

SDR Receiver – Part 2

Tuning the LW and MW Bands

I published a construction article in the February 2022 publication of Practical Wireless Magazine.

Electronic viewing of the magazine, as part of a subscription, is here: <https://pocketmags.com/eu/practical-wireless-magazine>

As necessitated by space constraints the photos and schematics in the article might be a little small to be of any use for some readers.

So here are each of the photographs and schematic in high resolution.

Samuel

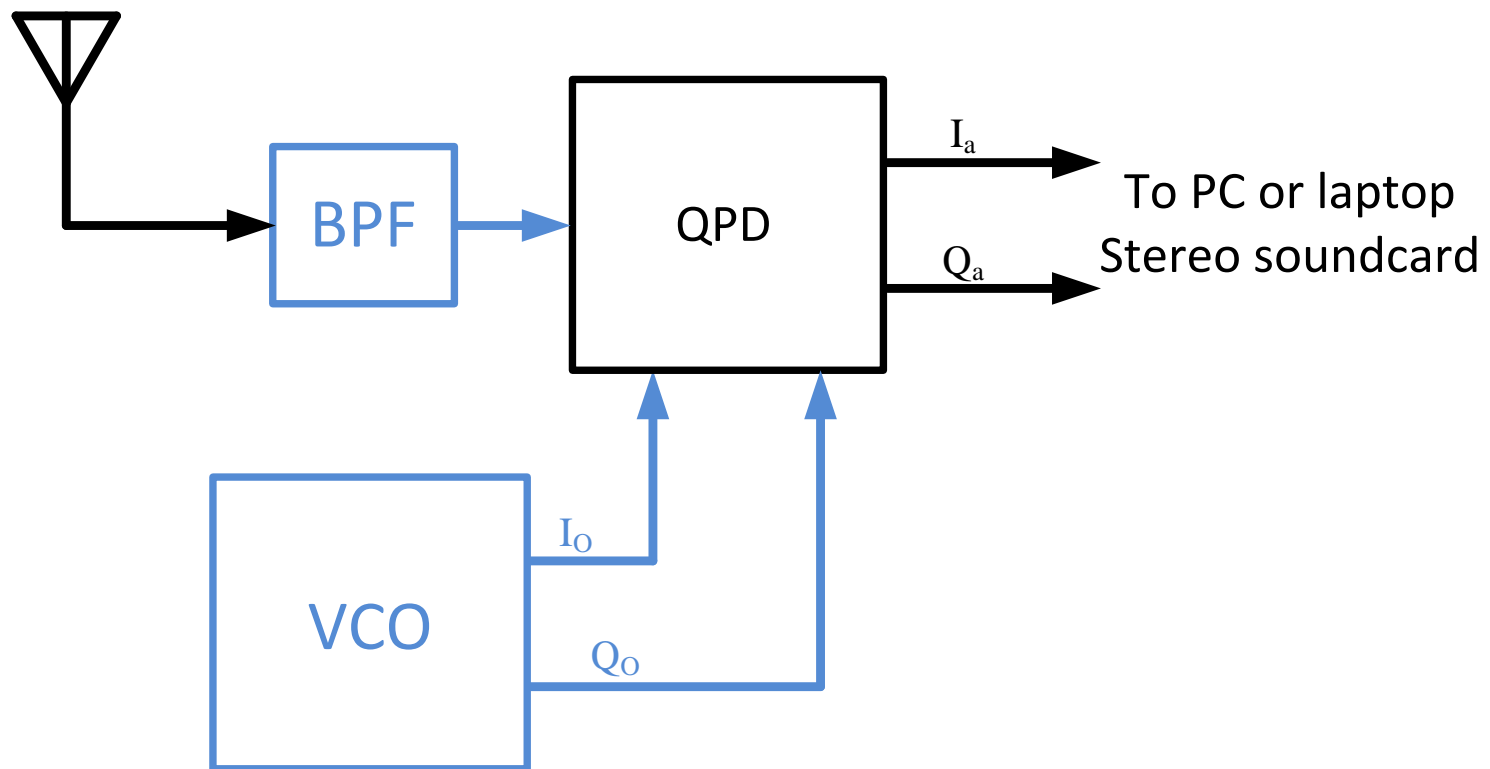


Figure 1. Basic block diagram

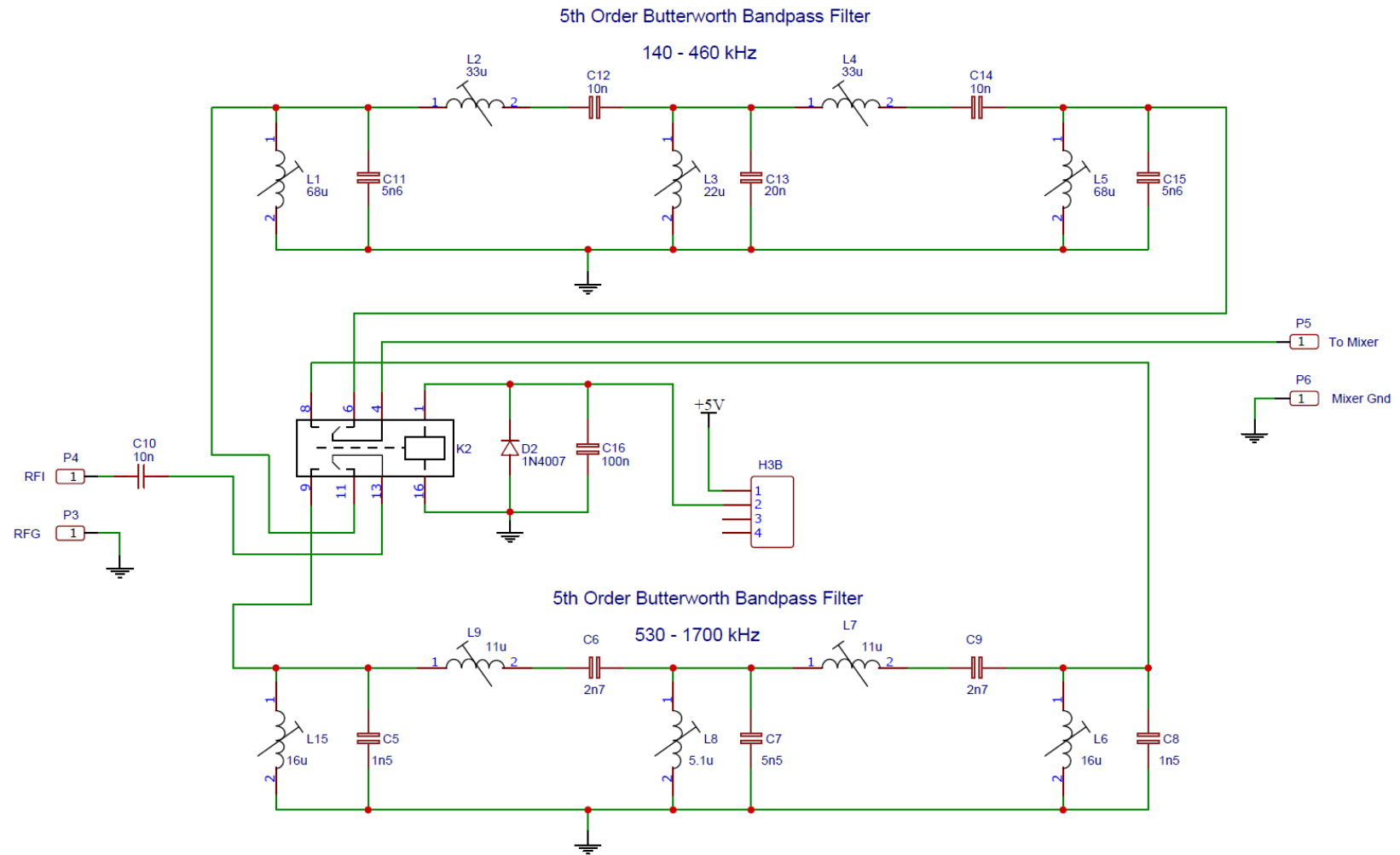


Figure 2. Schematic of the LW and MW BPFs.

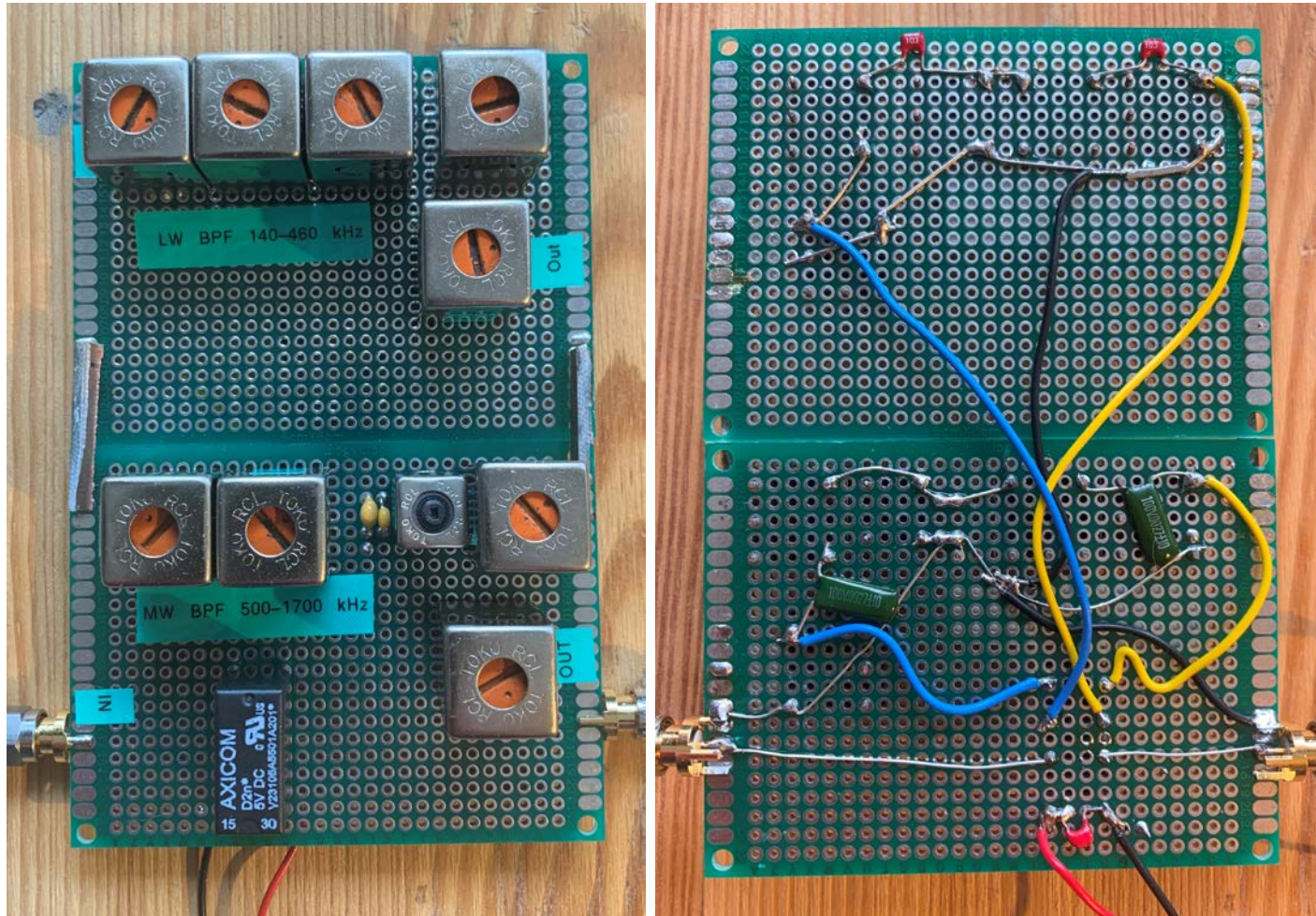


Figure 3. BPF - top and bottom view.

