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<http://www.projectsof8051.com/gsm-based-home-security-system/>

Code	Project Title
1601	GSM based Home Security System

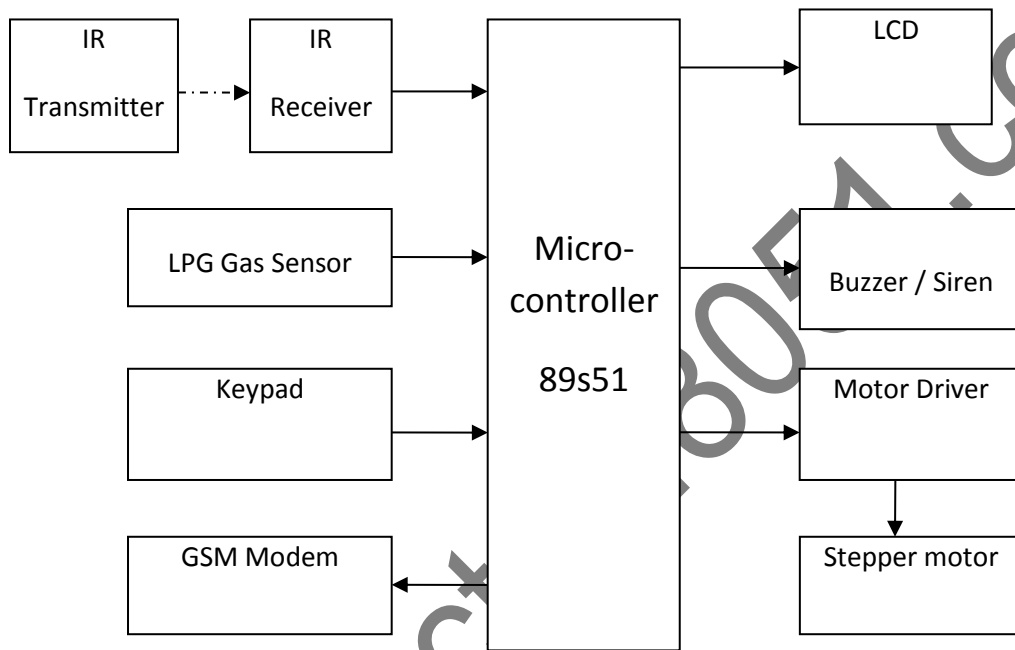
Synopsis for GSM based Home Security System

1. Introduction

This project has 3 basic modules. First module of this project detects if person is entering in room. LCD display placed outside the room displays this status. And if person has entered then buzzer is turned on. Second part of project serves the functionality of a door-latch opening using a password entered through keypad. As well as sending this data to a computer through serial port. This module also turns on buzzer if 3 wrong passwords are entered consequently. User can change this password anytime he/she wish using a keypad. Third module uses LPG gas sensor to detect the gas leakage. If there is leakage then buzzer is turned on.

GSM modem is used to send the SMS whenever there are changes in any of the three modules.

2. Block Diagram



3. Block Diagram Description

It mainly consist of following blocks

- 1. Transmitter:** We are going to implement the Person counter module using 1 transmitters and 1 receivers. We are going to use Infra-Red transmitters because infrared beams are not visible to human eyes. Transmitter used is IR LEDs

- 2. Receiver:** We are going to use an Infrared receiver. It is an active low device which means it gives low output when it receives the Infrared rays.

- 3. Microcontroller:** This is the CPU (central processing unit) of our project. We are going to use a microcontroller of 8051 family. The various functions of microcontroller are like
 - I. Reading the digital input from infrared receiver and find out if person is entering inside house.
 - II. Sending this data to LCD so that the person operating this project should read the number of persons inside the room.
 - III. Sensing the password using keypad and to check whether it is a correct password or a wrong password and rotate the stepper motor if the password entered is a correct password.
 - IV. Sending the data to the computer using serial port. This data consist of number of persons inside the room and the status of entered password (Correct/wrong)

- 4. LCD:** We are going to use 16x2 alphanumeric Liquid Crystal Display (LCD) which means it can display alphabets along with numbers on 2 lines each containing 16 characters.

- 5. GSM Modem:** We are going to use sim300 as a GSM modem. The values of number of persons inside the room, LPG Gas leakage status and the status of entered password (Correct/wrong) will be sent to GSM modem.

- 6. Keypad:** User will enter the password using the keypad. Various keys of keypad are as following,
 - I. 0 to 9
 - II. Enter
 - III. Escape

Application and Advantage:

1. Can be used in various rooms like seminar hall, conference room, and study rooms in college where the capacity of room is limited and should not be exceeded. So the project will display the actual number of persons inside the room.
2. The other part of the project (password detector) can be used to automate the door locking process, so the user need not to carry the door lock keys along with him, he can just remember the password and use it later to open the door

Future Development:

1. We can implement other related modules like fire sensor, wind sensor.
2. We can add the module of voice alarm system to indicate that the room is full and persons can not enter inside.