

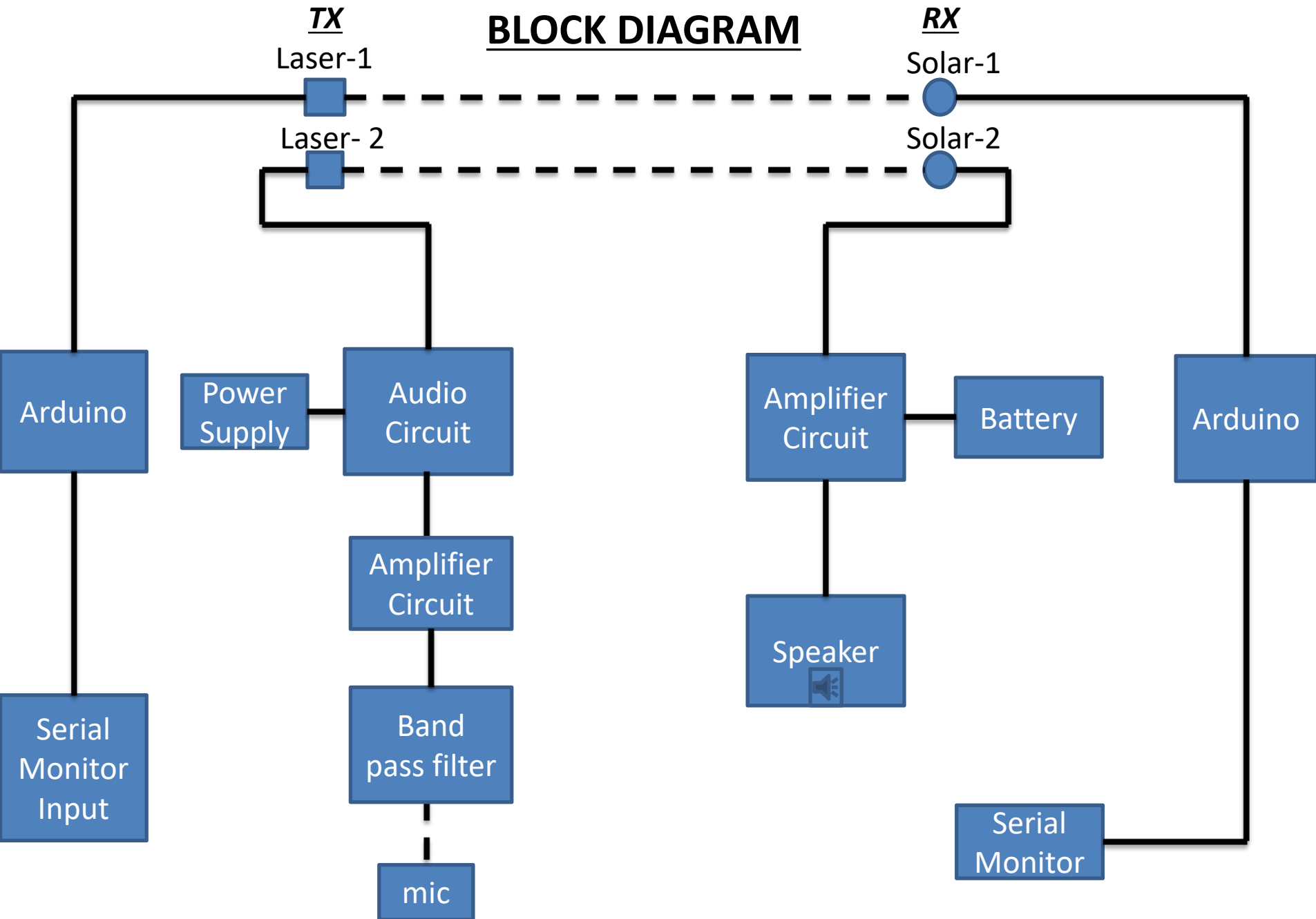
# **LASER BASED COMMUNICATION SYSTEM**

Group - 9

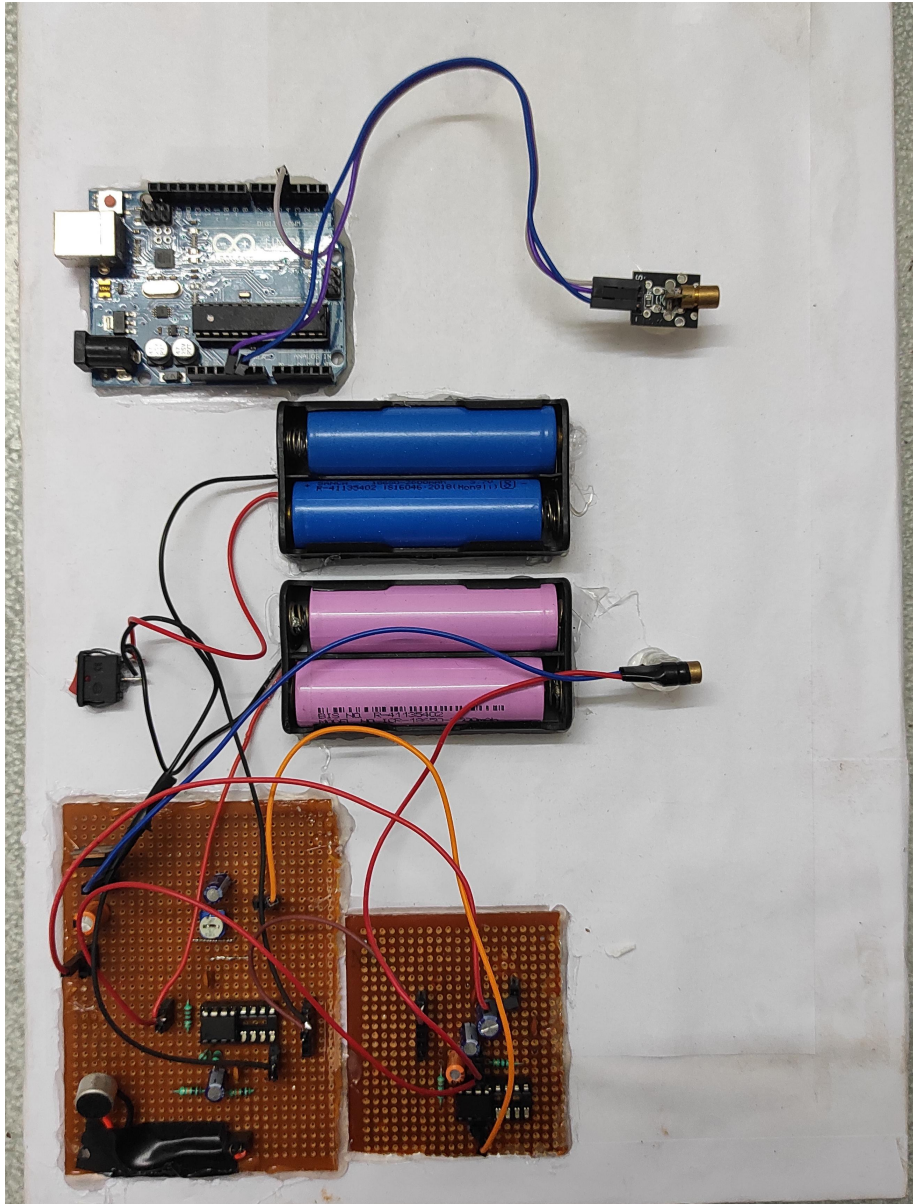
# Team Members:

- Shivamani Manchala. – S20200020279.
- Akanksha joshi. – S20200020267.
- Venkata Sai Nikhil Chava. – S20200020251.

