

FINAL YEAR PROJECT REPORT

DASH7 SECURITY SYSTEM



Project Advisor

Muhammad Rizwan

Submitted by

Farhan Ammar Ahmad - 071020-073

Yasir Haleem - 071020-128

Umair Riaz - 071020-223

Department of Electrical Engineering

School of Science and Technology

University of Management and Technology

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Farhan Ammar Ahmad - 071020-073

Yasir Haleem - 071020-128

Umair Riaz - 071020-223

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Abstract

Technologies have been continuously benefitting to the mankind in every way possible. Old systems are being replaced by new techniques in terms of technology. The never ending research is underway to make the system compact and durable. Similarly, we have focused on Security System that can be used at home users, businesses, universities etc. huge groups those who are concerned about their and others security. The main purpose of the system is to provide an easy and comfortable approach to the user, so that security related task can be achieved electronically. There are so many ways to implement such idea into real means.

We have used GSM technology features to enhance the coverage of the security related issues faces by many of the people in their daily life. We have tried to generate automatic SMS in case of any unpleasant incidence happen when it is hard for the user to reach to its home area from a remote location, so that the security of its belongings should be taken care by law enforcement agencies.

This efficient system makes it easy for the user to handle electronic security in an efficient way, so that the organizations and home users can have a feeling of security and relaxation that there is someone to take care of their belongings and they are safe.

This project titled “DASH7 SECURITY SYSTEM” aims at securing our home from a remote location. We have use the GSM technology for communicating between the remote location and the home controller. In addition we have place sensors at remote locations in home that are connected wirelessly by using RF car remoter control.

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Chapter I: Introduction

1. Introduction

This section will give some brief details of project. The goal of this project is to provide an inexpensive, reliable and user friendly security system that can be installed in homes, store rooms and in buildings while utilizing simple electronics components that are available in the market. We have incorporated *Touch sensor, Water sensor, Light Dependent Resistance LDR, Vibration sensor, PIR, Smoke sensor and a Battery level indicator*. Hence the security system will sound an alert when there is an attempt of opening door, water leakage, lights ON, earth quake, human detection, burning of something or main system battery is going to down and a Short Message Service SMS will be sent to user to inform any of these activity.

DASH7 is the open source wireless sensor networking standard for wireless sensor networking. The wireless networking technology was originally created for military use and has been re-purposed for mainly commercial applications in place of proprietary protocols like ZigBee or Z-Wave. [1]

This section will also state the basic problem and the characteristics of project. The basic idea behind the project is to develop a smart and intelligent security system that helps people who are far away from their home, store room or their office. If there will be a security issue or an accident in home store room or shopping malls, a SMS will be generated by microcontroller and send to user mobile and sound alarm will alert at accident place.

This project consists of three modules. First one is main unit which consists of a LCD, a Hex keypad, a GSM Modem and Serial Communication Module. Main unit gets input from receiver module and sends SMS to user and alert alarm. Second one is wireless data transmission module which gets data from sensors and sends it to main unit. And third and last one is module is of sensors.

1.1. Motivation

Security today is one of the most important reasons to consider. It is becoming more and more important these days as in the today's fast pace life, where everybody at home are busy in their daily activities like jobs or businesses etc. in order to have more comforts in life and it is compelling everyone to be engaged in some sort of earning resources, unlikely in the past where only single earning person could be able to manage the necessities of the whole family, leaving the females at home. But in today's world women have to work along with their family men to support their family leaving their homes alone. It is quite important that homeowners should ensure that they live their house in a safe condition and also should be well aware in case if any unpleasant incidence. In short, home security is a major issue as well as worrying subject which affect almost everybody. There are many security systems locally available in market with good features but these are much expensive and majority people cannot afford to purchase them.

1.1. Previous Work

Previously security systems designed were not reliable because they were connected via wire to main unit. And they are installed in homes, store rooms and in offices then many issues will arise. For example, if a sensor is attached at a far away distance then installation is a big issue and it will also be unsecured because any one can cut wire or accidentally wire can be broken then main unit will not receive any signal and system will fail. So our DASH 7 Security system is a wireless security system. All of sensors are attached wirelessly and maximum distance can be 100 feet.

1.2. Aim of project

The objective of this project is to develop such a security system that allow users not only the ease of use but also give them maximum reliability. To develop such a system that will be powerful and flexible that will offer service at any time, and from anywhere with the constraints of technologies being applied.

The proposed approach for designing this system is to implement a microcontroller based control module that can get input from sensors wirelessly and can inform user via GSM network. After that, user can watch his home or office live via internet anywhere in the world.