

A photograph of a blonde woman with a friendly expression, wearing a blue floral top, standing behind a retail counter. She is holding a silver handheld payment terminal. The background is a blurred retail store aisle.

WHITE PAPER

A First Capital Payments Smart Guide

# Making the Move to EMV: *The Risks and the Rewards*

Understanding, Implementing, and  
Benefitting From EMV Technology

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# An Overview of EMV Technology, Advantages, and Transitioning

## EMV Facts and Figures

- Every country and continent – except the United States and Antarctica – have already moved to EMV technology.
- According to VISA® and MasterCard®, 575 million payment cards in the U.S. will include EMV chips by the end of 2015.
- France has utilized EMV since 1986. They experienced a 50% decline in card-related fraud in face-to-face transactions between 2004 and 2009 alone.\*
- The United Kingdom reduced counterfeit fraud by 55% and lost or stolen card fraud by 33% from 2005 to 2013.\*\*

\*Chip and PIN, Successes and Failures In Reducing Fraud

\*\*EMV Lessons Learned and the US Outlook, Financial Fraud Action UK

## WHAT IS EMV?

EMV stands for Europay, MasterCard® and VISA®, thus the EMV card and system. EMV-enabled debit and credit cards are often referred to as chip cards or smart cards. In Europe, EMV card technology has been in used for almost 30 years. The U.S. is the last major market to still use the swipe-and-sign system. Instead of using a magnetic stripe, EMV cards utilize an embedded microchip (microprocessor) in each card to make payments and verify identity at Point of Sale (POS).

The EMV system has several informal names, including chip and PIN, chip and signature, chip and choice, and contactless.



## WHAT ARE THE ADVANTAGES OF EMV?

The objectives of EMV implementation are to help merchants and financial institutions **minimize** –

- Fraud
- Chargeback losses
- Use of stolen and counterfeit credit and debit cards
- Skimming card data (preventing via dynamic encryption)
- PCI compliance requirements (through taking payments with chip-certified devices)



Compared to magnetic-stripe cards, EMV smart cards deliver new and improved security benefits, including sophisticated, dynamic authentication methods to make it more difficult to copy or skim card data. EMV ends card swiping, replacing it with simple insertion into a terminal slot or Near Field Communication (NFC or contactless),



which reads the chip card by waving it in front of a reader so the card does not have to leave the consumer's hand. With every interaction, private data is securely encrypted and each card is validated with every transaction.

Improved means of identity verification are added to aid in confirmation and acceptance of a transaction, such as signing a receipt or entering a PIN. Three new verification methods are supported –

- 1. Chip and online PIN** – Customer PIN entered and transmitted to host for real-time verification. This aids in stopping fraud with stolen or counterfeit cards.
- 2. Chip and offline PIN** – Terminal and chip card verify the PIN offline, prior to authorization. This also helps prevent use of stolen and counterfeit cards.
- 3. Chip and signature** – By signing to assure identity, counterfeit card fraud is minimized.

#### EMERGING TRANSACTION TECHNOLOGIES

Along with EMV technology described here, several new related advances are emerging as new methods of digital payment and security.

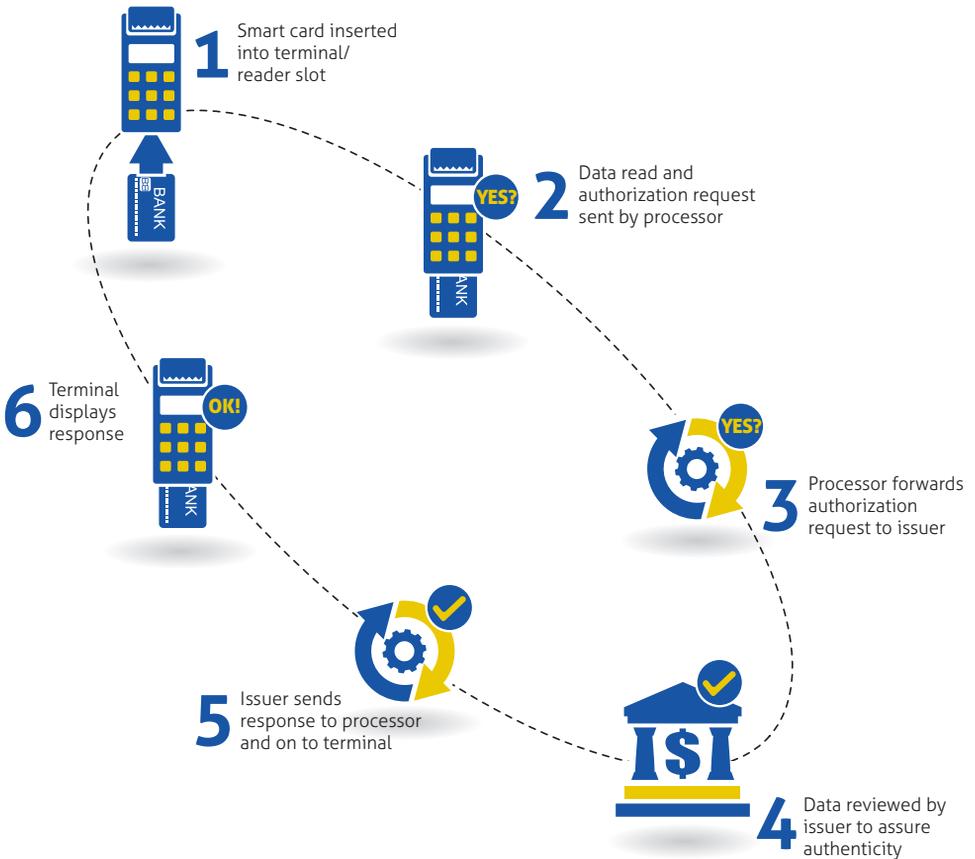
**Tokenization Technology** – complex codes easily transmitted wirelessly between devices, such as a smart card or phone and advanced readers/terminals. These codes are generated and used only once, so even if intercepted they are of no use to those wishing to commit fraud. More secure than static 16-digit card number.

