



## **STUDY OF SMART PAYMENT WALLET CARD USING LOW POWER**

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### **ABSTRACT**

Our paper aim is to design a reprogrammable smart payment card that replaces all other cards in the wallet constructed using an ultra low power e-paper display, capacitive touch sensor, NFC, and bluetooth communication. All-in-one electronic digital transaction card replacing the present multi card scenario is evolutionary for the most part of human history. In the olden days, people typically used wallets or purses to carry their possessions, particularly the currency notes. But today the technology forced us to replace currency notes with various payment cards. Hence the wallets have grown in size not because of the amount of cash, but because of the amount of cards we have to possess. In fact, an average person carries around at least 4 to 18 plastic cards in their wallets, including credit and debit cards, driving licenses, national insurance, store cards, membership cards and other identification cards. This indirectly increases the usage of plastic, which is harmful to the environment.

**Key words:** Card, Digital, Pay card, Wallet.

### **INTRODUCTION**

Technology that is able to integrate the components into one safe, convenient, and wearable pass is an attractive modern setup. Such a technology is required to customize, and unify this information into a convenient and secure system. Since all of a user's accounts are stored in a single device, the act of carrying around copious amounts of smart cards becomes obsolete. The following prototype has three main elements: the wearable technology, a smart reader, and a web-based phone application. The wearable technology is the access point for the user, the readers retrieve the required information, while the application allows the user to modify the information they wish to store. NFC Wallet is ubiquitous; the software is web-enabled so that the user can control it using smart phones, tablets, laptops and other computing devices. The system provides a true pervasive computing experience.

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## Literature survey

### Near field communication

William Lumpkins and Martine Joyce (2015) surveyed as follows in their paper. The exchanging of goods for a recognized symbol of value called currency has occurred on our planet for tens of thousands of years. The concept has stayed the same: an object represents a set value that is exchanged for goods and services. The object is then reused for other goods and services, with the object's value set by the local or international level of a group of individuals, which sets the value through a complex set of value or trust factors. At one time, precious metals were used, like gold and silver, and then we progressed, first to paper money, specialized paper notes issued by a regulatory body; then checks, paper notes that reference a local bank; and credit cards, plastic cards with identifiers that represent banks or credit-instituting institutions as well as the individual borrower of the credit. The inherent problem still existed that the paper money, credit card were lost, stolen, or copied, the individual would lose the value, or net worth. In this paper, we propose a wallet design such applications.



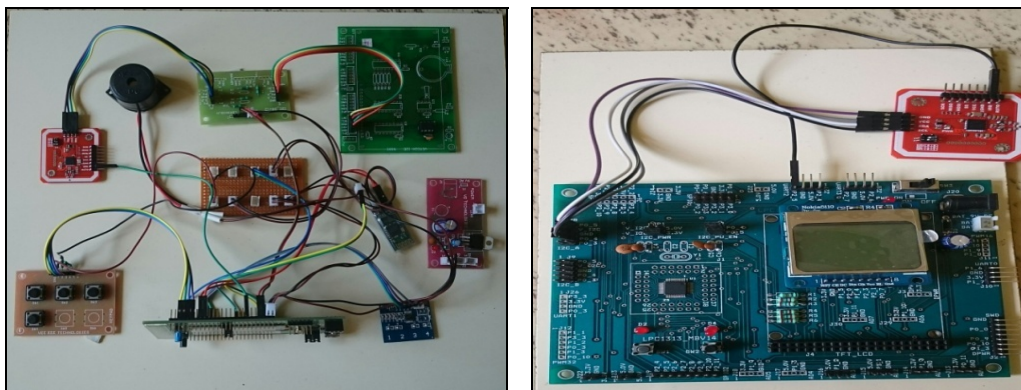
**Fig. 1: Near field communication diagram**

### Proposed system

NFC Wallet is a ubiquitous and secure system that enables the use of a single customizable and wearable device to replace traditional smart cards. This paper work introduces the NFC and wireless technology<sup>13</sup> in general and the specifics that are supported on Nokia devices. This document is intended for developers who are new to NFC and are planning to develop applications for Nokia devices using the Qt/Symbian/Java APIs. NFC stands for near field communication. It is a short-range radio technology that enables communication between devices that either touch or are momentarily held close together.

## RESULTS AND DISCUSSION

The Transmitter and receiver prototype model is shown in the Fig. 6. In this the figures of transmitter and receiver are exhibits the system. The transformer it gives 12v AC and then we are giving to the rectifier AC it convert 12v AC to 12v DC after that capacitor for the filter the noise. 7805 it convert 12v DC to 5v DC Full set up will work under the 5v DC. This Receiver helps us to get the output from zigbee which is transmitted from transmitter to the receiver.



**Fig. 2: Transmitter and receiver block diagram**

## CONCLUSION

NFC Wallet is a ubiquitous and secure system that enables the use of a single customizable and wearable device to replace traditional smart cards. The proposed system is of three main parts, namely, a wearable device, a control (web-enabled phone application and a server), and a reader hardware device. This paper presented the organization, architecture, hardware/software interface design, programming application, evaluation and analysis of the proposed system. The presented system enjoys several characteristics including its convenient use, secrecy, robustness, reliability, scalability, to name a few. Future work includes supporting credit card payments and smart locks for safe boxes in banks. Furthermore, the system may be modified to make even the wearable technology obsolete by integrating the UID into the NFC capability of the phone.

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