

EMV Chip Solutions



Superior Protection with Enhanced Security against Fraud

EMV is a global standard for credit and debit payment cards based on chip card technology. As of Q3 2011, there were more than 1.34 billion EMV compliant chip-based payment cards in use worldwide.

EMV chip-based payment cards, also known as smart cards, contain an embedded microprocessor, a type of small computer. The microprocessor chip contains the information needed to use the card for payment, and is protected by various security features. Chip cards are a more secure alternative to traditional magnetic stripe payment cards.

Over the next few years many financial card issuers will be transitioning to EMV “chip” cards – in fact, the process is well underway. The aim of this document is to help issuers who are considering or planning this transition to appreciate some of the new skills, processes, equipment and software that will be needed to launch and maintain a successful and profitable EMV smart card program.

Euronet has in-depth experience with EMV technology including data preparation, data processing and associated transactions. By offering these specific EMV solutions, Euronet is the go-to provider for EMV solutions to be delivered anywhere in the world. Euronet Pakistan is privileged to be the technology driving the 1st EMV Debit Card in Pakistan.

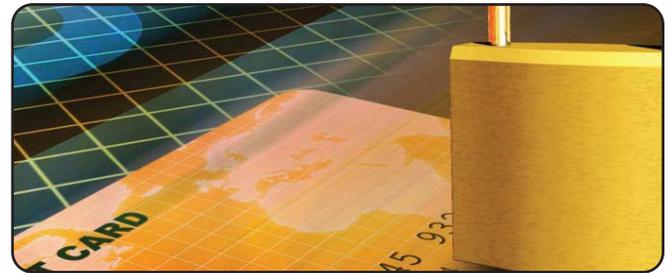
THE ABILITY TO ENSURE HIGHLY SECURE TRANSACTIONS FUELS THE GROWING DEMAND FOR CHIP PROCESSING

The risks and adverse consequences of global fraud are the leading factors in moving the market toward EMV® chip solutions.

EMV chip-based payment cards contain an embedded microprocessor that manages multiple applications in addition to storing, processing and highly protecting data such as cardholder identity, account information and more.

EMV Integrated Circuit Card Specifications are global standards for authenticating credit and debit chip card transactions at chip-enabled devices including point-of-sale (POS) terminals and automated teller machines (ATMs). These standards also extend to new types of payment devices including contactless and mobile. Currently owned by American Express, JCB, MasterCard and Visa, EMVCo manages, maintains and enhances EMV

specifications with the main goal of facilitating an interoperable framework for secure chip technology. The powerful combination of global security standards on a superior technology allows you to benefit from the ultimate protection against fraud; thereby, ensuring highly secure transactions for you and your customers. EMV chip solutions boast numerous advantages – from reducing the risk of liability for the issuer and acquirer to greater convenience and ease of use for the consumer. Financial services organizations around the world are adopting EMV chip solutions to reap the numerous benefits offered by this highly secure technology.

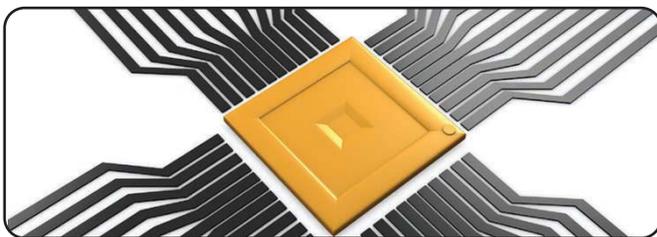


Implementing EMV chip solutions empowers banks to meet today's challenges and gain the unique advantages of microprocessor technologies. Euronet's EMV Chip Solutions enable you to protect your customers from fraud, as well as add security to your own liability risk

EURONET'S EMV CHIP SOLUTIONS

Issuing, Acquiring and Managing Chip Cards

Euronet's EMV Chip Solutions provide financial services organizations with the capability of issuing, acquiring and managing chip cards. Issuers and acquirers can take advantage of the many benefits offered by Euronet's solutions including minimizing the risk of fraudulent transactions, creating new business opportunities and increasing customer loyalty.



Triple Protection for You and Your Customers
Designed with our powerful and flexible Integrated Transaction Management® (ITM) transaction-processing

suite, our EMV Chip Solutions provide triple protection and security against fraudulent transactions through the built-in security of chip technology, compliance with EMV industry standards and an added layer of security services via our payments hub architecture.

Chip Technology – The security features of chip technology include encrypting personal data, locking access to data until the consumer authorizes access or the device reader authenticates itself to the chip, and encrypting communication between the reader and the chip provide immunity to threats from skimming and eavesdropping as well as prevent unauthorized access to personal information.

EMV Industry Standards – Euronet's EMV Chip Solutions perform regular security checks, as required by industry standards in processing chip card transactions, to ensure that it meets specifications set forth by EMVCo.

