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SPEED CONTROL OF DC MACHINE USING GSM

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Abstract: The design of an embedded device that can manage up to eight devices by sending a specific SMS message from a mobile phone is discussed. This controller comes in helpful when we need to regulate the ON and OFF switching of devices but don't have access to a wired connection. A GSM modem is attached to a programmable microcontroller that receives SMS from a reference cell phone to do this. The control signal portion of the received SMS is extracted and converted to a format that is compatible with microcontrollers. For monitoring and sending of control signals to the modem, a PC linked to the microcontroller through serial connection via RS232 can be utilized.

Keywords: Android smartphone, Bluetooth Model, Single Microcontroller Chip.

I. INTRODUCTION

In a variety of ways, the contemporary expansion of technological knowledge and generation has improved its qualities. Mechanisms are in the works. There could be an increase in global demand for energy and precision in motor speed control. In addition, several programmes call for long-distance pace monitoring and management. With so many different types of programmes, the dc motor's rate management is critical. It's also necessary to keep track of the DC motor's rate control device. Manually operated electric home equipment used to be controlled by mechanical switches. When activating mechanical switches in such conditions, the character may additionallysense surprise, and a spark can arise while turning on or off. It's also possible that the household appliances may be harmed as a result of this. Electric household equipment is controlled using a complex model of wi-fi technology that incorporates far-flung control, Bluetooth, and touch display, and these technologies are not adaptable. The Global System for Mobile Communication (GSM) is a wireless communication system that covers a large region. Virtual radio transmission devices can be used to deliver voice, data, and multimedia chat services.

II. METHODOLOGY:

The Arduino kit requires a 5V DC supply, hence the power supply kit is needed to step down the voltage. The UART (Universal asynchronous receiver transmitter) microcontroller connects GSM to Arduino. The LCD is connected to the Arduino's digital pin. The entire procedure will be shown on an LCD screen. The speed control mechanism is connected to the microcontroller unit. Pulse with Modulation Technique is used to change the pace. PWM is a basic and frequently used method of controlling the speed of Brushless DC Motors. The GSM (Global System for Mobile Communications) is a global mobile communication system. GSM stands for Global System for Mobile Communications. The GSM SIM 800 was used. We may send and receive SMS using the microcontroller by utilising AT's command.

III. MODELING AND ANALYSIS:

Model and Material which are used is presented in this section. Table and model should be in prescribed format.

Arduino is used to control the entire procedure in the suggested concept. For the control of household appliances, a GSM module can be used for wireless connection. The Arduino receives a signal via GSM and sends it to a relay to turn on/off the house electrical device persecution relay driver and vice versa. The Arduino analyses the communication by isolating the most command from the collected message and storing it in a variable amount once the message has been dispersed from the GSM module in the Mobile to the GSM module in the Arduino.

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IV. RELATED WORK:

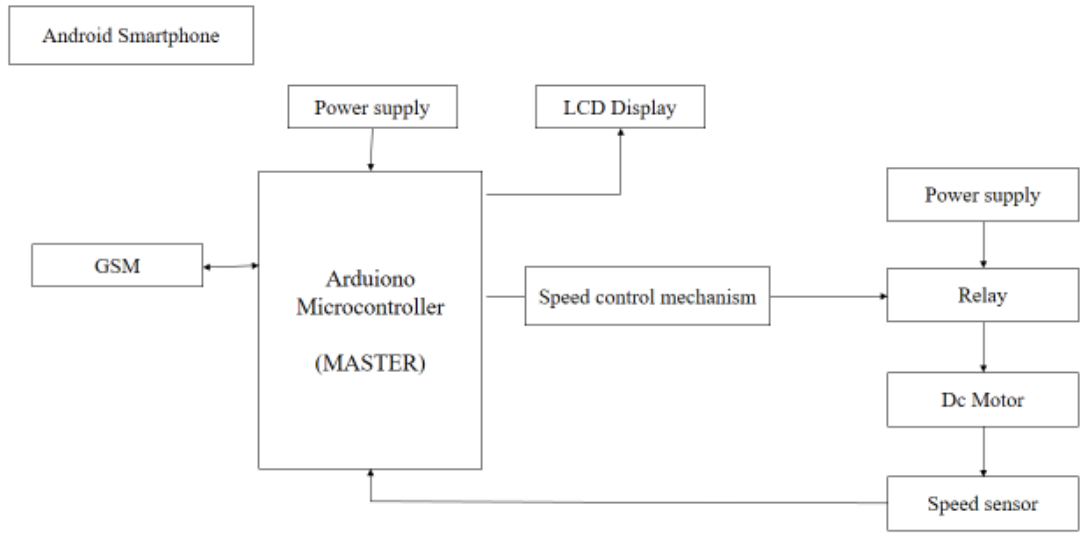

Fig. Speed Control of DC Motor

GSM Module: The technology is known as GSM (Global System for Mobile Communications). Almost every communication piece makes use of this gadget. It's used to communicate via a GSM network using a computer or other electronic devices with a GSM interface. The GSM module only understands and reacts to Atmel instructionsThe most basic command is "AT"; if the GSM module responds OK, then it's working properly; otherwise, it responds with an error message such as "ERROR." There are several Atmel commands, such as ATA for answering a decision, ATD for dialling a call, and so forth. Only the Atmel command should be followed by the printing procedure. A GSM electronic equipment is a customised modem that accepts a SIM card and functions on a mobile operator's subscription, comparable to a mobile phone. From the perspective of a mobile operator, the GSM modem resembles a phone.

Arduino Nano: Rather than requiring a physical hit of the push button prior to assistant transmission, the Arduino Nano is oriented in an unusual way in this section, allowing it to be reset by computer code running on a connected computer. A hundred micro farad capacitor connects one of the FT232RL's hardware movement organisation passageways (DTR) to the ATmega328's reset line. The readjusted line dips long enough to rotate the memory chip once this line is acknowledged (taken low). This feature is used by the Arduino software to allow you to upload code by just hitting the upload button while in the Arduino environment. Because the dumping of DTR will be well-coordinated with the start of the shift, the bootloader should have a shorter timeout. This set-up has several different ramifications. When the Nano is linked to a computer running either OS X or Linux, it resets when a computer code relationship is made (via USB).

LED Display: Nowadays, we utilise LCD-based products such as CD players, DVD players, digital watches, laptops, and so on. These are commonly used in film and television productions to replace CRTs. When compared to LCDs, Cathode Ray Tubes require a lot more electricity, and they're also a lot heavier and bulkier. These gadgets are small and consume very little power. The LCD 162 works on the principle of blocking rather than dissipating light. This article gives you an overview of the LCD 16X2, including its pin layout and functionality. Diagram of the 162 pin LCD.

DC motor: Simple DC motors with a gearbox are referred to as geared motors. geared motors are generally basic DC motors with a gearbox attached to them. DC Motor - 1000RPM - 12Volts geared motors are usually simple DC motors with a gearbox attached to them. This might be used in a variety of robotic applications, such as all-terrain robots. These motors include a 3 mm threaded drill hole in the centre of the shaft, making it simple to attach them to the wheels or any other mechanical.

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V. CONCLUSION

This document describes the home automation system as a mobile-controlled, user-friendly technique. This system is simple to set up due to its wireless communication standards. For all of the subjects relevant to GSM automation through SMS, it has relied on the literature to date. After that, the fundamental control programme, hardware, and automation system are constructed and sent through the GSM network (with SMS). To assure the system's reliability, a hardware implementation was carried out. The method developed was simple, cost-effective, and versatile, allowing it to be scaled up and expanded.

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