

Speech recognition based password enabled device switching for blind and physically challenged

The project aims in designing a system which is capable of switching ON/OFF the electrical devices based on the speech (command). This system creates a new era in the automation system. This system integrates human-machine interface.

The modules in the project are: Speech recognition system which is capable of recognizing the speech command by the user. Switches Relay and Triac were connected to the electrical appliances that are to be controlled.

Speech is the primary and most convenient means of communication between humans. Whether due to technological curiosity to build machines that mimic human's or desire to automate work with machine, research in speech recognition as a first step towards human-machine communication. Speech recognition is the process of recognizing the spoken word to take necessary actions accordingly.

The controlling device of the whole system is a Microcontroller. Speech recognition module along with Relay and Triac are interfaced to the Microcontroller. Whenever user speaks a command (already defined), the speech recognition module recognize it and feds this as input to Microcontroller. The Microcontroller processes this information and acts on the switches relay and Triac accordingly depending on the voice command. This system also provides a unique feature of enabling password. This feature provides security. The foremost thing the user needs to do is to spoke the voice command based password to activate the system. The Microcontroller is programmed in Embedded C language.

The main objectives of the project are:

1. Human-Machine interface.
2. Password enabled voice based controlling.

The project provides the following learning's:

1. Speech recognition module operation.
2. Relay and Triac.
3. Conversion of AC supply to DC supply.
4. Interfacing Speech recognition module to Microcontroller
5. Embedded C programming.
6. PCB design.

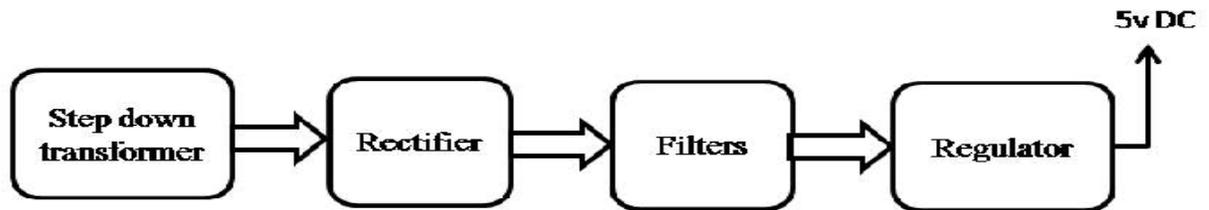
The main building blocks of the project are:

1. Regulated Power Supply.
2. Microcontroller.
3. Speech recognition module.
4. Relay with driver.
5. Reset.
6. Triac with driver.
7. Crystal oscillator.
8. LED indicators.

Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

Regulated Power Supply:



Block diagram:

