REDTACTON

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Abstract: *Redtacton* is *a new technology which is based on human area network that enables communication by touching. RedTacton was introduced by Nippon telegraph and telephone corporations (NTT). Which makes use of minute electic field emitted on surface of human body as a communication medium since human body provides safe and high speed data transmission path between user and device in close proximity. The chip which will be embedded in various devices contain transmitter and receiver built to send and accept data in digital format   Focusing on different ways of communication like wired or wireless in everyday life, the Redtacton is a technology which makes many things easier. In this we surveyed the RedTacton technology, working principle of RedTacton over human area network, application, etc.*

Key Words: Red-tacton Mechanism, Human Area Networking, Transceiver etc.

1. INTRODUCTION

Redtacton is a first technology that uses human body as a safe and high data transmission media. it was introduced by Nippon Telegraph and telephone carporation.The name is chooses as RedTacton because tacton means action triggered on touching that is when the user touches the redtacton transreceiver his data will be transmitted   and Red is auspicious color of warm according to Japanese culture **.**

Red Tacton is an electronic future where information can be accessible whenever and wherever needed at our finger tips. RedTacton is a new Human Area Networking technology which was introduced by Nippon telegraph and Telephone Corporation (NTT's) that uses the human body surface is a high speed and safe network transmission path. TACTON-meaning "action triggered by touching" and RED - It is an auspicious color according to for warmth. RedTacton   is a Break-through technology that enables reliable high-speed HAN for the first time. In the past, Before Redtacton other technologies have been developed like Bluetooth, RFID to solve the "last meter" connectivity problem. But, those technologies each have various fundamental technical limitations, such as the precipitous fall-off in transmission speed due to Multi-user environment.

What is RedTacton?

RedTacton Technology was introduced by Nippon Telegraph and Telephone Corporation (NTT). It is a technology that uses the surface of the human body as a protected, high speed transmission media. The study of Human Area Networking i.) RedTacton uses the minute electric field emitted on the surface of the human body through which the data is transmitted. It is completely different from wireless and infrared. ii.) A transmission path is formed when human body which comes in contact with a RedTacton transceiver. When there is no contact between human body and transceiver, the communication will stop. iii.) Using RedTacton, communication starts when terminals carried by the user are linked in several combinations according to the user's physical movements like walking. iv.) In this technology communication is possible using any body surfaces, such as the hands, fingers, feet, face, legs, skin or torso. Even through the shoes and clothing the RedTacton can work.

2. LITERATURE REVIEW-

Redtacton is a device based on human area networking technology which makes the transmission of data secured Here in this literature survey we have studied about some papers, given as below

R. Ramesh-this paper gives basic concept of the Redtacton and also how the Redtacton is different from other technology like infrared communication, Blutooth and RFID .This technology have their fundamental technical limitations that constrain their usage in different application, such as precipitous fall off in transmission speed in multiuser environment producing network congestion

Rahul shirhate,Vishal Mogal RMD sinhgad school of engineering Pune-According to this paper, the red tacton works on IEEE802.3 standard to have a data rate of up to 10mbps.In digital communication data transmission a common need of every individual to communicate their devices with nearby devices hence for effective transmission data rate is important constrain in communication.

Akash D. Patel, Muhib A. Lambay, Muneer R. Ahmed-This paper gives the information about origin of Redtacton. According to this paper, the concept of communication through human body was primarily proposed by IBM in

1996 .The data transfer takes place through small minute electric field, but the speed with which the data travel was at speed of 40bps. This was major drawback. Hence later on in year 2005, a company named Nippon Telegraph and Telephone Corporation discarded the limitation by using electric field sensor.

3. PROPOSED SYSTEM-

In this paper we are proposing a device which is based on HAN technology. The key point of the device is intrabody communication. Communication is possible through any part of body i.e. Legs, hands, feed, trunk, fingers.

WORKING-

Redtacton induces weak electric field on human body. As present in other technology Redtacton also uses transmitter and receiver circuitry for communication. The block diagram of redtacton transceiver is shown in below fig. which is embedded in environment for reception of data and again the data is transmitted through wifi module to cloud for backup.
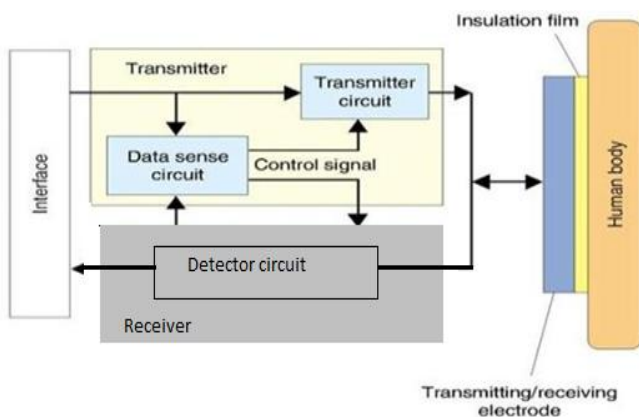
BLOCK DIAGRAM-

RedTacton Transceiver:

Fig.1 Block diagram of RedTacton Transceiver

Transmitter block-

As shown in above figure Transmitter block consist of transmitter circuit that emits electric field towards the body and a data sense circuit, which select transmitting or receiving modes by detecting both transmission and reception data and outputs control signals according to the two modes to allow communication between human body and transceiver. The signal from interface is Passed to the data sense circuit and transmitter circuit both are used to keep record of transmission & reception by detecting input data sense circuit senses the signal coming from interface and if the data is present it sends control signal to the transmitter

Receiver Block-

The receiver circuit consist of a detector circuit which detect the change in electric field caused by transmitter .The output of the detector is passed to the interface of the receiving Redtacton device. Implementation of receive-first half-duplex communication avoids the possibility of packet collision. It sends data only when there is no data to receive. RedTacton takes advantage of electric field that surrounds the human body.

