**DC MOTOR SPEED AND DIRECTION CONTROL USING IR REMOTE**

**DESCRIPTION:**

 The main aim of the project is to design a versatile device that can control DC motor by using IR technology of wireless communication.

The project is built around an 8051 microcontroller, IR remote and an IR receiver. And a DC motor will also be interfaced to the controller through a driver IC . IR remote acts as the transmitter in this project. When a button is pressed in the remote, the signal will be passed and received by the IR receiver i.e TSOP Receiver. This signal is sent to the microcontroller which decodes the signal and performs the corresponding action in accordance with the button pressed in the remote. In the remote, 4 buttons are being dedicated to control the motor. Now, it is the job of the controller to read the data received from the receiver and to perform the predefined task of rotating the motor clockwise, anticlockwise and increasing, decreasing the speed of the dc motor. The direction of the motor can be controlled by driver IC . And the speed of the motor can be altered based on the power supplied to the . For this purpose we use L293D. 16X2 LCD is provided at the receiver side to display the status of the DC motor.

 This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for relay. 7805 three terminal voltage regulator is used for voltage regulation. Full wave bridge rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

# TECHNICAL SPECIFICATIONS:

**HARDWARE:**

Micro controller : AT89S52

Crystal : 11.0592 MHz

LCD : HD44780

IR receiver : TSOP 1738

IR transmitter : Remote

DC motor

Driver IC :

Switches

L293D

Power supply

Transformer : 12V step down

Filter : 1000uf/25V

Voltage Regulator : 7805

**SOFTWARE :**

Keil microvision

proteus

UC flash

**APPLICATIONS:**

* Industrial applications
* Automatic control systems

# BLOCK DIAGRAM:

**TRNSMITTER SECTION:**

IR remote

**RECEIVER SECTION:**

8

0

5

1

LCD

DISPLAY

Power Supply

Driver IC

TSOP1738 (IR receiver)

L293D

DC motor

**POWER SUPPLY BLOCK DIAGRAM:**

Step down Transformer

Filter

Regulator

Output

Bridge Rectifier