



Sign In!

Audio EQ Workshop

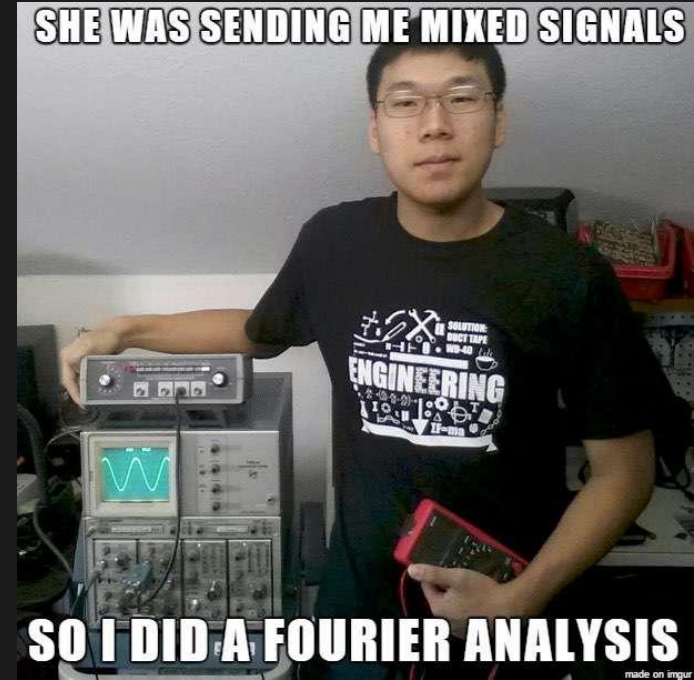


Spring 2024



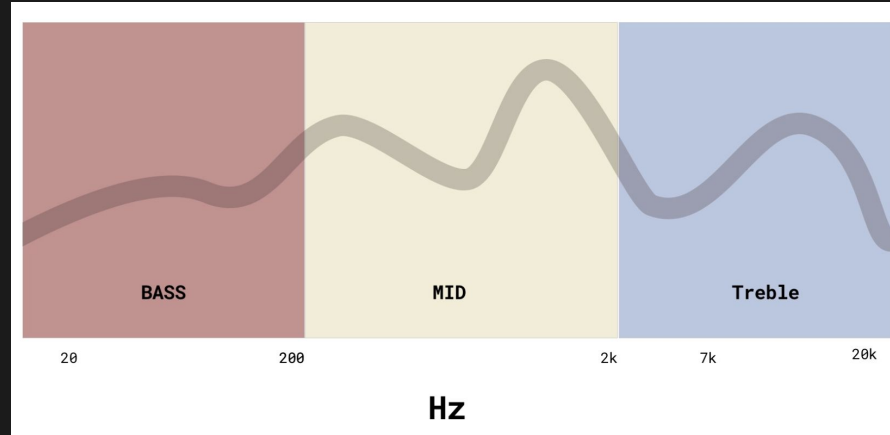
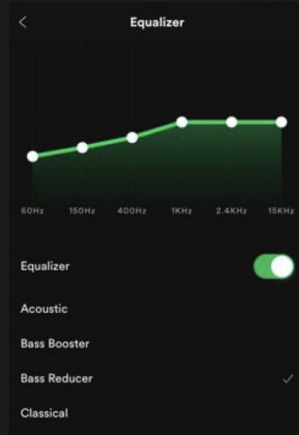
What you'll learn about

