NXP IC solution for secure proximity readers

Enhanced security for contactless readers

MIFARE RX852 from NXP Semiconductors revolutionizes the implementation of high security in a contactless reader. It is the first low cost, secure reader IC solution of its kind. It is available for a wide range of contactless reader applications that will offer solution developers and providers the benefits of a system in package (SIP), multi-chip, secured contactless reader IC. With AES and 3DES support, MIFARE RX852 uses widely adopted and open standards, enabling easy and fast solution development of infrastructures.

Key applications

- Public transportation
- E-government
- Access management
- Point of Sales (POS)

Key features

- ISO/ IEC 14443 compliant
- AES, 3DES, CRYPTO1 compatible
- Multi-chip secured contactless reader IC
- Secure key storage and key diversification

Benefits for solution developers

- Reduces complexity of reader design
- Fewer number of peripherals leads to lower bill of materials (BOM)
- Interoperability to all ISO/ IEC 14443 based solutions
- Limited integration effort with enhanced security
- Easy to use and proven toolkits
- Faster time-to-market
- Complete electrical circuit in one package
- Allows for enhanced security in handheld devices

New concept for secure reader designs

The use of secure elements such as a secure application module (SAM) in a contactless reader enables the handling of different interfaces and security. Customers that target higher security requirements are now able to significantly reduce their implementation time with the new MIFARE RX852.

Typically, the secure element is directly connected to a microcontroller, which handles the secured communication within a contactless reader. This additional interface causes a latency which negatively impacts the overall performance of the total system.

With the MIFARE RX852, customers benefit from having a direct connection between the secure element and the contactless reader IC, which removes the latency effect and, therefore, improves the overall speed of a reader system. In general, it leads to reduced complexity, effort and cost of implementation (BOM), and it allows customers to considerably cut time-to-market.

NXP founded by Philips

MIFARE in figures

- In 1994, first MIFARE card & reader solution was invented and launched by NXP engineers
- More than 650 cities and 50 countries adopted MIFARE solutions
- 20 million readers distributed in the market
- More than 740 (1) card & reader makers; (2) solution developers registered and available at: www.MIFARE.net
- More than 10 breakthrough innovations developed with first time-to-market

NXP MIFARE™ SAMs for Reader Systems

Product Features	MF RX852
Memory	
EEPROM size [byte]	81 K
OTP area [bit]	
Write Endurance [cycles]	100 000
Data Retention [yrs]	10
Organization	128 key entries
RF-Interface	
Acc. to ISO 14443A	ISO 7816, T=1
Frequency [MHz]	1 ... 10
Baudrate [kbit/s]	9.6 ... 1500
Anticollision	yes
Operating Distance [mm]	RC523 / 80mm
Security	
Unique Serial Number [byte]	7
Random Number Generator	yes
Access Keys	128 key entries
Access Conditions	per key entry
MIFARE Classic Security	supported
DES & DES3 Security	MACing / Encipherment
AES 128 Security	MACing / Encipherment
PKI	-
RSA	-
Packaging	
PCM1.1 Module	-
HVQFN package	HVQFN48

MIFARE Pedigree

NXP MIFARE is the leading technology platform for contactless ticket, card and reader solutions. With more than 20 million reader core components, 1 billion cards and 800 million smart ticket ICs sold, MIFARE is a proven and reliable technology, which represents the largest installed base worldwide.

Compliant with the ISO / IEC 14443 A international standard, MIFARE ensures that today's infrastructure can easily be upgraded. It enables solution providers to expand their transportation networks and to integrate additional services such as payment systems for taxi fares, cinema and theatre tickets, loyalty programs, access management and parking. And all while reducing the total costs of operations.

MIFARE evolves. NXP's latest innovations in MIFARE such as the MIFARE Ultralight C, MIFARE Plus and MIFARE DESFire EV1, bring your application to the next level of security, performance and convenience.

MIFARE.net

www.nxp.com

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