Using RCKskimmer with a WEB-based SDR

This document describes how to setup the software RCKskimmer, the PC (Hardware) and a WEB-SDR (Web-based Software-Defined-Radio).

A good web side to find available web-sdr's is www.websdr.org .

| Location and URL	Frequency range	Antenna	
WebSDR at the University of Twente, Enschede, NL http://websdr.ewi.utwente.nl:8901/ JO32KF; 95 users	0.000 - 29.160 MHz	Mini-Whip	1
160m, 60m, 80m, 40m and 17m SDR's from Nantwich in Cheshire http://hackgreensdr.org:8901/ IO83RA; 26 users	1.804 - 1.996 MHz	204 foot long double size G5RV	2
	3.600 - 3.792 MHz		
	5.237 - 5.428 MHz		
	7.008 - 7.200 MHz		
	14.130 - 14.322 MHz		
	18.019 - 18.211 MHz		
WebSDR in Volgodonsk, South of Russia http://websdr.net/ LN17CM; 18 users	3.504 - 3.696 MHz	Diamond CP8040	3
	7.054 - 7.246 MHz	Dipol on 40m	
	14.004 - 14.196 MHz	Dipol on 20m	
	14.180 - 14.372 MHz	Dipol on 20 m	
WebSDR in C3 Ordino - ANDORRA PRINCIPALITY - ARDAM Ham Radio Association - RX 4 pcs FuncubePro+ http://sdr.radioandorra.org:8901/ JN02SN; 11 users	7.008 - 7.200 MHz	Half wave Dipole.	4
	50.000 - 50.192 MHz	2 elem. Moxon NE	
	3.556 - 3.748 MHz	Half wave Dipole.	
	14.043 - 14.235 MHz		
Multiband SDR receiver located in Bucharest, Romania. http://websdr.yo3ggx.ro:8765/ KN34bk ; 11 users	3.590 - 3.782 MHz	Windom (132')	5
	6.998 - 7.190 MHz		
	10.075 - 10.171 MHz		
	14.050 - 14.242 MHz		
	143.976 - 146.024 MHz	Diamond X200N	
HF SDR at University of Eindhoven NL, by	1.804 - 1.996 MHz	1m Active magnetic loop	
	3.494 - 3.686 MHz		

For my tests I choose the web-sdr from the amateur radio club ETGD at the University of Twente with the URL: http://websdr.ewi.utwente.nl:8901/ but other WEB-SDR's are working too.

The picture below is showing the setup of the web-sdr.
The frequency I selected is 14073 kHz, because on this frequency the most digital stations (PSK31 and PSK63) are available for testing and demonstration. Use your preferred frequency and mode for monitoring.

