

## Data Transfer via Human Body

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**Abstract--**In this paper we are providing a overview of recent researches on body as a communication media i.e. creating a 'HAN' network. We use different communication media in our daily life such as LAN, WAN, VAN, MAN, etc... So according to research the new concept is came into account as "RED TACTON" which makes the human body as a communication media. It mainly create HAN network. It proved a better communication for near field where transmitter and receiver are in close proximity. RED TACTON mainly makes the use of electric field generated by the person's body as medium for transmitting data. For making use of human body as transmission media we have to first study the concept of intrabody communication In which the human body characteristics (distance, resistance, the effect of ground plane to body channel Trans receiver and proper frequency range for intra body communication etc.) as signal transmission media are explained thoroughly

**Keywords-** Human body, data transmission, communication media, HAN, electric field

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### I. INTRODUCTION

We are familiar to the communications medias like LAN (local area network), VAN (virtual area network), MAN (metropolitan area network), WAN (wireless area network). This proposed system describes the model of Human area network technology that mainly enables the communication by touch. Here we can simply transfers a data by just touching the destination body. There are mainly disadvantages are there in communication through wired or wireless networks such as routing of cables, data collision, data lost, risks of security, risk of unwanted or unauthorized users etc. For solving such kind of problems a technology like use of human body as a signal path for transmission is introduced. Here human body mainly acts as a half duplex communication media.

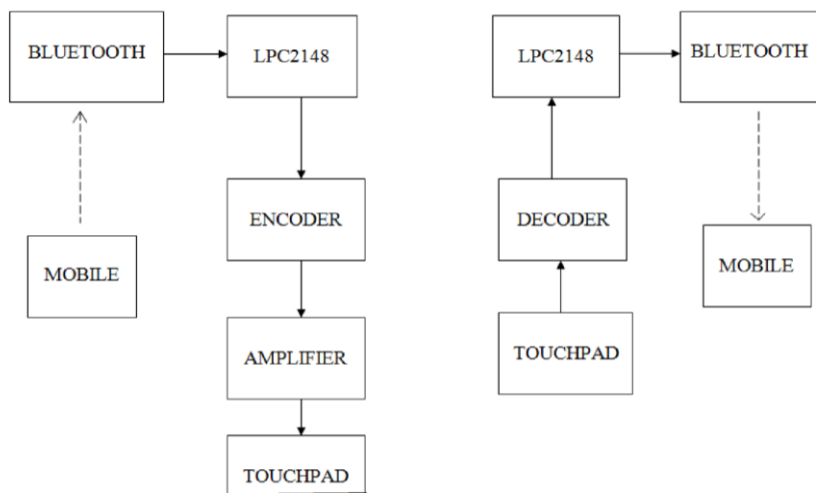
In this technology the signal path is created mainly when a particular person comes in contact with the device and communication between mobile terminals begins.

### II. INFORMATION ABOUT THE SYSTEM

The motto of our proposed system is to prove that human can be used as a communication media for data transfer On this level we are transferring messages through the body which will be received on the other side of the terminal which is in contact with the body.

- **Problem statement :** To use human area network for transmitting data(text messages) over a shorter distance with more efficient and cost effective communication components without an elimination of data.

### SYSTEM ARCHITECTURE



(1.1 basic block diagram)

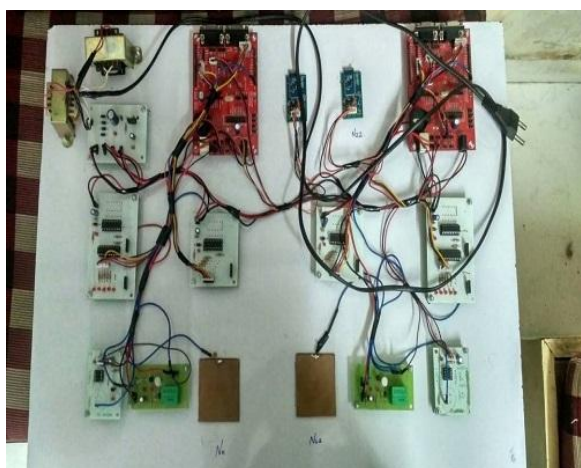
Here we can see there are two sections TX and RX having the same circuitry. There will be between mobile handset both the side for sending and receiving the data. The HC-05 modem receives the Bluetooth signals sends from mobile and it then to ARM7 processor. As we can see there is a LM358 amplifier ICs are there at both the sides just to amplify and regulate the data. After that the regulated data is send to the copper pad.

