

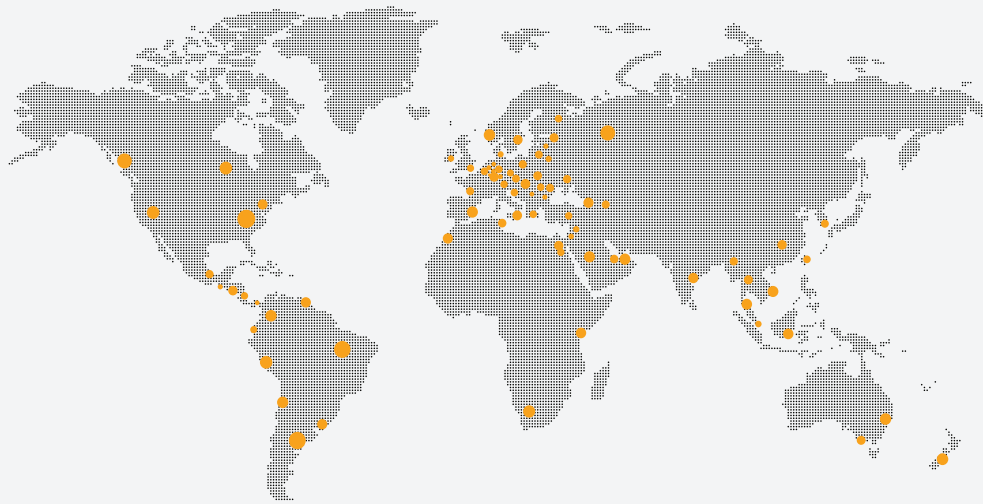


Tap into MIFARE

The leading contactless platform
for launching your next great idea







www.MIFARE.net

Ready-made opportunities

Product developers and service providers are constantly thinking about the next innovative idea. They never stop looking for ways to improve what we already do, or ways to do what we never thought we could. The best of these ideas catch on quickly, making a smooth transition into our everyday lives.

That's what makes NXP's MIFARE®, the world's leading contactless development platform for SmartCards, such a compelling choice for new ideas. It's proven, it's secure, and it's reliable – and it's already being used by millions of people worldwide.

Ready to go

Already in its 21st year of production, MIFARE is a made-to-order starting point for new ideas. The huge installed base means lower startup costs, since the infrastructure is already in place. It also means greater scalability, since there's more room to ramp up. Plus, because so many people around the world already know and trust the technology, market acceptance can be remarkably quick.

Easy to build

The MIFARE design community, which includes more than a thousand business partners, is a ready-to-use network of experts, so it's easy to get support when you need them. Also, having established partners for development means greater design flexibility, since there are more options to choose from.



More than two decades of innovation

It all began in 1994, when MIFARE was introduced as the world's first contactless ISO/IEC 14443 memory IC with cryptography. Since then, public- and private-sector organizations around the world have used MIFARE as the foundation for all kinds of contactless SmartCard systems.

What started as an interesting idea has become a worldwide phenomenon. Today, MIFARE can be found servicing dozens of applications around the world. In total, more than 1.2 billion people have access to MIFARE-based systems in over 70 countries.

And we're only just getting started.

MIFARE market leadership

- More than 736 cities worldwide
- More than 40 applications worldwide
- Combined memory and microcontroller share of more than 70% in the transport ticketing market
- More than 55% of all high-frequency (HF) access management systems
- More than 150 million readers and 10 billion contactless and dual interface IC's shipped

From limited-use paper tickets to dual-interface secure SmartCards and mobile solutions, MIFARE drives more than 40 application types.

The MIFARE universe

SmartCard ICs

- MIFARE® Classic
- MIFARE Plus®
- MIFARE® DESFire®
- MIFARE Ultralight®
- SmartMX with MIFARE implementation

Infrastructure & software

- MIFARE & NFC reader ICs
- MIFARE SDK
- MIFARE SAM AV2
- MIFARE4Mobile®
- MIFARE FLeX®



The MIFARE difference

- | | |
|---------------------|--|
| • Convenient | Typical operating distance -10 cm (4 inches) |
| • Multi-application | One card, multiple services |
| • Fast | Typical ticket transaction < 100 ms |
| • Secure | Highest rating from Common Criteria |
| • Reliable | No moving parts, no battery |

A world of possibilities

MIFARE is small enough and flexible enough to be housed just about anywhere, from plastic cards and wristbands to key fobs and even smartphones. And that means it can help people do just about anything. It's already in things like bus passes, employee badges, library cards, metro passes, student IDs, loyalty cards, toll cards, stadium-access passes, and an increasing number of smartphones.

MIFARE is the backbone for smart cities and the foundation for mobility services. It's helping people lead greener lives by making it easier to use public transport. It's helping schools keep students safe, and helping banks protect valuable assets. It's letting retailers give their customers better experiences, and making it easier to reward their loyalty.

Looking ahead, as MIFARE continues to evolve, it's clear that people will continue to make MIFARE an increasingly essential part of daily life.



