

EMV Chip

EMV chip is a microprocessor which can be found embedded in certain plastic payment cards and other form factors such as mobile phones. Sometimes referred to as a smart card or chip card, an EMV chip securely stores the payment data that currently resides on the magnetic stripe, and enables more secure processing by generating a one-time-use code for each transaction. These features make EMV chip card data nearly impossible to counterfeit and a less attractive target for criminals to steal.

How It Works

Rather than swiping the card and signing a receipt, the customer inserts or “dips” the Visa chip card into the terminal. EMV provides an additional layer of security known as dynamic authentication in addition to the real-time fraud scans conducted when the transaction is authorized by the issuing financial institution. The customer completes the transaction per the on-screen instructions, then removes the card when prompted.

Benefits

- Reduction in card-present counterfeit fraud
- Less incentive for hackers to steal data should lead to fewer retailer breaches since chip data cannot be used to create counterfeit cards
- Reduced PCI DSS compliance costs for retailers
- Enhanced international card acceptance

EMV Chip Part of a Multilayered Approach to Security

EMV chip is an important element of a multilayered approach to safeguarding electronic payments, including technology to conduct real-time authorizations and fraud monitoring, and ongoing adherence to the industry data security standard — all backed by the strongest consumer protection if a breach should occur, zero liability.

Visa’s Commitment to EMV Migration in the U.S.

In August 2011, Visa announced a series of initiatives outlined below to accelerate the adoption of EMV chip technology in the U.S. as a way to address counterfeit fraud while preparing the U.S. payment infrastructure for the arrival of NFC-based mobile payments.



EMV Chip Around the World

- There are now 1.6 billion active EMV chip cards used for credit and debit payment at 15.4 million EMV acceptance terminals deployed around the world.
- Today, 36 percent of total cards and 65 percent of total terminals deployed are based on the EMV standards.

Source: EMVCo LLC

2013	2013	2015	2017
Tech Innovation Program (TIP)	Acquirer Chip Processing	Liability Shift	Liability Shift
<ul style="list-style-type: none"> • PCI validation relief for merchants that adopt dual-interface terminals 	<ul style="list-style-type: none"> • Require acquirer processors are able to support chip processing 	<ul style="list-style-type: none"> • Debit and credit domestic and cross-border counterfeit liability shifts at all POS, excluding AFDs 	<ul style="list-style-type: none"> • Expanded Liability Shifts to include Automated Fuel Dispensers (AFDs) and ATMs

* The Visa Zero Liability policy covers U.S.-issued cards only and does not apply to ATM transactions, PIN transactions not processed by Visa, or certain commercial card transactions. Cardholder must notify issuer promptly of any unauthorized use. Consult issuer for additional details.



FREQUENTLY ASKED QUESTIONS

EMV Chip

1. What is a Visa chip credit or debit card?

Chip cards, or “smart cards” have a microchip embedded in the credit or debit card. The chip is tamper resistant and provides stronger security and protection against fraud. A chip card also has a magnetic stripe on the back of the card, so the card can still be used at retailers that have not installed EMV terminals or with eCommerce merchants.

2. What does a chip card look like?

Many features of a chip card are the same as a magnetic stripe card. Both cards are embossed on the front with the card number, cardholder name and expiration date and provide the three-digit security code on the back of the card. The key difference is an embedded metallic contact chip on the front left side of the card.

3. What are the benefits of a chip card?

Your chip card comes with the same security and protection benefits you’ve come to expect from Visa, but with the added protection of a microchip. As an additional layer of security, the chip generates a dynamic element every time you use the card, which makes it harder for a criminal to reuse your card information for retail fraud. Also, EMV is a technology that allows room for innovation, paving the way for mobile NFC payments or other non-card form factors.

4. Does this mean that a magnetic stripe card is not secure?

Cardholders should be confident about the safety and security of using magnetic stripe cards. Fraud within the Visa system is just 6 cents out of every \$100 transacted and that’s half of what it was a decade ago. Further, consumers are also protected against fraud with Visa’s zero liability fraud protection policy*, which means they won’t pay for unauthorized purchases.

5. What information is on a chip card?

The microchip embedded in the card stores information required to authenticate, authorize and process transactions. This is the same type of account information already stored in the magnetic stripe. No personal information about your account is stored on the chip card.

6. Where are chip cards used now?

In some countries (particularly in Europe and Latin America), merchants may be more familiar with accepting chip cards than magnetic stripe cards. Around the world, chip technology is currently in use or is being implemented in 130 countries.

7. Why hasn’t the United States adopted EMV chip yet?

Other markets originally adopted EMV chip because they didn’t have the ability to conduct real-time network authorizations like in the United States, largely due to expensive telecommunications infrastructure. As a result, a technology was needed that conducted security checks between the card and terminal; thus the emergence of a microchip. The United States has been able to keep fraud to low levels using advanced technologies that risk-score every transaction and provide an instant, network-based security screen in less than two seconds.

8. Will EMV chip in the United States be chip and PIN?

EMV chip is used around the world with either a signature or a PIN as a cardholder verification method. Visa will support both in the United States.

9. What does EMV stand for?

EMV is a global payment industry specification named for the organizations that jointly created it — Europay, MasterCard and Visa. The EMV specifications concern the interoperability between chip-based payment applications and payment terminals.

* The Visa Zero Liability policy covers U.S.-issued cards only and does not apply to ATM transactions, PIN transactions not processed by Visa, or certain commercial card transactions. Cardholder must notify issuer promptly of any unauthorized use. Consult issuer for additional details.