PC Based Wireless Appliance Control

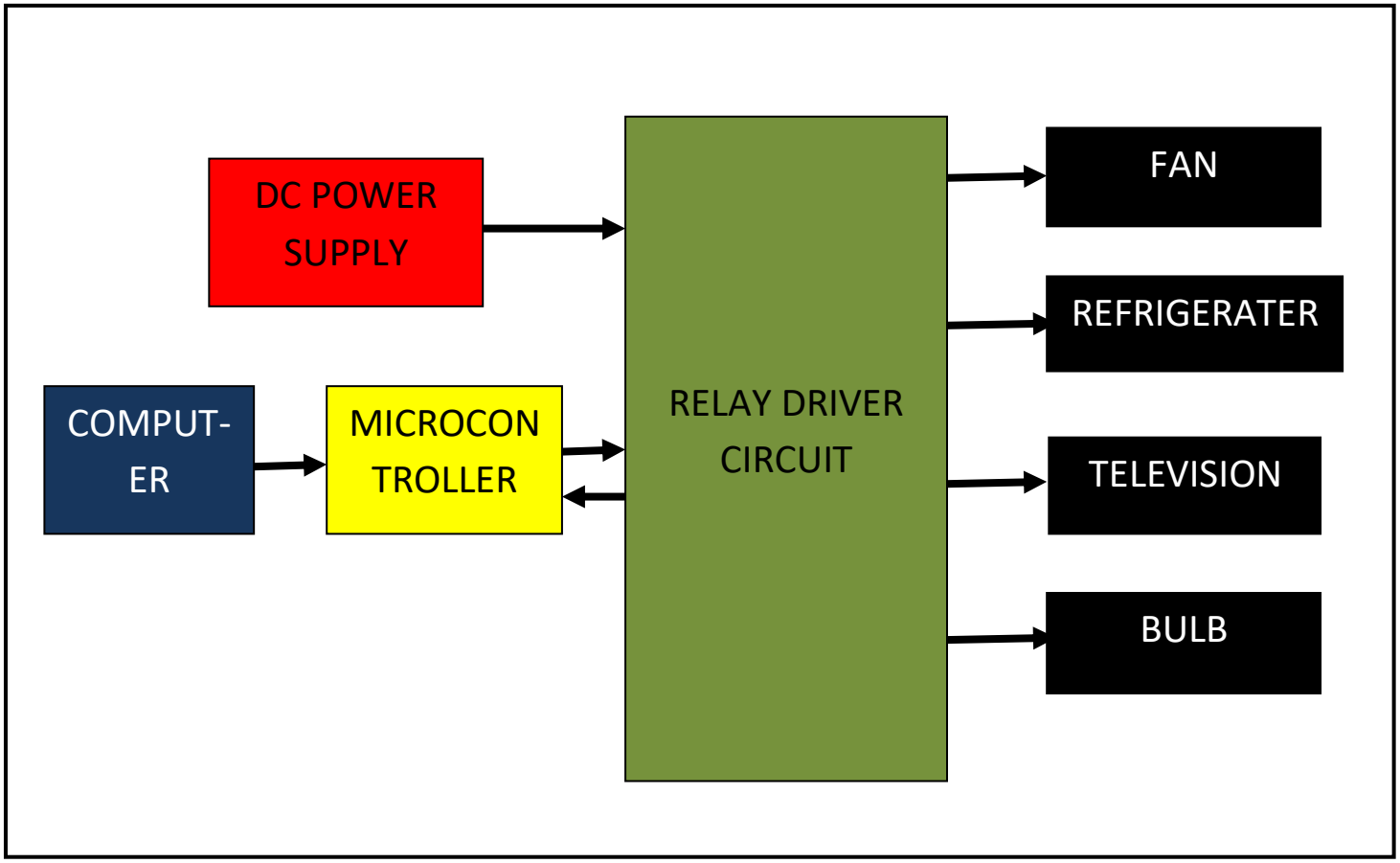
Abstract

Our daily activities can be performed very easily nowadays by automation. This automation project is a system by which we can control our home appliances with the help of a PC. The systems are more accurate and reliable than manual systems. It is an electronics and communication project based on wireless technology. The project will use radio frequencies and Microcontroller by which we will be able to control the circuit. The project aims to connect our devices to the computer for automation purposes.

Introduction

In today's world .there is high a demand for PC based control system because of its various advantages over manual control system, PC based control systems are highly reliable, accurate and time saving systems, they provide number of features like quick data storage, data transfer and data security which help industries to work in efficient manner In this paper, a PC based system which will control various devices like Motor, Light, and Fan etc. Designed a GUI (Graphical User Interface) on the PC and which helps to give command to the system. Microcontroller is used in order to receive commands from PC and accordingly control the devices connected to it. In this way this system is completely controlled by PC.

Block Diagram



Component Description

The project will require two circuits. One is Microcontroller and we need to connect it to our PC. The second circuit is a radio frequency receiver which will be on the relay circuit through home appliances. We may also require 15-watt bulbs for some demonstration. We need to connect Microcontroller with components like-

LCD - With the help of LCD will be able to know about the automation system. It will display all appliances data whether they are on or off.

Radiofrequency transmitter- Its requirement is for transmitting data to the receiver. it will have been 8 pins like supply voltage, ground pin, etc.

Relays- We will use the relay module which will be of 12 volts and 2 amperes by which we can turn on or off the appliances. We will connect it with data pins through circuits. The appliances were also connected to the relays for the purpose of on and off.

Decoder- Its work is to decoding the code in binary language. It is used for separating some addresses and data. This decoder can decode 12 bits of data.

Personal computer (PC)- We will need a PC for running applications and the application is REALTERM. It is basically a software air by which we can send serial data through a laptop or computer.

Advantages

1. This project can be effectively and conveniently utilized for the control of different appliances.

2. As this project could be extended to control number of devices, this could be used for computerization of an office, home, or a firm. The circuit is simple and the working mechanism could be easily understood.

3. It is able to know the status of the device to be controlled.

4. The program to control the appliances is written in C language which is more user friendly and easy to understand than other programming languages.

5. In today’s world there is high a demand for PC based control system because of its various advantages over manual control system.

6. PC based control systems are highly reliable, accurate and time saving systems they provide number of features like quick data storage, data transfer and data security which help industries to work in efficient manner.