



Lothians Radio Society

President's Address 2010

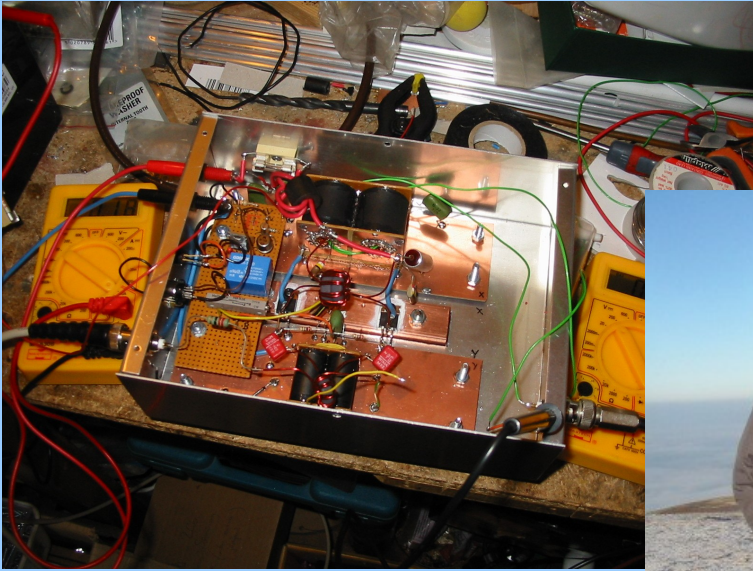
Home Brew /P

John Cooke GM80TI

Not this ...



... but this



Hilltop portable ...



... car portable ...



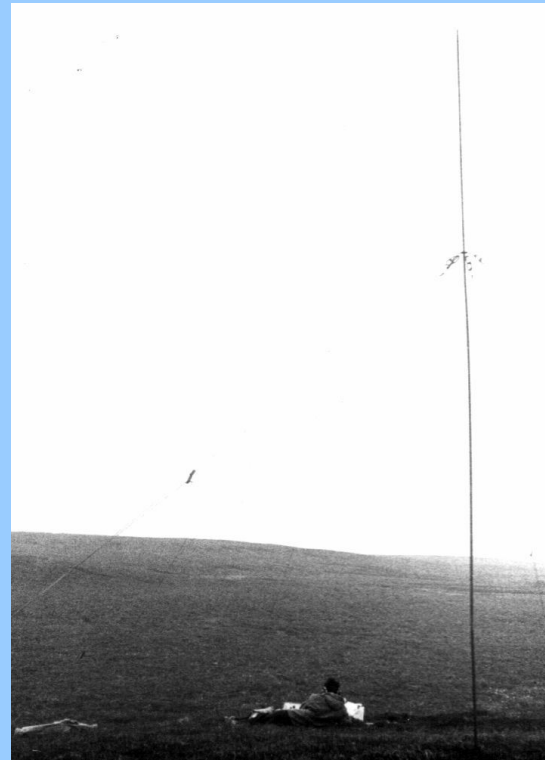
... even caravan portable!



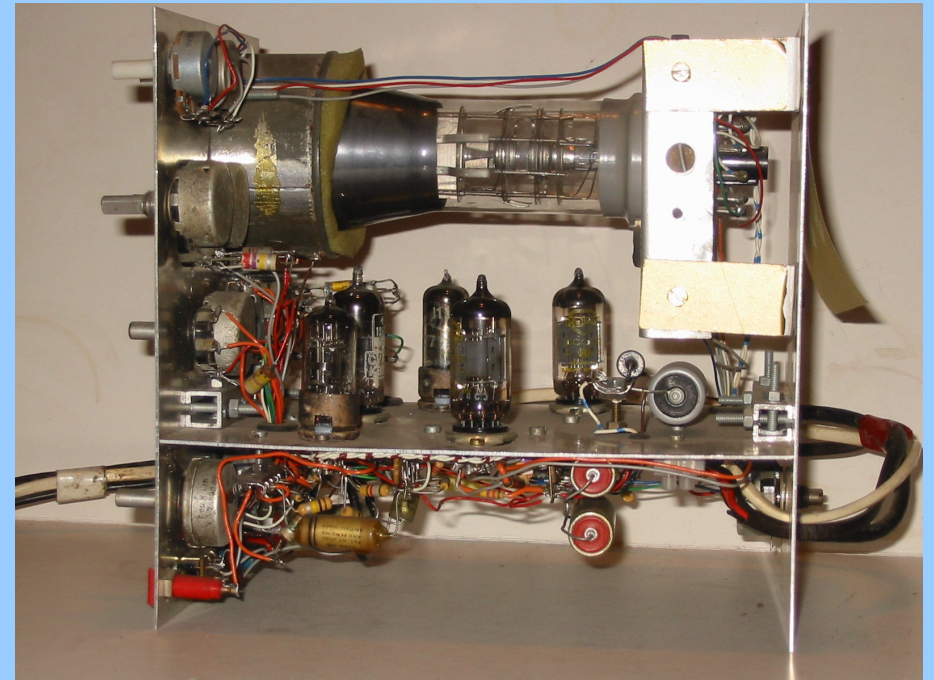
as SWL ...



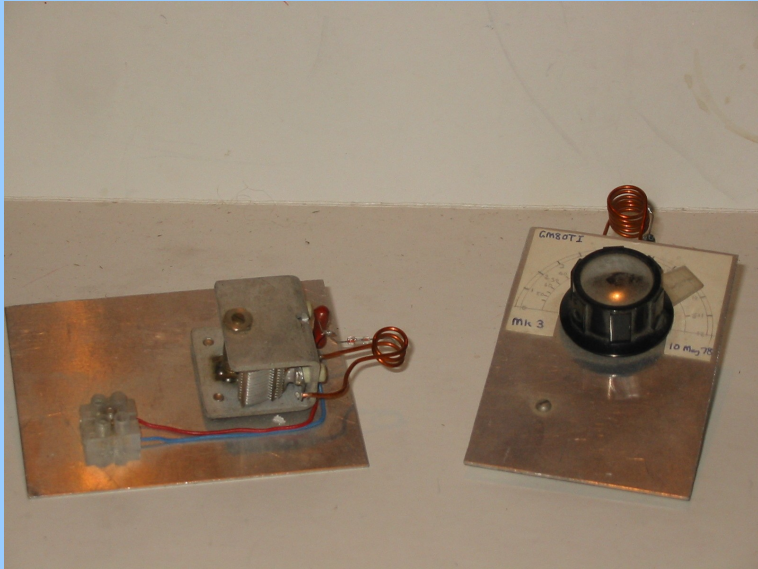
(with G3ZHL)



