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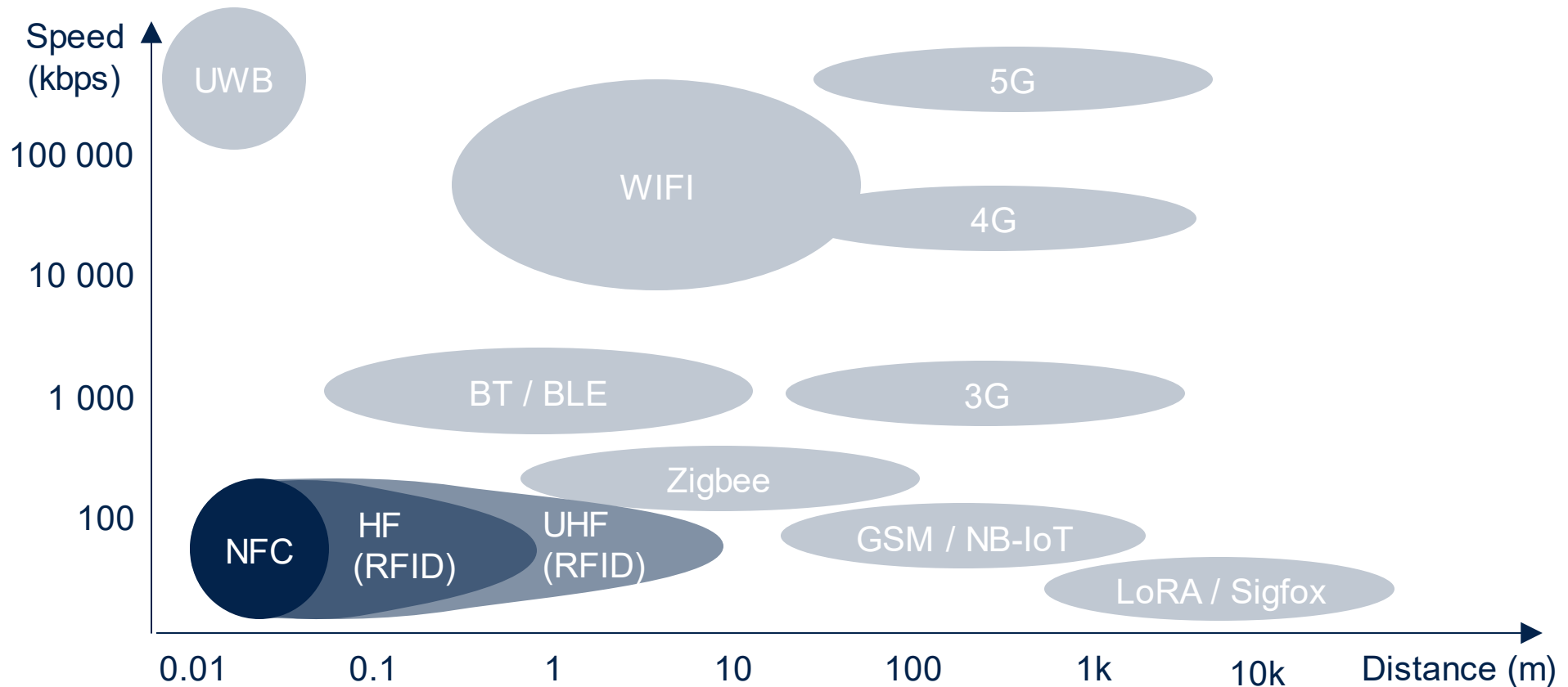
ST25 NFC / RFID solutions for medical & wellness applications





NFC, RFID HF & UHF technologies

Complementary solutions to Wireless Technologies



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

Medical & Wellness 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



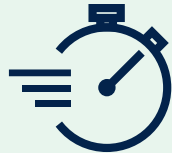
UHF technology

Ultra High Frequency



- Long read range wireless technology
- Operating between 840MHz and 960MHz
- Based on the GS1 EPC UHF Gen2 Air interface protocol

Read range and faster data transfer



- Enabling convenient connection to the IoT

UHF is developed by RAIN alliance



- “To enable businesses and consumers to identify, locate, authenticate, and engage items in our everyday world” *

* Sentence from rainrfid.org

Large volume market



- Cheapest tag to manufacture
- Application of UHF technology covers many markets.
- More than 20 billion tags produced in 2020



