



## MULTOS & MULTOS step/one

### 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 now with a 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 20 years MULTOS technology has been powering thousands of issuer's projects globally, including national ID, smart connected devices and EMV cards for some of the world's biggest names in banking. MULTOS is the trusted name in smartcard and smart device security.

#### MULTOS step/one Leads the Way

Multos International's acclaimed product offering, MULTOS step/one, is the leading solution for entry-level EMV smartcard programs. The fast, easy option to implement EMV, MULTOS step/one has cemented its position as the open platform of choice for issuers of global or domestic networks, allows you to maintain supply chain flexibility and easily make the leap into DDA and/or dual-interface cards.

#### Easy-to-use Contactless Technology

The renowned fast, easy & secure MULTOS products are available in various contactless and dual-interface options. Our development team has been able to achieve impressive contactless transaction performance, improving on the requirements set by the payment brands, 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 to mobile payments. Product configurations options include the latest contactless EMV payment applications pre-loaded in memory.

Since this is MULTOS, you can be sure that introducing contactless product options could not be easier. All the support, personalisation and manufacturing capability is standard across the range. Our experience in the contactless EMV market, developing leading solutions for the major payment schemes, options for domestic or private label networks, and working with dozens of card manufacturers globally, Multos International has a proven track record of products and support for numerous options, including: card format (full size/half size antenna), coil on module, antenna inlay options, contactless stickers, NFC wearables and other new form-factors.

Contact us for product availability.

**More applications pre-loaded** with a range of the popular options to choose from including: M/Chip Advance, M/Chip4, M/Chip PayPass, D-PAS, Visa VSDC/Pay-Wave, UnionPay qPBOC, Whitelabel EMV (including regional applications for Interac Canada, ELO Brazil, Korea, Taiwan, SPAN Saudi Arabia, MEPS Malaysia, RuPay qSparc 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 personalisation 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 new 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/CDA Contact only	Banking/EMV DDA/CDA Dual
<b>Memory (EEPROM)</b>			
8K to 36K		8K to 64K	12K to 144K
<b>Applications pre-loaded</b>			
MasterCard M/Chip 4 & Advance, Visa VSDC, Discover/Diners D-PAS, Whitelable EMV		MasterCard M/Chip 4 & Advance, Mobile PayPass, Visa VSDC/qVSDC, Amex AEIPS/ExpressPay, Discover/Diners D-PAS, Interac Flash, PBOC/qPBOC, MEPS PMPC, PURE, Whitelable EMV, qSparc	
<b>Cryptography capabilities</b>			
Message Digest/Hash: SHA-1		Asymmetric: RSA(512–2048 bits)	
Symmetric: DES, 3DES, AES, SEED (ECB/CBC modes of operation supported for all)		Message Digest/Hash: SHA-1/224/256	
		Symmetric: DES, 3DES, AES, SEED (ECB/CBC modes of operation supported for all)	
<b>Standards/Protocols</b>			
ISO7816-3, Transmission protocol supported: T=0, T=1, PPS speed: Up to 447 kbps		ISO7816-3, Transmission protocol: T=0, T=1, PPS speed: Up to 447 kbps	
		ISO14443 Type A or B, MIFARE 1K/4K, Double/Single UID PPS speed up to: 848kbps	
<i>Notes: Specifications and functionality may change please check for availability and configuration options</i>			

\* **New SC4-P20 range available now**

\* **New MC4 & ML4-P18 range available now**

With:

- Real-Time Enablement (RTE)
- 'Seamless Migration' for some supported EMV applications
- 5th generation virtual machine reduces application memory footprint
- Fast perso, before or after enablement
- CPS plug-in support option on P18 range

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