

RedTacton

RedTacton is a Human Area Networking technology, which is under development, that uses the surface of the [human body](#) as a safe, high speed network transmission path. It is completely distinct from [wireless](#) and [infrared](#) technologies as it uses the minute electric field emitted on the surface of the human body.

A transmission path is formed at the moment a part of the human body comes in contact with a RedTacton transceiver. Communication is possible using any body surfaces, such as the hands, fingers, arms, feet, face, legs or torso. RedTacton works through shoes and clothing as well. When the physical contact gets separated, the communication is ended.

Using RedTacton-enabled devices, music from a [digital audio player](#) in your pocket would pass through your clothing and shoot over your body to [headphones](#) in your ears. Instead of fiddling around with a cable to connect your [digital camera](#) to your computer, you could transfer pictures just by touching the PC while the camera is around your neck. And since data can pass from one body to another, you could also exchange electronic [business cards](#) by shaking hands, trade music files by dancing cheek to cheek, or swap [phone numbers](#) just by [kissing](#).

Features

RedTacton has three main functional features:

- Touch - Touching, gripping, sitting, walking, stepping and other human movements can be the triggers for unlocking or locking, starting or stopping equipment, or obtaining data.
- Broadband and Interactive - Duplex, interactive communication is possible at a maximum speed of 10Mbps. Because the transmission path is on the surface of the body, transmission speed does not deteriorate in congested areas where many people are communicating at the same time.
- Any media - In addition to the human body, various conductors and dielectrics can be used as transmission media. Conductors and dielectrics may also be used in combination.

Comparison with other network technologies

The focus on ubiquitous service has brought about the shortening of distances in communication. RedTacton is positioned as the last 1m solution to ultimate close-range communication. Wireless communication creates connections when signals arrive, allowing for easy connections because connectors are unnecessary. However, seen from another aspect, the arriving signals can be intercepted, so security becomes an issue. Wired communication transmits data between two connection points, so interception is difficult and security can be considered to be high. However, connectors and cables are a nuisance. Taking the above points in account, RedTacton is situated directly between wireless and wired communication.

ABSTRACT:-

Technology is making many things easier; I can say that our concept is standing example for that. So far we have seen LAN, MAN, WAN, INTERNET & many more but here is new concept of “ RED TACTON ” which makes the human body as a communication network by name HAN (Human Area Network).

NTT lab from Japan is currently testing & developing this revolutionary technology .RedTacton is a new Human Area networking technology that uses the surface of the human body as a safe, high speed network transmission path. Red Tacton uses the minute electric field generated by human body as medium for transmitting the data. The chips which will be embedded in various devices contain transmitter and receiver built to send and accept data in digital format.

REDTACTON:-

Red Tacton is a new Human Area Networking technology that uses the surface of the human body as a safe, high speed network transmission path. Red Tacton uses the minute electric field emitted on the surface of the human body. Technically, it is completely distinct from wireless and infrared .A transmission path is formed at the moment a part of the human body comes in contact with a Red Tacton transceiver. Physically separating ends the contact and thus ends communication Using Red Tacton, communication starts when terminals carried by the user or embedded in devices are linked in various combinations according to the user's Communication is possible using any body surfaces, such as the hands, fingers, arms, feet, face, legs or torso. Red Tacton works natural, physical movements.

Working principle :-

Using a new super-sensitive photonic electric field sensor, Red Tacton can achieve duplex communication over the human body at a maximum speed of 10 mbps The Red Tacton transmitter induces a weak electric field on the surface of the body. The Red Tacton receiver senses changes in the weak electric field on the surface of the body caused by the transmitter .Red tacton relies upon the principle that the optical properties of an electro-optic crystal can vary according to the changes of a weak electric field. Red Tacton detects changes in the optical properties of an electro-optic crystal using a laser and converts the result to an electrical signal in a optical receiver circuit. The transmitter sends data by inducing fluctuations in the minute electric field on the surface of the human body. Data is received using a photonic electric field sensor that combines an electro-optic crystal and a laser light to detect fluctuations in the minute electric field.