Decoding only one frequency   14073 kHz   with   **3 kHz**   bandwidth in   **LSB** .
In my setup it is necessary to set the volume level to maximum (maybe it's not necessary for you).
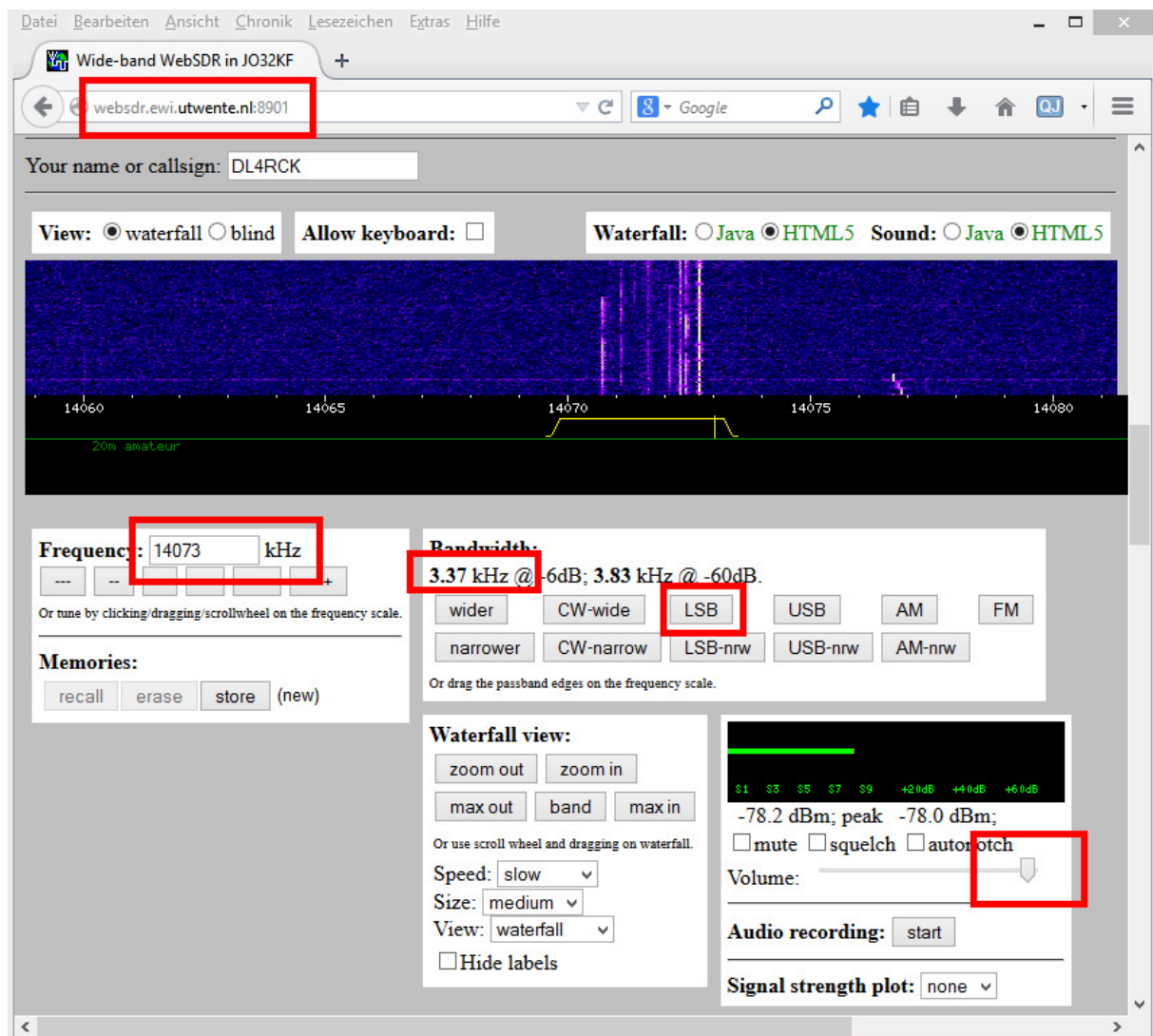
The PC-hardware must be manipulated with a simple trick.
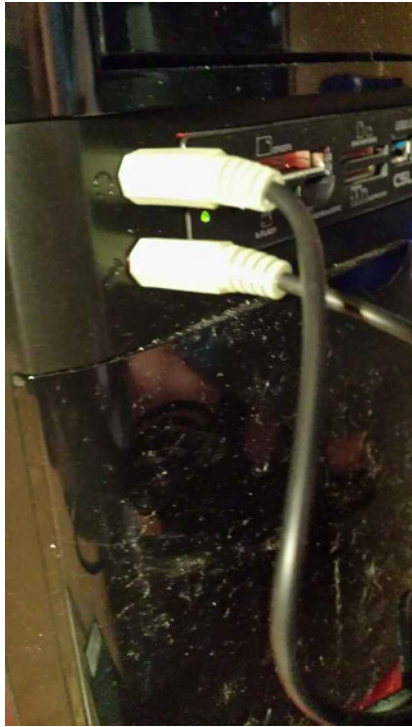
Make a bridge (connection) between your soundcard output (headphone) and your soundcard microphone input.

This simple connection takes over the received signals from your speakers (web-SDR noise) to the microphone input, because RCKskimmer is working only with soundcard inputs and not with the speaker signals itself.

Start RCKskimmer and enter the Setup -> Program Setup menu.

Enter the "Digi Modul" tab for the first setup.

1. Is showing the station information.
   In my case I was using a web-SDR from PA-land, so I add the Prefix PA in front of my personal callsign. Also using the QTH-locator and station information of the web-sdr.
   Password… doesn't matter.
   NOTE: The call must not be longer than 7 characters in sum.

2. Select here the microphone input of your soundcard.
   Press the "Apply" button to see if the setup is working. The waterfall display on the main window should show some lines.
3. Most soundcards are working with a sample frequency of 44100 Hz.
4. Set this option to share your incoming spots with all users of the digital cluster system.

Note: If the program locks if the wrong soundcard-input is selected and the program cannot be started anymore, have a look into the RCKskimmer directory on the hard disc and delete the file "rckskimmer.ini".

Note: Please use the call-prefix where the web-SDR is located with your callsign and the web-SDR locator to show other connected user (on the Digital-Cluster-System) where the signal is received.

Search Frequency Tab

Uncheck all options as shown in this picture.
Select the "DefaultFreqSearch"

This setup allows entering a frequency by hand.

Search Options Tab

Set the Jump Stepp (Hz) option to 2900.
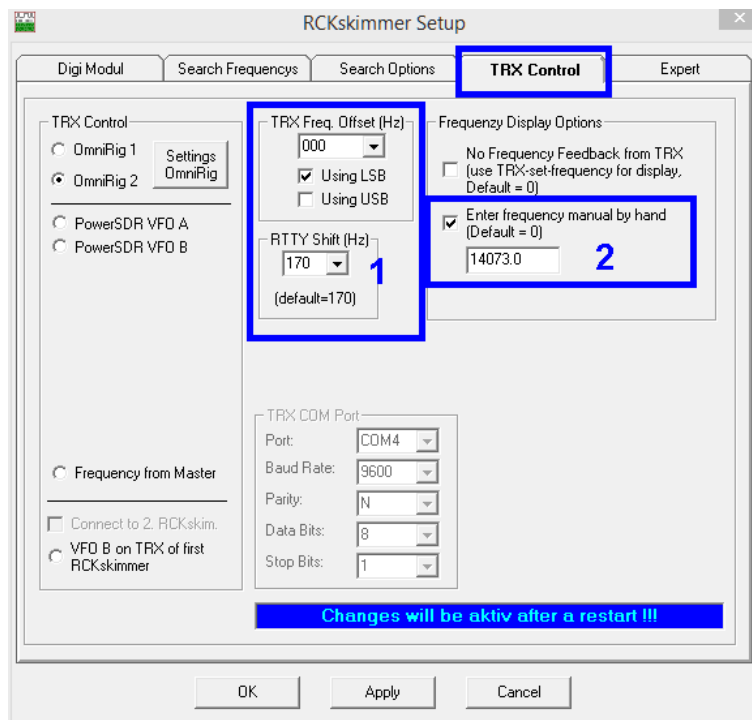
TRX Control Tab

1. Set the Offset to 000
   select "Using LSB"
   select 170Hz for RTTY signals
2. Select the option "Enter frequency manual by hand" and enter the frequency in kHz you would like to monitor. (In my tests I was running 14073 kHz)

