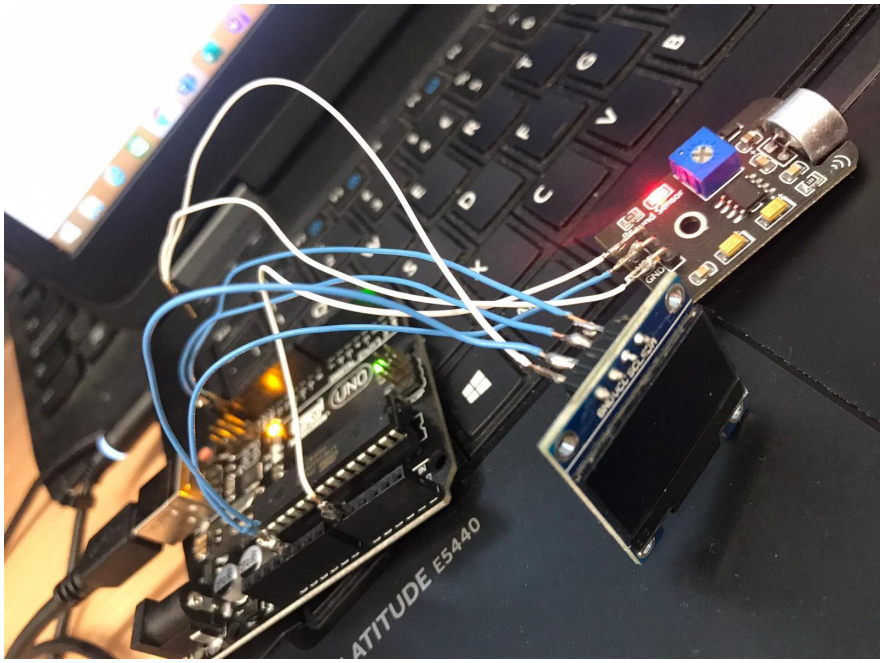
POLYTECHNIC University of Bucharest
Faculty of Engineering in Foreign Languages

