

Wireless Security System with Password Protection

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Abstract: Home security is not minor issue because crime is increasing and everyone wants to take proper measures to prevent invasion [1]. In this paper, design and implement of a microcontroller based wireless security system with password protection have been presented and analyzed. Microcontrollers with other peripheral devices which include Liquid Crystal Display (LCD), Buzzer, Sensors, Encoder and RF Module are responsible for reliable operation of the proposed security system. In addition, the system is provided with a manual keypad which provides a password protection in order to provide extra security to the system. Assembly language is used as the programming language and Atmel is used to compile the code in order to design a program that controls the system along with maintaining all security functions.

Keywords: Wireless, Security, System, Heat sensor, Gas sensor, Thermistor, LED, Electric Circuit

I. INTRODUCTION

Wireless Security systems are very important for modern Home [2]. The today's home security systems date back to the early 1900's. These systems were generally costly and not easy to operate. From last 100 years as technology has changed, and home security systems have also changed for the security [3]. Past time home security systems were very costly and surprisingly ineffective. The requirement for an effective and low cost effective system to cater the dangerous situations and in order to fulfill the security concerns of home owners when the owner is away from home, it was a need to develop a lower cost effective and reliable system to satisfy the security related needs of user [4]. Home security had changed a great deal over the past last century and it will continue to do so as long as technology continues to progress [5]. This paper mainly focuses on creating a wireless security system which provides security to the user. The system uses different sensors such as heat sensor, gas sensor to the system for security. Home security has been a major issue where crimes are increasing and everybody wants to take proper measures to prevent intrusion. Since this system is wireless therefore it makes it more adaptable and cost-effective.

II. PROPOSED SYSTEM

The system contains sensors to detect heat, smoke, temperature and any intruder. The system is controlled by two micro-controller 89S51 and 8051. 89S51 collects information from the sensors, makes a decision and sends the information to 8051 using a RF module. If it finds any interruption in its sensors like if the heat sensor is interrupted then MCU will send the data and the information about which sensor is activated is displayed on the Led screen.

III. SYSTEM DESIGN

The working principles and design steps of the system is organized into different units like controller unit, interfacing unit, password protection and different sensors. It also requires compiler to build the assembly program.

IV. HARDWARE DESIGN

Controller Unit

The control unit is built with the microcontroller IC. The central controller is MCU 89S51 and 8051. 89S51 series is 40 pin controller with 32 pins are available for the input and output. In fig 1 the circuit diagram of the MCU 89S is given whereas in fig 2. The circuit diagram of MCU 8051 is given.

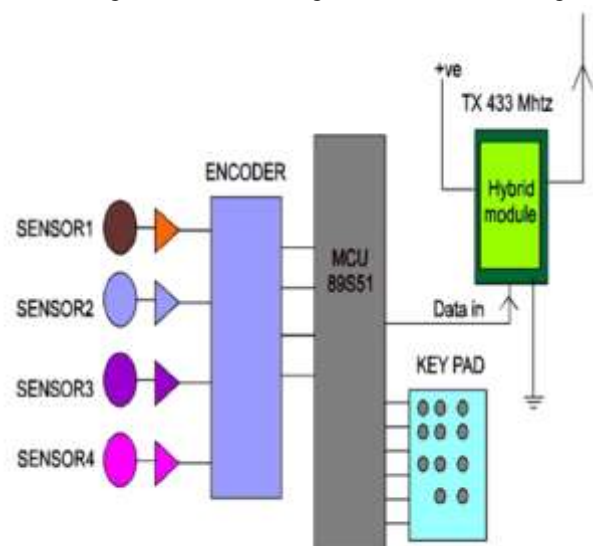


Fig 1: TRANSMITTER [6]

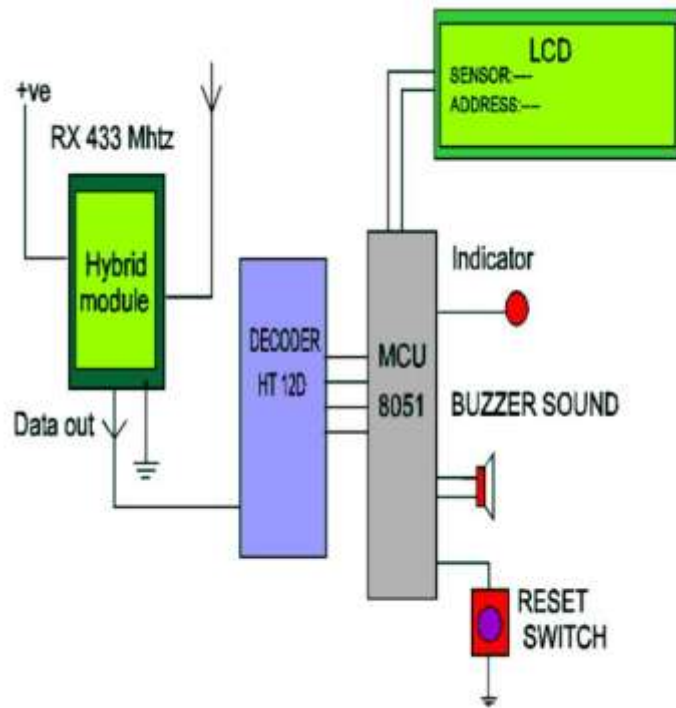


Fig 2: RECEIVER [7]

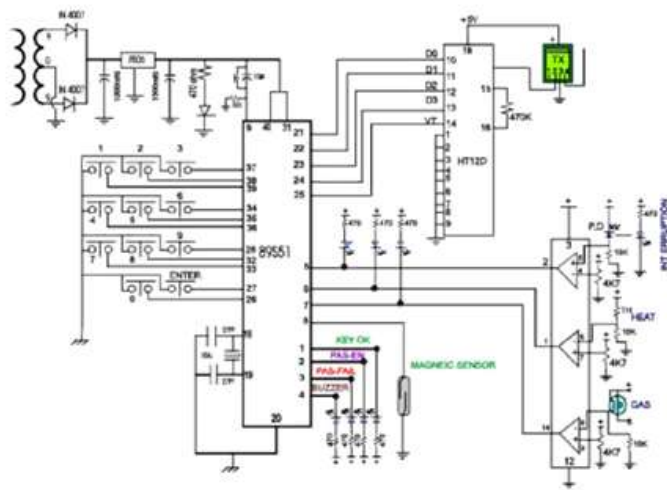


Fig 3: Schematic working diagram[8]

V. PRACRICAL IMPLEMENTATION



Fig 4 Implemented Transmitter Image

VI. WORKING DIAGRAM

The schematic working diagram of the system



fig 5 Implemented Receiver Image

VII.CONCLUSION

This home security feature is expected to get more attention in the future. People are learning more and more concerned about how to protect themselves and their houses in very emergencies. These emergencies include not only thief intrusion, but also fire attack. The device provides a means for being able to securely monitor a house to use of sensors integrated with password protection [6]. LED provides an economical and convenient way to alert users of a possible intrusion into the property. So this system is safe and cost effective as well.

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