ENERGY MANAGEMENT SYSTEM WITH PROGRAMMABLE NUMBER USING GSM

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ABSTRACT: ***The communication will consist of data transfer in which we are using GSM module for making it as wireless communications is used in this project for making better and longer distance communication. In this project we are using ATmega8 embedded microcontroller for implementing this technique in home or industries. The appliances like fridge, bulb, fan, television etc. are connected to the microcontroller through the relay. we can switch ON and OFF the appliances by using switches whenever we need. the power consumed by the appliances is measured .the consumption of power by the appliances is measured by the sensing unit. The power used is calculated with the help of current transformer. The current transformer, which gives the current consumed by the appliances and then the current, is converted into voltage by the current to voltage convert. the step down transformer will help the voltage to convert into 5V. the consumption of power is finding out by the program loaded in embedded controller .in order to save the power we are proposing two types of wiring i.e. normal wiring and restricted wiring. Under normal mode we can use maximum power and under restricted mode the restricted power is activated in order to manage the power across the area .under restricted period we can use only limited house appliances when the usage of power is beyond the limited power automatically the buzzer will give an alarm to alert the consumers in order to switch off the unused appliances within a limited period of time. if the consumer fails to switch off the unused appliances within a period, automatically the power will shut down in the consumer house.***

Keywords: Energy Management Using GSM

I. INTRODUCTION

The wireless communication is increasing day by day. This has motivated us to use mobile phones to remotely control household appliances and to receive a feedback SMS about the security and safety of the house. In this report we describe a remote appliance control system which can control different household appliances by sending a SMS from a mobile phone and monitor the safety and security of the house just by a SMS. This controller is extremely handy at places where we have to control the ON and OFF switching of the devices as no wired connection is required between the switch and the home appliances as it can be controlled from any place in this world. The microcontroller would then control the home appliances based on the information given to it and send a feedback during a security breach and it also send a feedback during gas leakage or if a fire takes place. The proposed solution is easy to use, simple, secure, and robust and can also be controlled through android mobile phones through and android application.

II. METHODOLOGY

A. Block diagram

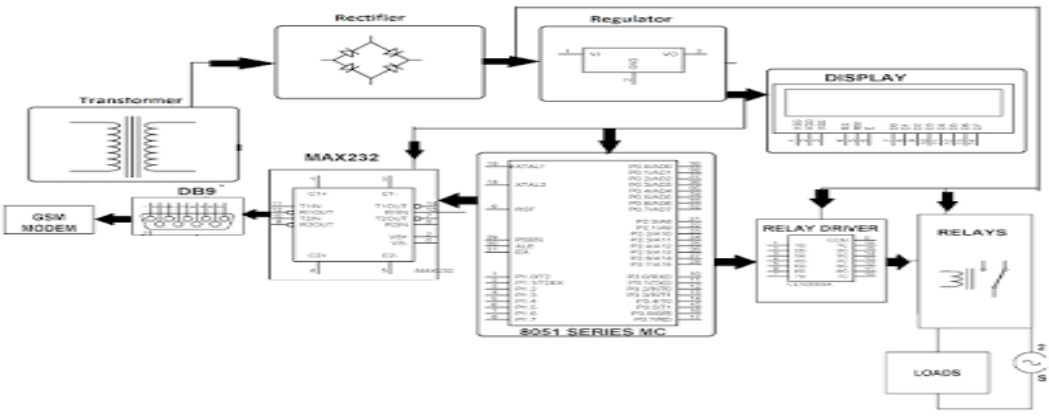

Figure 1. Block diagram

The main objective of this project is to develop a device that controls the home appliances through SMS with integrated acknowledgement feature. Unlike the conventional system present in houses, where one has to manually switch on and off the appliances. The proposed system allows the owner of the house to control the appliances by just sending an SMS to the device and then also receiving the status of the same via return SMS. A concept of wireless communication