Early days



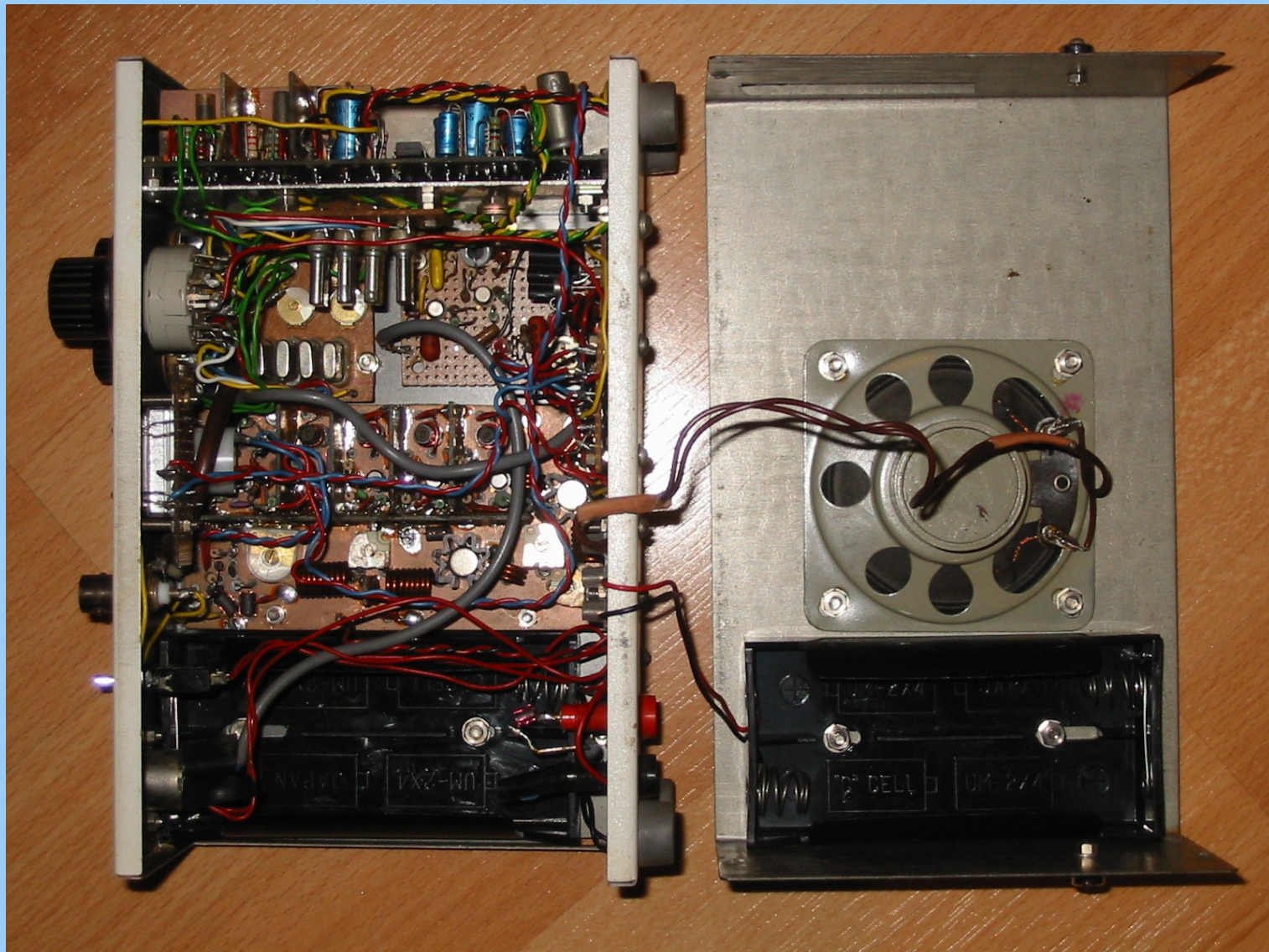
Preparing for the licence



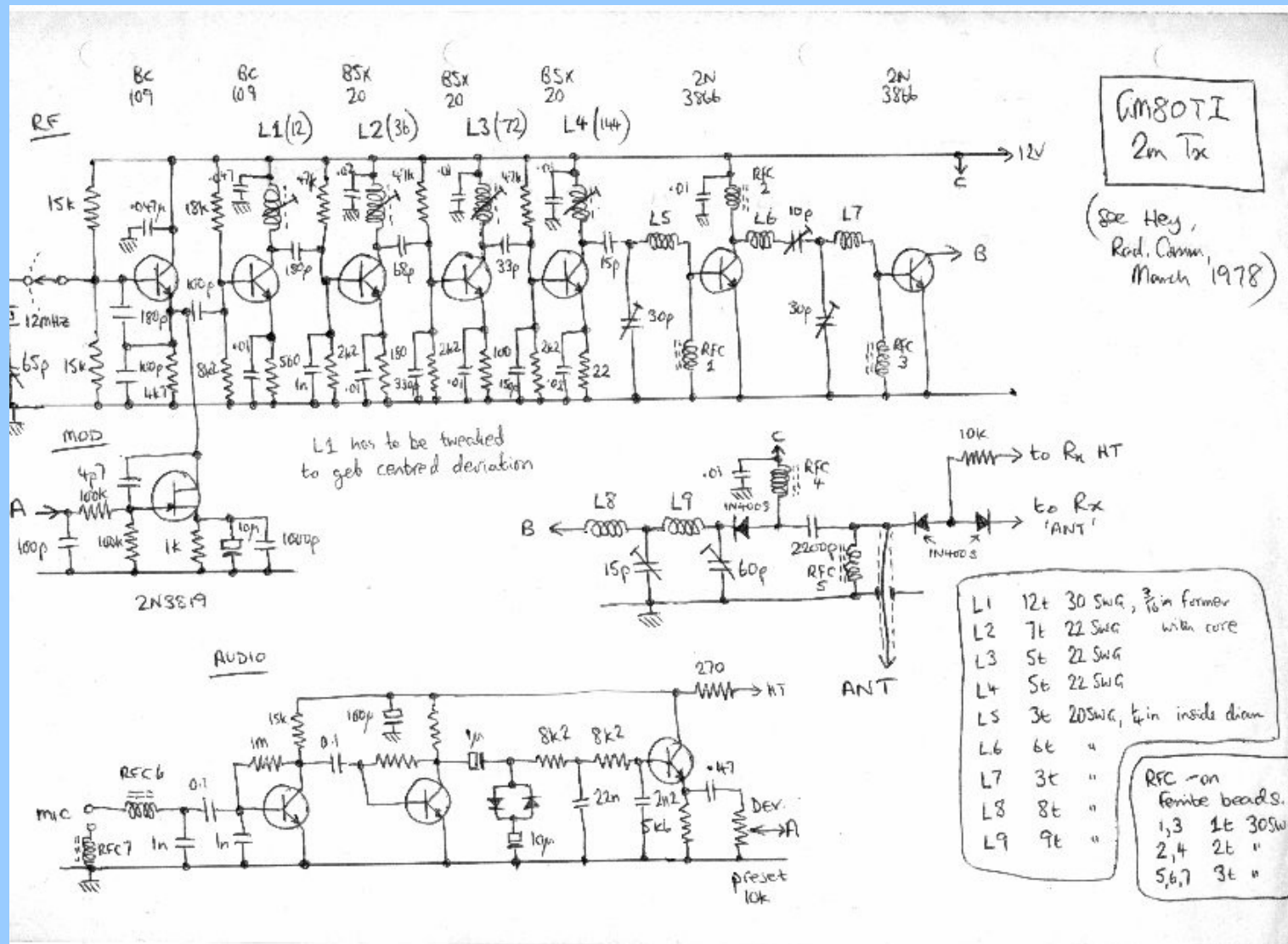
First rig – 2m FM portable



Inside the box



And I still have the circuits!



Early /P operation

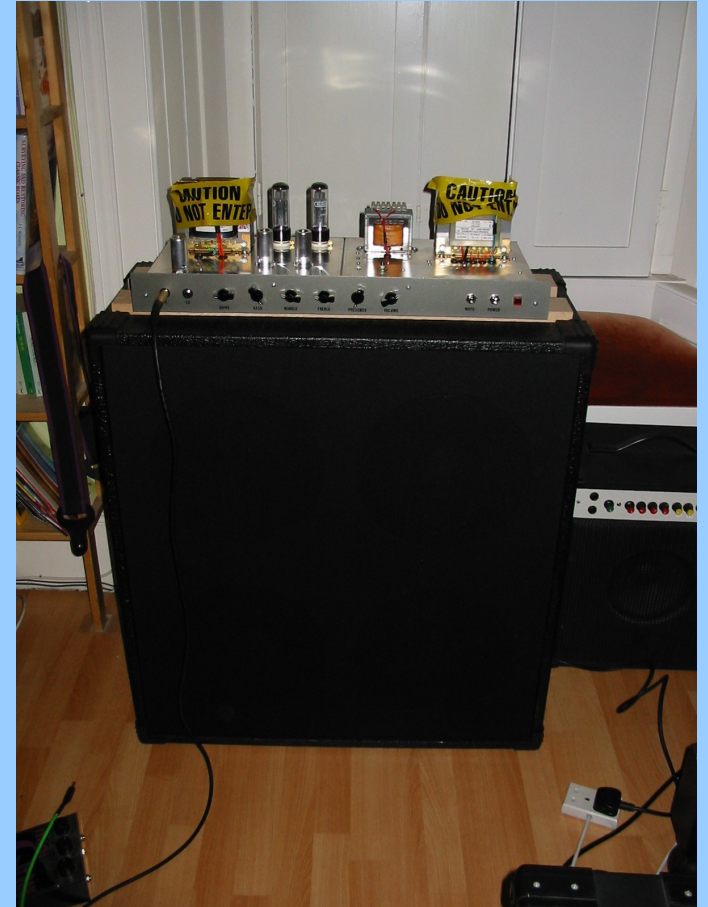
7

from	to	freq.	class	call
19 May 1978	from 17-10			Tax tests into D/L S22
—	18-10	—	finished	tests
20-00	20-01	145-150	F3	CQ via CS. No QSO.
20-15	20-19	145-150	F3	GM3PPJ Harry Cumroch
21-10	21-11	145-150	F3	GM8WZ/M No QSO. (too late?)
21-12	21-13	145-150	F3	GM8ARV No QSO.
21-43	21-45	145-150	F3	GM3YKE Bob Bob. Kilbinnie (reports me last week)
22-45	22-46	145-550	F3	Test
22-50				Close down.
20 May 1978	from 18-30			
/P operation	from Brail Hills.	NT 246695	3m S of air	
13-30	13-31	145-150	F3	CQ via CS. no QSO.
13-35	13-37	145-150	F3	GM4DEX Ian, Leslie (Fife)
13-40	13-45	145-150	F3	GM3POK/M John (Stirling)
13-55	13-56	145-150	F3	CQ via CS. No QSO.
14-00	14-06	145-150	F3	GM4COX/P Jack, Iv. ^{Ben} ^{near Inverness} ^{3000 ft.}
14-07	14-08	145-150	F3	GM8FM No QSO.
14-17	14-18	145-150	F3	GM3VTB/M No QSO.
14-20	14-21	145-150	F3	CQ via CS. No QSO.
14-30				Close down.

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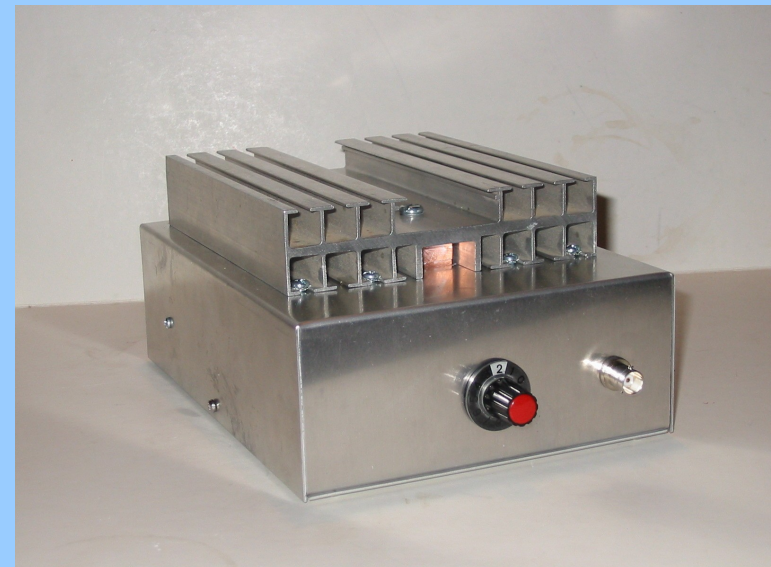
from	to	freq.	class	call
21 May 1978	from 11-00			
11-00	11-02	145-550	F3	Test - whip match.
11-12	11-13	145-550	F3	GM6XI Nampton? within 10m (Post Sctm)
11-25	11-26	145-150	F3	Test Q83CS access
21 May 1978	from 12-40			NT 2266 + NT 2366
/P operation	from the Ponds - Caerhelfin Hill/Allerwin hill -			
13-25	13-30	145-150	F3	GM8OAH/M Bill Lintington (Essex) via CS
13-30	13-55	145-550	F3	GM3BCD runs Wilsons R.C. of Bank Rd. 100m N. Allerwin - Vanguard Town
13-52	14-03	145-150	F3	GM8MMW/M Ian via CS
14-03	14-13	145-550	F3	GM6XI Jack
14-04	14-16	145-550	F3	GM8BOV/M Dave Finby Hills, Cumberland. 100m to 5/8
15-05	15-12	145-150	F3	GM3SND/M Graham Cumberland & Airdrie, good copy London G52DHB 10m
15-54	15-57	145-150	F3	EI2AZ/M John N. Coast. Dargat via CS
16-10	16-13	145-150	F3	GM8ARV/M Loch Lomondside via CS
16-20	16-22	145-150	F3	GM8EISQ/M Ken N. Coast. Dargat via CS
16-23	16-26	145-150	F3	GM4CAW/P Russ Milngavie via CS
16-27	16-28	145-550	F3	GM3POK/M John. Kinross Bn
				Close down 16-40.
22 May 1978	from 19-15			Blackford Hill /P operation
19-15	19-16	145-150	F3	CQ via CS. No QSO. Close 19-16

Interlude 1993 - 2007

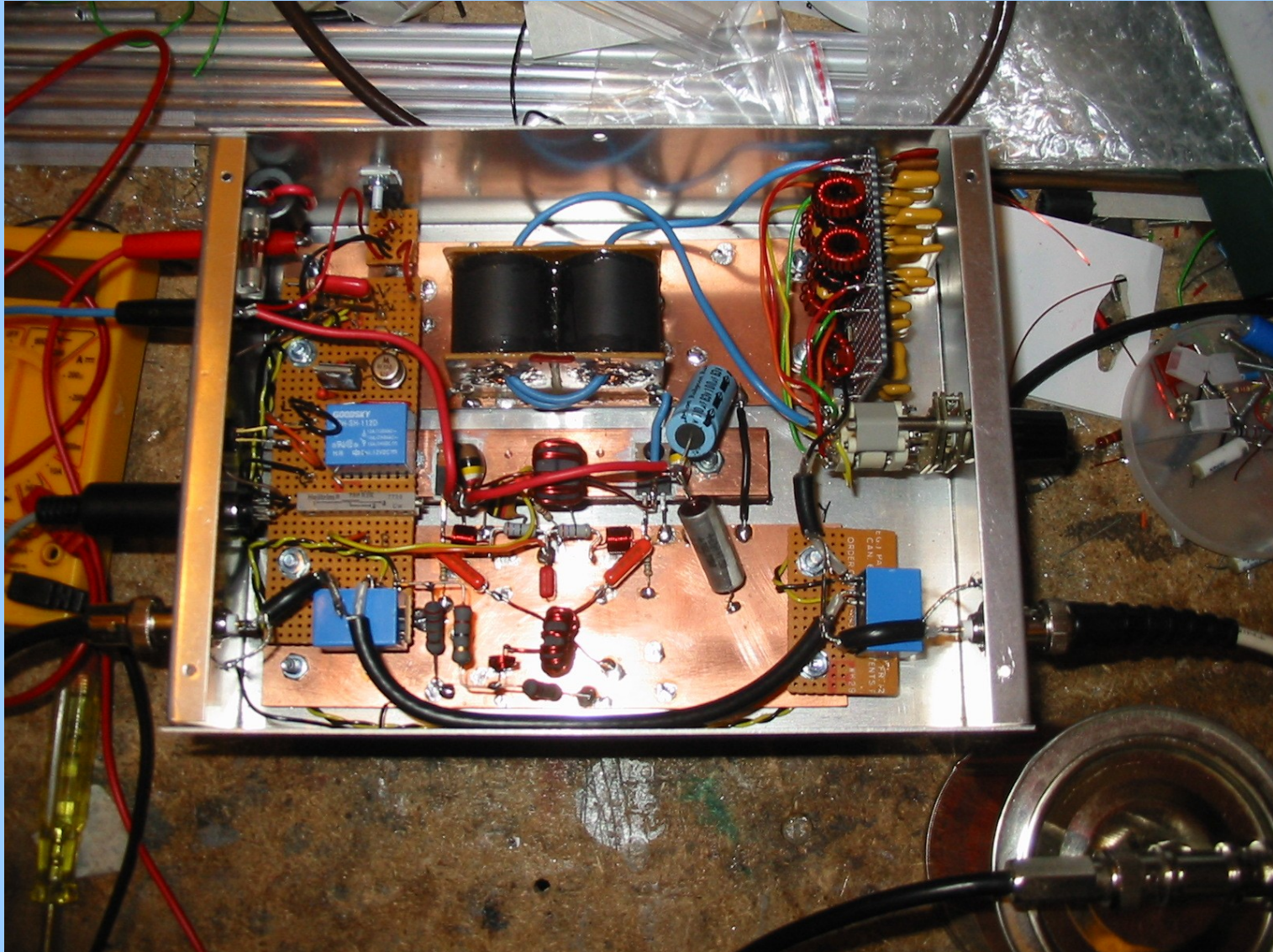


HF linear amplifier

- IRF510 push-pull
- 24V supply
- 2.5W drive
- 35W on lower bands
- similar to “Packer” amplifier (K5OOR)



HF linear amplifier



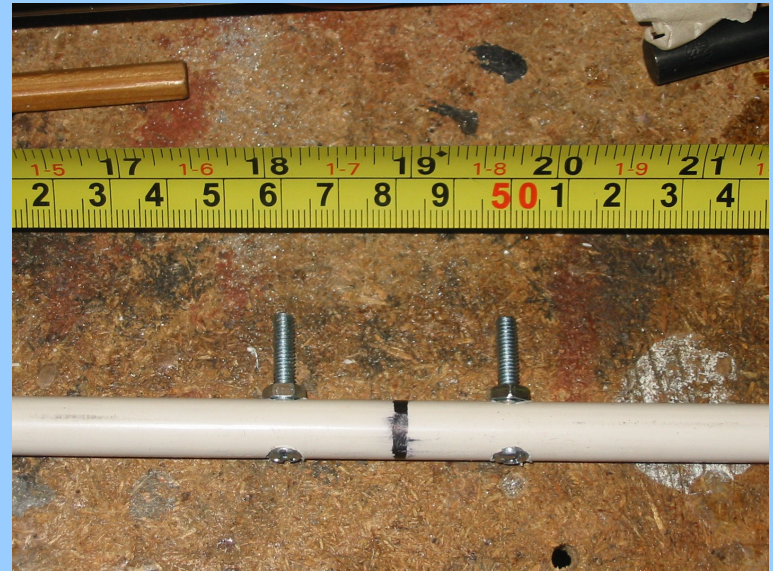
Antennas (fishing pole)



Antennas (Spiderbeam pole)



