Voice enable device switching for physically challenged and emergency alerts through SMS

The main aim of this project is to design and construct a voice enabled device switching system for physically challenged and also to alert using GSM modem. User can also control the electrical devices like light; fan etc with the help of voice recognition system. This device is very helpful for paralysis and physically challenged persons.

The GSM modem provides the communication mechanism between the user and the predefined number through SMS messages.

This project makes use of a Relay for switching the devices and voice recognition chip for recognition of the audio announcements and Microcontroller, which is programmed, with the help of embedded C instructions. This microcontroller is capable of communicating with all input and output modules. The voice recognition system which is the input module to the microcontroller takes the voice instruction given by the user as input and the controller judges whether the instruction is ON \OFF the device, and according to the users voice the switching mechanism controls the devices. An alerting SMS message is sent to the mobile phone using GSM modem and the status of the device is displayed on LCD.

This project provides us with the learning's on the following aspects:

1. Characteristics of voice recognition system
2. Interfacing GSM modem with Microcontroller.
3. Appliances interfacing with the controller.
4. Embedded C programming.
5. PCB Design concepts.

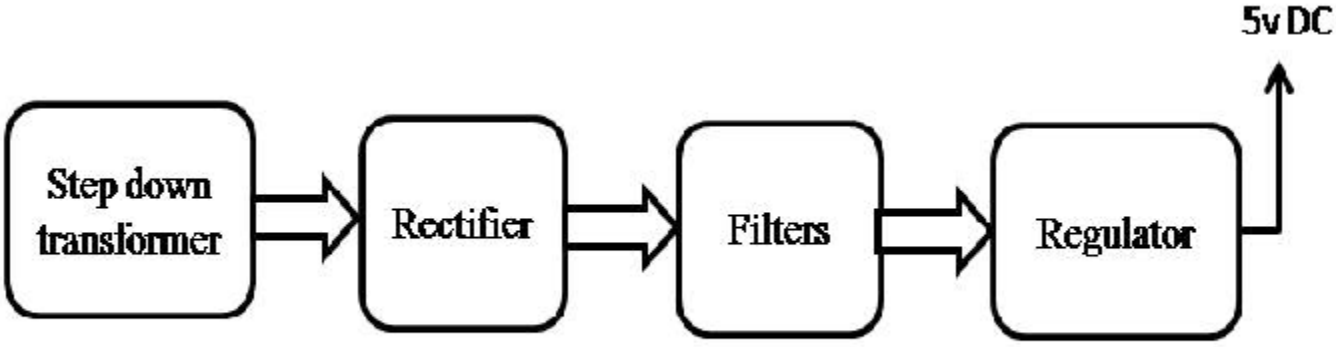
The major building blocks of this project are:

1. Regulated Power Supply.
2. Microcontroller.
3. GSM modem.
4. LCD display.
5. Crystal oscillator.
6. Interfacing voice chip with microcontroller.
7. Electromagnetic Relay.
8. LED indicators.

Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit2 programmer for dumping code into Microcontroller.

Regulated Power Supply:



Block diagram: