FACT SHEET

EMV Chip

EMV Chip or "smart" cards are credit, debit or prepaid cards that have an embedded microchip, which securely stores data that currently resides on the magnetic stripe. The microchip also generates a dynamic one-time use code for each transaction called a cryptogram. Because the cryptogram changes with every transaction, even if the card data is stolen, the information can't be used to create counterfeit cards because the stolen cryptogram would have already "expired." This feature makes EMV chip card data a less attractive target for criminals to steal.

How It Works

Rather than swiping the card and signing a receipt, the customer inserts 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 by following the on-screen instructions, then removes the card when prompted.

Benefits

- Enhanced security—reduction in card-present counterfeit fraud
- Enhanced international acceptance
- Paves the way for secure mobile payments
- Moves U.S. closer to dynamic data authentication—devaluing data
- Cardholders still protected by Visa's Zero Liability policy*

EMV Chip Part of a Multilayered Approach to Security

EMV chip is an important element of Visa's 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, Visa's Zero Liability policy.

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 also preparing the U.S. payment infrastructure for the arrival of NFC-based mobile payments.

EMV Chip Around the World

- There are now 2.4 billion active EMV chip cards used for credit and debit payment at 37 million EMV acceptance terminals deployed around the world.
- Today, 45 percent of total cards and 76 percent of total terminals deployed are based on the EMV standards.

Source: EMVCo LLC

April 2013

Acquirer EMV Chip POS Processing Mandate

April 2015

Acquirer EMV Chip ATM Processing Mandate

Oct. 2015

POS Liability Shift

- U.S. domestic and cross border

Oct. 2017

AFD Liability Shift

ATM Liability Shift

- U.S. domestic and cross border

* Visa's Zero Liability Policy covers U.S.-issued cards and does not apply to certain commercial card transactions or any transactions not processed by Visa. You must notify your financial institution immediately of any unauthorized use. For specific restrictions, limitations and other details, please consult your issuer.

FREQUENTLY ASKED QUESTIONS

EMV Chip

1. What is a Visa chip credit, debit or prepaid card?
   Chip cards, or "smart cards" have a microchip embedded in the credit or debit card. The microchip generates a dynamic one-time use code for each transaction called a cryptogram that can be validated by the issuer or by Visa on the issuer's behalf. 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 online 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 contact chip on the front left side of the card that is covered with a metallic chip plate.

3. What are the benefits of a chip card?
   The benefits of a chip card include enhanced security, leading to a reduction in card-present counterfeit fraud, and enhanced international acceptance, as EMV chip cards are currently used in 130+ countries. Along with tokenization, chip technology also paves the way for secure mobile payments and moves the U.S. closer to dynamic data authentication. Of course, cardholders with chip cards are still protected with Visa's Zero Liability policy.

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 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.

6. Where are chip cards used now?
   In some geographies (particularly Europe and Latin America), merchants may be more familiar with accepting chip cards than magnetic stripe cards. Chip technology is currently in use or is being implemented in 130+ countries around the world.

7. Why didn't the United States adopt EMV chip sooner?
   Other markets originally adopted EMV chip because it wasn't feasible to conduct real-time network authorizations for every transaction, 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. That problem did not exist in the United States, where Visa was 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. EMV now makes sense for the U.S. as a means to prevent migration of fraud from other regions that have already migrated to chip, and to lay the infrastructure that is required for ubiquitous mobile payments.

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 (or sometimes neither for certain low-value transactions). Visa will support signature, PIN, and "no signature required" in the United States.

9. What does EMV stand for?

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

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