**Near Field Communication (NFC)** – Very short-range radio transmissions (under an inch) initiated by proximity or tapping/touching a smart phone or chip-enabled card to an enabled, advanced reader/terminal.

**Apple Pay® and Digital Wallets** – Apple Pay®, a digital wallet, is included in the iPhone 6 and 6 Plus. Similar to previous digital wallets (Google), Apple has partnered with many banks and VISA®, MasterCard® and American Express® to help assure success for this venture. Consumers can pay at a contactless payment point with their iPhone 6/6 Plus with identity verification via a Touch ID fingerprint scanner. NFC is part of this technology.

## HOW DOES EMV TECHNOLOGY WORK?

A chip-enabled card and an EMV-enabled terminal communicate in real time to determine if a card is authentic. Upon approval, the customer can be prompted to enter a PIN or sign to confirm identity. The terminal also supports any guidelines established by the card issuer. For example, there could be a limit on the number of PIN attempts permitted before denying a transaction.



## HOW AND WHEN DOES EMV AFFECT YOU, YOUR BUSINESS, AND LIABILITY?

Today, if an in-store transaction using a counterfeit, compromised, or stolen card is conducted, the payment processor or issuing bank covers the loss.

As of October 2015, a critical deadline known as “the liability shift” will be in effect. This deadline – put in place by MasterCard®, VISA®, Discover®, and American Express® – states that card-present fraud liability will shift to whomever is “least EMV-compliant in a fraudulent transaction.”

Interpreting this language, it means that if you are still using an old, non-EMV-enabled system, you will still be able to complete customer transactions with a swipe and signature. However, you will now be solely liable for any fraudulent transactions when a customer uses a chip card on an outdated terminal.

Alternately, if you have a new EMV-enabled terminal but the bank has not yet issued a chip and PIN card to their customers, the bank will retain fraud liability.

Clearly, this liability shift is being implemented to speed migration and adoption of the new cards and POS devices by merchants and banks. It’s a strategy to drive fraud out of the system more quickly and comprehensively. If both the card and the terminal are EMV-certified, fraudulent transactions should not occur.

**If you are not “EMV-empowered” by October 2015, your exposure to liability and loss could significantly increase.**



### Are There Any Exceptions to the October 2015 Deadline?

Automated fuel dispensers (gasoline pumps) will not be required to make the shift to EMV until 2017, and these operators will benefit from existing fraud liability guidelines until then.

## WHAT INCENTIVES EXIST TO MAKE THE TRANSITION TO EMV?

To encourage adoption, MasterCard®, VISA®, Discover®, and American Express® are introducing PCI-validation reductions for merchants accepting 75% of card-present transactions via chip card insertion and contactless EMV-certified devices. The bottom line is that it may be possible to have merchant PCI assessment eliminated by the payment brands, although PCI compliance will still be necessary. Credit card processors and payment systems suppliers may also be offering incentives and rebates to help merchants more easily transition to EMV technology.

## WHAT STEPS SHOULD YOU TAKE TODAY?

The migration to EMV will be gradual, and initially merchants will be able to accept both chip and magnetic-stripe cards. Consumers will also gradually receive chip cards to replace older cards.

Here are five recommendations to help you make the transition in an intelligent, cost-effective manner –

### 1. Include EMV Support in Any Upgrade

If you are currently considering new POS software or hardware, make sure they support EMV technology.

### 2. Think PIN Pad

With EMV, depending on the card issuer, cardholders may have to enter a PIN for credit and debit transactions. New POS hardware with an integrated pad, or a solution that allows for an add-on PIN pad, will help get you ready for the (almost-immediate) future.



### 3. Explore Software Requiring Certification by Payment Brands for Chip Cards

Certifications like these are more complex than those for magnetic-stripe technology, requiring review and involvement with various payment brands. Your credit card processing and payment systems supplier can provide guidance.

### 4. Be Proactive to Provide Peace of Mind to Your Customers

Those who wait too long to transition to EMV will likely feel pressure from consumers who will have heard all about the new, safer technology and wonder why it is not in place at a place of business or organization. Many consumers have experienced credit card fraud and will be highly supportive of technology that prevents it.

### 5. Be Proactive to Budget for the Future

It will take both time and money to upgrade, so start planning early and discuss the costs, risks, and rewards of upgrading and determine a migration time frame and path. Again, your credit card processing and payment systems supplier can provide important guidance.

#### Why Consumers Will Embrace EMV

It seems that every week there is another credit card security breach story in the media. Consumers are growing extremely conscious of these and fear for the safety of their cards and personal information. Because of this and the publicity that will accompany the introduction of EMV and smart cards, consumers will expect merchants to adopt this new, more secure technology to protect them.

Recent, notable security breaches:\*

Company	Number of cards/accounts breached
JPMorgan Chase	83 million
Home Depot	56 million
T.J. Maxx	45.6 million
Target	40 million
Michaels Crafts	3 million

\*USA TODAY



First Capital Payments offers streamlined EMV transitioning, as well as EMV-compliant terminals and options in mobile payment systems. We invite you to benefit from our expertise in credit card processing and payment systems.



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