

Smart Electronic Security System for Residences with Auto Dialer

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Abstract- Security is primary concern for everyone. This Project describes a design of effective security alarm system that can monitor home with eight different sensors. Fire accident, IR detection, and gas detection can be monitored by the status of each individual sensor and is indicated with an LED. This LED shows whether the sensor has been activated and whether the wiring to the sensor is in order. The burglar alarm is built around the AT89S52 micro controller from Atmel. This micro controller provides all the functionality of the burglar alarm. It also takes care of filtering of the signals at the inputs. Only after an input has remained unchanged for 30 milliseconds, this new signal level passed on for processing by the micro controller program. This time can be varied by adopting small changes in the source code.

I. INTRODUCTION

From last few year home security is an essential requirement of households to keep home safe from intruders to get rob. So the researchers and companies tries to implement an algorithms and make some gradates that keep your home safe from intruders. This leads to advance technology that make your home intelligent or modern this called as home automation system also. With this technology house owner can control other appliances as well like lighting system, dimming, electrical appliances and many more. Now a day's wireless technology is used to control home appliances instead of wired topological connection. GSM(Global System for

Mobile Communication) technology makes used to communicate input signal from appliances to output message on device. That means after detection of any intrusion GSM Modem sends the appropriate message to house owner's phone. The signals or data which is comes from sensors or other equipment digitize it by GSM module and send it to receiver.

A typical home security system should consist of a detector and an alarm system which is triggered once an intruder is detected. Detector systems could be as simple as a trip switch attached to movable part like the hinge of a door and even door handles in such a way that any movement around this area will toggle the switch and thus raise an alarm. In more complex devices, detectors which can sense infrared radiation produce by body heat and fluctuation of such radiation as a result of movement have become common. Such detectors usually sense motion and then trigger the appropriate response. This work tends to utilize the availability of GSM network, mobile module and electronics circuit to achieve an automated system which is programmed to work as a thinking device to accomplish this purpose. By simply sending message to the phone number of the SMS attached to a slot in the circuit, this automatically puts the system to either "active or inactive" state, and on any attempt of theft the system sends a text message to the device owner, With this, the house is always protected. The total absence of sufficient security personnel in a house is a great discomfort to house owners.

II. METHODOLOGY

Early days with advancement of technology things are becoming simpler and easier for users. Automated systems/machines are being preferred over manual system. In this paper the basic definitions needed to understand the Project better and further defines the technical criteria to be implemented as a part of this project. Automation reduces the need of human work and also the use of control systems and information technologies reduces the need for human work in the production of goods and services. In the scope of industrialization, home automation is a step beyond mechanization. For machineries mechanization provided human operators with machinery to assist them with the muscular requirements of work, where automation greatly reduces the need for human sensory and mental requirements as well. Automation in security system plays an increasingly important role in the world economy. Automatic security systems are being preferred over manual system. Through this paper we have tried to show home automatic security system control of a house as a result of which power is saved to some extent with the help of home automation for door image capture for security system.

IV. HARDWARE IMPLEMENTATION

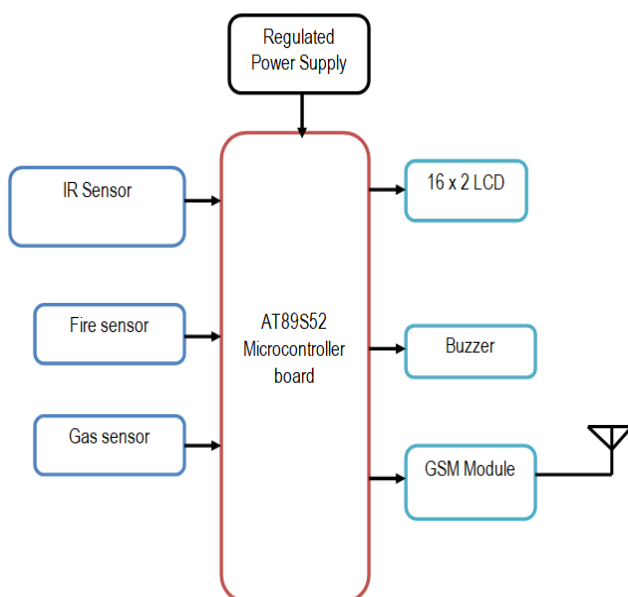


Fig.1 Proposed block diagram

A. Regulated Power Supply:

A variable regulated power supply, also called a variable bench power supply, is one where you can continuously adjust the output voltage to your requirements. Varying the output of the power supply is the recommended way to test a project after having double checked parts placement against circuit drawings and the parts placement guide.

B. LCD Interfacing

This section describes the operation modes of LCDs, then describes how to program and interface an LCD to art .8051 using Assembly and C.

