

Ultrasonic Glasses For Blind

Visually impaired people often need assistance in day to day life for navigating through their residence and outside. Having a human assistance is not possible all the time and so a solution to this problem is being researched from a long time.

Well here we develop a smart solution to this problem using ultrasonic glasses. Also the glasses are fitted with vibrator rather than a buzzer as constant buzzing sound would be more of a nuisance rather than help.

The Smart Glasses would offer the following Advantages:

- Ultrasonic Based Obstacle Detection
- No Need to Carry System as it is mounted on Wearable Glasses
- Silent Vibration Alert on Glasses
- Light Weight System

The system makes use of 2 x Ultrasonic sensors, an atmega microcontroller, battery, transparent glasses, basic electronics components and a PCB to develop this system. The glasses can now detect obstacles and transmit this to the blind person.

The ultrasonic sensors are mounted on glasses on 2 side to act as eyes. The sensors constantly transmit and receive ultrasonic waves to receive obstacle data. The Microcontroller is constantly getting this data from the sensors.

Based on this data the microcontroller operates a vibrator motors mounted on the respective side of the glasses. The microcontroller scans the sensor data and the operates the vibrator motors according to the data received in order to get a better understanding of the distance.

Thus this system allows blind person to get a more detailed idea of obstacles/objects in front of each eye using vibrations.

Components

- Atmega 328 Controller
- Ultrasonic Sensors
- Battery
- Vibrator Motor
- Glasses
- Regulator Circuitry
- Switches
- LED's
- PCB Board
- Resistors
- Capacitors
- Transistors
- Cables and Connectors

Block Diagram

