

# ADVANCED SECURITY SYSTEMS

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**Abstract**— There are many robbery cases, murder cases and many more disasters in which many a times the culprit is not found or there is no evidence of the crime the culprit has done and he is not punished/arrested for the crime. This is all because there is no security system. So we have introduced an Advanced Security System which overcomes the problem of not having the evidence of the crime the culprit has done. The Advanced Security System is all about sensing the presence, gas leakage, fire sensing. The gas sensor is used to detect the leakage of the LPG gas in the house if used in house security and if used in industry the LPG gas sensor can be replaced by the gas that can be hazardous or harmful in the industries. The fire sensor is used to detect the fire in the house as well as in different industries to avoid any fire that will eventually destroys the place when there is a fire.

**Index terms**- disasters, culprit, security, sensing, evidence, etc,

## I. INTRODUCTION

Home security has been a major issue where crime is increasing and everybody wants to take proper measures to prevent intrusion. In addition, there is need to automate home so that the user can take the advantage of technological advancement. This project presents a model that will provide security to their home, office or cabin etc via SMS using GSM technology. Keeping in view the rapid growth of wireless communication we are inspired to work on this project. The idea behind this project is to meet the upcoming challenges of the modern practical applications of wireless communication and to facilitate our successors with such splendid ideas that should clear their concept about wireless communication and control

system. The applications of SMS/GSM Based security system are quite diverse. There are many real life situations that require control of different devices remotely and to provide security. There will be instances where a wired connection between a remote appliance/device and the control unit might not be feasible due to structural problems. In such cases a wireless connection is a better option. Basic Idea of our

project is to provide GSM Based security even if the owner is away from the restricted areas. For this we

wireless mode of transmission using GSM. Beside this there are many methods of wireless communication but we selected GSM in our project because as compared to other techniques, this is an efficient and cheap solution also, we are much familiar with GSM technology and it is easily available.

## II. BLOCK DIAGRAM

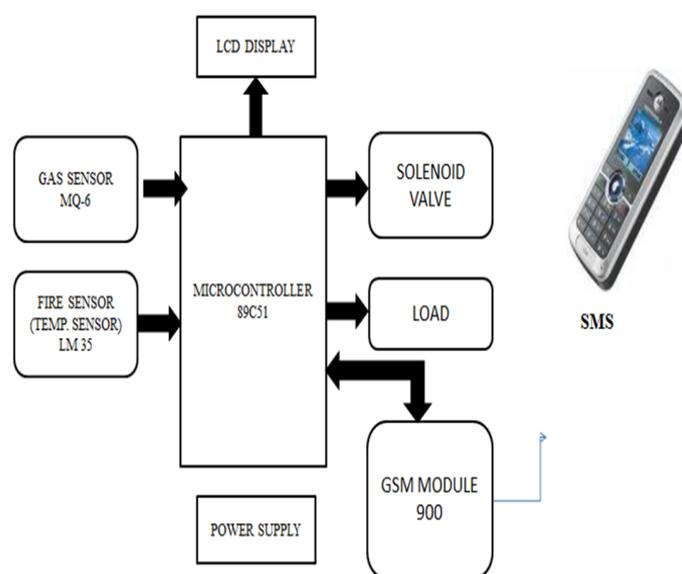


Fig1; Block diagram

## III. CONTENTS

### Gas Sensor (MQ6)

**Description:** It is a easy-to-use [liquefied petroleum gas \(LPG\)](#) sensor, suitable for sensing LPG (composed of mostly propane and butane) proportions in the air. This sensor has a high sensitivity and fast response time.

The sensor's output has analog resistance. The drive circuit is simple to understand; all you have to do is power the heater coil with 5V, add a load resistance, and connect the output to an ADC.



Fig2. Schematic of Gas Sensor

**LPG Gas Sensor (MQ6) Features:**

- High Sensitivity to LPG, iso-butane, propane.
- Small sensitivity to alcohol, smoke
- Detection Range: 100 - 10,000 ppm iso-butane propane
- Fast Response Time: <10s
- Simple drive circuit
- Heater Voltage: 5.0V

**Fire Sensor (Temp Sensor-LM 35)**

LM35 is a precision IC [temperature sensor](#) which has its output proportional to the temperature (in °C). As the sensor circuitry is sealed it is therefore not subjected to oxidation and other processes. With LM35, temperature can be measured more accurately than it can be measure by a thermistor.

