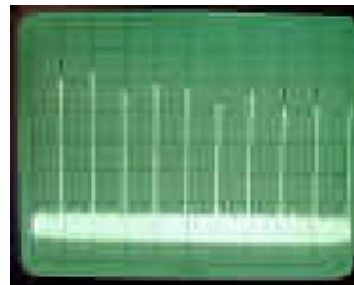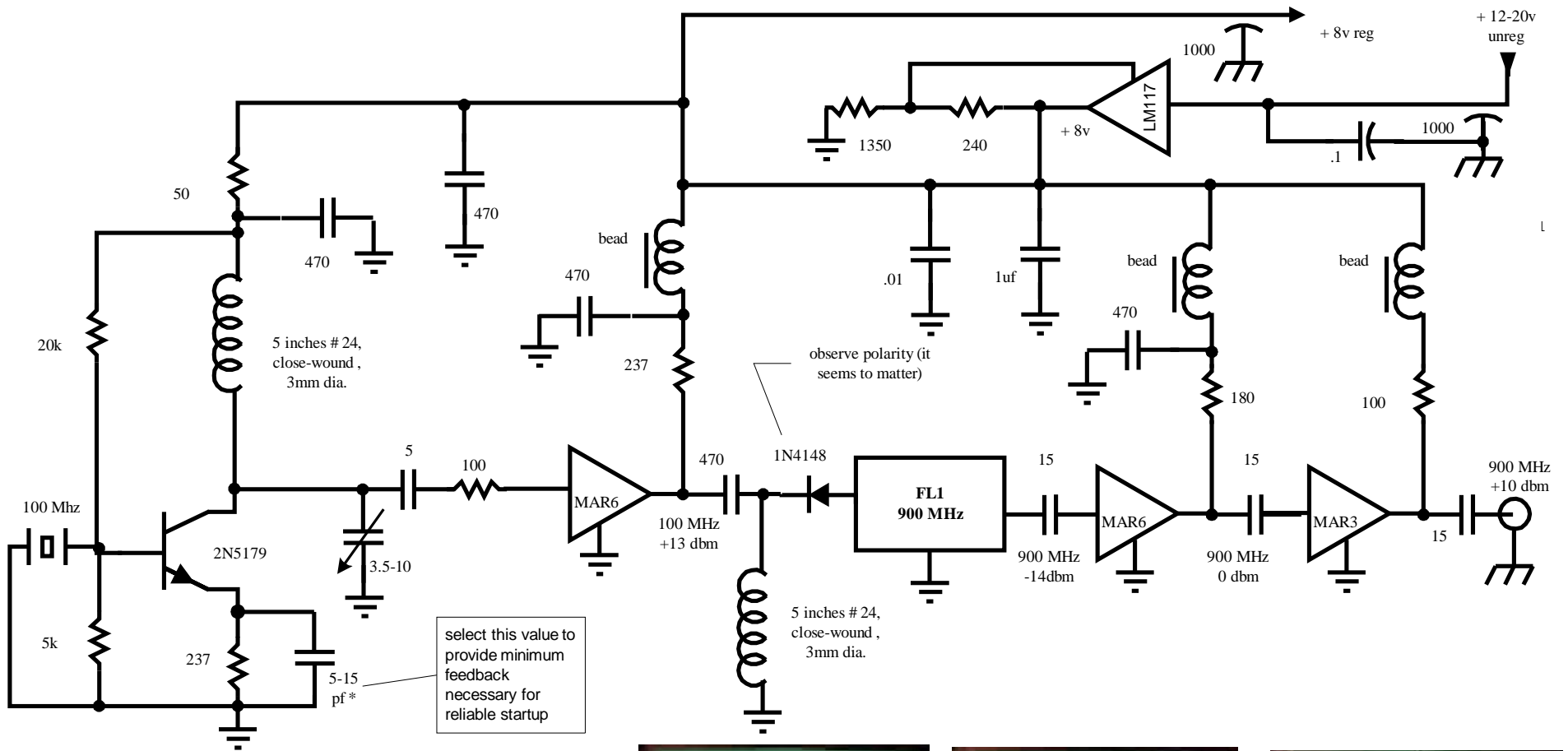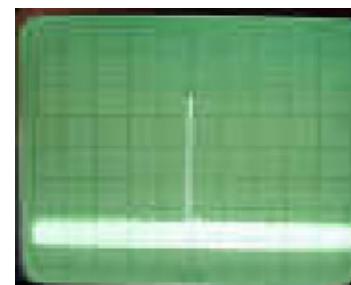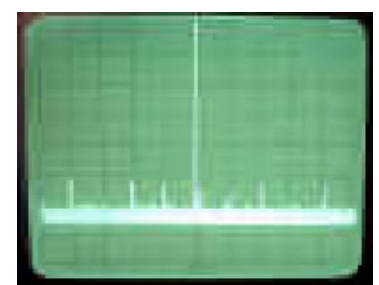This signal source features a minimum-tune design. The only tuning necessary is the crystal oscillator trimmer and the interdigital filter. The crystal used here is a standard 5th overtone series-resonant AT cut; I chose 100.25444 so that the 9th harmonic would fall on 902.290. The oscillator actually overdrives the first MMIC, creating a harmonic-rich output, which is furthur enhanced by the 1N4148 multiplier diode. After passing through the interdigital filter, the 900 mHz signal is amplified to +10 dbm by the next 2 MMIC's.

+ 12-20v unreg

+ 8v reg

1000

LM117

1350   240   + 8v   .1   1000

.01   1uf

bead   bead   bead

470   470   470   470   470   470

50

20k

100 Mhz

5k

237

2N5179

5 inches # 24, close-wound , 3mm dia.

5

100

237

3.5-10

5-15 pf *

select this value to provide minimum feedback necessary for reliable startup

MAR6

100 MHz +13 dbm

470

1N4148

observe polarity (it seems to matter)

5 inches # 24, close-wound , 3mm dia.

FL1 900 MHz

15

900 MHz -14dbm

MAR6

900 MHz 0 dbm

180   100

15   15

MAR3

900 MHz +10 dbm

15

L

diode output comb

filtered 900 MHz

10 mw output