



Microcontroller Based Three phase Motor Control Using GSM

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ABSTRACT: Now-a-days every system is automated in order to face new challenges in the present day situation. Automated systems have less manual operations so that the flexibility, reliabilities are high and accurate. Hence every field prefers automated control system especially in the field of electronics automated systems is doing better performance.

This paper is an implementation of the idea of the wireless communication between a mobile phone and a microcontroller. They have to go to the remote area and ON/OFF the appliance. But in this new design, the systems need not be reprogrammed to control another home appliance without changing the programming of microcontroller. The user will make a call from his phone and he will be able to control the appliance. This system is developed with AT89C51 Microcontroller which is connected to the GSM and the motor. The microcontroller includes the protection against dry running and single phasing.

KEYWORDS: AT89C51 Microcontroller, GSM-Global system for mobile communication, DTMF, mobile.

I.INTRODUCTION

India is basically agriculture country, and all its resources depends on the agriculture output . Agriculture is the most important field as compared to others in India. The underground water level is slowly falling down and as well as rainfall is also reduced due to deforestation. In order to get the maximum yield in agricultural process, it is necessary to supply the optimum quantity of water, and it should be supplied periodically. This is achieved only through a systematic irrigation system.

In recent years, there has been a rapid increase in wireless network deployment and mobile devices in the market. With various research that promises higher data rates, future wireless networks will likely become an integral part of the global communication infrastructure. Ultimately, wireless users will demand the same reliable service as today's wire-line network provides. Through our device controller we can represent a safe & secure wireless communication with proper authentication and less loss of data.

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This cell phone having wireless GSM remote controller helps the farmer to handle agricultural pump sets easily. It also helps the farmer to irrigate the crops in proper schedule. Farmer can set the total running time of pump set to be run. This "CELL PHONE BASED MOTOR CONTROL WITH VOICE ACKNOWLEDGMENT SYSTEM" is a boon to agriculturists. It can help the Indian farmers to save life in case of snake-bite during night time, saves water, time and electricity. Cell phone is a device for everyone in today's world.

Wireless Remote controller for Pump set is an add-on device to be fixed up with the button starter to control and monitor motor, pump set from remote location. This device is working with the help of GSM network support. Client can use Vodafone, Aircel, Airtel, BSNL Pre-paid SIM cards.

II. SYSTEM MODEL

The method used to carry out this project is the principle of serial communication in collaboration with embedded systems. This project has a Cell Phone Based Motor Control with Voice Acknowledgment, which will be used as the electronic device, and also a mobile phone having GSM modem, which is the latest technology used for communication between the mobile and the embedded devices.

System will work like when the user wants to ON/OFF the device; he has to make simple call in his mobile defining the messages by pressing key from keypad of mobile phone, for example key 1 is pressed then get a result as 'MOTOR ON' in voice message is heard to client, the microcontroller inside the system is programmed in such a way that when the modem receives any message the microcontroller will read the message from serial headphone and verify for the pressed key, if it is correct then it will start performing the desired task. The system block diagram shown below.

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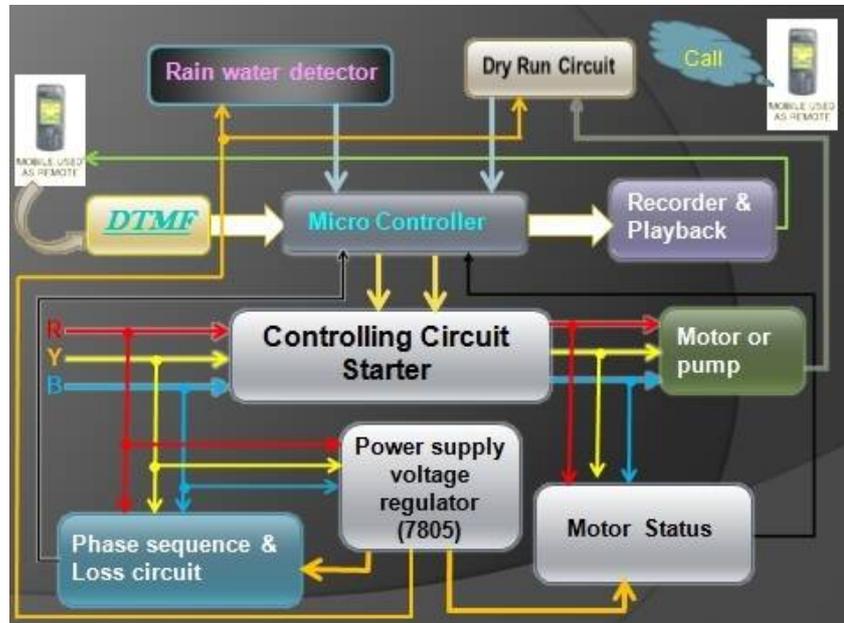


Figure-1 System Block Diagram

III.CONTROLLER MODEL

The microcontroller used in this case is ATMEL AT89C51. Cell phone made by Nokia model- 5800 is used as the GSM modem, in this prototype model. We use the APR33A3 IC which is multi-section sound record IC, which gives voice acknowledgment. The results presented in the thesis support the proper functionalities and working of the system.

The figure below shows the experimental setup of Microcontroller based three phase motor controller using GSM with voice acknowledgement system for irrigation system.



Figure-2 Experimental setup



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IV.CONCLUSION

The cell phone based device control with voice acknowledgement is an excellent device to operate any electronic equipment from miles away as the mobile technology is becoming advanced day by day; it is used for much other application as device control. As mobile service is used by everyone these days, this system will be very much useful in rural areas as well the device control can be applied in every field like agriculture, home, factories etc. The use of mobile communication in device control has been thoroughly justified and the previous drawbacks and problems have been overcome.

A cell phone having GSM and GPRS based Designs have developed another innovative and Public utility product for mass communication. This is an agriculture Appliance Control Device which controls the through call received and also gives voice acknowledgement of task. Such Devices can be used at different areas of the human being life. Such offices, houses, factories etc. send command from Mobiles to these devices for ON and OFF the devices. These devices are designed to remotely control the devices from anywhere and anytime. Wireless communication has announced its arrival on big stage and the world is going mobile.

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