

Synthesized Signal Source from China

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A very useful signal source for VHF thru microwaves can be found on ebay. These inexpensive synthesizers cover 137 MHz through 4.4 GHz with strong harmonics up to at least 24 GHz, generated by an ADF4350 chip. A unit is shown in Figure 1. The frequency easily set with pushbuttons if you know how, but there are no instructions. Don, W1FKF, figured them out and told me, but to my knowledge no one has written anything down – so here it is.

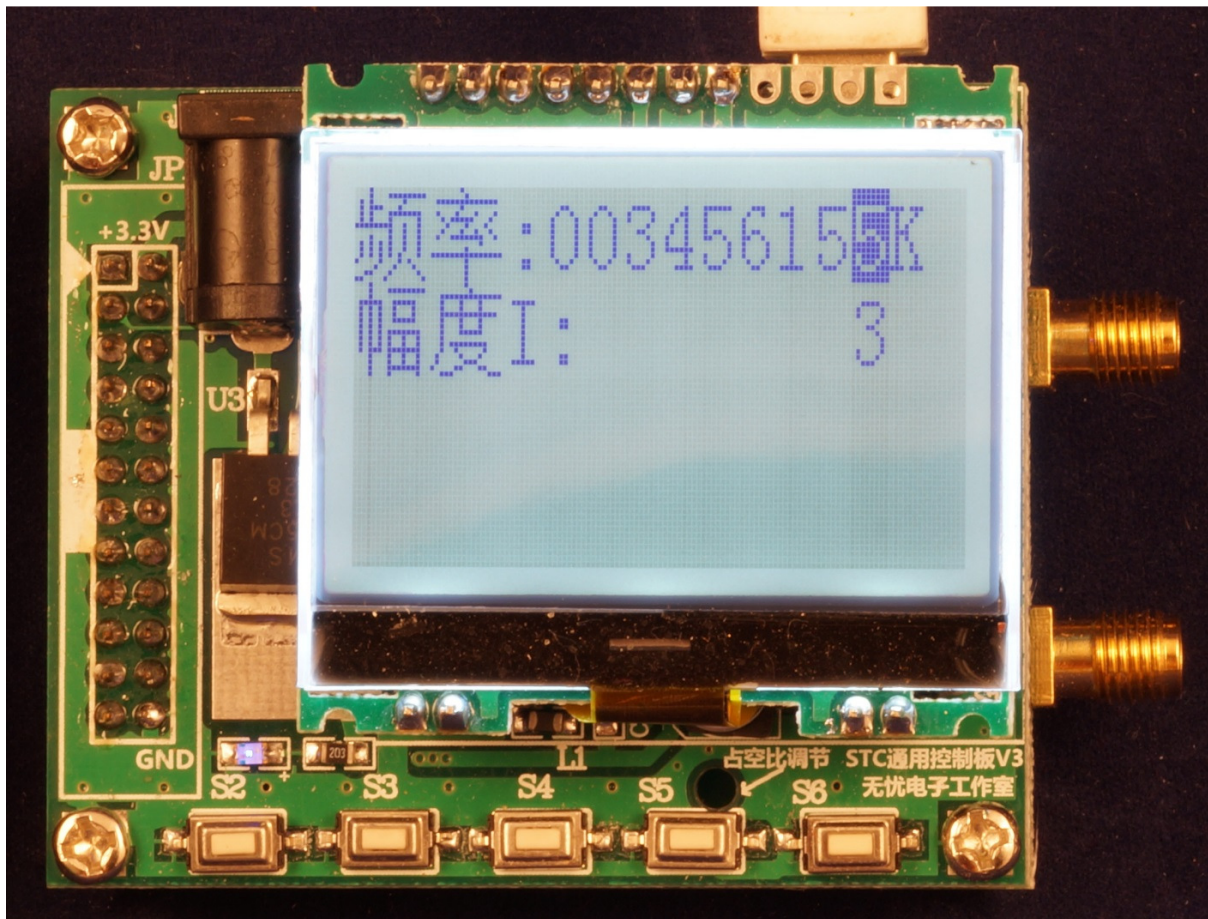


Figure 1 – Inexpensive ADF4350 signal source from China

When powered up via the USB port, some Chinese characters come up, then the frequency is displayed as shown above, in this case 3456.155 MHz. The second line is the power level, with choices of 0 to 3 (highest).

