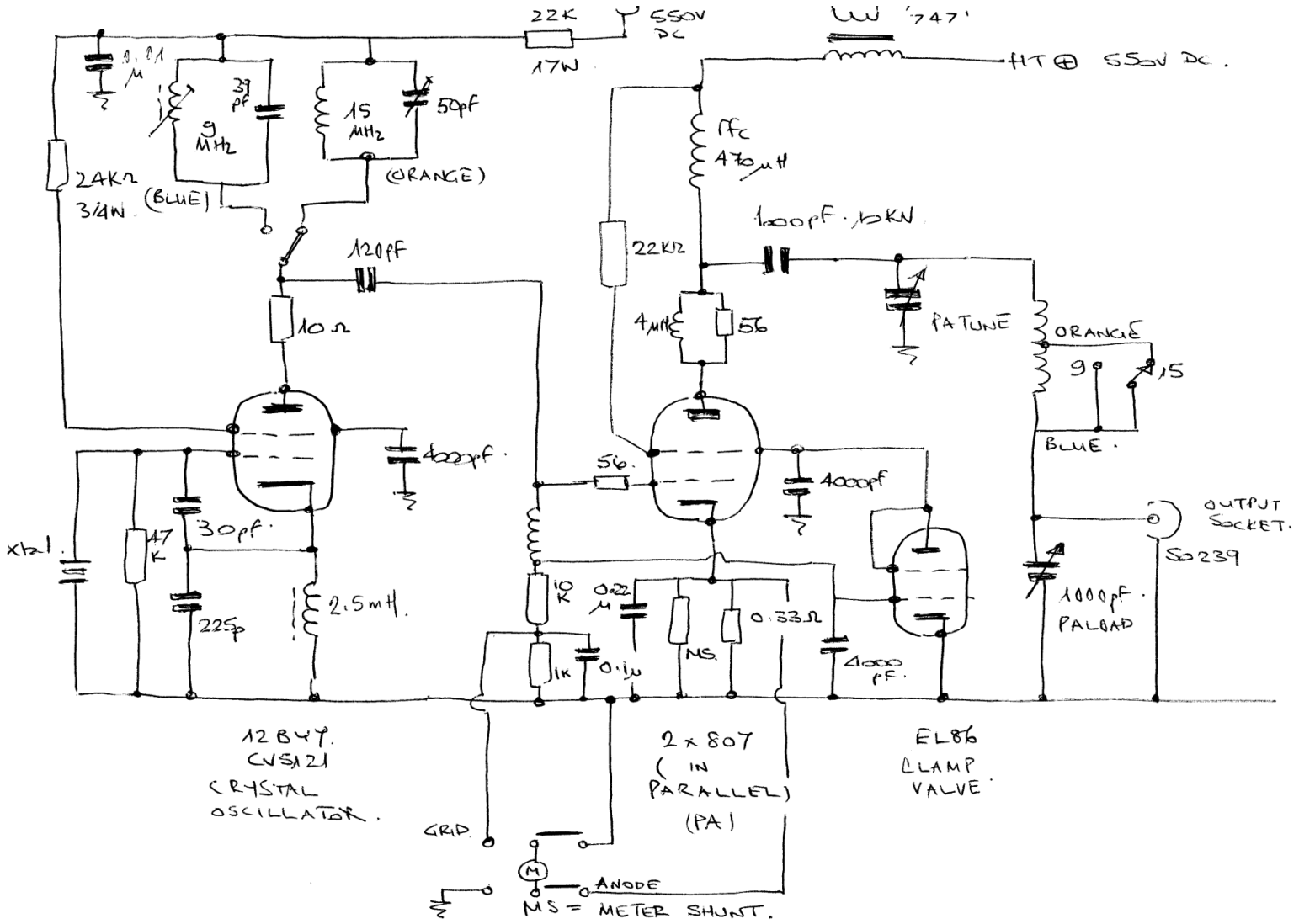
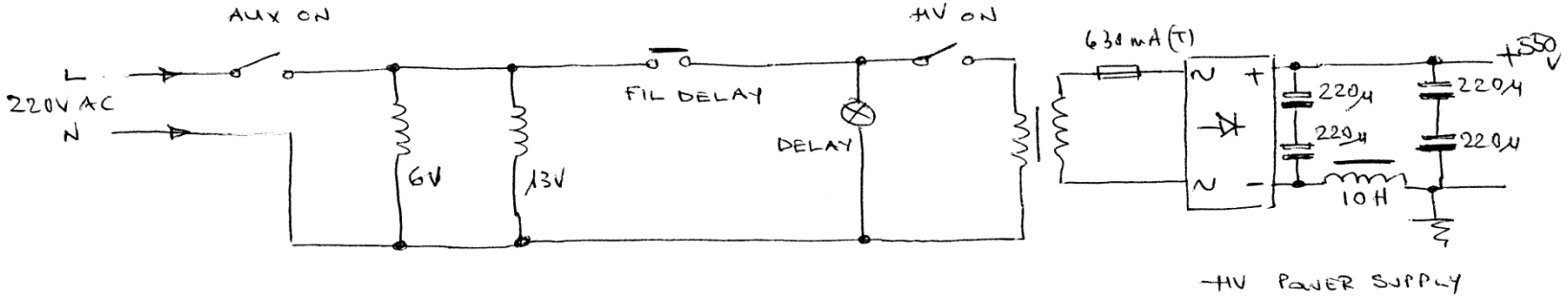
50 Watt Multiband AM Shortwave Transmitter Circuit

