

## My Swan 500C Frequency Stability and VFO Accuracy

**Stability:** When I got my Swan 500C it demonstrated a lot of frequency instability. I noted that it would change frequency abruptly in a short period of time (+/- 800 Hz in a few seconds on 40 meters). The first thing I did was apply deOxit to the band-switch. That reduced a lot of the frequency change.

I then noticed that depending on where I was in the band, I could still get some jumps (maybe 300 Hz in a second). I opened up the VFO compartment and used deOxit to clean and lubricate the rotor bearings of both the main VFO capacitor as well as the 'dial' trimmer. While I was at it, I lubricated and cleaned all of the VFO trimmers as well with deOxit. I then realigned the VFO.

Since then, my Swan 500C has a drift of less than 500 Hz in the first five minutes of operation and less than a +/- 100 Hz after a 20 minute warm-up. All on 40 meters – of course stability will be worse on 20 meters and above.

**Accuracy:** This Swan has about 0-3 kHz linearity error (analog dial readout error) between each 100 kHz calibration points. For this reason I decided to build an auxiliary digital dial for my Swan. The one I chose is marketed as a kit by N3ZI <http://www.pongrance.com/ddfc-cc.html>

I chose that kit because it was inexpensive and allowed the use of different types of LCD displays. It also can be reprogrammed quite easily for different IF schemes. That way, if I chose, I can use it later with another piece of vintage gear. Here is a picture of my display (right hand unit):



This display unit could have been built much smaller, but I happened to have this nice enclosure available. With this display I can easily monitor my frequency. While my Swan's accuracy and stability is not on a par with my modern gear, the addition of a digital display makes operation and changing frequency (QSYing) much easier.