All other setups doesn't matter.
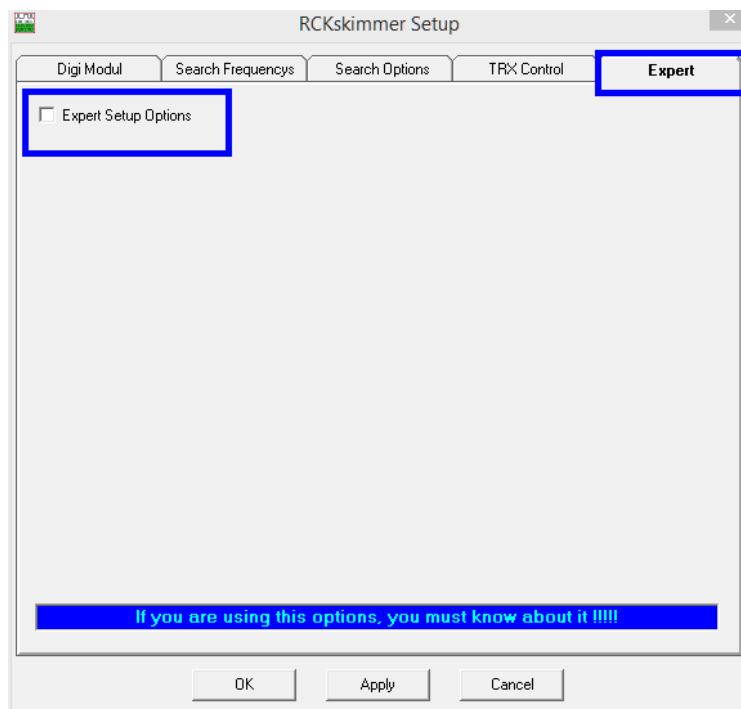
Expert Tab

No adjustments must be done here.
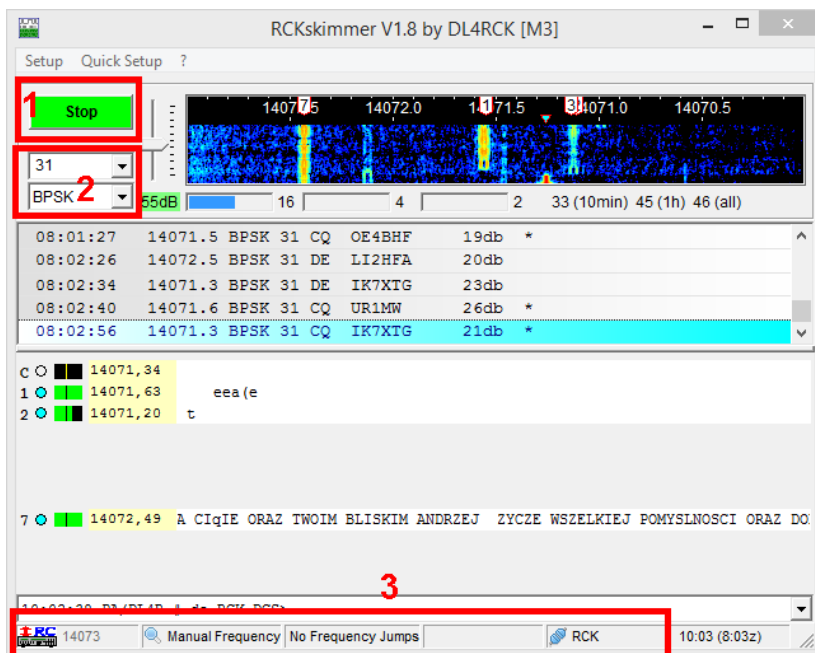
Disable the "Expert Setup Option".

Press the OK-button to take over of the setup.

If all adjustments are correct,
press the "Start" button (1),
select the mode you want to monitor
(2)

The status line (3) should looks like in
the picture.

This example is monitoring the mode
PSK31 at the frequency 14070 –
14073 kHz.

