

AMERICAN EXPRESS EMV CHIP CARD PAYMENTS

JULY 2013



EMV: Strengthen your business through Secure Payments

As EMV chip-based technology gains ground around the world, American Express can help you migrate to EMV to guard against the impacts of fraud. Upgrading your systems to issue and/or acquire American Express Chip Cards allows you to better serve your customers' demand for safer ways to pay, giving them greater confidence to spend securely worldwide. What's more, by deploying EMV in your business, you can establish a secure foundation to deploy new payment technologies such as contactless and mobile.

A GLOBAL SECURITY STANDARD FOR CARD PAYMENTS

EMV is an industry standard set of specifications for chip cards and terminals that heightens the level of authentication at the point of sale. EMV Chip Cards have an embedded microprocessor chip which increases transaction security by exchanging authentication data with terminals. This makes the cards difficult to counterfeit and effectively combats fraud at the point of sale.

The specification is referred to as EMV because EMVCo., the standards body for contact and contactless specifications, was originally established by Europay, MasterCard and Visa. Currently, EMVCo is jointly owned by American Express, JCB International, MasterCard Worldwide, Visa inc and China Union Pay.

A TRANSACTION PROCESS WITH GREATER SECURITY

Working in tandem with EMV-enabled terminals, American Express Chip Cards can provide your cardmembers with a higher level of security through:



Card Approval

When the Chip Card is inserted into the terminal, the embedded microchip exchanges Card data with the terminal to verify the Card is genuine.



Cardmember Verification

When a Cardmember's identity is verified with PIN or Signature, the Card then securely passes information to the Issuer to perform additional authentication.



Transaction Authorization

The microchip and terminal interact to assess the transaction details, providing Issuers and merchants better ability to control risk on every purchase.



POWERFUL SECURITY FOR FUTURE SUCCESS

American Express has extensive global experience and fluency in the payments industry, as well as demonstrated ability to migrate markets to new technologies. We will help make your transition to American Express Chip Cards and payment terminals as seamless as possible and help you use this technology to enhance your business.

PROTECT YOUR BUSINESS AGAINST FRAUD

American Express Chip Cards and terminal specifications help protect against the impacts of fraud by:

- Increasing security for all card-present transactions by heightening the level of card authentication.
- Deterring counterfeiting and lost/stolen card fraud at the point of sale.
- Deploying EMV specifications which are becoming a secure standard for emerging payment technologies around the world.

STRENGTHEN CARDMEMBER RELATIONSHIPS

With American Express Chip Cards and terminals, you have the ability to better serve your customers by:

- Providing a more secure payment option.
- Enabling them to feel confident using their card for purchases, potentially driving greater preference and spend.
- Giving them the freedom to purchase securely and seamlessly around the world.

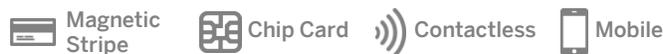
LEVERAGE A GLOBAL STANDARD FOR CARD-PRESENT SECURITY

When you migrate to EMV, you can be confident that you are:

- Adopting a dominant global standard in payment security, one that will only gain greater acceptance.
- Working with American Express who is fully committed to EMV and aligned with other major networks to drive EMV standards, interoperability and acceptance globally.
- Preparing your business for emerging payments such as contactless and mobile.



Ask your American Express Global Network Representative about how upgrading to EMV chip card technology can provide access to more American Express payment options.



SHIELD YOUR FINANCES

With the fraud liability shift, if your business is EMV-compliant, the fraud will shift to the least compliant entity, reducing your exposure.¹



CARD FRAUD PREVENTION

Since the UK adopted EMV Chip Cards in 2001, card fraud loss fell by over 52% between 2008 and 2011.²



