E5IoT - Project description

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Vibration sensor

It is possible to tune a string instrument in two ways, either by using the actual sound/electrical signal produced or by sensing the vibration the string produces in the wood. Using the vibration in the wood has the advantage of not collecting noise or other interference from the surroundings.

Clip-on guitar tuner, made by Korg

Project scope

The project will focus on getting the information from the sensor to the photon. The photon will then send this information to ThingSpeak for analysis and comparison to a known table of frequencies. This will trigger a response back to the photon that tells it to indicate to the user if the picked string is flat, OK or sharp.

Hardware

For the vibration sensor I will be using the SW-1802P. This component has a coil inside that will be moving when vibration is detected. The reason for using this component is based on the datasheet mentioning instruments as a possible application.

SW-18020P vibration sensor

The response from ThingSpeak will trigger the Photon to turn on one of three LEDs that will indicate to the user if the string is flat (red), OK (green) or sharp (red).