

Contactless payment cards: Research highlights security concerns

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(Phys.org) —Warnings about the use of contactless payment cards and Near Field Communication (NFC) capable devices are raised in a study led by a team of researchers at the University of Surrey.

The team from the University's Computing Department successfully received a contactless transmission from distances of 45-80cm using inconspicuous equipment, highlighting security concerns to personal data.

NFC technology is in use on more recent mobile phones and on contactless debit/credit cards issued by UK banks.

The team used portable, inexpensive and easily concealable equipment including a pocket-sized cylindrical antenna, a backpack, and a shopping trolley, none of which would raise suspicion if used in a supermarket queue or in a crowded place.

Using this equipment, the team showed how reliably eavesdropping could be carried out at various distances, with good reception possible even at 45cm when the minimum magnetic field strength required by the standard is in use.

The implications for consumers are significant. Dr Johann Briffa, Computing Lecturer, comments: "The results we found have an impact on how much we can rely on physical proximity as a 'security feature' of NFC devices.

"Designers of applications using NFC need to consider privacy because the intended short range of the channel is no defence against a determined eavesdropper."

Eleanor Gendle, IET Managing Editor at *The Journal of Engineering*, said: "With banks routinely issuing contactless [payment cards](#) to customers, there is a need to raise awareness of the potential security threats. It will be interesting to see further research in this area and ascertain the implications for users of contactless technology with regards to theft, fraud and liability."

According to Paul Krause, Professor of Software Engineering at the University of Surrey, "Open access is vitally important in order to ensure that the results of publicly funded research are made available to all. It is particularly important for the stimulation of innovation in engineering where new enterprises may not have the financial resources to pay for a range of journal subscriptions. The IET has taken a very significant initiative in establishing a high quality [open access](#) journal that covers all aspects of engineering in one resource."

Provided by University of Surrey

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