Human Detection Robot using 8051

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INTRODUCTION

Human detection robot are very useful. They are useful under circumstances where we need urgent rescue mission to rescue Humans and where rescue teams can’t go by themselves.They saves time.

Our this project is simple approach to make such Human detection robot using simple hardware.

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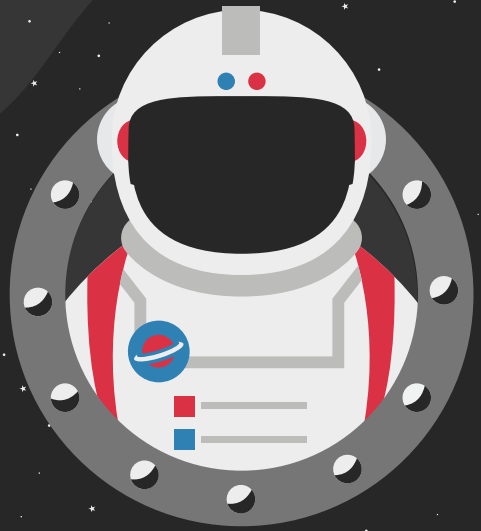
01 Circuit Principle:

The main principle of the circuit is to detect the human using **human detection sensor**. The wireless robot is operated manually using PC. The wireless technology used here is **Radio Frequency** technology. The data is transmitted to receiver through RF. Using the received data, robot is operated and controlled.

01 COMPONENTS

- AT89s51 microcontroller.
- PIR sensor.
- RF transmitter and receiver.
- L293D IC.
- PC.
- Robot chassis.
- Max232 IC.
- 9V battery.
- Motors.



02

Circuit Diagram

Circuit Diagram

It has two parts

Transmitter Circuit

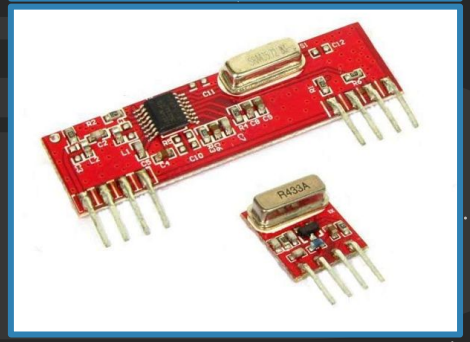
Transmitter Circuit is for to send Signals from Our PC to Our Robot which will be at the rescue ground