- Soldering
- RC Circuits
- Filters
- Audio
- Frequency Spectrum

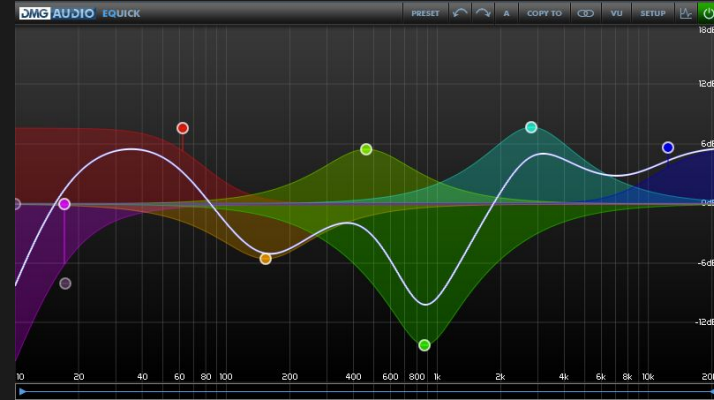
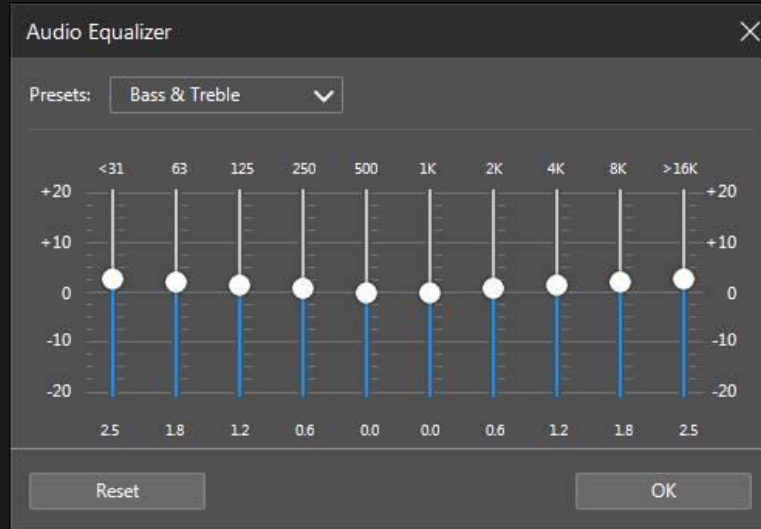


What is an EQ?

- Audio can be split in three basic frequency ranges: low, mid, high
- Can visualize audio using a Frequency spectrum
- If we want to increase/decrease sound level of frequencies, use an EQ



Other Examples



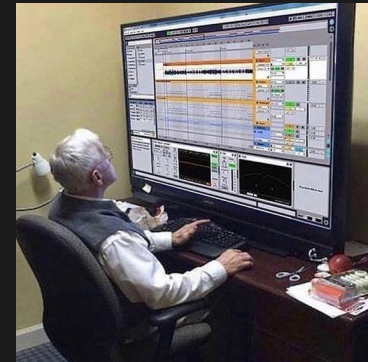
DSP processing

31-BAND DSP EQUALIZER

31-band DSP Audio Equalizer: Each band has LED indicating light, which shows the real-time changing of frequency point



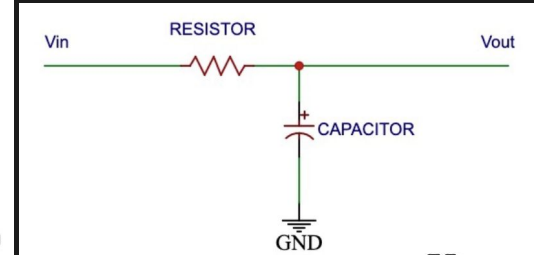
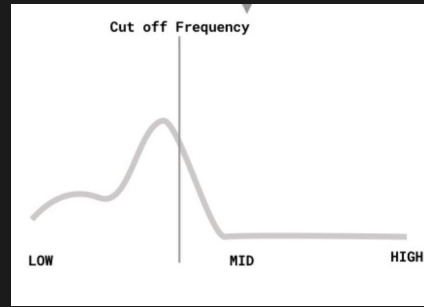
- 31-band
- PC control
- LED screen
- 3-color indicating light
- 16 preset 16 effects
- DSP processor
- noise reduction
- TREBLE MID BASS
- 1U 1U slim size



homieees in the studio like

How does it work?

