



Product Brief

Near Field Communication (NFC)

Nearly a decade since it was first introduced, Near Field Communication (NFC) is entering the consumer technology mass market. It will soon be available on hundreds of millions of smart phones and personal mobile devices. NFC is about to revolutionize everyday activities bringing a new era of connectivity into our daily life.

Based on Radio Frequency (RF) technology at 13.56MHz, NFC provides a short-range up to 10cm wireless data connection to mobile devices. By using this new capability on existing infrastructures, the NFC enabled device is then able to support services designed for contactless cards: ticketing, payment, loyalty programs. In addition, NFC offers new functions such as the reading of NFC tags, validation of transactions and Peer-to- Peer communication.

NFC raises the bar for security, performance and convenience for the smart card industry.

Information exchange applications, such as “smart” posters, operate in a relatively open manner. Many other applications, in particular those described as electronic wallet functions, utilize information that users want to keep private. In fact, the trust of the consumer that their personal data and financial transactions are protected will be critical to wide market success for NFC.

Infineon, Your partner of choice for your NFC solution



As member of the NFC Forum and other NFC-relevant standardization bodies, we drive actively the NFC market development. Thanks to our Security Leadership and Contactless Excellence, we contribute today to the emerging NFC market with an exceptionally broad and innovative portfolio supporting all NFC applications and business models.

Since the NFC RF communication functionality is to be integrated by the wireless chipset industry in their combo-devices (Bluetooth, IR, ...), we focus on security chips used to protect sensitive information from exposure, as well as RFID chips used in NFC Tags, important in the roll out of the NFC technology. We designed products to meet the security and the performance required by the challenging requirements of NFC.



We achieve the required security level to support efficiently the different solutions from the NFC SIM to the embedded Secure Elements which requires long term security. Our secure microcontrollers are certified according to the Common Criteria and EMVCo international standards. Dedicated ones feature the award-winning security technology Integrity Guard, ensuring robust protection of sensitive payment and authentication data. The security technology Integrity Guard bundles several highly sophisticated digital security mechanisms to cover a vast range of potential attacks.

Our entire portfolio is designed to deliver the highest performance of the chosen solution (SIM, microSD, Dual Interface, ...) crucial to the success of NFC applications. Widespread market penetration of NFC relies on customer experience. And the consumer expects that communications and transactions will be processed quickly, reliably and intuitively.



We support NFC Systems based on open standards such as CIPURSE™ from the OSPT Alliance. The CIPURSE™ system will ease the deployment of NFC solutions to be used in ticketing and transport applications. It operates on standard infrastructures and does not require specific terminal and specific TSM management. CIPURSE™ offers a clear and transparent licensing scheme for the NFC Stakeholders and users.

A Unique and Complete NFC Product Portfolio



Secure Elements				
	NFC SIM	Embedded SE	Solutions with Flexible Antenna	NFC MicroSD™
SWP Product	✓	✓		Possibility to package together a NFC Modem and a SWP chip into a MicroSD
Dual Interface Product	+Active modulation in a SIM Form Factor	✓	✓	+Active modulation in a SIM Form Factor

SWP Secure Element

Since 2007, the Single Wire Protocol interface is the standard interface connection between the UICC/SIM and the CLF(ContactLess Frontend) modem within NFC-enabled mobile devices. Infineon's SLE 97 SOLID FLASH™ Family is the state-of-the-art product generation, for high performance security chip cards supporting the SWP interface. The SLE 97 family is provided in various form factors, addressing besides SIM/UICC Secure Elements also embedded as well as microSD Secure Elements. The SLE 97 products implement a 32-bit CPU based on the ARM® SecurCore® SC300™, enhanced by Infineon's Cache and Security Technology.

mobile payment secure components with integrated contactless antenna, for example the Boosted NFC MicroSD or SIM, to enable the fast deployment of mobile payment services.

Dual Interface/ Boosted NFC Secure Element

The Infineon SOLID FLASH™ Dual Interface (DI) Security Controllers, such as the SLE 78 Family, are highly secure controllers supporting the simultaneous communication of both contact based and contact-less interfaces; compared to typical controllers that actually support only one interface at a time (e.g., contact-less only for paying, contact-based only for usage at a bank terminal). As the derivative of the product families, the Infineon Boosted NFC Secure Element provides turn-key solution of ultra-small mo-

Bundles

All Infineon's NFC products are certified according to Common Criteria EAL5+ high and EMVCo, necessary for secure transactions such as contactless payment, mobile banking and authentication. Embedded Secure Elements can be provided either as hardware only or as complete bundle including EMVCo approved JavaCard/GlobalPlatform operating system.

In addition, Infineon offers customization services such as pre-personalization, loading of applications and key management service including secure key injection

RFID Chips for NFC Tags

With my-d™ move NFC and my-d™ NFC, we provide a broad range of NFC Forum™ Type 2 Tag Operation ICs ideally suited for open NFC applications like device pairing, information sharing, sticker and smart poster reading. Additionally we offer also products compliant to NFC Forum's Type 4 Tag.

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