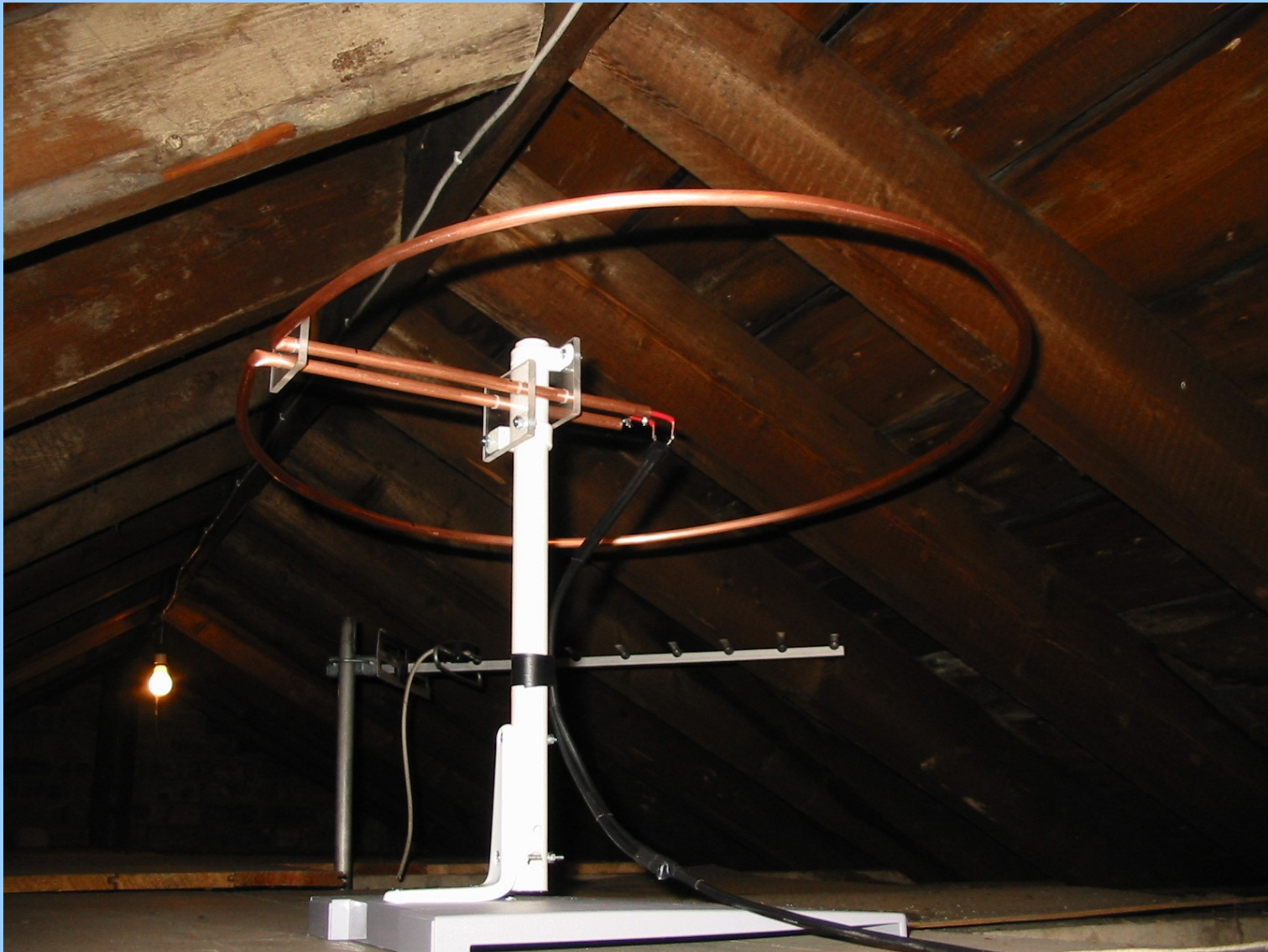
VHF/UHF Antennas



VHF/UHF Antennas

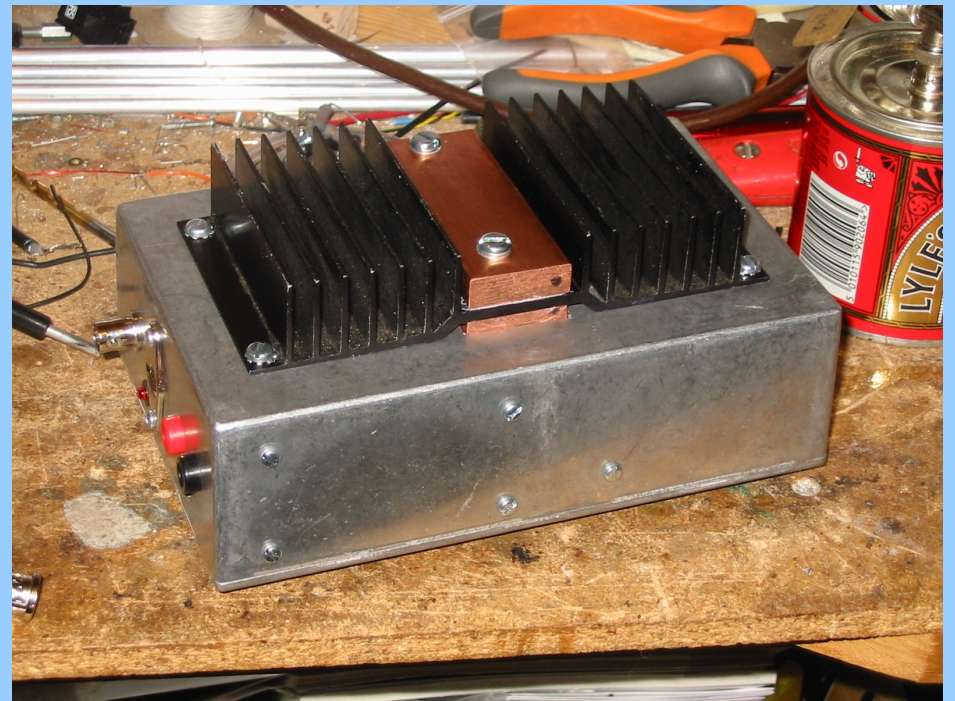


VHF/UHF Antennas

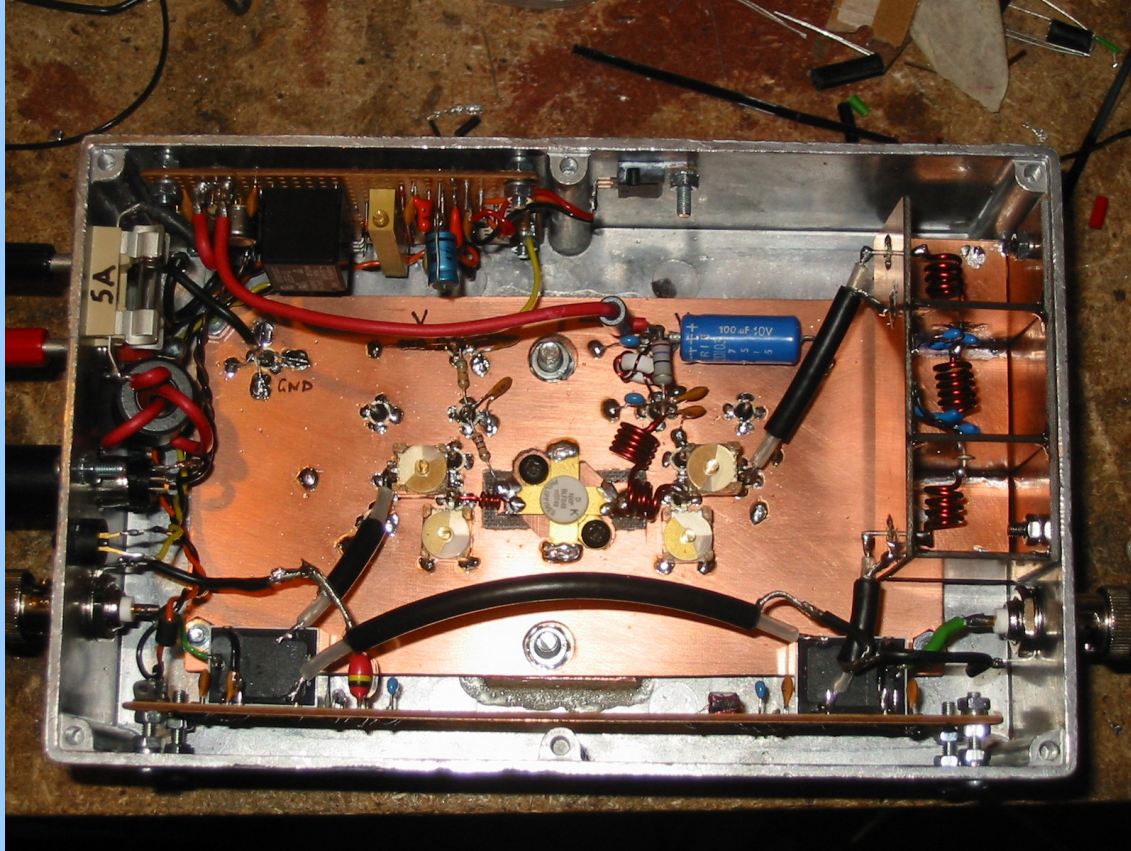


2m linear amplifier

- BLF245
- 24V supply
- 25W out
- 2.5W drive
