



## NXP ICs for basic contactless identity documents

# Making your eGovernment applications more secure

Designed for basic identity documents, these contactless Smart eID (electronic identity document) solutions offer standards-based, fixed functionality with fully integrated application software. They support compact memory sizes, which makes them ideal for applications that have low resource requirements without compromising security.

### Key features

- ▶ 4, 8 or 10 KB EEPROM
- ▶ Secured triple-DES coprocessor
- ▶ ISO/IEC 14443 A Contactless Interface Unit (CIU)
- ▶ EEPROM memory with typical endurance of 100,000 cycles and minimum retention time of 20 years
- ▶ Command set compliant to ISO/IEC 7816-4
- ▶ Pre-installed applications compatible to ICAO document 9303
- ▶ Compliant to ISO 18013-3 (with BAP in configuration 1)
- ▶ Flexible file structure

### Key applications

- ▶ Driver's licences (ISO compliant and other types)
- ▶ Government service cards
- ▶ National identity cards
- ▶ Corporate cards
- ▶ Vehicle registration stickers

NXP Semiconductors' Smart eID is an "all-in" product line that supports data structures according to ISO 7816, including the detailed data structures for machine-readable travel documents (MRTDs) defined in ICAO document 9303.

Every member of the Smart eID family consists of hardware and software components delivered in a module for easy integration into a contactless smart card or other contactless device. Each module comes pre-configured with application software and is ready to be personalized. There is no need for software development, so it is quick to implement an identity document scheme.

Developers who are familiar with the personalization steps used in ISO/IEC 7816-compliant smart cards will find it easy to work with Smart eID solutions. Simply pick a file system based on the requirements of the external applications and then define the necessary data structures and configure their authentication settings.

The file system supports pre-configured applications that provide data groups within the application. Access to these data groups can be according to one of three modes:

- ▶ LDS or open access, according to the Logical Data Structure defined in ICAO document 9303
- ▶ BAC or protected with basic access control and secure messaging, as defined in the ICAO document 9303

- ▶ BAC Plus, which adds a mechanism to update data after issuing the document to the holder, along with a feature to protect against cloning.

The additional features in the BAC Plus configuration make Smart eID particularly useful for ID cards, driver's licences and other eGovernment applications.

Smart eID products show high performance, as the NXP proprietary software is written directly in machine code and is optimized for the hardware platform. BAC authentication times of 1.1 seconds are typical.

## NXP - leading in eGovernment technology

NXP has a broad portfolio of contact, contactless and dual-interface ICs, and is in an excellent position to supply eGovernment ID technology. We build on years of leadership in high-security solutions for banking, including security options, cryptographic processing, embedded memories and advanced durable packaging. We are the leader in contactless chip technology, security and ePassport solutions. We are also the industry's first volume supplier of 75µm wafers and MOB6 packages that measure 250µm thick.

Product features	Smart eID P304G002	Smart eID P308G002	Smart eID P310G002
Pre-installed applications	LDS, BAC	LDS, BAC	LDS, BAC
ICAO 9303 file system types	LDS, BAC	LDS, BAC	LDS, BAC
Enhanced file system types	BAC+	BAC+	BAC+
<b>Memory</b>			
EEPROM [byte]	4 K	8 K	10 K
Write endurance [cycles]	100.000	100.000	100.000
Data retention [years]	20	20	20
<b>RF Interface</b>			
Standard	ISO 14443 A	ISO 14443 A	ISO 14443 A
Frequency [MHz]	13.56	13.56	13.56
Baudrate [kbit/s]	106 / 212 / 424	106 / 212 / 424	106 / 212 / 424
Anticollision	True deterministic	True deterministic	True deterministic
Operating distance [cm]	10	10	10
<b>Security</b>			
Unique serial number [byte]	7	7	7
Anti-tear supported by chip	yes	yes	yes
DES engine	DES3 <40ms	DES3 <40ms	DES3 <40ms
Exception sensors	V, f, T, light	V, f, T, light	V, f, T, light
<b>General Product Information</b>			
Operating temperature range [C]	-25 ... +85	-25 ... +85	-25 ... +85
MIFARE emulation (option)	n/a	n/a	4k optional
Availability	Now	Now	Now
<b>Packaging</b>			
MOB4 module	P304G002A4	P308G002A4	P310G002A4
MOB2 module	P304G002A3	P308G002A3	n/a
Sawn wafer (8" on UV irradiated FFC)	P304G002UA	P308G002UA	n/a