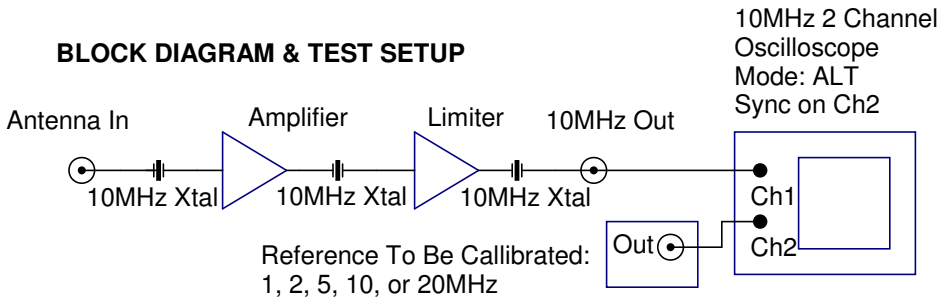
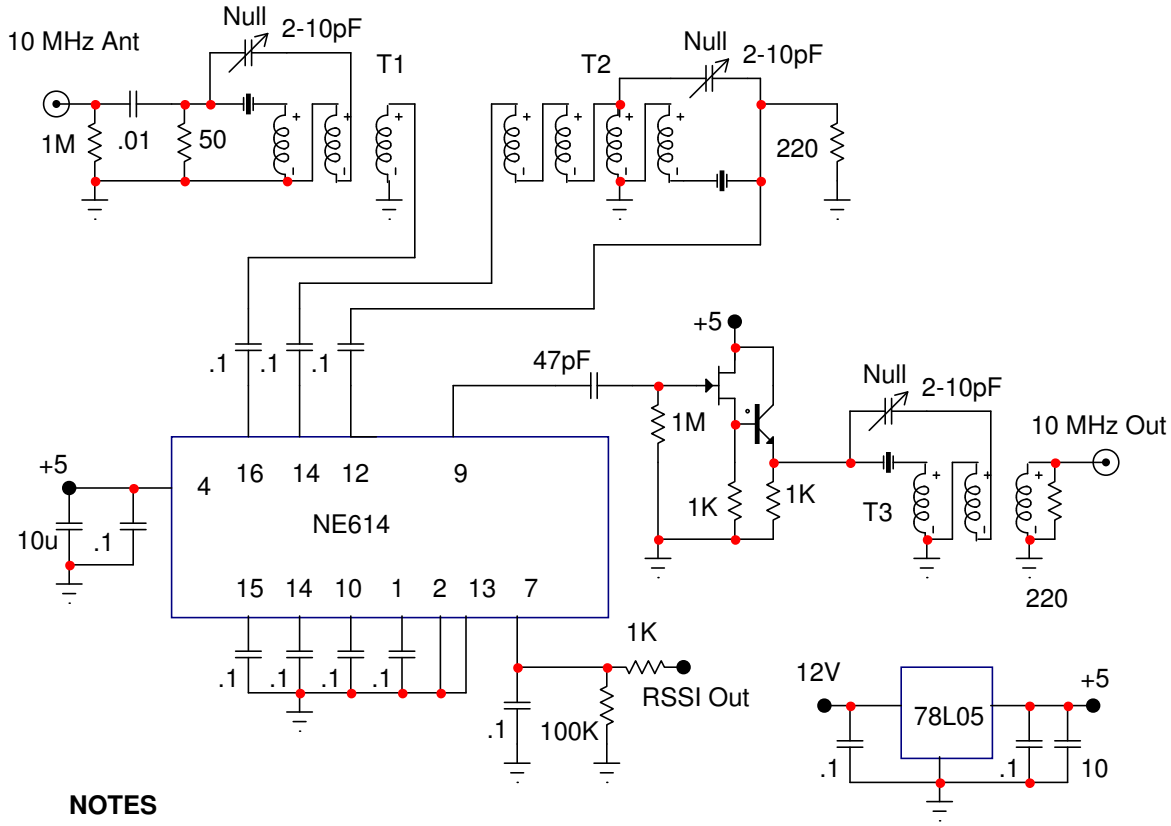
10MHz WWV RECEIVER / CALLIBRATOR

BLOCK DIAGRAM & TEST SETUP



SCHEMATIC



NOTES

Almost any RF/IF amp chip(s) should work. I happened to have a NE614 and just used the IF amp and limiter sections.

The crystals are all 10MHz series resonant Mouser 520-HCU1000-S. They were all pretty much dead on frequency if used with 50-200 Ohm source and load Z. With typ 2K Z they were all high so I just took the impedance hit rather than fool with trying to trim them, hence the odd transformers.

Torroid cores are 3/8" low Q, high u approx .5 to 1uH * N^2. Not critical.

L1 4T Bifi Pri, 16T Sec. to match 1.6K Zin of amp
L2 4T Quadfi connected as 9:1 w/ 2 Sec as center tap
L3 4T Trifiliar

Use: Connect as shown and rate of phase shift is cycles/sec error. Adjust your reference until pattern stands still. Shield well so Rx sees WWV and not ur ref!