- RFSim99 to design low pass filter



2m linear amplifier

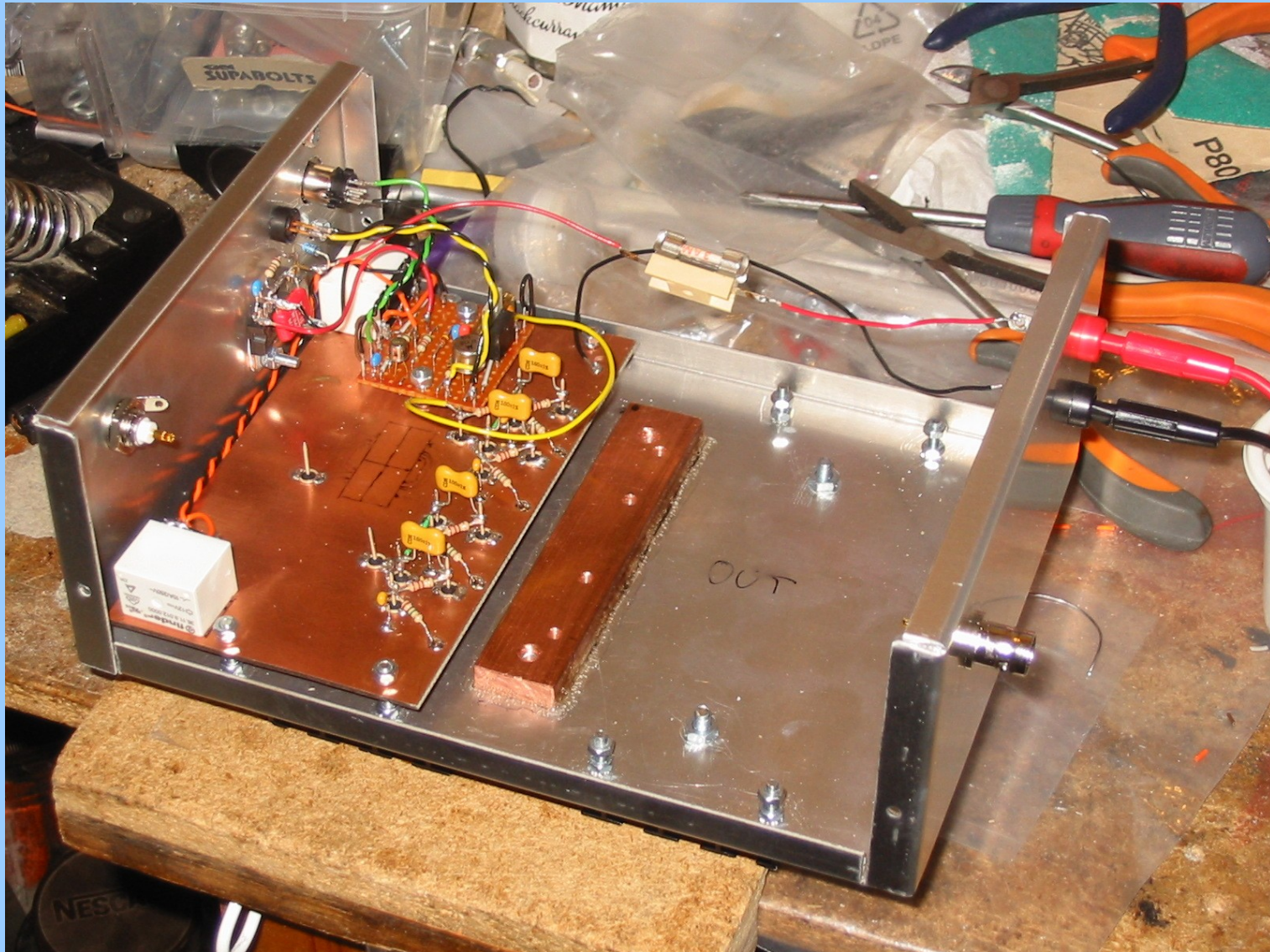


6m linear amplifier

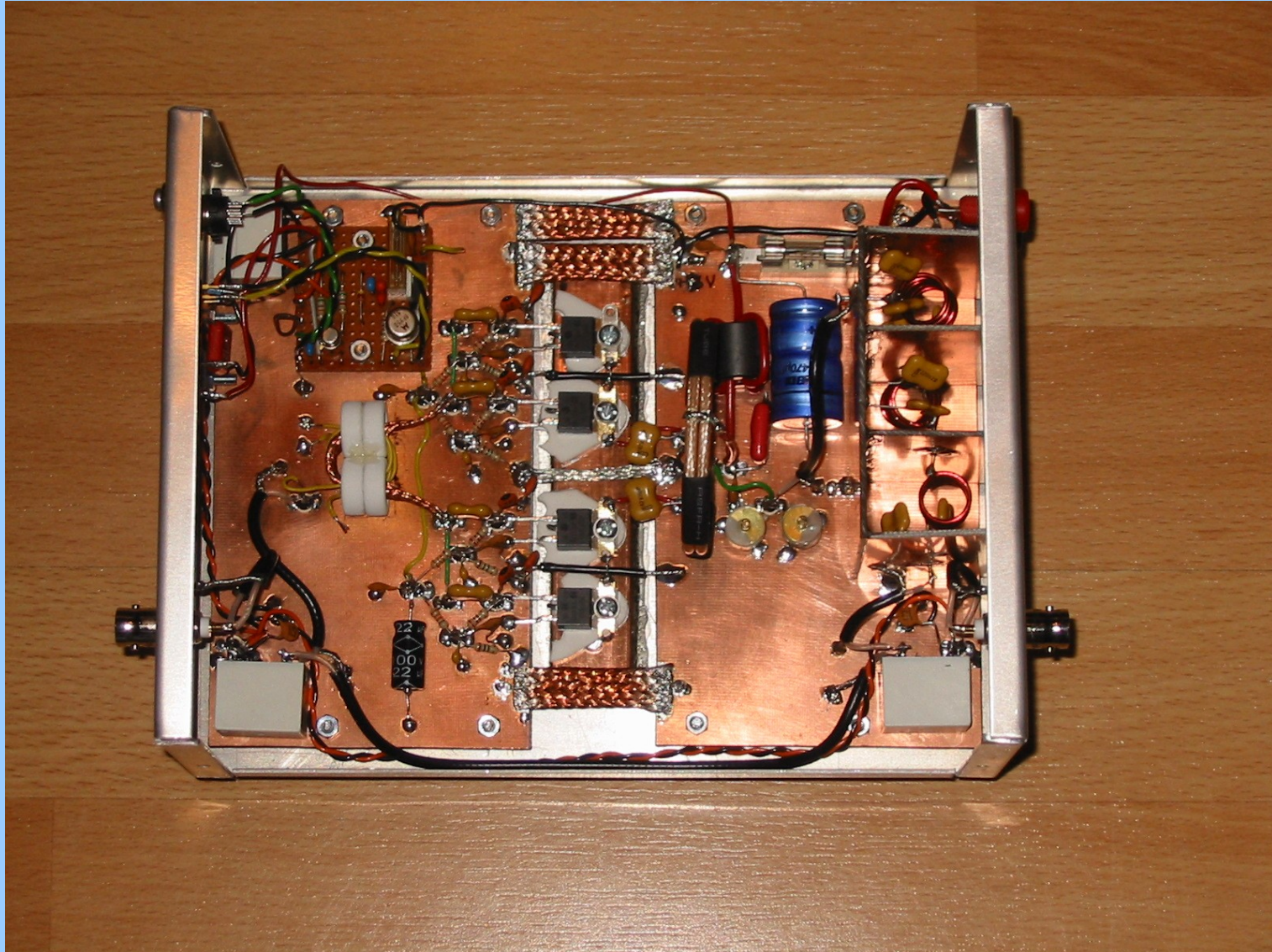
- Basic design from OZ1PIF
- IRF510 \times 4
- 36V supply
- 50W out
- 5W drive



