Ultrasonic Soundbar

Orsel, Ali (School: Melikgazi Mustafa Eminoglu Anatolian High School)

Sound resources that we use in our daily life like speakers transmit the sound waves to all directions. Here is the difference my Ultrasonic Soundbar transmit the sound waves to a one direction so you can put the sounds where you want to. My main purpose; transmit the sound waves linearly by using ultrasonic sound waves. So I can reduce the sound pollution in our daily lives. Because sound pollution effects peoples both physical and psychological. So I did project about how to hear sounds that we can't hear - like ultrasonic sounds. I researched for how we can hear the ultrasonic sound waves and I found 2 ways to do this. Firstly, we can use 2 ultrasonic sound resources that has different frequencies. If we collide them at the one point we can hear formed sound that has frequency the gap between 2 ultrasonic sound wave resources. But this way is too expensive and not working well. After that I decided to use ultrasonic sound waves that modulated with normal sound waves. In my ultrasonic soundbar there are transducer set with a lots of piezoelectric crystals that we called cuvars crystals. These crystals create ultrasonic sound waves by vibration. I modulated ultrasonic sound waves by using microcontroller. So if the sound waves -that coming out in my ultrasonic transducer set- hits somewhere they will demodulate and turn into the sounds that we can hear. With my ultrasonic soundbar you can transmit the sounds like laser. It can use for entertainment, advertising and daily usage.

Awards Won: