

Auto Load Shedder for Electricity Board Using GSM Technique

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Abstract- *The problem of electricity losses is increasing day by day. Because of the weak ability of generating electricity, proper management of load shedding is very important. Energy is one of the basic requirement in modern civilization, without it is not possible to standstill lot of applications. So due to this energy usage are increases so we need to manage electricity by using load shedding. If now we went to waste Image Quality control is the most important factor for any manufacturing industries. Since the conventional defect detection methods are slow, subjected to errors and time consuming, most of the industries now opt for automatic inspection systems. Also, the increasing production speed and high labour charges also paved way for the fast existence of this new trend. Increased expectation of high quality products from customers made the industries more responsible. As a solution to these problems, artificial vision based automatic inspection electricity, the future is definitely going to be darkened.*

We are developing the system for Electricity Board. The system will keep track of proper load management. Our aim is to develop the system which will be used for wireless management of load shedding in different areas in city or district.

Computerized Load Shedding Control System can now be extended and it can be controlled by a SMS based system. This project demonstrates the need for a modern load shedding scheme and introduces the idea of developing a SMS based procedure for controlling the load-shedding system where manual work will be minimized by selecting the feeder, substation and duration of shedding time by the user by sending SMS.

I. INTRODUCTION

The problem of electricity losses is increasing day by day. Because of capacity of generating electricity, proper management of load shedding is very important. If now we went on to waste electricity, the future is definitely going to be darkened.

We are developing the system for Electricity Board . The system will capable of proper load management.

Load shedding is a common process in countries where the production of electricity is less than the total requirement. To balance the availability and the requirement of electricity a concerned authority has to execute this process. This process is prone to human errors as an operator has to manually switch the channel on/off. If we can made an efficient and economical solution to do this operation remotely from a centralized location, we will be able to replace the manual system with a sophisticated centralized remote system. "GUI Based Remote power distribution system using GSM" implements the emerging applications of the GUI (Graphical User Interface) & GSM technology, which has fully covered almost all areas of the world. This helps in reducing the implementation cost and makes it simpler and easier to install the GSM system both at the controller and transformer side [1]

We have selected a GSM model for our use. The proposed approach for designing this system is to implement microcontroller based control module that receives its instructions and command from a cellular phone over the GSM network.

Controlling of electric power substation equipment's plays an important role in daily maintenance of electric power system. In an extra high voltage substation ,the reliability required from substation components is critical. Application of controlling base station with the help of mobile of substation equipment's could improve the quality of accelerating the process of any substation. Our aim is to control the substation equipment's through a mobile phone.

Here we are using a GSM Based Modem technology connected end-to-end with one end to the distribution side and other to the mobile device. The mobile device used here makes the control of equipment's of the substation on a global basis. Here we are going to distribution side equipment's switch Gears and Relays.

II. BLOCK DIAGRAM

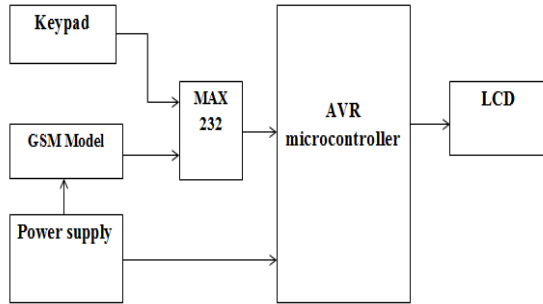


Fig block diagram for Tx.

Fig. shows the block diagram of transmitter section which is mounted in main control section of electricity board. There are different blocks are shows in block diagram like AVR microcontroller, power supply, GSM model, LCD, MAX232.

From this blocks, AVR microcontroller is a main block of transmitter section because AVR controller accepts all commands from user and take proper decision related to that commands which is given from the user. User can give the commands by using keypad which is another block shows in block diagram. Here keypad is given for setting the time of load shedding of particular area. In this block diagram power supply is given which is used for providing power supply for different components like AVR microcontroller, GSM model etc. GSM model is used for sending the particular command to area sub station as per the load shedding time of different area is given by supervisor from central station.

As per that set time the command messages are send to that particular area by realizing set time. For realization set time we are used RTC(Real Time Clock) in transmitter circuit. At that particular time controller controls the GSM model and by using that GSM model controller sends the particular area sub station number like for area 1 it will send message 1, for area 2 it will send 2 like this area selection is done.

