

Tokenblouser:

What's wrong with the QO-100 WebSDRs?

In this application note, we will compare reception of the QO-100 lower beacon, using two WebSDRs and a local receiving station, equipped with the Tokenblouser GPSDO.

Prerequisites

Please see Application note RigExpert TBR-AN-1 for the hardware requirements.

WebSDRs

The SDR receivers accessible through the browser are currently quite popular all over the world. Many of such receivers cover bands from LF to SHF. A few Web receivers installed to receive a narrow-band transponder from the QO-100 satellite (10.4895...10.490 GHz).

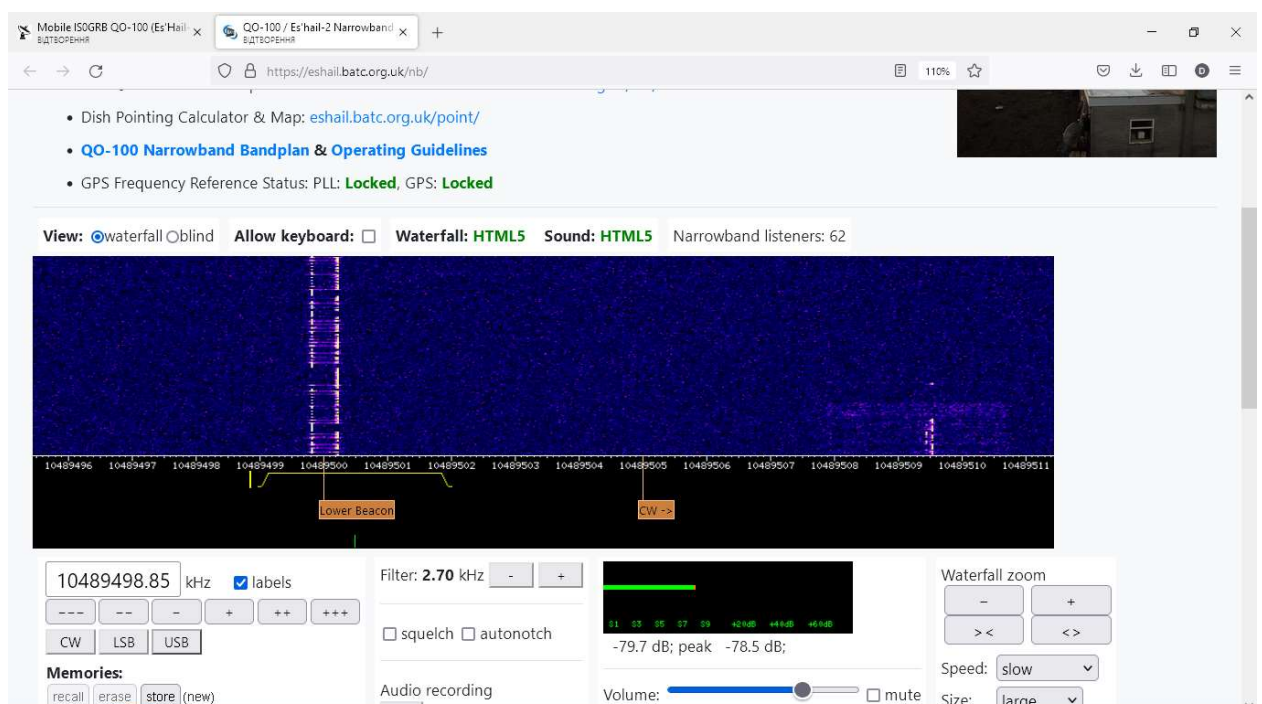
There are two receivers currently available on-line:

- <http://websdr.is0grb.it:8901/m.html>
- <https://eshail.batc.org.uk/nb/>

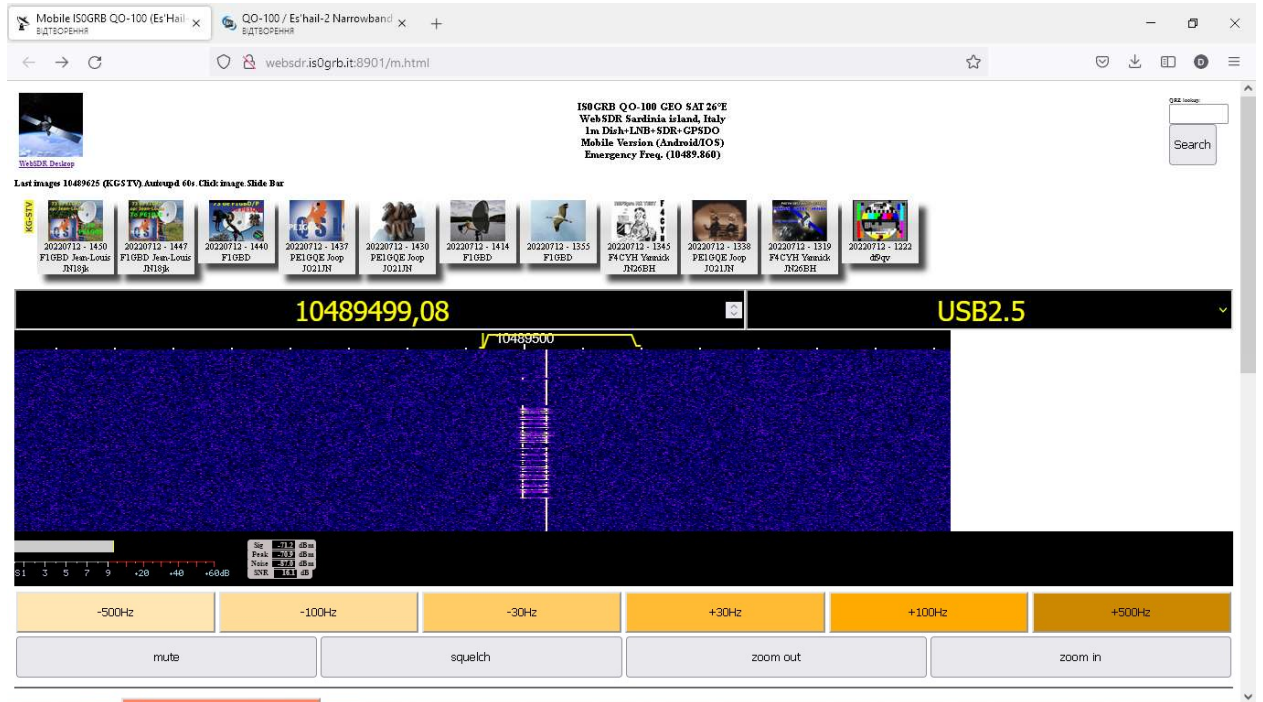
The Lower Beacon

The “Lower Beacon” is a two-tone CW beacon of the QO-100 satellite, located at 11.4895 GHz.