As it possess low self heating it does not cause more than 0.1 °C temperature rise in still air.

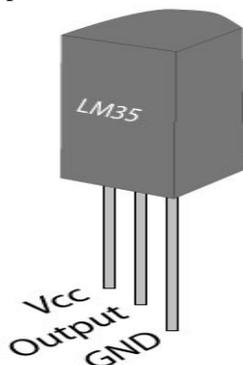


Fig3.Symbol of Fire Sensor

**Temp Sensor (LM 35) Features:**

- Supply Voltage +35V to -0.2V
- Output Voltage +6V to -1.0V
- Output Current 10 mA

**Gsm module 900**

This circuit provides communication between circuit and User via Sms. This is a module which works on 900mhz frequency band. It provides automatic sms service to the emergency user by using this module.



Fig4.GSM Module

**IV. CIRCUIT DIAGRAM**

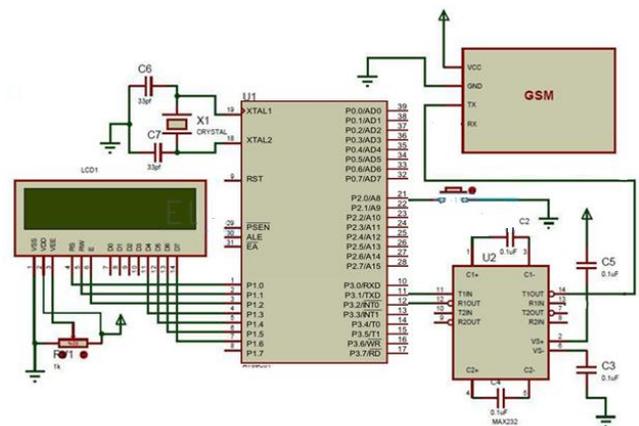


Fig5.Interfacing of 89c51 with GSM Module

**V. RESULT**

**In case of fire:**

- The lm 35 sensor is activated and accordingly the message command is sent to the GSM through the microcontroller. The GSM sends the message " FIRE SENSOR ACTIVATED" to the owner's cell

followed by a call which shall be automatically disconnected after 10 seconds so that the message will be noticed.

- The solenoids are switched ON which in turn allows the flow of water through the sprinklers in order to cut off the fire.
- The main supplies are cut off using the ELCB to avoid the spread of fire on the electrical circuit board.

#### **In case of gas leakage:**

- The MQ6 sensor is activated and accordingly the message command is sent to the GSM through the microcontroller. The GSM sends the message "GAS SENSOR ACTIVATED" to the owner's cell followed by a call which shall be automatically disconnected after 10 seconds so that the message will be noticed.
- The solenoids are switched OFF which are connected in between the gas cylinder and burner to prevent the further gas leakage. Here we are Using Dc Fan to act as a Solenoid switch.
- The main supplies are cut off using the ELCB as a small spark due to short circuit on the electrical components like switches, home appliances which will lead to the ignition of fire.

#### **VI. ADVANTAGES**

- It provides the Warning Sign.
- Fires can break out at any time and once they start they spread fast. Our home security alarm systems are equipped with smoke detectors, which warn you when you are at risk of a fire. These all encompassing systems can help save your property and your life.
- Neighbourhoods safety is always one of the top factors people consider.
- The best advantage to having a home security system is that you can go about your life knowing that your household and belongings are secure.
- Using Gsm the appliances can also on/off.

#### **VII. APPLICATION**

- The home Automation System can be Used in any type of area to monitor and control the appliances

- It can be used in industrial Application.
- It can be used where the Hazard Gases Present in the enviroment is more. To detect them and to ensure the safity.

#### **VIII. FUTURE SCOPE**

- In future we can control our home appliances by msg on/off.
- we can increase the home security level by adding the camera to click the pictures.
- The security system can make better by adding security lock to the door of House.

#### **IX. CONCLUSION**

This project presents Advance Home Security System and alert system with SMS to the user defined mobile numbers. The GSM alert based algorithm is designed and implemented with 89c51 MCU in embedded system domain. The proposed Advance Home Security System can track home gas leakage and fire in home automatically and sends an alert SMS regarding accident. This made the project more user-friendly and reliable. The proposed method is verified to be highly beneficial for the automotive industry.

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