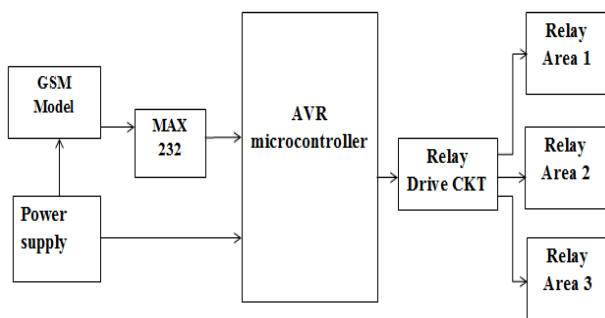


Fig.block diagram for Rx

figure shows the block diagram of receiver for the sub station. It has different blocks like GSM model, MAX 232, power supply, AVR controller, relay drive circuit and relays as different particular area.

In this section GSM is used as receiver which is receives the messages send by transmitter and pass this messages to the AVR controller. AVR controller reads that commands and take a particular decision.

Here we are using the IC name as MAX 232 , basically this IC is used for serial communication. When GSM is receives any message which transmitted from transmitter and pass it to serial communication IC. MAX 232 IC can pass that commands to AVR controller serially.

AVR controller receives that commands and take a particular decision depends on that commands and gives the output to the relay drive circuit. We can not pass the output directly to relay because relay wants more power for operation as compare to output power provided by AVR controller, so we want to pass this first to relay drive circuit which provides required power to relay. When AVE gives the commands to MAX 232 depends on that it switch the particular area or start the load shedding of particular area for particular time period.

III. ADVANTAGES

- 1 .Save waste of electricity
2. Reduce problem of electricity

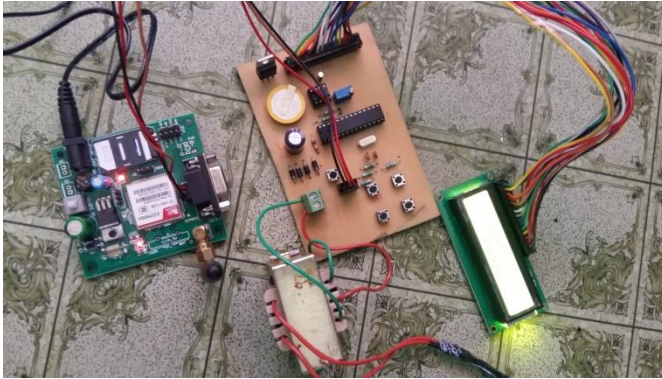
IV. CONCLUSION

This is a very useful project and helps to provide remote management of power distribution. This power distribution becomes easy and reduces human effort by the use of GSM application.

The device is handy and we have used toggles for ON and OFF of the circuit or the system between the transformer branch line and the remote control center. By implementing GSM application ,we have tried to make the whole system very easy. The system is made efficient by this application. By implementation of GSM application ,the whole system becomes automatic reducing the human effort. The main objective behind using this application is to reduce human effort ,cost of the system and also to reduce time involved in the process of Load shedding.

V. RESULTS

REFERENCES



This is transmitter section which is used for transmitting particular commands that commands may on and off particular substation. This commands are given from keypad or by a particular set program.



This is receiver section which receives commands send from transmitter by using gsm model. Received command gives controller & controller take decision depends on that command which is send from transmitter.

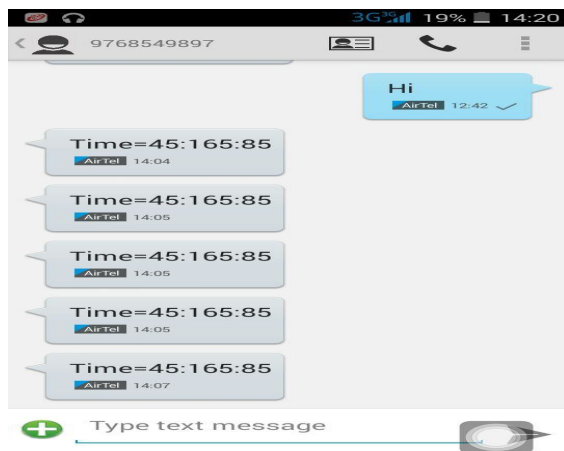


Fig shows the message format which send from transmitter to the receiver. Same message is displayed on display shown in fig.

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