ULTRASONIC SPECTACLES AND WAIST- BELT FOR VISUALLY IMPAIRED AND BLIND PERSON

AIM:

The main aim the project is to design “Ultrasonic Spectacles and Waist-belt for Visually Impaired and Blind Person”.

Description:

This paper presents an electronic navigation system for visually impaired and blind people (subject). This system understands obstacles around it and in front, left and right direction using a network of ultrasonic sensors. It effectively calculates distance of the detected object from the subject and prepares navigation path accordingly avoiding obstacles. It uses speech feedback to aware the subject about the detected obstacle and its distance. This proposed system uses AT89S52/LPC2148 microcontroller based embedded system to process real time data collected using ultrasonic sensor network. Based on direction and distance of detected obstacle, relevant pre-recorded speech message stored in Voice and playback circuit. Such speech messages are conveyed to the subject using speaker on voice and playback circuit.
OUTPUT IMAGE:

BLOCK DIAGRAM:

REGULATED POWER SUPPLY

ULTRASONIC SENSOR1 (AT BELT) → MICRO CONTROLLER

VOICE AND PLAY BACK CIRCUIT

ULTRASONIC SENSOR2 (AT SPECTICALS)
POWER SUPPLY CIRCUIT:

![Power supply circuit diagram]

TARGET DEVICE:

LPC2148(ARM7)/ 8051 Microcontroller.

APPLICATIONS:

Used as obstacle detection for VISUALLY IMPAIRED AND BLIND PERSON.

ADVANTAGES:

Low cost, easy to use for rural areas, automated operation, and Low Power consumption.

REFERENCE:

1. The 8051 micro controller and embedded systems by Mazidi.

2. Datasheets and the user manuals of LPC2148/ 8052.