COMMUNICATION THROUGH HELMET

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Abstract. The Project aims at developing medium of wireless communication between two stations, the communication being made secure by encryption and frequency hopping. Wireless communication is one of the most active area of technology development of our time. This development being driven primarily by the transformation of what has been largely a medium for supporting voice telephony into a medium for supporting other services. The demand for new wireless capacity is growing at very rapid space. Although there are of course still a great many technical problems to be solved in wireline communications demands for new wireless for additional wireline capacity can be fulfilled largely with the addition of new private infrastructure such as additional optical fiber, routers, switches and so on. This project provides voice signal to the administrator. This is carried out by exchanging the information between the user transceiver module.

IndexTerms – **Microphone, Speaker, Transmitter, Receiver, Antenna, Battery.**

I. INTRODUCTION

The Project aims to establish two way communication i.e. Full-duplex wireless communication between two stations. The issue of security of the communication is addressed by encryption and frequency hopping. Specifically, we look at voice transmission wherein the voice signal is sample data reasonable rate and the quantized samples are transmitted in digital format. At the receiver end, the signal is reconstructed from the sample Voice transmission over a wireless channel is an important challenge in view of the high data rate required. Wireless transfer of ordinary data, in general, does not require a high bit rate and may be achieved easily. Real-time voice transmission, on the other hand, that the rate at which bits are being generated, be equal to the rate at which they are being transmitted. Unless speech coding algorithms are used, a data rate of 32kilobits/sec or 4kilobytes/sec is a reasonable requirement.

I. LAYOUT OF PAPER

The paper has been divided into following parts viz, Introduction, Layout of paper Existing system, Proposed system Architecture , Algorithms and Technologies, Acknowledgement ,conclusion and References

II. EXISTING SYSTEM

The Existing system provides certain solutions which provide efficiency till a certain amount. At certain scenarios these systems may fail to Established instant call. The existing system provides solutions in the form of call send, call received, etc. These systems may not provide efficient solution. So in order to instant call Establish scenario we are proposing a Frequency Modulation system.

III. Proposed system

Time plays a very critical role while driving a racing car, If the racing car driver could not able to tell some problems while driving a car on time, they may faced Accidental problems. The Proposed system is a to established instant communication between driver and admin/member. It involves the following components/modules which are described in the Architecture diagram.

3.1 Proposed System Architecture
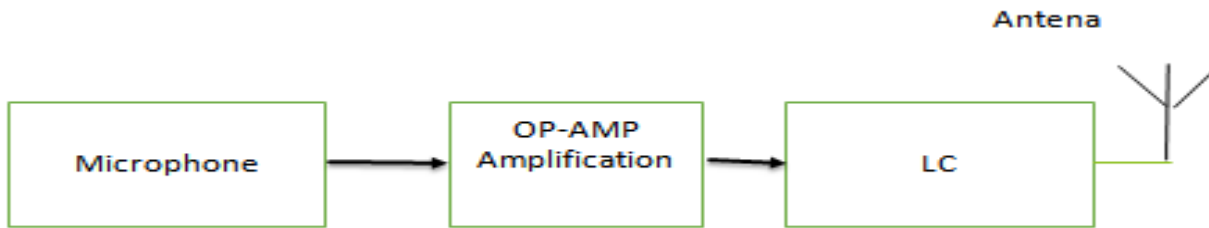
I)   **Transmitter**
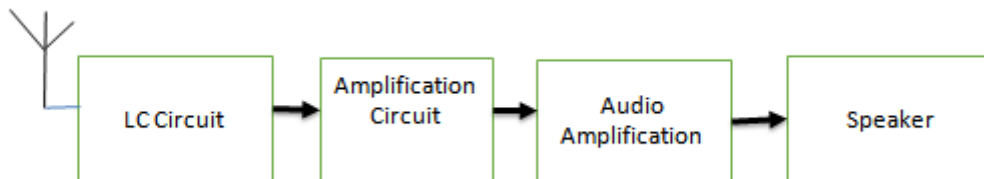
I)   Receiver

A)   The block diagram has been divided into two parts. one is transmitter part and another is receiver part. We should transfer analog voice signal through transmitter. From transmitter side whatever we speak through microphone first it will be amplified by using transistor.

B)   Once signal amplified it will passed to LC oscillation circuit. Generally LC circuit generates a particular frequency. In our system we will used two LC circuit for long distance range. As we increases the LC circuit it will be increased the range of Frequency.

C)   Total three LC circuit has been used. Last one LC circuit for frequency transmition purpose. Antenna should be connected to last LC circuit.

