

“Wireless Security System with Battery Backup”

Yogesh Gaikwad, Sagar Tupe, Ajinkya Shinde, Anirudha Sonar

Dept. of Electronic and Telecommunication Engineering at Sandip Institute of Technology and Research Centre.
Mahiravani, Nashik, Maharashtra.

ABSTRACT

The wireless sensors such as PIR sensor, gas sensor and smoke sensor are interconnected to the 8 bit P89VRD2 microcontroller by using interfacing circuits. The sensors are sensing the physical movement and gives information to microcontroller. The user id getting SMS send by microcontroller through GSM modem.

Keywords-PIR sensor, Gas sensor, smoke sensor, fuse failure detector, RS232 interfacing circuit SMS, GSM communication.

1. INTRODUCTION

This device works in two way modes.

- a. Internal mode
- b. External mode

When the internal mode is selected by the user when they are inside the wireless security area, the entire sensor except PIR sensor will be activated and the buzzer connected with the microcontroller will give an alarm and the reason for the insecurity will be displayed in the LCD connected to the microcontroller. In this mode, the electrical appliances in the security area automatically change to the manual mode in which user will control it.

When the external mode is selected by the user when they are outside the wireless security area, all the sensor will be active and the security area address which is pre-programmed, along with the problem will be sent as SMS to the specified police station, fire station, security room and also to the user at the time of insecurity, fire accident, unwanted movement of persons etc. which is sensed by the respective sensor. [2]

II. OBJECTIVE

The main purpose of the system is providing security to the home as well as industry. The system is also provides the awareness about leakage of gas in home and industry.

User can store and view data on internet. [3]

III. EXISTING SYSTEM

The security system is based on GSM module along with intrusion sensor. The sensors used in the system are wired sensor which are connected to system main module. In case of power cut the system will fail. The system

gives alarm output on only undesired activity. There is limitation to use of number of sensors for this system. No breakdown correction or detection facility is available with this system.

