

MicroPass™

Microprocessor made for a contactless world

Features

- 16-bit proprietary RISC architecture
- Combi contact/contactless operation
- Multi-standard: ISO 14443 A/B, 15693 and FeliCa™
- Multi-application architecture with MMU
- Complete range of microprocessors from 2 to 64 Kbytes EEPROM
- Low power consumption
- Power Guard™ and Safe Store™ anti-tearing function
- DES and optional PKI coprocessors
- SDK available

Applications

- Secure ID
- Travel Documents (visas, passports)
- Cashless payment
- Mass transit
- Access control

MicroPass™ is a highly optimized low power 16-bit RISC microprocessor core that is ideally suited for contact/contactless smart card applications systems requiring high performances, security, cost effectiveness and ease of integration.

Better communication and speed performances

MicroPass is fast, but unlike competing microprocessors, MicroPass execution speed performances have not been achieved in diminishing communication distances. A special low power mode allows the internal power consumption to be reduced to a few tens of μA in order to perform vicinity operations.

State of the art security

MicroPass proposes state of the art security offered by contact smart cards, while combining contactless specificities:

Dynamic Programmable Memory Management Unit (MMU)

MicroPass MMU is dynamic and allows any memory bandwidth, that makes it particularly adapted to load dynamic applications.

Power Guard™, Safe Store™

Inside has developed two revolutionary patented techniques, Power Guard and Safe Store, which provide MicroPass unrivalled level of resistance against data corruption.

Cost effectiveness

MicroPass has been designed to keep chips cost as low as possible and meet contact chip prices. To achieve this objective, RISC architecture makes MicroPass core only one third of the size of a generic 8051 chip.

Multi standard

MicroPass implements the ISO 14443 A, B, 15693 and FeliCa™ standards. It gives MicroPass a large acceptance to major deployed and coming infrastructures, as well as a large spectrum of communications distance offer.

Application Compatibility

MicroPass is fully compatible with INSIDE memory product line (PicoTag™ and PicoPass™). MicroPass offers the possibility to combine existing «PicoPass» (access control as an example) based application along with more power calculation demanding applications (DES based E-purse as an example) on the same chip. This compatibility makes «memory-to-microprocessor» migration or coexistence extremely easy.



MicroPass

Kits Offer

Product

Software development kit

Description

MicroPass SDK 1.0 provides software engineers with professional integrated development environment for writing and debugging applications in Windows 9x/NT/XP environment. It includes MicroPass assembler, C-Compiler and simulator, as well as program samples source code.

Key Technical Data

Main characteristics

Standard protocol	ISO 14443 A/B, FeliCa™ and 15693
Baud rate	26 kbps ISO 15693; 106 and up to 848 kbps baudrate ISO 14443A/B 212 kbps FeliCa™
EEPROM	2 kbytes and up to 64 kbytes Power Guard anti-tearing function 1 to 32 16-bit word programmed in parallel 1ms erase, 1ms write
RAM	1 kbyte
ROM	32 kbytes
Power consumption	700 µA for ISO 14443 35 µA for ISO 15693
Operating temperature	-20°C to +70°C
Endurance	100.000 write cycles
Data retention	10 years

Peripherals

