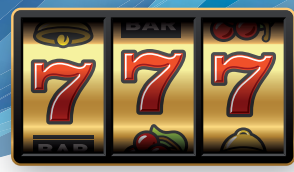
SECURE SOLUTIONS

EASY INTEGRATION AND FAST TIME TO MARKET FOR HIGHLY SECURE APPLICATIONS

INSIDE's award-winning secure solution platforms are deployed globally and simplify development of a wide range of contactless and embedded applications. INSIDE MicroPass® is the world's leading contactless microprocessor platform. The MicroPass intelligent payment platform powers open standard contactless and dual-interface bank cards, along with other value-added applications for mobile payment, transit, ID and access control markets. More than 250 million MicroPass platforms have been shipped worldwide.

INSIDE's VaultIC™ security modules provide customers with standards-based, turnkey solutions for a wide range of applications. VaultIC provides secure storage of encryption keys, certificates and customer data while dramatically reducing or eliminating the need for custom development. Comprehensive encryption, decryption, digital signature and other capabilities enable development flexibility. INSIDE VaultIC enables customers to build complete systems faster with a higher level of security than they can themselves.

- Smart Meters
- Femtocells
- Telehealth
- USB e-Tokens
- Secure USB Flash Drives
- Gaming Platforms
- White Goods
- Payment
- Loyalty Cards
- Mass Transit
- Access Control
- ID Cards, Passports
- Health Cards
- Biometrics



driving trust

inside SECURE

www.insidesecure.com

micropass®

INSIDE MicroPass provides a fully integrated contactless platform – complete with hardware, native operating system, and applications in a wide range of form factors. Card manufacturers and issuers gain leading-edge capabilities while preserving complete compatibility with existing personalization, acquiring, and acceptance devices. An optimized computing platform delivers rapid transaction time and outstanding read distance for reliable cardholder experience.

Key Features

- State of the art security counter measure
- 16-bit proprietary RISC architecture
- Designed for multiple applications
- Pre-certified for Visa, MasterCard, Discover, and EMVCo
- 4cm on EMVCo CCPS 2.0.1 test bench

Contactless Applications

- Payment
- Loyalty and gift card
- Transit
- Identification
- Access control

Fast Time to Market

- Platform EMVCo IC security certifed
- Visa Paywave™ - streamlined online qVSDC Approved (backword compatible with Visa MSD)
- MasterCard PayPass™ Magstripe Approved
- Discover Zip™ Approved
- First Data STAR Certiflash™ Approved

MicroPass certifications allow to accelerate time to market and minimize risk in introducing new products

Superior Cardholder Experience

Cardholders can present their MicroPass-enabled cards or fobs to a reader at any angle in the landing zone while ensuring fast, successful transactions–first time, every time. Low power provides flexibility for antenna design and a wide range of form factors enables card issuers to differentiate their programs and meet customers' needs for convenience.

Security Measures Build Cardholder Trust

MicroPass offers a wide range of software- and hardware-based security functionality, depending on specific application requirements.

Flexibility

A common operating system across all MicroPass products enables issuers to deliver a consistent brand experience for all cardholders with multi-brand, multi-application, and multi-package flexibility. INSIDE provides a wide range of available form factors, including chip, module, card inlay, fob inlay (mini, 2D, 3D), sticker, or paper ticket configurations.

Proven Reliability

MicroPass is certified in card products from the majority of Visa and MasterCard card manufacturers and its high quality has resulted in no field returns and high yield rates through card manufacturing.

micropass *4000 Suite*

Contactless payment applications for multiple card organizations

- micropass **4001** File Manager
- micropass **4002** for Discover Zip
- micropass **4003** for Visa and MasterCard
- micropass **4003**-Sticker for Visa and MasterCard
- micropass **4006** for Visa payment and iCLASS™ access control
- micropass **4102** and **4103** for Visa, MasterCard, Discover, STAR and microloyalty™

micropass *5000 Suite*

Platform for high-performance, contactless-only ID applications.

- micropass **5001** File Manager
- micropass **5002** for CEPAS-compliant transit
- micropass **5005** for RIS-compliant transit

micropass *5100 Suite*

Contactless solution for use in identity documents.