The published diagrams of Station QRP are for educational purposes only. These are offered for the furtherance of one's knowledge regarding radio frequency design and principles

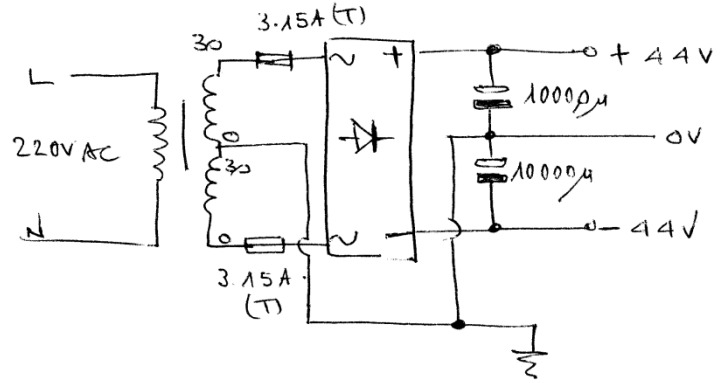
Transmitter: Tube (CV5152 & EL86 & 2 x 807 parallel)
Voltage: 525 volt / 300 mA
Frequency: 9.2x kHz & 15.0x kHz
Modulation: AM (High Level Anode and Screen); 100% Mod
Amplifier: Internal 100W/4 Ohms R.M.S. MOSFET amplifier (BUZ900/905)
Audio filter: low pass (<220 Hz) & high pass (>5.5 Khz)
Audio impedance: 47 KOhm
Output Power: 50 Watt carrier (AM PEP 100 Watts)


22K
17W
550V DC
HT ⊕ 550V DC.
0.01 µ
39 pF
9 MHz
15 MHz
50pF
(ORANGE)
24KΩ 3/4W.
(BLUE)
120pF
10Ω
4000pF.
30pF.
47K
225p
2.5mH.
Xtal.
12BY7. CV5121 CRYSTAL OSCILLATOR.
GRID.
rfc 470µH
22KΩ
1000pF. 10KV
4MHz
56
PA TUNE
ORANGE
9
15
BLUE.
56.
4000pF
10K
0.22 µ
0.33Ω
1K
0.1µ
MS.
4000 pF.
OUTPUT SOCKET.
SO239
1000pF. PALOAD
2 x 807 (IN PARALLEL) (PA)
EL86 CLAMP VALVE.
M
ANODE
MS = METER SHUNT.

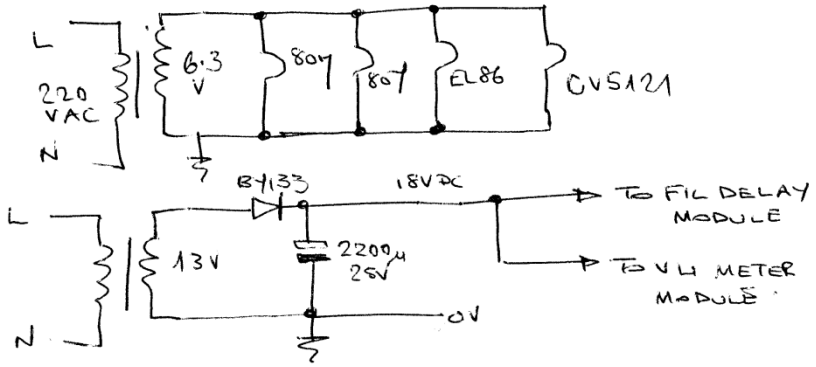


HV POWER SUPPLY

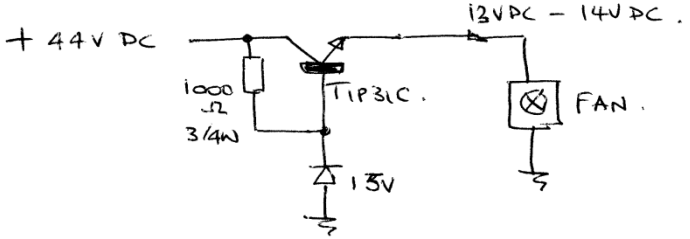
MODULATOR POWER SUPPLY



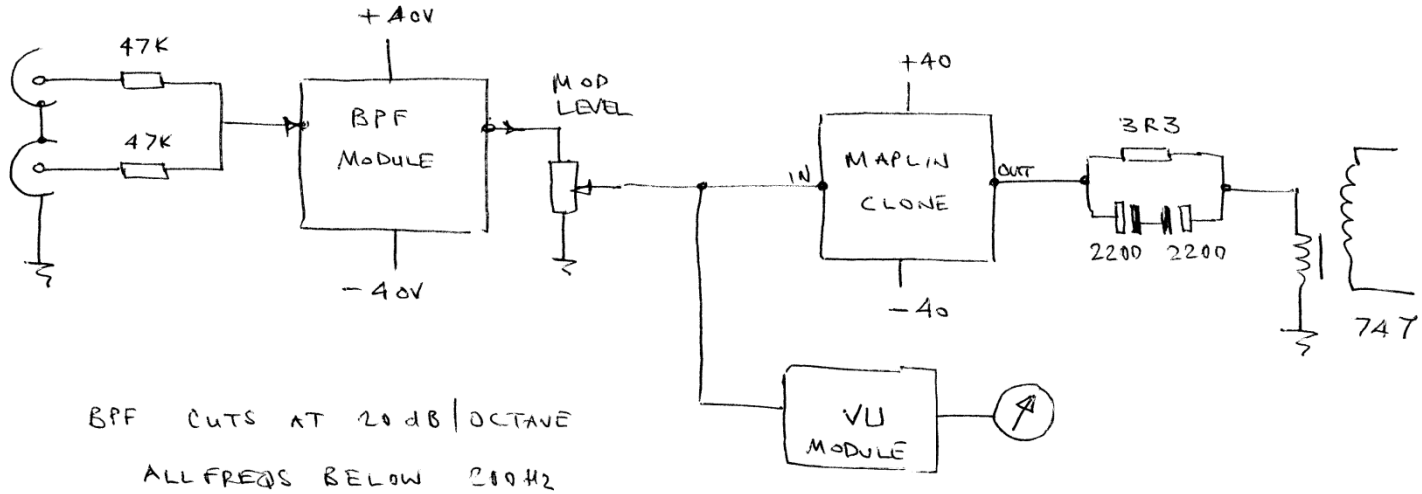
HEATER (FILS) SUPPLY



FAN POWER SUPPLY



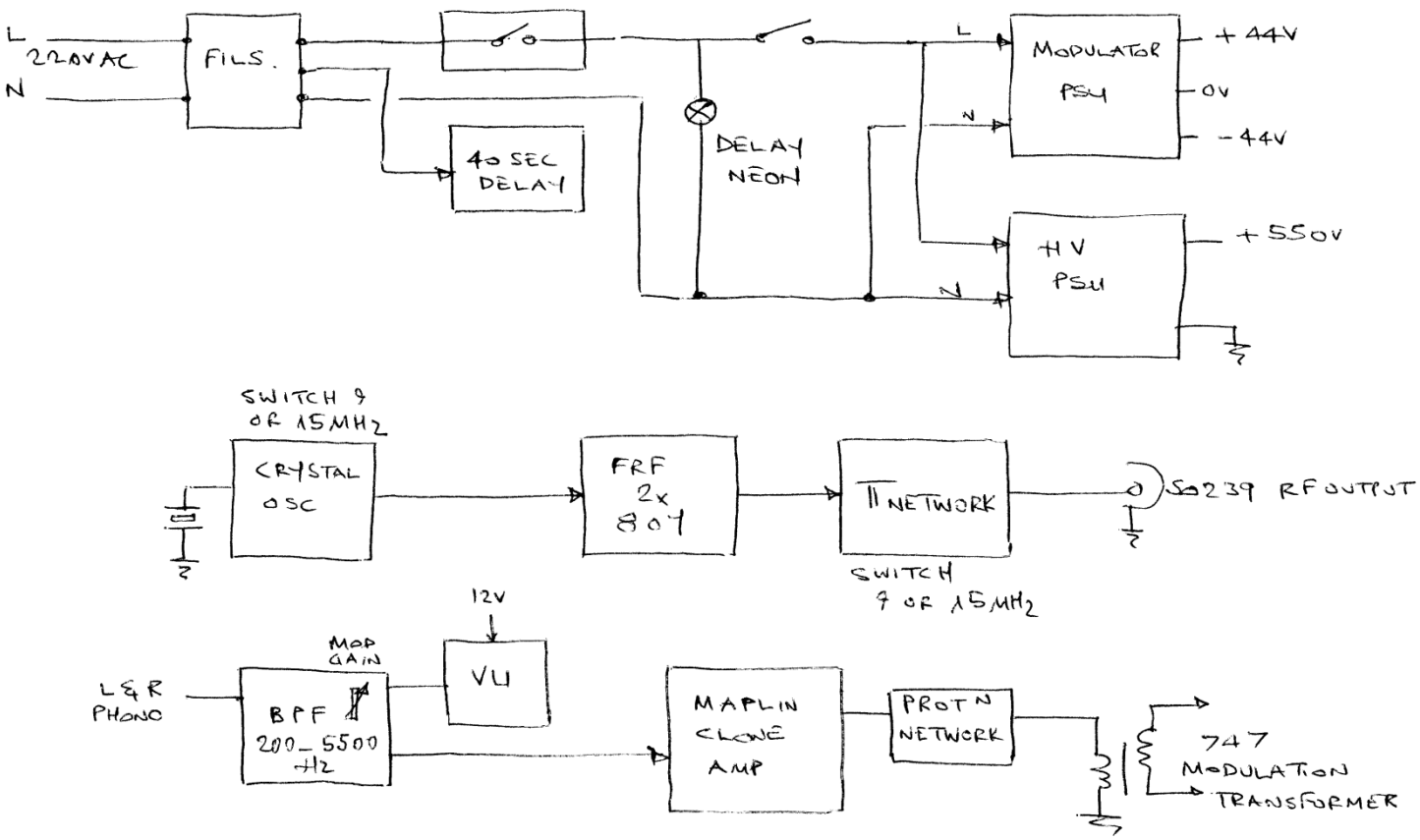
MODULATOR



