

Super Sensitive Home Security System with Auto-Dialer and 60DB Loud Siren

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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. Unauthorized access, Fire accident, wall braking, IR detection, and fire 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 alarm is also fitted with a so-called 'panic button'. 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.

Keywords/ Index Term: HOME Security, Auto-dialer, Siren 8051 microcontroller, sensors etc.

1.INTRODUCTION:

Security is the condition of being protected against danger or loss. In the general sense, security is a concept similar to safety. The nuance between the two is an added emphasis on being protected from dangers that originate from outside. Individuals or actions that encroach upon the condition of protection are responsible for the breach of security.[1]

The word "security" in general usage is synonymous with "safety," but as a technical term "security" means that something not only is secure but that it has been secured. One of the best options for providing good security is by using a technology named EMBEDDED SYSTEMS. The burglar alarm is built around the AT89S52 micro controller from Atmel. This microcontroller 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, is this new signal level passed on for processing by the micro controller program. A maximum of 8 sensors can be connected to the burglar alarm. These sensors need to have their contacts closed when in the inactive state.[3] HOME security is the most significant one for every area either in an individual. This 8051 microcontroller Bases HOME security system can be used to provide security system for residential, industrial, and for all domestic and commercial purposes using auto dialer technique. Security systems are certain electronic devices which are used to detect intrusions in home or .The basic components of this automation security system are Magnetic sensor, IR sensor, LDR, Panic switch LPG, Temp slot sensor. It is cheaper and can be maintained easily than any other security device. Eight LEDs indicate the status of the corresponding sensors. When the alarm has been activated, the LED of the sensor that caused the alarm will light up. [4] The uniqueness of this project is not only alerting the neighbors by siren, it also dials a mobile number which is already programmed into the system.

A mobile number or a land line number can be programmed into the system. As this system works on existing telephone line, it can dial the number even the subscriber is out of station.[5]

2.PROBLEM STATEMENT:

To develop the problem under consideration and justify feasibility using concept of knowledge canvas and IDEA Matrix.

Aim: The aim of the project is to propose the security at Home

IDEA Matrix:

I	D	E	A
INCREASE : The efficiency of the Security	DRIVE: To drive the sensors	EDUCATE : How to be safe or on anti theft	ACCELERATE : Safety of public
IMPROVE : Usability	DELIVER: Safety to people	EVALUATE : Sensors activation	ASSOCIATE: Calling.
IGNORE : Hacking.	DECREASE : The man power	ELIMINATE : Eliminating the time and effort.	AVOID : Theft

Table 2.1: IDEA Matrix

3.LITERATURE REVIEW :

M.Sravan Kumar et.al. Says in paper “GSM BASED industrial SECURITY SYSTEM” about Security and automation is a prime concern in our day-to-day life. The design of simple hardware circuit enables every user to use this wireless home security system with PIR sensor, Gas sensor, Smoke sensor and Main fuse Failure Detector at Home & Industries. [1]

N.Chintaiahi et al says in paper “AUTOMATED ADVANCED industrial and HOME SECURITY USING GSM and FPGA” that they going to present the design and implementation of a remote and sensing, control and home security system based on GSM (Global System for Mobile).. [2]

Ms. Priti Vasant Kale et.al. Says in paper “Intelligent Home Security System using illumination sensitive background model” that Home security has been a worry of around the world. On finding the interloper, the framework sends an email on the proprietor mail id with pictures of the gatecrashers so that the further activity can be started. [3]

The remote correspondence convention between the door and the hubs is additionally reasonable for other home machines [4]

R Megalingam, et.al. Says in the paper “Low Power, Intelligent, Wireless, Home Security System for the Elderly People” that they recommend a Low Power Intelligent, Remote, Home Security System (IWHSS) for Elders. The seniors can benefit the administrations of this IWHSS, advantageously inside their room. [5]

Zungeru, et.al. Says in the paper “A Simple and Reliable Touch sensitive security System” that security system is controlled by touch panel. Using touch screen all sensors are controlled.[6]

V. Rakesh et.al. says in the paper “An improved real-time surveillance system for home security system using BeagleBoard SBC, Zigbee and FTP webserver” that Real-time surveillance is an essential part and their proposed framework actualizes an installed framework for checking remote sensor hubs and camera introduced inside a building for security surveillance. When system get trigger , the framework sends cautioning messages through Short Message Service (SMS) to mobile phones, begins catching ongoing video for settled length and makes the alert on. The caught video clasp is quickly transferred to an FTP (File Transfer Protocol) webserver. [7]

Zazilah Binti May says in the paper “Real-time Alert System for Home Surveillance” that in the present market of reconnaissance innovation, the items appear to offer insignificant, nonflexible ready framework and are expensive. Continuous execution is accomplished by utilizing a GSM (Global System for Mobile Communication) modem for SMS (Short Message Service) warning supplemented by email notice for recording information off-site to FTP (File Transfer Protocol) stockpiling. [8]

K. Balasubramanian et.al. says in the paper ”Analysis of Remote Control Techniques Employed in Home Automation and Security Systems” that Remote control of home

machines are basic parts of home robotization and home security frameworks. Most normally utilized specialized apparatuses, for example, mobile phones, landline phone and email are considered for remote control of machines by proposing effective structures [10].

4.SYSTEM CHARRACTERISTICS:

The project would improve the accuracy in security. The theft will be avoided as this will be proposed in the society.

