solutions for NFC / RFID tags & readers



ST25 SIMPLY MORE CONNECTED