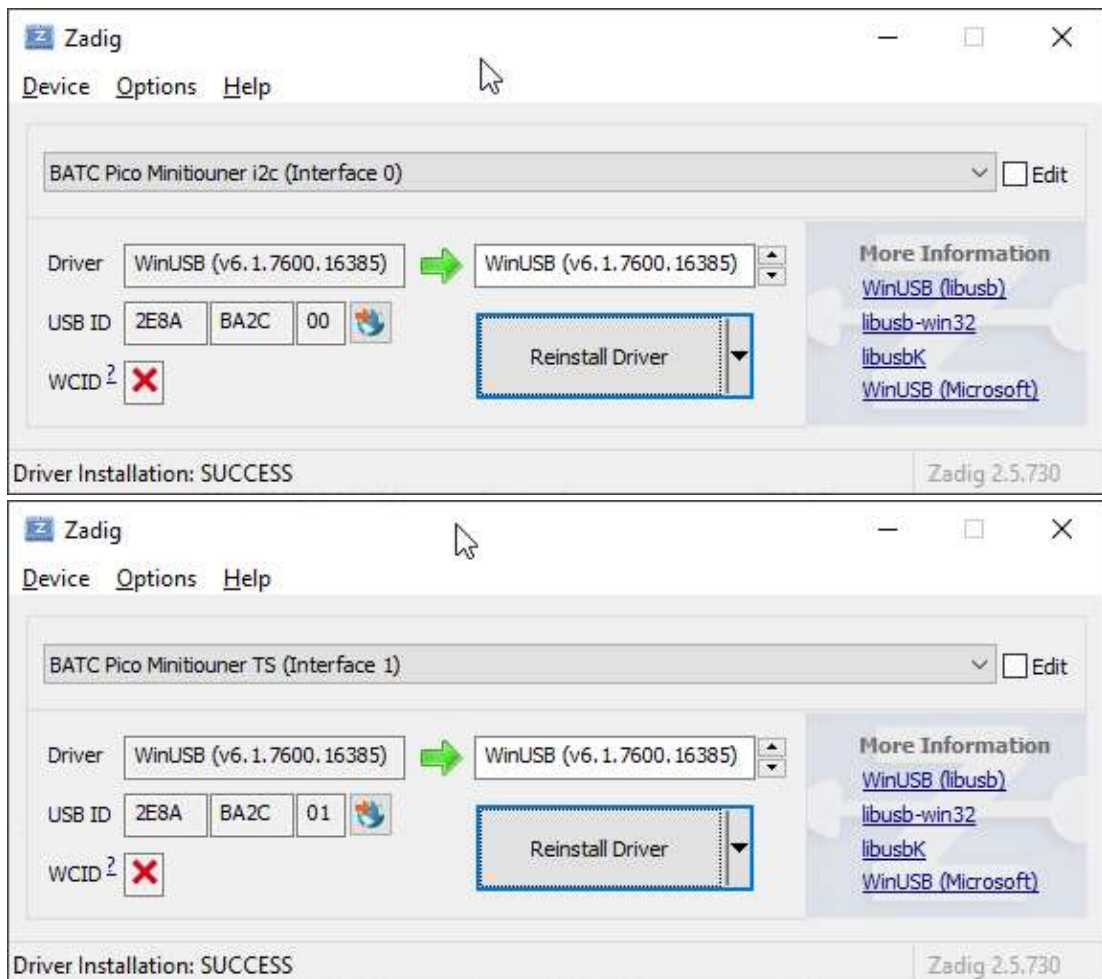


# PicoTuner V2 Pro Installation

created by DJ7TH

1. If not already installed, you must first download the latest USB firmware for the PicoTuner from Colin G4EML's [github page](#) (.uf2 file) and install it.  
The subsequent installation of the uf2 file on the Pico is very simple:  
Unscrew the four upper housing screws and remove the housing section.  
The Pico is put into programming mode by holding down the white BOOTSEL button on the Pico board and plugging the USB cable connected to the PC into the Pico. In the file manager, you will now find another USB drive to which you can copy the xxx.uf2 file. The green LED on the Pico should then flash. That's it.
2. The installed Pico firmware generates two USB interfaces on the software side:  
BATC Pico Minitiouner i2c (Interface 0) and BATC Pico Minitiouner TS (Interface 1).  
In order for the Windows PC to recognize the two USB interfaces from the PicoTuner, the two associated USB drivers must be installed on the PC using the [ZADIG 2.8](#) software:



