

**ATM INSIGHTS**

# Defining EMV<sup>®</sup> and its impact on ATMs in the US



**2.37 billion** chip-enabled cards have been issued worldwide

Source: EMVCo, *EMV Chip Deployment Statistics, Q4 2013*

EMV, a term frequently used in the payments industry, defines a global standard that relates to chip-based credit and debit cards, and the associated accepting devices. EMV is an open-standard set of specifications designed to ensure interoperability between chip-based payment cards and EMV-compatible devices, such as retail terminals, automated fuel dispensers and ATMs. First published as integrated circuit card specifications for payment systems, the standards now known simply as “EMV” were developed by Europay, MasterCard and Visa. EMV specifications and associated testing and approvals are managed by EMVCo.<sup>1</sup>

### EMV and the benefits of migration

The purpose for the migration to chip-based cards is to reduce the potential for fraud associated with easy access to data stored in the magnetic stripe on most payment cards. Chip-based cards contain embedded microprocessors that hold far more information, far more securely, than magnetic stripe cards. The chip also differs in that it can perform processing functions, including cryptographic processing, which enables additional levels of tamper-resistance. Issuer security credentials that are encoded and stored in the chip upon personalization “are impervious to access by unauthorized parties.”<sup>2</sup>

The results of EMV adoption are dramatic. Losses from counterfeit card fraud, lost and stolen card fraud and/or debit card skimming fraud fell to record lows over several years following the introduction of EMV technology in countries such as Canada and the UK.<sup>3</sup> Credit card issuers in the US are requiring the adoption of EMV technology in order to achieve similar fraud reductions.

### How it works

Consumers insert their EMV card into a compatible terminal, where the chip makes either a “contact” or “contactless” connection with a reader. The card remains in the reader until the transaction is complete, introducing a change in behavior that merchants and financial institutions will need to reinforce with their customers. Chip technology uses sophisticated methods of authentication, verification and authorization to securely process card and transaction information, generating unique, transaction-specific data that cannot be re-used in a new transaction. These security protocols virtually eliminate the possibility of making counterfeit EMV cards that can be successfully used in a payment transaction. EMV cards can also be used to secure online payment transactions.

<sup>1</sup> [http://www.emvco.com/about\\_emv.aspx](http://www.emvco.com/about_emv.aspx)

<sup>2</sup> EMV Connection, January 2014. <http://www.emv-connection.com/smart-chip-payment-card-brief/>

<sup>3</sup> EMV FAQ: What is the proven impact of EMV adoption on payment card fraud? <http://www.emv-connection.com/emv-faq/>

# EMV global adoption

Percentage of chip-enabled terminals:



**99.9%**  
Europe  
(Zone 1)



**91.2%**  
Europe  
(Zone 2)



**84.7%**  
Canada  
Latin America  
Caribbean



**86.3%**  
Africa  
Middle East



**71.7%**  
Asia Pacific

Source: EMVCo

## Status of worldwide EMV migration





According to EMVCo, at least 80 countries are at some stage of EMV adoption, with billions of chip payment cards already in use across the globe. Terminals in Europe were 99.9% chip-enabled at the end of 2013. Canada, Latin America, the Caribbean, Africa, the Middle East, and Asia Pacific are all closing in on full implementation.

The US payments infrastructure is moving toward EMV readiness. To support merchant EMV-chip acceptance, acquirers and processors were mandated as of April 1, 2013 to certify they can send and receive EMV data in online transactions when they connect to the networks of Visa, MasterCard, Amex or Discover. To incent compliance in other stakeholders, including merchant POS devices and ATMs, additional mandates and liability shifts are taking place between now and October 1, 2017.

With timelines in place for a shift in liability, the total cost of card-present fraud in the US will no longer be borne solely by card issuers. After the prescribed dates, liability for counterfeit fraud “shifts” to the least EMV-compliant party.<sup>4</sup> This is why it is critical for financial institutions to enable EMV transactions across their channels.

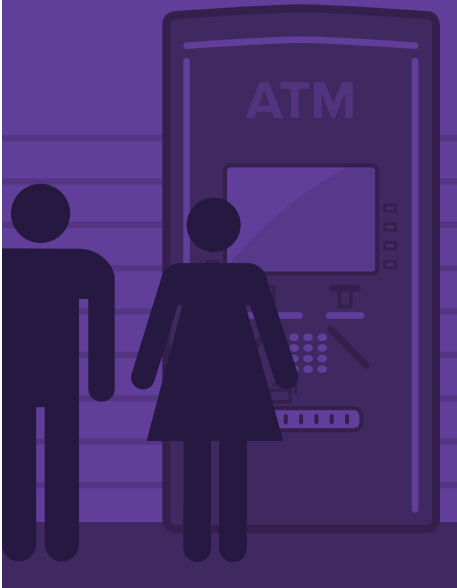
### Key dates for the US

The chart below outlines key dates for liability shifts. If an ATM cannot accept EMV chip cards after the deadline, the ATM acquirer (such as the bank or credit union) bears the cost of the fraud.

DATE	ISSUER	EVENT
	Visa	Liability shift: US third party ATM acquirer processors and sub-processors must be able to support EMV data in transactions.
	MasterCard	ATM liability shifts to the least EMV-invested party. Exempts automated fuel dispensers.
	Visa	ATM liability shifts to the least EMV-invested party.
	Visa, MasterCard, Amex, Discover	Liability shift for automated fuel dispensers.

<sup>4</sup> EMV Migration – Driven by Payment Brand Milestones  
<http://www.emv-connection.com/emv-migration-driven-by-payment-brand-milestones/>

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## EMVCo testing and certification

EMV solutions must conform to EMV specifications and pass tests for compliance with EMV standards. Vendors are issued a Letter of Approval for each product that successfully passes type approval:

- 1 Level 1 type approval** - verifies that the terminal chip reader conforms to Level 1 of the EMV mechanical and electrical protocol specifications with regard to the transfer of data between the terminal and the card.
- 2 Level 2 type approval** - verifies that the EMV Level 2 kernel or the terminal application software that supports the EMV payment application functions, as defined in the EMV Chip Specifications, demonstrates sufficient conformance to those specifications.<sup>5</sup>
- 3 EMV Level 3 (also referred to as EMV Terminal Integration Testing)** verifies compliance with each ATM brand's specific terminal configuration rules, requirements and recommendations. Acquirer's ATM network undergoes end-to-end validation of online transaction request and response messages related to the transportation of chip data. Serves to identify and resolve any terminal mis-configuration that might cause interoperability issues. Prerequisite to deployment of any chip-acceptance device for specific payment products (Brands) the acquirer plans to accept.<sup>6</sup>

## Cummins Allison ATMs are EMV compliant

Cummins Allison ATMs are certified Level 1 and Level 2 compliant. Level 3 approval is pending. In addition, all Cummins Allison ATMs are shipped with EMV compliant card readers making the EMV migration path easier.

<sup>5</sup> A Guide to EMV Chip Technology, v2.0 November, 2014. EVMCo is jointly owned by American Express, JCB, MasterCard, UnionPay Visa and Discover.

<sup>6</sup> EMV® Brand-aligned Terminal Integration Testing Framework: Process Enhancements, November 1, 2014



### When you are ready to replace, add or expand your ATM network, let's talk.

Cummins Allison offers a complete line of high-quality, reliable ATMs to fit any branch configuration. Call 800 786 5528 or click [cumminsallison.com/letstalk](http://cumminsallison.com/letstalk).

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## Generations of Vision and Excellence

Cummins Allison sets the standard for accuracy and dependability.

Cummins Allison is a global leader in developing solutions that quickly and efficiently count, sort and authenticate currency, checks and coin. We also offer a complete line of full-function automated teller machines (ATMs). Our leadership in technology and product innovation spans more than 125 years. Cummins Allison serves the majority of financial institutions worldwide, as well as leading organizations in retail, gaming, law enforcement and government. Ninety-seven percent of our customers would recommend our products and services.

The company holds more than 350 patents and invests double the industry average in R&D. Our world-class sales and service network includes hundreds of local representatives in more than 50 offices in North America, wholly-owned subsidiaries in Canada, the United Kingdom, Germany, France, Ireland and Australia and is represented in more than 70 countries around the world.