

# RFID and RF memory products

13.56 MHz family - ISO 14443-B and ISO 15693



## Leading-edge worldwide-standard-compliant products

Committed to high-volume, competitive markets, **STMicroelectronics (ST)** is a leader in serial non-volatile memories and application specific memories (ASMs). ST's approach in the identification market consists of offering standard-compliant memories and complete solutions through a wide network of partners.

ST is strongly behind the adoption of worldwide RFID standards such as ISO 14443, ISO 15693, ISO 18000 and EPCglobal.

## Ready for multiple applications

ST offers a broad range of RFID and memory products with RF interfaces, ideal for tags and access cards used in a wide variety of applications:

- Mass transit
- Access control
- Asset tracking
- Anti-counterfeiting
- Brand protection
- Event ticketing
- Healthcare
- Identification
- Loyalty
- E-purse
- Object tracking

## Know-how and expertise

With considerable experience in the RFID domain, as well as partnerships with system integrators and involvement in standardization committees, ST can offer a cost-effective, flexible and interoperable RFID product portfolio with a large range of memory densities.

ST also offers security features on all RFID product families with an anti-clone function on the SR (short range) family and password access on the LR (long range) family.

To meet today's environmental requirements, ST's RFID memories offer an optimized choice of form factors.

## Short-range RFID ICs

### Common features

- ISO 14443-2 type B fully compliant
- ISO 14443-3 type B frame format compliant
- 13.56 MHz carrier frequency, 847 kHz subcarrier and 106-Kbit/s data transfer rate
- ASK data modulation for reader-to-card and BPSK coding for card-to-reader
- 64-bit unique ID and two binary counters
- Internal tuning capacitor
- Anti-collision

### SRIx4K/SRI4K

- 4 Kbits of user EEPROM with write protection
- Five one-time programmable blocks
- France Telecom proprietary anti-clone function for SRIx4K only

### SRI512/SRT512

- 512 bits of user EEPROM with write protection
- Full EEPROM blocks for the SRT512 and five one-time-programmable blocks for the SRI512

## Short-range RFID couplers

### CR14/CRX14

- Integrated chip coupler for ISO 14443-B protocol
- Single 4.5 to 5.5 V operation
- 400 kHz I<sup>2</sup>C bus
- Up to 8 x I<sup>2</sup>C addresses using chip enable pads
- 13.56 MHz carrier frequency
- France Telecom proprietary anti-clone function for CRX14 only

## Long-range RFID ICs

### Common features

- ISO 15693 standard compliant
- 13.56 MHz carrier frequency
- ASK data modulation for reader-to-card and Manchester coding for card-to-reader
- Internal tuning capacitor
- Anti-collision

### LRi64

- 64-bit unique ID (user programmable capability)
- 64-bit user write once, read many

### LRi2K/LRiS2K

- 2 Kbits of user EEPROM with block lock
- 64-bit unique ID
- E.A.S. electrical article surveillance capable (software controlled) through AFI
- Kill command
- Supports 53-Kbit/s data transfer rate
- Read/write access password controlled for LRiS2K only

Part number	Memory size	64-bit unique ID	Anti-collision	Anti-clone	Package
<b>ISO 14443 type B short-range/proximity</b>					
<b>SRI512</b>	512-bit EEPROM	•	•		Bumped dies, wafers
<b>SRT512</b>	512-bit EEPROM	•	•		Bumped dies, wafers
<b>SRIx4K</b>	4-Kbit EEPROM	•	•	•	Bumped dies, wafers
<b>SRI4K</b>	4-Kbit EEPROM	•	•		Bumped dies, wafers
<b>CRX14</b>				•	S016N
<b>CR14</b>					S016N
<b>ISO 15693 long-range/vicinity</b>					
<b>LRi64</b>	64-bit WORM EEPROM	•	•		Bumped dies, wafers
<b>LRi2K</b>	2-Kbit EEPROM	•	•		Bumped dies, wafers, VFN 2x3
<b>LRiS2K</b>	2-Kbit EEPROM	•	•	3 passwords	Bumped dies, wafers



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