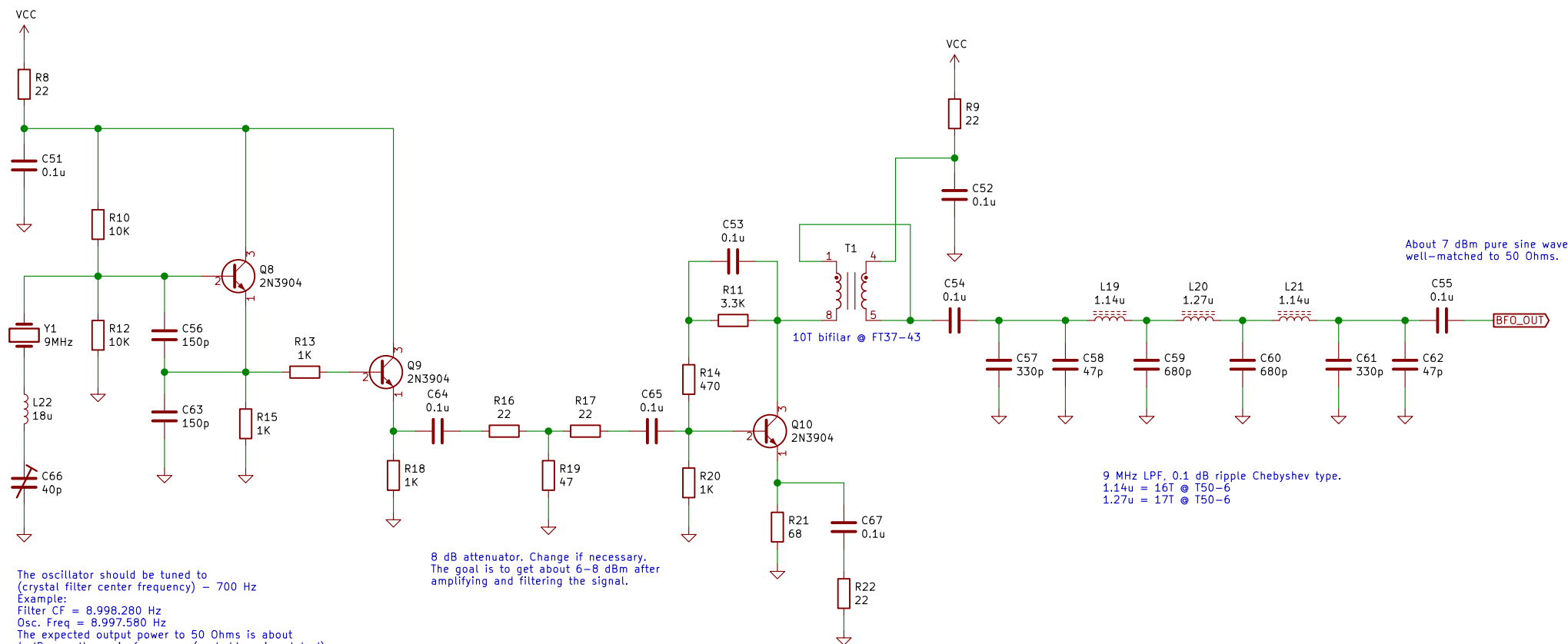


The secret of a superheterodyne receiver free of spurious signals is a clean BFO. The signal of SI5351 is way too dirty and can't be used as a BFO. Trust me, I've tried many times.

For this project I wanted a clean, well-matched to 50 Ohm, 7 dBm BFO. However, if space is limited, try removing the attenuator and the amplifier, and then – the filter. Chances are everything will work adequately without them.



The oscillator should be tuned to
(crystal filter center frequency) – 700 Hz
Example:
Filter CF = 8,998,280 Hz
Osc. Freq = 8,997,580 Hz
The expected output power to 50 Ohms is about
4 dBm on the main frequency (probably, mismatched).

Some experimentation may be required.
Try different coils and crystals if the oscillator
doesn't tune to the required frequency.
Low Q crystals are preferable in this circuit.