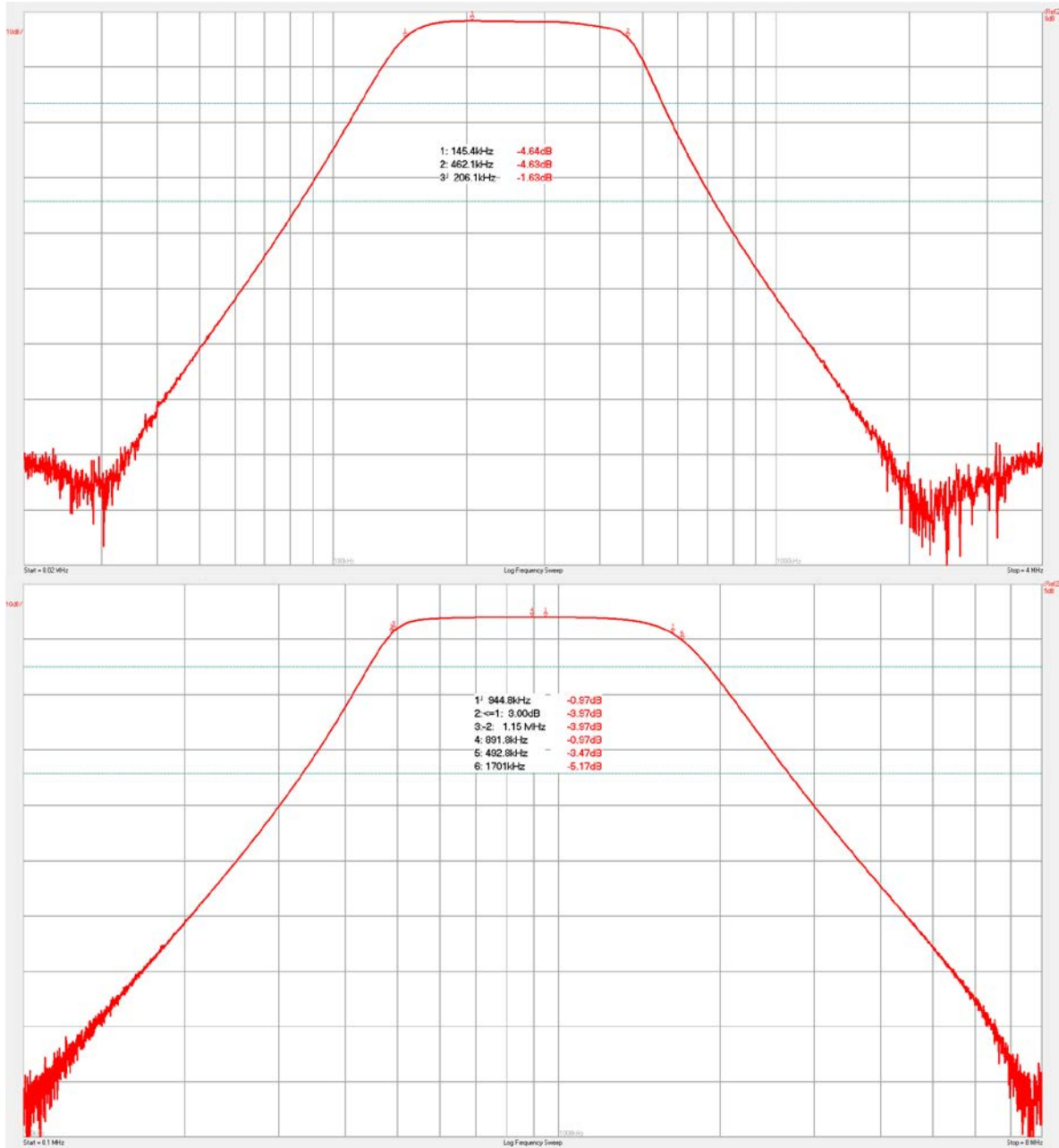


Figure 4. BPF characteristics (LW top and MW bottom)

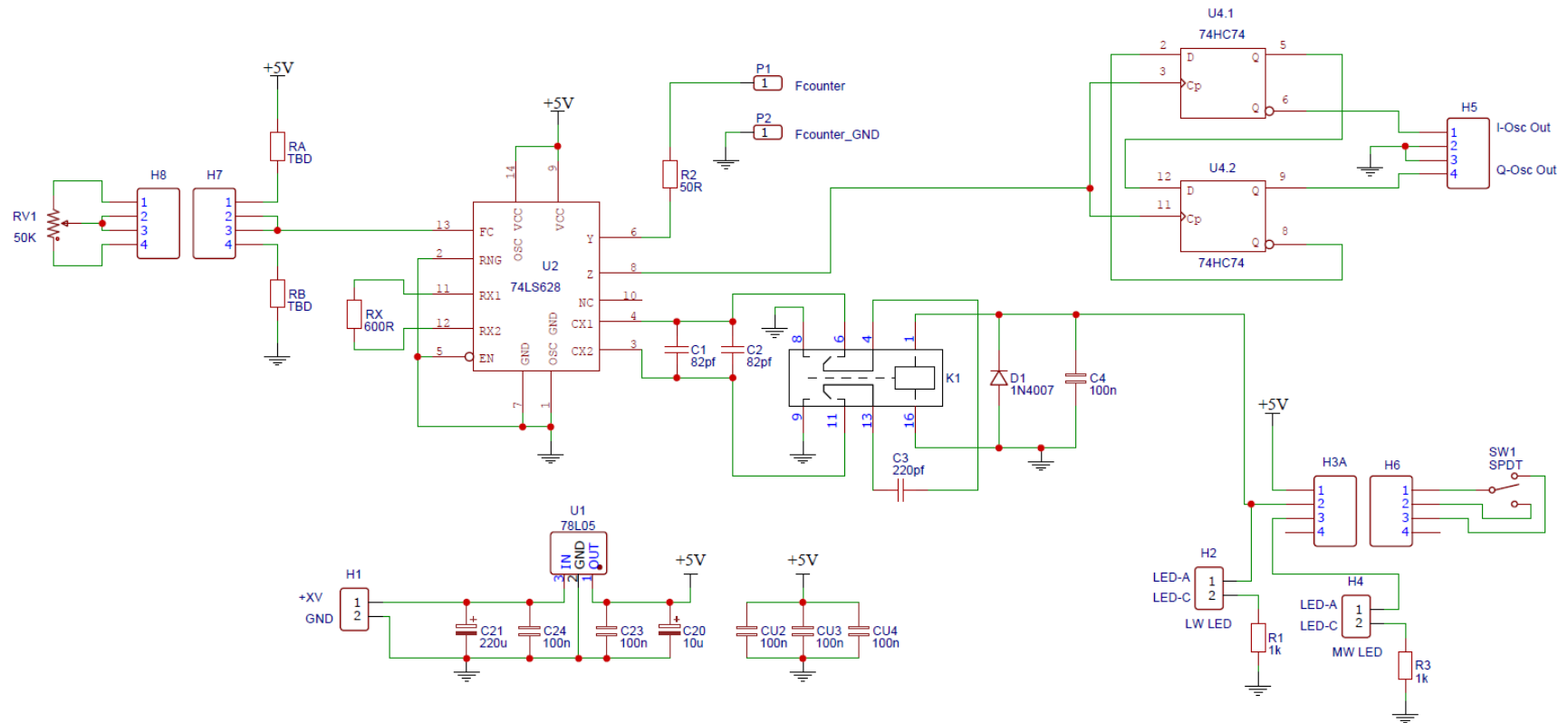


Figure 5. Schematic of VCO.

