gemalto
security to be free

Easy-to-use contactless technology

Cost-effective smart card interfaces for the growing contactless market

Interoperability

ISO 14443 A&B

PayPass

FIPS 201

ICAO

Visa

USB

PC/SC

ExpressPay

A complete range of products

GemProx is the name of the Gemalto range of contactless interfaces. It includes OEM couplers, packaged readers, chip sets and Development Kits.

gemalto Technology **GemProx**

A macro component for hand-held terminals

The **GemProx-Module** is an OEM coupler which embeds all the key components of a very small size contactless interface: **3 cm x 3 cm**. It is based on the Gemalto GemProx Chipset High Speed.

This coupler can be seen as macro component that is plugged on the mother Printed Circuit Board.

Consequently, GemProx-Module is well suited for hand-held terminals such as POS terminals, PDAs or any other portable devices. It also allows the user to turn the RF field off, when not in operation, in order to save battery operating life.
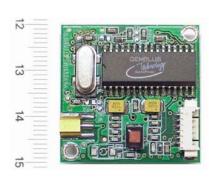The markets targeted are the Proximity Payments, Identity, Access Control and Mass Transit.

Technical support

An external antenna is connected to GemProx-Module.
Gemalto supplies off-the-shelf antennas but also provides:

- the appropriate documentation to help its customers to design their own antenna
- the technical support to get PayPass, ExpressPay, FIPS 201 / PIV certifications or Electro-Magnetic Compatibility approvals.

GemProx-Module OEM coupler

Easy to use

With GemProx, the contactless technology has now reached the same level of accessibility as the contact one. The application software is dramatically simplified by the use of a high level command set, API library and PC/SC v2.0 driver.

Automatic operating modes such as the card insertion / removal, the **PayPass** card recognition algorithm or the Mifare® Application Directory (**MAD**) are implemented on-board and provide the highest possible performances.

Market standards and interoperability

GemProx technology is fully compliant with the **ISO 14443 A and B** standard. The **T=CL** protocol is handled directly by the reader.

The Mifare protocol and security scheme are also supported.

GemProx readers are ranked among the very best readers in terms of interoperability, thanks to the unique experience of Gemalto both in smart card and reader technologies.

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Specifications

Contactless card interface
- Operating frequency: 13.56 MHz
- Embedded ISO 14443–4 T=CL protocol
- Baud rate: 106 Kbps to 848 Kbps
- Reading distance: up to 10 cm depending on antenna size
- Remote antenna (not included): Antenna connection distance up to 50 cm

Host interface
- Type of interface: RS232 - TTL levels
- Protocol: GBP
- Baud rate: 1.2 Kbps to 460 Kbps
- Option: Wiegand 32 bits (Mifare and type A cards)

External SAM interfaces
- Number of SAM interfaces: 4
- ISO 7816 –1 to –3, T=0, T=1 protocols
- SAM power supply: +5 VDC +/- 10%
- Baud rate: 9.6 Kbps to 115 Kbps

Power supply
- Voltage: +5 VDC +/- 10%
- Current: 200 mA
- Low power management functions

Other features
- Output signals for 3 remote LED indicators and one remote buzzer
- Dimensions: 31 mm x 31 mm x 9 mm
- Weight : 6 g

Main functions
- Read/write the following Smart Cards:
    - ISO 14443 A, B, T=CL cards
    - Mifare® cards (including DESFire)
    - SR176, SRIX512 and SRIX4K
    - Other cards on request
- High level command set
- Firmware up grade in Flash memory
- Mifare® Application Directory (MAD)
- PayPass, Visa contactless and ExpressPay level 1 compliance
- ICAO and FIPS 201 / PIV specifications compliance
- Card insertion/removal detection
- E-purse command set
- Self test

Associated tools
- GemProx Development Kit
- PC/SC v2.0 driver for Windows 2000/XP
- C language source code API
- Firmware download tools

Environment
- Operating temperature range: -20 °C to +70 °C (-4 °F to +158 °F)
- Storage temperature range: -40 °C to
- +85 °C (-40 °F to +185 °F)
- Humidity: 0 % to 95 % non condensing
- EMC: 89/336/CEE
- Safety: UL 1950, cUL CSA 950, EN 60950
- MTBF: 800,000 H at +20 °C

Gemalto services

Gemalto is recognized as the world's leading supplier of Smart Cards readers (Frost & Sullivan 2006).

Gemalto is an active participant to international standardization groups (ISO, PC/SC, etc.) and offers its unique experience in consulting services such as: Security schemes, interoperability issues, test specifications and tools, feasibility analysis, demonstrations.

For payment applications, Gemalto can take in charge the PayPass and ExpressPay certifications of the equipment that embeds GemProx-Module and its antenna.

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