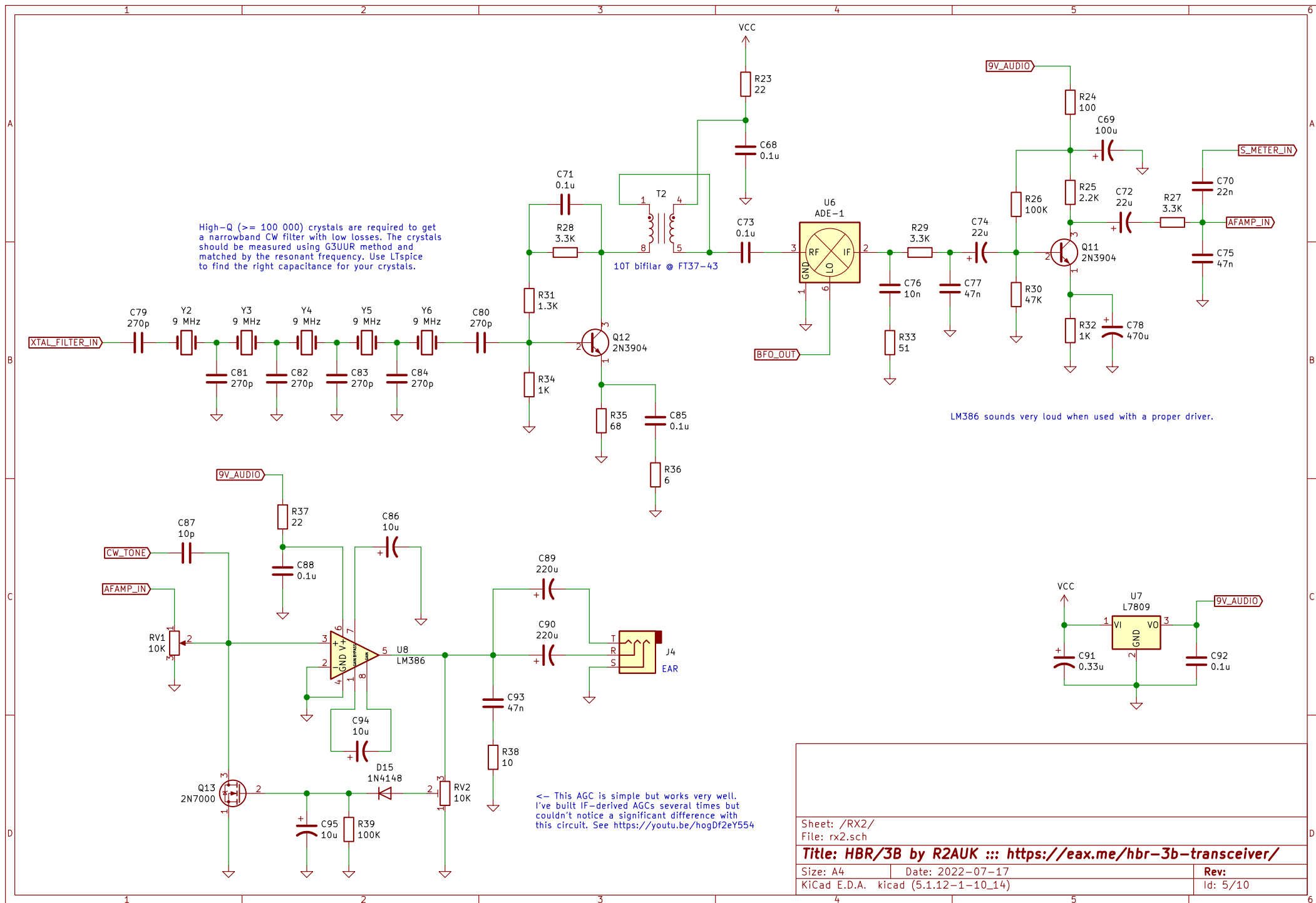
This feedback amplifier gives 10..12 dB of gain
at 9 Mhz depending on the specific transistor.