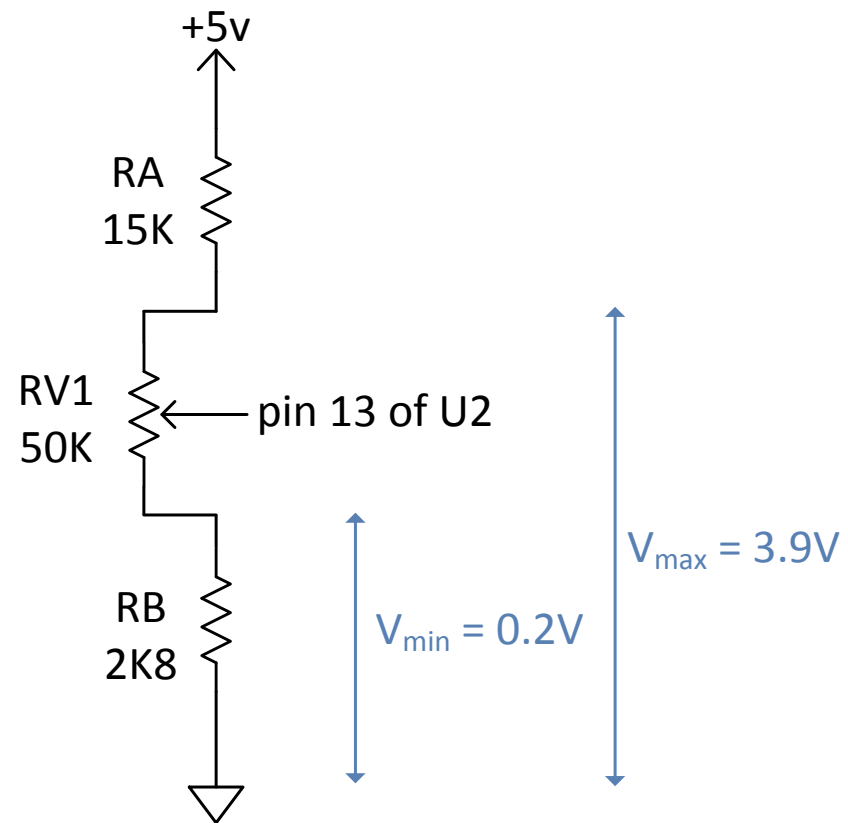


Figure 6. Limiting the range of the VCO.

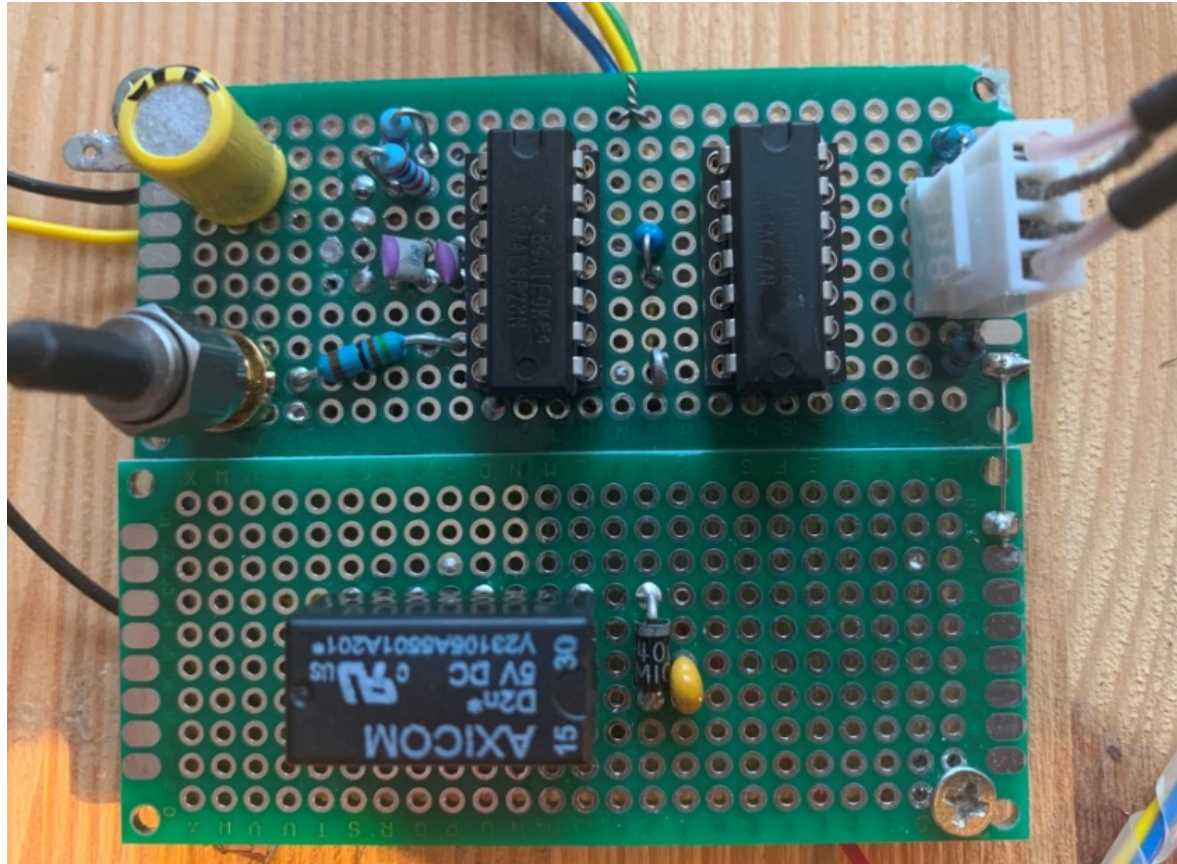


Figure 7. Top view of the VCO with relay for capacitor switching.

