

for Visa payWave & MasterCard® PayPass™ Contactless Payment Applications



→ Applications

- Visa payWave (Visa MSD and Streamline On-line qVSDC)
- MasterCard® PayPass™
- Multiple applications - payment plus transit fare collection, access control, retail loyalty programs, and lightweight ID applications
- Application software developer kit - supports data storage applications

→ Security

- Open-standard software DES
- MasterCard certified (EMVco, CAST)
- Visa certified (EMVco, Visa Risk)

→ Architecture

- 16-bit proprietary RISC architecture
- Multi-application architecture
- ISO 7816-4 File Manager

→ Form Factors

- Chip, wafer
- Module packages (standard, thin)
- Card prelam (full embossing)
- Fob prelam - Visa Mini, 2D, and 3D shapes
- Sticker
- Limited-use paper ticket

→ EEPROM

- 4K bytes
- PowerGuard™ anti-tearing function
- 300,000 erase/write cycles

→ Operating Features

- Distance: 4cm (PayPass testbench)
- Temperature -20°C to 70°C

The **micropass® 4003** is a contactless payment microprocessor designed from the ground up for Visa payWave and MasterCard PayPass contactless payment applications. Based on a 16-bit reduced instruction set (RISC) architecture bundled with a native operating system, **micropass® 4003** offers low power, fast performance, and excellent read distance. The **micropass® 4003** is built on INSIDE'S award-winning **micropass®** intelligent contactless payment platform and enables high-volume, multi-payment, and multi-application capabilities for the next generation of contactless payment applications. Card manufacturers can also deliver multi-application contactless payment cards that support transit fare collection, access control, retail loyalty programs, and lightweight identification applications.

High Performance for Superior Cardholder Experience

Cardholders complete their Visa payWave and MasterCard PayPass transactions quickly and reliably with **micropass® 4003**-powered cards. With the industry's fastest transaction time and outstanding read distance, there is no waiting. Powered by its reduced-size antenna, **micropass®** requires half the energy of general-purpose chips and delivers superior transaction speed. Cardholders can present their **micropass®**-enabled credit or debit cards to a reader at any angle in the landing zone and ensure fast, successful transactions - first time, every time.

Compliant with Latest Visa and MasterCard Contactless Standards

micropass® 4003 has been built to the latest Visa payWave and MasterCard PayPass specifications:

- Visa payWave - Visa Contactless 2.0.2 AC v3 specification, including Streamline Online qVSDC, the new standard for U.S. and backwards compatibility for MSD 1.4.2.
- MasterCard PayPass - PayPass V3.3 specification

Card manufacturers and issuers gain leading-edge capabilities while preserving complete backwards compatibility with existing personalization, acquiring, and acceptance devices.

Security Measures that Build Cardholder Trust

micropass® has been certified by Visa (EMVco and Visa Risk) and MasterCard (EMVco and MasterCard CAST) for compliance with the latest card brand security requirements. Card manufacturers can offer contactless card products that are compliant with payment brand requirements and that build cardholder trust.

Support for Multiple Next-Generation Applications

The industry's first true multi-application contactless payment platform, **micropass® 4003** supports contactless payment along with file structure data applications and native applets. Its built-in development environment enables deployment of value-added retail, loyalty, transit, and access control applications - in addition to core payment processing applications.

Unmatched Flexibility for Card Manufacturers and Issuers

INSIDE builds multi-brand, multi-application, and multi-form factor support - as well as advanced chip hardware, native operating system, and payment application software - into the **micropass® 4003** platform for maximum flexibility. Card issuers gain a complete integrated package with a wide choice of form-factors, including chip, module, card inlay, fob inlay (mini, 2D, 3D), sticker, or paper ticket configurations. With a common operating system across all **micropass®** products, customers can deliver a consistent brand experience to cardholders while retaining the flexibility to develop multiple proprietary incentive, loyalty, access control, discount ID, or other applications that meet their business objectives.

Fast Time to Market

With built-in support for multiple payment brands **micropass® 4003**-powered cards can be delivered to market quickly and easily.



micropass[®] Services

INSIDE can accelerate integration and adoption of the **micropass[®]** platform through its professional services:

Application Development

INSIDE can help specify, design, implement, and test new **micropass[®]**-based applications for co-existence with **micropass[®] 4003** payment applications.

Alternative Packaging

INSIDE can provide alternative form factors, including:

- Full-size antennas for ID-1 cards
- Half-size antennas for ID-1 cards (full 4-line embossing)
- Designs for transparent and translucent cards
- Mini-cards
- 2D and 3D fobs
- Mobile handset sticker devices
- Designs for paper limited-use cards

Pre- and personalization support

INSIDE provides sheet-reader systems for:

- Pre-personalization integration within a card manufacturing operation
- Pre-personalization script development
- Personalization support services

This product is covered by a DPA countermeasures patent license from Cryptography Research, Inc. 

Features	MicroPass [®] 4003
Core Technology	0.35 micron
CPU	16-bit RISC microprocessor
EEPROM	4K bytes
ROM	32K bytes
RAM	512 bytes & UART buffer 288 bytes
Cryptography	Software DES
Protocols	ISO 14443/B
Operating System Type	INSIDE OS v5.1/Native
Applications	<ul style="list-style-type: none"> • VCPS 1.4.2/MSD with dCVV • VCPS 2.0.2, A&C v3/MSD and qVSDC Streamline On-line • MasterCard PayPass magstripe 3.3 • PayPass Application AN#2 • Microloyalty
Certification	<ul style="list-style-type: none"> • EMVco • CAST • Visa Level 3
Application Development	Microloyalty SDK
Operating Environment	-20°C to 70°C
EEPROM Features	300,00 erase/write cycles