Digital Signal Processing Project

Spectrum Analyzer



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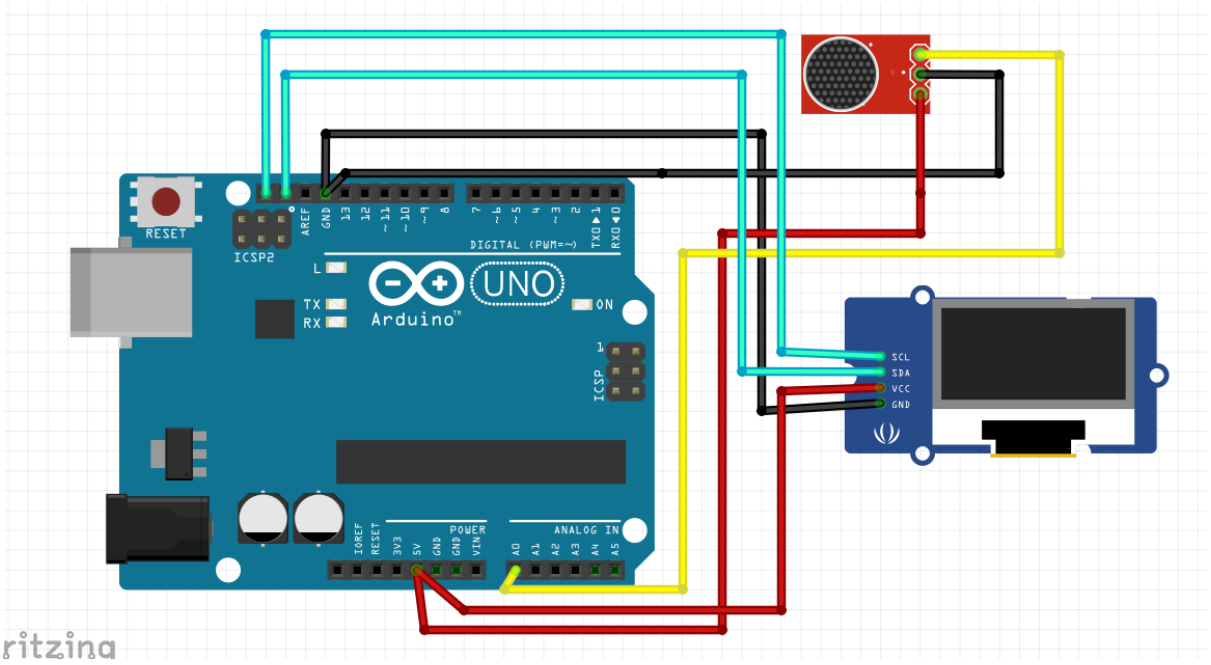
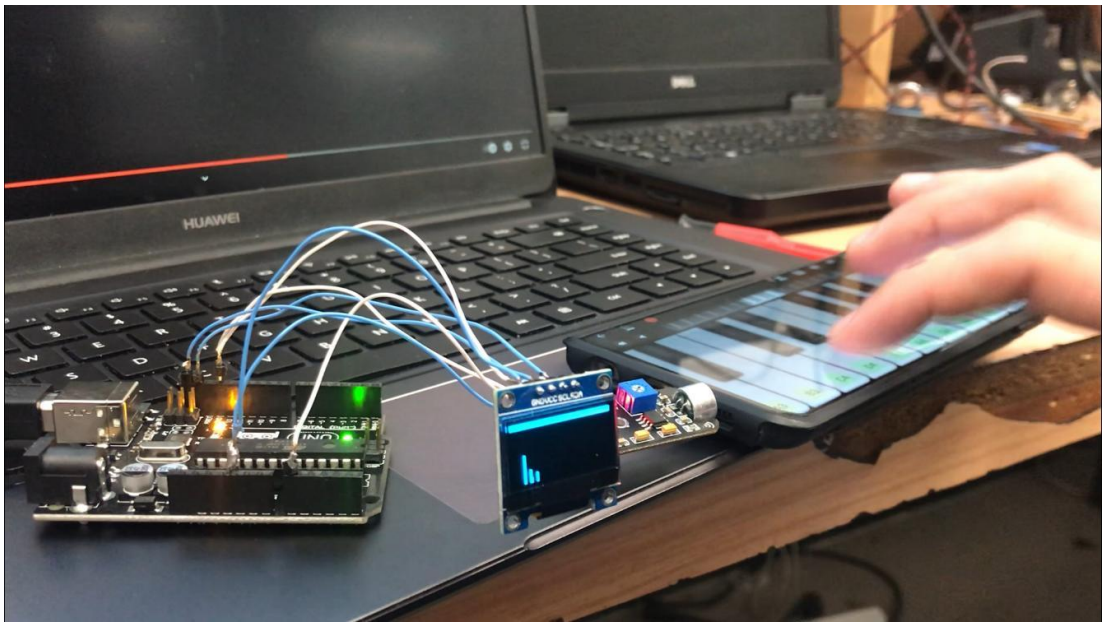
Urda Raluca

Group: 1232A

In this paper we will make use of an Arduino UNO board, a high frequency microphone and an OLED display.

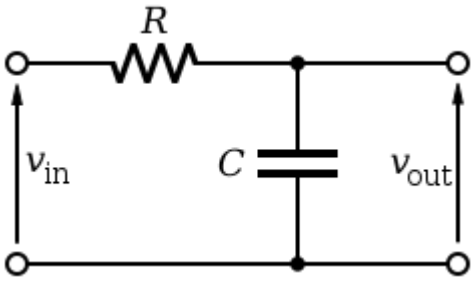


The purpose of this work is to understand how digital signal processing works in real life. In our case we will take an analog input(a sound) and convert it with the help of Fast Fourier transform, which converts a signal into individual spectral components and thereby provides frequency information about the signal.