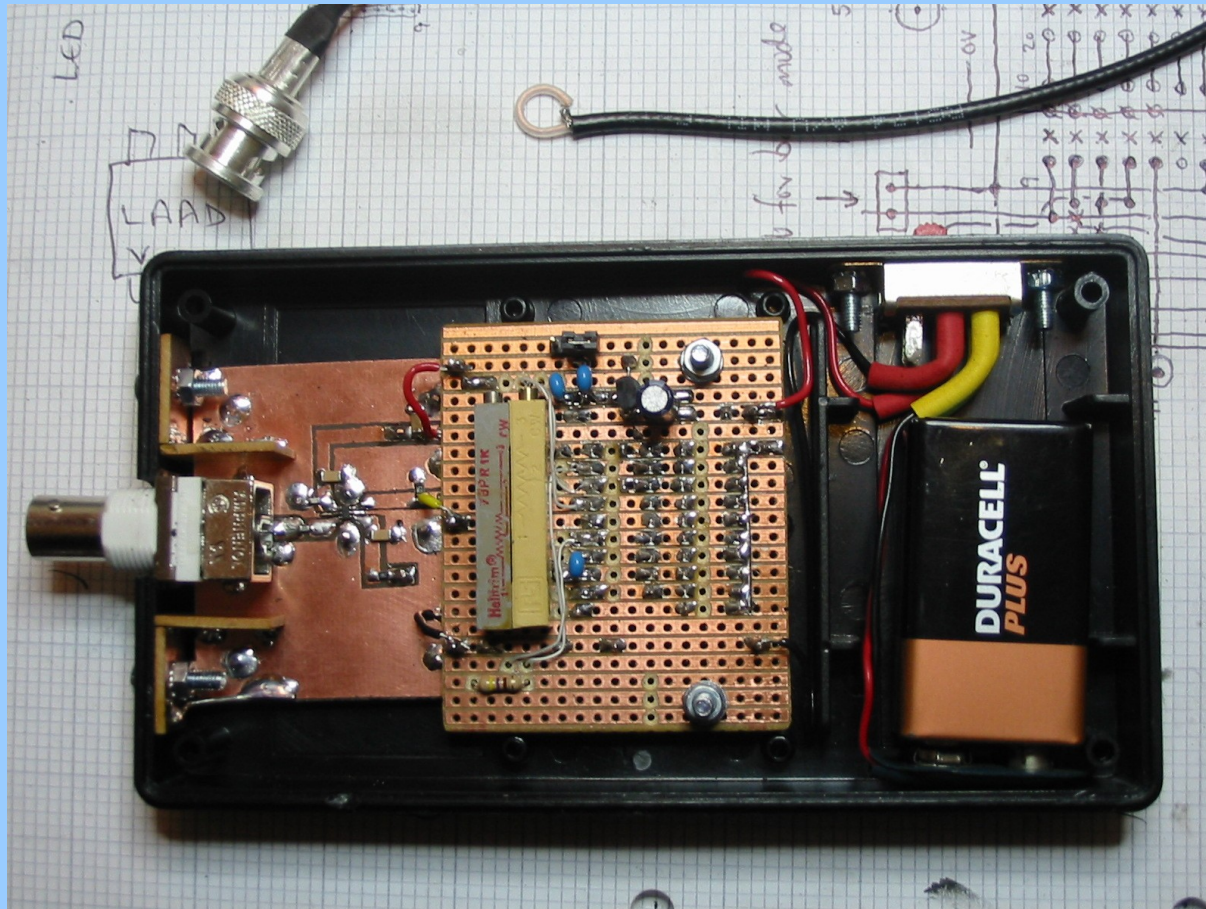
6m linear amplifier



6m linear amplifier



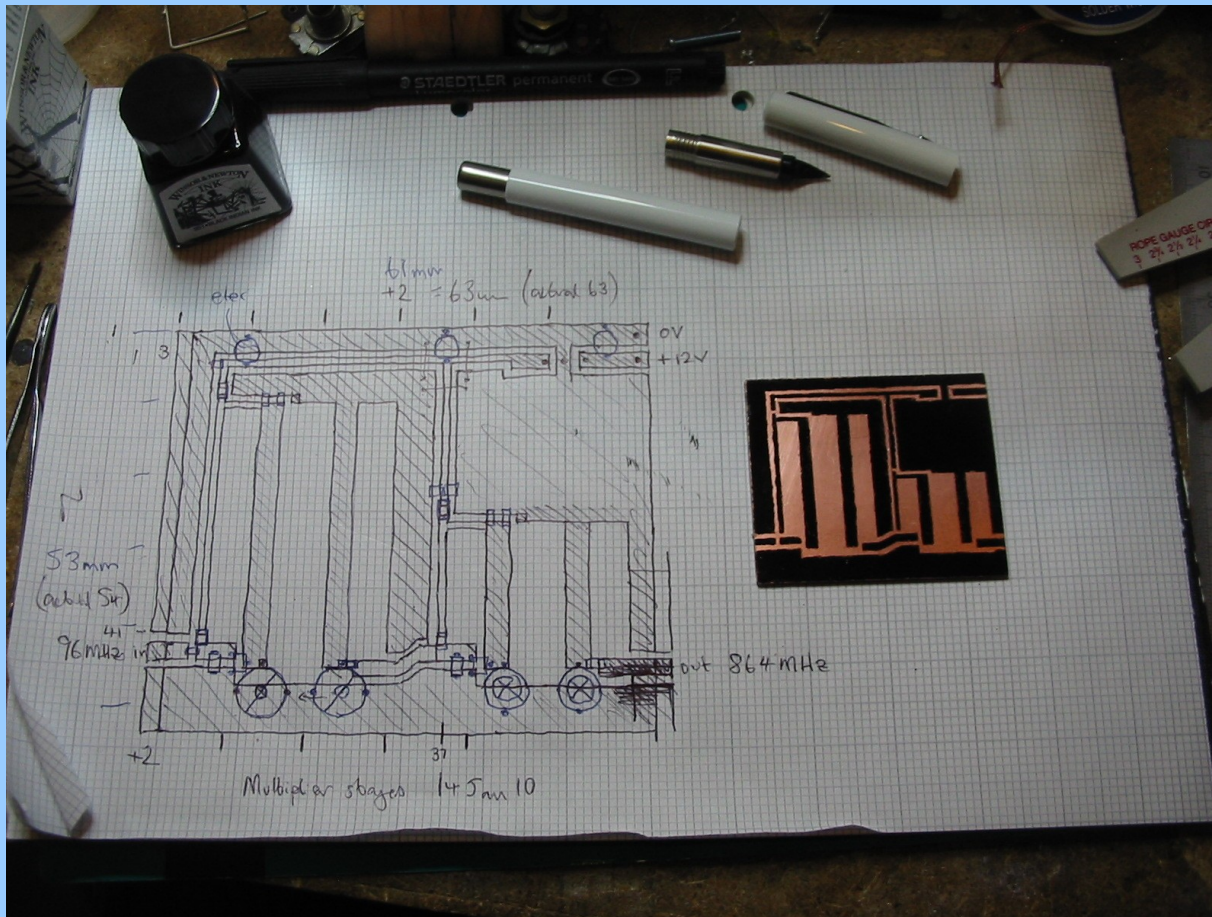
At last – above 1GHz!