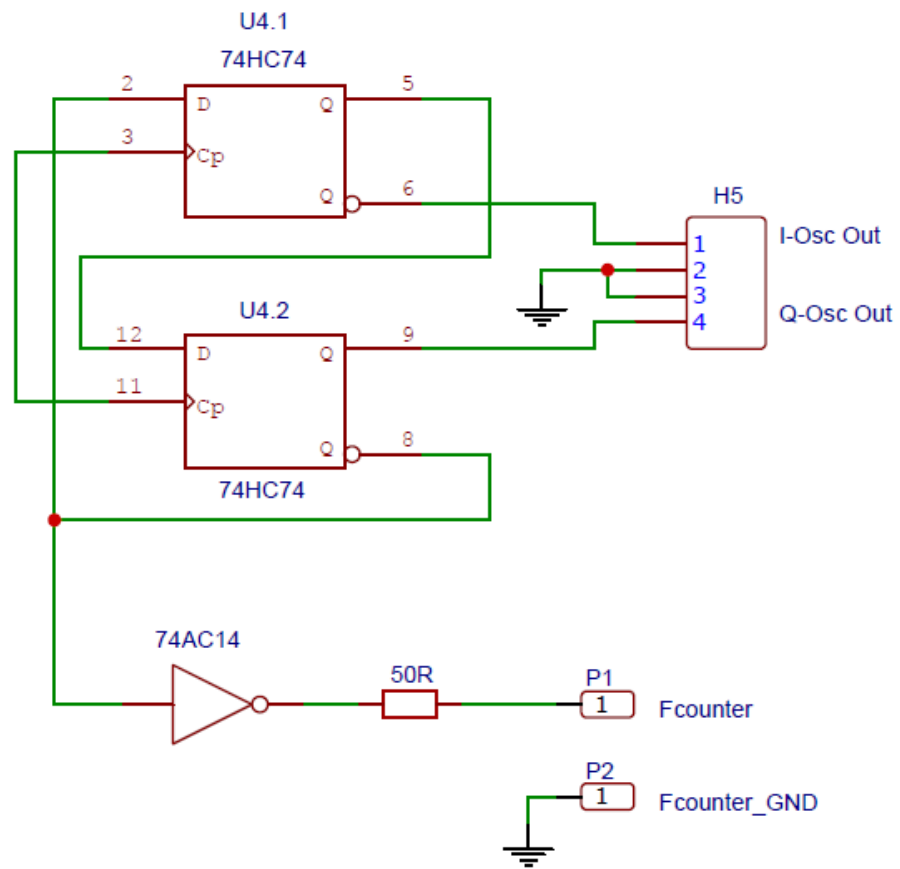


Figure 8. Alternative connection for a frequency counter.

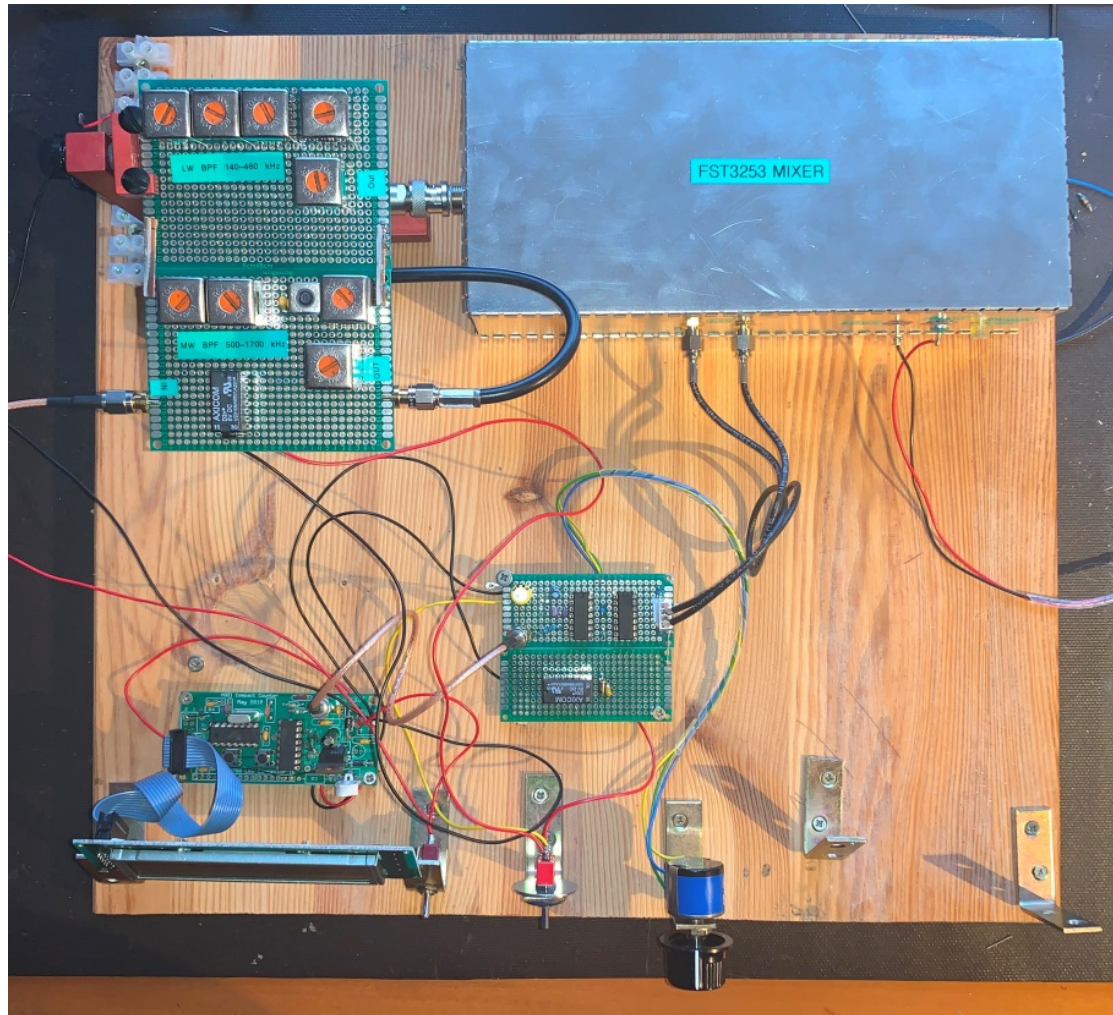


Figure 9. Breadboard version of the LW/MW SDR receiver.

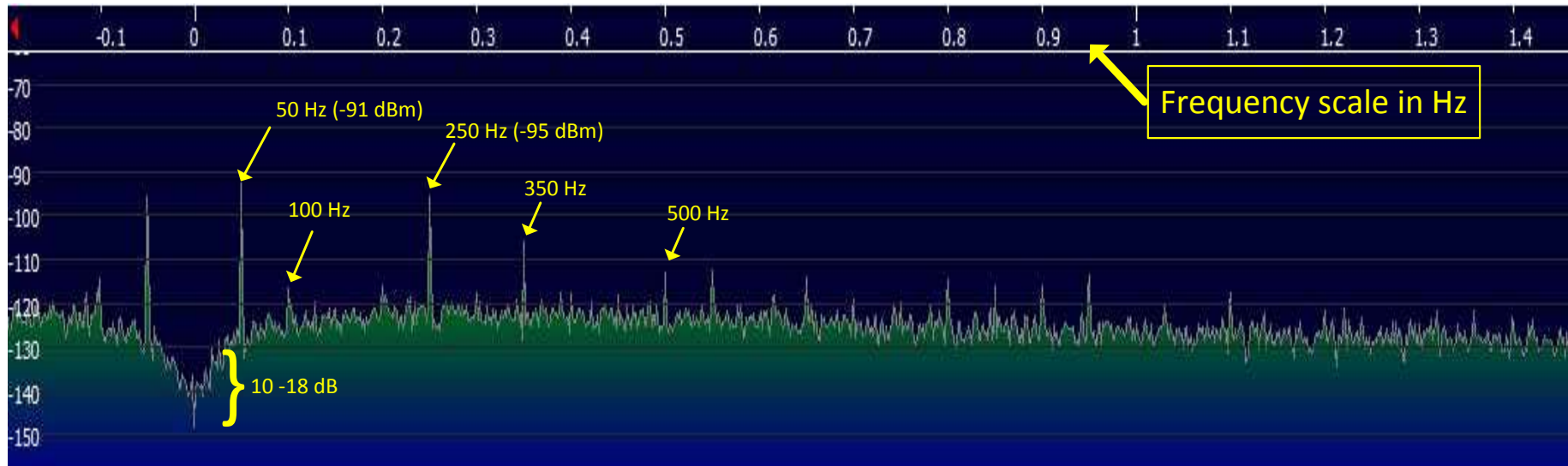


Figure 10. Examining signals between 0 Hz and 1.4 kHz.

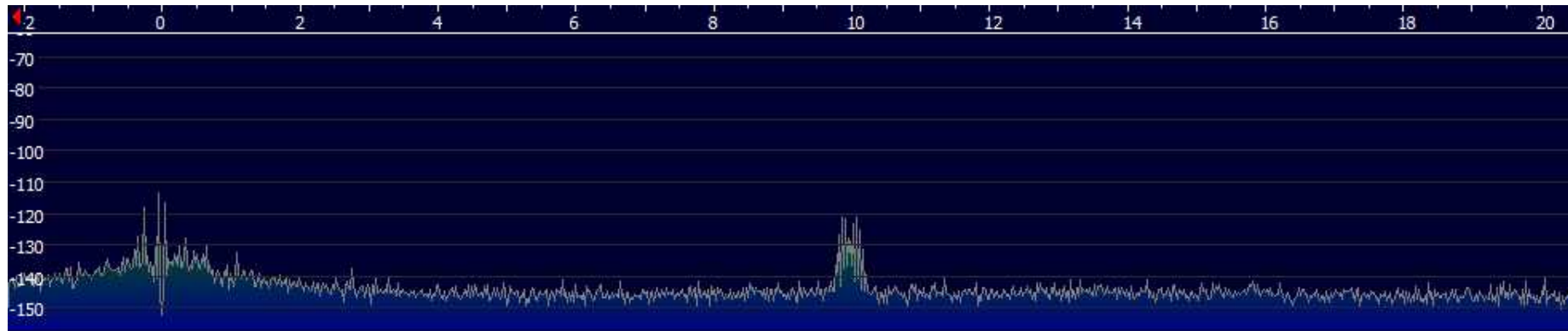


Figure 11. Offset at 10 kHz.