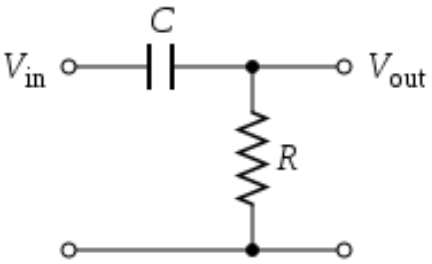


After constructing everything we made a low pass filter and a high pass filter using:

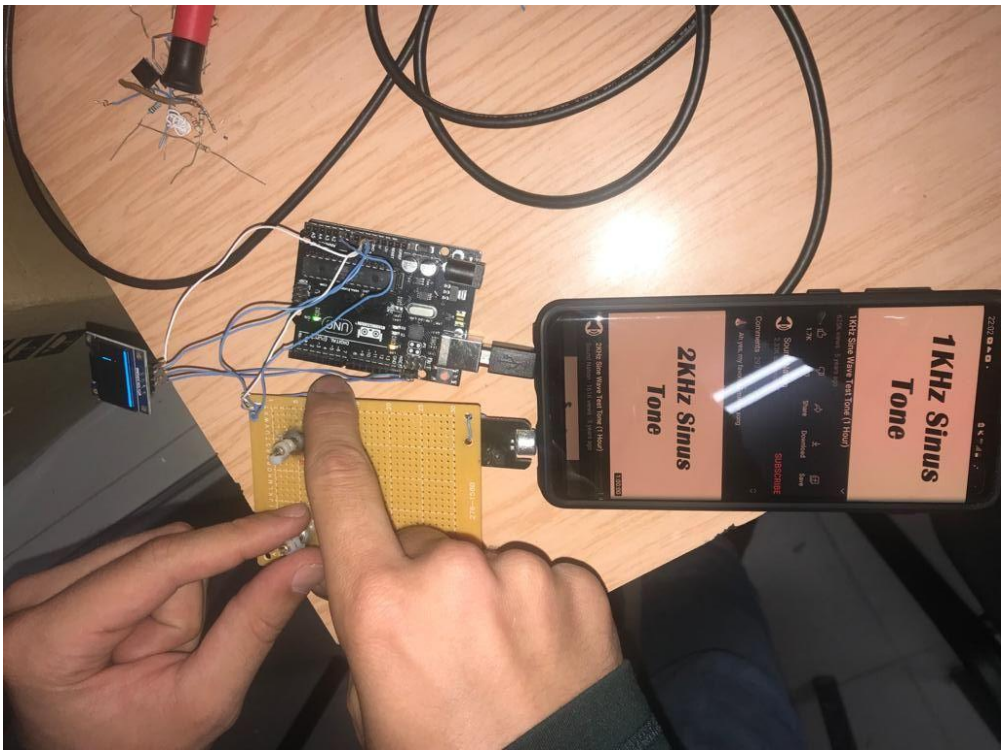
- 2 x potentiometers
- 1 x capacitor 100 nF
- 1 x capacitor 1pF

