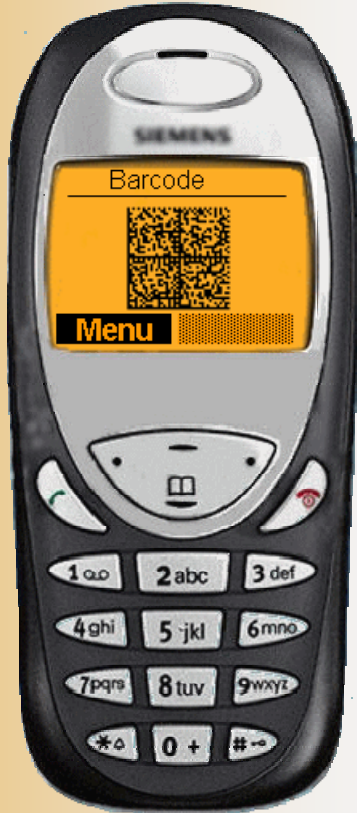


IPCS Group

Contending with Today's Leading Data Threats
in Electronic and Mobile Commerce



& barcode enabling mobile payment



Mobile payment

Mobile payment is payment using the mobile phone at the point-of-sale instead of using credit or debit cards. This provides an unparalleled shopping experience combining ease with flexibility.

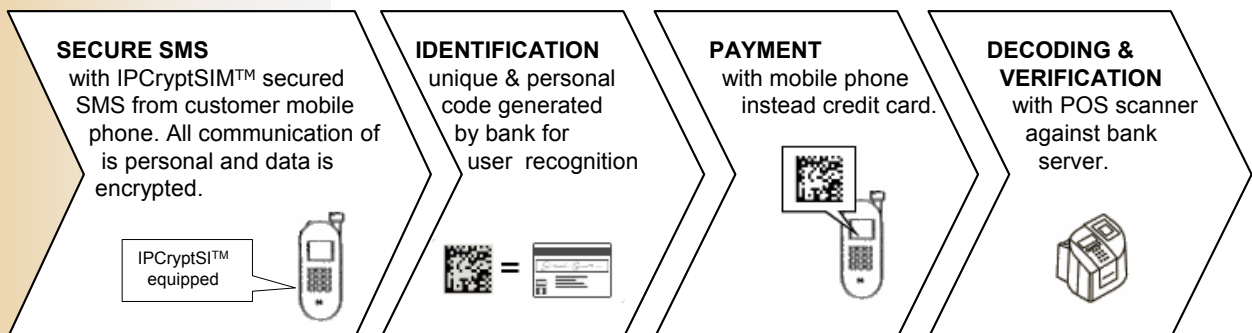
Overview

The customer goes shopping and uses the mobile phone to pay for a product or service or make transactions. There is no need to carry a purse or wallet.

Scenario 1: Customer sends a secure SMS, using **IPCryptSIM™** to his bank. SMS contains the amount and the bank account code. The bank checks and returns a **IPCryptSIM™** secured SMS containing the barcode to customer. Customer enters PIN to open encrypted SMS and flashes mobile phone screen onto the POS at merchant, that reads barcode and translates the bank approval code.

Scenario 2: Customer is at a merchant (retail shop, Post office, Restaurant, etc.) and wants to pay via the mobile phone. Customer gives his mobile phone number to merchant who sends it via secure SMS (**IPCryptSIM™**) to bank together with merchant ID and amount. Bank clears payment and sends a **IPCryptSIM™** secured SMS containing the barcode to customer. Customer enters PIN to open encrypted SMS and flashes mobile phone screen onto the POS at merchant, that reads barcode and translates the bank approval code.

Scenario 3: Customer has applied for a personalized and unique barcode from the bank before going shopping. Barcode is generated by the bank for user recognition and sent via **IPCryptSIM™** secure SMS to customer hand phone who stores it in the phone memory. When paying for something, the customer shows the identification code on the mobile phone to the merchant's POS hardware reader. The code is scanned and the customer's personal information transferred to bank to request payment permission. After validation, the payment is accepted and shopping finished!



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Comparison between Data Matrix and IPCryptSIM™ barcode

The following pictures compare a Data Matrix code and the IPCryptSIM™ barcode sent as encrypted picture SMS :



Data Matrix



IPCryptSIM™

	Data Matrix (2D)	IPCryptSIM™ (2D)
Code size	18 x 18 pixels 0,9 x 0,9 cm	36 x 36 pixels 1,8 x 1,8 cm
Encoding	16 digits	150 digits
Number of SMS:	only 1 SMS	only 1 SMS

Two-dimensional (2D) code

A 2D code does not consist of bars but rather a grid of square cells allowing more information to be encoded in a smaller amount of space. These are also referred to as “stacked” or “matrix” codes.

DataMatrix barcodes have made tremendous inroads in m-Commerce today. Their major use is in m-Ticketing. The DataMatrix encoded barcode represents approx 10 digits.

IPCryptSIM™’s high security environment to enable secure mobile payments has taken the DataMatrix code one step further. The encoded information needed to assure authentication and authorization of mobile clients to make mobile payments requires an encoding of up to 150 digits.

Mobile users can “display” their IPCryptSIM™ code from the phone’s secure repository by entering their unique PIN, then “flash” the mobile screen onto the barcode reader of the merchant’s POS scanner, which captures the barcode and sends it to the user’s bank for authentication and authorization to make payment. The bank instantly issues payment of the amount to the merchant’s bank account and sends a confirmation of the payment to the merchant’s POS scanner. An encrypted SMS is sent to the mobile user to confirm that payment has been done and that the amount was debited to the user’s bank account.

IPCryptSIM data encryption and data security

2D codes also bring more reliability and security because the stored data can be encrypted. IPCryptSIM™ is RSA compliant, uses a 2,048bit key length and a 128bit encryption. Moreover, the high data capacity allows extra data to be added to the code providing both error detection and error correction.

High degree of redundancy and accurate reading

Because it can hold a much larger volume of data, two-dimensional codes like the IPCryptSIM™ code provide an excellent amount of redundancy using error correction. Employing the Reed-Solomon error correction, IPCryptSIM™ codes can reconstruct up to 20% of damaged characters while barcodes have absolutely no error correction providing simply a check digit for basic error detection. If the barcode is damaged or loses any characters, those characters are lost forever. This enables IPCryptSIM™ codes to guarantee a fast and accurate reading where misreading is almost a thing of the past.

Technology and direct debit

Selected POS / code reader can read barcodes and 2D codes sent as simple picture messages (SMS, EMS or Nokia Pictures) from mobile phone displays. This is the key to trouble-free payment by mobile phones. Furthermore, the amount of money is not settled on the user’s monthly mobile phone invoices because the IPCryptSIM™ technology allows a direct connection between the user’s mobile phone and his bank / bank account. This technology brings enormous advantages for user and trade as even large amounts can be paid by mobile phone and the billing on the client’s account is carried out promptly and safely.

Please contact us so that we can help you to implement a successful and innovative mobile payment and marketing campaign.

