Live monitoring and controlling of multi DC motor

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Abstract - In many industries multi motor are available for desire automation. So it is necessary to control and monitoring accurately, for that we design this particular system. Here, we control and monitoring multi dc motor wirelessly using zigbee. Here, we monitor a speed of all motor that indicate motor is faulty or not, temperature level that give indication of over load and input voltage level, to run a motor in define voltage range. We also control a speed of all motor and also a direction of all motor. If any motor faulty than system will stop all motor automatically, which avoids a possibility of an accident. If voltage level varies in other than define range than system will automatic stop all motor.

Key Words : Speed controller, Voltage controller, Temperature controller, Zigbee, DC motor, Microcontroller

1.INTRODUCTION

We can achieve speed control of Multi DC motor using mechanical or electrical techniques but they require large size hardware to implement but microcontroller based system provides easy way to control the speed of multi DC motor. The speed of DC motor is directly proportional to the voltage applied across its terminals. Hence, if voltage across motor terminal is varied, then speed can also be varied. Microcontroller ATmega32 can be used to control speed of the motor. Here we can also control temperature, voltage and RPM of multi DC motor. Most of the DC motor have power requirements well out of the reach of microcontroller and more over the voltage spikes produced while reversing the direction of rotation could easily damage microcontroller. So it is not wise to connect a DC motor directly to the microcontroller. The perfect solution is to use a motor driver circuit in between the microcontroller and the multi DC motor

2. SYSTEM BLOCK DIAGRAM
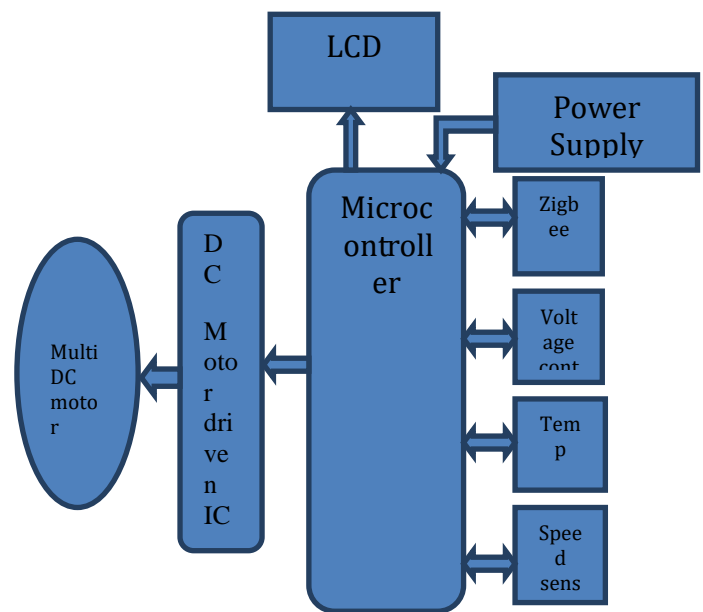
Transmitting module
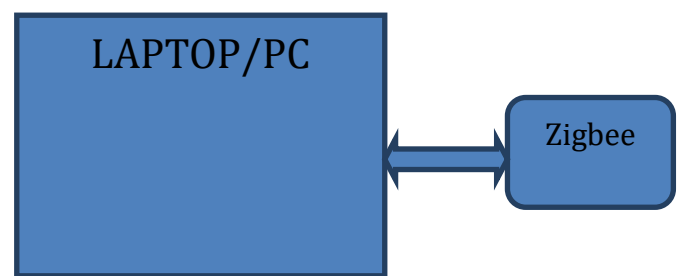
Receiving module

3. SOFTWARE & SIMULATION RESULT

Software

We need software which is used in making of simulation for project work. These software is as given below.

Proteus

Proteus 7.0 is a Virtual System Modeling (VSM) that combines circuit simulation, animated components and microprocessor models to co-simulate the complete microcontroller based designs. This is the perfect tool for engineers to test their microcontroller designs before constructing a physical prototype in real time. This program allows users to interact with the design using on-screen indicators and/or LED and LCD displays and, if attached to the PC, switches and buttons.