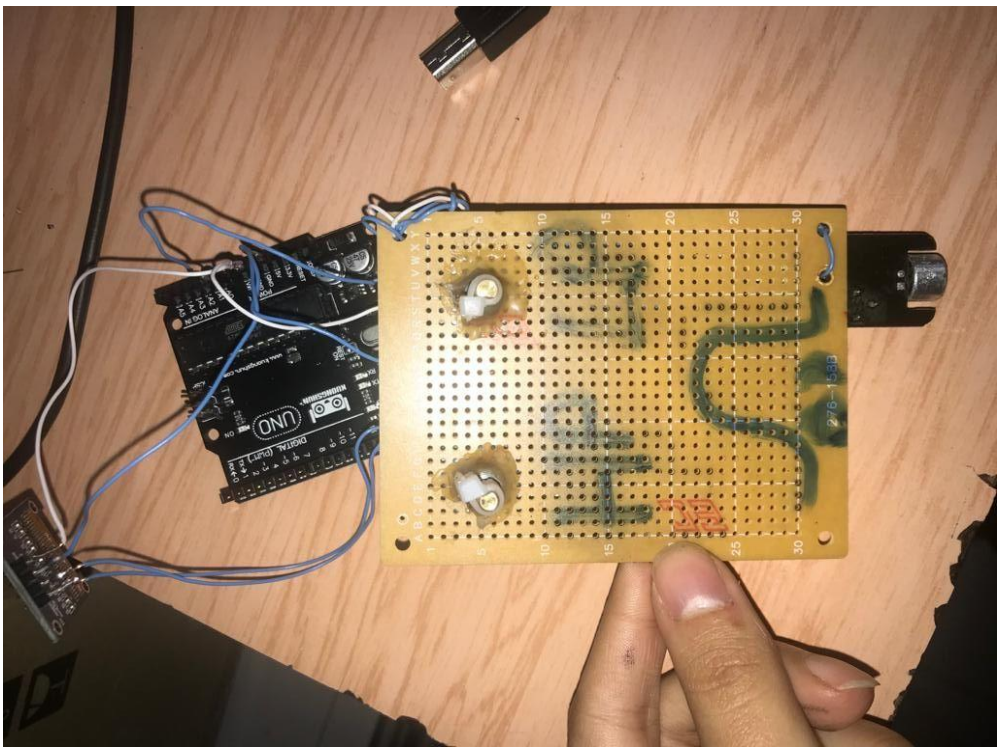


Schematic for low pass filter



Schematic for high pass filter

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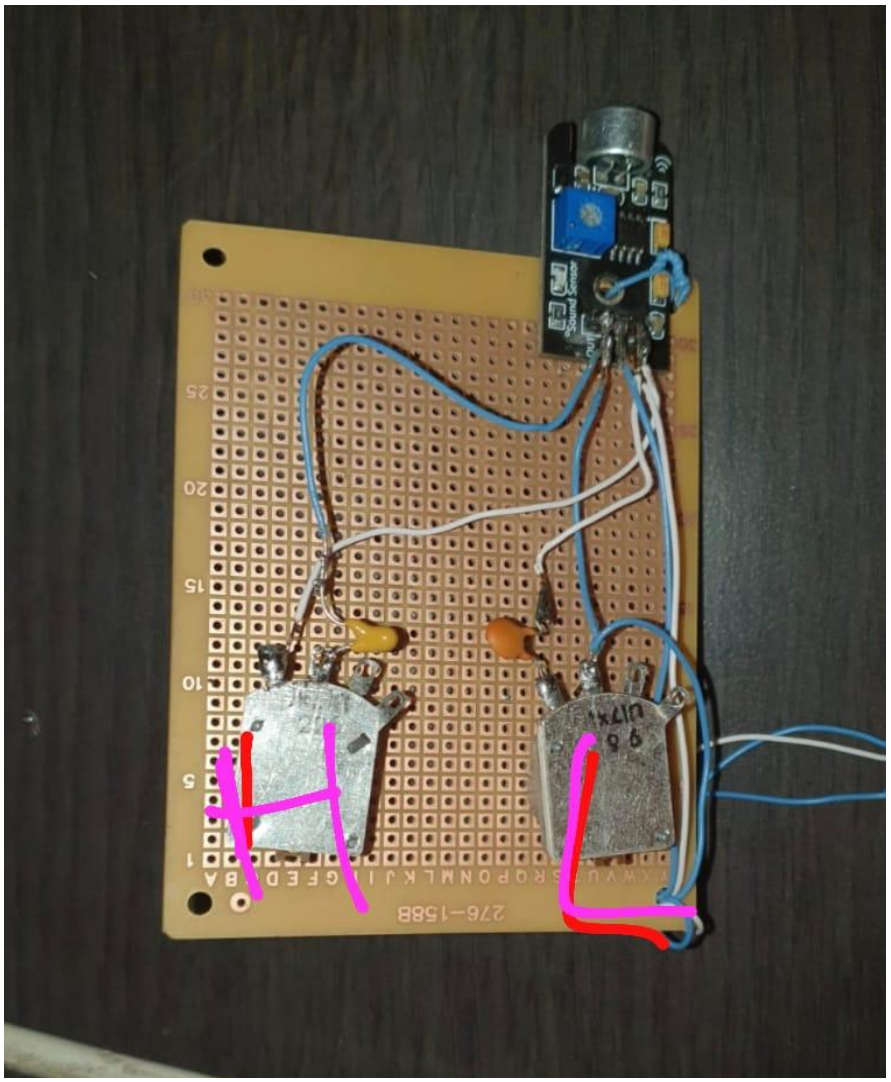
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For a better overview of our experiment, we added 3 short movies into the archive.