ABSTRACT

Nowadays people increasingly demanded to have high mobility, especially in the case of an influential work in the manufacture of sophisticated tools. This condition is certainly encourage people to create tools that can work automatically and has a high accuracy with the aid of a microcontroller. One way is to optimize functionality of existing TV remote at home that can be used to control the lights.

Forms of control are offered in the form of activation and deactivation of existing lights in the house. This remote will control the lights with a maximum voltage of 220 volts with a sort code or a channel one of a number of buttons embedded on a remote control. The data is serial data sent by a particular format and the modulated carrier signal that is at 30KHz to 40KHz. This modulated data will be filtered by an infrared receiver module which converts the energy infrared light into pulses of electrical signals in the form of binary data packet to obtain the original data. From these results, the entire system will be processed by the microcontroller. Microcontroller will detect the binary data packet is received to activate the relay driver circuit as a driver of the load to activate or deactivate the lights. Lamp used as a load to be controlled by TV remote.

The final project is to produce a series of systems that can control light with the angle 0^0, 30^0, 60^0, 120^0, 180^0. The greater the angle the shorter the distance to the receiver remote control. In open space, minimum distance that can be in control is 60cm with a corner in 180^0 while in an enclosed space, the maximum distance control system is 12 meters with 0^0 corners. System is in conformity with the specifications in the design, which can work at a distance of 10 meters with angel 0^0.

Key words: TV Remote, Infra Red Receiver Module, Microcontroller, Relay