

Measuring the Noise Floor

If the noise floor at your location is high receiving faint meteor echoes will not be possible. So before embarking on making a system for meteor observations by radio it is necessary to assess your local noise level. A simple way of doing this is to use the digital signal level feature in SDR Console with the receiver tuned to a clear frequency near that of the beacon on 50.408MHz. There is a guide on setting up SDR Console in the Resources / Documents section of the project web site at:-

<https://ukmeteorbeacon.org/Documents2List?recperpage=30> .

With your antenna connected Set the frequency to 50.408MHz. with a span of 1KHz.

In the View menu click on Signal Meter and select Digital.

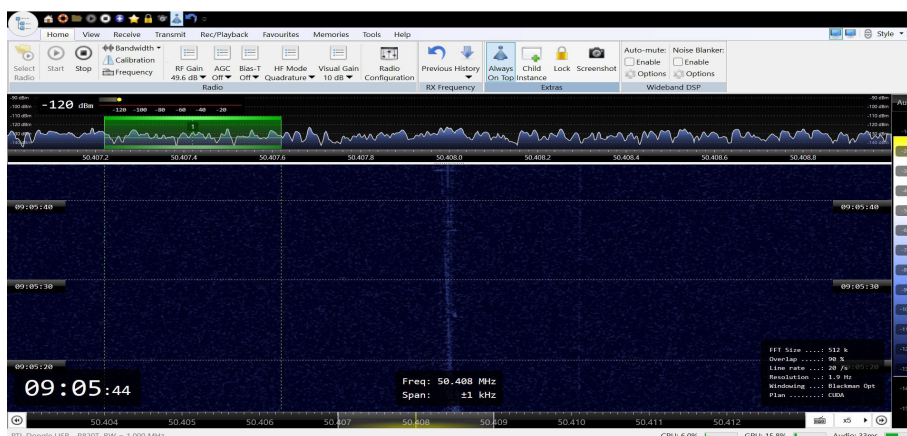


Fig 1

be present. The Signal Meter now reads the relative noise level, -120dBm in this example.

Disconnect the antenna from the receiver and note the new level. See Fig 2.

The increase in noise when the antenna is connected is $122-120=2\text{dB}$ in this example. This is a good figure. As the noise floor increases more and more meteor echoes will go unseen. Anything up to about a 6dB increase with antenna connected is acceptable.

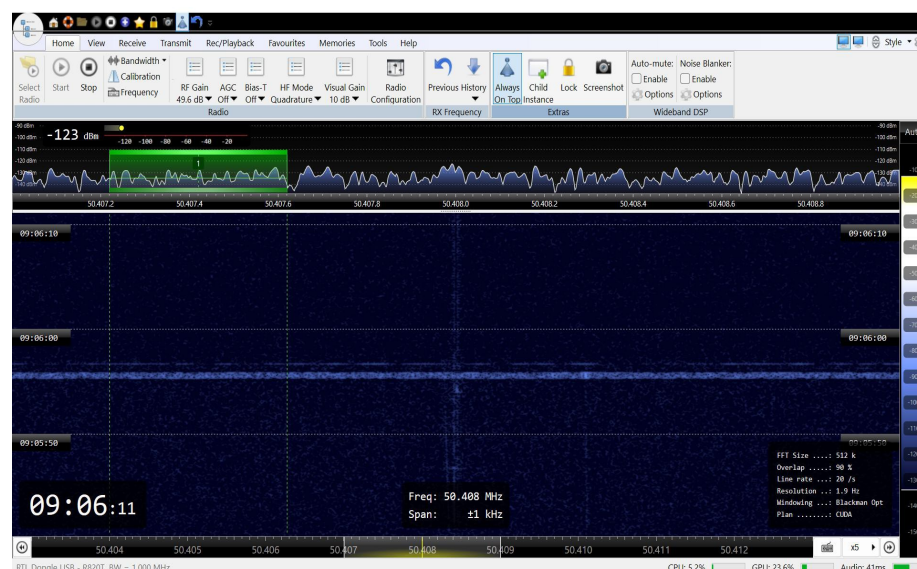


Fig 2

<https://ukmeteorbeacon.org/beaconclient/>.

In the Receive Menu click on DSP then on the DSP panel select CW and a bandwidth of 400Hz. On the waterfall find a clear spot with no signal. Click on that part of the display and it should look like Fig 1.

Note that in this example there is a weak signal on 50.408MHz. Avoid this or any other signals, vertical lines, that may

be present.

Disconnect the antenna from the receiver and note the new level. See Fig 2.

The increase in noise when the antenna is connected is $122-120=2\text{dB}$ in this example. This is a good figure. As the noise floor increases more and more meteor echoes will go unseen. Anything up to about a 6dB increase with antenna connected is acceptable.

If you have a higher noise level try re-positioning the antenna and using its directional properties to track down the noise source. This will only work for a single noise source. If there are many noise sources as is sometimes the case in an urban environment your location may be unusable. In this case use the projects network of receivers. The live stream from which can be found at :-