Contactless payment

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Contactless payment systems are credit cards and debit cards, key fobs, smart cards or other devices, including smartphones and other mobile devices, that use radio-frequency identification (RFID) or near field communication (NFC, e.g. Samsung Pay, Apple Pay, Android Pay or any bank mobile application that support Contactless) for making secure payments. The embedded chip and antenna enable consumers to wave their card, fob, or handheld device over a reader at the point of sale terminal. Contactless payments are made in close physical proximity, unlike mobile payments which use broad-area cellular or WiFi networks and do not involve close physical proximity.

EMV contactless symbol used on compatible payment terminals

Some suppliers claim that transactions can be almost twice as fast as a conventional cash, credit, or debit card purchase. Because no signature or PIN verification is typically required, contactless purchases are typically limited to small value sales. Lack of authentication provides a window during which fraudulent purchases can be made.

A contactless enabled American Express charge card issued in the UK

Research indicates that consumers are likely to spend more money using their cards due to the ease of small transactions.[1] MasterCard Canada says it has seen "about 25 percent" higher spending by users of its Mastercard Contactless-brand RFID credit cards.[2]

EMV is a common standard used by major credit card and smartphone companies for use in general commerce. Contactless smart cards that function as stored-value cards are becoming popular for use as transit system farecards, such as the Oyster card or RioCard. These can often store non-currency value (such as monthly passes) in additional to fare value purchased with cash or electronic payment.

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History

Mobil was one of the most notable early adopters of a similar technology, and offered their "Speedpass" contactless payment system for participating Mobil gas stations as early as 1997. Although Mobil has since merged with Exxon, the service is still offered at many of ExxonMobil's stations. Freedompay also had early wins in the contactless space with Bank of America[3] and McDonald's.[4]

McDonald's, KFC, Burger King, Boots, Eat, Heron Foods, Pret a Manger, Stagecoach Group, Subway, AMT Coffee, Tesco, Asda and Lidl are among the retailers offering contactless payments to their customers in the UK. In March 2008, EAT. became the first restaurant chain to adopt contactless.[5]

Major financial entities now offering contactless payment systems include MasterCard, Citibank, JPMorgan Chase, American Express, KeyBank, Barclays, Barclaycard, HSBC, Lloyds Banking Group, Freedompay, The Co-operative Bank, Nationwide Building Society and The Royal Bank of Scotland Group. Visa payWave, American Express Expresspay, and MasterCard Contactless are examples of contactless credit cards which have become widespread in U.S. and UK.

The first contactless cards in the UK were issued by Barclaycard in 2007.[6] As of December 2014, there are approximately 58 million contactless-enabled cards in use, in the UK, and over 147,000 terminals in use though this is growing in numbers and percentages of adoption.[7][8]

Telecom operators are starting to get involved in contactless payments via the use of near field communication phones. Belgacom's Pingping - Belgium, for example, has a stored value account and via a partnership with Alcatel-Lucent's touchatag provides contactless payment functionalities. In January 2010, Barclaycard partnered with mobile phone firm Orange, to launch a contactless credit card in the UK.[9] Orange and Barclaycard also announced in 2009 that they would be launching a mobile phone with contactless technology.[10]

In October 2011, the first mobile phones with MasterCard PayPass and/or Visa payWave certification appeared. A PayPass or payWave account can be assigned to the embedded secure element and/or SIM card within the phones. Android Pay is an application for devices running Google's Android OS, which allows users to make purchases using NFC, which initially required a physical secure element but this was replaced by host card emulation which was introduced in Android 4.4 (KitKat). Softcard (formerly known as Isis mobile wallet), Cityzi and Quick Tap wallets for example, use a secure SIM card to store encrypted personal information. Contactless payments with enabled mobile phones still occur on a small scale, but every month an increasing number of mobile phones are certified.[11]

In February 2014, MasterCard announced that it would partner with Weve, which is a joint venture between EE, Telefónica UK, and Vodafone UK, to focus on mobile payments. The partnership will promote the development of "contactless mobile payment systems" by creating a universal platform in Europe for it.[12]

In September 2014, Transport for London's Tube began accepting contactless payment. The number of completed contactless journeys has now exceeded 300m. On Friday 18 December, the busiest single day in 2015, a record 1.24m journeys were completed by over 500k unique contactless cards.[13]

In 2016 Erste Group launched an NFC only debit card implemented as a sticker in Austria. It can be used at any NFC supporting terminal for transactions of unlimited amount however for transactions over the floor limit of 25 EUR a PIN is required to confirm the transaction.[14]

Security

As with all payment devices, contactless cards have a number of security features. Depending on the economic space, there may be a payment limit on single transactions, and some contactless cards can only be used a certain number of times before customers are asked for their PIN.[15] Contactless debit and credit transactions use the same chip and PIN network as older cards and are protected by the same fraud guarantees. Where PIN is supported, the contactless part of the card remains non-functional until a standard chip and PIN transaction has been executed. This provides some verification that the card was delivered to the actual cardholder.

Under fraud guarantee standards U.S. banks are liable for any fraudulent transactions charged to the contactless cards.

Floor limit

Because no signature or PIN verification is typically required, contactless purchases are typically limited to a set maximum amount per transaction, known as a "floor limit". Limits may vary between banks.

Economic space	Limit	Comment
Australia	No limit	For transactions over A$100 a PIN is required.[16][17]
Austria	No limit	For transactions exceeding €25 a PIN is required. Additionally for cards produced before 2017 only five transactions can be made without a PIN.[18] Cards issued after December 2016 need a PIN code for transactions over €25 or a contactless total of €125.
Belgium	€25	For transactions over €25 a PIN is required. When several contactless payments in a row reach the amount of €50, the PIN is required.
Bulgaria	No limit	For transactions over 25 BGN (~€12) a PIN is required.
Brazil	No limit	For transactions over R$50,00 a PIN is required.
Canada	No limit	Limits are completely at the discretion of the merchant's acquiring bank and the consumer's bank. There is no law limiting the amounts.
Chile	$12.000 CLP	
China	CNY ¥1000[19]	Unionpay QuickPass. PIN required unless disabled with bank.
Croatia[20]	No limit	For transactions over 100HRK PIN or signature are needed.
Czech Republic	No limit	For transactions over 500 CZK PIN is needed. For every 3 consecutive contactless transactions PIN is needed.
Denmark[21]	No limit	For transactions over 200DKK PIN is needed. Sometimes PIN is needed anyway to ensure the card is used by its owner.
Estonia[22]	€10	
Eurozone	€25	In general
Finland	€25	
France	€20	Can be used up to three times a day. Cannot be used for transactions over €20.
Germany	€25	For each transaction over 25 € or 50 € (some Visa cards) a PIN or CDCVM verification is required.
Hong Kong	HKD $500	Some merchants can accept contactless payment if the transaction amount is under HKD $1000
Hungary	No limit	For transactions over 5000 HUF PIN is needed. For every 10 consecutive contactless transactions or if you reach 10.000 HUF PIN is needed.
India	Rs. 2000	Above Rs. 2000 Contact chip transaction needs to be done.
Ireland	€30	Previously €15 until 1 October 2015.
Italy	€25	For transactions over €25 PIN is needed
Latvia	€10	
Lithuania[23]	€10	€25 from autumn 2017
Macedonia, Republic of	750 MKD	
Malaysia	Depends on the bank	After RM 250 (roughly US$50), PIN is required. As for debit cards, a contactless limit is set for a maximum usage limit of 4 - 5 transactions and up to RM 250 per transaction before a PIN entry is required to re-enable the contactless feature.

Netherlands[24]	€25	For more than €25 at once or €50 in a row PIN verification is mandatory.
New Zealand	No limit	For each transaction over NZ$80 a PIN is required.
Norway	200 NOK	For each transaction over 200 NOK a PIN is required.
Poland	No limit	For transactions over or equal to 50 PLN PIN is required.
Russia	No limit	For transactions over ₽1000 PIN or signature is required.
Serbia	No limit	For more than 2000RSD PIN verification is mandatory
Slovakia	No limit	For transactions over €20 PIN is needed. For every 3 consecutive contactless transactions PIN is needed.
Spain	No limit	For more than €20 PIN verification is mandatory
Sweden	200 SEK	For each transaction over 200 SEK a PIN is required.
Switzerland	40 CHF	For transactions over 40 CHF a PIN is required.
Taiwan	No limit	Signatures may be required for large purchases.
Thailand	฿1500	
Turkey	50 TL	Transactions over 50 TL require PIN entry.
Ukraine	No limit	For transactions over 100 UAH a PIN is required
United Kingdom	£30	£20 until 1 September 2015;[25] still £20 limit on some cards. Sometimes PIN is needed anyway to ensure the card is used by its owner. Some retailers will allow higher value purchases using newer hardware that supports high value purchases if the contactless authentication method is biometric (e.g. Apple Touch ID used in Apple Pay)[26]
United States of America	No limit	Predominantly device based (e.g. Apple Pay) but will generally ask for signature over $25-50 for the few contactless cards available.
Greece	€25	For transactions over €25 a PIN is required

See also

- Apple Pay
- Android Pay
- Contactless smart card
- Dashtop mobile
- Google Wallet
- Microsoft Wallet
- Mobile payment
- Near field communication
- Proximity card
- Octopus card
- OPUS card
- Oyster card
- Presto card
- Samsung Pay
- Softcard (formerly Isis mobile wallet)
- Vicinity cards

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External links

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