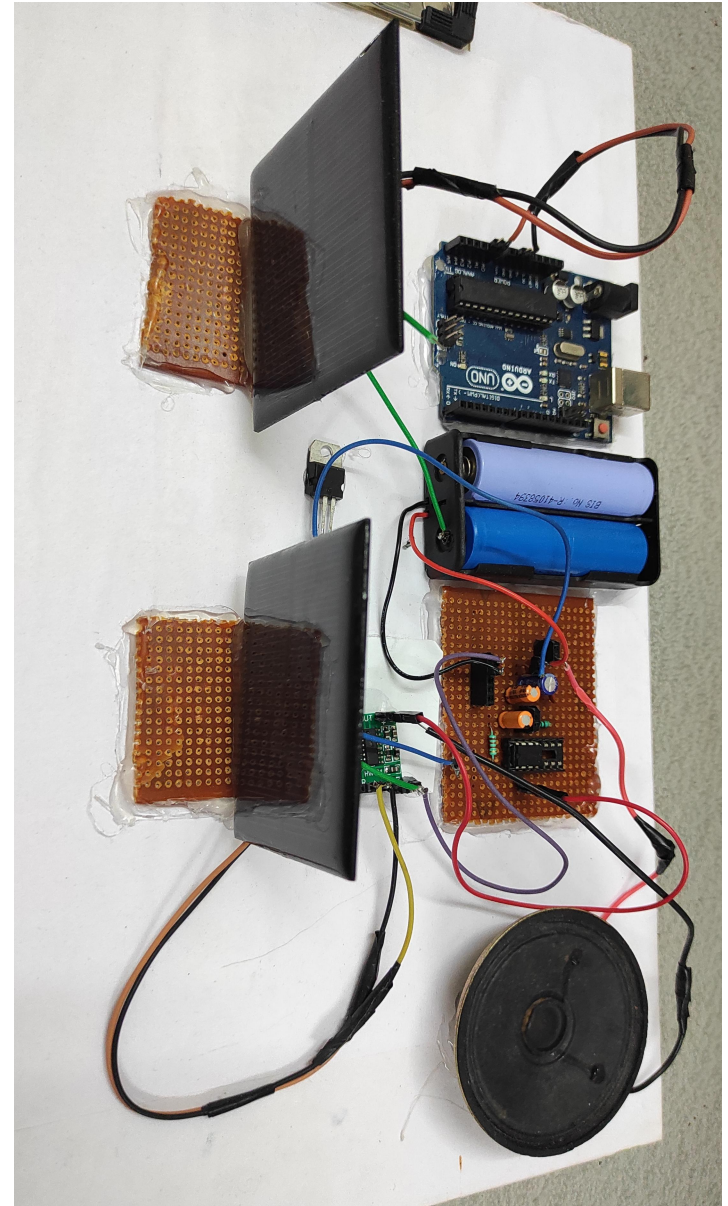
# BLOCK DIAGRAM



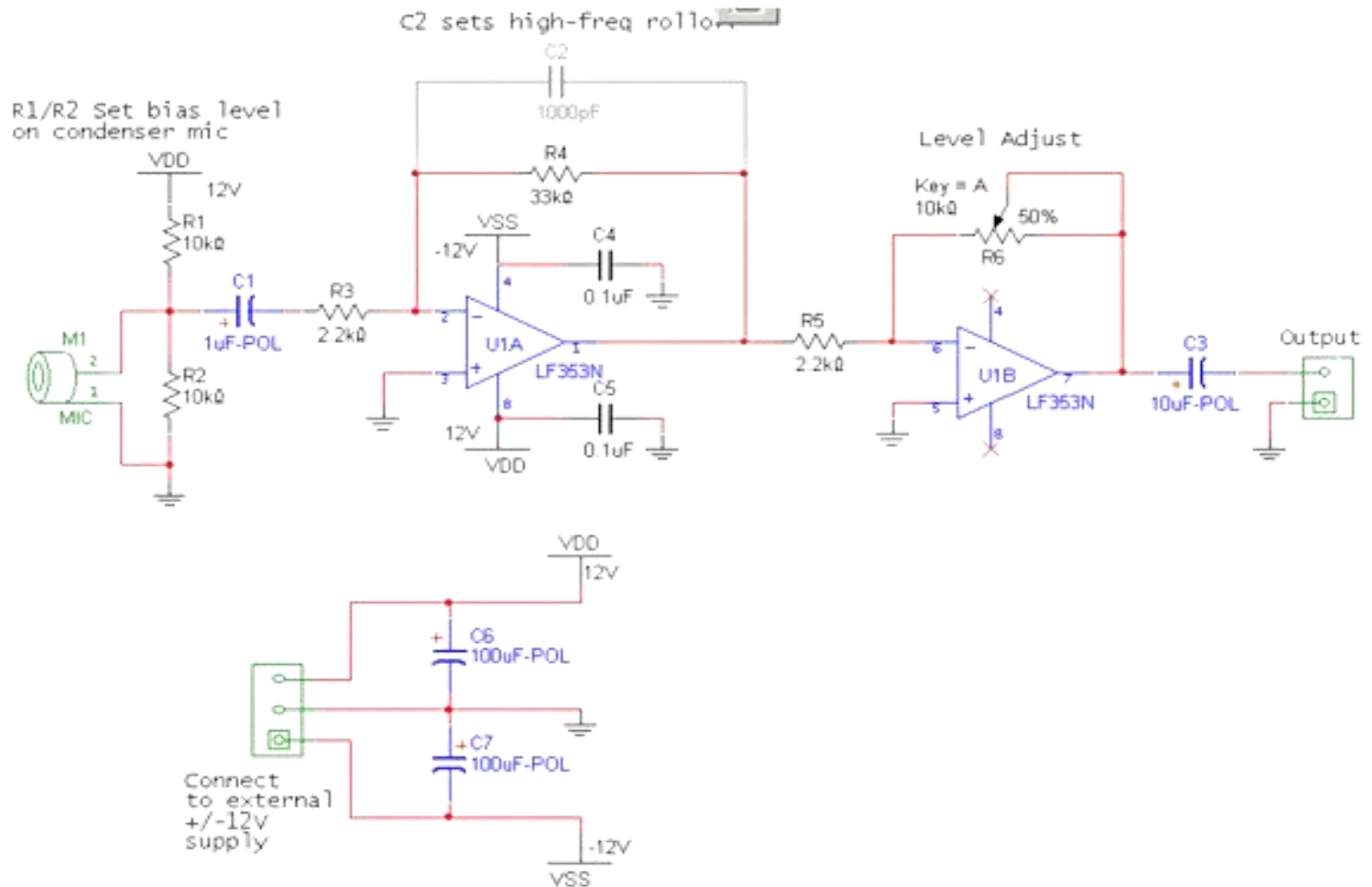
## Transmitter :