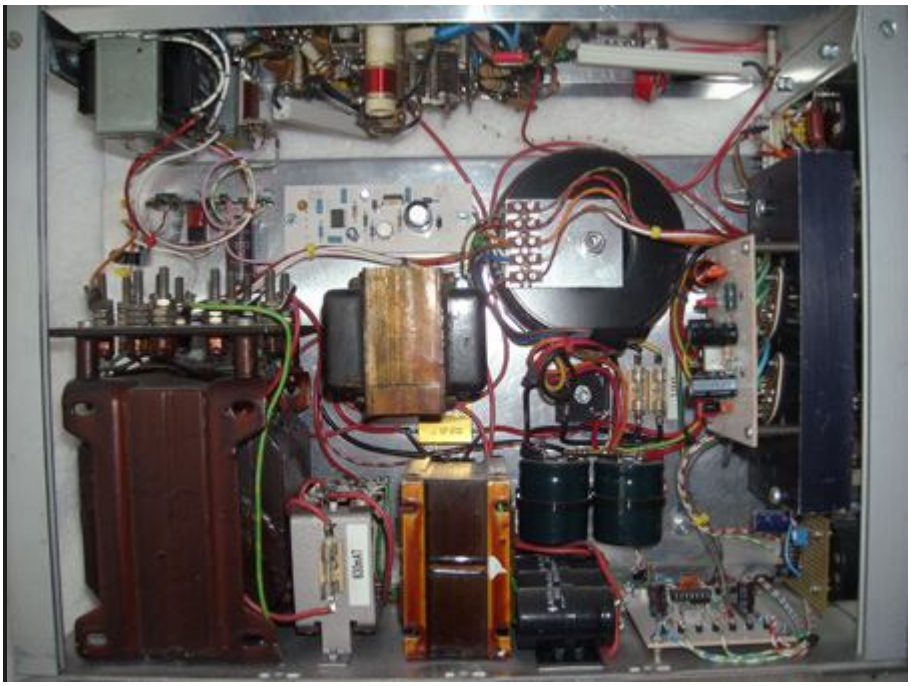
BPF CUTS AT 20 dB | OCTAVE

ALL FREQS BELOW 200 Hz

& ALL FREQS ABOVE 5500 Hz.

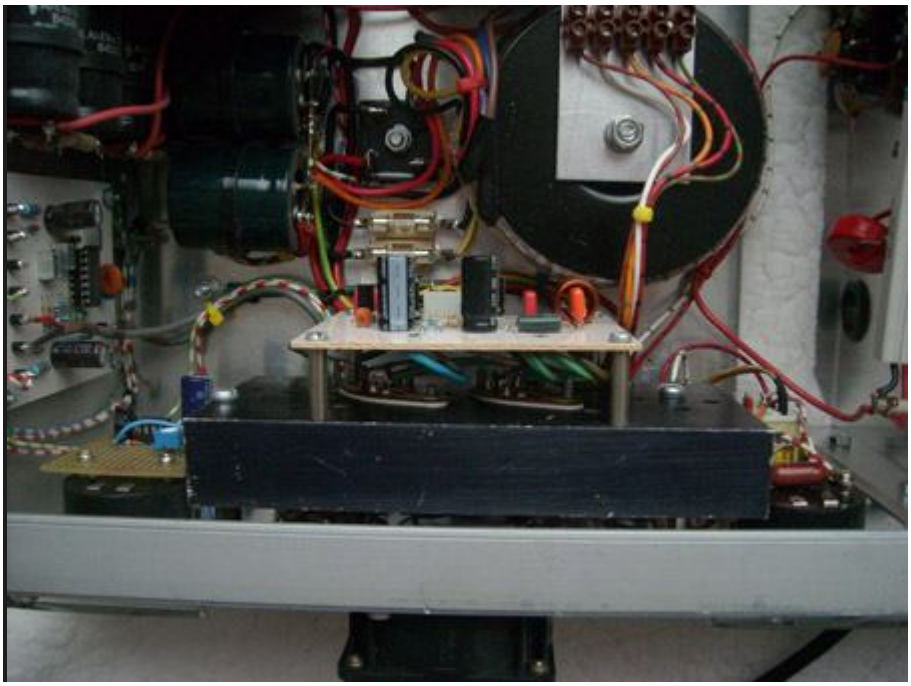

L
220VAC
N
FILS.
40 SEC DELAY
DELAY NEON
L
N
MODULATOR PSU
+44V
0V
-44V
HV PSU
+550V
N
SWITCH 9 OR 15MHz
CRYSTAL OSC
FRF 2x 807
TT NETWORK
SO239 RF OUTPUT
SWITCH 9 OR 15MHz
12V
MOD GAIN
L&R PHONO
BPF 200-5500 Hz
VU
MAPLIN CLONE AMP
PROTN NETWORK
747 MODULATION TRANSFORMER

The VU meter (left) shows the peak modulation. (0VU = 100% modulation) On the right metering is provided for Grid current and Kathode current on the 807s