NFC main use cases & benefits

Configuration & Data logging

NFC



- Product configuration and parameter settings through NFC
- Data log transferred, processed and plotted on NFC phone

Servicing & Maintenance

NFC



- Contactless access to maintenance records
- Update parameters even if device is powered off thanks to NFC phone
- Quick firmware upgrade via fast transfer mode

Enhanced user experience

NFC



- Wireless pairing
- Access to Web Page (URL) or get link for Android (AAR) or iOS application
- E-warranty card & customer registration
- Device control with mobile phone
- User identification & personalized settings



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



UHF main use cases & benefits

Real-time patient tracking

UHF



- Log & monitor the progress of a person
- Locate people in real time
- Speed up bed turnover to admit more patients efficiently

Asset management

UHF



- Locate medical equipments
- Update parameters
- Speed up inventory management



Fast detection and long read range
Possibility of identifying more than 200 tags without constraint of positioning
Cheapest tag to manufacture



Typical NFC Tag Block Diagram & Usage in Medical



Healthcare
equipment



ST25T

EEPROM

ST25TV02K / ST25TA02KB



TruST25 digital signature
Passwords
Easy & fast data transfer

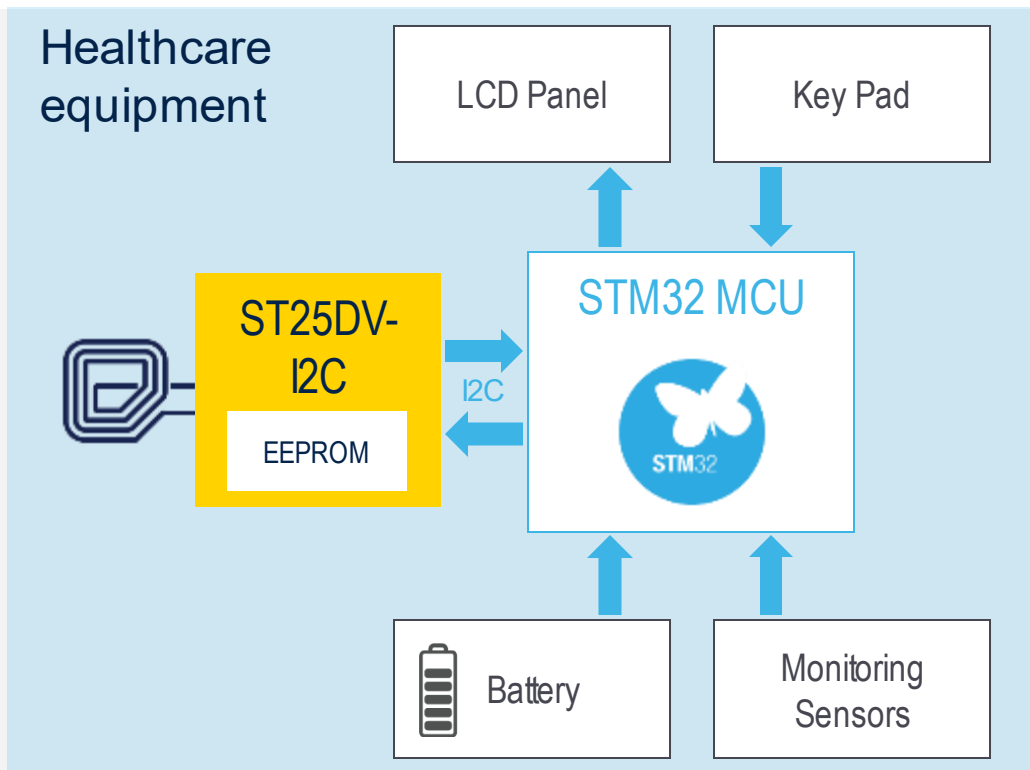
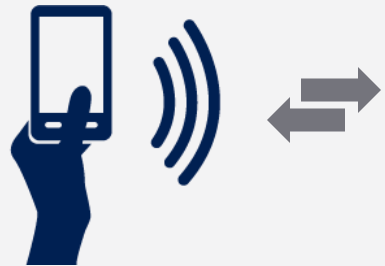
Enhanced user experience





