
IR REMOTE BASED APPLIANCE CONTROL SYSTEM

DESCRIPTION:

In industries, there will be various loads to be operated and these loads are to be operated at some specific intervals according to our requirements and also based on the device constraints. For these purposes, a person should be employed to monitor the status of the loads. But there may be chances that the person may forget to operate these loads. And also it is not an easy task for a person to operate these loads manually as these loads run with high currents and high power consumption. This project gives the best solution for electrical power wastage. Also the manual operation is completely eliminated. This project is implemented on wireless technology. One of wireless communication system is IR (Infrared frequency) communication system as it is very cheap and very easy to implement.

This project is not only limited to industrial applications but can also be extended to domestic purposes for home appliances controlling using IR. The home appliances can be switched ON/OFF using IR without actually going near the switch boards or regulators. The loads like lights, motors, heaters, power controlling system and also current through the loads can be controlled in this project. We can control all loads at a time from one place (control room) without connecting any physical wire between loads and control room.

IR remote acts as the transmitter in this project. When a button is pressed in the remote, the signal will be passed and received by the IR receiver i.e TSOP Receiver. This signal is sent to the microcontroller which decodes the signal and performs the corresponding action in accordance with the button pressed in the remote. For example, if number 1 is pressed in the remote, the load will be switched ON/OFF according to the user requirement. The other tasks will be performed in the similar fashion using IR. Since AC loads are also controlled in this project and the microcontroller cannot handle AC loads, relay is used to control the AC loads.

This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Micro controller : AT89x series
Crystal : 11.0592 MHz
IR receiver : TSOP 1738
IR transmitter : Remote

Loads

Relays

Power supply

Transformer : 12V step down

Filter : 1000uf/25V

Voltage Regulator : 7805, 7812

SOFTWARE:

Keil IDE

UC flash

Proteus

APPLICATIONS:

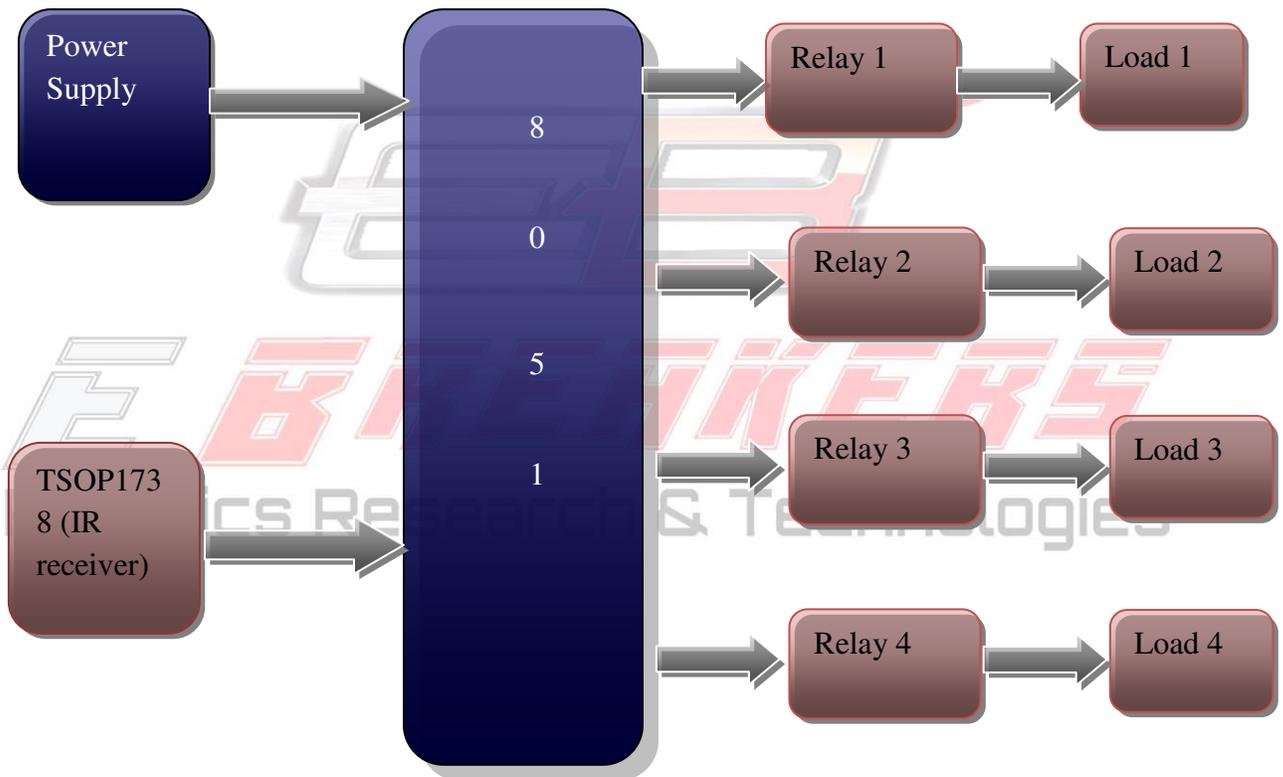
- Industrial applications
- Automatic control systems

BLOCK DIAGRAM:

TRANSMITTER SECTION:

IR remote

RECEIVER SECTION:



POWER SUPPLY BLOCKDIAGRAM:

