NXP smart card JAVA operating system

JCOP OS for SmartMX in eGovernment, banking, and public transport

This advanced operating system supports NXP's SmartMX family of secure microcontrollers. It includes approved applets for banking and eGovernment, and makes it easy to develop custom applets for specific requirements.

Key features

▸ Java Card™ v2.2.1 to v3.0.1 Classic
▸ GlobalPlatform v2.1.1
▸ Common Criteria EAL 5+ certified
▸ Multi-application capability
▸ Supports 3DES, AES, RSA, ECC
▸ ISO 7816-3 T=0, T=1 (223.2 Kbps)
▸ ISO 14443 (up to 848 Kbps)
▸ Dual-interface support
▸ Available EEPROM: 20 to 128 KB
▸ Custom ROM masking for customer-specific products

Key applications

▸ National eID
▸ Electronic passport
▸ Electronic health card
▸ Digital signature card
▸ Approved VISA® and MasterCard®
▸ Local banking
▸ Micro payment
▸ Public transport
▸ Logical and physical access cards
▸ NFC

JCOP (Java Card™ GlobalPlatform Operating System) is the ideal solution for designers seeking a field-proven, vendor-independent OS for their smart card applications. It provides secure multi-application support for contact, contactless and dual-interface applications, and delivers benchmark transaction performance for smart cards and security documents.

Certified to Common Criteria EAL 5+ and EMVCo approved, JCOP is optimized for NXP's SmartMX family of secure microcontrollers to deliver best-in-class transaction performance and personalization time. Developers can create their own single or multiple Java Card applets with JCOP, or get a head start on design by using NXP's approved banking and eGovernment applets. Custom ROM masking for storing applets in ROM is available to save EEPROM space.

JCOP meets the highest encryption and security standards. Hardware accelerators for every crypto algorithm deliver best-in-class execution performance, even in high-end applications.

While meeting the stringent security requirements of eGovernment and banking applications, NXP ensures best-in-class transaction speed, from border control gates to contactless payment terminals, and even for automatic fare collection schemes.

JCOP is available on a wide range of NXP SmartMX microcontrollers, each optimized for performance and security, and enables cost-effective solutions for all market segments based on advanced CMOS18, CMOS14, and, in future, CMOS90 technology.

SmartMX family

The SmartMX family is a series of proven, reliable ICs for contact and contactless applications. They combine ultra-low-power design and high performance with advanced attack resistance through powerful cryptographic coprocessors. With its leading-edge performance, SmartMX is the platform of choice for a wide range of applications, including secure banking and eGovernment.

JCOP support package

Available on request, NXP's JCOP support package includes documentation, samples, and JCOP development tools. It's backed by NXP's world-class application support, which provides access to expert design-in assistance and JCOP customer training.

Product features	JCOP v2.4.1
Specifications	
Java Card™ version	2.2.2
GlobalPlatform	2.1.1
Main field of application	eGovernment & Banking
Available memory size and technology	
EEPROM (Kbyte)	20 to 128
CMOS technology	CMOS14
Applets	
EAC/BAC	Yes
VISA VSDC	2.7.1
MasterCard (PayPass™) M/Chip4	v1.1a (v1.3.1)
eGovernment and banking performance	
BAC (20 kByte read)	< 1.2 s
EAC (36 kByte read)	< 5 s
MasterCard PayPass M/Chip4	< 390 ms
Cryptography	
DES/TDES [bit]	56/112/168
AES [bit]	256
RSA [bit]	2048
ECC GF(p) [bit]	320
Point Addition (PACE)	Yes
SHA	SHA-1/2
Certifications and approvals	
EMVCo hardware approval	Yes
VISA approvals	Yes
MasterCard PIC + CAST	Yes
Common Criteria (VAN5)	EAL 5+ (40 K to 128 K EEPROM)

GLOBALPLATFORM
The Standard for Smart Card Infrastructure

Java POWERED