Dynamic NFC tag

Typical Dynamic NFC Tag Block Diagram & Usage in Medical



ST25DV04K / 16K / 64K



I2C fast interface
Fast Transfer Mode
Large memory storage

Configuration & data logging
Servicing & Maintenance
Enhanced user experience



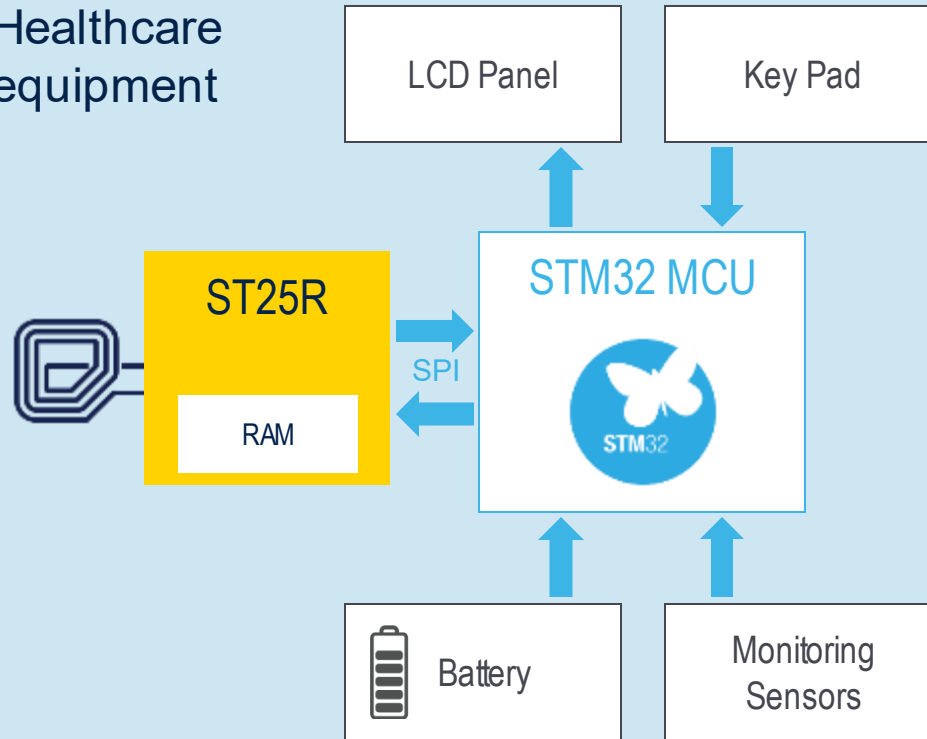


HF / NFC reader

Typical NFC Reader Block Diagram & Usage for Medical



Healthcare equipment



ST25R3911B / 12 / 13



High output power
Low power consumption
Automatic antenna tuning

Configuration &
data logging
Servicing & Maintenance

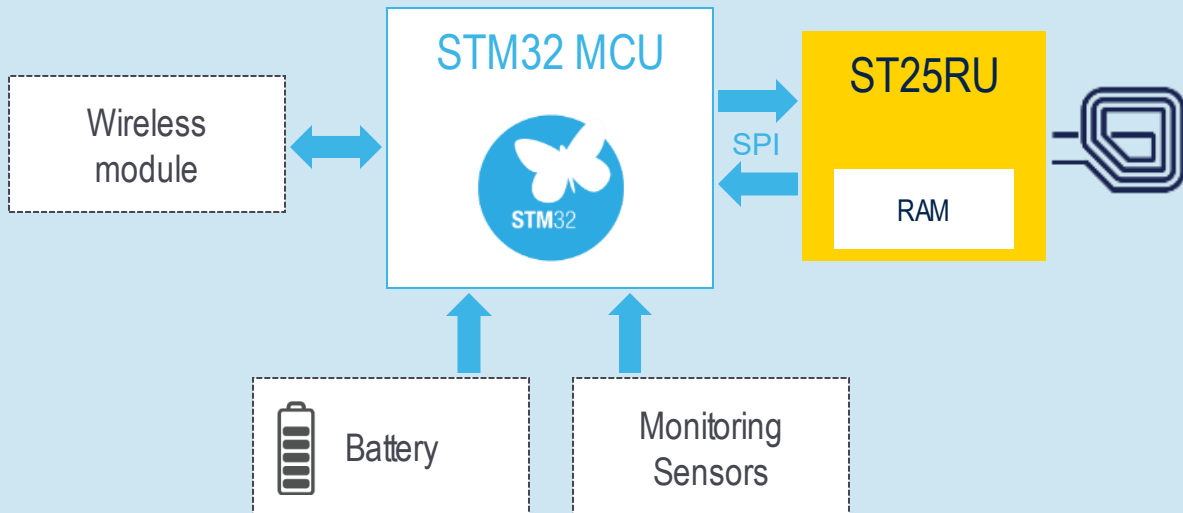




UHF reader

Typical UHF Reader Block Diagram & Usage for Medical

UHF reader



ST25RU3993



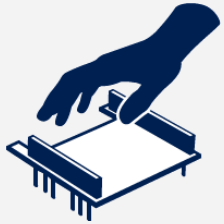