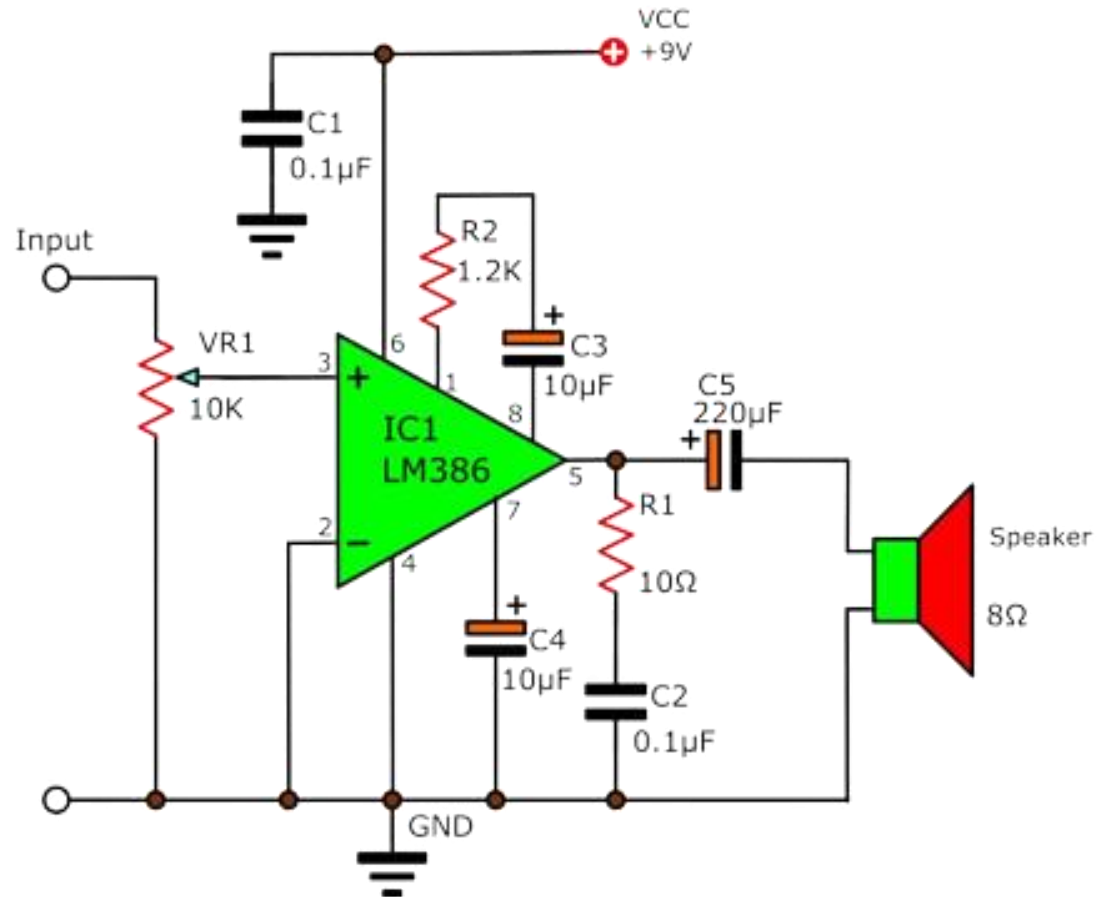
## Receiver :



