Interactive Voice Response System for Three Phase Motor Protection, Control & Alert Using GSM Mobile with Android Application

Sushama S. Punde[1], Deepak S.Handore[2], Ashwini M.Khadse[3], Tanmay N.Kapse[4] Dhanashree S.Wagh[5]

[1,2,3,4,5]*(Dept. of Electronics & Telecommunication, KVNNIEER,(MS) / SPPU, India)*

Abstract : *Control system is a system where we can start and shut down the system when we want. That's the main difference between controlled and uncontrolled system. Our project aim is to make system more efficient and reliable. As the name suggest control is for controlling the three phase motor from remote place by using GSM mobile with android application, it will also detect there various fault like over voltage, dry run, sequential phase protection, under voltage etc and ensure that safe operation and provide instant status various way sms on mobile(message status),IVRS, android application etc .we used GSM network because it world-wide and operate our motor also transferring feedback Information through it thus the use of GSM network we don't need to establish extra equipment for networking. For eg. Instead GSM we used zigbee then we have to creating range and more costly, for more safety operation we provide unique identification number system, In agricultural sector we hope our project is become handy and cost effective to operate motor and give it's protection.*

Keywords : *Interactive voice response system(IVRS),Global system for mobile communication(GSM) ,Short message status(SMS)*

I. Introduction

This Project is purely based on embedded system as all its operations are controlled by intelligent program inside the microcontroller. The objective of this project is to control ON/OFF various three phase motor more efficient, reliable and ensure safety, by using the SMS service our project is remotely control by sending plain text messages, such as "abcdn1", "abcdnaf3", etc all of which can be pre-programmed into the controller and easily remembered later. And it can also control motor by using android application. And that application is designed by using JAVA programming (Eclipse). The current status of working motor, it there fault occurs all these type of information is received by SMS on registered number, also these information will provided in three regional language like Hindi, Marathi, English etc. by using IVRS.

II. Existing System

2.1 Water pump control using GSM network-

These system will operate through a missed call; if you missed call then it will simply ON &OFF accordingly, and system is designed for single and three phase motor, but these system have so many drawbacks like safety, security etc.

2.2 GSM based motor monitoring and speed control

The designed aspect of an embedded device which can control upto device by sending SMS, message from mobile is an the control action is depend on the microcontroller, it is the heart of system, these system is designed to monitor control speed of an induction motor/ DC motor and also perform necessary operation like start, stop, reverse the rotation etc. [1]

III. Proposed System

3.1 Need

We are trying to complete our Prime Minister Mr.Narendra Modi dream "MAKE INDIA DIGITAL" and we are the part of them, the aim of our project is to get agricultural section modern and reduce human effort, provide a remote control, centralized control and try to overcome various fault as well as ensure safety operation.

3.2 Working

Signal conditioning block is used to maintain the voltage with in positive range and these voltage is read by the ADC which is in microcontroller, the relay is used as a switch to ON/OFF the motor, and one of the main work of microcontroller is it continuously monitor the RYB phase and if voltage is over, under not in range then it will off the motor and send corresponding message status to register user through GSM network. And indicate problem occurs like spp, dry run etc. then it indicated by LED, ap89341 is used for sound recording (clips).

3.3 Android Application Concept & Development:

In Day to day life everyone used Android Smart phone for various application purpose & our project subpart is controlling three phase motor through Android application which name has "GSM Motor Controller" & this application is designed & developed by JAVA(eclips:JUNO) & it worked very simply when we installed & open Apk file then first register user mobile number and password after that it include various options like motor on, motor off, get status etc select any one which user want according to there need & then the message send to the microcontroller & these whole process running at background of the application.
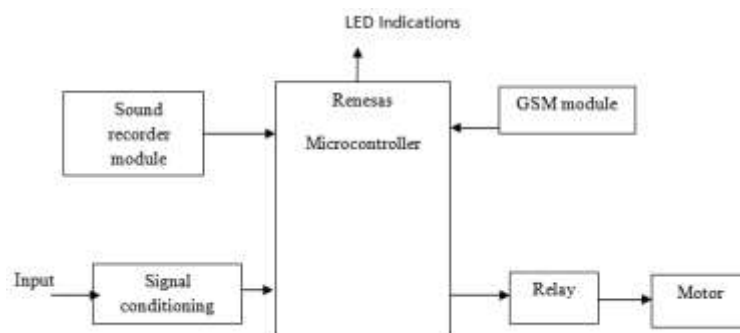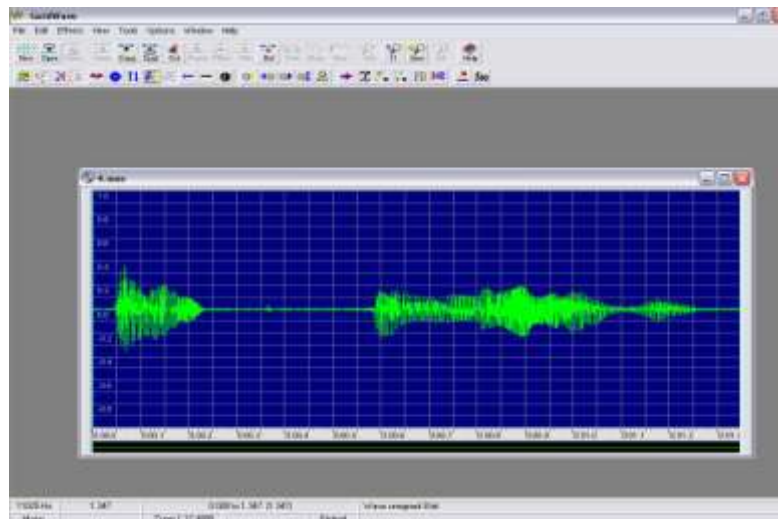

Fig 1: Block diagram

fig 2:Sound Recording using Goldwave Software

Fig 3: Android Application Snapshot

IV. Conclusion

4.1 Summary:

In this paper we decribe that there are many alternatives for controlling device individually but the purposed of our system is to control a task in multiple way and make system more reliable, efficient and time consuming. As well as reduced the farmer effect,& also for security purpose we provide a unique identification system. We hope our project is being change in agricultural section as well as industrial level motor controlling system.

4.2 Future Scope:

If the GSM range is not occurs in some area then the controlling three phase motor using GSM is difficult then instead GSM we used Zigbee for controlling three phase motor because the property of zig bee is creating the range according to user requirement. If user want to seen current operation and status live then we used Digital Camera System It will possible to controlling the three phase transformer, three phase drivers, breakers which is required for Maharashtra State Electricity Board(MSEB) using GSM and Android Application.

Acknowledgement

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