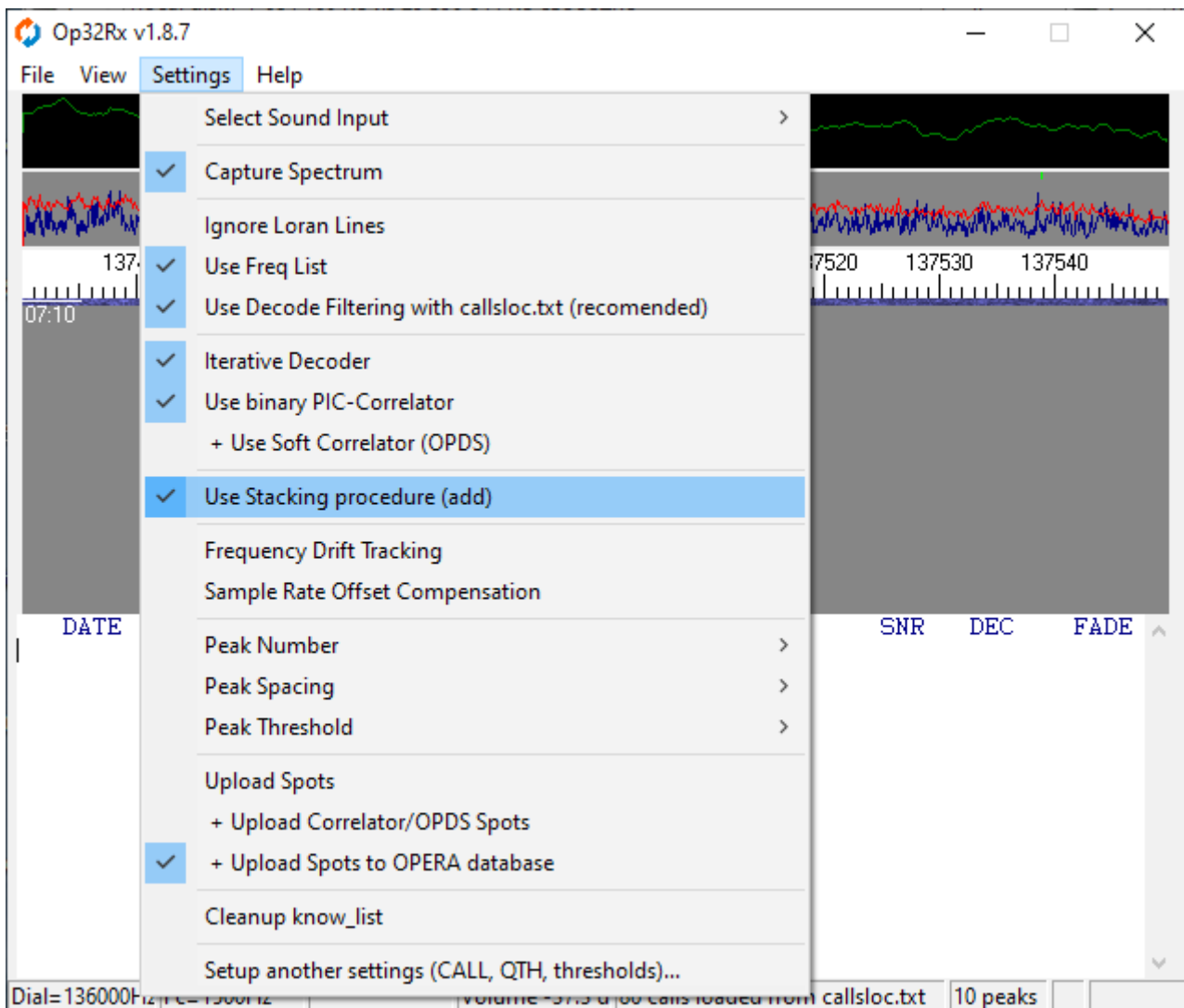


Op32Rx v.1.8.7 addition two-copy signal reception procedure (autostacking)

In order to further increase the noise immunity of reception, starting from version 1.8.7, the mode of automatic search and addition of undecoded copies (repetitions) of the received signal has been implemented. Optimal post-detection (incoherent) addition has been implemented.

The mode is activated in the menu Settings->Use stacking procedure (add):



