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100 Watt SW Tube Transmitter
48 meterband

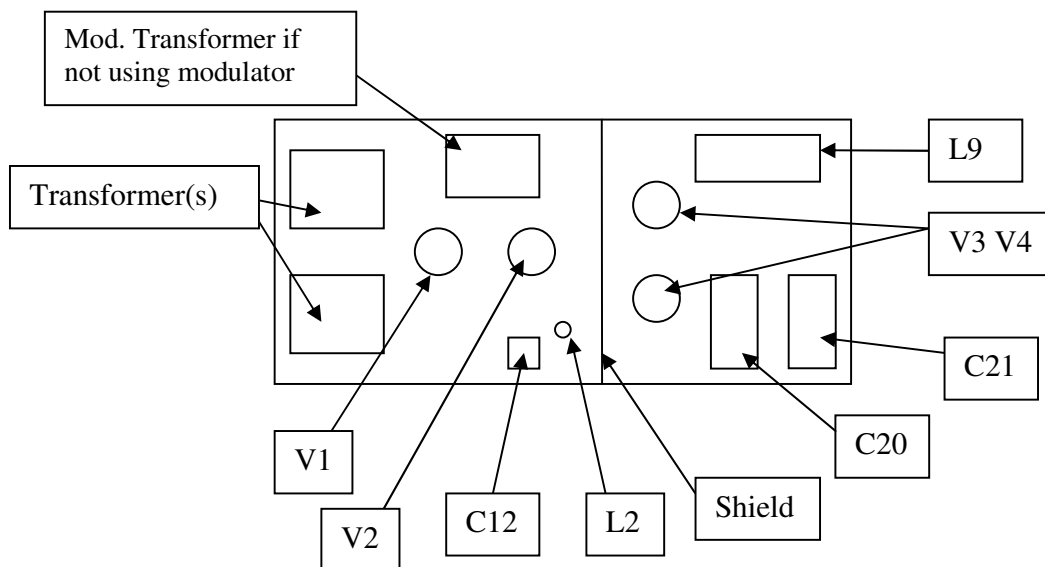
100 watt short wave Tube transmitter.

This schematic is built and test and works. The schematic is easy and use the tubes EL84, EL34 and two 807 tubes.

The part with the EL84 is the crystal oscillator, the EL 34 is the buffer trap and the part with the two 807 tubes is the final power trap.

Some hints and tips.

For a good working transmitter keep the final trap separate from the first two. This can be done by placing a shield between the EL34 and the rest behind this tube. Here is a possible set-up, often use and always work.



The crystal oscillator is some kind of Broadband, which means that any short wave crystal would work. The transmitter can easy modified by example for 76 meter. You only have to change the crystal, C12 & L2 and C20, C21 & L9.

Some problems You can expect are strange oscillations in the transmitter while trying to get some power out of it. Use always a dummy load the first time, not the antenna! While tuning C12, C20 and C21 it must by quiet on the receiver. When You hear noise or plops your transmitter have some bad oscillations!

Mostly the problem can be found after the buffer. The components marked with ** in the list you have to experiment with.

First try to use some another rf coils for L8. If this doesn't make any different try to change the parasite stoppers L6 and L7. (this works for me The transmitter I have build use just a small piece of wire and three ferrit rings on the topcaps from the 807 tubes) At last try to use some other parasite stoppers for L4 and L5, remove them or use only resistors 22ohm, 2watt. Now the problem must be gone, and You only hear a blank carrier while tuning the transmitter. Don't use a sheap \$5,00 radio but a good short wave receiver.

Components

Mod. trafo (100W)

C1	= 8N2 (500V)
C2	= 50pf
C3	= 100n (500V)
C4	= 10n (500V)
C5	= 33p (100V)
C6	= 100n (500V)
C7	= 100p (500V)
C8	= 10n (500V)
C9	= 470P (100V)
C10	= 4N7 (100V)
C11	= 2n2 (500V)
C12	= 50-300P(*)
C13	= 1n (500V)
C15	= 1n (100V)
C16	= 2N2 (500V)
C17	= 10n (500V)
C18	= 8N2 (500V)
C19	= 10n (2000V)
C20	= 500P (Wide Plate Distance)
C21	= 500-1000P (*)
L1	= 2.5mH
L2	= Coil (Coil , 15 turns 0.3 cu diam. 25mm)
L3	= 2.5mH
L4	= 2.5uH (5 turns on 100 Ohm / 2Watt**)
L5	= 2.5uH (5 turns on 100 Ohm / 2Watt**)
L6	= 2.5uH (5 turns on 47 Ohm / 2Watt**)
L7	= 2.5uH (5 turns on 47 Ohm / 2Watt**)
L8	= 3.5mH (**)
L9	= Coil (Coil 15 turns 1,5 cu diam. 50mm wide space)
L10	= 2.5µH (*)
Qz1	= 6,3 MHz (Quarz Crystal)
R1	= 100k (2W)
R2	= 100k (1W)
R3	= 15k (1W)
R4	= 27k (2W)
R5	= 1k (2W)
R6	= 330 (2W)
R7	= 330 (2W)
R8	= 6k6 (5 watt)
R9	= 11k (15W)
R10	= 1k (5W)
R11	= 8k (15W)
R12	= 10k (10W)
R13	= 10k (10W)
SO239 1	= Antenna plug
V1	= EL 84
V2	= EL 34
V3	= 807
V4	= 807