WISeKey

micropass® 2323 micropass® 2303

CONTACT EMV PAYMENT SOLUTIONS

- **applications**
  - EMV PSE
  - VISA VIS 1.5.4 & Multi-Access
  - Mastercard M/Chip Advance
    First Data STAR CertiFlash
- **general**
  - High-performance, low-power enhanced RISC architecture
  - Bond pad locations conforming to ISO 7816-2
  - ESD protection to ± 4 KV
  - Operating Range: from 2.7V to 5.5V
  - Compliant with EMV 4.3 specifications and CQM
  - Available in wafers and modules
- **memory**
  - 104K bytes ROM program memory and 32K of ROM with specific access
  - 8K bytes EEPROM
    - Endurance: 500,000 write/erase cycles at 25°C
    - 10 years data retention
  - 4.5K bytes RAM memory (2.5K bytes of CPU RAM + 2K bytes of Ad-X2 shareable with CPU)
- **peripherals**
  - One ISO 7816 controller, compliant with EMV 4.3 T=0 Protocol
- **security**
  - EMVCo IC
  - MasterCard CAST
  - Visa VCSP
  - First Data STAR CertiFlash

Micropass® 2323 and micropass® 2303 are EMV contact chip based payment platforms, designed to meet the latest Visa, MasterCard and First Data STAR CertiFlash specifications. Micropass® 2323 and micropass® 2303 are based on WISeKey's award-winning micropass intelligent payment platform which is designed to deliver advanced security, convenience, and flexibility for multiple applications implemented on contact cards.

High performance for a superior cardholder experience

Cardholders complete their Visa VIS 1.5.4, MasterCard M/Chip Advance or First Data STAR CertiFlash transactions quickly and reliably with micropass® 2323- and micropass® 2303-powered cards. An optimized native operating system and fully integrated development approach enables products based on micropass® 2323 and micropass® 2303 to achieve the industry's fastest transaction times. Micropass® 2303 is designed for online only market and for market supporting offline transaction processing with Static Data Authentication. Micropass® 2323 extends the card capability to offline transaction processing with Dynamic Data Authentication and Combined Data Authentication as well as enciphered PIN support.

Compliant with latest standards

Card manufacturers and issuers gain leading-edge capabilities while preserving backward compatibility with existing personalization, acquiring, and acceptance devices. Micropass® 2323 and micropass® 2303 have been built to meet the latest payment card specifications:

- Visa Integrated Circuit Card Specification (VIS) 1.5.4
- MasterCard M/Chip Advance Card Specification Payment 1.0/v1.1
- First Data Chip Card and Reader Payment Technical Specification

Security measures build cardholder trust

Micropass® 2323 and micropass® 2303 integrate state-of-the-art security features with hardware-based Digital Encryption Standard (DES) and hardware-based RSA authentication (micropass® 2323 only) to allow secure offline transaction processing. They are certified by EMVCo IC, Visa VCSP, MasterCard CAST, and First Data STAR CertiFlash.

Unmatched flexibility for card manufacturers and issuers

Multi-brand, multi-application, and multi-form factor support—as well as advanced chip hardware, native operating system, and payment application software —are built into the **micro**pass® 2323 and **micro**pass® 2303 platforms for maximum flexibility. Card issuers gain a complete integrated package with a choice of form factors, including wafer and modules. With a common operating system across all **micro**pass® products, customers can deliver a consistent brand experience to cardholders while retaining the flexibility to develop multiple proprietary incentive applications that meet their business objectives. To facilitate the integration of WISeKey products into personalization bureaus, **micro**pass® 2323 and **micro**pass® 2303 are fully compliant with EMV CPS personalization process. WISeKey accelerates integration and adoption of the **micro**pass® platform through the availability of pre-personalization and personalization packages from main personalization system providers.

Differentiation criteria

With built-in support for multiple payment brands, **micro**pass® 2323 and **micro**pass® 2303-powered cards can be delivered to market quickly and easily. Aligned with market evolution, **micro**pass®

micropass® SERVICES

WISeKey® can accelerate integration and adoption of the micropass® platform through its professional services:

- Application development: WISeKey® can help you specify, design, implement, and test new **micro**pass®-based applications for co-existence with **micro**pass® 2323 and 2303 payment applications.
- Alternative packaging: WISeKey® can work with you to provide alternative form factors, including customized contact modules.

Features	**micro**pass® 2323 & 2303
Core Technology	0.13 micron
ROM	136 KB
RAM	4,5 KB
EEPROM	8 KB
Processor	8/16 bit RISC
DES Support	Hardware
RSA Support	Hardware (MP2323 only)
Interface	T=0
Contact Protocol	EMV 4.3
Contactless Protocol	None
Operating System	WISeKey Native OS v6.0
Application Load Support	Yes
Applications	• EMV PSE • Visa VIS 1.5.4 • Visa Multi-Access • MasterCard M/Chip Advance 1.0/1.1 • First Data STAR CertiFlash
Certification	• EMVCo IC • MasterCard CAST • Visa VCSP • First Data STAR CertiFlash

For further details on all of WISeKey's security solutions, visit www.wisekey.com