

# CONTROLLED HOME APPLIANCES USING BRAIN DETECTOR

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**Abstract** – Nowadays human want to do work in less time with less efforts. This project describes on controlling few home appliances by using a brain sensor which will be placed on human head and be connected to computer through BCI technique and we can turn on off appliances form one place by our brain wave frequency. In this technique brain sensor will be connected to computer and will measure our brain waves frequency. This project will be more helpful for differently able people or paralyzed people.

**Key Words** : BCI Brain Computer Interface, brain wave, frequency, appliances, paralyzed.

## 1. INTRODUCTION

In todays world home automation has become necessary. Automation minimizes effort of human. Because of automation our tome is well utilized. This system can control home appliances using brain wave sensor and also can measure brain wave frequencies. The main part of our project are

### 1.1 Brain wave sensor

### 1.2 Android application

The brain wave sensor measures the waves and frequency levels in brain and sends to microcontroller. The android application is developed

to connect the sensor , the microcontroller and the Bluetooth module to each other.

## 2. MODEL DESIGN

The system consists of a brain wave sensor that is paired with android application which is developed to allow the user to control the system. The android application is paired with microcontroller using HC-05 bluetooth module .the connection between sensor, application and microcontroller is done via Bluetooth. The system allows user to switch on or off appliances using attention and concentration levels. The following figure shows hardware design of project -



Fig- 1: Hardware model



**Fig – 2:** Brain wave sensor

The main components are

- Sensor
- Relay
- Bluetooth module
- AC to AC step down transformer
- LED indicators

Brain wave sensor measures the wave frequencies in the brain. Relay act as electrically operated switch to turn on or off the appliances. Bluetooth module is used for pairing the different components to each other. AC to AC step transformer is used to convert 230v ac to 12v ac supply. And the led indicators are used check whether the components are in working condition or not.

The sensor will sense the wave frequencies and send it to the microcontroller and it will further send to computer through Bluetooth to android application. The further processing will be carried out as per the program execution and it will send back the data to microcontroller and it will do the processing and execute the task which will be used to turn on or off the appliances.

**Table -1:** Components and its ratings

Sr no	Component	Ratings
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1	Bluetooth module	5v ac
2	LED ind	5v ac
3	Microcontroller	5v ac
4	Relay	12v ac

Two regulators, one of 12v and other of 5v is used to give specific supply to the components as per their requirement.

### 3. CONCLUSIONS

The system consists of brain sensor that is paired with android application which is developed to allow user to control appliances. The android application is paired with micro controller using an HC -05 bluetooth module. The system allows the user individually turn on or off appliances using attention levels. This system is more helpful for handicapped or paralyzed people. Thus the developed system can be easily implemented in home.

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