D)   There will be total three trimmer used for frequency tunning purpose.

3.2 V. Technologies and Algorithm Used
i. Full duplex modulation

Frequency modulation uses the information signal, Vm (t) to vary the carrier frequency within some small range about its original value.

3.2.1 Equation

$$\text{FM: } V_{FM}(t) = v_{co} \sin\left(2p[f_c + (D_f/V_{mo})V_m(t)]\, t + f\right)$$

3.3 Mathematical Model

3.3.1 System Description:
        Process1: Wear Helmet.
        Process2: Turn on input switch.
        Process3: Analog/sound signal is transmitted.
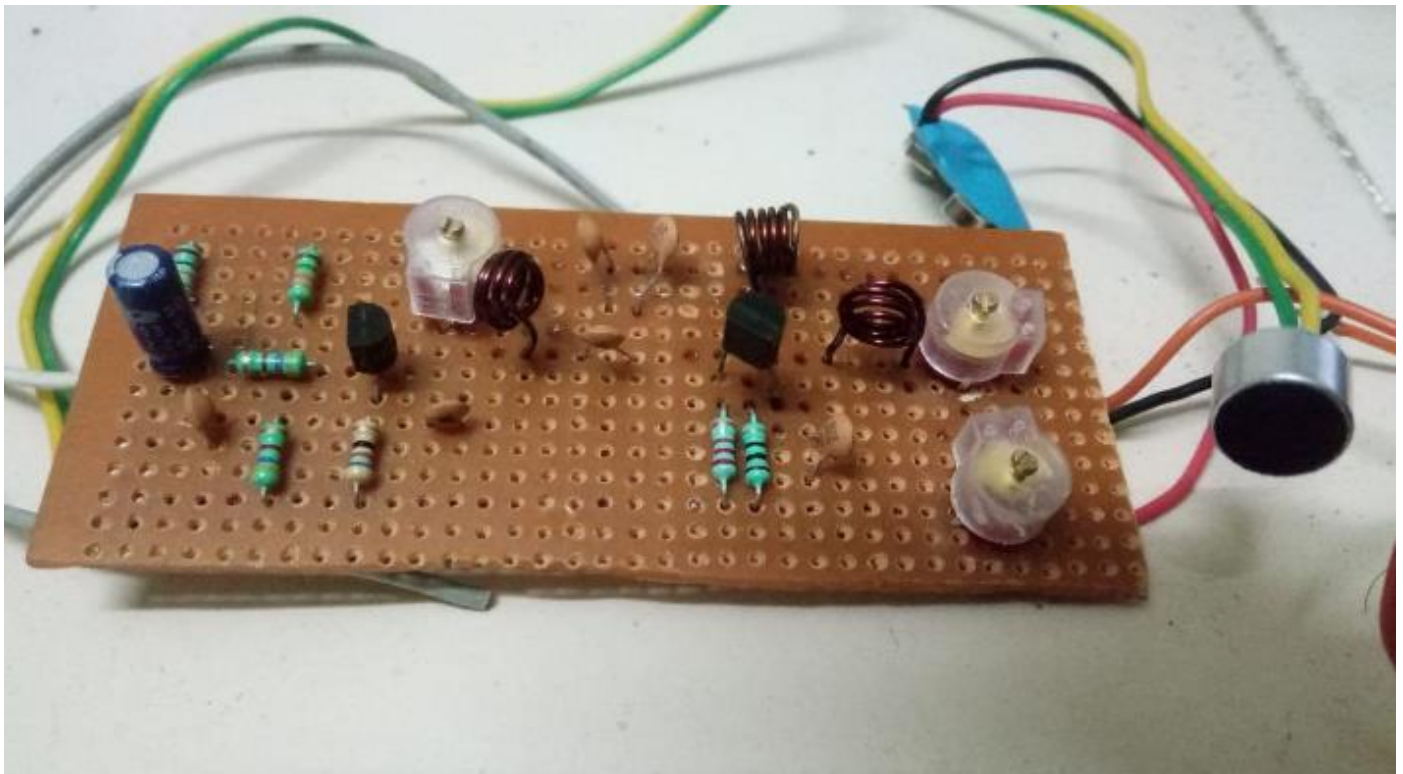   Process4: turn on switch at receiver side.

Output:
        To Receive the original signal

3.3.2 Equation

$$\text{FM: } V_{FM}(t) = v_{co} \sin\left(2p[f_c + (D_f/V_{mo})V_m(t)]\, t + f\right)$$

Result Discussion

IV. ACKNOWLEDGMENT

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