The goal of the project is to build a base ground electric circuit for quartz tuning-fork based sensor. The project employs concepts in electronics as well as instrumentation programming, providing the user with a sensing device. During development, the circuit was tested as air flow sensor, however the potential applications may be: temperature sensing, micro-topography, air-born molecule sensing, and more.

The project utilizes quartz crystal tuning fork as the sensing element. Due to the physical properties of quartz, an electric signal applied to the tuning fork is returned, with the strongest response being at resonant frequency. The output signal is also dependant on ambient conditions the fork is operating in. By comparing the input and output signal of quartz tuning fork, it is possible to have the sensor circuit adjust the operating frequency to the resonance. Thus, the frequency shift is indicative of environment around the tuning fork changing in real time.