On the PC, you can now find "USB devices" in the device manager:



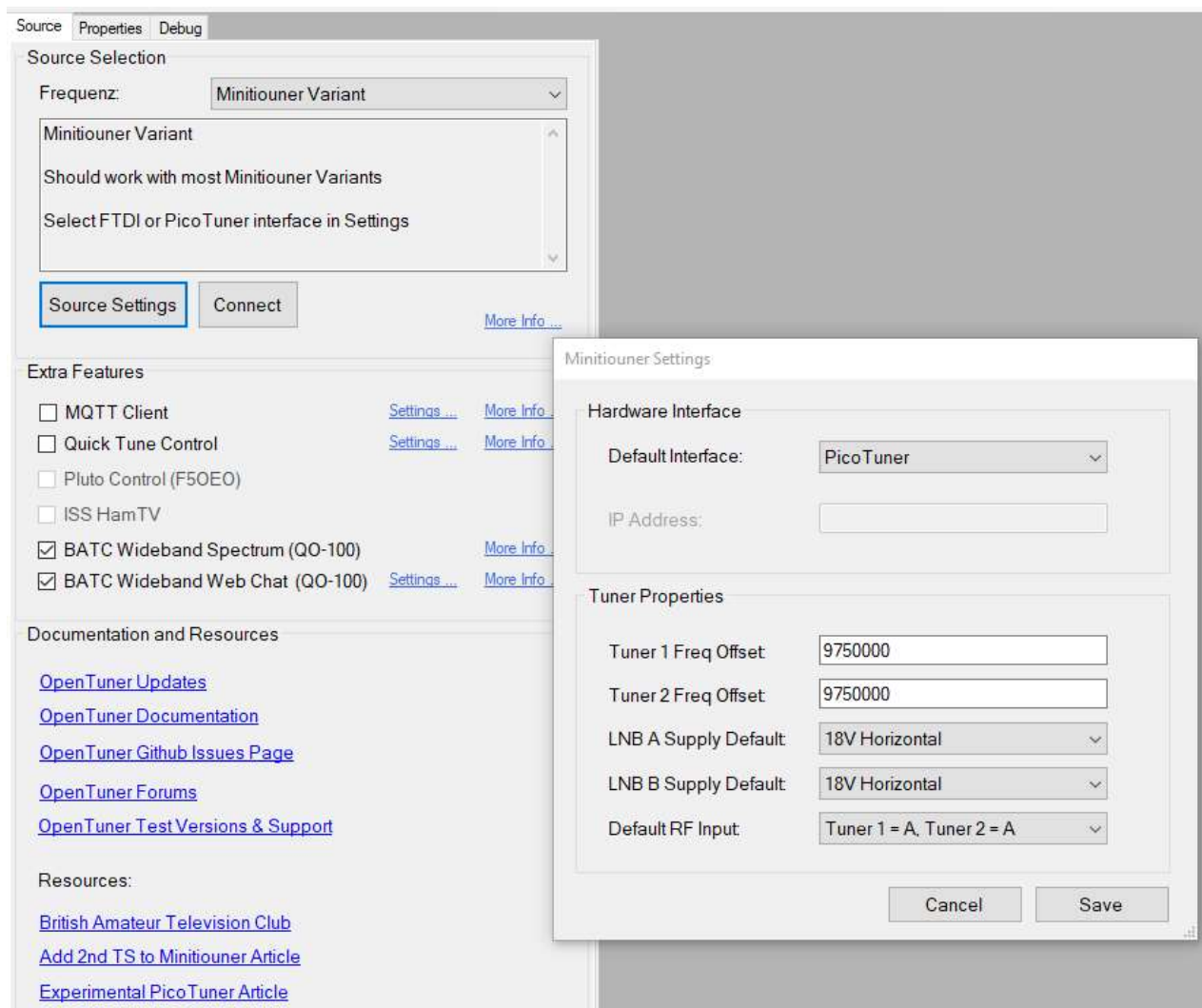
The PicoTuner only runs in conjunction with the new [OpenTuner software](#) from Tom ZR6TG. The MiniTioner software from F6DZP cannot be used.

The current OpenTuner software (August 2024) can be downloaded here:

[https://www.zr6tg.co.za/files/open\\_tuner\\_0.B\\_20240714.zip](https://www.zr6tg.co.za/files/open_tuner_0.B_20240714.zip)

The OpenTuner software supports various versions of the MiniTioner and PicoTuner.

You have to select the PicoTuner in the "Source Settings" after starting OpenTuner:



The setting values of the Serit tuner are predefined and can be adjusted here.

The two tuners (1+2) are switched to LNB-A and to 18V LNB voltage.

As both tuners have a tuning range of 140MHz to 2450MHz each, you could also switch tuner 2 = B, i.e. to input LNB-B and directly control your own transmission on 2.4GHz. The offset of tuner 2 must be set to 0.

### Updating the firmware:

The tool "picotuner\_driver\_test\_app" is a helpful program for checking and transferring the firmware to the Pico module without opening the tuner to access the BOOTSEL button.

You can find it under "Downloads" as "Firmware Test Program" on my HP:

[http://www.download.dj7th.de/PicoTuner/picotuner\\_driver\\_test\\_app.zip](http://www.download.dj7th.de/PicoTuner/picotuner_driver_test_app.zip)

### Setting the LNB voltages:

The four jumpers K30-K32-K33-K34 on the PicoTuner board can be used to determine whether the LNB voltages for LNB-A and LNB-B are fixed or can be selected via software.

Here are the jumper placements for LNB voltages permanently set to 18V (factory setting):



The following changes are possible:

Jumper K30 not plugged in: LNB-B voltage = 12V

Jumper K32 not inserted: LNB-B voltage = 0V

Jumper K33 not plugged in: LNB-A voltage = 12V

Jumper K34 not plugged in: LNB-B voltage = 0V

Here are the jumper placements for LNB voltages that can be set via software:

**Note: the selection via software does not (yet) work in the LAN version.**



## Operation in a network:

The Ethernet firmware from Brian G4EWJ must be installed for this (Winterhill mode).

The installation process on the Pico is identical to the USB version (see above)

