

## Red-Tacton HAN Based ATM Machine Control System

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**Abstract:** In this 21<sup>st</sup> century we are searching for the technology which gives us better security and highest protection. We expect technology that should be genuine this need is satisfied by growing most genuine and new technology invented in 2005 called as 'HAN based RED-TACTON' by NTT's, which is Japanese corporation. This technology is similar to LAN, MAN, WAN, HAN is nothing but human area network and these is advanced to WLAN, infrared and Bluetooth. This technology mainly used in security matters like access the things, lock or unlock the things which are we use daily. Out of many applications we chose ATM machine control using HAN based RED-TACTON technology. . This project develops a method to access the ATM card using human body part. In this technology, password of authentication is stored at transmitter side, same password is stored at ATM machine, if both password get math then only authentication will be done. After authentication user can able to do his/her transaction. If in any case user doesn't has account and still he/she trying to access the account, then message will be generated by system alerts banks, that some unauthorized person is trying to hack account. The authority will take proper action to prevent hacking.

**Keywords:** HAN (Human Area Network), RED-TACTON, Security, ATM, NTT.

### INTRODUCTION

In Human Area Network (HAN) technology, we use our body parts such as hands, arm, fingers, legs, and toes for data transmission path. The speed of this transmission is high nearly equal to 10 mbps, also it is safe. And this technology is completely different from infrared and wireless because it uses the minute electric field on surface of human body. Red is auspicious color for warmth in Japanese culture and action takes by triggering hence name to this technology is RED-TACTON. As per NTT, human body can act as perfect conductor to send electric data. RED-TACTON uses a conversion method in this digital data takes as low power digital pulse, and easily transmit through human body. RED-TACTON has based on principle that the properties of an electro-optic crystal can change as per change in weak electric field. NTT developed sensor called as 'Photonic electric field sensor' for detection of minute electric field on surface of body. Three main features of this technology are- i) Touch ii) Broadband Interactive iii) Any-Media.

**Touch:** Communication starts with touching or step. Human movement touching, gripping, walking can triggers for locking, unlocking or starting ,stopping purpose devices, or to get data

**Broadband and Interactive:** Communication is duplex as well as interactive. Very few chances of data loss in between middle, as speed is very high upto 10 mbps. Simultaneously many people can communicate with each other.

**Any Media:** In addition to human body we can also use dielectrics and conductors as transmission media. It works through shoes and clothing also, but within distance 10 cm

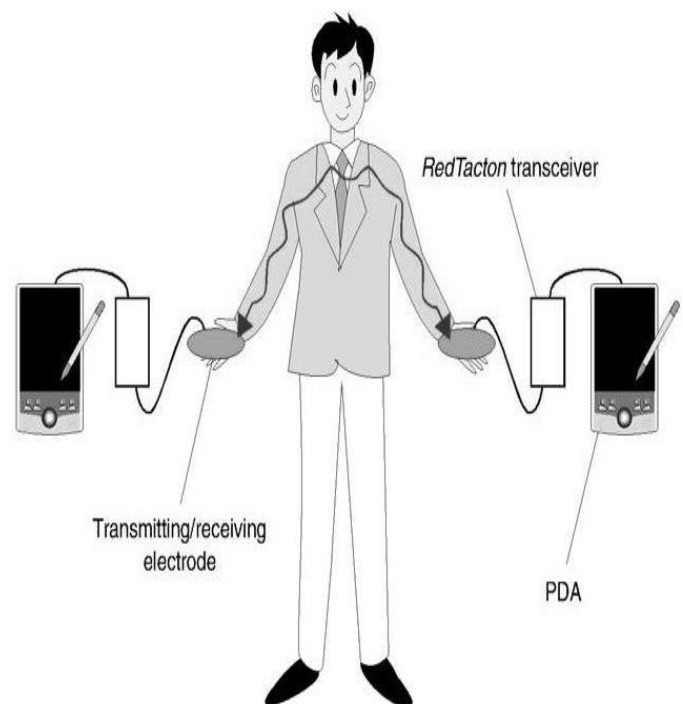


Fig.1: Mechanism of communication with Red-Tacton

**LITERATURE SURVEY**

1. An interference resilient, 60 kb/s–10 Mb/s body channel transceiver for body area network is proposed. The transceiver uses the human body as a signal transmission medium in the 30–120 MHz frequency range for energy-efficient and scalable data communication around the body. In the frequency range of BCC, the human body may operate as a receiving antenna and pick-up large interferences to the body channel RX, degrading its SIR to 22 dB.

