

Wireless operated War field land Rover that alerts on sensing planted Land Mines

The project aims designing a robot which is capable of detecting land mines in its path and alerting through alarm system. Also, the robot is operated through a remote made using RF technology.

The advent of new high-speed technology provided realistic opportunity for new robot controls and realization of new methods of control theory. This technical improvement together with the need for high performance robots created faster, more accurate and more intelligent robots using new robots control devices, new drivers and advanced control algorithms. This project describes a new economical solution of robot control systems. The presented robot control system can be used for different sophisticated robotic applications.

RF Communication ranges in between 30 KHz to 300 GHz. RF communication works by creating electromagnetic waves at a source and being able to pick up those electromagnetic waves at a particular destination. These electromagnetic waves travel through the air at near the speed of light. The wavelength of an electromagnetic signal is inversely proportional to the frequency; the higher the frequency, the shorter the wavelength.

The controlling device of the whole system is a Microcontroller. Land mine detector, RF receiver, DC motors and buzzer are interfaced to Microcontroller. The Microcontroller receives input from RF receiver and operates the dc motors accordingly written in the program. The Robot is attached with a land mine detector which continuously monitors the landmines in its presence and feeds as input controller which horns a buzzer, if they are present. To perform this intelligent task, Microcontroller is loaded with a program written in embedded 'C' language.

The main objectives of the project are:

1. Controlling Robot wirelessly.
2. Alerting through buzzer, if land mines are present in its path.

The major building blocks of this project are:

1. Regulated power supply.
2. Microcontroller.
3. RF transmitter and RF receiver.
4. Encoder and Decoder.
5. Land mine detector
6. Crystal oscillator.
7. Reset.
8. Buzzer with driver.
9. LED Indicators

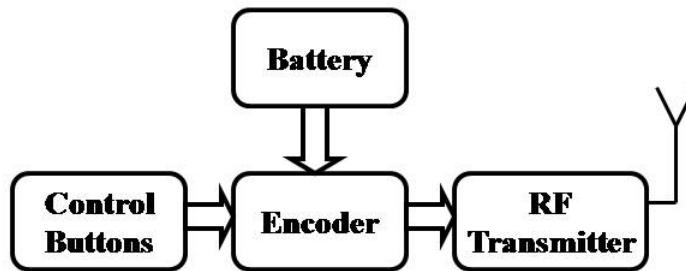
Software's used:

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.

Block Diagram:

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1. Transmitter



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2. Receiver