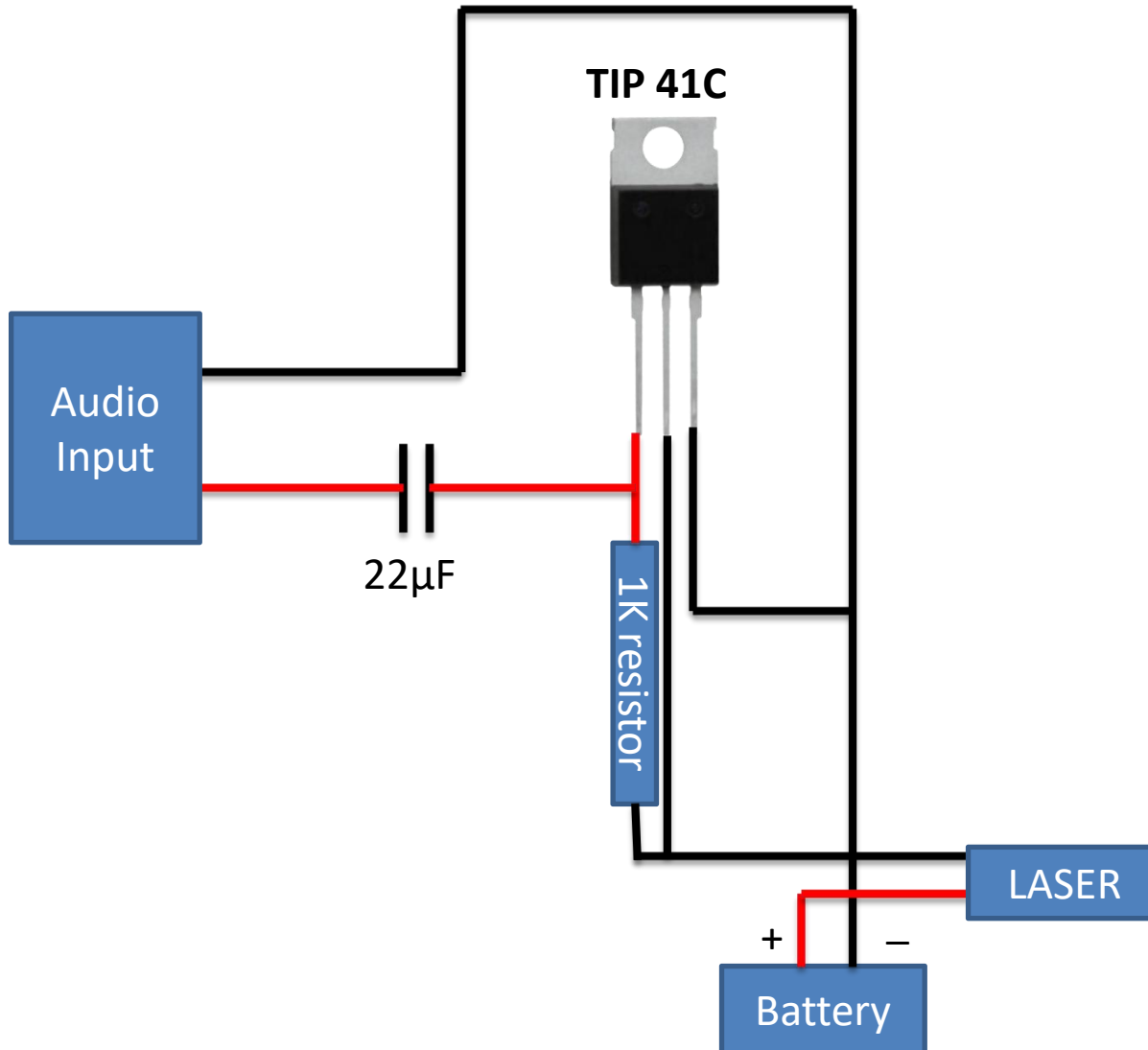
# Band pass filter & mic



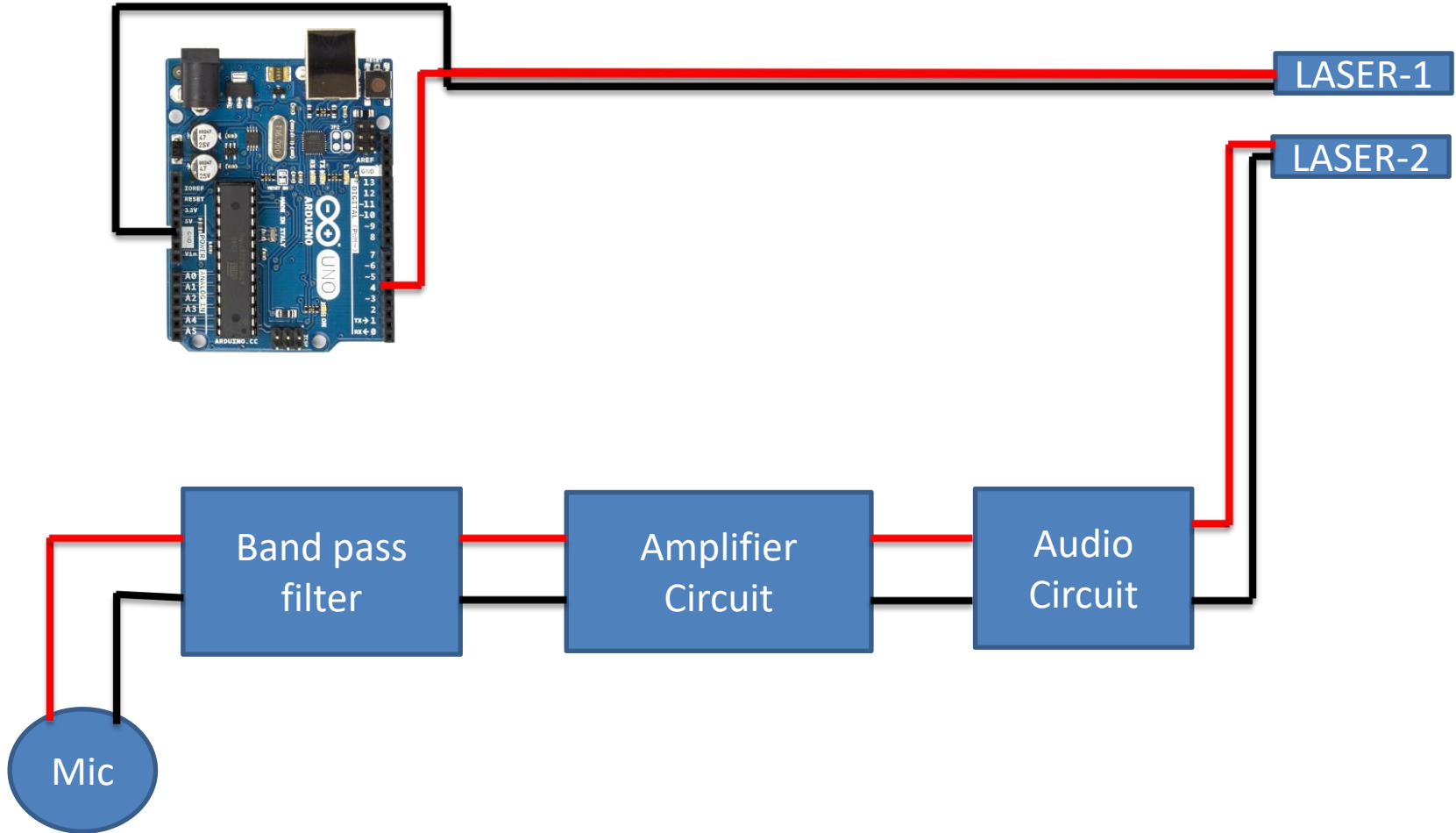
# Amplifier Circuit



# Audio Circuit

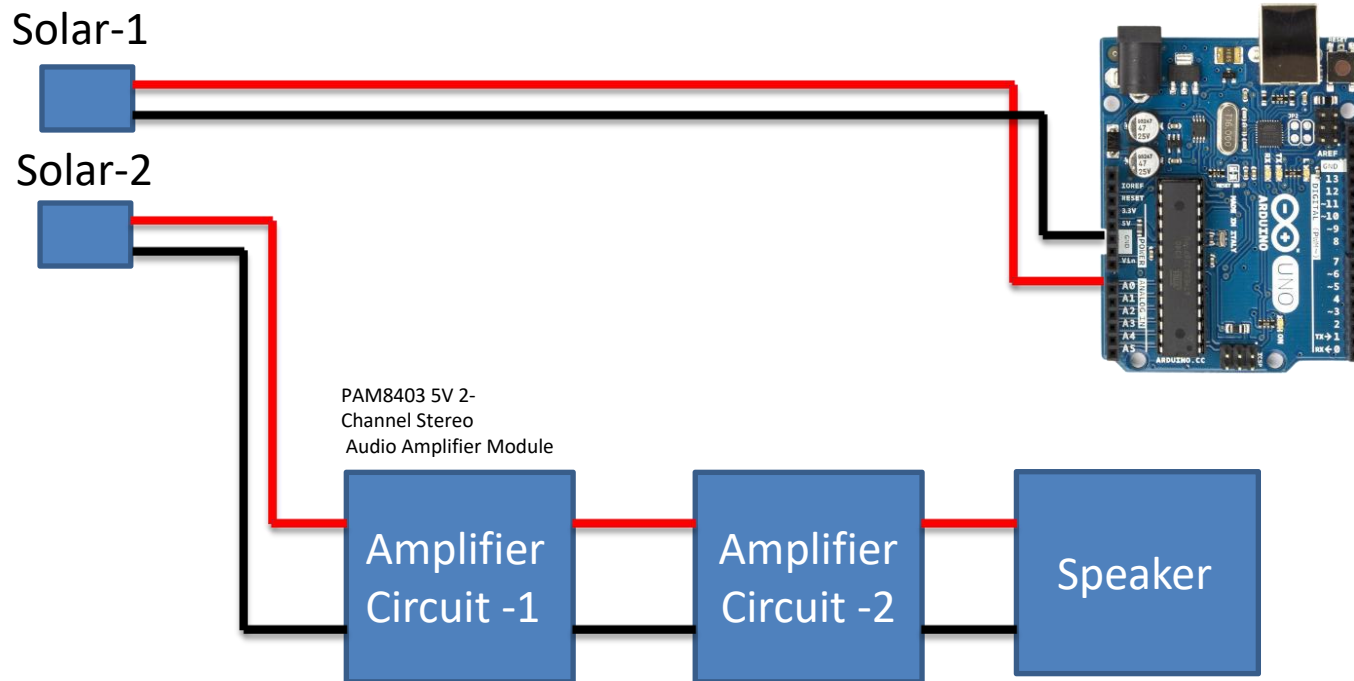


# Transmitter Side





# Receiver Side



# Bit Rate Calculation

- For suppose , consider we are sending  $n$  letters in a transmission.
- For each letter – 8 bits.
- So overall bits to transmit are  $n * 8 = 8n$  bits.
- To transmit each bit ,we need 10msec of time.
- So,  $80n$  msec.
- After transmission of each letter ,there will be a delay of 100msec.
- So ,as there are  $n$  letters ,overall delay is  $100 * n$  msec.
- Hence it will take  $80 * n$  msec +  $100 * n$  msec =  $180 * n$  msec =  $0.18 * n$  sec.

# Challenges Faced:

- Initially we used ,LDR sensors to detect the laser, but we are getting delayed response when compared to Solar panels.
- In this way we have eliminated the medium between the transmitter and receiver.
- While taking the input from the user through mic, it didn't detect the lower frequency signals for a normal mic circuit.
- So we designed a band pass filter which can allow 40Hz to 30KHz ,which can be varied.