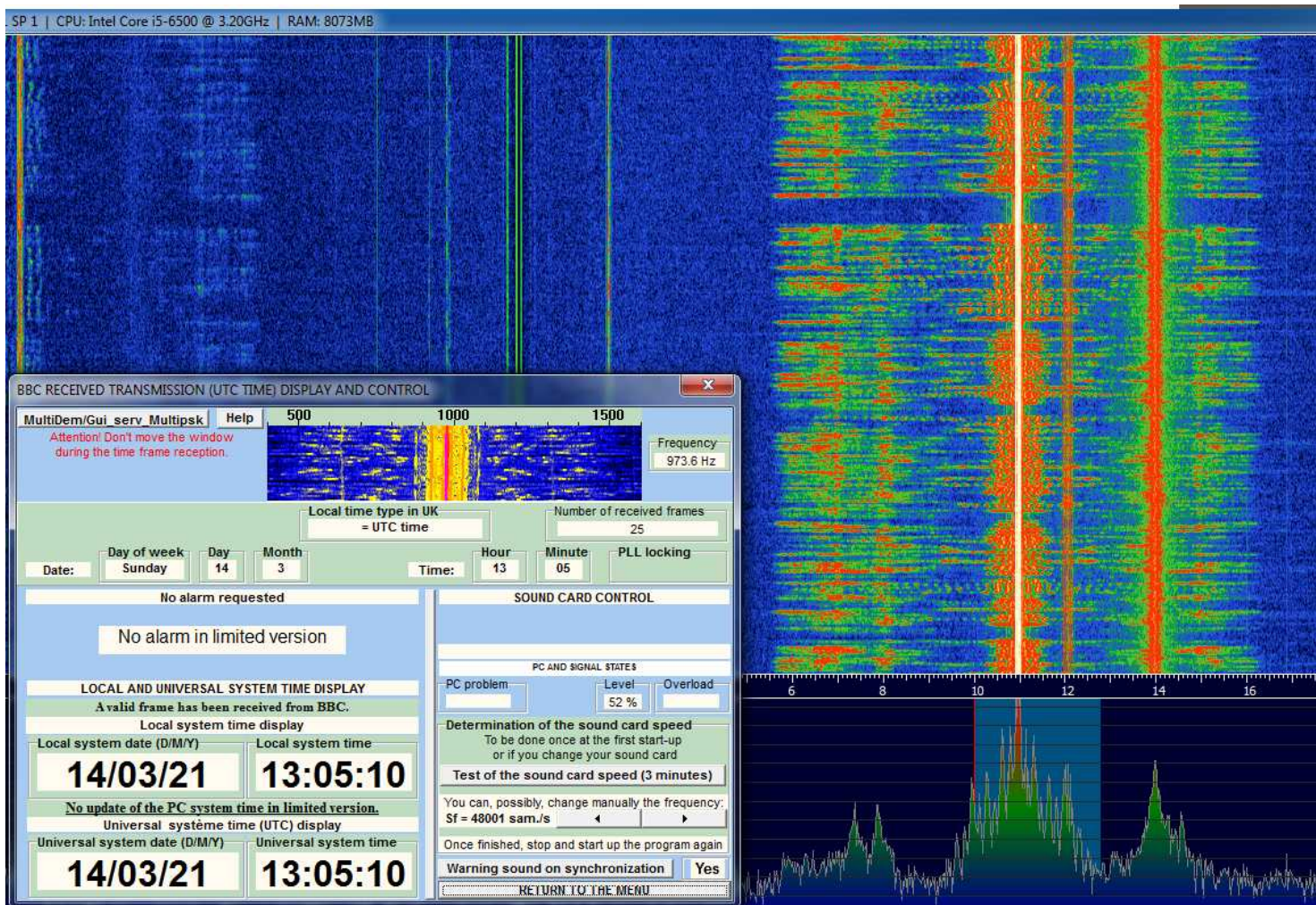


Figure 12. Listening to BBC and decoding the time signal on 198 kHz.

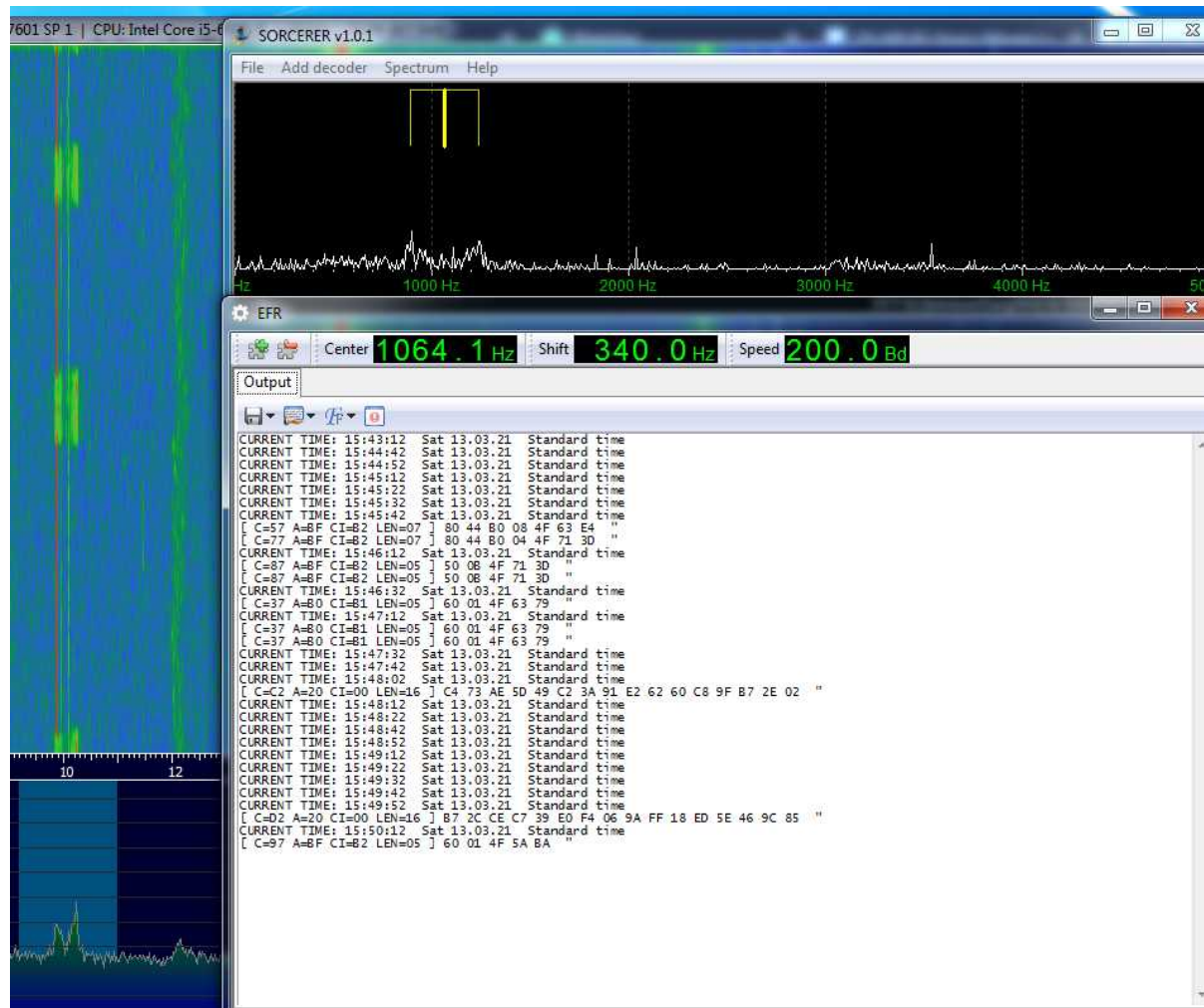


Figure 13. Decoding EFR at 129.1 kHz.

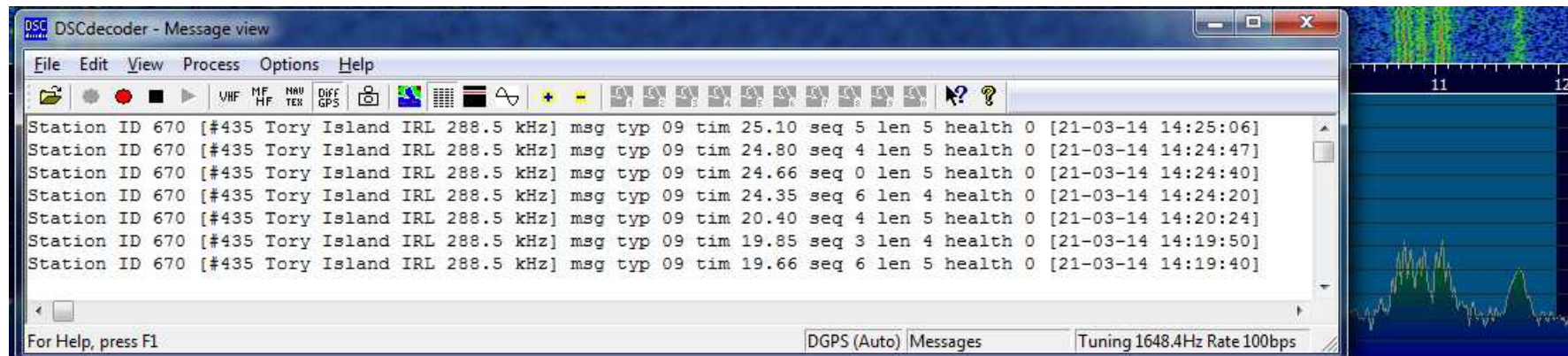


Figure 14. Decoding DGPS at 228.5 kHz.

