International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 05 | May 2020 www.irjet.net p-ISSN: 2395-0072

Speed Controlling of DC Motor Using Android Application

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Abstract - *Speed controlling of DC motor has broad role in the period of industrialization. This paper is presenting the different modes of controlling of the Direct Current motor by the adopting of Bluetooth technology. The signal is dispatched from the smartphone mobile , That is linked to Arduino Uno board by way of Bluetooth module HC05. PWM techniques is usually adopted to the control speed of the Direct Current motor.*

Key Words: Arduino uno board, Android smartphone mobile, Direct Current motors, Bluetooth moduleHC05.

1. Introduction

Speed controlling of DC motors plays a very crucial role. Monitoring and controlling of speed of a DC motor by using Android Smart phones have involved the Bluetooth technology, so and outer Bluetooth module HC05 is interfaced with the arduino uno microcontroller unit for the wireless connection. The Bluetooth module obtains signal from the smartphone mobile android app. Therefore, according to the I/P signal, with the using of arduino uno , MOSFET can be usually used to vary the voltage and current as well as the DC motor speed by using PWM techniques. Direct Current motor direction can also be varied with the using of relay circuit or Hadge Bridge network.

2. Literature Review

- Bhattacharyya and team- speed control of BLDC through Bluetooth control in either direction clockwise and anticlockwise.
- N. Barsoum - DC motor control by dispatching SMS from phone microphone. GSM module will receive sms of desirable motor speed in RPM
- RiteshChaubey and his team- DC motor interfacing with microcontroller different letters in coded with clockwise, anticlockwise and stopping of the direction of the DC motor is controlling by adopting h Bridge
- AnkeshN.Nichat and team - speed and direction controlling by DC motor is obtained by radio frequencies Technology science and wireless .
- Abhishek Khanna and PriyaRajan -motor driver IC L293D interface with arduino Uno used Solar Panel for 12 volt supply in adaptor cost effective and eco4friendly projects used for robotics drones, house doors etc.
- VJ SIVANAGAPPA &K.HARIBALAN- used rectifier, filter capacitor, DC to DC Converter IGBT

3. COMPONENTS

1.Supply-
2.SMPS
3.Arduino UNO
4.Bluetooth Module

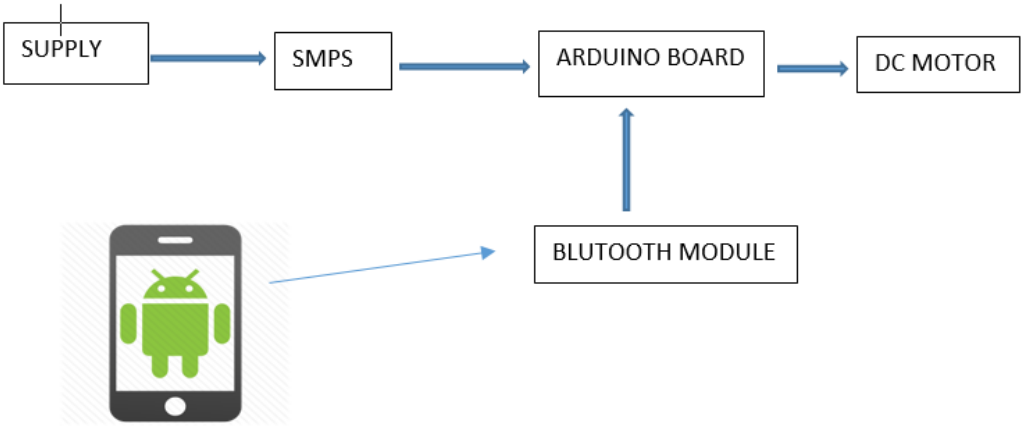

Fig-1: Block diagram

4. Methodology

Steps involve preparing project-
Step 1: Connect all components as per block diagram.
Step 2: Open the android app, it asks for Bluetooth connection.
Step 3: once the app is opened, scan for the Bluetooth device and connect to HC-05.
Step 4: give the message from app for increasing or decreasing the speed.
Step 5: The message is received by microcontroller and processed message is sent to Arduino.
Step 6: PWM program/coding is stored in Arduino. It gives the required output and the motor speed changes with respect to the message given by the user from the app.

5. Result

Installed Play Store Android app used for Bluetooth support the input signal from the Android received by Arduino board ,using coding's and output from the pins such that value of voltage and current arrange as per requirement. Start, stop and reversal are tested and verified in serial port and also in output pins of arduino board using LED.

6. Conclusion

Thereby speed and direction controlling of the DC motors are done. In such wise wireless communication is also obtained.

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