

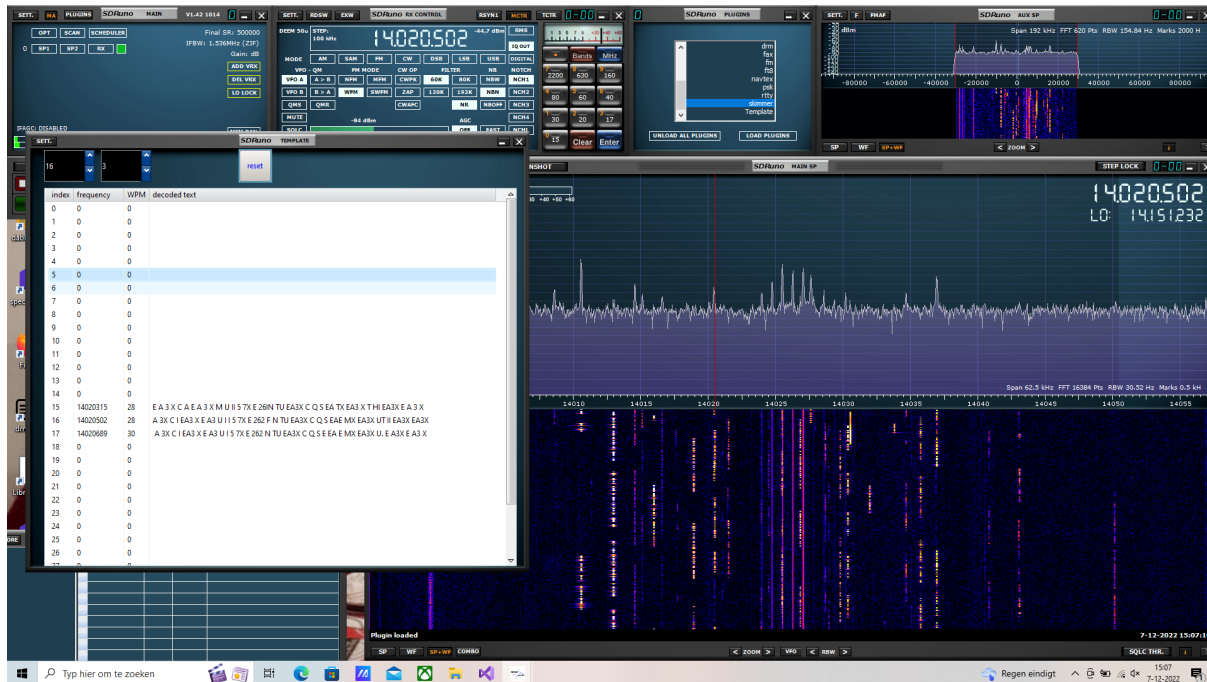
An experimental plugin for decoding CW

user's guide *

Revised edition of the plugin

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1 Background

The biggest problem I have when using the CW decoder plugin is tuning. After all, tuning should be very accurate and manually tuning is not easy with all the flickerings on the screen of signals "on" and "off"

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While the CW decoder plugin provided some support for tuning correction, I was not very happy with it.

Therefore a completely different approach was taken in this "skimmer" type plugin. Basically it is simple, the incoming samples, rate 192000, are per segment of 3 milliseconds, i.e. $3 * 192$ samples, fed into an FFT processor with 1024 "bin"s. Each bin then shows the "energy" of the signal in a frequency band with a width of $192000 / 1024$, i.e. slightly less than 200 Hz.

Then from some specified bins the data is sent to a decoder, the samplerate of that data is then obviously app 333 samples a second. Note that a 30 WPM signal takes app 40 mseconds per dot, so that is covered by app 13 samples.

This plugin provides means for decoding signal from a group of successive bins.