2. The paper represents the HAN technology which can revolutionize next generation healthcare and entertainment applications. HAN brings out a new set of challenges in terms of scalability, energy efficiency, antenna design, QoS, coexistence, interference mitigation, and security and privacy to name a few, which are highlighted in this paper. We also discuss state-of-art technologies and standards which are relevant to HANs, as well as their merits and demerits. Developing a unifying BAN standard which addresses the core set of technical requirements is the quintessential step for unleashing the full potential of HANs.

1) The HAN TRANSMITTER consists of transmitter side circuit, which induces weak electric field on the human body surface and data sensing circuit which differentiate transmitting and receiving mode by detection of transmission and reception data. HAN TRANSMITTER acts as encoder in this case.

2) The HAN RECEIVER works as decoder .It senses changes in electric field on human body surface which is caused by HAN TRANSMITTER.

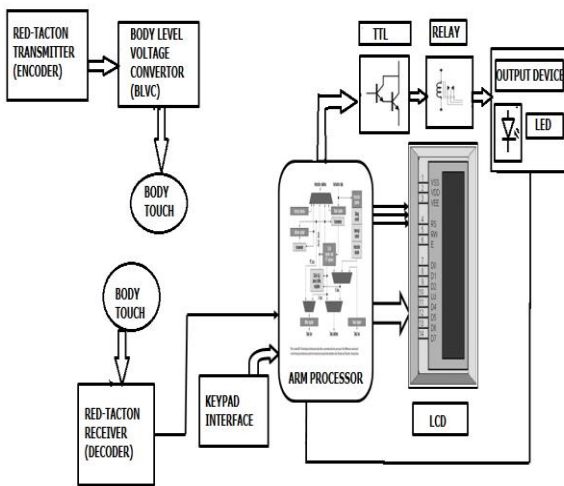
3] Authentication password is burned in transmitter same password is burned in receiver side. When authentication process starts, password from transmitter flows towards receiver, if both password matches, authentication will be successfully done.

4) After authenticating the HAN the microcontroller present in ARM LPC2148 helps the user to enter the three digit security pin through the keypad interfaced in the hardware shown in the figure.

5) If it successful entered then he can continue his transaction and complete his transaction successfully.

6) Here LED used for indication of authentication. When person will get authenticated green LED will be glow.

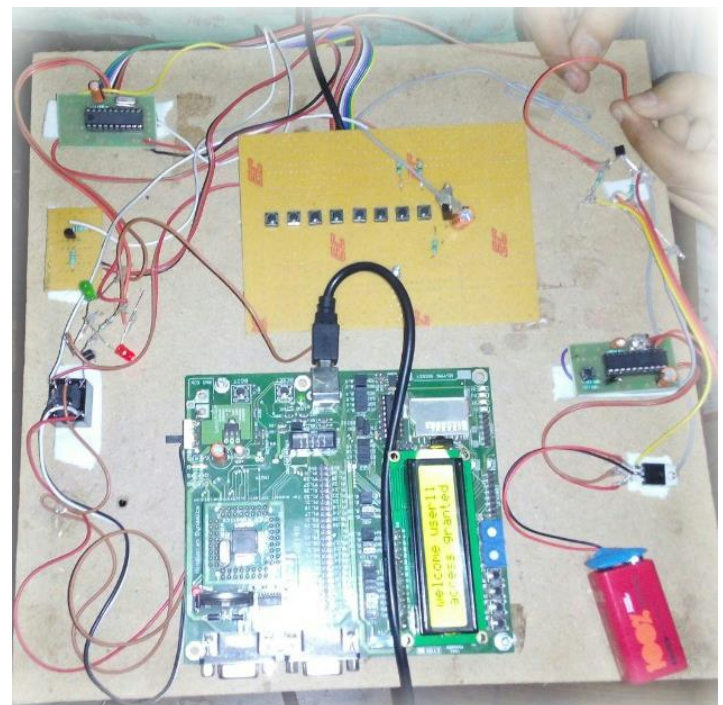
**PROPOSED METHODOLOGY**



**Fig2: Block diagram of system.**

As shown in figure, RED-TACTON consists following three major parts namely

- 1] HAN TRANSMITTER
- 2] HAN RECEIVER
- 3] HAN



**Fig3: Project Hardware**

## CONCLUSION

The proposed work “Red-Tacton HAN Based ATM Machine Control System” has been successfully implemented and tested and verified using the hardware results. It has been one of newest technologies in this world which can grow very vast in upcoming years as it uses the human body as communication interface to talk to the machines and also it provides high security and decreases theft rate in ATM's. There is no problem of hackers in the bank accounts as it uses human body for authentication which cannot be duplicated and produced by any one. Using these type of security we can use this in military, hospitality, defense areas etc.

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