Sheet: /BFO/
File: bfo.sch

Title: HBR/3B by R2AUK ::: <https://eax.me/hbr-3b-transceiver/>

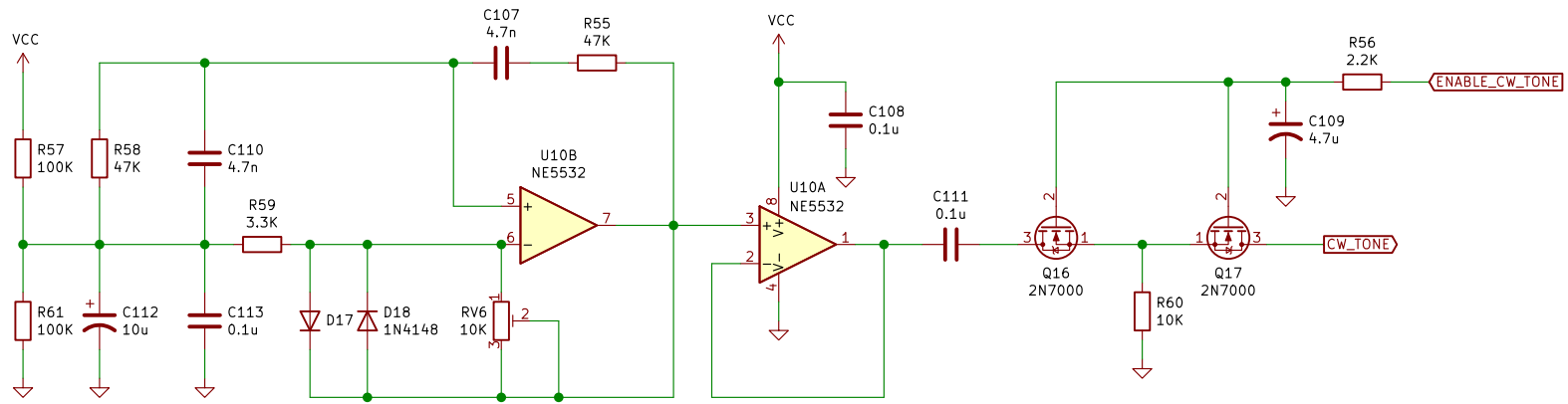
Size: A4 Date: 2022-07-17
KiCad E.D.A. kicad (5.1.12-1-10_14)

Rev:
Id: 4/10



Sheet: /RX2/			
File: rx2.sch			
Title: HBR/3B by R2AUK ::: https://eax.me/hbr-3b-transceiver/			
Size: A4		Date: 2022-07-17	
KiCad E.D.A. kicad (5.1.12-1-10_14)		Rev: Id: 5/10	