ISIS has wide range of components in its library. It has sources, signal generators, measurement and analysis tools like oscilloscope, voltmeter, ammeter etc., probes for real time monitoring of the parameters of the circuit, switches, displays, loads like motors and lamps, discrete components like resistors, capacitors, inductors, transformers, digital and analog Integrated circuits, semiconductor switches, relays, microcontrollers, processors, sensors etc.

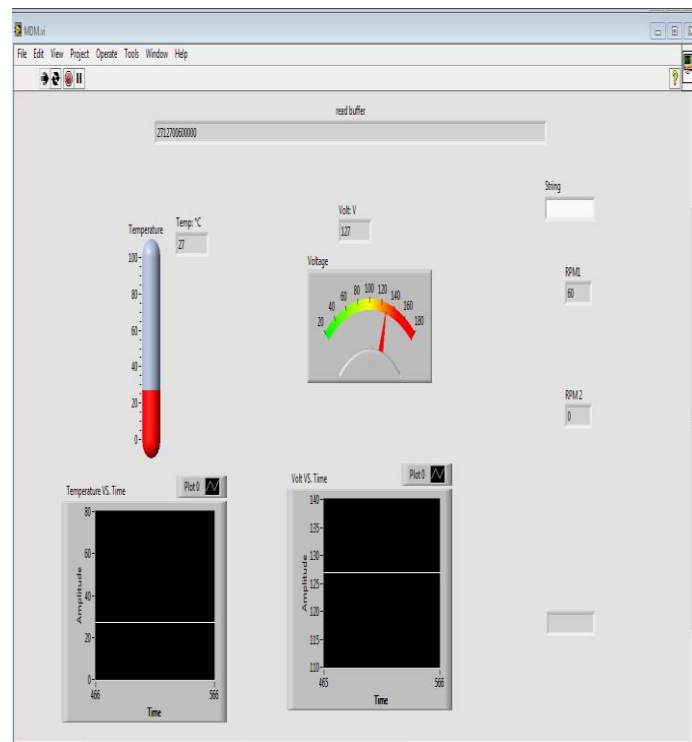**3.1 Simulation of Live monitoring and controlling of multi dc motor**
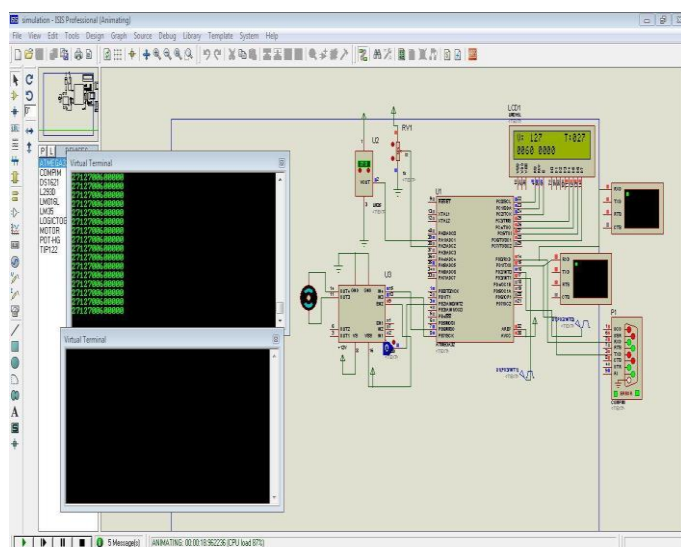
4. HARDWARE & RESULT

4.1 HARDWARE

4.2 RESULT IN LABVIEW SCREEN

3. CONCLUSIONS

The project we have undertaken has helped us gain a better perspective on various aspects related to our course of study as well as practical knowledge of electrical equipments. We became familiar with software analysis, designing, implementation, testing and maintenance concerned with our project.

The microcontroller based DC motor speed, direction and temperature controller system has been developed. This system is applicable to different size of motors and capable of controlling the speed of the motor with very high precision.

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BIOGRAPHIES

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