



Giesecke+Devrient



MIFARE DESFire® EV1/EV2

High security, high speed,
multi-application
contactless smart cards



The MIFARE® DESFire® family consists of MIFARE DESFire EV1 and MIFARE DESFire EV2 and is ideally suited for transit operators, ticketing system integrators and solution developers building reliable, interoperable and scalable contactless solutions. It targets multi-application smart card solutions in identity, access, loyalty and micro-payment applications as well as in transport schemes.

MIFARE DESFire delivers the perfect balance of speed, performance, security and cost efficiency, is broadly backwards compatible and interoperable with existing contactless infrastructures.

The G+D MIFARE card represents over 20 years of experience and continued product development.

G+D has delivered several million transit smart cards world-wide, including MIFARE DESFire technology. G+D is more than a card supplier: we take the complexity out of the process and provide guidance with a complete portfolio of products, technologies and services.

Profit from G+D 's many years of experience in delivering contactless smart card solutions to public transport systems worldwide.

Did you know...

that G+D is one of the top 3 transit cards suppliers.

Technical Data MIFARE DESFire EV1/EV2

MIFARE COMMUNICATION INTERFACE

- ISO/IEC 14443 Type A
- Contactless transmission of data and powered by the RF field (no battery needed)
- Up to 100 mm operating distance
- 13.56 MHz operating frequency
- Fast data transfer: up to 848 kbit/s
- High data integrity: 4 byte MAC, 16 bit CRC, parity, bit coding, bit counting
- True deterministic anticollision
- 7 byte unique identifier (cascade level two according to ISO 14443-3)
- Support of ISO 14443-4 transport protocol

MEMORY ORGANIZATION/ MULTI-APPLICATIONS

- 2 kB, 4 kB or 8 kB EEPROM
- 10-year data retention
- 200,000 write cycles
- Flexible file system
- Up to 28 applications simultaneously on one PICC
- Up to 32 files in each application
- MAD3
- Value file for purse functionality

STANDARDS

- MIFARE communication Protocol
- Composite CC EAL 4+ Certification
- ISO 14443-1/-2/-3/-4, Type A
- ISO 7810
- ISO/IEC 7816-4 commands
- ISO 10373

SECURITY FEATURES

- Unique 7-byte serial number (ISO cascade level 2)
- Mutual three pass authentication
- Open DES/3DES crypto algorithm in hardware
- Open AES128 crypto algorithm in hardware
- Data Authenticity by 8 byte CMAC
- Authentication on application level
- Random number generator
- 14 access keys per application
- Access conditions per file
- Chip supporting anti-tear
- Data integrity: CRC and bit counting on physical layer

MATERIALS AND FORM FACTORS

- PVC
- Composite materials PVC/PET
- Form factors other than ISO 7810 on request

PRINTING AND PERSONALIZATION

- 4-color offset litho or screen printing
- Thermal transfer printing
- Transparent matt overlay
- Encoding
- Laser engraving
- Magnetic stripe
- Signature panel
- Serial numbering
- Barcode
- Hologram

OPERATING CONDITIONS

- Temperature: -25°C to 50°C

Did you know ...

that more than 50 million passengers use G+D's transit cards and tickets every day.

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