- RC Passive Filters!
 - Made up of resistors and capacitors
- Capacitor reactance formula
 - As frequency increases, resistance decreases, voltage decreases
- Low Pass & High Pass Filter
 - Allows desired frequencies to pass
 - Cutoff Frequency determines where undesired frequencies roll off
 - Potentiometers change resistance



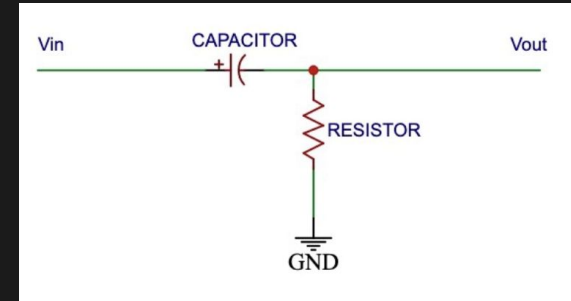
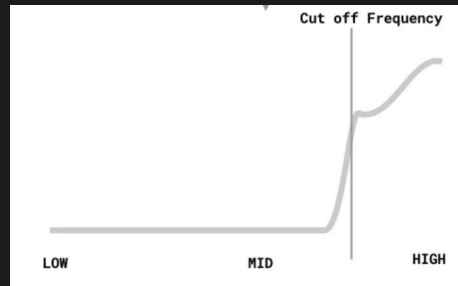
$$X_C = \frac{1}{2\pi fC}$$

$$f_c = \frac{1}{2\pi RC}$$

↓
 Cut off Frequency in Hz

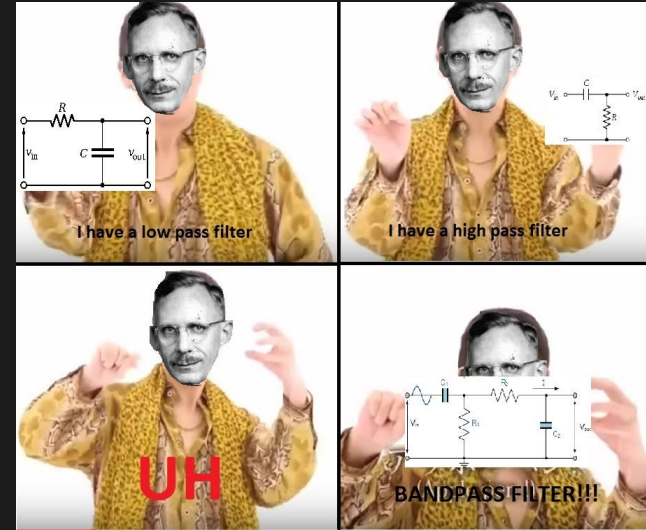
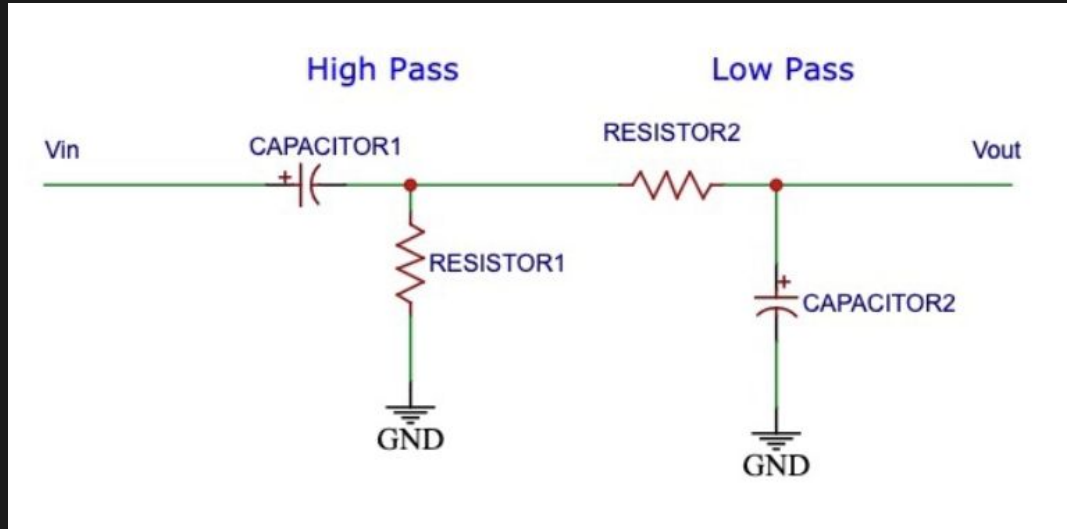
↓
 in Ohms

