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NFC and Secure Element in mobile payments

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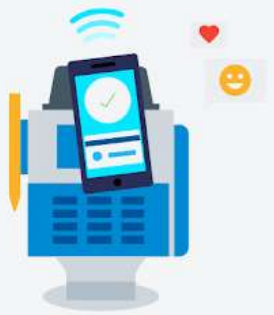

To use a NFC device, the cardholder can use a mobile app to make their phone act as a payment card

Secure element is a chip that stores the card mobile application communicate with the payment terminal during the transaction

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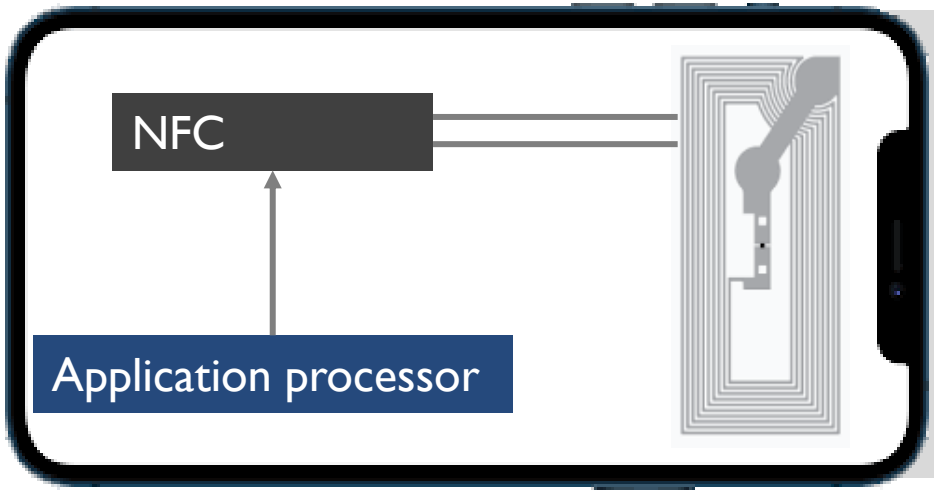
NFC and Secure Element in mobile payments

Secure element can be embedded in mobile device or be removable and separate from it

No need to carry a physical payment card



Contains an NFC antenna and an NFC controller that allow communication with a payment terminal

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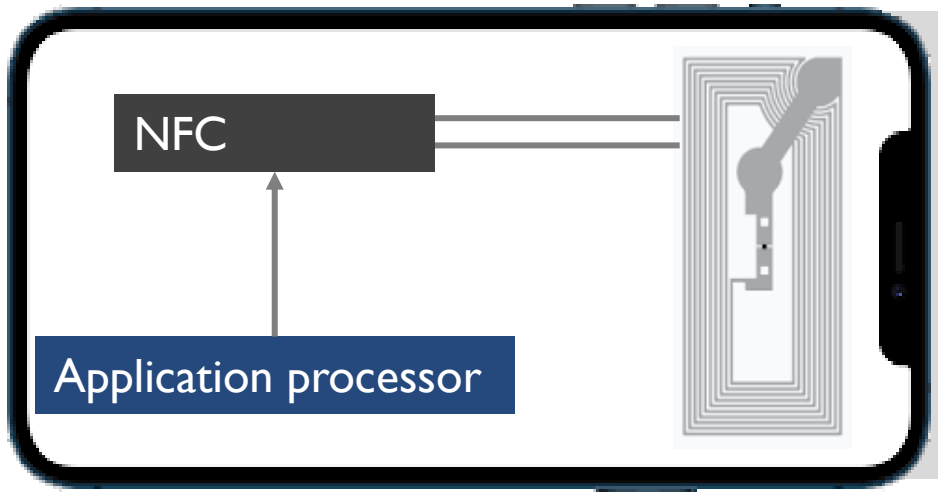

Contains an NFC antenna and an NFC controller that allow communication with a payment terminal

Secure element	NFC antenna	NFC controller

Can perform a contactless payment transaction and be tested for functional compliance with EMV or scheme mobile requirements.

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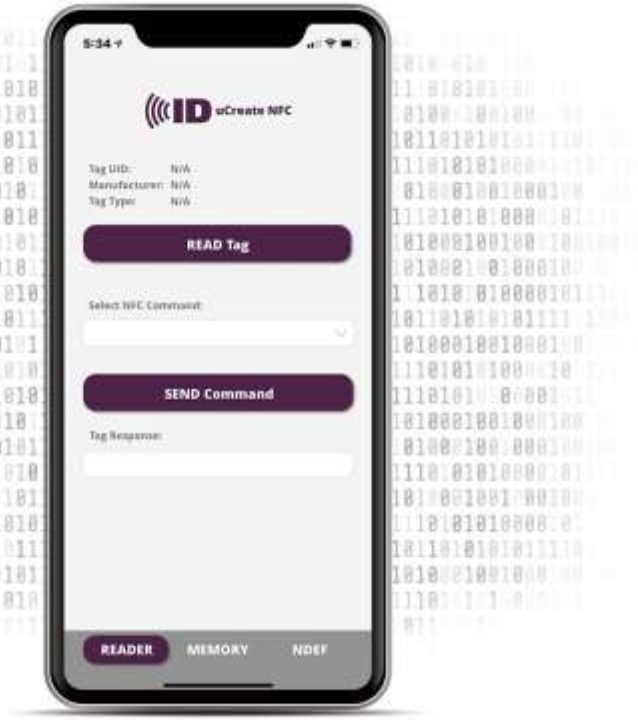
NFC and Secure Element in mobile payments

To use a mobile device for contactless payments , cardholder must



Sign up for and use a mobile application that enables the device to act as a card

NFC components in the mobile device allow communication with payment terminal, enables the assembly to perform a contactless payment transaction

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Personalization of NFC cards

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Personalization of NFC cards

Two ways in which a secure element (SE) can be added to a mobile phone

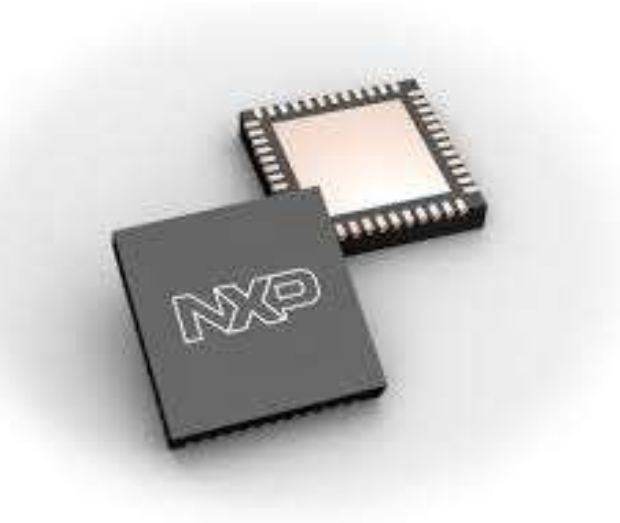
1 Embedded SE

Secure element is physically embedded within the mobile device

Found in newer mobile devices

SE cannot be removed by the cardholder

Personalization is performed by device manufacturer



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Personalization of NFC cards

Two ways in which a secure element (SE) can be added to a mobile phone

2 Removable SE

SE is a separate physical component added or removed from the mobile device

This type of SE is often used in older mobile devices

A special sim card with embedded SE to be inserted

Personalization process in this case is typically performed by the issuer

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Test Your Knowledge!

What is an application template in EMV?

1. Is it a set of data elements used to define issuer card products such as debit or credit cards

2. A pre-defined structure that specifies how the EMV personalization data should be organized for a specific application on the card

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