The unit is programmed with the pushbuttons along the bottom, which change the highlighted digit, one digit at a time. Button S4 increments the highlighted character, while S5 decrements it. Button S2 shifts the highlight one character to the left and S3 shifts the highlight to the right. The unit will remain on this frequency as long as powered up.

To save the frequency, press button S6, which also shifts the highlight to the power level. Then the power level can be incremented with S2 or decremented with S3, and saved with S6.

The ads, shown in Figure 2, mention sweep, but I don't know how. Search "ADF4350 display" to find one. There also seem to be versions in a case for around \$100.

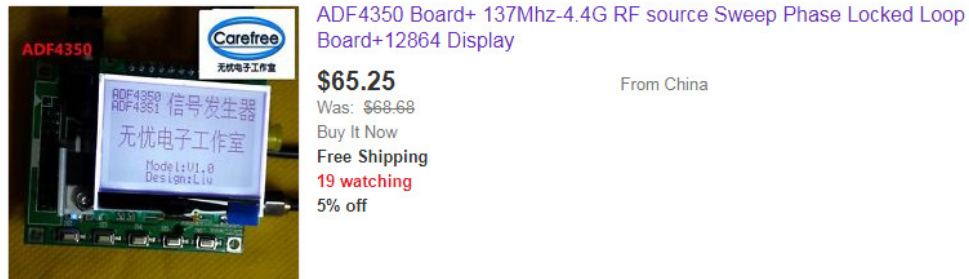


Figure 2 – Typical ebay ad

The units are reasonably stable and clean good enough to be the LO for a simple transverter like the 3456 MHz lunchbox transverter shown in Figure 3. The synthesizer output is about 1 dBm at the highest setting, so a small MMIC amplifier is needed. Since it has a cheap crystal, the frequency isn't exact, but easily compensated with the pushbuttons.

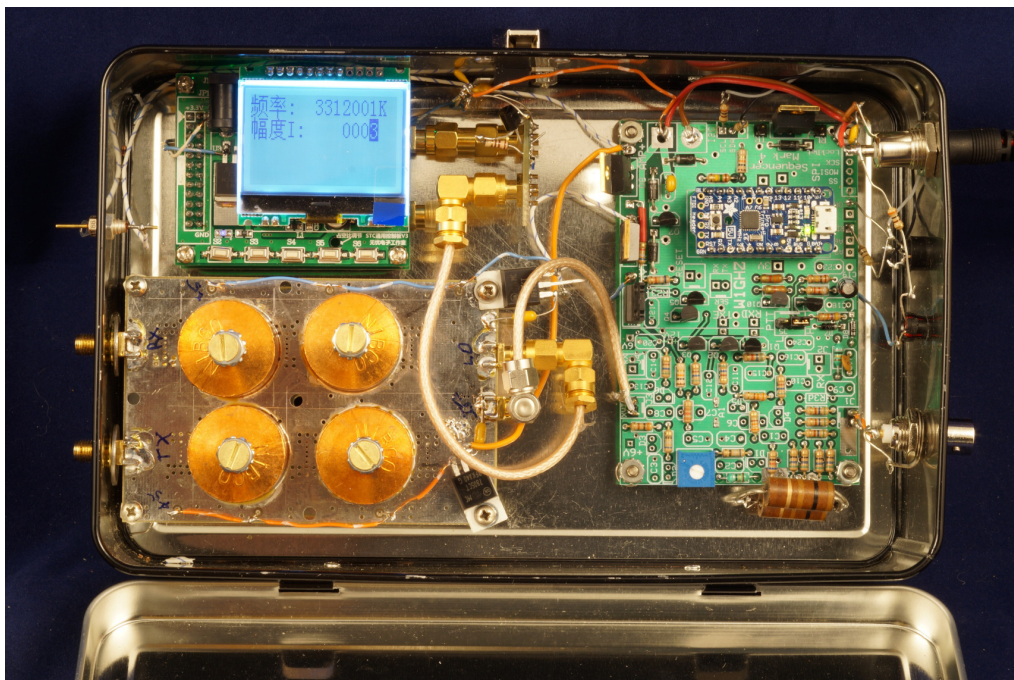


Figure 3 – Signal source as LO in simple transverter

A final warning – run it from 5 volts. Putting 12 volts into the DC jack lets some smoke out. For a signal source, I run it from a small USB booster battery.