↓
 in farads

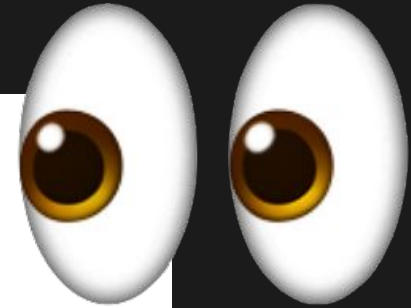
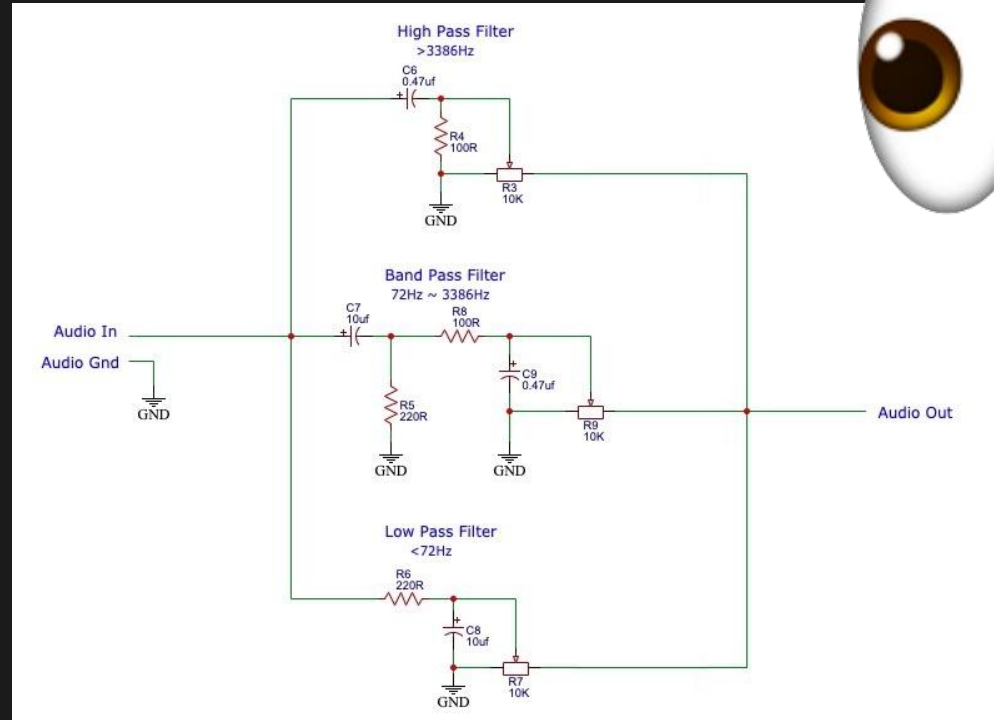
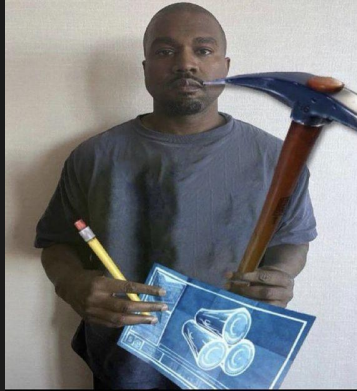


How does it work?