700 Hz Wien bridge oscillator + buffer



Adjust to get a pure sine wave

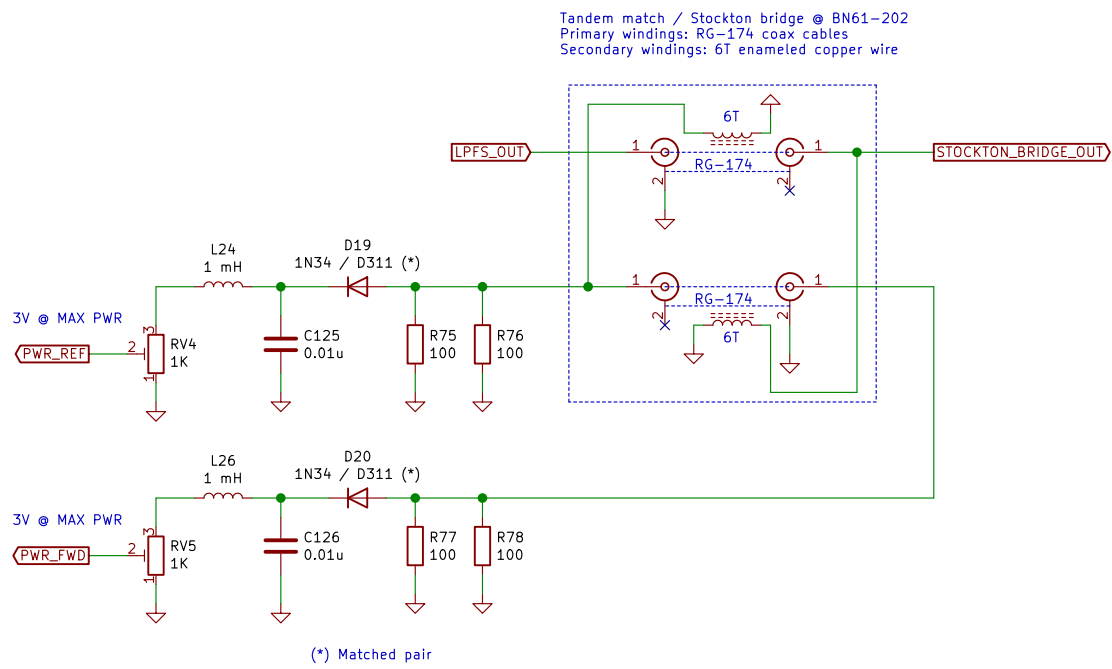
Sheet: /CW Tone/
File: cw-tone.sch

Title: HBR/3B by R2AUK ::: <https://eax.me/hbr-3b-transceiver/>

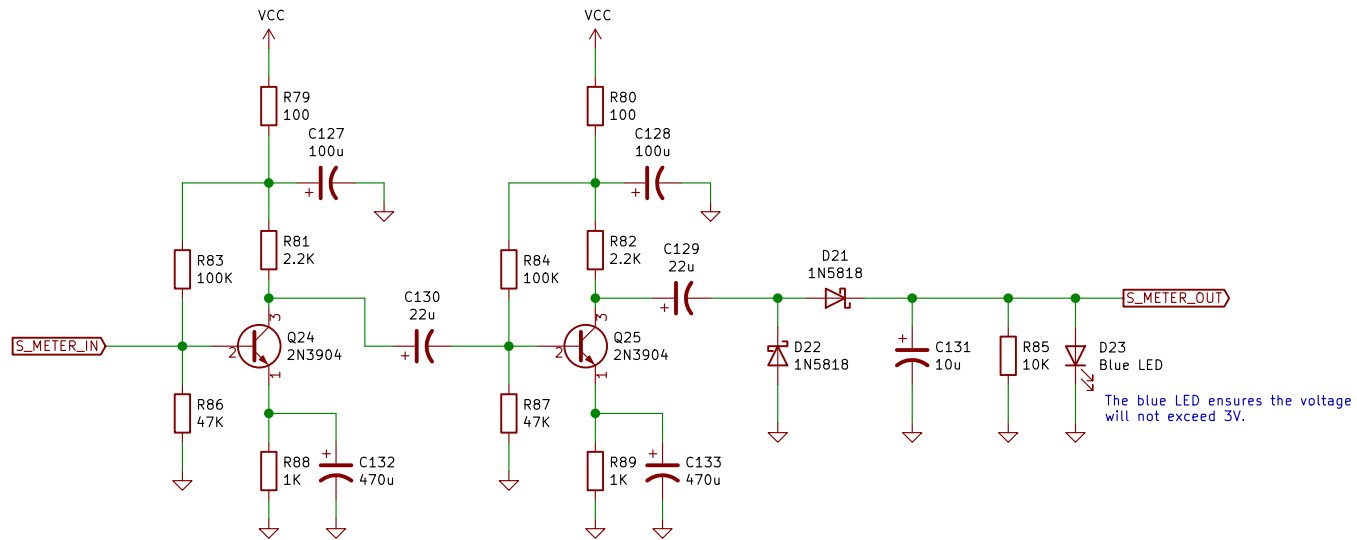
Size: A4
KiCad E.D.A. kicad (5.1.12-1-10_14)

Rev:
Id: 7/10





Sheet: /Stockton Bridge/	
File: stockton-bridge.sch	
Title: HBR/3B by R2AUK ::: https://eax.me/hbr-3b-transceiver/	
Size: A4	Date: 2022-07-17
KiCad E.D.A. kicad (5.1.12-1-10_14)	Rev: 9/10



Sheet: /S Meter/
File: s-meter.sch

Title: HBR/3B by R2AUK ::: <https://eax.me/hbr-3b-transceiver/>

Size: A4	Date: 2022-07-17	Rev:
KiCad E.D.A. kicad (5.1.12-1-10_14)		Id: 10/10