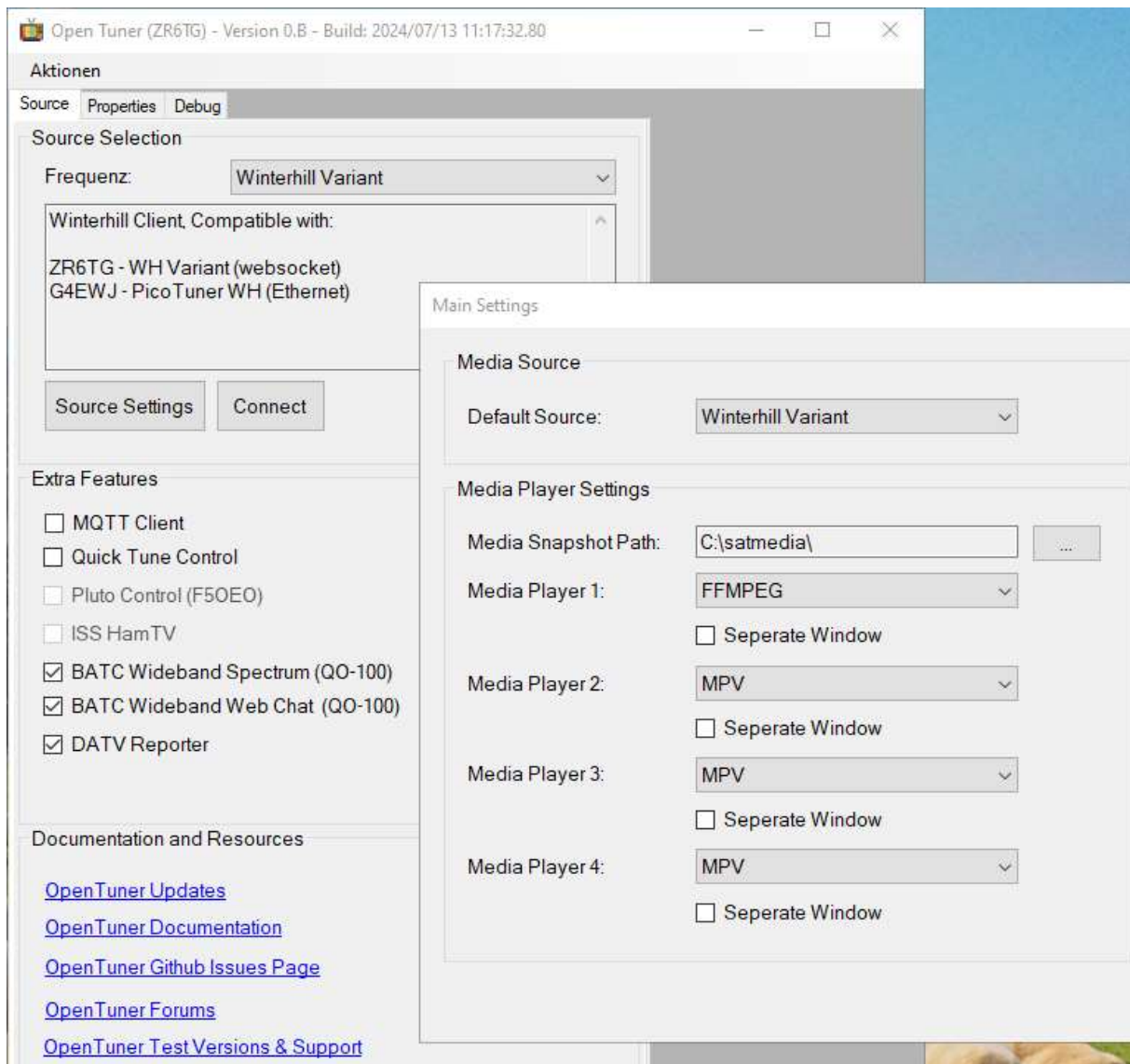
The current file (August 2024) has the name **ptwh0v3b-w5100HAT.uf2**

There is a comprehensive instructions manual in German and English.

The current **OpenTuner version 0.B** is required for operation.

The following changes must be made in the OpenTuner settings:

In "Actions - Main Settings - Media Source", select "Winterhill Variant" as the default:



Here you can also select the various media players for the 4 windows.

Only the FFMPEG and MPV players are suitable for receiving broadcasts in H.266.

