

# PicoTag™

PicoTag™ 2K bit version  
PicoTag™ 2KS secure version

13.56 MHz ISO 15693  
standard contactless memory chips

## Features

- Communication standard: ISO15693
- Operating range up to 1.5 m
- Communication speed : 26 kbps
- 2 kbit of EEPROM read/write memory
- Write-once memory space for personalization data protection
- Independent credit and debit secret keys
- Authentication using INSIDE's proprietary cryptographic algorithm
- PowerGuard® anti-tearing function
- Fast anti-collision management: up to 50 chips/second
- Compliant with other INSIDE contactless chips
- Smart EAS capability option
- Personalization kits available

## PicoTag™ 2K Typical applications

- Source tagging
- Logistics
- Libraries
- Laundry
- Airline baggage tracking
- Asset management

## PicoTag™ 2KS Typical applications

- Anti-counterfeit
- RFID (secure tags, smart labels)
- Access control
- Border control/ID cards
- Toll gate
- Mass transit
- Ski pass

**PicoTag™** is a family of contactless memory chips compliant with ISO 15693 standard. It has been designed for large volume identification applications requiring small amount of data and maximized communication distances.

**PicoTag 2KS** chip version offers additional cryptographic security features for internal data protection and chip authentication.

## Product characteristics

**PicoTag™ 2K/2KS** contain 2k bits of non-volatile read/write memory including personalization area protected by a fuse. PicoTag can communicate at up to 1.5 m distance with a gate antenna and up to 70 cm distance with a single antenna. Fast anti-collision capability enables to treat multiple tags present simultaneously in the field.

**PicoTag™ 2KS** offers an additional cryptographic security feature for data protection and chip authentication. Two unique secret keys are used to protect two different applications or to manage crediting and debiting of a secure stored value area.

## Benefits

PicoTag offers the following benefits for both smart cards and RFID applications:

**Long Range Communication:** allows to implement hands free operation, communicate with objects in movement and achieve very low reader cost in proximity operations.

**Security:** PicoTag state-of-the-art cryptographic authentication prevents from chip memory reading and modification by an unauthorized person and chip cloning or simulation.

**Fast Anti-collision Management:** Fast anti-collision provides a high speed throughput in case multiple objects are present simultaneously in the communication field.

# PicoTag™

2 kbit and 2 kbit secure versions

## Kits offer

### Product

Personalization Kit

### Description

The Personalization Kit is used to personalize secure areas of PicoTag™ chips.

## Key technical data of PicoTag chip family

Features	PicoTag™ 2K	PicoTag™ 2KS
<i>Standard protocol</i>		ISO 15693
<i>Carrier frequency</i>		13.56 MHz
<i>Baud rate</i>		26 kbps
<i>Anti collision</i>		50 chips/s
<i>Unique serial number</i>		64 bits
<i>EEPROM memory size</i>		8 bytes block
<i>Secure stored value area</i>	No	65534 units
<i>Recharging counter</i>	No	65535 times
<i>Cryptographic Authentication</i>	No	64 bits key length
<i>Key area</i>	No	Credit and Debit keys
<i>Read/Write protection with Authentication</i>	No	Yes
<i>Write-once</i>	Yes	Yes
<i>EEPROM cycle</i>		Over 100K cycles
<i>EEPROM data retention</i>		10 years
<i>Operating temperature</i>		-40 to 70°C