**INFRARED REMOTE RECEIVER**

**DESCRIPTION:**

Infrared remote receiver means controlling of appliances through IR remote. It is interesting and very useful application. This system is widely used in industries, offices, Banks, hotels, hospitals, and display boards. In this project, IR is used for controlling any appliance by controlling the loads.

Infra-Red actually is a normal light with a particular color. We humans can't see this color because its wave length, which is 950nm, below the visible spectrum. That's one of the reasons why IR is chosen for remote control purposes, we want to use it but we're not interested in seeing it. Another reason is because IR LED’s are quite easy to make, and therefore can be very cheap.

This project describes to control the Home appliances wirelessly using IR data communication. When we access the remote by pressing a key, the IR transmitter sends a signal to the Receiver which is placed in the desired room as bursts of non-visible light. The Receiver in the other end is a photodiode or photoreceptor that detects and captures the light pulses, which are then processed to retrieve the information they contain. This application uses TSOP1738 receiver which will accept input signals form IR transmitter .IR rays are transmitted through remote and these rays are received by a receiver named TSOP 1738. The microcontroller captures data from receiver and controller performs the necessary action by turning ON/OFF the loads through relays. In this, for every respective load on activation, a message is shown on LCD as load turn ON/OFF.

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

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
* Infrared remote control units with high power requirements
* Infrared source for optical counters and card readers

**BLOCK DIAGRAM:**

**TRNSMITTER SECTION:**

IR remote

**RECEIVER SECTION:**

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Power Supply

Load 1

Relay 1

Load 2

Relay 2

TSOP1738 (IR receiver)

Load 3

Relay 3

Load 4

Relay 4

**POWER SUPPLY BLOCKDIAGRAM:**

Step down Transformer

Filter

Regulator

Output

Bridge Rectifier