

Introduction

My project was about researching and investigation into the safety and security of Near Field Communication (NFC) and how it is used with today’s technology. This is getting a feeling of how safe it is, what it does and its advantages. ). It is a peer-to-peer communicator that uses radio frequencies to transfer or receive information. NFC chip is made up of some small memory storage, radio chip, and an antenna.

Aim & Objectives

- What cryptographic method does it use – can someone just easily steal data from it or hence your phone?
- What ways are NFC’s are used i.e. Phone and travel cards?
- Understanding what NFC is, what are the advantages that it holds, why it is useful, and see what future projects there are being developed with it
- . Comparing NFC with radio frequency identification (RFID) and learning how they are both used.

Methodology

To make a test that identifies the way an NFC is protective. First by testing the distances, these test start off from 2cm and goes up to 20cm. Using the distance hardware stand that was made for the project, the user can place their tag onto the slot the system tells them to. Secondly the blockage of material is tested. The user will be using slot 2 on the distance stand while the material is in between the tag and reader.

Devices

Smart Card Reader

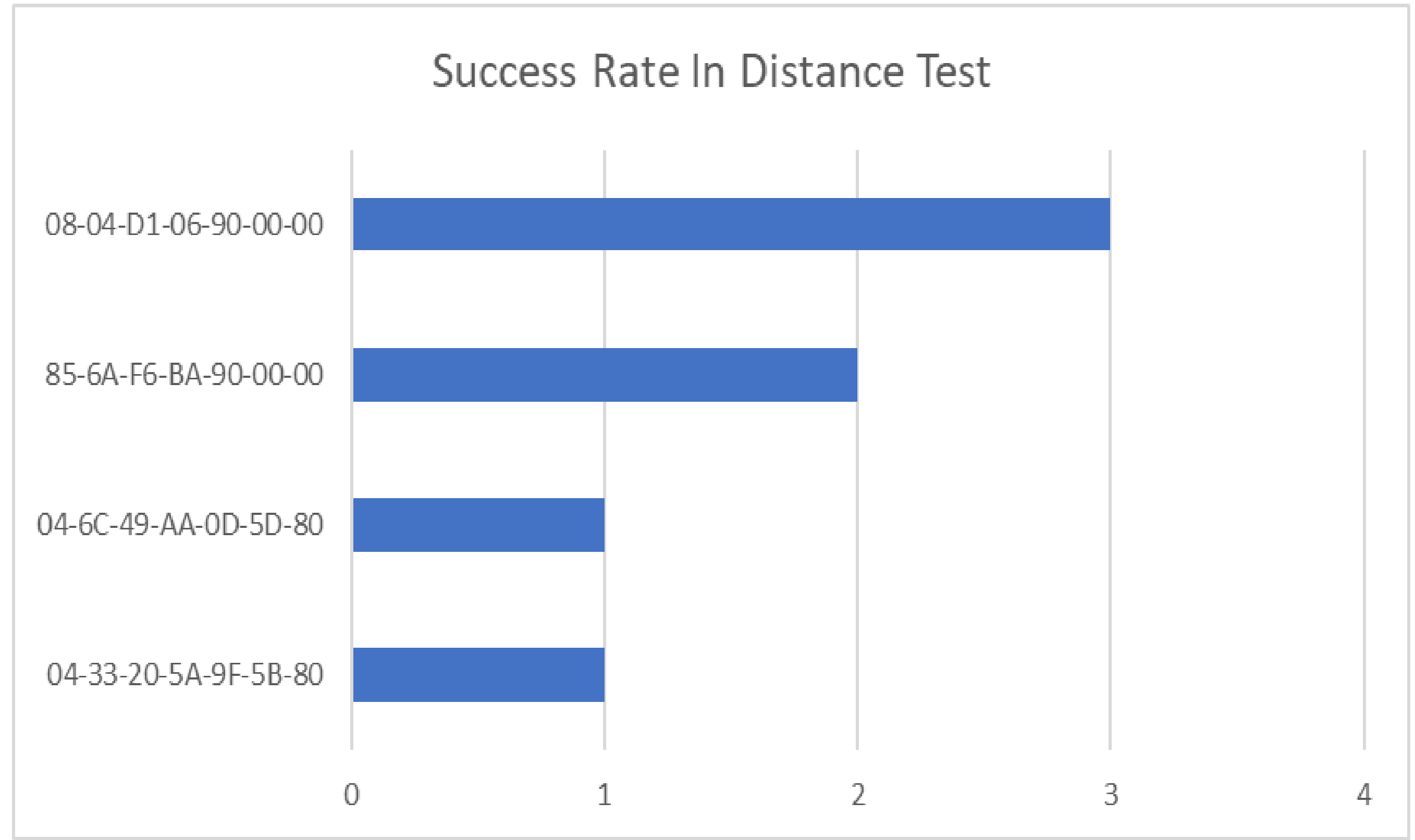
P/N: ACR122U-A9  
  
Power: 5VDC, 200mA  
  
ACS: Advanced Card Systems Ltd.



Findings

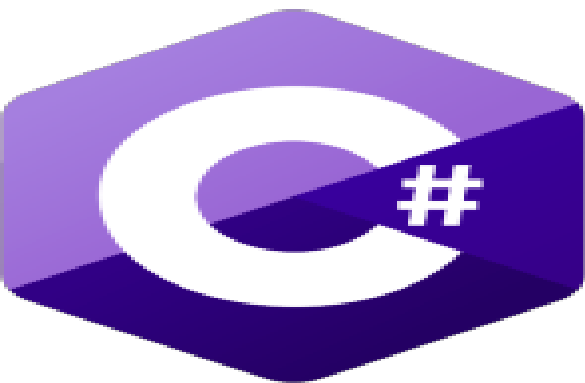
The tag types have different distances that can be connected to a reader/writer, in my test data below only 2 tags got past the 2cm test.

UID	Tag Type	2cm	5cm	7cm	10cm	15cm	20cm
04-33-20-5A-9F-5B-80	Tag Type 4	Success	Failed	Failed	Failed	Failed	Failed
04-6C-49-AA-0D-5D-80	Tag Type 4	Success	Failed	Failed	Failed	Failed	Failed
85-6A-F6-BA-90-00-00	MIFARE Classic	Success	Success	Failed	Failed	Failed	Failed
08-04-D1-06-90-00-00	Tag Type 2	Success	Success	Success	Failed	Failed	Failed



Conclusion

In conclusion, the type of tag matters as the distance at which each tag is effective varies, therefore so do the security capabilities making it easier or harder for people to actually get information from the tags since they would have to be closer to or further from the victim's card



Technologies

