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General Description
Guitar tuner

System requirements
Non-functional - constraints on design metrics
- Performance - sounds frequency analyzed and displayed in real time
- Size - Small handheld
- Weight - Less than 1 lb
- Power - 5V/500mA USB powered

Functional
- A microphone will sense ambient sound waves
- FFT will be used to find the frequency of greatest magnitude
- OLED display will display whether the frequency needs to be decreased or increased in order to reach the desired string frequency

Performance Expectation
- Constrained metric - OLED will be updated at rate fast enough to give a user a sense of real time feedback

PMODs
- MEMS microphone : https://store.digilentinc.com/pmod-mic3-mems-microphone-with-adjustable-gain/
- OLED: https://store.digilentinc.com/pmod-oledrgb-96-x-64-rgb-oled-display-with-16-bit-color-resolution/

Block Diagram