

Wireless device switching for head Movement Based Voice Enabled

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Abstract:

The user can wear this device to head and with the Simple head movement's he can request the basic needs like water, food or medicine by using IR Rays. User can also control the electrical devices like this device is very helpful for paralysis and physically challenged persons. Light, fan etc with the help of head movements. The IR based sensor detects the head movement and provides the information to the microcontroller. This device is portable and this system operation is driven by wireless technology. User can wear it to his head like a band and can operate it by tilting the MEMS sensor.

Keywords — wireless, head movement, voice recognition, microcontroller.

I. Introduction :

This Project concept is constructing a voice enabled device to switching system using GSM Device. This method is useful for physically challenged Persons. Wireless device communication between the user and number through text messages. The System makes use of a Relay for switching the devices and voice recognition for recognition of the audio announcements and Microcontroller. Both are Programmed to help of embedded some commend. The Microcontroller is communicating with input value and output Value of modules. This Method get input Value take the voice instruction given by the user as input and the controller judges whether the instruction controlled to device action. An alerting SMS message is sent to the mobile phone using GSM modem and the status of the device is displayed on LCD.

Characteristics of voice recognition system:

A human voice is as distinct as a human's face image or fingerprints. In addition, identifying humans by their voices is both user-friendly and effortless Voice recognition technology uses to verify a person's identity. This Method Based on physically challenged Persons. Voice recognition techniques are used number of request in rapid

process servicing of clients and reduced operator workload. Handwriting recognition is based on analyzing such distinct physiological components as the physical shape of the mouth and throat, structure of the vocal cords as well as such acquired habits as the volume, manner and rate of speech. The voice is a person's mood and state of health. The Communication lines are used to verify by person. A Human voice is The term voice recognition or speaker identification refers to identifying the speaker, rather than what they are saying. Recognizing the speaker can simplify the task of translating speech in systems that have been trained on a specific person's voice or it can be used to authenticate or verify the identity of a speaker as part of a security process.

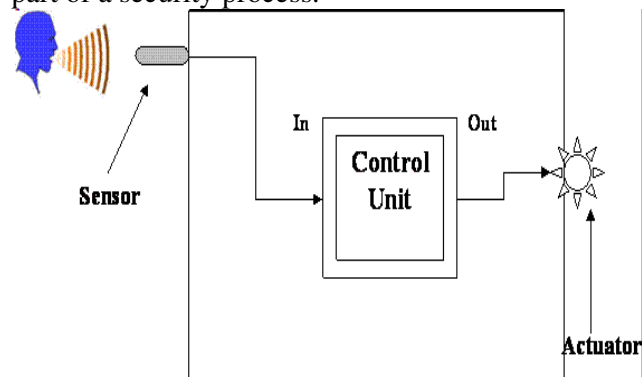


Fig1. voice recognition system.

Frequency Channel Setting:

If you live in an apartment complex you probably noticed more than just the passive-aggressive network IDs that your neighbors use—very likely you've had problems with your wireless connection dropping out, or just not being as fast as you'd like. Turn on your receiver while the transmitter is powered off. Most wireless receivers have "Automatic Frequency Selection" function – press a button and your receiver will assign its frequency. Most wireless transmitters have a button that will make it synchronize with the receiver that you just turned on (once the receiver has chosen a frequency). Press this button, and the transmitter will shake hands with the receiver that you just set up, and you're ready for wireless audio. Check the signal levels at the transmitter and at the receiver to make sure that you're getting a good signal without any distortion. If things sound too quiet with a lot of noise, chances are the volume control on the transmitter is set too low. If you get a very loud signal that sounds distorted, chances are the volume on the transmitter is too high. The transmitter-to-receiver distance has a major effect on the signal-to-noise ratio of a wireless system. As the transmitter moves farther away from the receiver, the overall signal-to-noise ratio grows worse as the transmitter signal gets weaker. When the system gets near the limit of its operating range, dropouts will become more frequent and a buildup of steady background noise (hiss) may be audible.

Interfacing wireless device with Microcontroller:

Going wireless always starts with a basic RF communication, using serial encoders and decoders. This process and method is described, doesn't matter whether you are a newbie or not. The wireless communication all of protocols can be interfaced with microcontroller. Use a microcontroller to convert the n-bit data into serial data and vice-versa Use serial encoders/decoders to do the same.

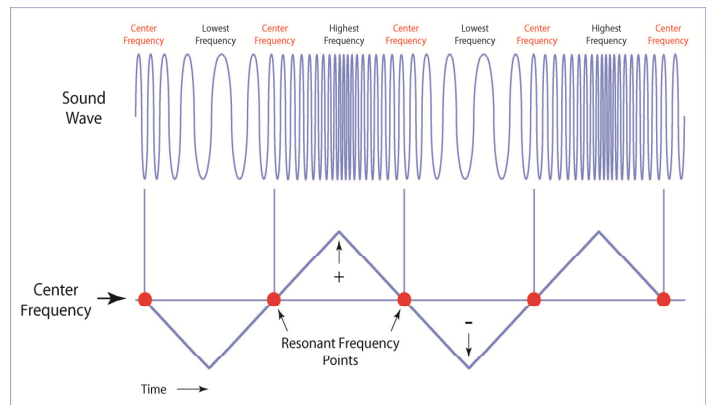
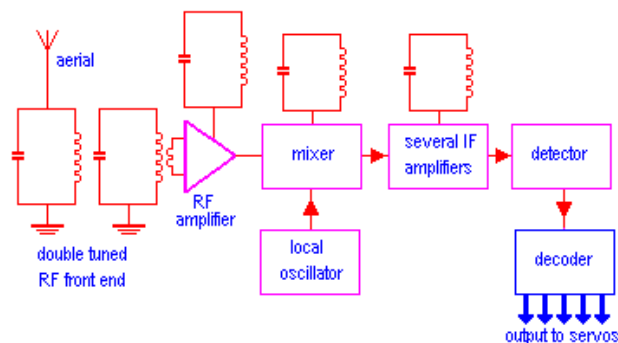


Fig2. Wireless frequency level

Interfacing voice chip with microcontroller:

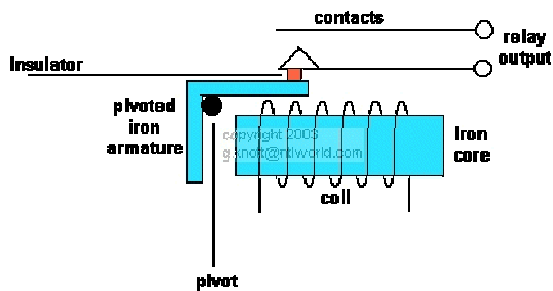
An microcontroller (radio frequency module) is a (usually) small electronic device used to transmit and/or receive radio signals between two devices. In an embedded system it is often desirable to communicate with another device wirelessly. This wireless communication may be accomplished through optical communication or through Radio Frequency (RF) communication. Electronic radio design is notoriously complex because of the sensitivity of radio circuits and the accuracy of components and layouts required to achieve operation on a specific frequency.

Transmission through RF is better than IR (infrared) because of many reasons. Firstly, signals through RF can travel through larger distances making it suitable for long range applications. Also, while IR mostly operates in line-of-sight mode, RF signals can travel even when there is an obstruction between transmitter & receiver. Next, RF transmission is more strong and reliable than IR transmission. RF communication uses a specific frequency unlike IR signals which are affected by other IR emitting sources.



Electromagnetic Relay:

Electromagnetic relays are those relays which are operated by electromagnetic action. Modern electrical protection relays are mainly micro processor based, but still electromagnetic relay holds its place. It will take much longer time to be replaced the all electromagnetic relays by micro processor based static relays. The electromagnetic relay consists of a multi-turn coil, wound on an iron core, to form an electromagnet. The armature is pivoted which causes it to operate one or more sets of contacts. The coil can be energised from a low power source such as a transistor while the contacts can switch high powers such as the mains supply. This can damage other components in the circuit. To prevent this diode is connected across the coil. The cathode of the diode is connected to the most positive end of the coil.



Conclusion:

The scope this project is that we can increase the communication speed between transmitter and receiver and also the mouse movement convert in shaking movement to working device. This project is also useful for monitoring disable people. The focal aim of this project is to present the basic needs for physically challenged people like food,

water and medicine and to control the electrical devices like Fan, bulb by using switch buttons and also for controlling wheel chair by using MEMS technology (micro electro mechanical sensor), which is an extremely sensitive sensor capable of detecting the tilt.

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