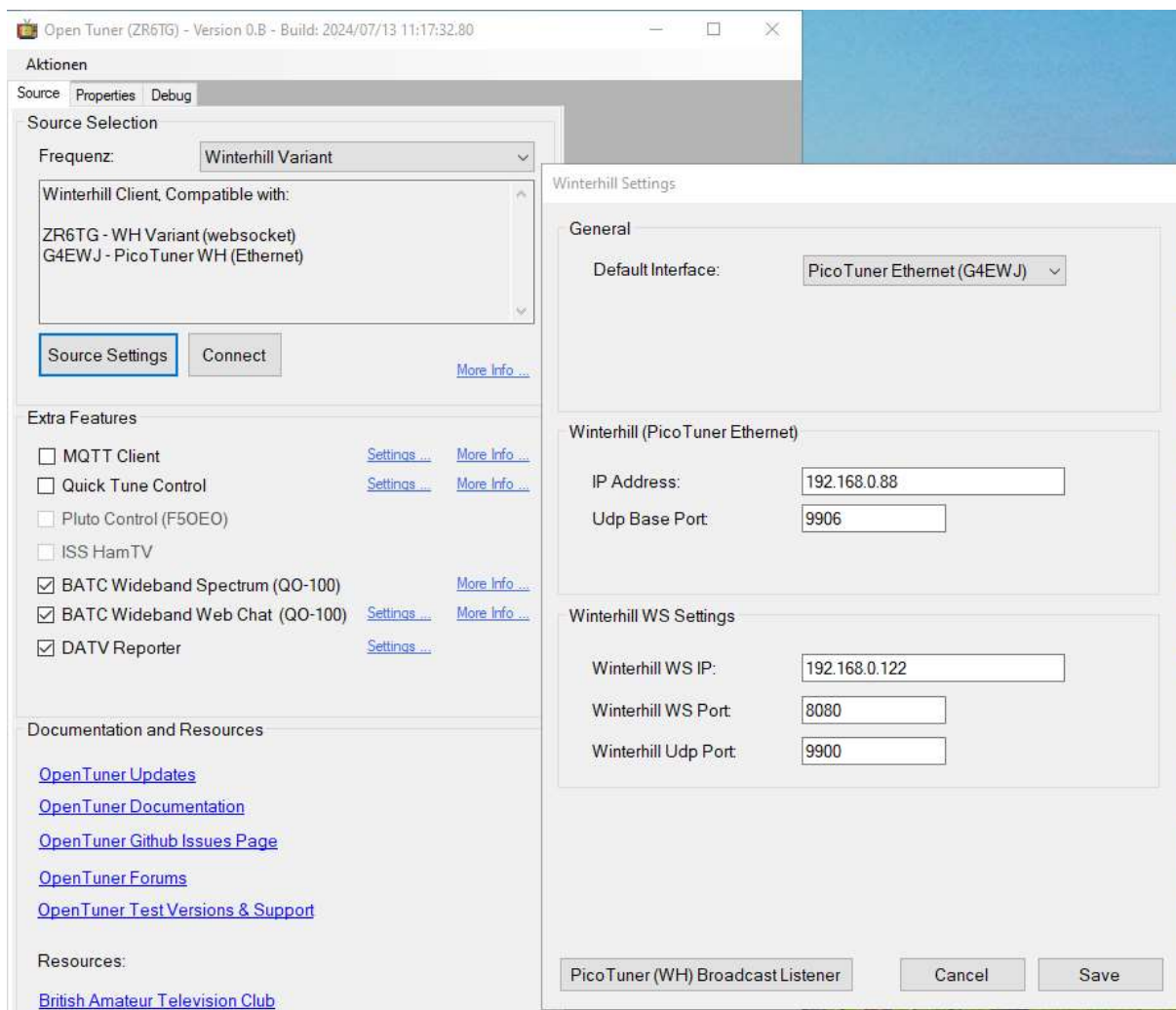
The VLC player is standard.

Please note: **The FFMPEG player cannot (yet) display the beacon with 1500kS.**

This is irritating as you will not see a beacon in the FFMPEG windows when you start OpenTuner.

If no player window appears, you have to reset the values in "open\_tuner\_settings.json" to the original value in the "settings" of OT. (Bug in OT)

The "PicoTuner Ethernet (G4EWJ)" must be selected under "General" in the "Source Settings" and the "IP Address" is the IP assigned to the Pico by the router (FritzBox) via DHCP.  
If only one PicoTuner is running in the network, leave the UDP port at 9900.



If no stations appear in the window after "Connect", proceed as follows:

Open the "Pico Tuner (WH) Broadcast Listener" in the "Winterhill Settings" window and check which "Detected IP Address" is listed there. This must be the same in the "Winterhill Settings" window, otherwise enter it there. Also accept the value of "Detected Base Port" (should be set to 9900 for only 1 tuner) and also enter it in "Change Base Port".

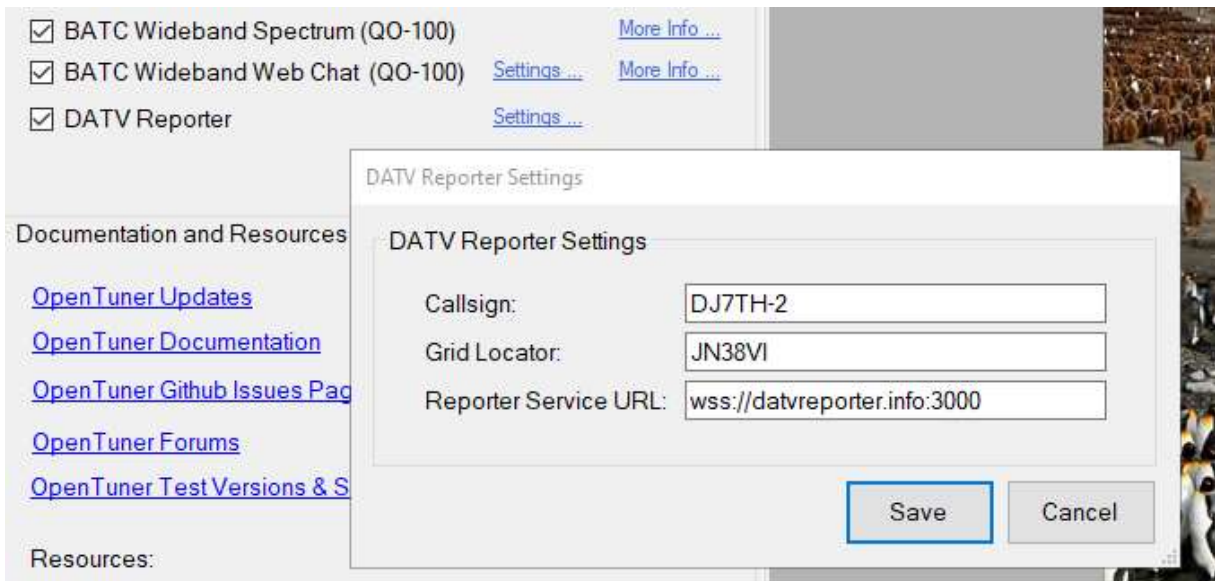
**Then click on "Change Base Port" and wait until this value has been transferred to "Detected Base Port". This may take several seconds.**

Save settings with "Save" and start OT with "Connect".

If there are two PicoTuners in the network, select UDP port 9002 or 9004 for the second tuner. Unfortunately, the above procedure must be carried out every time the tuner is restarted, as the port addresses > 9000 are obviously not saved. The best way has proven to be: first switch on the tuner with port 9000 and start OT with "Connect" and then switch on the 2nd tuner with port 9002 or higher, whereby the above procedure with "Change Base Port" must be carried out again in OT before "Connect". You will then see in the broadcast listener that the displayed IP + port address changes back and forth.

## DATV Reporter:

If you want to send reception data to the DATV reporter, you can check the box there and enter your data in the window with "Settings":



These then appear in the browser on page <https://www.datvreporter.info>

The screenshot shows the DATV Reporter web interface. It features two summary boxes at the top: "Stations Listening" (2E0ILY, SP9ACQ, DL4FBN) and "Stations Recently Seen (Viewers)" (R6WAX (3), A71A (1), f6has (1)). Below these is a "Live View" section with a search bar and a table of reception data.

