

Subject: SSB Demo circuit

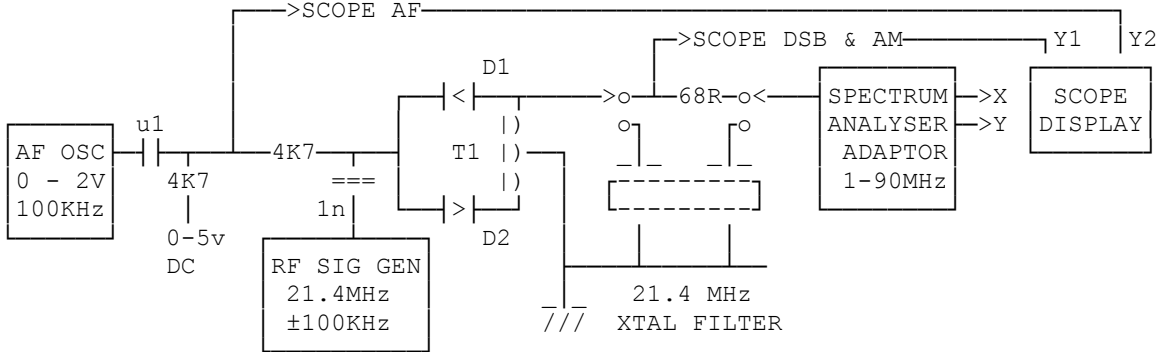
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By G8MNY

(Updated Dec 04)

Being involved with ham training, I have been doing all the technical demos including AM & FM (Signal generator), but I was ask to do a SIMPLE demo of SSB generation which my Signal generator can't do. As I only have a wide 50KHz bandwidth filters in my spectrum analyser scope adaptor & wanted to show the sidebands etc, normal comms SSB is out, so I came with this set up....

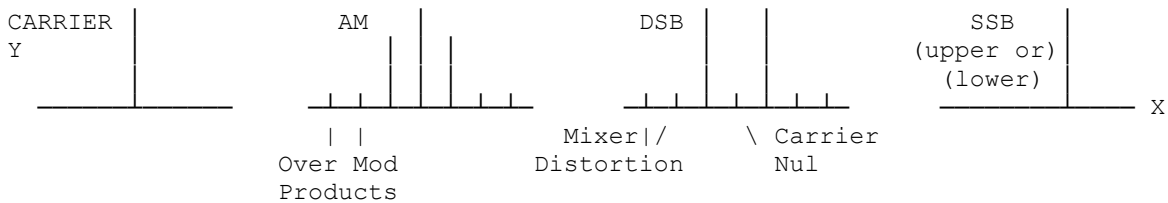


I cheated with 100KHz for the Audio to solve the analyser display problem. I initially built from junk on just 2 BNCs, but I soon boxed it up. Diodes D1 & 2 are any small silicon type, I did find proper mixer types better (more linear) but could only handle low level, but my scope was happier with larger signals.

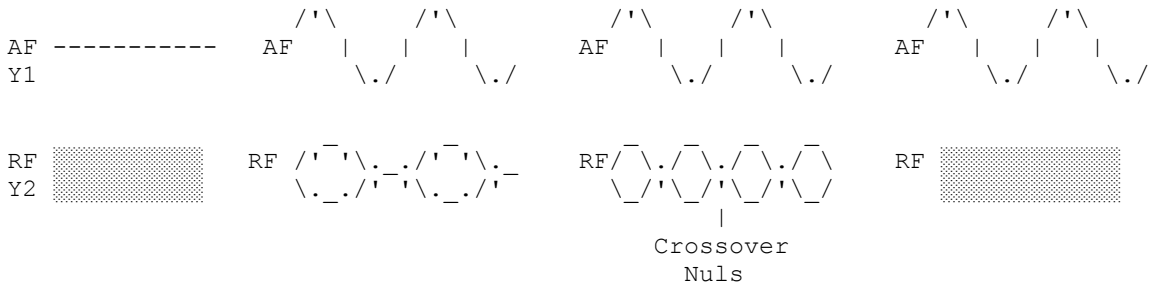
T1 is a medium sized ferrite bead 6mm dia with 2x 8 turns (bifil) wound on it with the centre tap (opposite end of each wire) earthed.

The filter I had is a 7.5KHz wide one (narrower than the spectrum analyser resolution) & it is totally unmatched, but works well with only a 68Ω to equalise the loss for filter bypass (DSB) mode.

SPECTRUM DISPLAYS



SCOPE DISPLAYS



AM can be displayed by off setting the balance of the mixer with DC.

I found the Scope display worked best with 1-10KHz AF & the Spectrum display with 100KHz AF as this gave clear sideband signals (& distortion products in course) & it was easy to select either upper or low sideband with  $\pm 100$ KHz off set of the RF signal generator.

Why don't U send an interesting bul?

73 de John G8MNY @ GB7CIP  
/EX