LCD operation

In recent years the LCD is finding widespread use replacing LEDs (seven-segment LEDs or other multi segment LEDs). This is due to the following reasons:

1. The declining prices of LCDs.
2. The ability of display numbers, characters, and graphics. This is ain contrast to LEDs, which are limited to numbers and a few characters.
3. Incorporation of a refreshing controller into the LCD, thereby relieving the CPU of the task of refreshing the LCD. In contrast, the LED must be refreshed by the CPU (or in some other way) to keep displaying the data.
4. Ease of programming for characters and graphics.

C. Buzzer:

Buzzer is an electronic device commonly used to produce sound. It is the phenomena of generating electricity when mechanical pressure is applied to certain materials and the vice versa is also true. Such materials are called piezo electric materials. Piezo electric materials are either naturally available or manmade. Piezoceramic is class of manmade material, which poses piezo electric effect and is widely used to make disc, the heart of piezo buzzer.

D. IR Sensor:

An infrared sensor is an electronic device that emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. When IR light falls on the photodiode, The resistances and these output voltages, change in proportion to the magnitude of the IR light received.

E. Fire sensor:

Fire sensor is a sensor designed to detect and respond to the presence of a flame or fire. Responses to a detected flame depend on the installation, but can include sounding an alarm, deactivating a fuel line (such as a propane or a natural gas line), and activating a fire suppression system. When used in applications such as industrial furnaces, their role is to provide confirmation that the furnace is properly lit; in these cases they take no direct action beyond notifying the operator or control system. A flame detector can often respond faster and more accurately than a smoke or heat detector due to the mechanisms it uses to detect the flame.

F. GSM:

GSM is a mobile communication modem; it stands for global system for mobile communication (GSM). The idea of GSM was developed at Bell Laboratories in 1970. It is widely used mobile communication system in the world. GSM is an open and digital cellular technology used for transmitting mobile voice and data services operates at the 850MHz, 900MHz, 1800MHz and 1900MHz frequency bands.

G. Gas sensor:

Gas sensors need to be calibrated and periodically checked to ensure sensor accuracy and system integrity. It is important to install stationary sensors in locations where the calibration can be performed easily. The intervals between calibrations can be different from sensor to sensor. Generally, the manufacturer of the sensor will recommend a time interval between calibrations. However, it is good general practice to check the sensor more closely

during the first 30 days after installation. During this period, it is possible to observe how well the sensor is adapting to its new environment. Also, factors that were not accounted for in the design of the system might surface and can affect the sensor's performance.

V. WORKING PRINCIPLE

This section describes briefly the design methodology used to achieve the project. The project was design to provide global access to the system for the security using extensive GSM technology for communication purposes and microcontroller for device control. The highlights of the system are the long range of communication and robust coordinating software with a data base containing information about the user (client) mobile phone number. Design also based on microcontroller based home security system with SMS alert using human body motion detective and GSM module. The system design is in three main phases: the sensitivity, central processing and action. The sensitivity is the perception section that is done through IR sensor mounted at watch-area, central processing is performed by a programmed microcontroller, and the action (task) is done through an interaction of an attached on-board GSM module to the processor (the microcontroller) which then send an SMS alert to the user or owner mobile phone number.

VI. RESULTS

The experimental hardware setup is designed to implement Electronic security system using auto dialer.

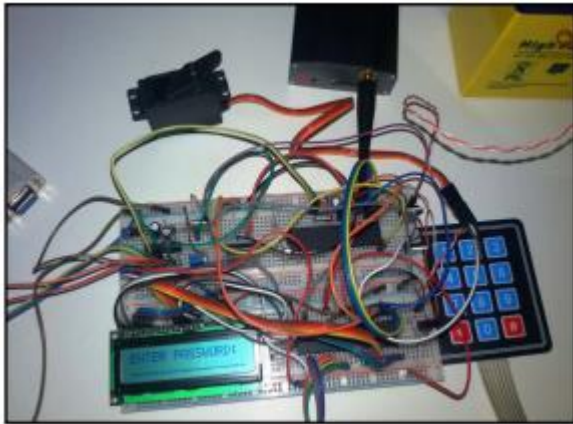


Fig.2 Typical Hardware setup



Fig.3: Getting information on mobile



Fig.4: Home security application

VII. CONCLUSION AND FUTURE SCOPE

In the general sense, security is a concept similar to safety. Individuals or actions that encroach upon the condition of protection are responsible for the breach of security. As safety is priority for everyone, this system is useful for every individual. Hence by using this system home will be secure and safe from all danger.

Various future enhancements can be given to the proposed security system. Additionally the Person Identification Function (PIDF) can be executed by utilizing remote camera which makes utilization of the Wi-Fi innovation. The camera can be set outside the house and the confirmation can be given by mindful individual.

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