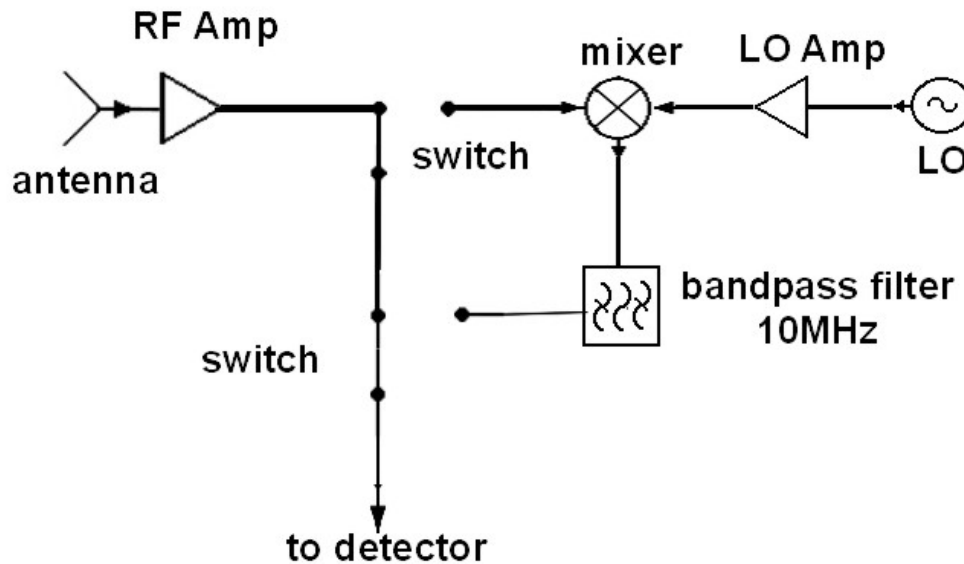


Quiet Skies Detector Description and Use.

Description.

The Quiet Skies (QS) Detector operates in two modes. In *wideband* mode the detector is sensitive to the full range of the receiver: 800 MHz - 1700 MHz. In *narrowband* mode, the detector is tunable over a range of frequencies from 800 - 1700 MHz. In *narrowband* mode, a filter with a bandwidth of 10 MHz is employed.



Block diagram of Quiet Skies Detector (shown switched in *wideband* mode)

The detector requires 4 C batteries (included) which will last about 4 hours. The detector has a threaded $\frac{1}{4}$ inch hole in the back which allows you to mount the detector to a standard tripod. By changing the angle of the tripod head you can orient the antenna vertically or horizontally.



Use vertical scans for airplanes, radar, GPS satellites, etc.

Use horizontal scans for signals like cellphone towers).
Use for obtaining total RFI data.

Use of Quiet Skies Detector.

1. Charge the batteries first, then pop them in.
2. The knob on the left has three positions. From left to right, they are as follows: *off/on*, *Wideband*, *Narrowband*. If you wish to operate in *wideband* mode, tuning

is not necessary. In this mode the detector detects the entire bandwidth of the amplifier.

3. The right knob is the tuning knob. If you wish to tune to a particular frequency, twist the left knob to *Narrowband*, then tune to the desired frequency with the right knob. The display will show the frequency and total power detected, as you tune. This is handy if you want to determine the frequency of greatest signal strength.
4. If you wish to scan in all directions for RFI at a particular frequency:
 - a. mount detector in horizontal position,
 - b. select *Tuning* mode and tune to the desired frequency,
 - c. point the detector at the horizon beginning with North,
 - d. Record the output. Output power is in dBm.
 - e. rotate the detector by 30 degrees in azimuth and repeat observations.
 - f. continue until you have made a complete circle.
 - g. You can add all numbers to get a total RFI detection for that location.

Note: Avoid close proximity to buildings, as they can act like transmitters and reflectors. It's ok if you are surrounded by buildings, but if there is just one or two, this will skew your data. Try to find a location where the building occupies no more than 20 degrees of your field of view (2 fists at arms length)

Some questions to investigate: Does the RFI change with time of day? Does the RFI level change with cardinal direction? Does the RFI level change with Frequency?

If you detect RFI at a particular frequency and in a certain direction, what could it be? You can search for fixed licensed transmitters on the FCC website.

1. Visit <http://wireless2.fcc.gov/uls>
2. Click on "search licenses"
3. Click on "geographic" under specialized searches
4. Then you can enter your location, a radius about which you want to search, a frequency range, etc.
5. You'll see a list of transmitters. By clicking on them you can learn exactly where they are, what frequency they radiate, even what they are for!

Also try this site to look for cellphone towers in your area:

<http://www.cellreception.com/towers>

Maintenance and Troubleshooting

1. Erratic display: batteries are low, or a switch is bad.
2. QS detector display is blank: Batteries are in the wrong way
3. Don't drop – especially into a puddle! (QS is not waterproof!!)