

Home Appliances Control Using GSM Modem

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Abstract— With advancement of technology things are becoming simpler and easier for us. Automatic systems are being preferred over manual system. The purpose of this project is to design and construct A GSM based home automation using AVR. Using GSM networks, in this project a home power control system has been proposed that will act as an embedded system which can monitor and control appliances and other devices locally using built-in input and output peripherals. The system has a delay of 2 minutes after the first call to initiate the next command. This project is made up of four vital units. These units are as follows: GSM module unit, peripheral interface control (PIC) unit, driver unit and a power monitoring and control unit. The GSM module is a GSM transceiver which gives the system access to the GSM service provider. The peripheral interface control (PIC) is programmed to carry out the OFF/ RESET operation according to the GSM commands while the driver and control unit consist of capacitors, resistors, diodes, regulators and electromagnetic relay is to effect power switching. The major component that performed the power control of 220v main supply and the automatic voltage regulation (AVR) is the automated electromagnetic relay. The project was realized.

Keywords: GSM Module Unit, Peripheral Interface Control (PIC) Unit, Driver Unit and a Power Monitoring and Control Unit

I. INTRODUCTION

With advancement of technology things are becoming simpler and easier for us. Automation is the use of control systems and information technologies to reduce the need for human work in the production of goods and services. In the scope of industrialization, automation is a step beyond mechanization. Whereas mechanization provided human operators with machinery to assist them with the muscular requirements of work, automation greatly decreases the need for human sensory and mental requirements as well. Automation plays an increasingly important role in the world economy and in daily experience. Automatic systems are being preferred over manual system. Through this project we have tried to show automatic control of a house as a result of which power is saved to some extent. GSM based home automation using AVR is an electronic device that allows a GSM cell phone to monitor and shut down electrical power supply at home where there are emergency or ugly situations such as fire outbreak, lightning strikes, switching surges, transients, neutral failure and other abnormal conditions or malfunctions that can destroy lives and properties. GSM based home automation using AVR is a system that implements the emerging applications of the GSM technology which enable the users to carry out some task from anywhere in the world via a GSM network, and the system will automatically regulates power surge. The system is made up of a GSM amplifier unit, PIC12f629 microcontroller, power control and a power supply unit.

These sub circuits are designed using passive and active electronic components like capacitors, resistors, diode, regulators, transistors, electromagnetic relay, microcontroller and battery.

II. GSM MODULE:

A GSM modem is a wireless modem that works with a GSM wireless network. A wireless modem behaves like a dial-up modem. The main difference between them is that a dial-up modem sends and receives data through a fixed telephone line while a wireless modem sends and receives data through radio waves.



Fig 1. GSM Modem.

A GSM modem can be an external device or a PC Card / PCMCIA Card. Typically, an external GSM modem is connected to a computer through a serial cable or a USB cable. A GSM modem in the form of a PC Card / PCMCIA Card is designed for use with a laptop computer. It should be inserted into one of the PC Card / PCMCIA Card slots of a laptop computer.

III. FEATURE EXTRACTION:

With advancement of technology things are becoming simpler and easier for us. Automatic systems are being preferred over manual system. The purpose of this project is to design and construct A GSM based home automation using AVR. Using GSM networks, in this project a home power control system has been proposed that will act as an embedded system which can monitor and control appliances and other devices locally using built-in input and output peripherals. The system has a delay of 2 minutes after the first call to initiate the next command. This project is made up of four vital units. These units are as follows: GSM module unit, peripheral interface control (PIC) unit, driver unit and a power monitoring and control unit. The GSM module is a GSM transceiver which gives the system access to the GSM service provider. The peripheral interface control (PIC) is programmed to carry out the OFF/ RESET operation

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IV. BLOCK DIAGRAM:

The project was designed and implemented using top to bottom design method just as shown in the block diagram in figure The system starts form the following units:-

