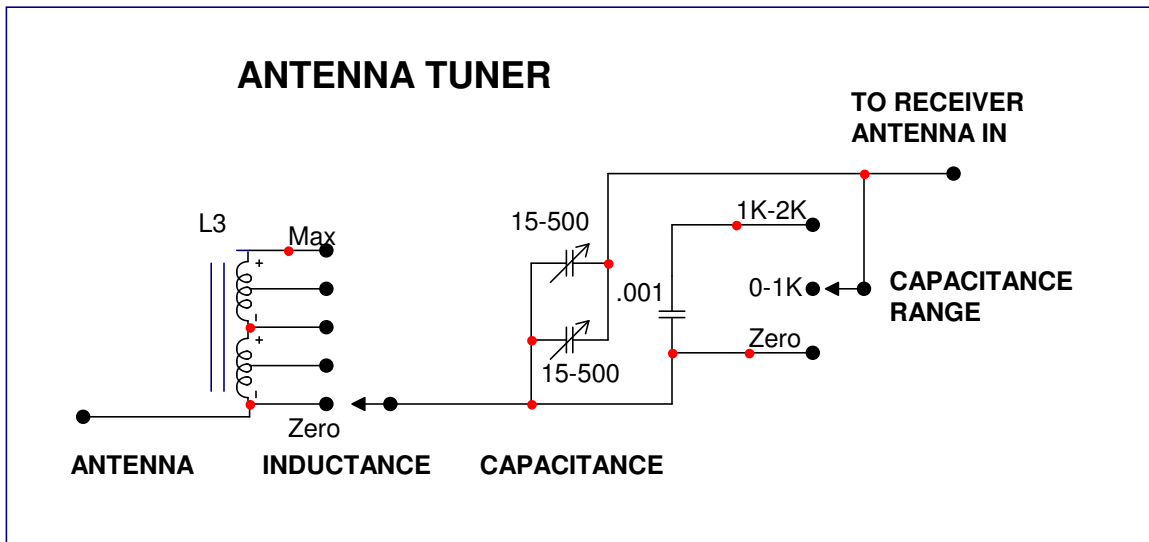
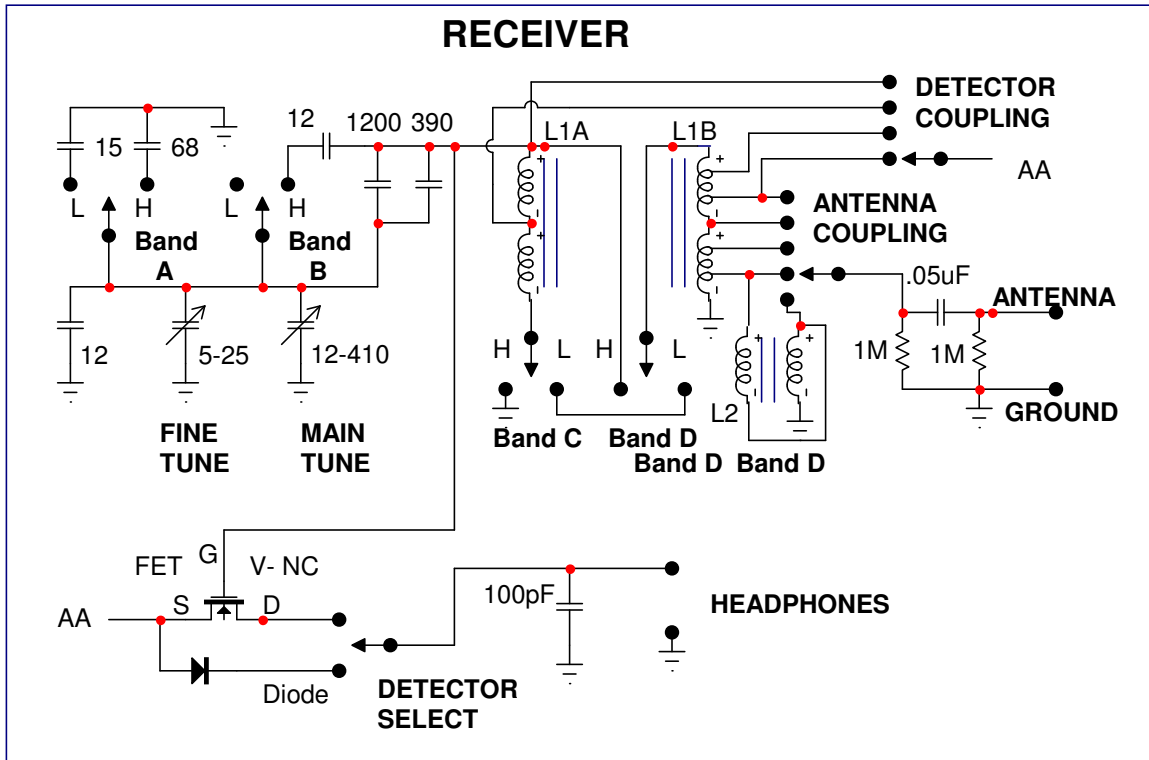


CRYSTAL RADIO 2007



See second page for notes.

Notes:

1. L1A & L1B #24 insul wire on FT114A core type 61 (I think, or maybe 43). Each winding is flat wound separately 21 turns for approx 69-70uH. For Low band (540-1200) windings are in series (approx 280uH). For high band they are in parallel. L1A tapped at 10 turns. B at 1,2,4,9,15 turns.
2. L2 is a broadband 1:4 Un-Un to get very low coupling approx 1/4 turn. Core used was a tiny, hi U, approx .4" dia, 3-5uHn* grey core. Windings are 3 turns bifilar for 36uH each or 144uH for two in series.
3. L3 same core type as L1, same 2 - 21T windings in series, each center tapped for inductance of 0, 25, 70, 162, 260 (measured, not critical)
4. Start w/tuner L & C switches set to 0 to find a station then adj tuner for best signal.
5. Best selectivity with minimum antenna and detector coupling, highest volume usually with an intermediate setting of both.
6. Tried with crystal earpiece, H43B/U military dual magnetic headset, and a modern in-ear medium impedance magnetic unit with the first two giving very good results but the magnetic headset needing the MOSFET for good volume on weaker stations.
7. The MOSFET (ALD110900) I tried is a dual unit in a 8 pin DIP. Both FETS are tied in parallel. On very strong stations it may overload with the gate across the full coil and may need some experimenting.
8. All the fixed series and parallel capacitors switched with the bandswitch are used to spread the tuning range more evenly across the dial.
9. I live about 25 miles West of Columbia, SC and can pick up about 6 or 7 locals in the daytime, the strongest being a small Spanish station about 10 miles away. Nighttime reception is also very good with stations fading in and out across the band.
10. The antenna used is a full wave 80M horizontal delta loop fed with balanced line to a balun and then coax. The antenna is used as-is, not with the coax shorted together. It's up about 50-60' and about 270' in circumference.
11. Unloaded Q (w/o detector) / bandwidth without the tuner measures at best about 100-125 at 1800 and about the same at the low end of the band. The tuner improves selectivity noticeably, partly due to being able to use less antenna coupling. The MOSFET detector is only noticeably better on the low detector tap and / or magnetic phones.