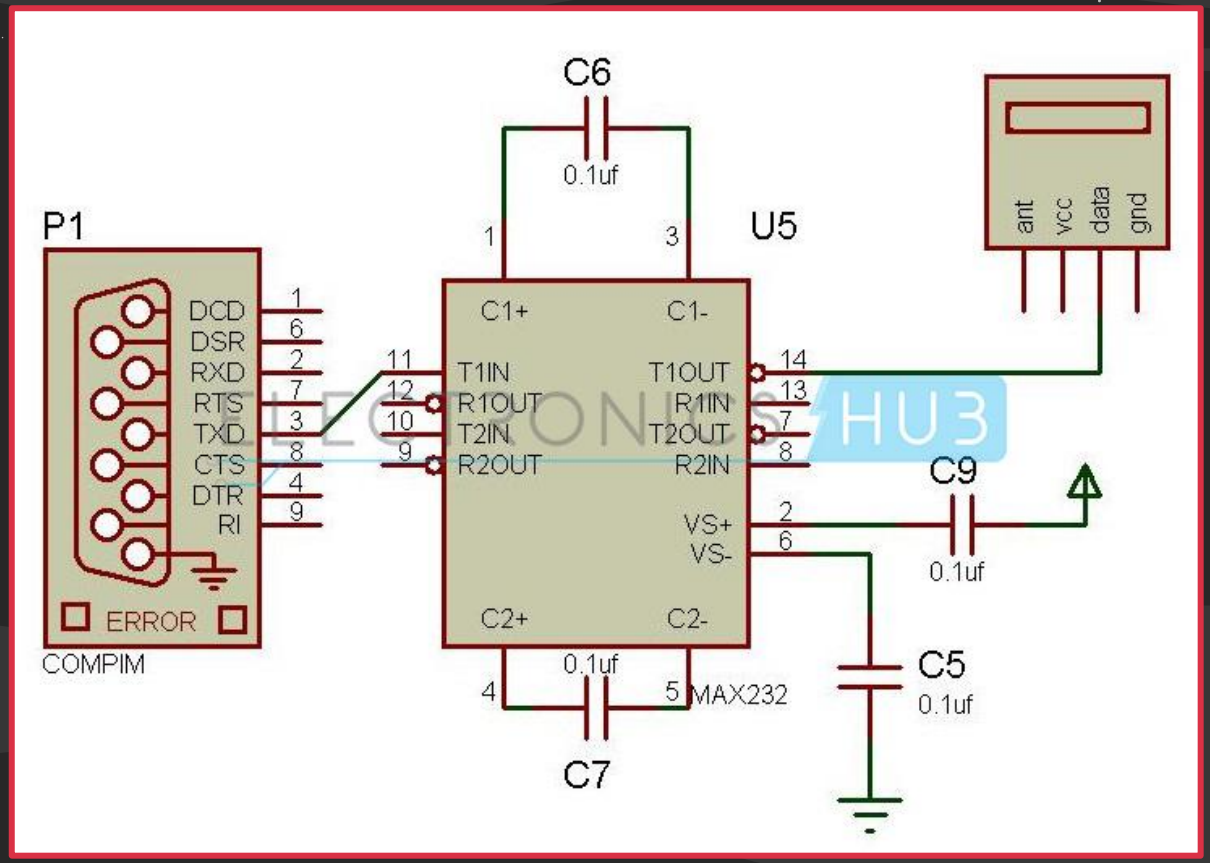
Receiver Circuit

This Circuit will be mounted on the Robot Chassis. It will be receiving commands from Pc and then acting on it.

CIRCUIT DIAGRAM

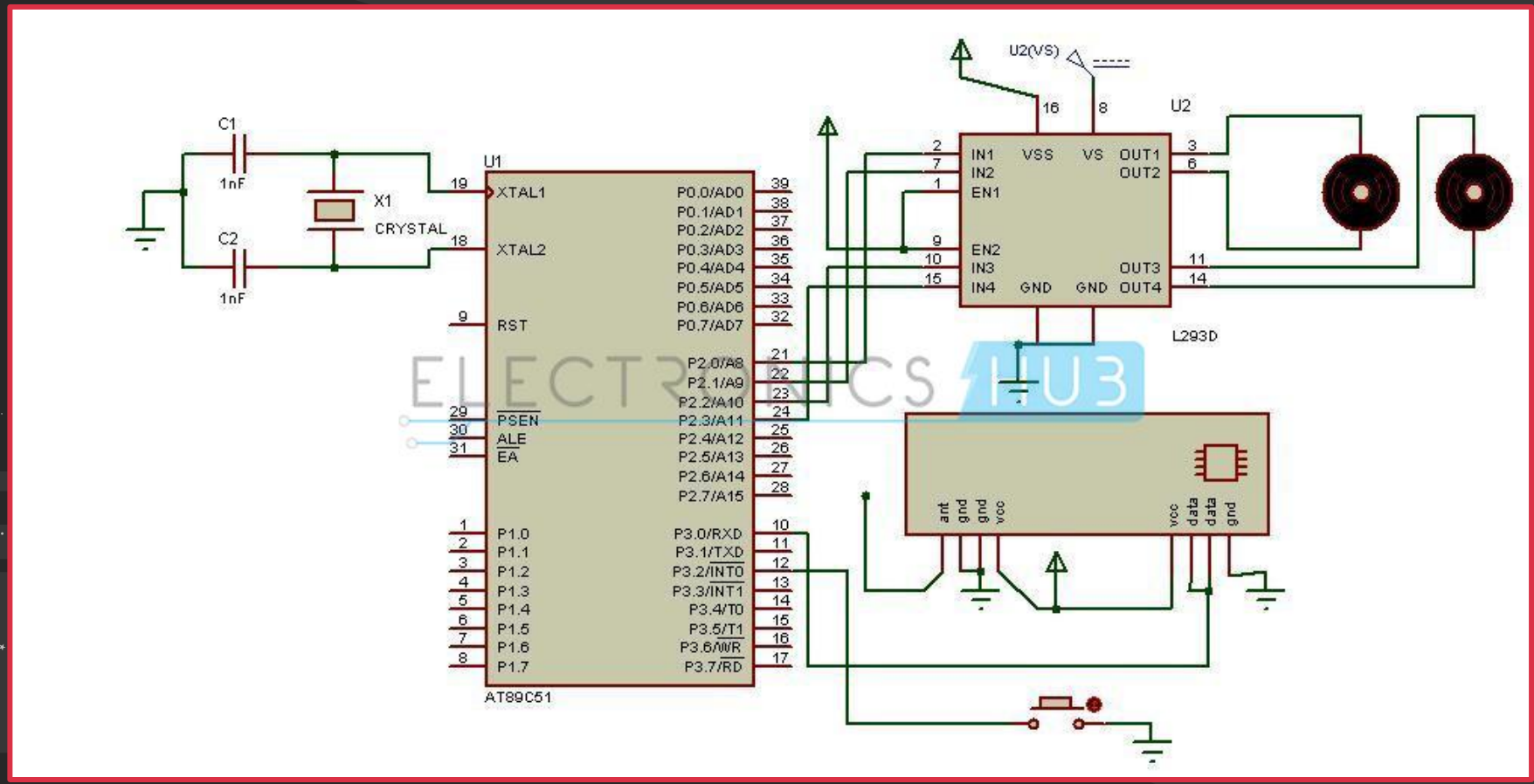
Transmitter Circuit:





