# Sparsh – Touch To Transfer

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***Abstract-*** *Technologies enabling communication between people and devices are required for all modern user friendly gadgets. This paper demonstrates a design and implementation of how data can be transferred using Human Area Network technology that enables communication through human contact. Use of cable is not very much convenient as it can get tangled and is difficult to manage when used. When radio signal which are weak is used for the communication, data speeds gets reduced by packet collision in crowded places, such as site of exhibition. There are also various security risk from unwanted signals. For solving such problems this concept uses body of a human for communication as signal path. A transmission path is formed by the human body for data transmission. This concept will make transmission more efficient and secure and will reduce reliability on other communication channels.*

***Keywords***- Human Area Network (HAN).

## I. INTRODUCTION

In today's fast moving world everybody is in a rush to do things as quick as possible, let it be anything like reaching to a destination or getting work done. To get any operation done fast, there is a need to transfer data as fast as possible. There are many ways in which data can be transferred from source to destination. For eg- Pen-drive, Cables ,etc but carrying pen-drive leads to takeing care of it, as it has sensitive data which if lost can lead to great consequences. Also if cables are used there is possibility that they may get tangled. All these problem leads to great frustration for the user.

Thus Sparsh comes into existence. It uses the concept of Human Area Network (HAN).The user just needs to place the hand, one on the source and other at the destination and the data gets transferred through Human Body. The data is transferred in form of electrical impulses from one computer to other via Human Body through the use of Sparsh.

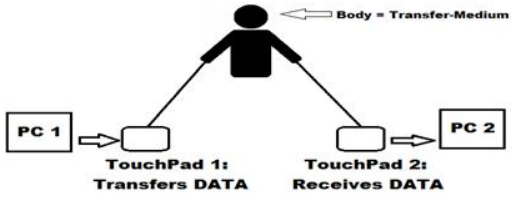


Fig : Block Diagram

## II. PROBLEM STATEMENT

Drawbacks of current approaches:

There are many exciting technologies such as Wi-Fi, Bluetooth, and Infrared etc. This technology can transfer data at very good speed. But all this technologies have their own drawback such as limited line of sight, excessive power consumption, possibility of signal interception during transmission, low throughput etc.

Our solution to above problem :

Since secure transfer of data is very important in data transmission, there can nothing be more secure than your body itself .As also human body is a good conductor of electricity thus data can be transferred through human body in form of electrical signals with the help of Sparsh.
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## III. WORKING

Sparsh consist of two circuits which are attached to copper pads. The components used in the circuit are basic electrical components which just regulates proper flow of electric signal from one place to other, it also comprises of voltage regulator and step-down transformer which maintains 5v current throughout the circuit as human body can safely transfer this amount of current. One circuit is connected to the sender with the help of USB-TTL and another circuit at receiver side. Sparsh software needs to be installed on both the system. Sparsh software consist of a user-friendly GUI which consist of drop down box for selecting COM-PORT (for USB connection) and a text box to enter data. The sender first selects the COM-PORT number and then establishes the connection by clicking on the start button , same is to be done at the receiver end. The sender then enters the text or selects a file that the user wants to transfer, and places both the hands

on copper pads simultaneously. The data gets transferred through the human body and is received on the receiver side.


FIG : GUI for Sparsh

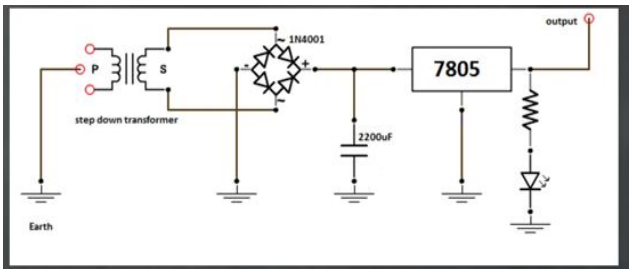


FIG: Transmitter Circuit

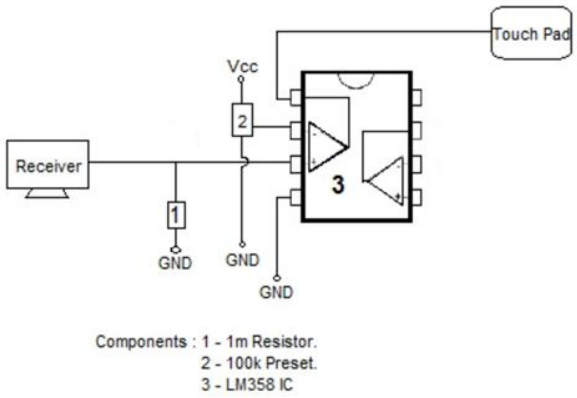


FIG : Receiver Circuit

## IV. FEASIBILITY STUDY

**Feasibility Study**

A feasibility study, also known as feasibility analysis, is an analysis of the viability of an idea. It describes a preliminary study undertaken to determine and document a project's viability. The results of this analysis are used in making the decision whether to proceed with the project or not.

A - Technical Feasibility

The components used in Sparsh are basic electronic components such as IC, resistors etc. Also each of components are technically feasible. In Sparsh these components are integrated in order to prepare a hardware that helps in transfer of data through human body. Thus, it is concluded that Sparsh is technically feasible.

B - Operational Feasibility

Operational feasibility is the measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development. The operation involved in this project is transfer of data via human body. There is a need for a conducting device to pass the signal through the human body. As copper is one good conducting material of electricity, the project Sparsh uses the copper pads for conductivity. Thus, it is concluded that Sparsh is operationally feasible.

C - Economic Feasibility

Economic feasibility is to demonstrate the net benefit of a proposed project for accepting or disbursing electronic funds/benefits, taking into consideration the benefits and costs to the agency, other state agencies, and the general public as a whole. The only requirement of the project are various electronic components for making of the hardware. The components used are led's, step down transformer IC LM 358 etc .These components are easily available and also at low and affordable prices. Thus, it is observed that Sparsh is economically feasible.

## V. APPLICATION

1. Transferring very private data from one device to another in secure way.
2. For military purposes to transfer confidential data.
3. Transferring data in nearby places very securely.
4. At location where internet or wifi is not available.

## VI. CONCLUSION

The Sparsh system will establish a secure connection between two systems using human body as connecting medium. The project aims at achieving optimum results of data transfer at a really high speed. It also provides better

security for communication between two systems. Hence, concluded that the project Sparsh can be beneficial for transferring the data with the help of human body which is available as and when required rather than carrying cables, pen-drive, etc also it provides security as human body is the most secure medium.

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