

## **Motor speed monitors and control system using GSM modem**

The purpose of this project is to control the speed and direction of DC Motor using Microcontroller and GSM Modem with password protection. This uses a PWM (Pulse Width Modulation) technique to control the speed of motor from 0% to 100%.

The speed of the motor is measured using contact-less speed measurement technique. Speed control is done using PWM (Pulse Width Modulation) method. User can send SMS messages to control the motor speed and direction. A GSM modem attached to the control unit handles automatic SMS sending and receiving process. As this monitoring and controlling can be done by any mobile phone, we provided a security feature by implementing password-based protection. User has to send the password along with the commands to be controlled.

GSM Modem connected to microcontroller unit is used to control the motor and know the motor live speed. Microcontroller automatically reads the SMS messages stored in the SIM card and takes necessary action like speed control, direction control etc. There will be a particular code that needs to be sent through SMS to set the speed and get the speed from the DC motor.

### **Features of this project:**

1. Remote monitoring and controlling of DC motor.
2. Can be operated from anywhere in the world.
3. Reliable for industrial and domestic needs.
4. Automatic remote speed measurement.

**The project focuses on the following areas:**

1. Characteristics of GSM modem.
2. GSM modem and microcontroller interface.
3. Embedded C programming.
4. Hardware and PCB design.
5. Serial Communication with GSM modem.

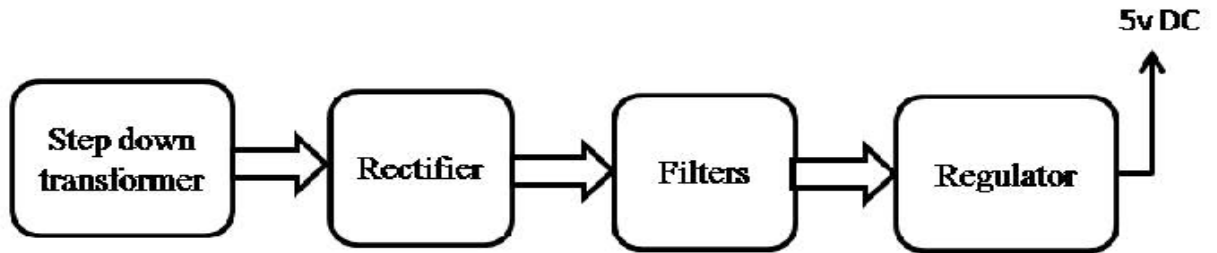
**The major building blocks of the project are:**

1. Regulated Power Supply.
2. Microcontroller.
3. GSM modem.
4. Contact less speed sensor.
5. DC motor with driver.
6. LCD display with driver.
7. Crystal oscillator.
8. Reset.
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.

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 Regulated Power Supply:



Block diagram:

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