- GSM module unit
- Microcontroller AT89S52
- Relay Driver
- LCD Display

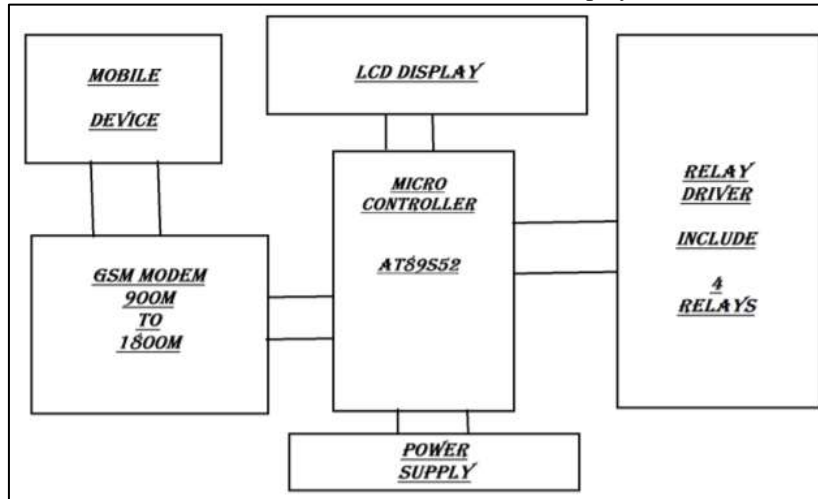


Fig. 2: Block diagram figure

In the methodology, the overall system design is in two parts: hardware design and software design. The hardware design is the physical parts of the system while the software design treats the programs that were written to control the microcontroller at the processing center of the

system. The hardware design is the heart of the project. This is the physical implementation where the various components used for the design were incorporated together on a vero board through soldering. It consists of many units which includes a GSM module, a PIC unit and other units listed above.

V. GSM MODULE INTERFACE WITH AT89S52

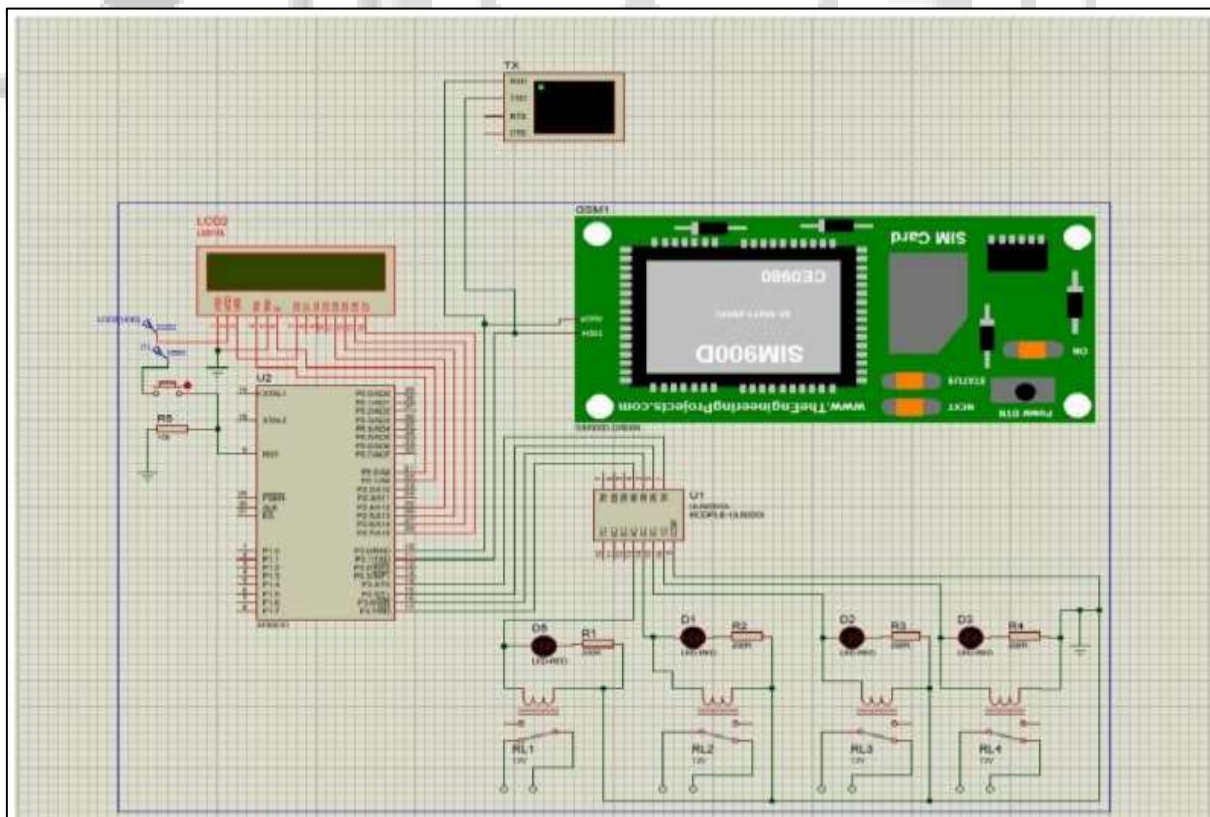


Fig.3.GSM module interface with AT89S52

VI. WORKING PROGRESS



Fig. 4.:Practical Assembly

VII. CONCLUSION:

This document presents a mobile controlled and user friendly approach to the available home automation system. This system can easily be implemented because of its wireless communication standards

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