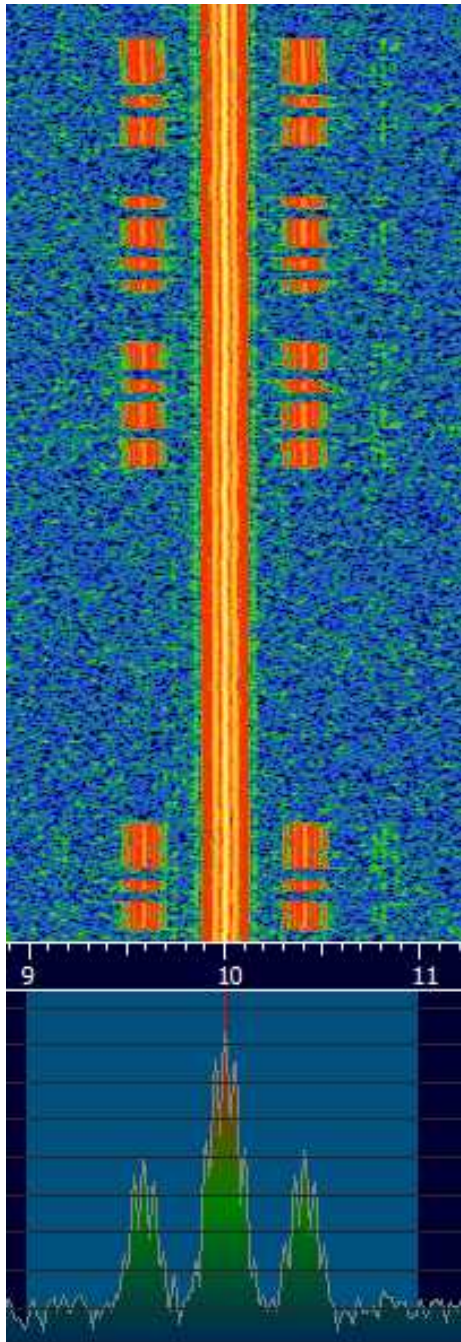


Figure 15. Decoding NDB KLY on 378 kHz.

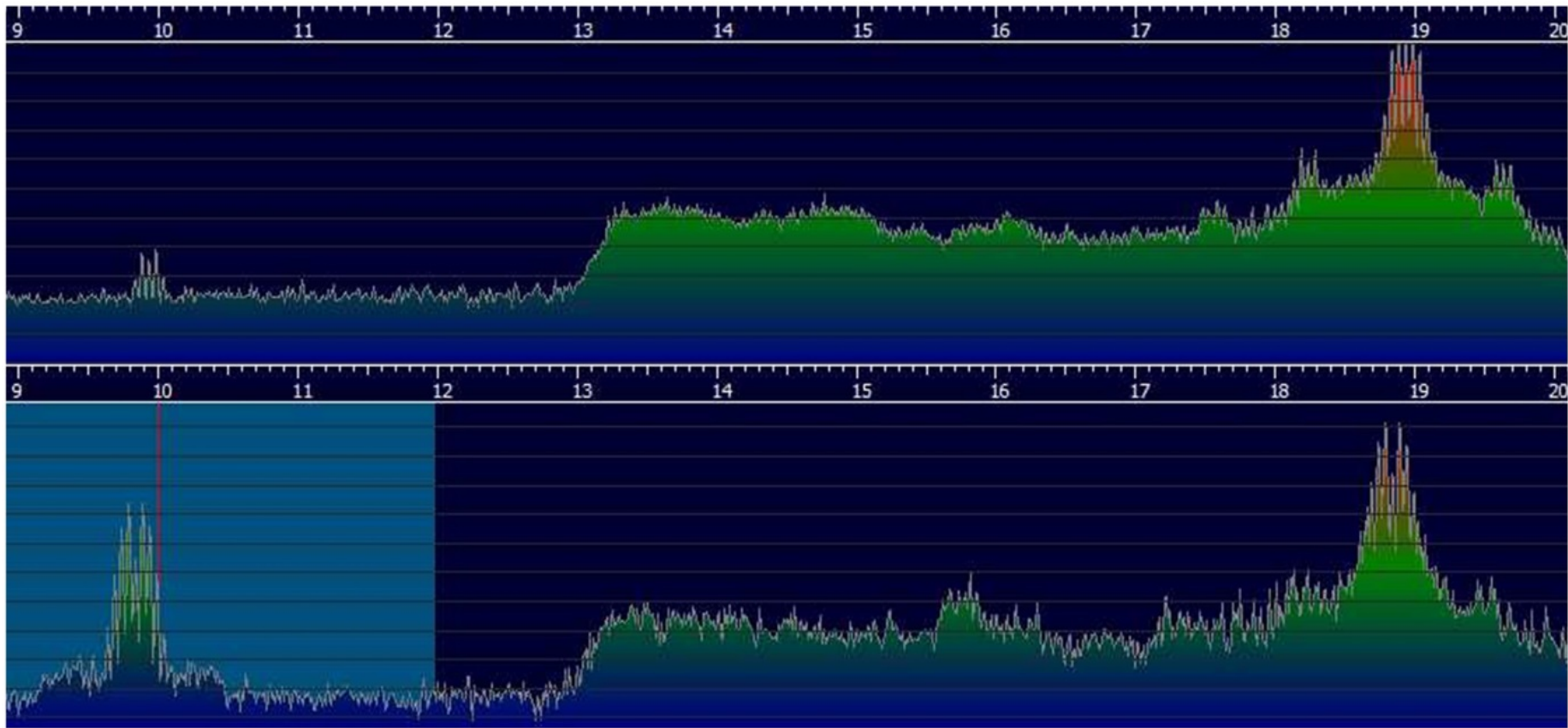


Figure 16. Watch and measure the effect of the D-layer.