NXP®
MIFARE® DESFire®
Light

Simplify the deployment of trusted contactless services

Designed for single-application use cases, MIFARE DESFire Light is an easy-to-integrate, cost-effective, and secure way to deploy efficient and convenient contactless transactions in a range of services. With its up-scalability to MIFARE DESFire EV2 and availability on mobile devices, it opens the door to the Internet of Services.

KEY FEATURES

▸ Pre-defined file structure

▸ 640-byte user memory, equivalent to MIFARE Classic® with 1 kB

▸ Works with MIFARE® DESFire® EV2, MIFARE 2GO, and AppXplorer

▸ AES 128-bit and LRP authentication and secure messaging

▸ Configurable secure messaging communication mode: Plain, CMAC and full encryption

▸ Five AES keys with flexible assignment of access rights

▸ Transaction MAC for secure offline validation of transactions in the back-end system

▸ Common Criteria certification: EAL4 for IC HW and SW

▸ Optional random ID

▸ Superior transaction performance

▸ ECC based NXP Originality Signature

▸ ISO/IEC 14443 A 1-4 and ISO/IEC 7816 compliant for highest interoperability with mobiles and wearables

▸ NFC Type Tag 4 compliant

TARGET APPLICATIONS

▸ Leisure and entertainment

▸ Closed-loop micropayments

▸ Loyalty programs

▸ Public transportation

▸ Access management, e.g. smart home

KEY BENEFITS

▸ Cost-effective, secure contactless transaction, designed for use in a single application

▸ Upward scalability to MIFARE DESFire EV2 and AppXplorer for integration into Smart City environments

▸ Full scalability with mobiles and wearables, with support for Bring Your Own Device (BYOD)

NXP's MIFARE DESFire Light is a contactless IC designed for easy integration into new and existing systems. Its pre-defined file system and total available memory of 640 Bytes make it an excellent choice for single-application designs in a wide variety of use cases. MIFARE DESFire Light is compatible with MIFARE DESFire EV2, so designers can easily expand their systems to support complementing applications. Compatibility with MIFARE DESFire EV2 also lets operators promote their services on NXP's AppXplorer, a collaboration platform that creates an App Store-like experience on smart cards.

Applications using MIFARE DESFire Light further benefit from scalability to other form factors. Systems based on MIFARE DESFire Light are prepared to support implementations on banking cards, mobile devices, and wearables, so operators can extend their services to support the growing end-user trend of Bring Your Own Device.

FEATURES: MIFARE DESFire Light

Memory and Configuration	
Memory configuration	Pre-defined file structure
Memory size	640-byte user memory – equivalent to MIFARE Classic with 1 kB
Applications	Single application
Application management	Easy onboarding to AppXplorer collaboration platform
Security and Privacy	
Algorithm	AES 128-bit and LRP authentication and secure messaging
Keys	Five keys with flexible assignment of access rights
Transaction MAC (TMAC)	TMAC for secure validation of transaction in back-end
Proximity Check	-
Privacy	Optional Random ID
Independent Security Certification	Common Criteria certification: EAL4 for IC HW and SW
Industry Standards	
ISO/IEC	ISO/IEC 14443 A 1-4 and ISO/IEC 7816 compliant
UID	Unique 7-byte serial number (ISO Cascade Level 2)
Data rates	High data rates according ISO/IEC 14443-4: Up to 848 kBits/s
NFC Forum Type Tag	NFC Type Tag 4 compliant

MIFARE DESFire Light can also be configured as an NFC Forum NFC Type Tag 4, so it's ready to use with the broadest range of mobile devices equipped with contactless reading capabilities.

Designed for limited- and extended-use applications, MIFARE DESFire Light includes the appropriate protection mechanisms to power trusted services. Depending on the use case, up to five AES 128-bit keys can be used to manage access rights, while the secure messaging option enhances the protection of both data and privacy. All of the chip's hardware and software security features have been externally reviewed, tested, and certified according to Common Criteria EAL4.

MIFARE DESFire Light delivers outstanding contactless performance, for an improved user experience. The advanced combination of security and performance features makes MIFARE DESFire Light the right choice for new applications in public transportation, smart home, access management, micropayment, loyalty, events, and more.

Also, because the MIFARE DESFire IC family is designed for scalability, system operators are able to protect their long-term investments while also evolving their systems to offer new services, support new trends, and keep pace with consumer expectations for convenience and privacy.

NXP supports MIFARE DESFire Light with an extensive range of software and service offerings, including the Android-based TapLinx SDK, the NFC Reader Library, the RFIDDiscover tool for 13.56 MHz contactless ICs, and NXP's Originality Checker Reader for MIFARE product authentication.

ORDERING INFORMATION

Packaging	MIFARE DESFire Light	
17 pF	**Part Type**	**12NC**
Wafer 75 µm	MF2DL1001DUF/02	9353 783 64003
Wafer 120 µm	MF2DL1001DUD/02	9353 783 21003
MOA4 Module	MF2DL1000DA4/02	9353 784 14118
MOA8 Module	MF2DL1000DA8/02	9353 784 11118
50 pF	**Part Type**	**12NC**
Wafer 75 µm	MF2DLH1001DUF/02	9353 784 09003
Wafer 120 µm	MF2DLH1001DUD/02	9353 783 65003
MOA4 Module	MF2DLH1000DA4/02	9353 784 15118
MOA8 Module	MF2DLH1000DA8/02	9353 784 13118

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