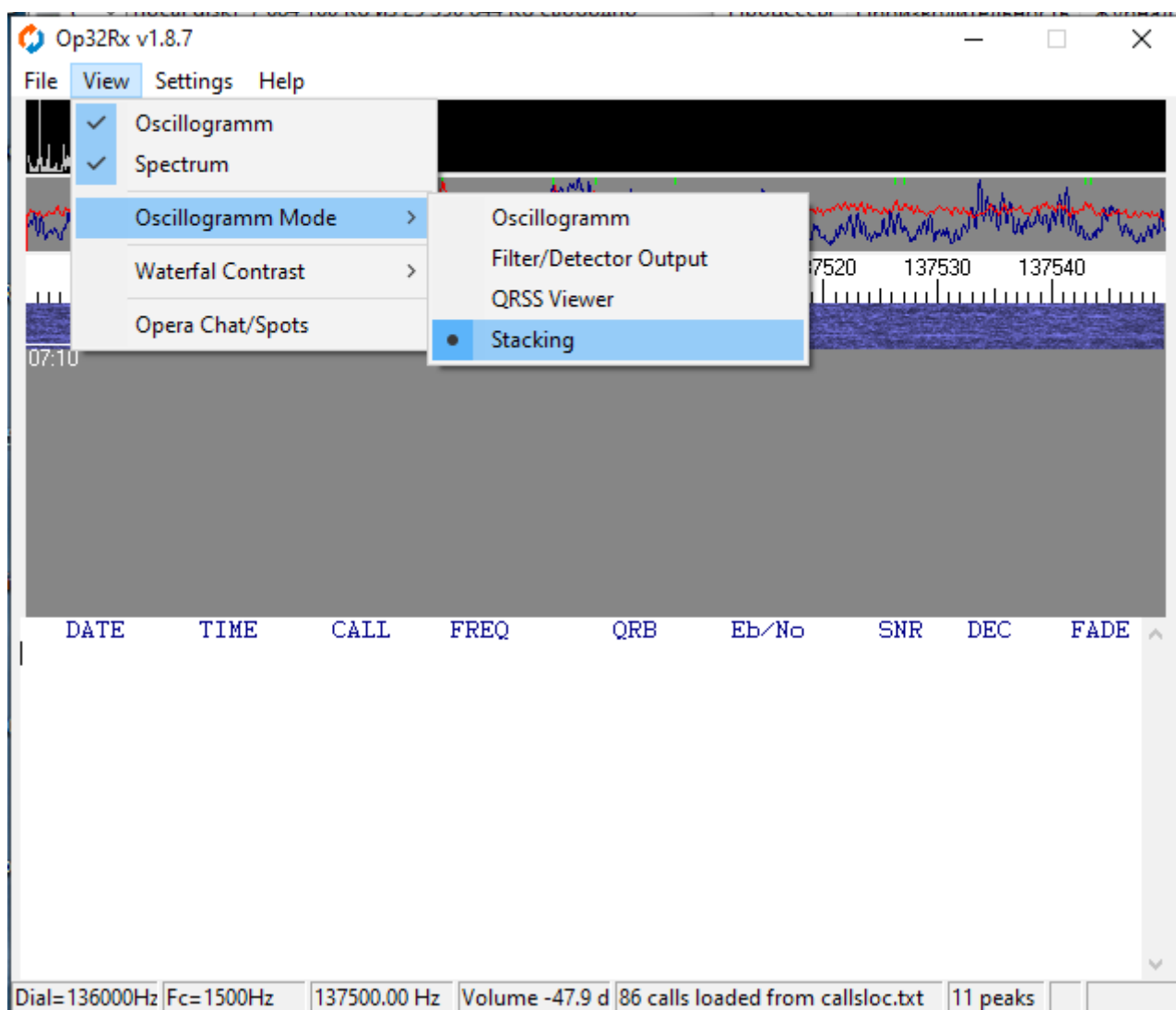
The program will try to decode the sum of the current signal and its copy delayed by 1 hour or by the duration of the transmission of the entire OP-32 sequence ($240 * 8.192 \text{ s} = 1966 \text{ s}$).

If the signal was successfully decoded by one copy or by the sum of copies, the program memory for this frequency is cleared to exclude false re-reception.

It is assumed that the use of the addition of non-decoded copies of the signal

can allow receiving signals whose level is 1–2 dB lower than the capabilities of the decoder and correlator in a single reception.

You can monitor the progress of the search for signal copies and their processing in the menu View – Oscillogramm mode – Stacking:



Thus, it is good practice for the transmitting side to transmit OP-32 repeats either in succession or at 1 hour intervals. Both of these beacon modes are implemented in Opera1.6.5 from EA5HVK.

In the same way, it is easy to organize repeats of programs both in the DDS_Ctrl program http://www.rn3aus.136.su/dds_tx/index.html and directly from the synthesizer under the control of Arduino http://rn3aus.136.su/dds_tx/Arduino/DDS_ctrl_Arduino_Help_Eng.pdf

In addition, in version Op32Rx 1.8.7, the algorithm for calculating the signal-to-noise ratio SNR has been slightly improved. This led to a small change in the values of the optimal thresholds to exclude cases of false decoding (set by default). It is also now possible to adjust the threshold of the impulse noise suppressor (NB).

The image shows the 'Op32Rx Setup' dialog box with the following fields and values:

Field	Value
My CALL:	RN3AUS-2
My QTH-loc:	K085HA
My City:	
Fdial [Hz]:	136000
Fcenter [Hz]:	1500
My Name:	
Detected file:	my_detected.txt
Capture path:	Capture\
My Ant:	
Capture file:	op32rx_capture.jpg
Exec command if decoded:	
Decode threshold [dB]:	2.4
Opera dB offset [dB]:	-10
OPDS threshold [dB]:	2.5
CALL blocking Time [s]:	1200
OPDS Max1/Max2 thr:	1.78
Correlator239 threshold:	164
P_false_decode=	1.627771e-09 or 0.2 ghost per Month
NB threshold [dB]:	10

0.3 % of signal blanked

Apply Cancel

NB settings are applied immediately when the NB threshold parameter is changed, there is no need to click the Apply button.