

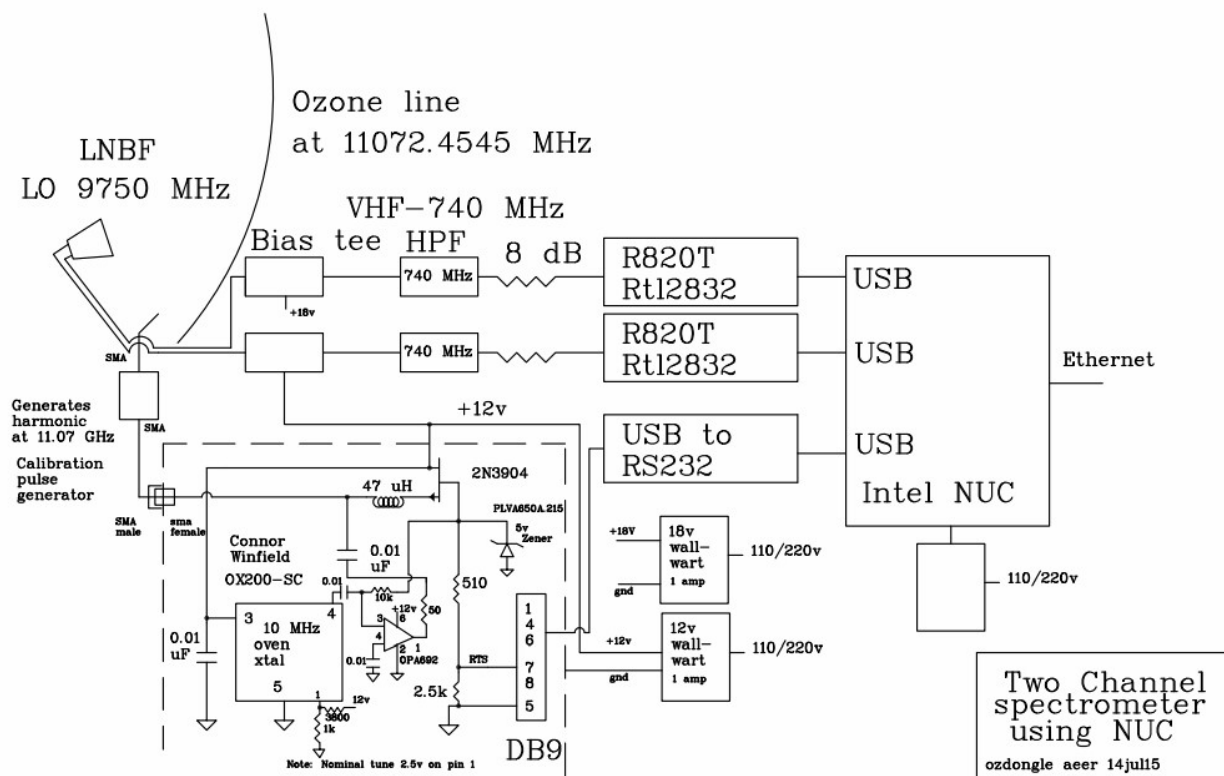
Creating a low cost Ozone Spectrometer out of RTL-SDR's to measure mesospheric winds and tides

Written by admin

August 18, 2015

Over at the MIT Haystack Observatory in Westford Massachusetts, researchers O.B Alam and A.E.E Rogers have been [working on creating a low cost ground based Ozone spectrometer out of RTL-SDR dongles](#) (pdf warning). An Ozone spectrometer is used by scientists to measure the concentration, velocity and temperature of the ozone gasses in the mesosphere (50 – 85 km above the ground) and lower thermosphere (85 km+) at the Ozone line frequency of 11072.4545 MHz.

The spectrometer the researchers built consists of a satellite TV parabolic reflector dish with 46.72cm diameter, 9750 MHz LNBF, two Bias Tees, two 740 MHz high pass filters, two 8dB attenuators, a calibration pulse generator, an Intel NUC mini PC and three R820T RTL-SDR dongles.



RTL-SDR based Ozone Spectrometer block diagram from the MIT Haystack Observatory.

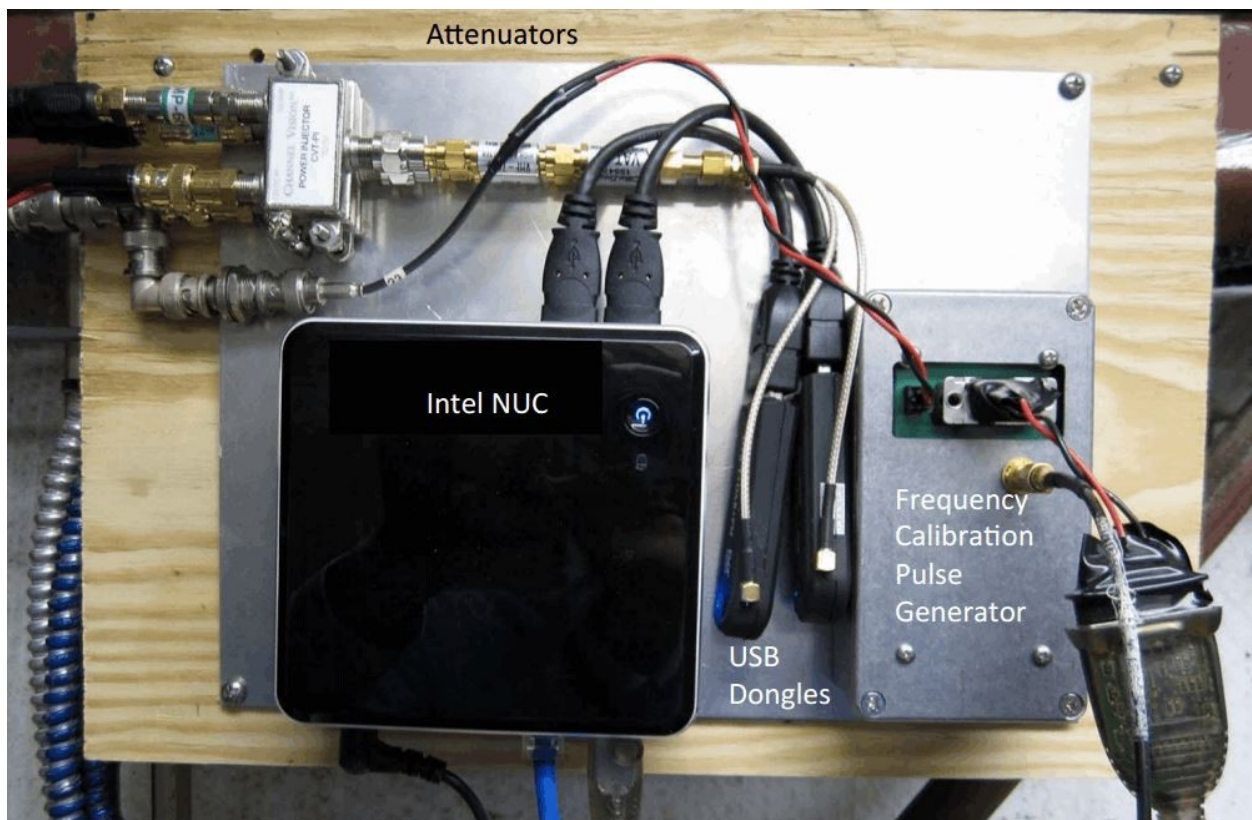


Photo of some of the components of the ozone spectrometer.