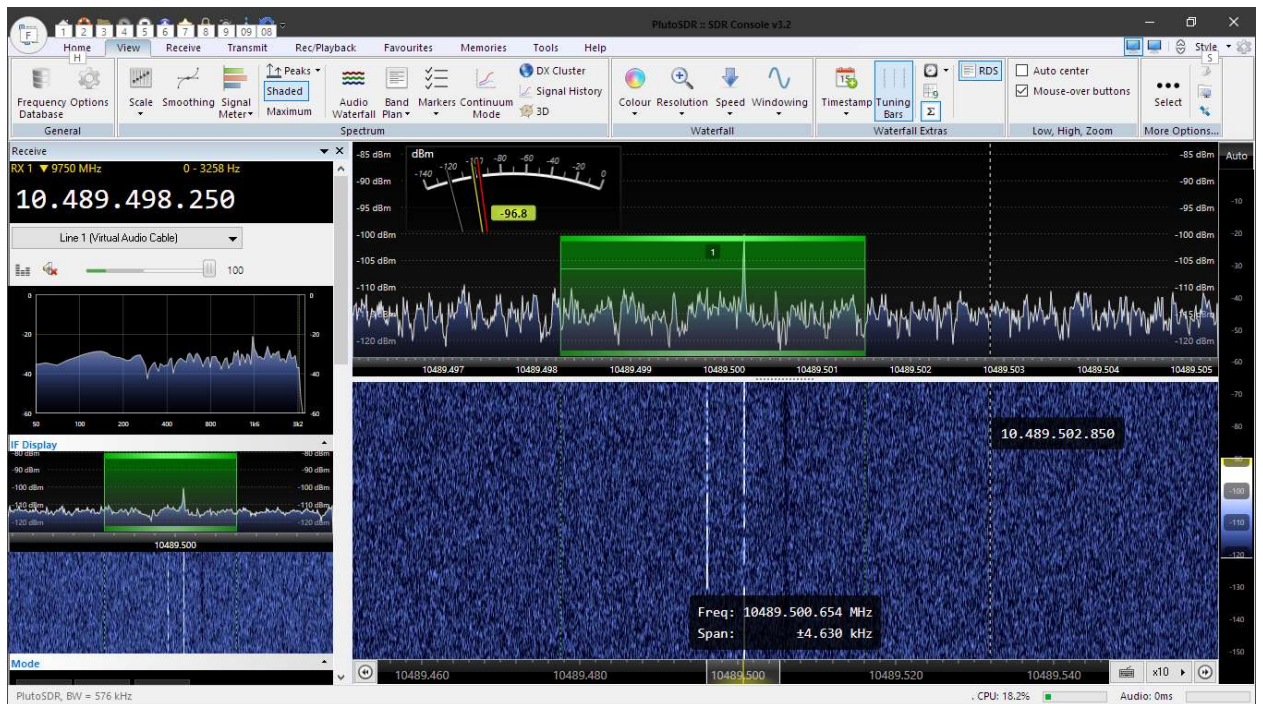
Using the **BATC WebSDR**, the signal is clearly visible on the waterfall:



The IS0GRB WebSDR is also providing a nice reception:

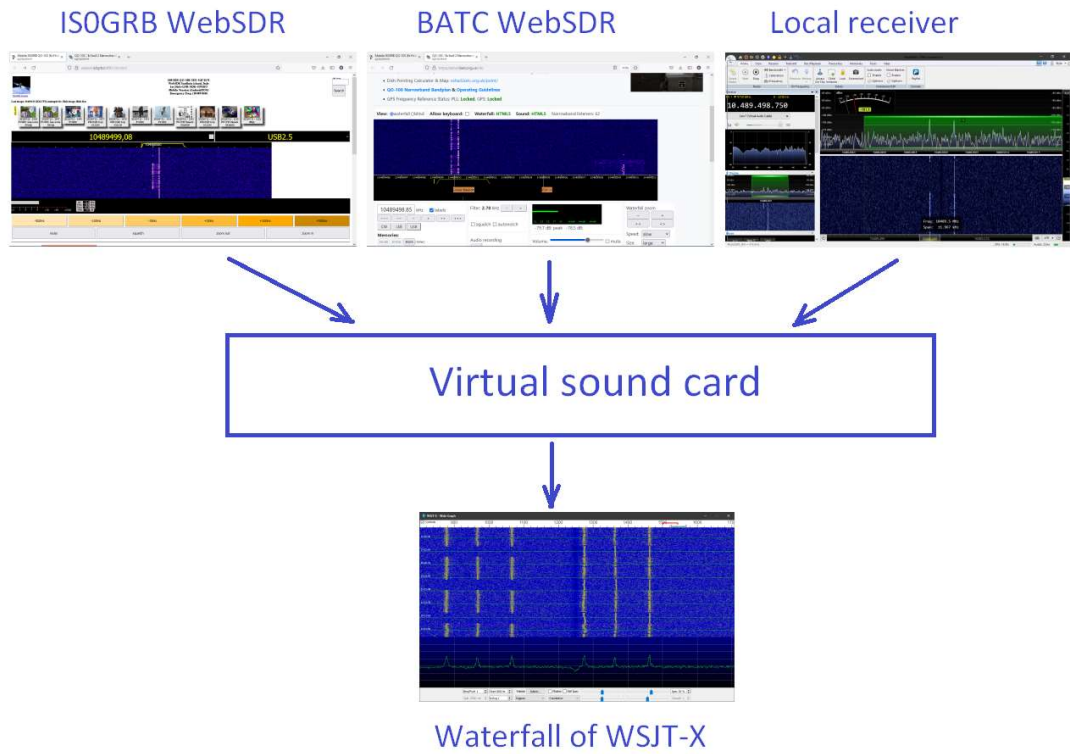


In addition, a local reception by a station equipped with the Tokenblauser GPSDO is giving similar view:

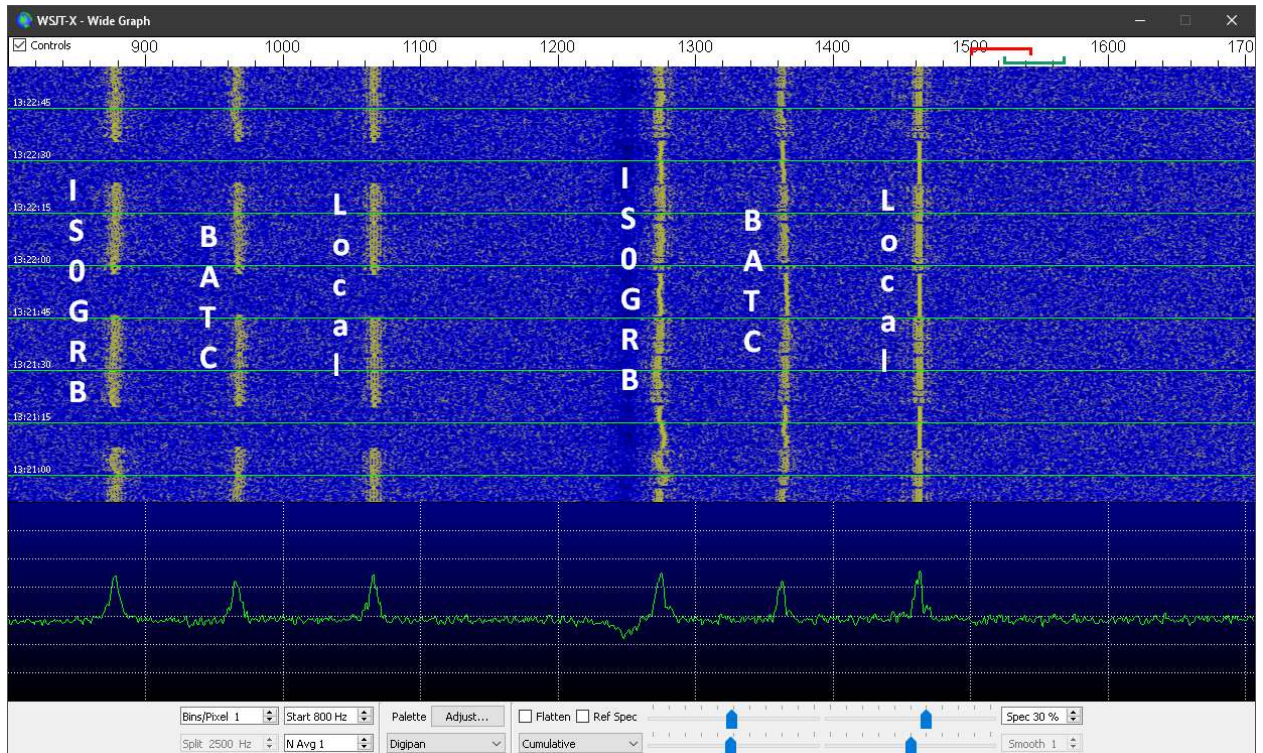


Combining all signals together

By using a virtual sound card software, such as a Virtual Audio Cable, all audio signals can be combined. The waterfall of the WSJT-X software is used to view the result. All receivers are tuned at slightly different frequencies so on the waterfall we will see three copies of the Lower Beacon:



What is wrong with WebSDRs and what causes their frequency instability?



A closer view:

