



# MULTOS: THE TRUSTED CHOICE

## **Demand Flexibility. Choose MULTOS**

MULTOS sets the benchmark in smartcard and secure device technology, offering an open platform that combines the best in security, flexibility and ease of use. The fully defined lifecycle management of MULTOS and the Issuer/bureau-centric approach means there can be multiple sourcing at every level of the supply chain, and choice in the functions that you either in-source or out-source. No other platform compares to MULTOS when it comes to provisioning; with best-in-class security, no perso script headaches and choice of key management methods, allowing lifecycle processes to be integrated into a single step right at the bureau. The multi-application platform also means that you can combine several applications onto the one card, at any stage in the card lifecycle.

## **Real Security Built-In**

Our products have achieved security far beyond the minimum required by payment brands and governments because security is a core part of the MULTOS DNA. And for more than 20 years MULTOS technology has been powering over 1 billion secure devices from thousands of issuers globally, including national ID, smart connected devices and EMV payment cards for some of the world's biggest banks. MULTOS is the trusted name in smartcard and smart device security.

## **Easy-to-use Contactless Technology**

MULTOS products are renowned not only as being the most secure smartcard platform but also as one of the fastest products in the industry – including impressive personalisation performance and contactless transaction times. As one of the pioneers involved in the very first EMV dual-interface projects, our development team has achieved impressive contactless transaction performance, without compromising the security and flexibility of MULTOS. Choose from a range of memory sizes from 12K to 144K, covering various contactless product formats from card to wearables. Product configurations options include the latest contactless EMV payment applications pre-loaded in memory.

Our experience in contactless payment technology includes developing leading solutions for the major payment networks and options for domestic and private label networks. We work with dozens of card manufacturers globally, and have a proven track record of delivering products and supporting numerous options, including: card format (full size, 1/2 size antenna), coil on module, antenna inlay options, contactless stickers, NFC wearables and other new form-factors.

More applications pre-loaded with a range of the popular options to choose from including: M/Chip Advance, D-PAS, Visa VSDC/PayWave, RuPay qSparc, Whitelabel EMV (including regional applications for Interac Canada, ELO Brazil, Korea, Taiwan, SPAN Saudi Arabia, MEPS Malaysia and more).

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## Security and Performance

» MULTOS platforms are the most secure in the industry, having achieved CC EAL7. The new range of products include the latest advanced security features, improved performance and enhanced ultra-efficient virtual machine. That's because unlike any other platform, MULTOS was designed from the ground-up as a secure operating system for smart devices, especially suited to multi-application environments.

## Personalisation and Provisioning

» The processes for preparing and loading applications onto MULTOS cards is unique and designed for person-alisation operations in order to achieve the most flexibility (easily manage multiple card suppliers) and high efficiency (provision any application, any product, any channel without affecting the perso systems – no scripts to manage). And now, the new range of products support Real Time Enablement, which allows full integration and one-step provisioning right at the bureau using our C3 key management utility. No other platform matches this level of provisioning flexibility.

## Applications

» Multos International includes a choice of the latest popular applications pre-loaded in memory. This ensures the best-cost product and reduces personalisation time/cost.

» Develop new applications using the free MULTOS SDK tools (applications can be developed in low-level MEL, or industry-standard 'C' or Java).

» The MULTOS scheme provides the issuer with full control over the applications resident on the card.

## Inter-application Communications

The delegation functionality enables an application to

» delegate commands to other applications, increasing the efficiency of MULTOS applications by removing the need to duplicate common functionality within each separate application.

## Efficient Memory Use

» A number of choices for EEPROM size provides space for additional applications (code and data) with the most cost effective solution for your needs.

» MULTOS applications are renowned as being the most efficient in the industry allowing you to choose the best size platform for your needs and reducing your costs.

## Technical Specifications

MULTOS step/one		MULTOS	
SC4	MC4	ML4	
<b>Target Markets</b>			
Banking/EMV SDA Contact only	Banking/EMV DDA Contact only	Banking/EMV DDA Dual Interface	
<b>Memory (EEPROM)</b>			
8K to 36K	8K to 144K		
<b>Applications pre-loaded*</b>			
MasterCard M/Chip Advance, Visa VSDC, Discover/Diners D-PAS, Whitelable EMV	MasterCard M/Chip Advance, Visa VSDC/qVSDC, Amex AEIPS/ExpressPay, Discover/Diners D-PAS Connect, Interac Flash, PBOC, Domestic Whitelable EMV, RuPay qSparc		
<b>Cryptography capabilities</b>			
Message Digest/Hash: SHA-1	Asymmetric: RSA(512–2048 bits)		
Symmetric: 3DES, AES, SEED (ECB/CBC modes of operation supported for all)	Message Digest/Hash: SHA-1/224/256		
	Symmetric: 3DES, AES, SEED (ECB/CBC modes of operation supported for all)		
<b>Standards/Protocols</b>			
ISO7816-3, Transmission protocol: T=0, T=1, PPS speed: Up to 625 kbps	ISO7816-3, Transmission protocol: T=0, T=1, PPS speed: Up to 625 kbps		
	SO14443 Type A or B, MIFARE 1K/4K, Double/Single UID PPS speed up to: 848kbps		
<i>Note: Specifications and functionality may change; * please check for availability and configuration options</i>			

### Key Platform Features for Perso Bureaus:

- Real-Time Enablement (RTE)
- 'Seamless Migration' for supported EMV applications to allow fastest on-boarding of new products
- Fastest perso in the industry, even after enablement
- 5th generation virtual machine for compact application memory footprint

Contact us for product options targeting other markets such as government ID and secure embedded (IoT)