



# PRODUCT DATASHEET

## SmartMX 36K / 72K

ISO 14443A

**PAV Card**

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<b>Chip manufacturer:</b>	NXP (Philips)
<b>Product:</b>	<b>SmartMX 36K / 72K</b>
<b>Memory:</b>	
<b>EEPROM size:</b>	36 / 72 Kbytes
<b>Write endurance:</b>	500.000 cycles
<b>Data retention:</b>	20 years
<b>Organisation:</b>	36/72 Kbytes EEPROM, 160 Kbytes User ROM, 4608 bytes RAM

### RF-Interface:

<b>According:</b>	<b>ISO 14443A</b>
<b>Frequency:</b>	13.56 MHz
<b>Baudrate:</b>	106/212/424 (kbit/s)
<b>Anticollision:</b>	yes
<b>Operating Distance:</b>	up to 10 cm

**Please note:** Max. reading range depends on used RF standard, the requirements of national spectrum management authorities, reader application, antenna, transponder and

### Security:

- Unique serial number
- Enhanced Security Sensors
- Electronic fuses
- Clock Input Filter for protection against spikes
- Power-up / Power-down reset
- Optional programmable "Card Disable" feature
- Memory Security (encryption and physical measures) for RAM, EEPROM and ROM
- Memory Management and Protection Unit (MMU)
- Optional disabling of ROM read instructions by code executed in EEPROM
- Optional disabling of any code executing out of RAM
- EEPROM programming
- Customer specific EEPROM initialisation

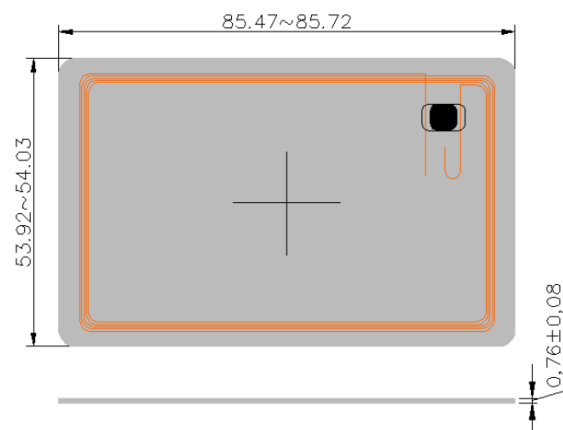
### Special Features:

- 4608 bytes RAM
- 256 bytes IRAM + 3 Kbytes CXRAM
- 1280 bytes FXRAM usable for FameXE
- Reliable communication due to 100% ASK
- High Speed CRC co-processor according to CCITT MIFARE reader infrastructure compatibility
- High Speed DES-3 co-processor (64-bit parallel processing DES engine)
- High Speed AES co-processor (128-bit parallel processing AES engine)
- Optional free of charge MIFARE 1K/4K functionality

**subject to change without notice, errors excepted**

Contactless cards in standard ISO format.

Produced according ISO 7810 / ISO 7816 - with advanced antenna and assembly technologies.



This picture shows a MOB4 module and its copper wire antenna. The contacting is realized by thermo compression-welding.

PVC is the standard material for contactless cards. Generally we can produce cards with other materials like PET, PEC, PC or composite. These alternative materials are on request.

We provide PVC cards with glossy or matt surface. The glossy surface allows the customer to personalise the cards by printing.

Additionally a microcontroller (contact chip) and/or magnetic strip (HiCo, LoCo) can be used for multiusage cards.

### Additional Services:

#### Security:

- hologram
- signature panel
- magnetic stripe (incl. encoding)
- barcode
- UV printing

#### Chip encoding:

- encoding of contactless chip

#### Personalisation:

- thermo transfer / dye sublimation
- laser lettering
- embossing
- digital printing

#### Printing technologies:

- (UV-)offset printing
- silk-screen printing
- digital printing

#### Thermo rewrite function:

- thermo rewrite foil (optional one side covered or as stripe)