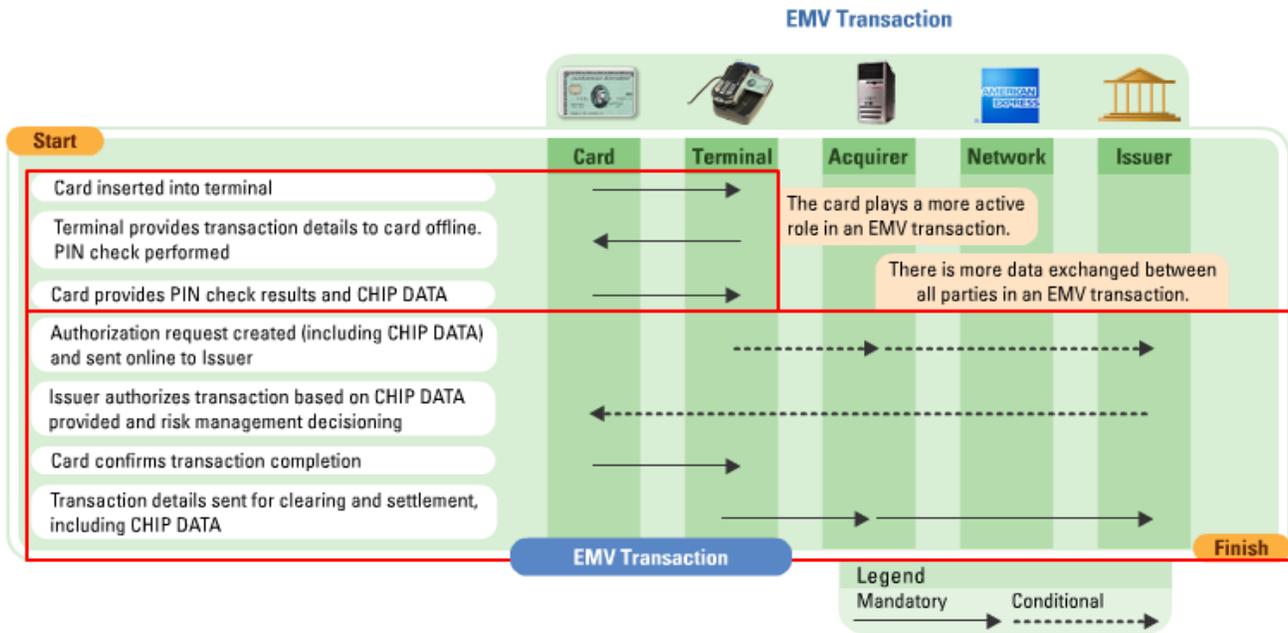
GLOBALLY ACCEPTED

EMV is the emerging payment standard in over 80 countries and every major economic region.³

1. See the current edition of the Business and Operational Policies manual for details.
 2. First Data, EMV in the U.S.: Putting it into Perspective for Merchants and Financial Institutions, 2011
 3. Smart Card Alliance, www.smartcardalliance.org, Feb 2013

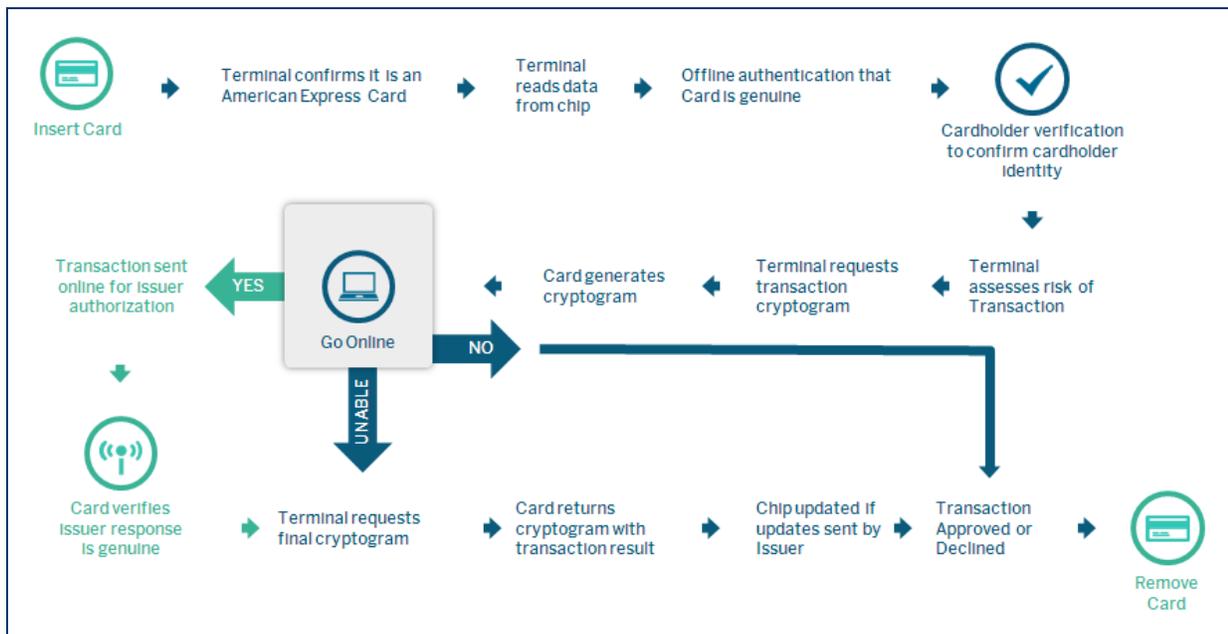
HOW EMV WORKS

The EMV transaction process engages all elements of the transaction process including the Card and Terminal as well as the Acquirer, Network and Issuer. The difference between an EMV and magnetic stripe transaction is that the Card plays a more active role in the transaction process. Also, there is more data exchanged between all parties in an EMV transaction



EMV CARD/TERMINAL INTERACTION*

The diagram below provides additional insight into the Card and terminal interaction. The Card and terminal interact to authorize the transaction directly or to do further authentication, either online with the Issuer or offline. One of the key benefits of EMV approval process is the ability to approve a transaction offline, not only online.