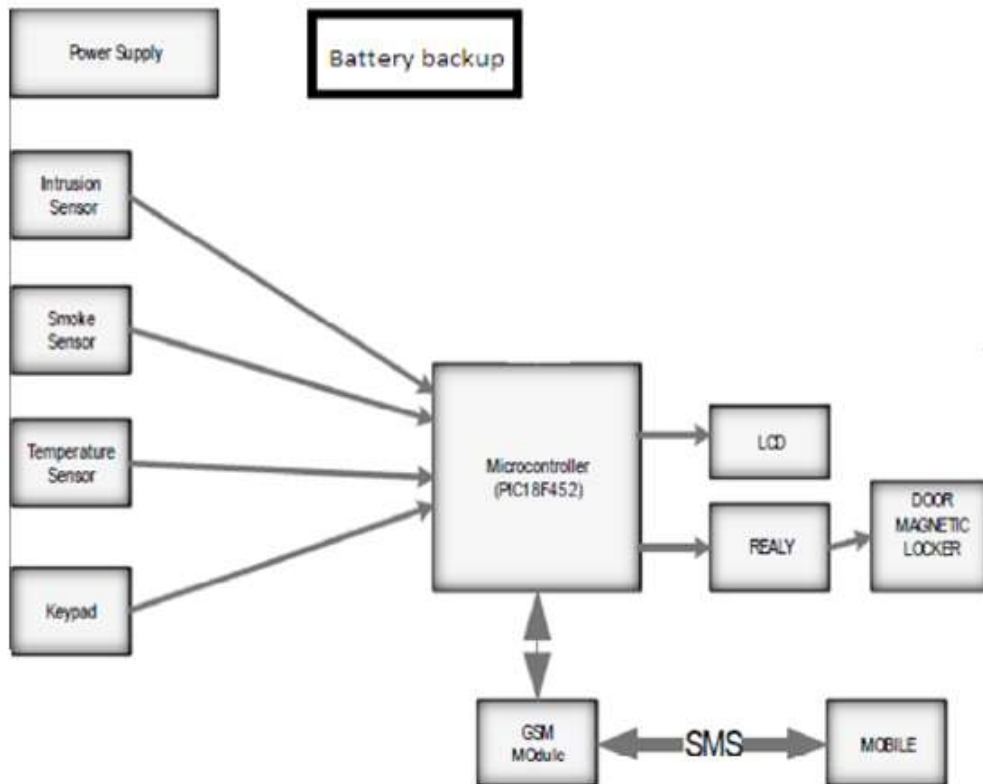
IV.PROPOSED WORK

In order to remove all the con's from the existing system, first of all we are going to use the wireless sensor instead of wire connection .The will be connected to system with Wi-Fi protocol using an antenna to improve range of the sensors. Number of sensors like intrusion sensor, gas detector, motion detection sensor can be connected to one system.

The wireless sensor work on battery, so in case of battery failure of the sensor the system will get notified. The will come with LCD display and keypad on it, which will display output on the system itself. The keypad will shows the system status .The system will on and off after getting the message from the user's mobile number .Along with GSM a remote provided with system which can also be can be also operated on remote control. In order to avoid intrusion M Module, on power failure, the battery backup facility is provided. According to the pulse of input devices, the controller section takes decision and activates the output section which includes LCD display, GS LED and Buzzer.[1]



V.WORKING OF THE SYSTEM



The system is fully controlled by the microcontroller and the microcontrollers will continuously monitors the sensors, detector and GSM modem. If the voltage level of sensor input pins goes to zero then it will send the “AT + CMGS =”USER MOBILE NUMBER” to GSM modem through serial port. The GSM modems will response

with the character ">". After receiving ">" Character microcontroller again send the type of security problem SMS + CTRL Z to GSM Modem. GSM modem will send the type of problem to user. Microcontroller sensed the change and immediately send AT + CMGS = "+888888888888" to GSM modem, GSM modem give ">" character to microcontroller. After receiving ">" Character microcontroller again sends the "MOMENT DETECTED" SMS to GSM Modem. GSM modem sends the SMS to user. When a new sms arrived, the GSM modem would send the AT + CMTI: "SM", 1 byte stream to microcontroller, to read the message, the microcontroller send the command AT + CMGR = 1 to GSM modem. The GSM modem will respond with something similar to the following: + CMGR: "REC UNREAD", "+888888888888", "08/08/09 18:20:35 + 00", + CR + LF USER SMS OK. The first part is the command + CMGR, the second part is the status of the message, the third portion is the sender's mobile number, the fourth portion is the base station time-stamp, followed by the carriage return and line feed characters, the message content, and finally the "OK" terminating character. After receiving SMS, the microcontroller take necessary action based on user SMS. For example user send the sms "Light One On" to GSM modem number, GSM modem receive the sms and send AT + CMTI: "SM" to microcontroller. After receiving the command microcontroller will send text message read command "AT + CMGR = 1" to GSM modem, after receiving read command microcontroller send received message in the format of + CMGR: "REC UNREAD", "+888888888888", "08/08/0918:20:35 + 00", Light one on OK. After receiving original message, microcontroller will skip all the character before the six inverted commas, then will read the original message and verify with pre loaded user message then make pin number 25 to high. [3]

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VII. REFERENCES

1. Raqibull Hasan, Mohammad Monirujjaman Khan, Asaduzzaman Ashek, Israt Jahan Rumpa" Microcontroller Based Home Security System with GSM Technology" published 15 June 2015.
2. R.Anandan, Mr.B.Karthik, Dr.T.V.U.Kiran Kumar"Wireless home and industrial automation system using GSM" Volume 4, No. 4, April 2013.
- 3."Wireless Home Security System with Mobile" Information Technology Dept, ISTAR, Sardar Patel University, VVNagar, India.