The naturally occurring electric field induced on the surface of the human body dissipates into the earth. Therefore, this electric field is exceptionally faint and unstable. The photonic electric field sensor developed by NTT enables weak electric fields to be measured by detecting changes in the optical properties of an electro-optic crystal with a laser beam.

FEATURES:-

1. TOUCH:-

Touching, gripping, sitting, walking, stepping and other human movements can be the triggers for unlocking or locking, starting or stopping equipment, or obtaining data. using Red Tacton, communication starts when terminals carried by the user or embedded in devices are linked in various combinations through physical contact according to the human's natural movements.

2.BROADBAND & INTERACTIVE

Duplex, interactive communication is possible at a maximum speed of 10Mbps. Because the transmission path is on the surface of the body, transmission speed does not deteriorate in congested areas where many people are communicating at the same time .Taking advantage of this speed, device drivers can be downloaded instantly and execute programs can be sent.

3.ANY MEDIA

In addition to the human body, various conductors and dielectrics can be used as transmission media. Conductors and dielectrics may also be used in combination.

DI ELETRICS

(Signals pass through materials)

CONDUCTORS

(Signals travel along surface)

A communication environment can be created easily and at low-cost by using items close at hand, such as desks, walls, and metal objects. But there is one limitation on the length of the conductor to be propagated, on installation locations, and on the thickness of the dielectric to be passed through.

Application fields

Many application using Red Tacton are introduced. Some are:

- **An alarm sound automatically to avoid accidental medicine ingestion: -Red tacton devices embedded medicine bottles transmit information on the medicines' attributes. If the user touches the wrong medicine, an alarm will trigger on the terminal he is carrying. The alarm sounds only if the user actually touches the medicine bottle, reducing false alarms common with passive wireless ID tags, which can trigger simply by proximity.**

- **Touch advertising and receive information:** - When a consumer stands in front of an advertising panel, advertising and information matching his or her attributes is automatically displayed. By touching or standing in front of items they are interested in, consumers can get more in-depth information.
- **Touch a printer to print:** -Print out where you want just by touching the desired printer with one hand and a PC or digital camera with the other hand to make the link. Complicated configurations are reduced by downloading device drivers "at first touch".
- **Instantaneous private network via personal handshake:** -By shaking hands, personal profile data can be exchanged between mobile terminals on the users. (Electronic exchange of business cards) Communication can be kept private using authentication and encryption technologies
- **Just touching a phone makes it your own:** -Your own phone number is allocated and billing commences. Automatic importing of personal address book and call history.
- **Just sitting on the seat triggers the car to load all its presets, just the way you like:** -The seat position and steering wheel height adjust to match the driver just by sitting in the car. The driver's home is set as the destination in the car navigation system. The stereo plays the driver's favorite song...
- **Connect to the network just by putting a laptop on the table:** -An electrically conductive sheet is embedded in the table. A network connection is initiated simply by placing a lap-top on the table. Using different sheet patterns enables segmentation of the table into subnets.
- **Wireless headset:** -Red Tacton can carry music or video between headsets, mobile devices, mobile phones, etc. Users can listen to music from a Red Tacton player simply by putting on a headset or holding a viewer.
- **User verification and unlocking with just a touch:** -Carrying a mobile RedTacton-capable device in one's pocket, ID is verified and the door unlocked when the user holds the doorknob normally. Secure lock administration is possible by combining personal verification tools such as fingerprint ID or other biometric in the mobile terminal.

System safety:-

- **No current flowing into the human body from redtacton devices:** -RedTacton uses the electric field that occurs naturally on the surface of the human body for communication. Transmitter and receiver electrodes are covered with an insulating films. No current flows into the body from the RedTacton transceiver.
- **Displacement current occurring in the body is small enough:** -There is no current flowing from the RedTacton transceiver; however, the body indirectly receives a minute electric field. This causes electrons already present inside the body to move, creating a minute displacement current. This displacement current is similar to those occurring in everyday life.

