



## ELSmart Contactless Smart Card

- Multi-application
- Compliant to ISO/IEC 14443 standard
- Read/Write operations support
- Secure transactions
- 10 years estimated life time
- Standard ID1 card size
- Multiple Personalization options

### ELSMART CONTACTLESS SMART CARD



**ELsmart contactless card** is a multi-application smart card compliant to ISO/IEC 14443 standard. The card has a Memory capacity of 4Kbyte (32 K bits) of EEPROM memory.

Contactless smart cards are passed near an antenna to carry out a transaction. They look just like plastic credit cards, except that they have an electronic microchip and an antenna embedded inside. These components allow the card to communicate with an antenna / coupler unit without any physical contact. Contactless cards are the ideal solution when transactions must be processed very quickly.

The Elsmart contactless card supports read/write operation at a distance of 0 to 30mm from the Elsmart Terminal. When there are more than one card in the terminal antenna field, the anti-collision mechanism detects and protects the read/write operation with the card.

#### Memory and Security

The Elsmart contactless card provides an 32-Kbit EEPROM memory based on a Mifare®1 chip. The memory is divided into 40 sectors, each with separate access rights for secure implementation of multiple applications.

The two-way authentication sequence is based on a hardwired logic algorithm, random numbers and secret keys. Data transmission to and from the card is encrypted to ensure confidentiality and protection against replay attacks.

The card also features electronic purse functions. Credit and debit operations are managed directly inside the chip with distinct access rights, allowing the implementation electronic purse functions securely.

#### Surface printing and finish

The Elsmart card can be provided with different surface printing option with single/double side printing. Full color on one side and black on the other. Surface treatment options include Duragard® coating and or Hologram application with Duraguard®.



## Technical Specifications

- Type:** Multi-application smartcard compliant to ISO/IEC 14443
- Memory capacity:** 4 Kbyte (32Kbits) divided into 40 sectors
- Security block:** One 128-bit system block for each sector indicating access rights and holding two secret keys
- Card Identification:** Unique Serial number
- Security features:** Hardwired cryptographic algorithm for read/write operation Mutual authentication + encrypted transmission
- Anti-collision:** Identify multiple cards in the Terminal antenna field
- Application feature:** Electronic purse structure, independent credit debit rights
- Number of read:** Unlimited
- Number of writes:** 100,000
- Data retention:** 10 years



## Contactless Communication

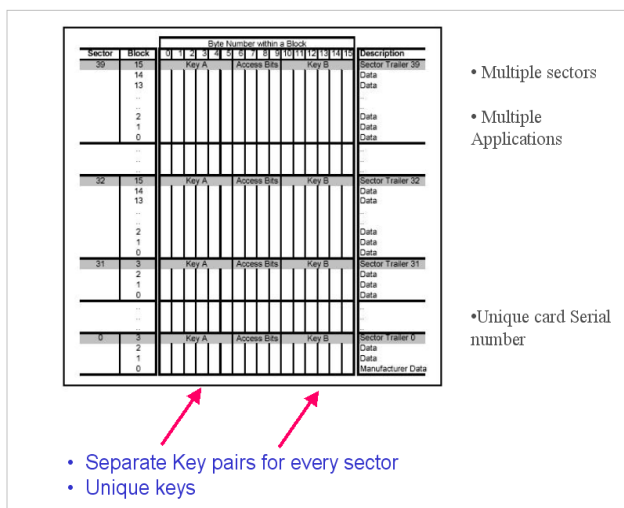
- Operating Frequency:** 13.56 MHz
- Power supply:** Magnetic Induction
- Communication speed:** 106Kbaud
- Communication integrity:** CRC16 and parity bit
- Operating range:** 0-30mm with Elsmart Smart card Terminal (standard)

## Physical Characteristics

- Size:** 85.6 mm (length)  
54 mm (width)  
0.7mm (thickness)  
( $\pm 0.5\%$  for length & width)
- Card body:** White glossy finish
- Card Printing:** Full color one side, Black on the reverse  
Duraguard® protection layer  
Hologram (one side) (option)

## Durability

- Mechanical stress:** 250 bending cycles per side
- Chemical:** ISO10373 compliant (resistant to alcohol, Fuel B, sweat...)
- Temperature:** -20°C to +50°C (standard)  
-20°C to +100°C (option)  
Retains functionality and visual aspect



Secure Smartcard Architecture