Date/Time	Callsign	Seen By	dB Margin	MER	Frequency	Symbol Rate	Application
2024/08/25 18:30:13	A71A	2E0ILY	7.70	12.40	10491530	1500	OpenTuner
2024/08/25 18:30:11	R6WAX	DL4FBN	2.40	7.10	10498753	333	OpenTuner
2024/08/25 18:30:08	R6WAX	SP9ACQ	1.20	5.90	10498748	333	OpenTuner
2024/08/25 18:30:02	R6WAX	2E0ILY	4.00	8.70	10498753	333	OpenTuner
2024/08/25 18:29:52	f6has	2E0ILY	5.00	7.30	10497230	333	OpenTuner
2024/08/25 18:29:42	A71A	2E0ILY	7.60	12.30	10491530	1500	OpenTuner
2024/08/25 18:29:41	R6WAX	DL4FBN	2.50	7.20	10498753	333	OpenTuner

## Optional settings in OpenTuner from version 0.B:



Click on one of the windows to show/hide an info bar at the top.

You can adjust the volume with the scroll wheel of the mouse (white vertical bar on the right)

With "Control-P" you can show/hide the left menu "Hardware Properties".

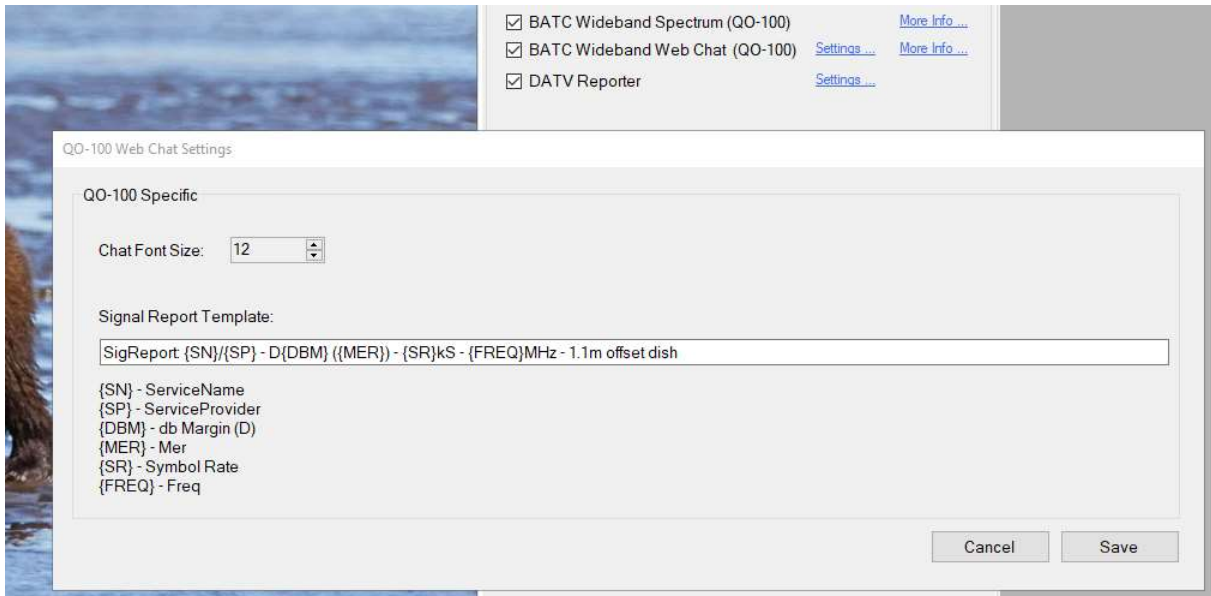
If you have two tuners and operate them with two separate OpenTuners, four windows can be displayed. These settings are also saved in this form when closing.



## QO-100 Wideband Chat:

In "Actions - Source" under "BATC Wideband Web Chat..." select "Settings...".

In the "QO-100 Specific" window, you can accept the "Signal Report Template:" line or add your own details, as I have done, for example:



When you start the chat, you must first log in if you want to send a signal report of a received signal from one of the two tuner windows (bottom left):