Added Layer of Security Services – Euronet views the ability to protect against fraud as a multi-pronged

approach. Our methodology considers not only technological advances and industry standards, but also the service functionalities built within our solutions. The services available within our payments hub architecture are bundled within an access and authority security layer. This layer provides application-level authentication, authority and security management providing you with the confidence to ensure highly protected transactions.

Ultimate Security and Protection

Euronet's EMV Chip Solution provides secure card authentication allowing the issuer to validate the card during online transaction processing and protects the card against alteration. Our solution also supports the ability to validate the issuer during online transaction processing, which protects the issuer's authorization response from fraudulent modification. EMV security reduces fraud by making it more difficult to counterfeit cards and transactions. With Euronet's EMV Chip Solution, you can rest assured that you and your customers have the ultimate security and protection against fraud.

TAKE ADVANTAGE OF NUMEROUS OPPORTUNITIES

Meet the Needs of Your Customers Today and Tomorrow

The vast potential of chip technology presents an array of opportunities for you to create new revenue streams and to increase customer loyalty. Euronet will help you identify and take advantage of those opportunities by providing the solutions you need, including the most recent chip opportunities, contactless payments and mobile payments.

With Euronet as your trusted partner, you can drive EMV chip and other types of transactions with solutions that are fully integrated with an expanding array of technology and delivery channels. We continually invest in and explore new ways to service and expand the quality of our solutions through our commitment to product management, industry research, product development and innovation. Our demonstrated and continued product reinvestment ensures long-term growth, prevents solution obsolescence and provides you with a true competitive advantage. To ensure that you have the best software possible, we leverage our success of implementing EMV chip solutions across Europe, the Middle East, Asia, Latin America and the Caribbean.

As the adoption of global EMV standards continues to increase around the world, so do the opportunities presented by the technology itself. Euronet can help your

organization create a solution that will grow with your business so you can meet the needs of your customers today and tomorrow.

According to EMVCo, as of the end of Q3 2011, there were more than 1.34 billion EMV compliant chip-based payment cards in use worldwide and more than 15.4 million EMV terminals globally

EMVCo SETS THE INDUSTRY STANDARD FOR SUPREME SECURITY

Facilitating Global Interoperability and Compatibility of Chip-Based Payments

A primary goal of EMVCo and EMV Specifications is to help facilitate global interoperability and compatibility of chip-based payment cards and acceptance devices. Based on the EMV global standard, the infrastructure for this technology enables all organizations to deploy solutions that are compatible with all transaction-processing operators. EMVCo establishes and administers testing and approval processes along with best practices to evaluate compliance with EMV Specifications.

Developments by EMVCo include an approval process for chip acceptance terminals and chip card standards, Common Core Definitions (CCD,) and a Common Payment Application (CPA) to provide a standard transaction processing interface for issuers of both MasterCard and Visa cards.

EMV Benefits Create a Strong Business Case for EMV Chip Card Processing

- Minimize risk of fraudulent transactions
- Create new business opportunities
- Increase loyalty
- Provide greater convenience and ease of use
- Reduce risk of fraud due to shift of liability to the acquirer
- Create possible interchange incentives
- Increase global acceptance
- Decrease communication costs with secure offline approvals
- Increase control by modifying card parameters without reissuing

Features

- Fully EMV compliant
- Support for Offline PIN change
- Capture and Processing for Chip Card data
- Ability to view chip data with transaction history
- Authentication of online card and issuer
- Support for SDA, DDA and CDA offline data authentication
- Support for Post Issuance Script commands in transaction responses to the device or acquirer
- Ability to change card parameters without reissuing the card
- Verification of the Authorization Request Cryptogram (ARQC) required for online card authentication
- Generation of Authorization Response Cryptogram (ARPC) required for online issuer authentication



EURONET'S EMV CHIP FUNCTIONALITY

Offline Card Authorization - This functionality facilitates the use of offline card authorization, which significantly reduces transaction wait time and customer throughput. Issuer authentication allows the card to validate the issuer during online transaction processing. The offline authorization control defines when a transaction is to be processed online versus offline.

Capture and Processing of Chip Data - Chip data that is included in a transaction is captured by Euronet's ITM system and processed as part of the transaction authorization process.

Inclusion of Post-Issuance Script Commands in Transaction Responses to the Device or Acquirer - Post-issuance script commands allow information on the chip to be updated without reissuing the card, include the ability to block or unblock an application and update offline limits that are stored on the chip.

Risk Management - Information may be assigned and viewed for a particular cardholder using an enhanced version of the GUI Card Management System.

- Modify risk management parameters for future card issuance with the ability to process previously issued cards with previous risk management parameters.
- Override certain risk management parameters for a specific card using the enhanced version of the GUI Card Management System, resulting in the creation of post issuance script commands.
- Support the extraction of card and related risk management information including network specific risk management parameters to be sent to a personalization system for inclusion on the chip.

For more information write to us at: pakistan-info@eef.com



Euronet Pakistan (Private) Limited
7th Floor, Bahria Complex-III
M.T. Khan Road, Karachi-74000, Pakistan
Tel: +92 21 111-SECURE, URL: www.euronetpakistan.com