Band Pass = Low Pass + High Pass

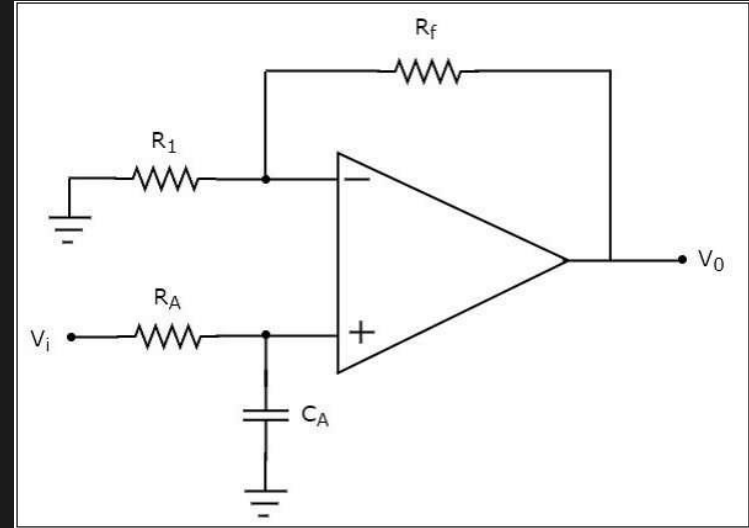
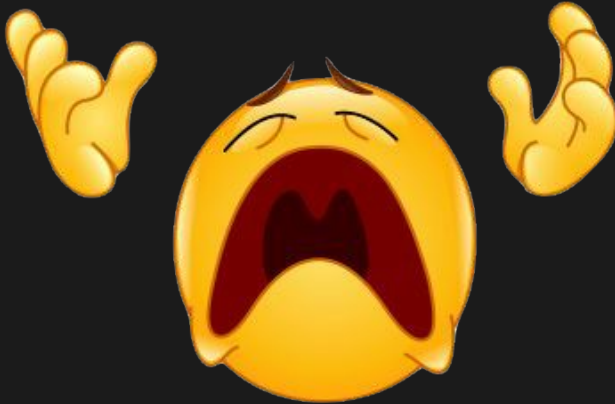


Schematic



Problem with Passive Filters

- When you attach something to the output, the voltage drops
 - This means lower volume
- Fix: Active filters
 - Amplification

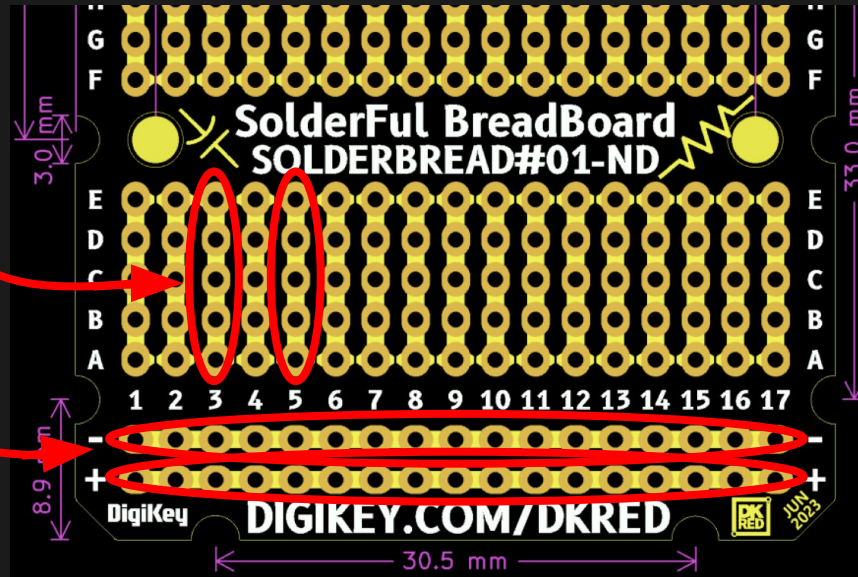


How to Solder and not burn yourself lol



Wiring of the Solder Board

- Positive and negative (ground) rails are wired horizontally
- Other connections are wired vertically



Now Go~~~~!

- Open up instructions in Google Docs
- Ask for help if you need!
- https://docs.google.com/document/d/1ylOzbRfCS3_CaZcGtvx9tQ1rc6Y3oglmPakmMxCU1as/edit?usp=sharing



Interested in joining Workshop Committee?

Come talk to us !

Or message Ethan on Discord