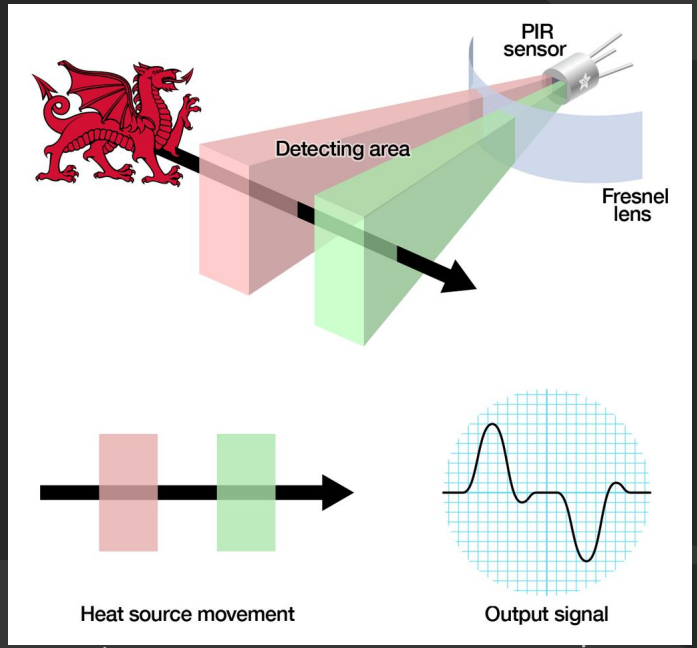
CIRCUIT DIAGRAM

Receiver Circuit:



How does PIR sensor work?

The PIR sensor itself has two slots in it, each slot is made of a special material that is sensitive to IR. The lens used here is not really doing much and so we see that the two slots can 'see' out past some distance (basically the sensitivity of the sensor). When the sensor is idle, both slots detect the same amount of IR, the ambient amount radiated from the room or walls or outdoors. When a warm body like a human or animal passes by, it first intercepts one half of the PIR sensor, which causes a *positive differential* change between the two halves. When the warm body leaves the sensing area, the reverse happens, whereby the sensor generates a negative differential change. These change pulses are what is detected.



03 How does it works?

Using Robot

- First we connect the transmitter to the PC.
- Enter the character F in the hyper terminal of the PC.
- This makes the robot to move in forward direction.
- Now enter the character B to move the robot in reverse direction.
- Enter L and R to move the robot in left and right directions.
- While the robot is moving if any human detected by the PIR sensor robot stops moving and a signal is sent back to PC operator

Hyper Terminal

Hyper terminal is basically a computer software which will be using to send command to our robot using RF transmitter circuit connected to Pc

Simulation

04 Applications

Following are the main applications of this Human Detection Robot:

- Human detection robot can be used at the time of natural calamities to save the lives of human.
- This can also be used to detect the humans in the war field.
- This can be used for security purpose in the jewellery shops, museums, etc.

THANKS!

Do you have any questions?