SMS BASED HOME APPLIANCES CONTROL SYSTEM

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Abstract: This project presents a new solution to the problem of Home Automation like door locking and home appliances controlling. It will focus on how short Message Service (SMS) can be incorporated into Home Automation with the base of GSM network to achieve remote communication with the user. This project describes the hardware and software constructs, which is essential in the development of the system. GSM network is composed of several functional entities, whose functions and interfaces are defined. The GSM network can be divided into three broad parts. The Mobile Station is carried by the subscriber; the Base Station Subsystem controls the radio link with the Mobile Station. The Network Subsystem, the main part of which is the Mobile services switching centre, performs the switching of calls between the mobile and other fixed or mobile network users, as well as management of mobile services, such as authentication. Operations and Maintenance centre, which oversees the proper operation and setup of the network.

Keywords: 8051, GSM, Power Supply.

I. INTRODUCTION

The aim of the paper is to investigate a cost effective solution that will provide controlling of home appliances remotely and will also enable home security against intrusion in the absence of home owner. The motivation is to facilitate the users to automate their homes having ubiquitous access. The system provides availability due to development of a low cost system. The home appliances control system with an affordable cost was thought to be built that should be mobile providing remote access to the appliances and allowing home security. Home security has been a major issue where crime is increasing and everybody wants to take proper measures to prevent intrusion. In addition there was a need to automate home so that user can take advantage of the technological advancement in such a way that a person getting off the office does not get melted with the hot climate. Therefore this paper proposes a system that allows user to be control home appliances ubiquitously and also provide security on detection of intrusion via SMS using GSM technology.

II. HARDWARE SYSTEM

Micro controller: This section forms the control unit of the whole project. This section basically consists of a Microcontroller with its associated circuitry like Crystal with capacitors, Reset circuitry, Pull up resistors (if needed) and so on. The Microcontroller forms the heart of the project because it controls the devices being interfaced and communicates with the devices according to the program being written.

Liquid-crystal display (LCD) is a flat panel display, electronic visual display that uses the light
modulation properties of liquid crystals. Liquid crystals do not emit light directly. LCDs are available to display arbitrary images or fixed images which can be displayed or hidden, such as preset words, digits, and 7-segment displays as in a digital clock.

**III. BOARD HARDWARE FEATURES**

**GSM:**

Global System for Mobile Communication (GSM) is a set of ETSI standards specifying the infrastructure for a digital cellular service.

The network is structured into a number of discrete sections:
- Base Station Subsystem – the base stations and their controllers explained
- Network and Switching Subsystem – the part of the network most similar to a fixed network, sometimes just called the "core network"
- GPRS Core Network – the optional part which allows packet-based Internet connections
- Operations support system (OSS) – network maintenance

SM was intended to be a secure wireless system. It has considered the user authentication using a pre-shared key and challenge-response, and over-the-air encryption. However, GSM is vulnerable to different class of attacks, each of them aiming a different part of the network.

**RELAYS**

Relay is an electrically operated switch. Current flowing through the coil of the relay creates a magnetic field which attracts a lever and changes the switch contacts. The coil current can be on or off so relays have two switch positions and they are double throw (changeover) switches. Relays allow one circuit to switch a second circuit which can be completely separate from the first. For example a low voltage battery circuit can use a relay to switch a 230V AC mains circuit. There is no electrical connection inside the relay between the two circuits; the link is magnetic and mechanical.
IV. RESULTS

Fig. 4: Hardware kit without power off

Fig. 5: Hardware kit without power on

V. CONCLUSION

In the paper, a low cost, secure, ubiquitously accessible, auto-configurable, remotely controlled solution for automation of homes has been introduced. The approach discussed in the paper is novel and has achieved the target to control home appliances remotely using the SMS-based system satisfying user needs and requirements. GSM technology capable solution has proved to be controlled remotely, provide home security and is cost-effective as compared to the previously existing systems.

V. REFERENCES