MIFARE is already at the heart of best-in-class projects worldwide

Transport ticketing

- Oyster Card, London
- TROIKA Card, Moscow
- Clipper Card, San Francisco

Campuses

- Technical University Delft, National University of Singapore, San Francisco University, Cambridge University

Corporate buildings

- General Motors, Nestlé, Daimler Benz, the EU Commission

Hotels

- Hilton, Hyatt, Intercontinental, Marriott

Stadiums

- Istanbul, Manchester, Munich, Sao Paulo

Multi-application formats with bankcards and mobile solutions

Mobilis Card, Valencia: transport ticketing, bike rental, electric car rental, citizenship card, library card, retail micro payment, tourism card, and access management

Nol Card, Dubai: transport ticketing, access management, micro payment for taxi rides, parking and retail

Rabbit Card, Bangkok: transport ticketing, personal ID, access control retail micro payment, and loyalty programs



MIFARE possibilities

Multi-application cards combine two or more functions

- Amusement parks
- Bike rentals
- Blood donor cards
- Campus cards
- Car rentals
- Citizen cards
- Event ticketing
- Ferry cards
- Fleet management
- Fuel cards
- Gaming
- Health cards
- Home access cards
- Hotel cards
- ID cards
- Information services
- Interactive exhibits
- Interactive lotteries
- Library cards
- Logical access
- Loyalty cards
- Membership cards
- Micro payment
- Mobile ticketing
- Museum access
- NFC tags
- Office access
- Parking
- Password storage
- Product authentication
- Production control
- Road tolling
- Smart advertising
- Smart metering
- Social welfare
- Student cards
- Taxi cards
- Tourist cards
- Transport ticketing
- Waste management

The right building blocks

Since 1994, when we introduced the first MIFARE product family, we have dedicated ourselves to delivering a unique combination of innovation and value. Our current portfolio includes all the building blocks for complete MIFARE applications, from cards to readers, and we support every transaction with the most advanced security functions available today – including open-standard cryptography, strong DES and AES-128 security, and high-level certifications from the Common Criteria standards body. Whether you're looking for reader ICs, secure access modules (SAMs), dual-interface SmartCard controllers, or secure elements for mobile devices, we're sure to have exactly what you need.

Building blocks for MIFARE SmartCards



MIFARE Classic

This is the contactless product that started it all. Now available in the new MIFARE Classic EV1 version, with an improved feature set, MIFARE Classic continues to enable a very wide range of applications around the world.



MIFARE Ultralight

Designed for single- and limited-use tickets, our Ultralight, Ultralight C, and Ultralight EV1 versions of MIFARE offer low-cost options for replacing traditional paper tickets, tickets with magnetic strips, and coins.



MIFARE DESFire

Optimized for multi-application functionality in transport schemes, micro payments, access management, and identity applications, MIFARE DESFire EV1 and EV2 add fast, highly secure data transmission and flexible memory organization.



MIFARE Plus

Targeting cost-sensitive applications in automated fare collection (AFC) and access control, MIFARE Plus is a performance upgrade that provides additional levels of security, including encryption based on the Advanced Encryption Standard (AES).



SmartMX

Our latest generation of SmartMX2, which includes a MIFARE implementation, builds on advanced C90 process technology. It combines powerful co-processors and introduces our Integral Security™ architecture, which has over 100 security features and a Common Criteria EAL 6+ rating. The result is a new level of contactless performance in a dual-interface solution.



What is NFC?

Near Field Communication (NFC) is the tap-and-go technology that makes life easier and more convenient.

A touch is all it takes to:

- Make a payment
- Exchange digital content
- Connect electronic devices

Designed for:

- Card emulation
- Information readers
- Peer-to-peer communications

Building blocks for MIFARE infrastructure & software



MIFARE SAM AV2

Our Secure Access Modules (SAMs) handle all the crypto-related functions inside a reader terminal, ensuring the highest levels of security, including 3DES and AES cryptography, for MIFARE applications of all kinds.



MIFARE4Mobile

This interoperable programming interface, which includes a service manager applet, enables remote provision and management of MIFARE-based services, so mobile devices equipped with NFC can deliver better user experiences.



MIFARE Flex

This powerful software tool, designed for developers creating multi-application systems that use a SmartMX secure SmartCard controller, makes it easy to define a specific MIFARE scheme.



MIFARE SDK

This new software development kit gives Android App Developers an easy way to develop apps that work with all MIFARE, NTAG, andICODE hardware features through the NFC sensors of a Smartphone.



MIFARE & NFC Reader ICs

Compatible with MIFARE and NFC, the CLRC and MFRC families of reader ICs reflect our active involvement with regulatory bodies, including the FCC, CE, Paypass, and EMVCo, along with our deep commitment to interoperability and environmental quality.

A global community

When you choose MIFARE for your project, you join a global community of people dedicated to making the most of SmartCard opportunities. Our online resources give you a direct connection to all kinds of useful information, from news stories and upcoming events to detailed technical guidelines, downloads, Q&A sheets, and more.



Micomcommunity

Here's where you'll discover MIFARE-based projects from our partners and customers, along with links to the MIFARE support forum, FAQs, and NXP blogs on MIFARE.

www.mifare.net/en/micomcommunity/



MIFARE Partner Program

NXP's MIFARE partners are an elite group of companies that have special access to the latest in MIFARE product innovation. Partners are also eligible to participate in special promotional activities that drive growth within the industry.

www.mifare.net/en/micomcommunity/partner-program/



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