2 The plugin

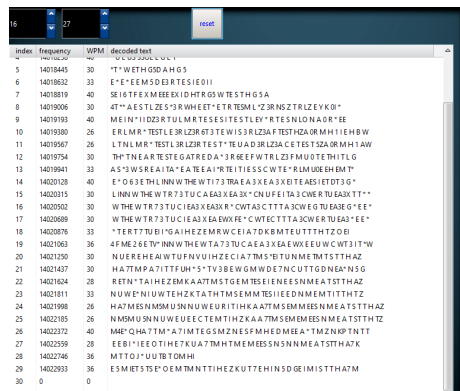
The plugin itself is straightforward, and contains a top line with two selectors and a button, and a field with 32 lines. The area of interest is a region of 32 bins (i.e. about 5 to 6 KHz) around the selected frequency.

Each line contains 4 elements

- a line number, i.e. one in the range of 1 .. 32;
- a frequency indicator. If data in the bin is decoded, the frequency indicator gives the precise frequency for the data in that bin;
- a WPM indicator. If data in the bin is decoded, the WPM indicator gives an estimate of the Words per Minute of the decoded data;
- the text, the last 85 characters of the text.

The indicators tell which bins are selected for data decoding:

- the right selector, with as default value 3, tells how many bins are selected for decoding the data (always an odd number);
- the left selector, with as default value 6, tells the line number of the bin that is central in the selected bins.



index	frequency	WPM	decoded text
1	14018445	30	"*WETHGDAHGS
2	14018632	33	E*E*EEMSDERTESIOII
3	14018819	40	SE16TFEXMEEBXIDHTRGSWTETHGSA
4	14019006	30	47*AE5TLZES*3RWHLET*ETR30ML*23R4027RLZEYK0*
5	14019193	40	MEIN*1IGDR*JULMRTSESISTELEY*RTESNIGNAAR*SE
6	14019380	26	ERLMR*TESTE3RLZIRRT3TEWIS3RIZIACTESTSZAORMH1IEHBW
7	14019567	26	L7NLMR*TESTE3RLZIRTEST*TEUAD3RLZIACTESTSZAORMH1AW
8	14019754	30	3H*TNEARTESTEGATREDA*3RGEFFWRLZDFMUUTETHITLG
9	14019941	33	A*5*W5REAI*EA*TEAI*W*ITIESSCWTE*WUMGOWMPP
10	14020128	40	E*O*SE*THLNNW*THEWIT373RAEA3XEA3XET3AAS*ETD3IG*
11	14020315	30	LNNW*THEWTR73TUCAE3XEA3X*CNUEFI3A3CWER*TEBAXTT*
12	14020502	30	W*THEWTR73TUCIEA3XEA3X*CWTA3CTTA3OWEGTUBAEG*EE*
13	14020689	30	W*THEWTR73TUCIEA3XEA3X*CWTECTTA3OWEGTUBAEG*EE*
14	14020876	33	*TERTTUBI*AIHEZEMWCEIATONRMTU*TTHTZOO
15	14021063	36	4FME26E7*NNW*THEWTA73TUCAE3XEA3XEWEEUWCWT3IT*W
16	14021250	30	NUREHEAIW*U*FVUIHZEICIA7TMS*BTUNMEMTSTTHAZ
17	14021437	30	HA7TMPA7ITTTFH*5*TV3BEWGMWDETNCUTTGONEN*NSG
18	14021624	26	RETN*TAIHEZEMAAATMSTGEMTESIEEESNMEASTTHAZ
19	14021811	33	NUW*NIUWTEHZKTAHTMSEMMEITESIEDONMEMTITHTZ
20	14021998	26	HA7MESNMU*UNW*U*RI*HKAAT7MSEMMEESNMEASTTHAZ
21	14022185	26	NMOMU*NNW*UEEC*EMTH*HZKAA7TMS*EMMEESNMEASTTHAZ
22	14022372	40	8AB*QHA7TM*AT7MTGSAZNE5PMHOMIEA*TMZNPNTT
23	14022559	26	EEB*IEEGT*HET*UAT*7MHTMMEESNMEASTTHAZ
24	14022746	36	MTTO*U*U*BTOMH
25	14022933	36	ESMETS*5*E*OEMTMTTIEKZUT7EHINSOQEIIMSTTHAZ
26	0	0	
27	0	0	
28	0	0	
29	0	0	
30	0	0	
31	0	0	
32	0	0	

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