

## **DTMF controlled Live Human Being and landmine Detecting Robot**

The aim of this project is to design robot which is capable of receiving a set of command instructions in the form of DTMF tones and performs the necessary actions. Here DTMF stands for “Dual tone multiple frequency”. And also to detect the human being by using sensors that detects the presence of the human being and indicates the user. This can be used to detect terrorists/thief inside the building. Also, the robot is capable of finding landmines and alerting the user through buzzer

The objective of this project is fulfilled by employing a DTMF mobile, a microcontroller, few DC motors for direction control, and an interfacing between the different modules of the project and the controller.

The project makes use of a microcontroller which acts as a central controlling unit. This module is capable of communicating with the input and the output modules. The controller makes use of a PIR based input sensor to sense the human being and give us an alert indication through a buzzer that alerts the presence of humans. We also make use of a mobile phone, which is used to control the robot. Also, the Microcontroller continuously checks for landmines in its presence and alerts the user through buzzer, if present. The output module is formed by the motors used for controlling the direction of the motor i.e. the forward and backward movement of the robot. The Microcontroller is programmed using Embedded C language.

### **The main objectives of this project are:**

1. Design of real time robot.
2. Mobile phone control of robot directions and movement.
3. Real time human detection.
4. Land mines detection
5. Buzzer alerts.

**The learning's provided by the project are:**

1. Characteristics of PIR sensor.
2. Characteristics of metal sensor.
3. Interfacing PIR with controller.
4. DC motors controlling through controller.
5. DTMF decoder interfacing with microcontroller.
6. Embedded C programming with controller.
7. PCB design concepts.

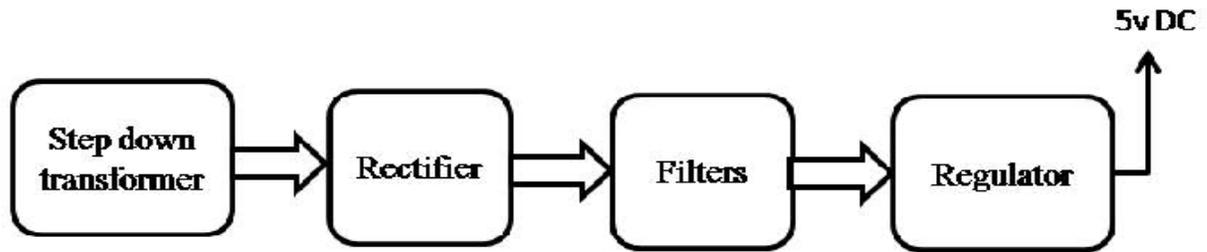
**The major building blocks of this project are:**

1. Regulated Power Supply.
2. Microcontroller.
3. DTMF decoder.
4. PIR Module.
5. Land mine detector
6. DC Motors with driver.
7. Buzzer with driver.
8. Crystal oscillator.
9. LED Indicators.

**Software's used:**

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

**Regulated Power Supply:**



**Block diagram:**

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