4.1 Sensors:

The eight different sensors are used for the security system and these are interfaced to the microcontroller AT89S52. Various sensors are used like for temperature LM35 is used, for gas MQ3, for light LDR and for door magnetic sensor is used.

4.2 Microcontroller:

AT89S52 is of 8 bit controller. It is having 4.0V to 5.5V Operating Range. It,s fully Static Operation range is 0 Hz to 33 MHz.256 x 8-bit Internal RAM. 32 Programmable I/O Lines. Three 16-bit Timer/Counters.

4.3 Operating Environment:

The system shall operate with the following platform: Windows. The output will operate on the platform of android Phone or the normal phone

5.PROJECT REQUIREMENTS:

5.1 Hardware Requirements:

1. Microcontroller
2. Sensor panel
3. Power supply
4. Buzzer
5. LED

5.2 Software Requirements:

1. KEIL: It is used for programming
2. PROTEUS: It is used for simulation
3. PROLOAD: It is used for dumping HEX file

6.BLOCK DIAGRAM

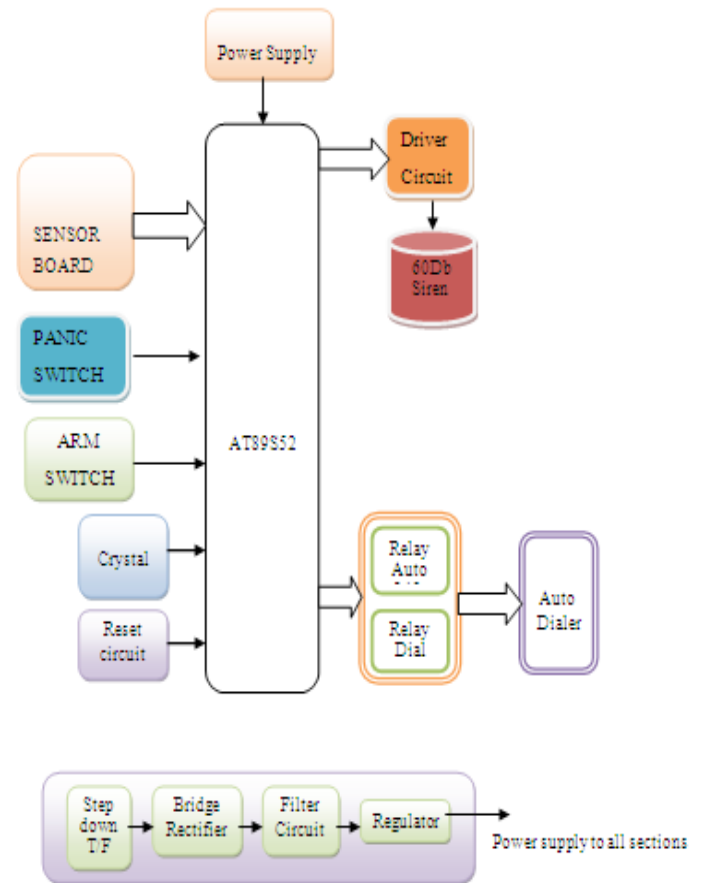


Figure1. Block diagram of the system and power supply

7.IMPLEMENTATION CONSTRAINTS:

Super sensitive home security system is mainly depends on controller used i.e.80s52.To sense the condition, we are using sensors which are related to our security. Eight LEDs indicate the status of the corresponding sensors. When any security constraints get break, then alarm will be blow. When the alarm has been activated, the LED of the sensor that caused the alarm will light up, or flash in the event of a cable failure. After the exit-delay, the LED will light continuously. The ‘Alarm triggered LED’ flashes during the entry-delay and will turn on continuously once an actual alarm has been generated. ‘Alarm triggered LED’ turns off only when the alarm is switched off with key switch Sw1. When an alarm has taken place, it can be determined afterwards which sensor (or tamper input) caused the alarm to trigger is only because of LED connected to that sensor. This LED will also continue to be on until the alarm is switched off.

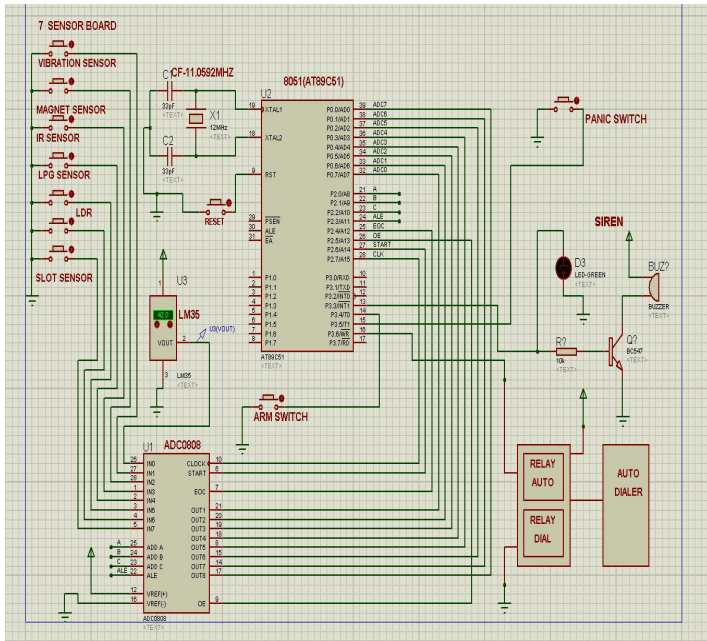


Figure 2. Proteus simulation diagram

This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

8. CONCLUSION AND FUTURE WORK:

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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