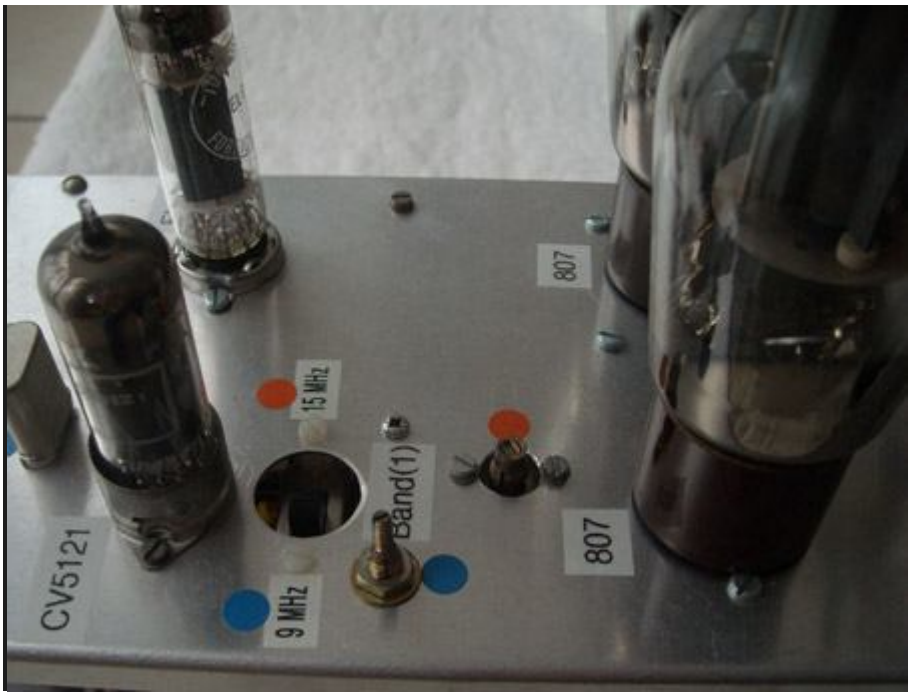


Seen from the bottom.....

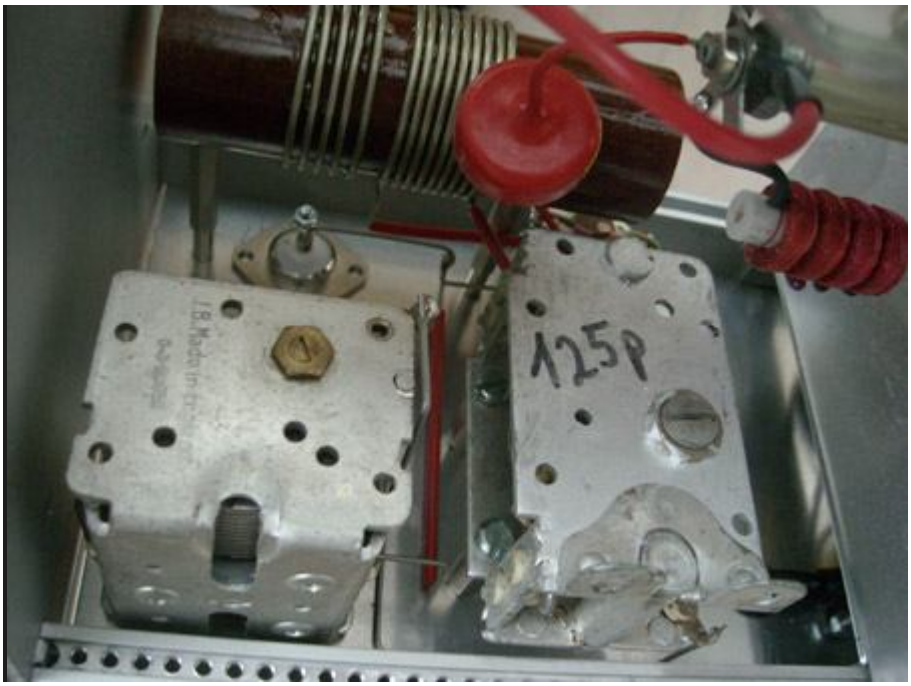
Inside the tube rig; CV5152 Crystal Oscillator, EL 86 and 2 x 807 Power



Internal MOSFET (BUZ900/905) 100W RMS into 4 Ohms solid-state Maplin clone modulator/amplifier



EL86, CV5121 and 2 x 807 Power Amplifier



Tank circuit