To enable Issuers and Acquirers to best leverage EMV technology, the American Express ICC Payment Specifications (AEIPS) set, which defines the implementation of the EMV specification as applicable to American Express Issuers and Acquirers, has been produced. AEIPS has been divided into two separate specifications: AEIPS Chip Card Specifications and AEIPS Terminal Specifications.

IMPLEMENTATION AND INVESTMENT CONSIDERATIONS – ISSUER

Implementation:

- Card production – manufacturing of cards with an embedded chip module in the cards
- Data/systems preparation – developing cryptographic material for personalization
- Card personalization – securely loading data into chip and delivering to Cardmember
- Chip Card Personalization Infrastructure Certification – Process by which American Express confirms issuance capability
- Certification to support American Express Network messaging

Investment Components*:

- Chip procurement, Card design and personalization
- Issuance systems to include one time and ongoing costs of a chip bureau for chip cards
- Upgrades to systems to use chip data, e.g., Authorization, Risk Management, Clearing and Settlement, and Disputes
- PIN Management Systems (if PIN selected as Cardmember Verification Method)

IMPLEMENTATION AND INVESTMENT CONSIDERATIONS – ACQUIRER

Implementation:

- EMV and AEIPS terminal certification (Level 1, Level 2 and then end to end testing)
- Training, Servicing, Merchant information
- Certification to support American Express Network messaging

Investment Components*:

- Terminal hardware/software upgrades to perform EMV transactions
- Acquiring systems to handle chip-related fields and chip data in messages
- Terminal Management systems for chip functions
- Disputes and related processing for chip transactions

*Precise costs will depend on number of factors

NETWORK DOCUMENTATION

- Business and Operational Policies
- Network Specifications

RELATED PRODUCTS / FEATURES

AEIPS On-Behalf-Of (AEIPS OBO)

For years, EMV technology has offered improved security through the use of cryptographic algorithms which provide card authentication. Despite these proven advantages, Issuer host related costs to implement this technology can be an obstacle to entry. American Express offers a cryptogram validation solution to our strategic participants, with the following benefits:

- Cryptogram validation with reduced lead time
- Fewer system modifications
- Reduced costs

*Please see Network Product Capability Guide EMV On-Behalf-Of (EMV OBO) for more information

American Express Contactless Payments

Contactless payments enable the card and terminal to interact and complete a transaction without inserting the card into the terminal. American Express Expresspay* is an EMV-based payment specification that uses a contactless interface to communicate with a terminal. American Express contactless payments deliver benefits such as:

- Enables faster transactions leading to increased operational throughput
- Allows for different form factors e.g., fobs, mobile phones
- Reduces cash handling for merchants
- Increases convenience, making it easier to process a transaction

*For detailed information on Expresspay implementation, please consult the Acquirer Chip Card Implementation Guide and Issuer Chip Card Implementation Guide on GNSweb.



FREQUENTLY ASKED QUESTIONS

What makes EMV transactions more secure than magnetic stripe transactions?

The fundamental difference between magnetic stripe and EMV chip transactions is in the card and terminal interaction.

- For magnetic stripe, the card stores data for the terminal to read. Once the terminal reads the data from the magnetic stripe, the terminal performs the rest of the transaction with out interacting with the Card, following rules for payment
- For EMV transactions, the chip within the card processes information and interacts with the terminal to enforce the rules for payment set by the issuer of the chip, and can include offline data authentication, cardmember verification, online authorization among others.

This rigorous interaction between the Card and terminal ensure a more secure transaction process.

Is the EMV specification applicable to emerging payment technologies such as contactless and mobile?

The EMV technical specifications are flexible and provide interface specifications and network specifications for multiple factors. American Express has developed specifications for contact, contactless and mobile devices based on EMV standards. In each of these categories, the EMV specification has been designed to be robust enough to maintain the flexibility and security required.

What is the timeframe required for implementation of EMV for Issuers and Acquirers?

Migrating to EMV is a complex project that will impact issuing and acquiring infrastructures as well as back-end authorization systems. Specific information regarding adoption can be obtained by contacting your local American Express Global Network representative.

Does American Express offer network capabilities to issuers to expedite the migration to EMV cards?

Yes, the American Express provides an “On Behalf Of” services such as cryptogram validation service for EMV card transactions. This enables participants to take advantage of EMV without the costs associated with building cryptogram validation logic on the Issuer’s authorization host system. For Issuers using this capability, American Express will validate the cryptogram on the issuer’s behalf and forward an incoming authorization message to the issuer for decisioning with a flag indicating whether the cryptogram was successfully validated.

LEARN
MORE

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RELEVANT GNSWEB PATHS:

Business and Operational Policies

Ops & Tech > Policy > Business & Operational Policies > BOP

Network Specifications

Ops & Tech > Technical Documentation > Technical Message Specifications > Network Specifications

Acquirer Chip Card Implementation Guide

Ops & Tech > Technical Documentation > EMV Chip > Acquirer Chip Implementation Guide

Issuer Chip Card Implementation Guide

Ops & Tech > Technical Documentation > EMV Chip > Issuer Chip Implementation Guide