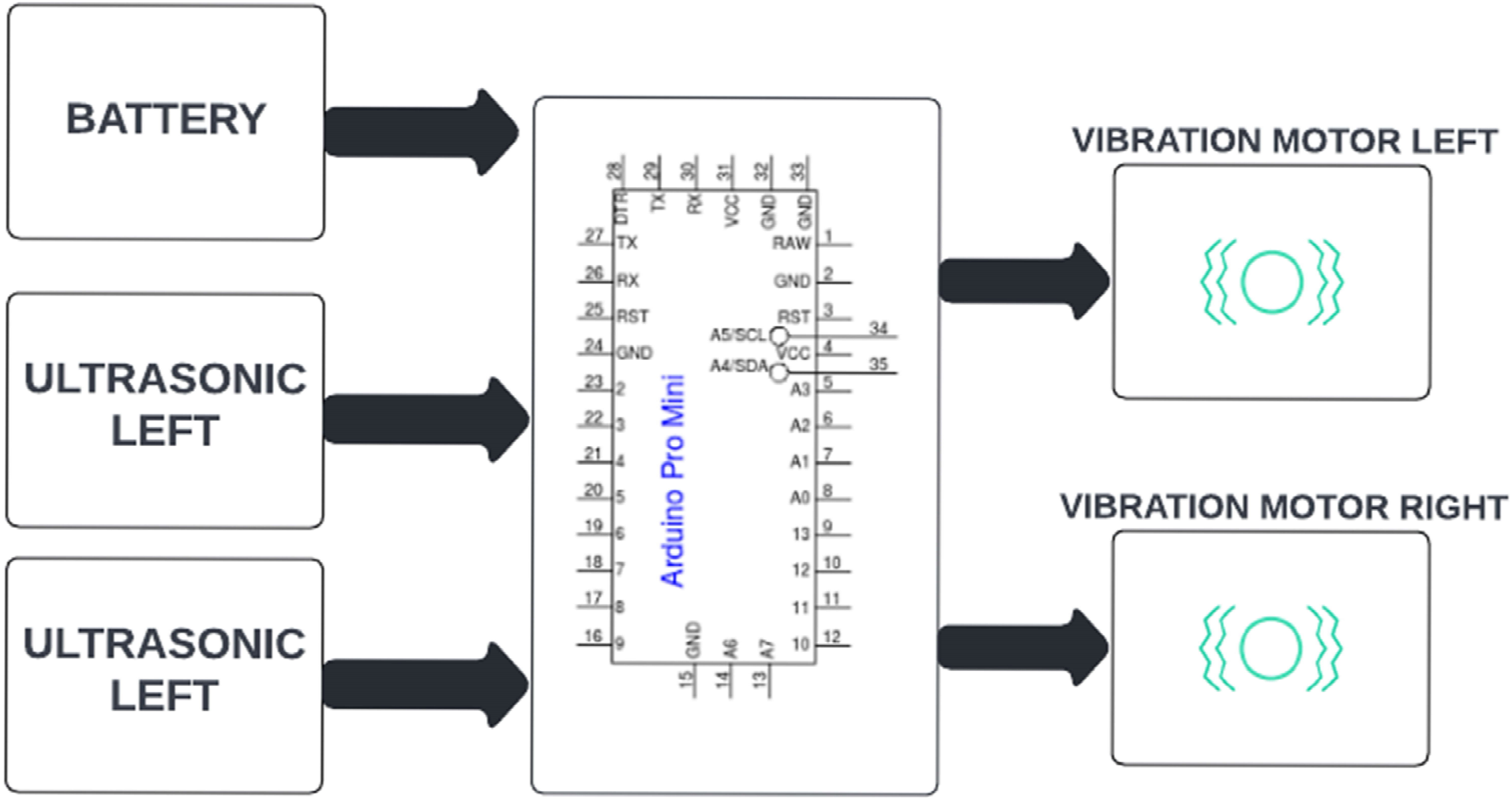
Ultrasonic Glasses For the Blind

INTRODUCTION

- 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.

Block Diagram



Components

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

Code

Basic Code Outline:

```
#include <NewPing.h>
#define TRIGGER_PIN  9  // Pin for trigger
#define ECHO_PIN     10 // Pin for echo
#define MAX_DISTANCE 200 // Maximum distance to check (in cm)
#define LED_PIN      8  // Pin for LED
NewPing sonar(TRIGGER_PIN, ECHO_PIN, MAX_DISTANCE);
void setup() {
  pinMode(LED_PIN, OUTPUT);
  Serial.begin(9600);
```

Void loop() {

- delay(50); // Short delay between readings
- int distance = sonar.ping_cm(); // Get distance in cm
- if (distance > 0 && distance < 50) { // If an object is within 50 cm
- digitalWrite(LED_PIN, HIGH); // Turn on LED
- } else {
- digitalWrite(LED_PIN, LOW); // Turn off LED
- }
- // Debug output
- Serial.print("Distance: ");
- Serial.print(distance);
- Serial.println(" cm");