www.ijecs.in
International Journal Of Engineering And Computer Science ISSN:2319-7242
Volume 4 Issue 7 July 2015, Page No. 13289-13291

Smart Home System Control Using GSM

A.C.Kaveri[1], T.Jyothi[2]

[1](PG Scholar in Embedded Systems, Department of ECE, SVPCET, Puttur, JNTU, Ananthapur, AP, INDIA)

[2](Assistant Professor, Department of ECE, SVPCET, Puttur, JNTU, Ananthapur, AP, INDIA)

Abstract:

Home automation is becoming more and more popular day by day due to its numerous advantages. This can be achieved by local networking or by remote control.

In existing system, the control of smart home is via Bluetooth and internet connectivity. There is only fire sensor in the smart home, if there is any problem due to that sensor there is indication through alarm like buzzer and there is an email alert to the user. Here the Bluetooth is used for short distance communication and internet is used for long distance communication.

In present system GSM (Global System for Mobile Communication) is used to control smart home from anywhere. There are three sensors i.e. gas, temperature, fire and three light emitting diodes to indicate the problem through the particular sensor and two loads. If there is any sudden changes in gas, temperature, fire then it displays in LCD with buzzer and the particular led will glow and the message will send to the user.

Keywords: ***smart living, gas sensor, fire sensor, temperature sensor, light, fan, LCD, ARM 7 controllers, GSM.***

1. INTRODUCTION

Various smart home systems have been proposed where the control is via Bluetooth, internet, short message service (SMS) based while some researchers have proposed voice controlled smart home system based on Microsoft speech recognition and microcontroller based voice activation (voice recognition module is used).The home automation is made for several reasons of ease, security and energy efficiency. Home automation is used to control electric appliance like air conditioner, fan, and bulb etc. It can be control appliance within home or anywhere. Home automation of appliance may be wired or wireless. For our convenient we generally use wireless automation because of increasing smart phones and tablets in recent years. The Smartphone provide easy connectivity with other devices. Through smart phones we can easily

control appliance through Bluetooth, NFC, WLAN, mobile internet etc.

2. EXISTING SYSTEM

In existing system if we want to control appliance from hundreds of mile away, we use internet to control our appliance and within home we generally use Bluetooth or NFC. Here we are using two ways to control smart home for short distance we are using Bluetooth and for long distance we are using internet. To overcome to we are going for proposed system.

3. PROPOSED SYSTEM

In the proposed system, we will implement the security, surveillance and home automation control using GSM. The proposed system consists the following blocks. ARM 7(LPC2148), Power supply, GSM modem, Temperature Sensor, Gas sensor, Fire sensor, Loads (light, fan) , Alarm, LED array, Max 232 and LCD. The block diagram of proposed system is shown in following figure.

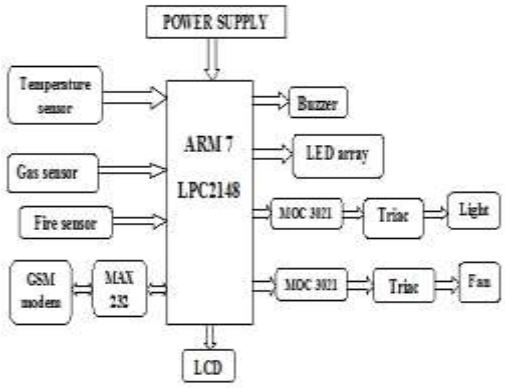

Fig. Block diagram of proposed system.

A low-cost and flexible standalone smart home system is proposed and designed. The proposed system uses GSM. The proposed smart home system has features such as security and fire, temperature, gas system with siren and message alerts and automated control of home appliances.

4. PROPOSED SYSTEM IMPLEMENTATION

The overview of proposed system is shown in following figure. In this paper the smart home has some features such as ON and OFF of the loads and control of smart home due to fire, temperature and gas.

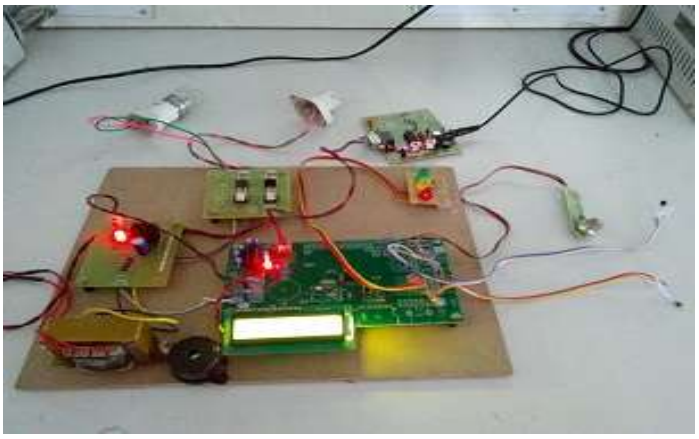

Fig. Overview of proposed system

The following figure shows that light is ON in the smart home.

