Chip-Based EMV Payment Cards

How EMV Enables Secure and Convenient Payments in the United States

Which EMV Will You Deploy?

Credit, debit, prepaid, and contactless cards, as well as mobile payments – all of these are now being secured with EMV. Your payment strategies can be brought to life on any channel. With decades of expertise in deploying EMV card solutions, Gemalto can walk you through the considerations that card issuers face in managing an EMV program.

- **Contact EMV**
  Contact EMV cards are often the first channel on which your EMV program will be built, and they are necessary to meet the requirements of the Fraud Liability Shift.

- **Contactless EMV**
  Contactless cards allow customers to tap their card against a payment terminal, enabling the most convenient payment method. Contactless cards harness the security of EMV, offering an ultra-fast way to pay that is safer than ever before.

- **Mobile EMV**
  For mobile payments that require the highest security combined with the convenience of a quick tap and pay, Mobile EMV allows you to load a customer’s account credentials directly onto a mobile phone.

Benefits at-a-Glance

- **No Swiping** – EMV bankcards contain smart card technology. Smart cards use a computer and software with hundreds of built-in security features.

- **No Skimming** – Each card has a unique identifier and a digital seal that cannot be copied and successfully cloned onto another card; the banks will know that it is a fake, and will refuse authorization.

- **Card-Present Security** – Because the chip in the card is an active part of the transaction, as compared to magstripe which is passive, EMV provides unparalleled security at the point-of-sale.

- **Global Interoperability** – EMV chip payment cards are already accepted in more than 80 countries.

- **Core Technology** – EMV is the only security standard that can guarantee interoperability between payment technologies, and serves as the core for future payment channels, including Mobile EMV.

- **Multiple Deployment Options** – EMV allows an issuer to choose the secure payment technology they wish to deploy: Contact EMV, Contactless EMV, Mobile EMV, or even all three to maximize customer satisfaction by meeting the diverse payment needs of their client base.
EMV in the United States
Bringing Secure, Interoperable and Convenient Payments

Based on Secure, Proven Smart Card Technology

What is EMV Technology?
EMV bankcard technology uses a microcomputer chip and software applications with hundreds of built-in security features.

- **Embedded Microchip**
  The contacts on the surface of the device are connected to wires running from a microchip.

- **Embedded Antenna**
  The card also features an embedded antenna that connects to the computer and contactlessly communicates transaction data using the same secure EMV protocol.

Achieves Global Interoperability

- **4bn**
  4 billion EMV cards have been deployed globally by Gemalto

- **37m**
  37 million POS terminals accept EMV cards, and counting

Foundation for Future Advanced Payments and Mobile Convergence

The EMV Payment Infrastructure Supports Both

- **Contactless EMV** – simply tap the card and pay using the same EMV security mechanisms

- **Mobile EMV** – provides secure mobile payments, increased loyalty and marketing options for issuers

Merchants can future-proof their investment by installing dual contact/contactless POS terminals that accept contact EMV, contactless EMV and Mobile EMV.

Contactless EMV Card + 2” Distance Contactless NFC Payment Terminal

Contactless NFC-Enabled Phone + Contactless Payment Terminal

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**EMV in the United States**

Bringing Secure, Interoperable and Convenient Payments

## Securing Transactions at the Retail Point-of-Sale

No matter which payment method is used, EMV affords the added security of credit cards remaining in the possession of the cardholder throughout the entire transaction. With EMV, the computer chip inside the bankcard is an active part of the transaction; unlike the magstripe, which is passive.

### 1. Contact EMV

At the point-of-sale the EMV contact card is inserted into a slot which activates the chip and reads the card data to confirm that the card is real via mutual authentication. To verify the cardholder’s identity, the terminal will prompt the user to enter their PIN or request a signature, depending on the verification method chosen by the issuer.

### 2. Transaction Authorization

The EMV card and terminal prepare the transaction data which includes a unique code that is only valid for that specific transaction. If the transaction is online, this dynamic data will be sent to the issuer, validated, and the transaction will be authorized.

### 3. Secure and Speedy Transactions

To further expedite transactions and to allow approval in the case of offline transactions, the issuer can set rules such as requirement of cardholder verification, floor limits, cumulative amounts, velocity, last online authorization, etc.

### 1. Contactless EMV & Mobile EMV

In a contactless or Mobile EMV transaction, the card or NFC-enabled smart phone is tapped or waved above the reader. The credentials are confirmed using the same EMV security, but without having to wait with your card in the terminal.

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security to be free
**The Implementation of Chip**

October 2015

All major U.S. payment brands have announced roadmaps for the move from magnetic stripe cards to the global standard for payments, chip-based EMV credit cards. As of 2013, all acquirers must support the ability to accept chip-based payment.

The October 2015 liability shift means that a bank will no longer be liable for fraudulent activity that occurs on a card that has been issued with a chip. If an EMV card is used at a merchant’s terminal that is not EMV compatible, the liability in the occurrence of fraud will shift from the bank to the merchant, as they are the weakest security point in the transaction.

**Why Choose Gemalto?**

For financial institutions looking for more than a card provider, we become a trusted partner, helping to navigate the twists and turns of EMV migration projects.

**A Trusted, Experienced Partner**

We understand the needs of card issuers because we have supported banks through decades of EMV issuance, working with more than 3,000 financial institutions and issuing 4 billion payment cards.

**Customer Service for the Entire Journey**

Our support doesn’t end with the first wave of EMV issuance. We’re ready to support you through the entire lifecycle of managing your EMV program. With deep expertise in mobile payment solutions, we’ll help to ensure you’re getting the most out of your mobile program for the road ahead.

**Capacity and Time to Market**

As the world’s largest provider of EMV solutions, we have the capacity to scale with your EMV needs better than any other card provider, which means you can achieve your time to market goals.

To begin your EMV journey, visit gemalto.com/emv and contact a Gemalto payments expert today.

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EMV is a global standard for EMV bankcards managed by EMVCo, and jointly owned by American Express, Discover, JCB, Mastercard, Union Pay, and Visa.