MIFARE® DESFire® EV1

MIFARE_DESFIRE_EV1_2K_8K

Not Recommended for New Designs

Not recommended for new designs. For new designs please use replacement product MIFARE DESFire EV3.

Last Updated: Sep 23, 2025

MIFARE DESFire EV1 (MF3ICD(H) 21/41/81), a Common Criteria (EAL4+) certified product, is ideal for service providers wanting to use secure multiapplication smart cards in public transport schemes, access management, or closed-loop e-payment applications. It fully complies with the requirements for fast and highly secure data transmission, flexible memory organization, and interoperability with existing infrastructure.

MIFARE DESFire EV1 is based on open global standards for both air interface and cryptographic methods. It is compliant to all 4 levels of ISO/IEC 14443A and uses optional ISO/IEC 7816-4 commands.

Featuring an on-chip backup management system and the mutual three-pass authentication, a MIFARE DESFire EV1 card can hold up to 28 different applications and 32 files per application. The size of each file is defined at the moment of its creation, making MIFARE DESFire EV1 a truly flexible and convenient product.

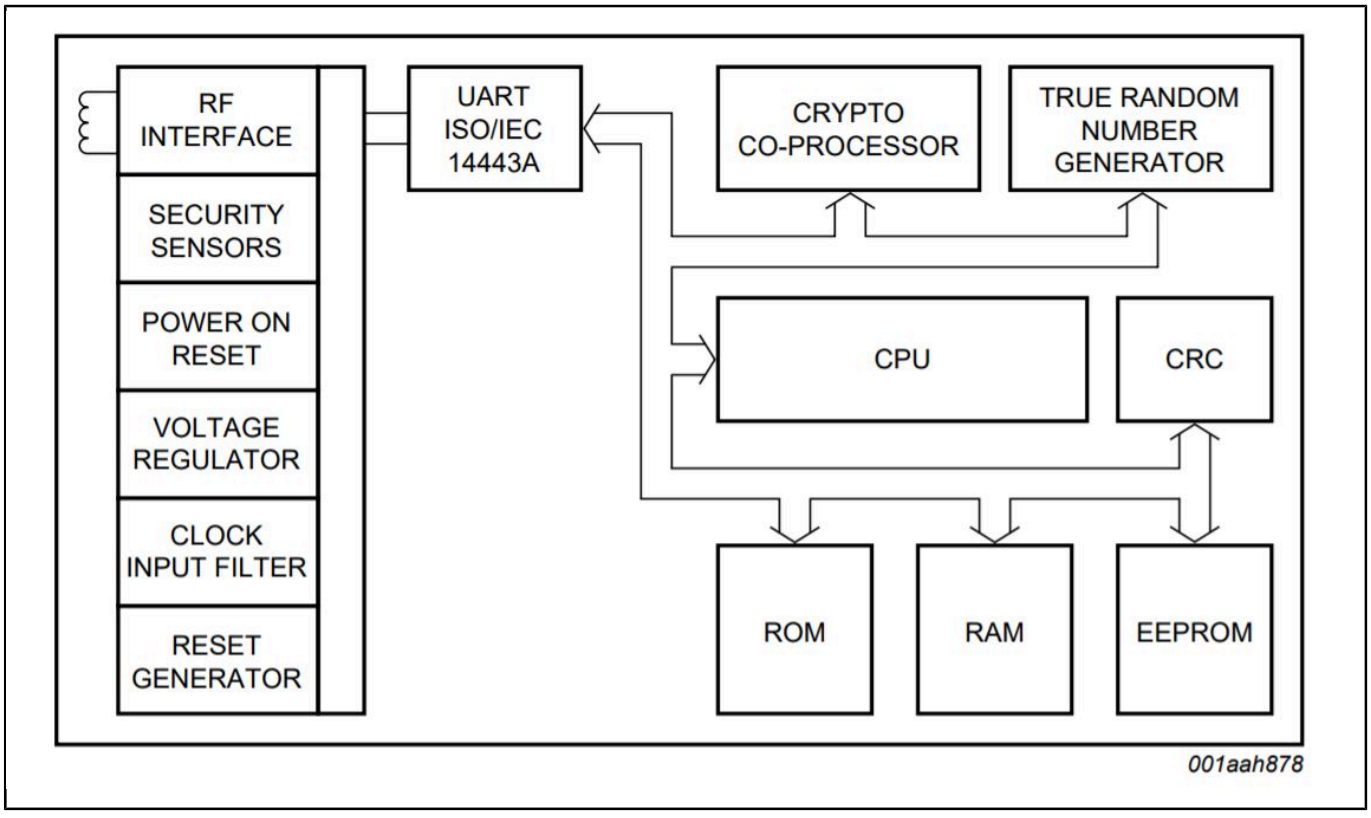
Additionally, an automatic anti-tear mechanism is available for all file types, which guarantees transaction-oriented data integrity. With MIFARE DESFire EV1, data transfer rates up to 848 kbit/s can be achieved, allowing fast data transmission.

The main characteristics of this device are denoted by its name "DESFire": DES indicates the high level of security using a 3DES or AES hardware cryptographic engine for enciphering transmission data and Fire indicates its outstanding position as a fast, innovative, reliable, and secure IC in the contactless proximity transaction market. Hence, MIFARE DESFire EV1 brings many benefits to end-users. Cardholders can experience convenient contactless ticketing while

also having the possibility to use the same device for related applications such as payment at vending machines, access control, or event ticketing. In other words, the MIFARE DESFire EV1 silicon solution offers enhanced consumer-friendly system design, in combination with security and reliability.

MIFARE DESFire EV1 delivers the perfect balance of speed, performance, and cost-efficiency. Its open concept allows future seamless integration of other ticketing media such as smart paper tickets, key fobs, and mobile ticketing based on Near Field Communication (NFC) technology. It is also fully compatible with the existing NFC reader hardware platform. MIFARE DESFire EV1 is your ticket to contactless systems worldwide.

MIFARE DESFire EV1 block diagram Block Diagram



View additional information for MIFARE® DESFire® EV1.

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