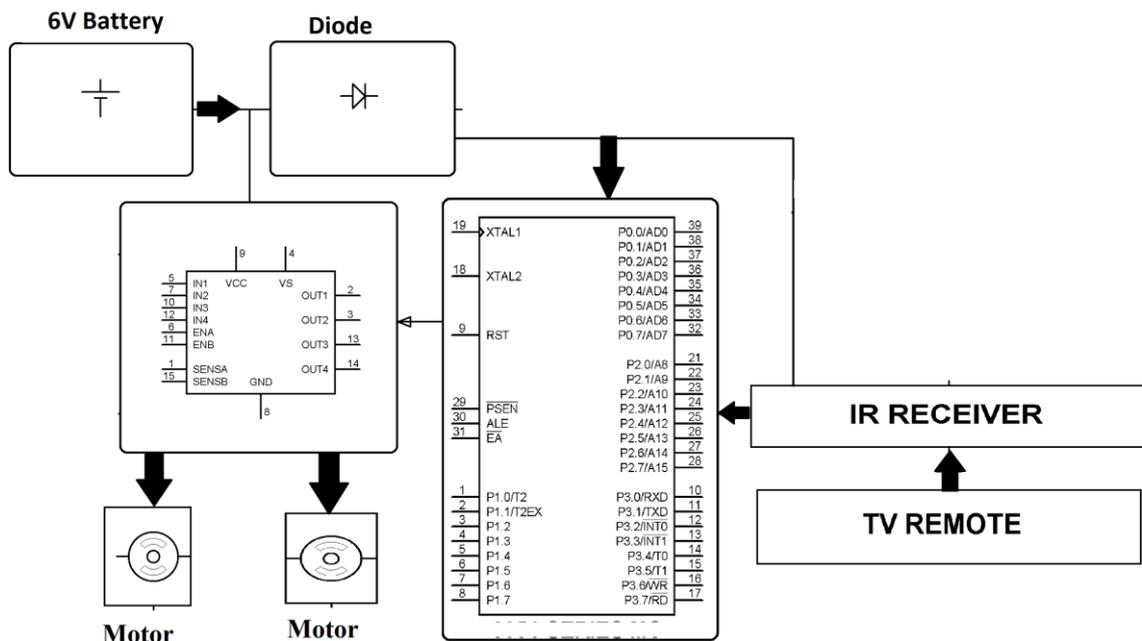


IR Control Robot

Introduction

The project is designed to control a robotic vehicle using a standard TV remote. IR sensor is interfaced to the control unit on the robot for sensing the IR signals transmitted by the remote. This data is conveyed to the control unit which moves the robot as desired. An 8051 series microcontroller is used in this project as control device. Transmitting end uses a TV remote through which IR commands are transmitted. At the receiver end, these commands are used for controlling the robot in all directions such as forward, backward and left or right etc. At the receiving end the movement is achieved by two motors that are interfaced to the microcontroller. RC5 based coded data sent from the TV remote is received by an IR receiver interfaced to the microcontroller. The program on the microcontroller refers to the RC5 code to generate respective output based on the input data to operate the motors through a motor driver IC. The motors are interfaced to the control unit through motor driver IC. Further the project can be enhanced by DTMF technology. With this technology we can control the robotic vehicle by a cell phone. This technology has an advantage over long communication range as compared to line of sight communication in IR technology.

Block Diagram



Component

- **Hardware Specifications**
- Microcontroller
- TV Remote
- IR Receiver
- Crystal Oscillator
- Resistors
- Capacitors
- Transistors
- Cables and Connectors
- Diodes
- PCB and Breadboards
- LED
- Push Buttons
- Switch
- IC

- IC Sockets
- Robotic Chassis

- **Software Specifications**
- Keil μ Vision IDE
- MC Programming Language: C

Advantages

Some of the advantages of using infra-red technology are:

- Low cost
- Simple TV remote controls can be used as controllers

Disadvantages

- As it uses LED lights to transmit the signal, the remote requires line of sight i.e., an open path and you cannot control the robot through walls
- Distance is limited
- Very low data rate (simple commands only)