picopass®Suite

picopass® 2KS (2Kbits)
picopass® 32KS (32Kbits)

Dual-standard 13.56MHz memory chip for contactless applications

Features

- **Interoperable with ISO 14443B and ISO 15693**
- **Automatic protocol selection**
- **Operating ranges: 10cm and 1.5m**
- **Baud rates up to 424kbps**
- **EEPROM: 2Kbit, 32Kbit**
- **Write-once memory space for protected personalized data**
- **Multi-application capability: up to 16 independent 2Kbit applications**
- **Independent secret credit and debit keys for each application**
- **Authentication with proprietary cryptographic management**
- **PowerGuard® antitearing power protection**
- **Fast anticollision protocol up to 100 chips per second**

Applications

- **Physical access control**
- **Mass transit**
- **ID cards, passports**
- **Biometrics**
- **Enterprise cards**
- **Payment**
- **Health cards**
- **Loyalty cards**

picopass® *is a family of contactless memory chips that support both ISO 14443B and ISO 15693 proximity and vicinity protocols. It automatically responds to a received command with the appropriate protocol.*

Compatible

picopass® operates with the ISO 14443B proximity protocol for high speed communication at a range of 10 centimeters. Applications include POS and biometric identification.

It uses the vicinity protocol ISO 15693 to operate at lower speeds over longer ranges:

- 1.5 meters in gate antenna configuration
- 70 centimeters with a single antenna. Standard yields higher communication speeds at proximity distance.

The longer-range capability is suited to applications like asset tracking or hands-free access.

Multiple

picopass® can manage up to 16 independent applications while ensuring their individual security settings.

Having vicinity and proximity protocols in one chip offers advantages.

In mass transit, for example, **pico**pass® can collect fares in proximity mode and track passenger flows using vicinity. An enterprise card would use the vicinity protocol to control entry to the company parking lot and proximity for PC logon.

picopass®'s fast anticollision feature enables it to read multiple tags within the operating field.

Memorable

picopass® 2KS contains 2 Kbits of non-volatile read/write memory including fuse-protected personalization space.

picopass® 32KS contains two **pico**pass® 16KS chips on the same silicon chip.

The **pico**pass® chip can store large amounts of data such as high quality photographs, fingerprints, biometric templates, signatures, and data records.

Secure

The **pico**pass® 's state-of-the-art cryptographic authentication prevents unauthorized third parties from reading or tampering with its memory. It also prevents any cloning or simulation. A unique secret key is used for each application. Equally, a unique secret key is used for crediting a secure stored value area, and another one for debiting it.

Cryptographic security protections can be disabled during personalization.

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picopass®Suite

Available Kit

Product

Personalization Kit | Used to personalize secure areas of **pico**pass® chips (credit and debit keys diversification and download).
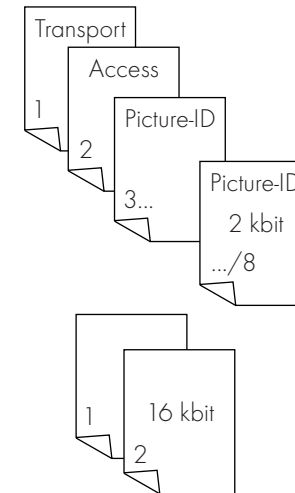
Key technical data

Features	**pico**pass® 2 KS / **pico**pass® 32 KS
Standard protocol	ISO 15693 and ISO 14443B
Carrier frequency	13.56 Mhz
Baud rate	26 kbps - ISO 15693 106 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 / 16x2 kbit
Memory organization	8 bytes block
Secure stored value area	65534 units
Recharging counter	65535 times
Cryptographic Authentication	64-bit 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® **memory mapping**

picopass® 2KS

2 kbit

picopass® 32KS: 16x2 kbit

Transport
Access
1
2
Picture-ID
3...
Picture-ID
2 kbit
.../8

1   16 kbit
2

picopass® 32KS: 2x16 kbit

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