Transmission steps-

RedTacton takes a different technical approach. Instead of depending on electromagnetic waves or light waves to carry the data. RedTacton uses weak electric fields on the surface of the human body as a transmission medium.

i.) The RedTacton transmitter emits a weak electric field on the surface of the body of the user.

ii.) The RedTacton receiver senses changes in the weak electric field on the surface of the body with the help of detector circuit caused by the transmitter.

iii.) The changes are nothing but the data which is transmitted by transmitter through electric field around surface of human body. The detector circuit detects the data and converts the result into an electrical signal.

4. APPLICATION-

Redtacton can be used in different applications for secure data transmission in different fields. Some applications of Redtacton are given as below.

A. One–To–One Services:

1]. An Alarm

Red Tacton devices can be embedded on medicine bottles to transmit information on the medicines attributes. If the user touches the wrong medicine, an alarm will trigger on the terminal he is carrying because the information is stored in transmitter chip, hence if the touches the wrong medicine it will be detected [1, 2].

2]. Touch Advertising

When a consumer or customer stands in front of an advertising board and information matching his or her attributes is automatically displayed. By touching or standing in front of items, consumers can get more information about the item.

3]. Intuitive Operation:

In intuitive operation, Instant private data or personal profile data can be exchanged by shaking hands between

mobile terminals on the users like Electronic exchange of business cards just by shaking the hands. Information can be kept private using authentication and encryption techniques.

4]. Personalization:

Under personalization the Redtacton can be used as.

A. Personalization of Automobiles-

The seat position and steering wheel height can be adjusted to match the driver height just by sitting in the car.

5]. Security Applications:

Red Tacton is very secure in authenticity, authorization and verification such as.

A. User verification and unlocking-

A touch can be done by carrying a mobile Red Tacton capable device in one's pocket and red tacton receiver is embedded on a locked door when the ID is verified the door will be unlocked when the user holds the doorknob normally.

B. Automatic access log-

There is also a facility to automatic access log for private document storage. This access logs contain data base information in the form of log files.

5. RESULTS AND DISCUSSION-

RedTacton is a new technology for human area networking. We have designed a transceiver that uses the human body as a data transmission medium based on an electric-field. Module and output of the redtacton shown below.
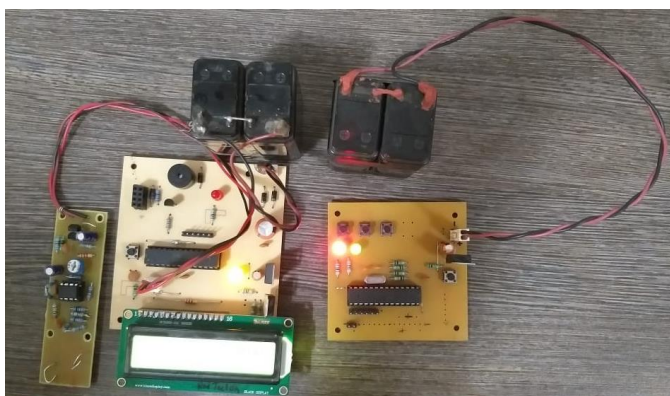

Fig.2 REDTACTON Module

Fig 2 shows the interfacing of Redtacton and LCD display This shows the content of user which is programmed in microcontroller.
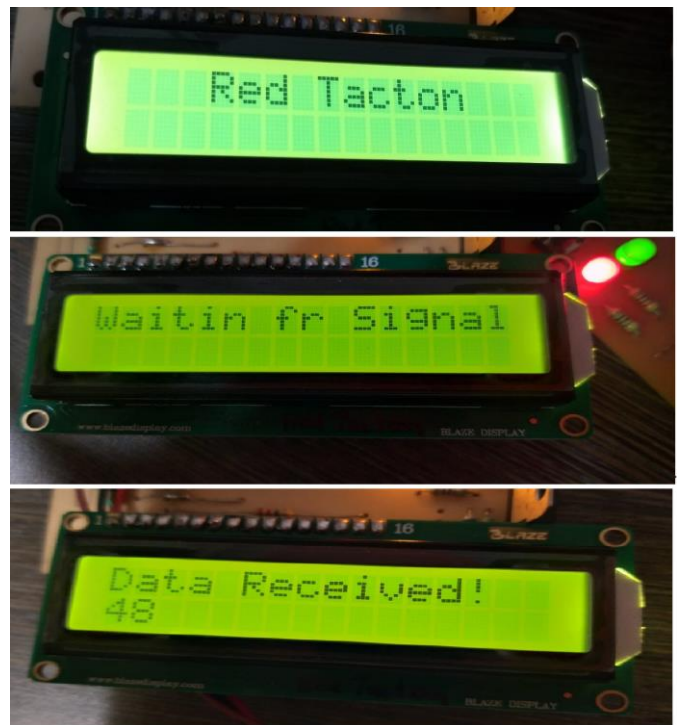

Fig. 3 Output on LCD display.

Above fig.3 shows output on LCD display. When we turn ON the module, it will simply display the name of the module. Unless and until the user transmits the data to Redtacton module, it displays a message that is 'Waiting for signal'. And when the user touches the receiver it displays user information which is stored in transmitter chip.

CONCLUSION-

In this paper we have designed and developed Red tacton. This system is based on Human Area Networking. Where we have developed a transceiver that uses the human body as a data transmission medium. The transceiver takes the data from human body and sends it to the cloud for storage. We conclude that, when we compare Red Tacton with other technology present today it can give a better performance than other technology. Also to connect the network within short distances Red Tacton is best. In this technology, there is no problem of breach of security by third-party intruders since human body is itself a media.

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