Now as we can see there is the same circuitry at the receiver side. Now as soon as the person touches the copper pad on both sides the circuit path get closed and current starts flowing through the body which is our data.

Here we know that body generates the electric field and

This electric field is chosen as a transmission media for data transfer.

By touching or adding 2-3 persons in between transmitting and receiving body one can easily creates the HAN network.



(1.2 our working module)

### III. HARDWARE USED

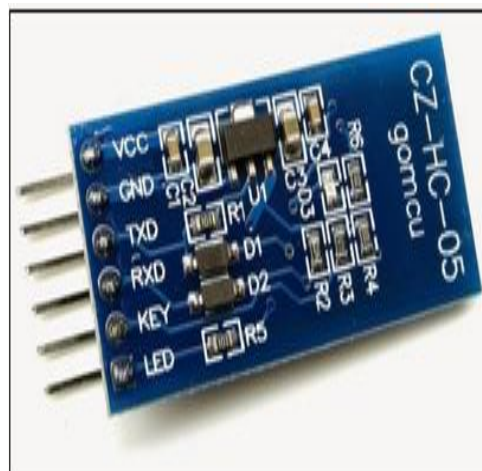
#### 1) Mobile device



Mobile device is required to develop an android application so that the communication between the two devices can be shown practically happening. Now a day android operating system is used in large scale so this system is chosen here. Android is the user friendly operating system which directly provides the graphical user interfaces inbuilt at the time of development and writing code and designing application.

Mobile device is connected to Bluetooth modem of the circuit can communicate with mobile.

#### 2) HC-05 modem



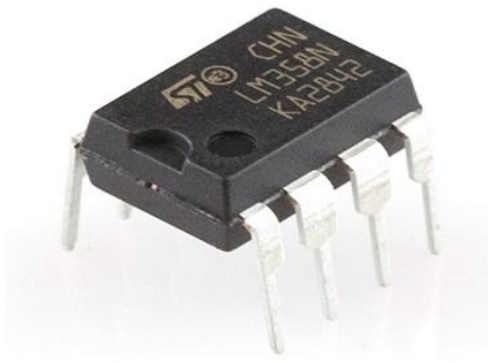
We use HC-05 Modem having rolling Network (RN) 42. It is a class 2 device. Its range is between 50 – 60 feet. Corresponding power consumption is reduced. It is used for short range, battery powered applications. It works on frequency 2.46 GHz. It supports multiple Bluetooth profiles like SPP and HID. It has simple UART hardware interface. It has low power sleep mode and works on 3.3 V. Programming languages for HC-05 is X-CTU/ Hyper Terminal.

#### 3) ARM7



It represents generation of ARM Processor design. Due to their tiny size and low power consumption these micro controllers are ideal for the application where miniaturization is the key requirement. It is general purpose 32 bit microprocessor with ISP or IAP. The LPC 2148 ARM-7 IC is used here. It is based on principle Reduced instruction set computer (RISC). This IC programmed to BT Modem and copper pad. Keil embedded C software is used for the programming.

4) LM358



It is an operational amplifier. It can operate over wide range of voltage

5) COPPER PAD



Copper Pads are used as conductor. This unit is nothing but the square block of copper. From this block the data will be transferred into the body and is received from the body.

#### IV. CONCLUSION

This project is under development and has great future scope.

#### REFERENCES

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