Below is a picture of monitoring PSK31 and PSK63 the same time on the same frequency.
This is possible by running two instances of RCKskimmer. Copy the complete directory of
RCKskimmer 1 (with all files) in a second directory and starting this new RCKskimmer 2 with same
setup but with other monitoring mode.
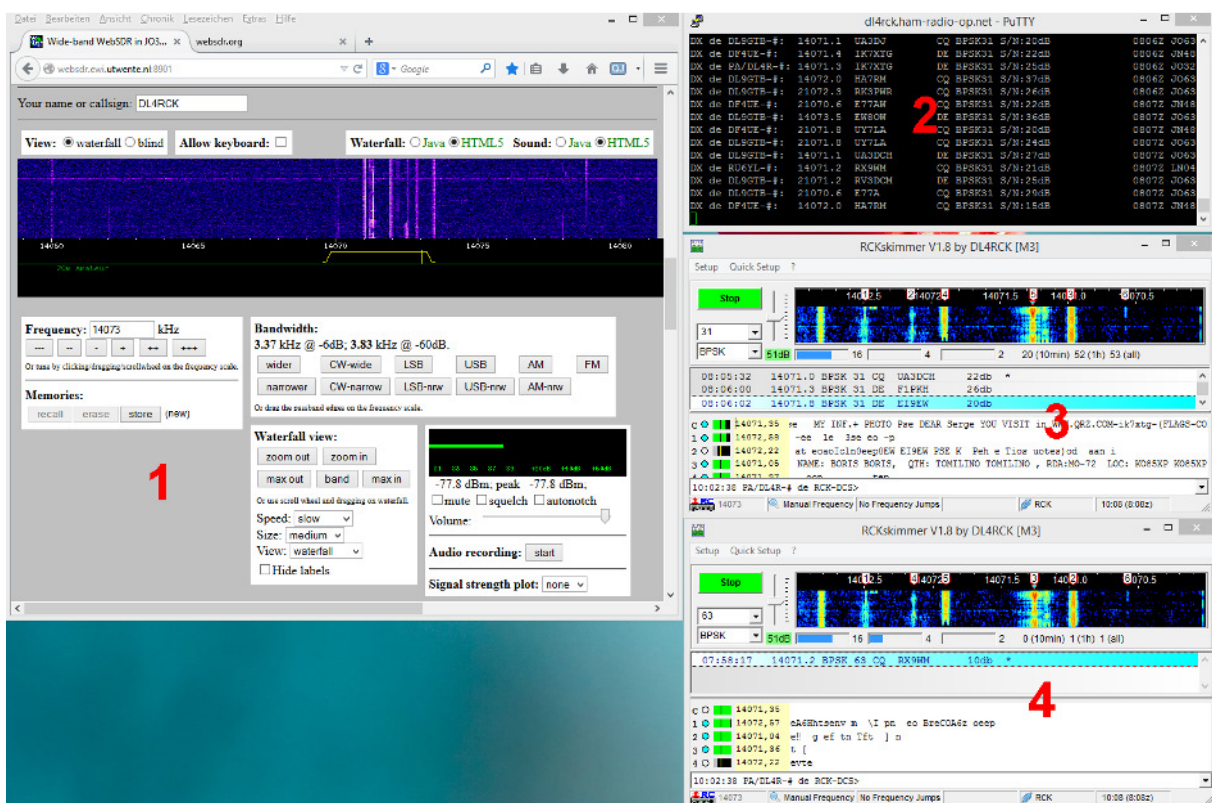
The above picture is showing my screen I used during the test.

1. Browser (FireFox) with web-SDR monitoring 14073.00 kHz, 3.37 kHz bandwidth, in LSB, and full volume.
2. Terminal program PuTTY with a connection to the Digital-Cluster-System at dl4rck.ham-radio-op.net:8000   for monitoring my spots.
3. RCKskimmer instance 1, monitoring 14070 – 14073 kHz, BPSK31.
4. RCKskimmer instance 2, monitoring 14070 – 14073 kHz, BPSK63.

Special Notes:

- My test shows, to get the exact frequency I have to enter 14072.95 kHz (instead of 14073.00) on the web-SDR. A discrepancy of 50 Hz seems to be.
- My selected web-SDR was disconnecting me from time to time. This forces me to update the browser (I am using FireFox) for a reconnection. In this case I must configure the web-SDR again.
- Please share your captured spots with the digital community on the cluster system by connecting RCKskimmer to the Digital-Cluster-System.
- Please monitor your spots if you are distributing these to the cluster system to have the right spot-frequency. This can be done by connecting to the Digital-Cluster-System) with any cluster software (like PuTTY) and compare your spots with other RCKskimmer spots of same captured callsign.
  The address is: dl4rck.ham-radio-op.net:8000