- micropass **5101**
- micropass **5102**

micropass *6000*

Dual-interface platform support for transit and payment applications.

- micropass **6001** File Manager

vaultIC

Security is becoming an increasingly critical concern for systems manufacturers as the threat of hacking and identity theft grows. INSIDE VaultIC™ application-specific standard products provide manufacturers with turnkey solutions designed to protect smart objects and complex systems. Customers turn to INSIDE for flexible, proven solutions that secure systems against counterfeiting, cloning and identity theft. Based on security-certified hardware platforms with Common Criteria EAL4+/EAL5+ and/or FIPS 140-2 security certificates, VaultIC provides secure storage of keys, certificates, and customer data while dramatically reducing or eliminating the need for custom development.

Key Features

- Flexible Secure Data storage Management
- High Level Cryptographic Services Based on Hardware Accelerators
- USB 2.0 Full Speed Interface, USB CCID Compliant
- SPI, ISO7816, I2C Interfaces
- Designed to meet C.C.EAL4+ Certifications
- 8-/16-bit RISC Architecture

Applications

- Energy and Water Smart Meter Protection
- Femtocells
- Telehealth
- USB e-Tokens
- Secure USB Flash Drives
- Gaming Platforms
- White Goods

Fast Time to Market

Fully ready, proven security can be easily integrated into applications.

Proven Security and Performance

VaultIC delivers high performance without compromising security. All cryptography algorithms–AES, DES/TDES, RSA, and ECC–are supported by hardware accelerators that are compatible with Common Criteria EAL4+ and FIPS 140-2 Level 3 security levels so that applications receive the performance and security required.

Turnkey with Development Flexibility

Although no software development is required, VaultIC provides a high level of flexibility for tailoring to your specific application requirements. Comprehensive symmetric and asymmetric cryptography, security protocols, and configurable EEPROMs enable you to match any security architecture. Pin-to-pin compatibility between all members of the VaultIC product family simplifies board changes and enables you to support application variations without adding complexity.

Cost-Effective Platforms

Development costs are reduced by eliminating the need to develop proprietary security schemes or integrating multiple security solutions to achieve a comparable level of proven security.

Unmatched Investment Protection

The VaultIC family offers platforms ranging from 2.5 Kb to 128K. Pay only for the capacity you need while retaining the ability to increase memory later with a simple swap.

Part Number	EEPROM	I/O interface	Voltage	Package
VaultIC200	2.5K	SPI, I²C, ISO 7816	2.7-5.5V	SOIC-8, DFN-8
AT98SC016CU	16K	SPI, I²C, ISO 7816	1.62-5.5V	QFN20, SOIC-8
VaultIC400	16K	SPI, I²C, ISO 7816	1.62-5.5V	QFN20, SOIC-8
AT98SC032CT-USB	32K	USB 2.0	2.7-5.5V	QFN44, SOIC-8
VaultIC420	32K	USB 2.0, SPI, I²C, ISO 7816	2.7-5.5V	QFN44, SOIC-8
VaultIC440	64K	USB 2.0, SPI, I²C, ISO 7816	2.7-5.5V	QFN44, SOIC-8
VaultIC460	128K	USB 2.0, SPI, I²C, ISO 7816	2.7-5.5V	QFN44, SOIC-8

picopass® Suite

Key Features

- Interoperable with ISO 14443B and ISO 15693-2
- Automatic protocol selection
- Operating range: 10cm and 1.5m
- Baud rates up to 424kbps
- EEPROM: 2Kbit, 32Kbit
- Write-once memory space for protected personalized data
- Multi-application: 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 anti-collision protocol up to 100 chips per second

Applications

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

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 Applications

picopass can manage up to 16 independent applications while ensuring their individual security settings. For example, 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.

High Memory Capacity

picopass 2KS contains 2 Kbits of non-volatile read/write memory including fuse-protected personalization space. picopass 32KS contains two picopass 16KS chips on the same silicon chip. The picopass chip can store large amounts of data such as high quality photographs, fingerprints, biometric templates, signatures, and data records.

Secure

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.

For more information about INSIDE Secure Solutions, visit www.insidesecure.com

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