Microwave RF sniffer

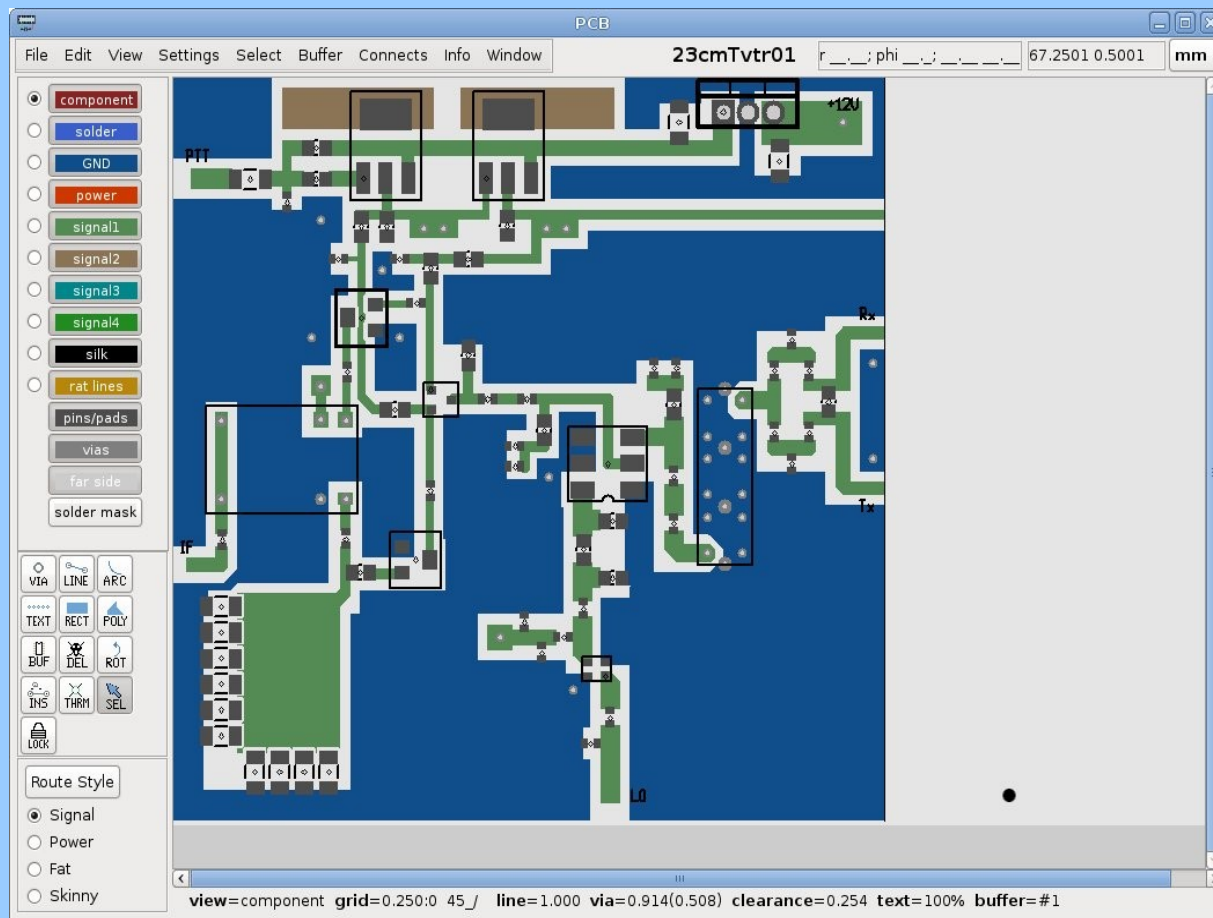
Diversion - PCBs

- Hand drawn layout
- Indian ink resist



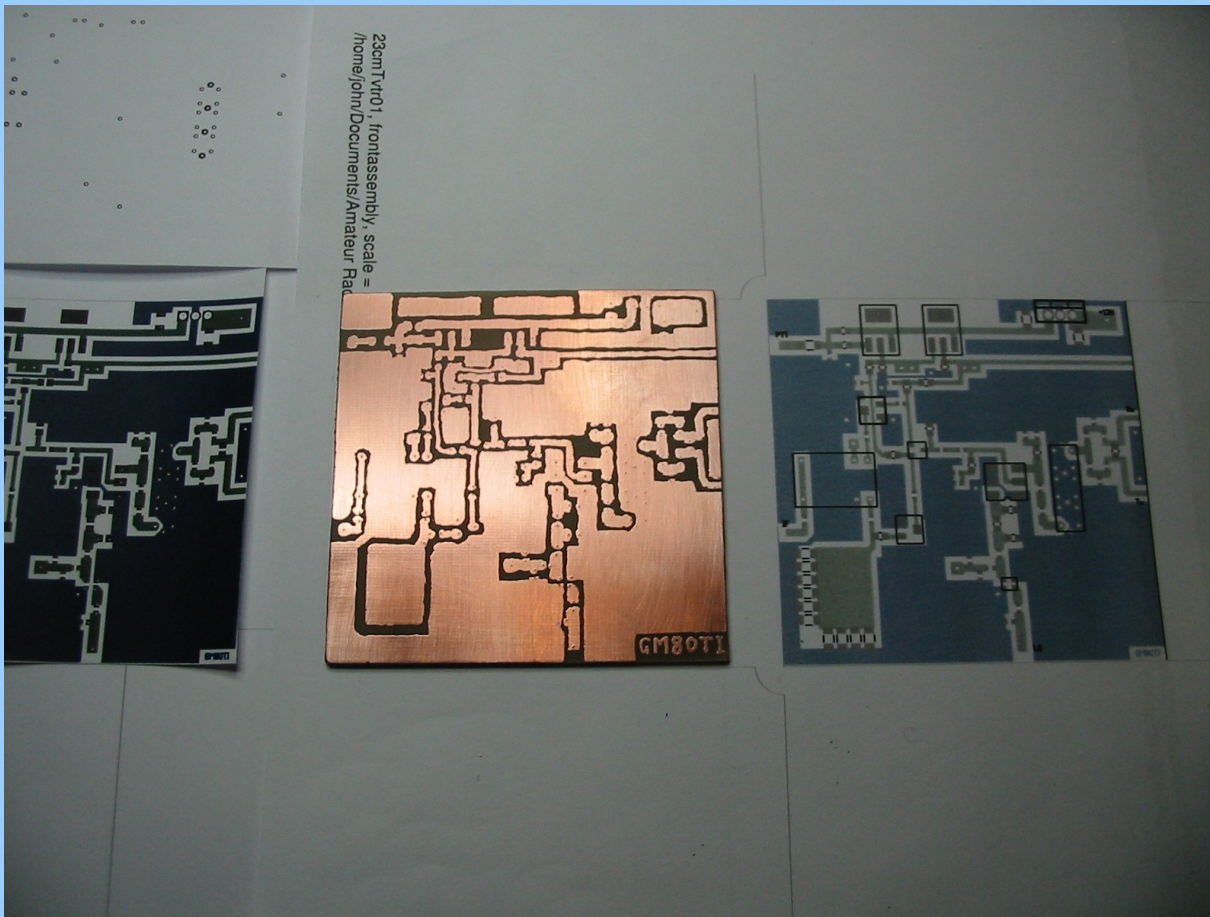
Diversion - PCBs

- “PCB” design tool
- Open source

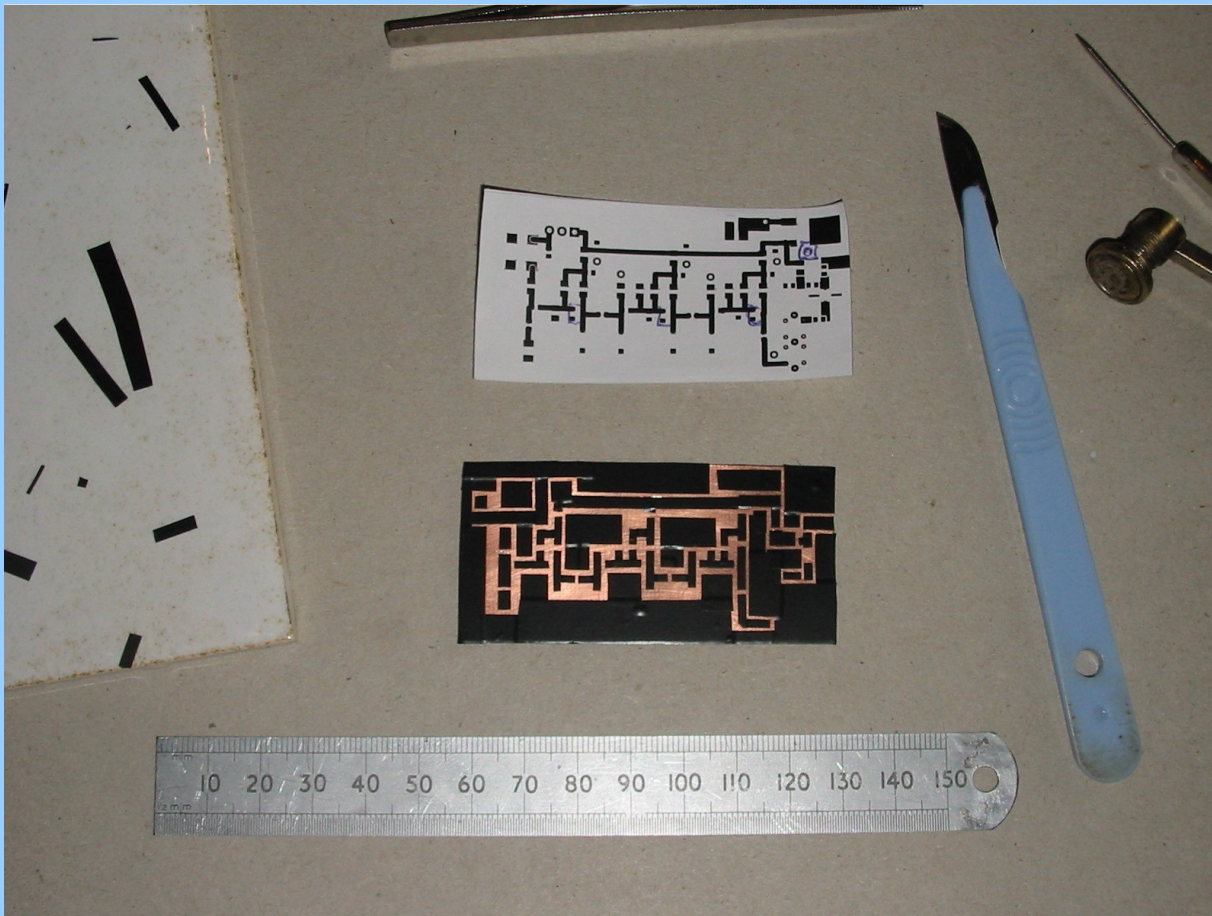


Diversion - PCBs

- Enamel paint resist
- Wire wool to remove

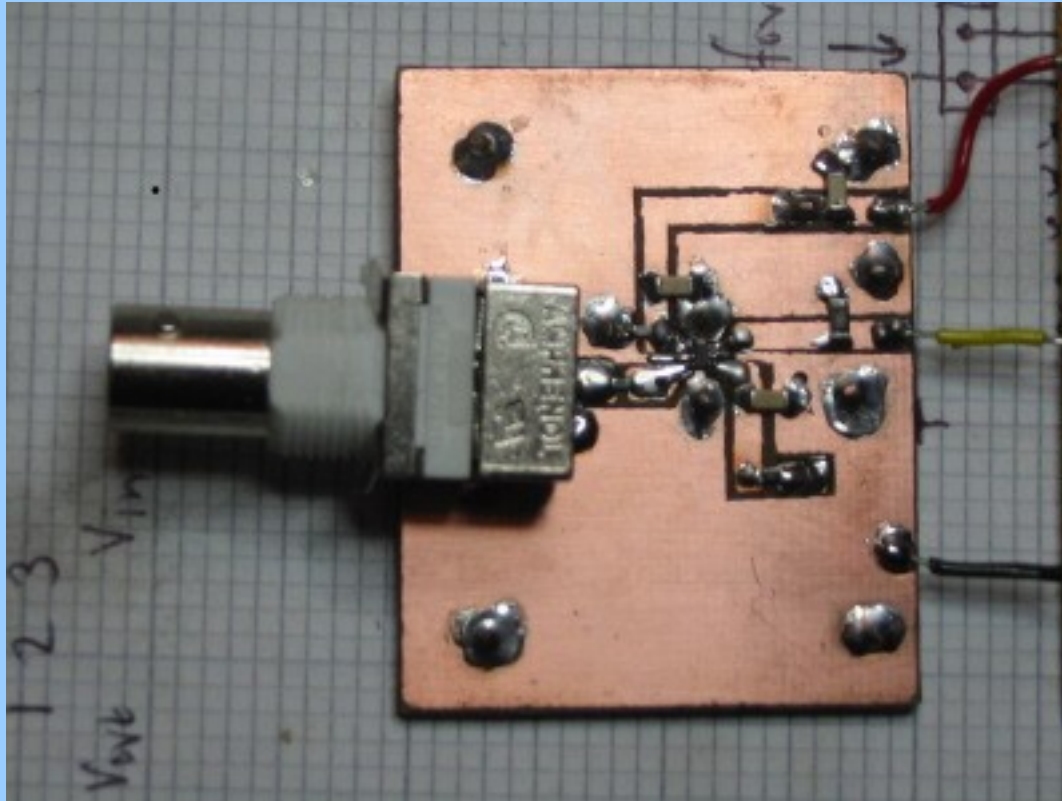


Diversion - PCBs

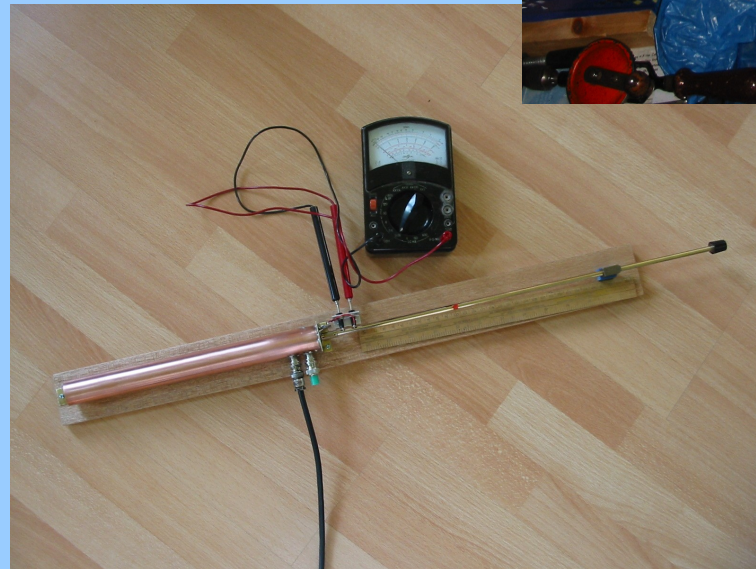
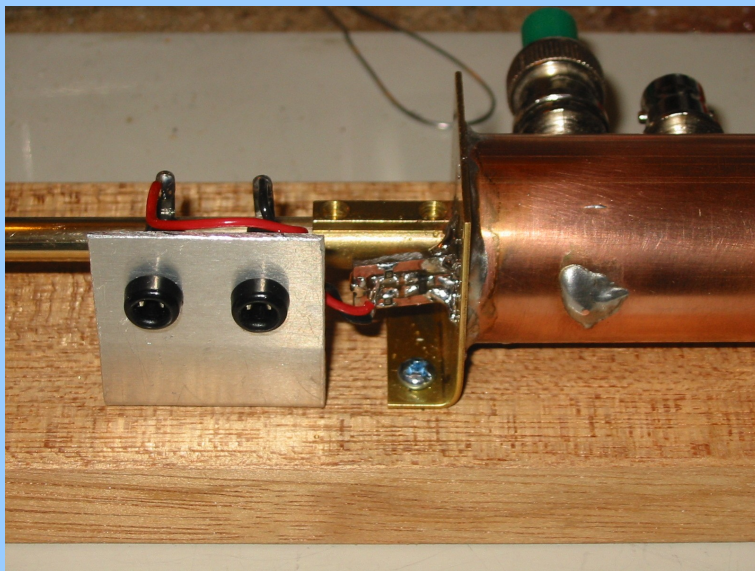


