PicoPass™

PicoPass™ 2KS - 2Kbit version
PicoPass™ 16KS - 16Kbit version
PicoPass™ 32KS - 32Kbit version

13.56MHz dual-standard
ISO 14443B/ISO 15693
contactless memory chips

Features

- ISO 14443B and ISO 15693 with auto-detection, optional ISO 14443A
- Operating range up to 1.5 m
- Communication speed up to 424 kbps
- 32k, 16k or 2k bits of EEPROM versions
- Write-once memory space for personalization data protection
- Multi-application mapping: up to 16 applications of 2k bits
- Independent credit and debit secret keys for each application
- Authentication using INSIDE's proprietary cryptographic algorithm
- PowerGuard® anti-tearing function
- Fast anti-collision management: up to 100 chips/second
- Compliant with other PicoTag™ family
- Personalization kits available

Typical applications

- Multi-application cards
- Access control
- Mass transit
- ID cards, passports
- Border control
- Company cards
- Biometrics
- Payment
- Health cards
- City cards
- Loyalty cards

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PicoPass™ is a family of dual-standard contactless memory chips compliant with both ISO 14443B and ISO 15693 standards. Dual standard enables to obtain higher communication speed at proximity distances using ISO 14443B or extended communication range in case data exchange speed is less important.
An optional PicoPass/A version enables the chip to communicate using ISO 14443A standard only.

Product characteristics

PicoPass can communicate at up to 1.5 m distance with a gate antenna and up to 70 cm distance with a single antenna using ISO 15693 or at approximately 10 cm using ISO 14443B or ISO 14443A standards. Fast anti-collision capability enables to treat multiple tags present simultaneously in the field.

PicoPass **2KS** contains 2 kbits of non-volatile read/write memory including personalization area protected by a fuse. PicoPass 2KS employs cryptographic security 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. Cryptographic security protections can be disabled during personalization phase.

PicoPass **16KS** offers multi-application capabilities and/or extended data storage capabilities thanks to its 16 kbits of memory space. PicoPass 16KS can be configured as either PicoPass 2KS with a single extended application memory or as 8 fully independent PicoPass 2KS chips.

PicoPass **32KS** contains simply 2 PicoPass 16KS chips integrated on the same silicon.

Benefits

PicoPass offers the following benefits for both smart cards and RFID applications

Multi-standard capability allows the implementation of applications using vicinity for tracking or hands free operation and proximity communication distances for high speed payment or biometric identification.

Multi-application: PicoPass enables coexistence of several independent applications (up to 16) while maintaining fully separate security conditions.

Memory capacity can be used to store large amounts of data such as high quality ID photos, data records and biometric templates.

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

ISO 14443A option: PicoPass can be easily integrated within applications using Mifare® technology.

creating a contactless world

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PicoPass™

2 kbit, 16 kbit and 32 kbit version

Kits offer

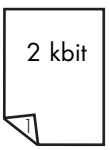
Product	Description
Personalization Kit	The Personalization Kit is used to personalize secure areas of PicoPass™ chips.

Key technical data of PicoPass™ chip family

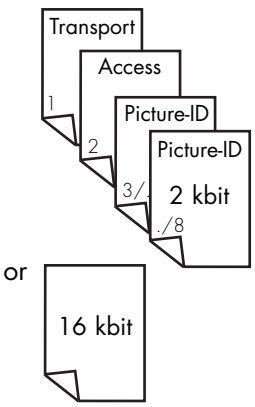
Features	PicoPass™ 2 KS	PicoTPass™ 16 KS	PicoPass™ 32 KS
Standard protocol	ISO 15693, ISO 14443B and optional ISO 14443A version		
Carrier frequency	13.56 MHz		
Baud rate	26 kbps - ISO 15693 106 kbps - ISO 14443B or 424 kbps - ISO 14443B		
Anti collision	50 chips/s for ISO 15693 100 chips/s for ISO 14443B		
Unique serial number	64 bits		
EEPROM memory size	2 kbit	16 kbit or 8x2 kbit	16x2 kbit or 2x16 kbit
Memory organization	8 bytes block		
Secure stored value area	65534 units		
Recharging counter	65535 times		
Cryptographic Authentication	64 bits key length		
Key area	Credit and Debit keys for secure pages		
Read/Write protection with Authentication	Yes		
Write-once area	Yes		
EEPROM cycle	Over 100K cycles		
EEPROM data retention	10 years		
Operating temperature	-40 to 70°C		

PicoPass™ chips family mapping

PicoPass™ 2KS



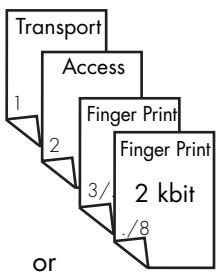
PicoPass™ 16KS: 8x2 kbit



or

PicoPass™ 16KS : 1x16 kbit

PicoPass™ 32KS: 16x2 kbit



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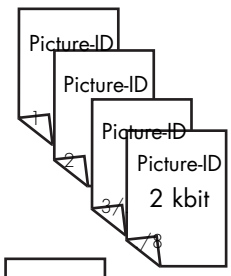

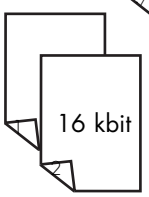

PicoPass™ 32KS : 2x16 kbit

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