Product Brief

Boosted NFC Secure Element

Security solution for mobile payment

The Infineon Boosted NFC Secure Element is designed for mobile payment services via active boost transmission technology. Targeting the smart wearable devices with NFC secure payment and other portable smart devices, as well as NFC smart cards like SIM/UICC or micro SD card, the Boosted NFC security products significantly reduce the footprint of the antenna while enhancing the contactless performance, thus enable the design of mobile payment secure devices with self-contained NFC functionality in ultra small size.

As a leader in the security IC market for more than two decades and being certified with the industry top security certificates like EMVCo and CC EAL6+ (high) and more, Infineon security devices are worldwide deployed in financial institutes' contactless and dual interface chip cards, transportation ticket solutions as well as the SIM/UICC based payment applications. The Boosted NFC Secure Element provides financial transactions, SIM/UICC functionality as well as other NFC card functions on one device. It is connected to a booster frontend* to provide the active boost transmission. This frontend boosts the secure element’s response signal to the NFC reader/initiator and improves the receiving sensitivity, in order to improve the performance compared to a classic NFC passive communication.

Provide ISO/IEC 14443 type A, type B as well as ISO/IEC 18092 card modulation via ACLB interface to the booster frontend. The software and applications designed for classic dual interface SLE 77/SLE 78 product families can be quickly adapted to Boosted NFC products. The solution provides a secured application system together with NFC functions, and solves proximity communication problems as an ultra small NFC device. It has reliable NFC performance even when the mechanical construction of the host device partially shields the radio signals.

Pin configuration of Boosted NFC Secure Element

- **ISO 7816 interface**
- **ACLB**
- **GPIOs**
- **SPI**
- **Boosted NFC SE**

Main features

- Security controller supporting Boosted NFC frontends with active boost transmission
- Crypto@2304T engine for public key cryptography
  - RSA up to 4096 bit
  - ECC up to 521 bit
- Symmetric Crypto Processor (SCP) for triple-key triple-DES and AES acceleration
- ISO/IEC 14443 type A and type B, ISO/IEC 18092 card via ACLB interface
- ISO/IEC 7816 interface
- Optional GPIOs
- Optional SPI interface
- Optional compatible functionality

Applications

- Ultra small form factored NFC secure components with antenna for wearable smart devices
- Secure NFC SIM, NFC SD or micro SD card with integrated NFC antenna
- Other small form factored NFC secure components (for example SMD component) for wearable smart devices

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For a secure element final design with NFC functionality added, a well established and customer accepted form factor is the critical success factor. Furthermore mass productivity and being distributed through established channels will provide real commercial advantages.

The ultra small form factor system designs with Boosted NFC Secure Element contains all necessary functions for realizing the mobile payment, thus enables the innovative mobile commercial applications for service providers like mobile networks operators, financial institutes and other financial payment service providers.

In order to achieve the best system performance, Infineon provides also a turn-key design support for above applications.

Application example

![Host CPU
 SPI, I2C or ISO7816

Boosted NFC SE Module](image)

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