

PC Controlled wireless Robot with live human being detection

The Main Aim of This project is to control the robot with PC through wireless. Robot can move either Forward or Backward, Left or right through the set of Commands given from the PC through the Hyper Terminal. And also to detect the human being by using the wireless remote controlled Robot, which have the sensors that detects the presence of the human being and indicates the user. As it is a wireless Robot it can be easily mobilized and can be controlled. This can be used to detect terrorists/thief inside the building.

The advent of new high-speed technology and the growing computer Capacity 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 drives 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 robot applications

The control system consists of a RF receiver and microcontroller; microcontroller collects data from the receiver and controls the robot. The intelligent control software, which has been developed Embedded C programming language. A complete solution of a robot control solution is presented in this project. The robot was fully controlled by the PC and the commands from the PC were received by the receiver and fed to microcontroller.

This Project consists of Microcontroller Unit, Robot, a PIR sensor for human presence detection, RF transmitter and receiver and Max 232 IC which is used to connect the Micro controller to PC. Robot is made up of DC Motors, the Motors Directions can be changed through the set of Instructions given from the transmitter, and

the action of these Instructions is already loaded into the Microcontroller using Embedded C programming.

In This Project Microcontroller acts as a Control Unit which controls the all Devices interfaced to it .This project makes use of a microcontroller, which is programmed, with the help of embedded C instructions. This microcontroller is capable of communicating with transmitter and receiver modules. The PC provides the information to the microcontroller (on board computer) and the controller judges whether the instruction is right movement or left movement instruction and controls the direction respectively. The controller is interfaced with two dc motors to control the direction of the Robot. The controller makes use of a PIR based input sensor to sense the human being and give us an alert indication.

Features:

1. Can be easily controlled.
2. Ease in understanding the working module.
3. Easy to operate.
4. Low power consumption

The project provides the following learning's:

1. PC interfacing to Microcontroller.
2. RF technology.
3. DC motors working.
4. Conversion of AC supply to DC supply.
5. Embedded C programming.
6. PIR sensor working principle.
7. PCB designing.

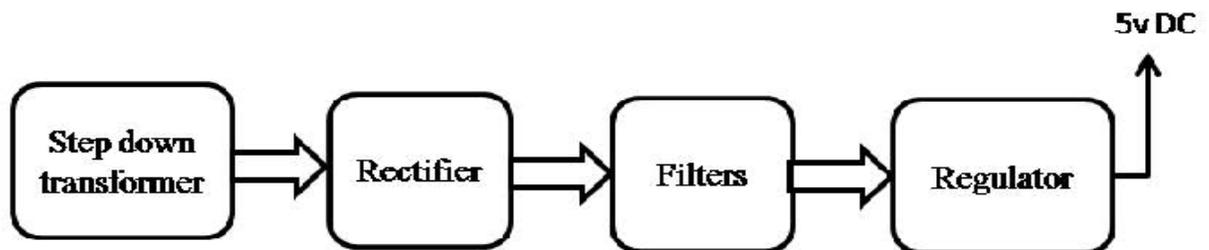
The main building blocks of the project are:

1. Regulated Power Supply.
2. Microcontroller.
3. DC motors with drivers.
4. RF transmitter and RF receiver.
5. Crystal oscillator.
6. LED indicators.
7. PIR sensor.
8. Buzzer with driver.
9. Reset.

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.

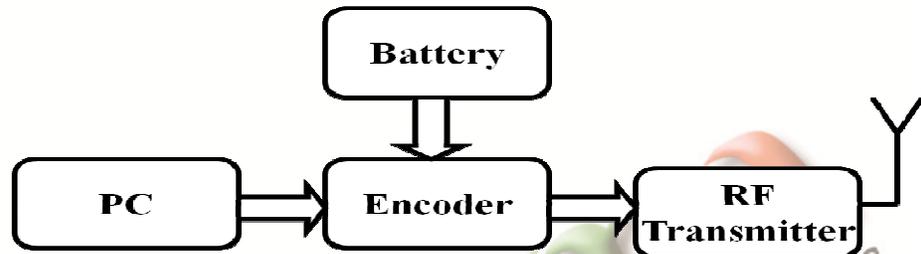
Regulated Power Supply:



Block Diagram:

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1. Transmitter



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2. Receiver