Long read range
Low power consumption
Fast read speeds

Real-time patient tracking
Asset management





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)



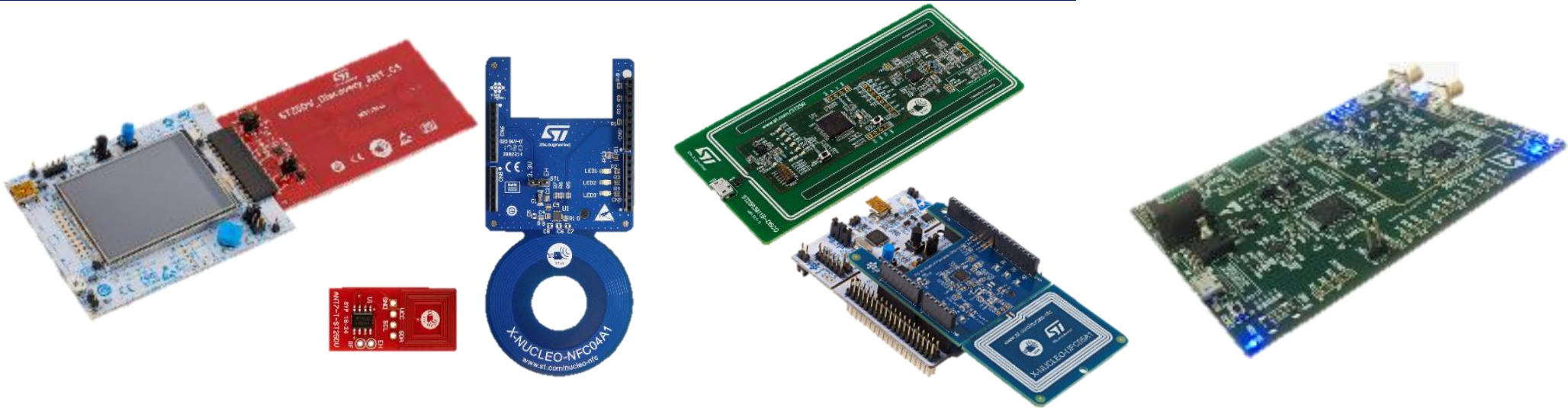
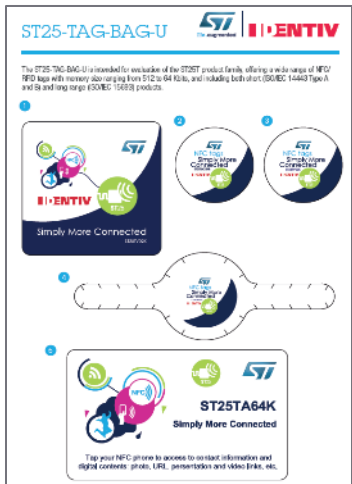
- Documentation
- Training
- Webinar
- MOOC

- NFC only



ST25 hardware solutions

Speed-up Evaluation, Prototyping and Design



NFC TAG KIT

- ST25-TAG-BAG-U

DYNAMIC NFC TAG KITS

- ST25DV-DISCOVERY
- X-NUCLEO-NFC04A1
- ANT7-T-ST25DV04K

HF / NFC READER KITS

- ST25R3911B-DISCO
- X-NUCLEO-NFC05A1

UHF READER KIT

- ST25RU3993-EVAL



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Solutions for NFC / RFID tags & readers



ST25 SIMPLY MORE CONNECTED