**EMBEDDED ENERGY SAVER SYSTEM FOR HOME APPLIANCES**

**DESCRIPTION:**

The project is aimed to design an automatic power saving system for home appliances using 8051 micro controller, which will be having various applications in our daily life.

Here we consider the number of people inside the home to save the power. To detect the number of people inside the room we are using IR sensors at the entrance and exit as shown in block diagram. We will fix these IR sensors at the entrance and exit of the particular place such that if any obstacle (person) comes in front of the transmitter, the emitted IR rays from the transmitter will get disturbed and will not be received by the IR receiver.

Whenever the sensor [IR receiver] at the entrance is activated the count corresponding to the number of people inside the room will be increased and in opposite case if IR receiver at the exit is activated and count will be decreased. We continuously monitor the IR sensors at the entrance and exit by using the AT89C51 controller. . In both cases the count will be updated with in a very short time on the LCD, depending upon the count the loads will be automatically turned ON/OFF through relays.

This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for relay. 7805 three terminal voltage regulator is used for voltage regulation. Full wave bridge 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

LCD : HD44780

IR receiver

IR transmitter

Relays

AC loads

Power supply

Transformer : 12V step down

Filter : 1000uf/25V

Voltage Regulator : 7805, 7812

**SOFTWARE:**

Keil IDE

UC flash

Proteus

**APPLICATIONS**

* Shopping malls
* Automatic control systems

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**BLOCK DIAGRAM:**

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Power Supply

Load 1

Relay

Relay

Load 2

IR transmitter (at entrance)

IR receiver (at entrance)

Load 3

Relay

IR transmitter (at exit)

IR receiver (at exit)

Load 3

Relay

16X2LCD

**POWER SUPPLY BLOCKDIAGRAM:**

Step down Transformer

Filter

Regulator

Output

Bridge Rectifier