B. Circuit diagram

In this paper we describe a simple remote home appliance control, security and safety system using GSM SMS (Short Messaging Service). The system has two parts, namely; hardware and software. The hardware architecture consists of a stand-alone embedded system that is based on 8-bit microcontroller (ATMega8), a GSM handset with GSM Modem (SIM900), relay module, The software part consists of

programming in arduino and an android based application run on android phone. The GSM modem provides the communication media between the home owner and the system by means of SMS

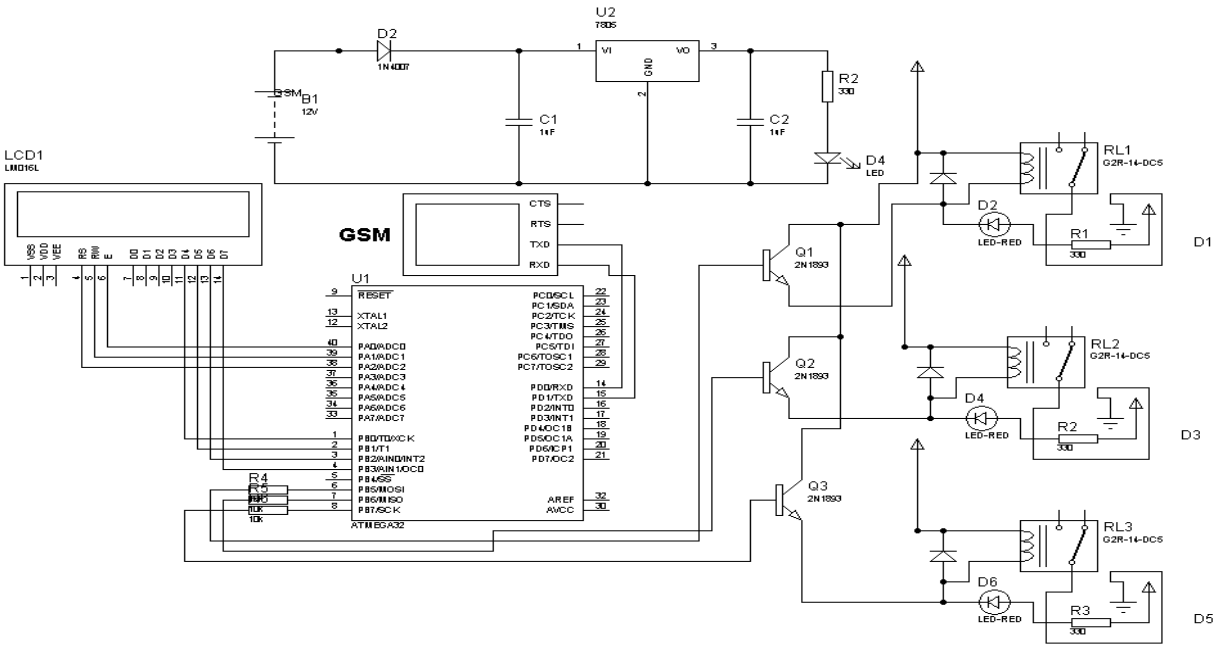

Figure 2 circuit diagram

The SMS consists of commands to be executed. The format of the message is predefined. The SMS message is sent to the GSM modem via the GSM public networks as a text message with a definite predefined format. Once the GSM modem receives the message, the commands sent will be extracted and executed by the microcontroller. The system will interpret the commands and turn the appliances ON/OFF accordingly via the switching module. For the home security and safety system, in case of security breach, fire and gas leakage microcontroller will ring the alarm and send a feedback message through the GSM modem to the GSM handset

Components

Microcontroller, LED , Relay , Resistor, Capacitor, Voltage, regulator, Display GSM modem, diode

III. CONCLUSIONS

After study the literature work of project we are able to understand the working function of each part of project also we collect the information of all components. We had designed circuits of our project and connected various circuits .the project is a one part of industries and we have study the process of industries so we are able to how implementation of project is possible in industries..

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