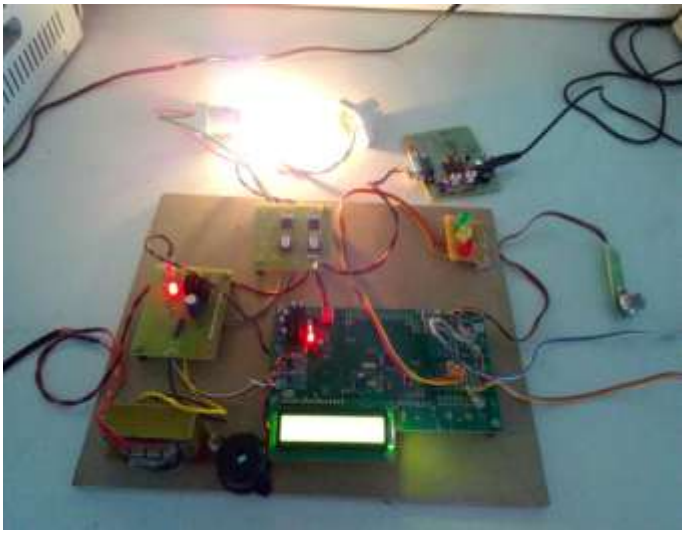

Fig. Indication of light is ON

When fire is detected in smart home then the red led will glow and there is an indication through buzzer and it displays in LCD. The following figure shows that fire is detected in smart home.

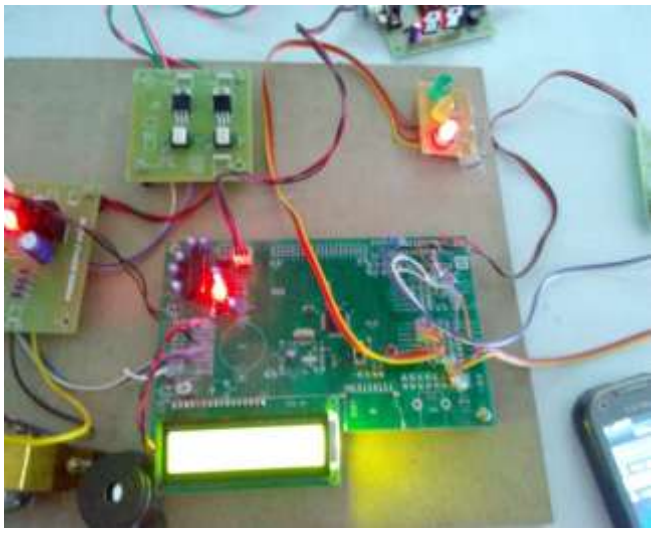

Fig. Indication of fire through red LED

When gas is detected in smart home then the yellow led will glow and there is an indication through buzzer and it displays in LCD. The following figure shows that gas is detected in smart home.

Fig. Indication of gas through yellow LED

When temperature is detected in smart home then the green led will glow and there is an indication through buzzer and it displays in LCD. The following figure shows that temperature is detected in smart home.

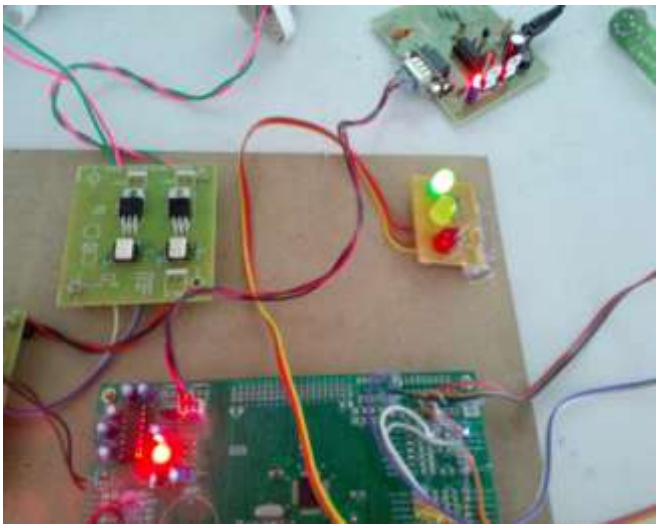

Fig. Indication of temperature through green LED

4. CONCLUSION

The proposed smart home system has been successfully developed and tested. Devices such as light, fan, temperature sensor, gas sensor, fire detection sensors and alarms have been integrated in the system to demonstrate its feasibility and effectiveness. Features such as low cost, user authentication, voice activation, security and surveillance, and automatic control make the proposed system unique.

5. REFERENCES

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