

# ST25R3920 NFC READER FOR AUTOMOTIVE



## CCC digital key and center console applications



### AEC-Q100 qualified high performance NFC universal device supporting NFC Reader, initiator, target and NFC card emulation

Ideal for car access/start applications in areas like door handle or center console, the ST25R3920 offers lowest power consumption combined with large communication distance even on smallest antenna sizes.

Additional functionality, like pairing a mobile phone to the car or NFC card protection combined with a Qi charger can also be implemented.

Unique features like NSR, AAT and DPO allow for faster design and certification cycles and increase customer experience and safety.

#### KEY FEATURES & BENEFITS

High performance CCC DK2.0 and NFC forum NFC reader

- Noise suppression Receiver (NSR)
  - Increases immunity to interference from noise sources and therefore simplifies electromagnetic immunity and eases certification
- Automatic Antenna Tuning (AAT)
  - Automatic antenna adjustment to environmental (eg. temperature, metal), aging or placement influences
- Dynamic Power Output (DPO)
  - 1.6 W output power with dynamic power adjustment to optimize power transfer within given limits (NFC Forum)
- Low Power card detection
  - Achieve market leading power consumption

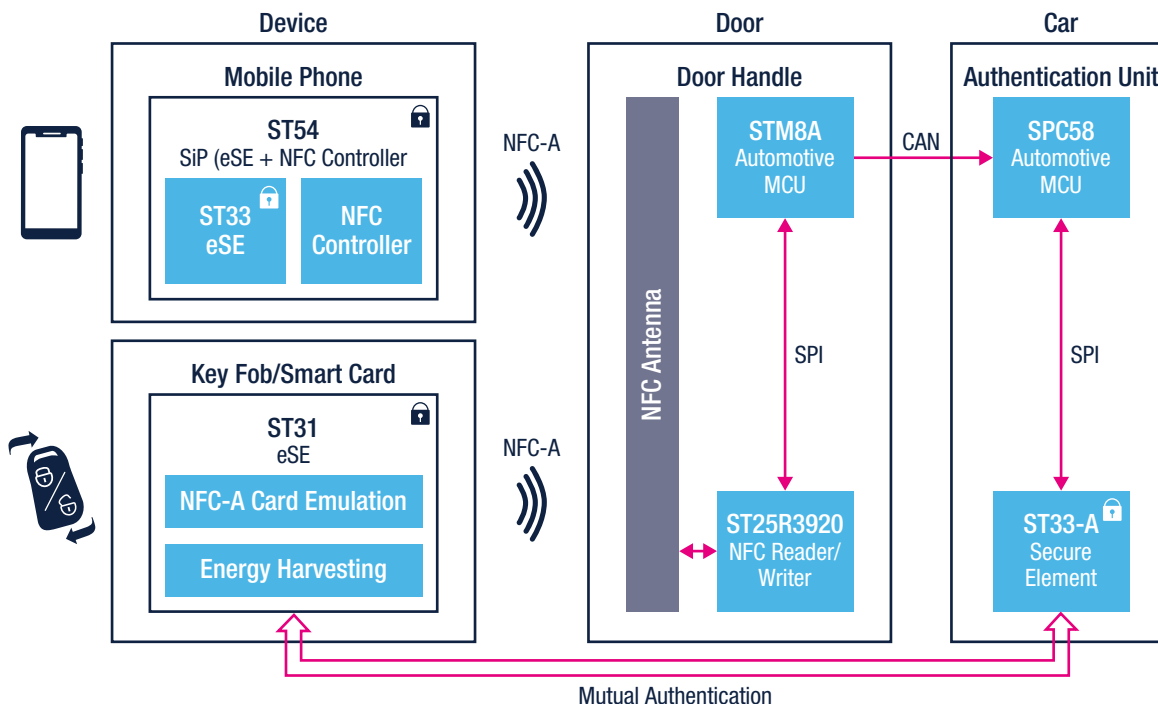
#### KEY APPLICATIONS

- Car connectivity Consortium Digital Key 2.0 (CCC DK2.0)
- Car Access and start
- NFC card protection on center console Qi chargers
- Phone pairing and data transfer
- Consumable detection

Ideally fitting the car connectivity consortium (CCC) digital key 2.0 (DK2.0) specifications, the ST25R3920 is a very robust and noise tolerant solution while reducing electromagnetic emission, the device works even under harsh conditions, enabling an easier certification.

The device includes an advanced analog front end (AFE) supporting mandatory NFC-A but also optional NFC-B (ISO14443A/B) and NFC-F (FeliCa™) reader functionality as defined by CCC. Additionally for pairing and NFC card protection for Qi charging ISO18092 passive and active initiator&target, NFC-V (ISO15693) reader, and NFC-A / NFC-F card emulation are supported.

### CCC Digital Key 2.0 solution block diagram with ST25R3920



### Device summary

Product name	Mode	RF Interface	Serial Interface	Advanced features	Output Power	Ambient Temperature Range	Package	Applications
ST25R3920	Reader / Writer, P2P, Card Emulation	ISO14443A/B, ISO15693, FeliCa	SPI, I <sup>2</sup> C	AAT, DPO, AWS, NSR, CIWU	1.6 W	-40 °C to +105 °C	32-pin QFN (5x5 mm)	DK2.0, Car start, car access, pairing, NFC card protection

Note:  
 AAT: automatic antenna tuning    NSR: noise suppression receiver    DPO: dynamic output power    CIWU: capacitive and inductive wakeup    AWS: active waveshaping

### Eco-system



#### Support eco-system



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