

Contactless and Dual Interface Cards

More convenience with Contactless Multi-functional Smart Cards



Contactless and Dual Interface chip cards from Giesecke & Devrient offer all the advantages of contact chip card technology, together with a multitude of benefits derived from contactless communication:

Speed and convenience

Reliable data transaction processing (read and write) in any card orientation or direction, and convenient transaction processing without taking the card out of the wallet and inserting it into the reader.

Security

Encrypted data communication between the chip card and the read/write device and protecting each application by individual keys.

Card reliability

Long life and durability in severe environmental conditions through special production methods developed by G&D.

Compatibility to standards

Contactless chip cards from G&D comply with the latest established ISO standards for ID cards.

Multi-functionality

Many different applications can reside on the same card, with easy, independent and secure administration of each application.

Applications

- Automatic Fare Collection
- Access control
- Electronic purse
- Multi-functional ID Cards
- Loyalty
- Digital signature



Giesecke & Devrient



References

- ♦ Bus Cards, Sweden
- ♦ Washington Metropolitan Area Transit Authority (WMATA), USA
- ♦ Chicago Transit Authority (CTA), USA
- ♦ National Railroad Passenger Corporation (AMTRAK), USA
- ♦ Lufthansa Ticketless Flying, Germany
- ♦ Metrovias Buenos Aires, Argentina
- ♦ SPTRANS, Sao Paulo, Brazil
- ♦ Piracicaba Bus, Brazil
- ♦ SitPass, Goiania Bus, Brazil
- ♦ Konya Büyükşehir Buses, Turkey
- ♦ Dutch Army, The Netherlands
- ♦ Rhein-Main Verkehrsverbund, Germany

Contactless Cards

Contactless Cards		
MIFARE	Chip:	Philips MFOU10/11, MF1ICS50, MF1ICS70, Infineon SLE 44R35
	Memory Capacity:	512 Bits / 1 kb / 4 kb EEPROM
	Security:	unique, invariable serial number; encrypted data communication (not MFOU10/11) Mutual authentication between smart card and reader according to ISO/IEC 9798-2 (not MFOU10/11)
	Data Transmission:	13,56 MHz carrier frequency; 0-10 cm range; anticollision method
	Compatibility:	ISO 14443 Type A, Part 1-3
GO CARD	Chip:	Go Card / Fujitsu
	Memory Capacity:	16 Kbits FRAM, 16 sectors x 8 pages x 16 bytes
	Security:	unique and invariable serial number; individual access rights for each of the 16 sectors
	Data Transmission:	13.56 MHz carrier frequency; 0,7-6,4 cm range, anticollision method

Dual Interface Cards

Dual Interface Cards		
MIFARE PRO	Chip:	MF2ICD80
	Operating System:	STARCOS S2.1CL
	Memory Capacity:	8 bit CPU 80C51, 20 kb ROM, 256 byte RAM, 8 kb EEPROM
	Security:	TripleDES coprocessor; unique, invariable serial number
	Data Transmission:	13.56 MHz carrier frequency; 0-10 cm range; anticollision method
Compatibility:	ISO 14443 Type A ; ISO 7816	
MIFARE PRO X	Chip:	P8RF5016
	Operating System:	STARCOS SPK2.5DI
	Memory Capacity:	8 bit CPU 80C51, 64 kb ROM, 2,3 kb RAM, 16 kb EEPROM
	Security:	Identical Mifare Pro, RSA
	Data Transmission:	Identical Mifare Pro
Compatibility:	Identical Mifare Pro; Mifare Standard Evaluation	

Giesecke & Devrient GmbH
Prinzregentenstrasse 159
81677 Munich, Germany

Phone: +49 89 4119-2892
Fax: +49 89 4119-2117

payment.cards@de.gi-de.com
www.gi-de.com

© Giesecke & Devrient GmbH, 2002.
All technical data are subject to modification.
STARCOS® is a registered trademark of Giesecke & Devrient GmbH.
LEGIC® is a registered trademark of Kaba Security Locking Systems AG.
MIFARE® is a registered trademark of Philips Semiconductor.



Giesecke & Devrient