- “PCB” design
- Vinyl tape
- Cut on ceramic tile
- Clean edges
- Peels off

Surface mount components



Microwave wavemeter



23cm Transverter



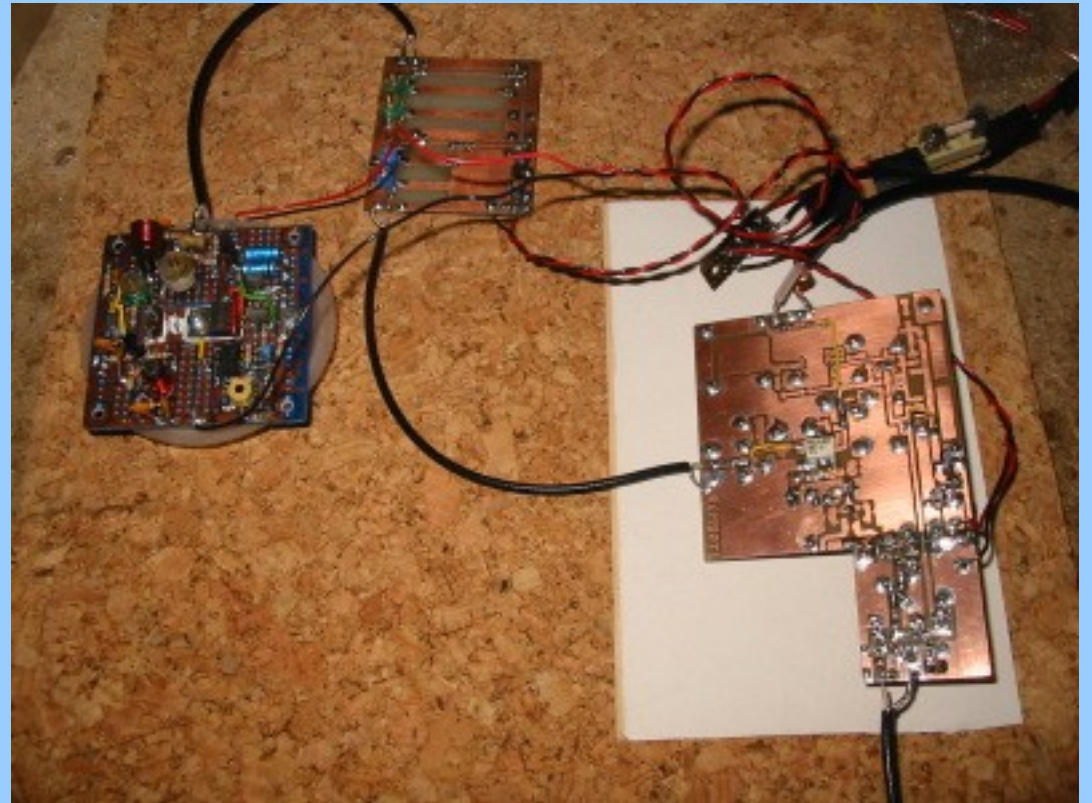
OCXO – oven controlled crystal oscillator

23cm Transverter



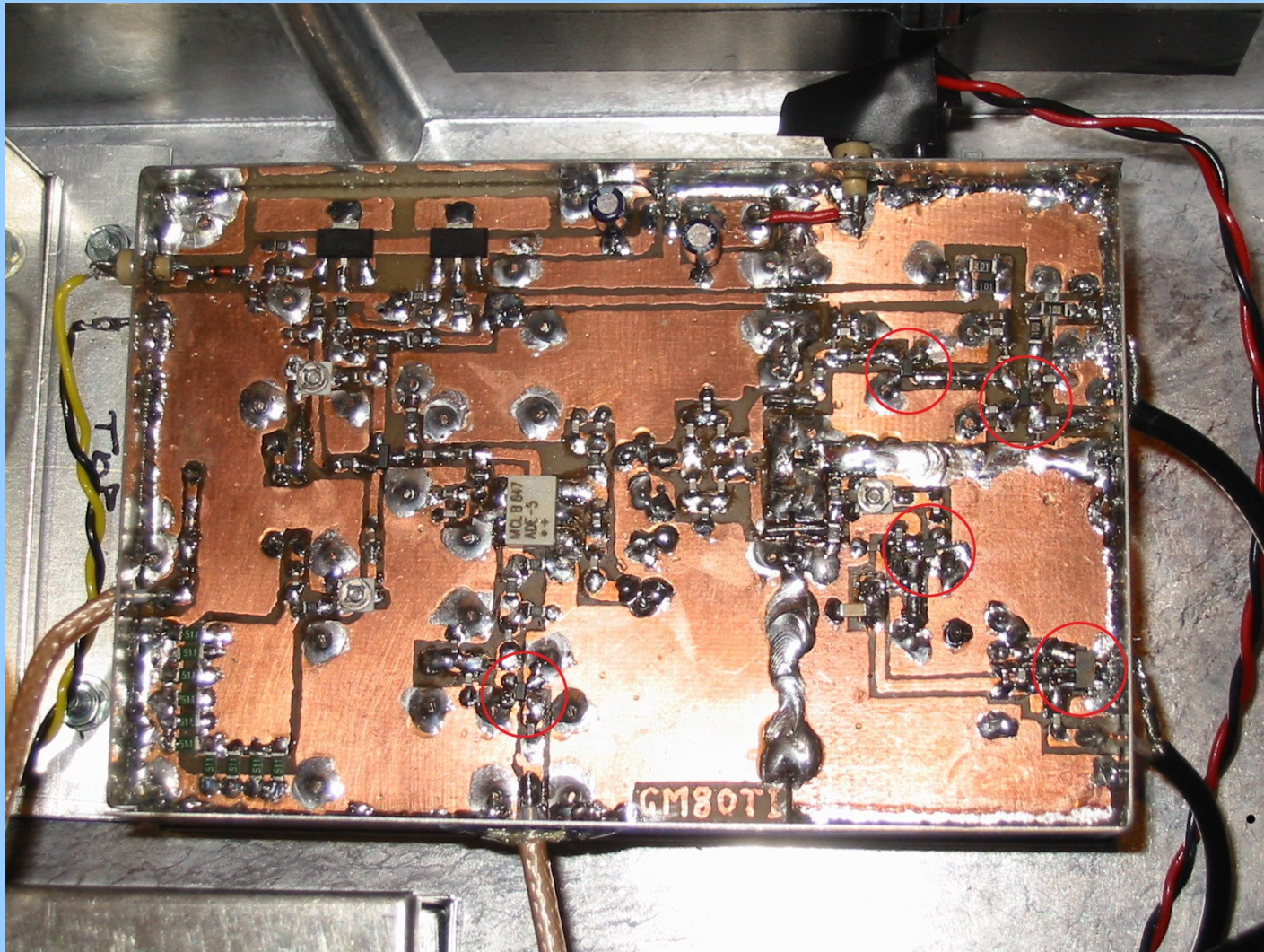
First local oscillator multiplier

23cm Transverter



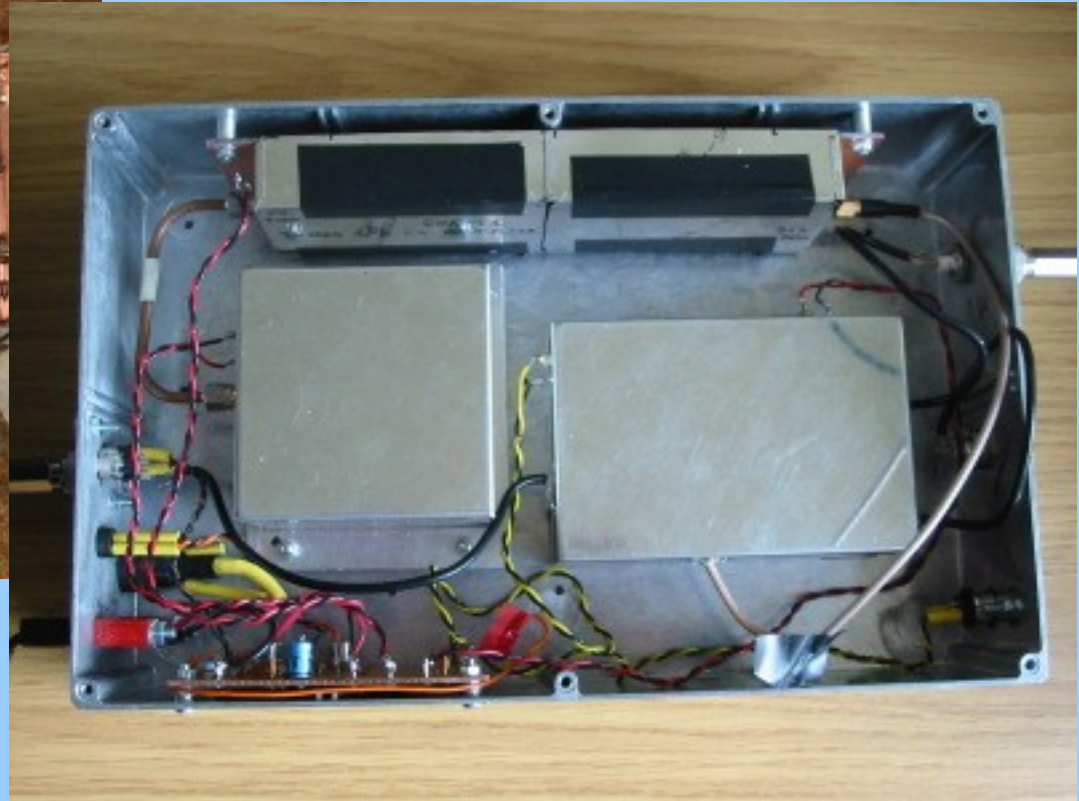
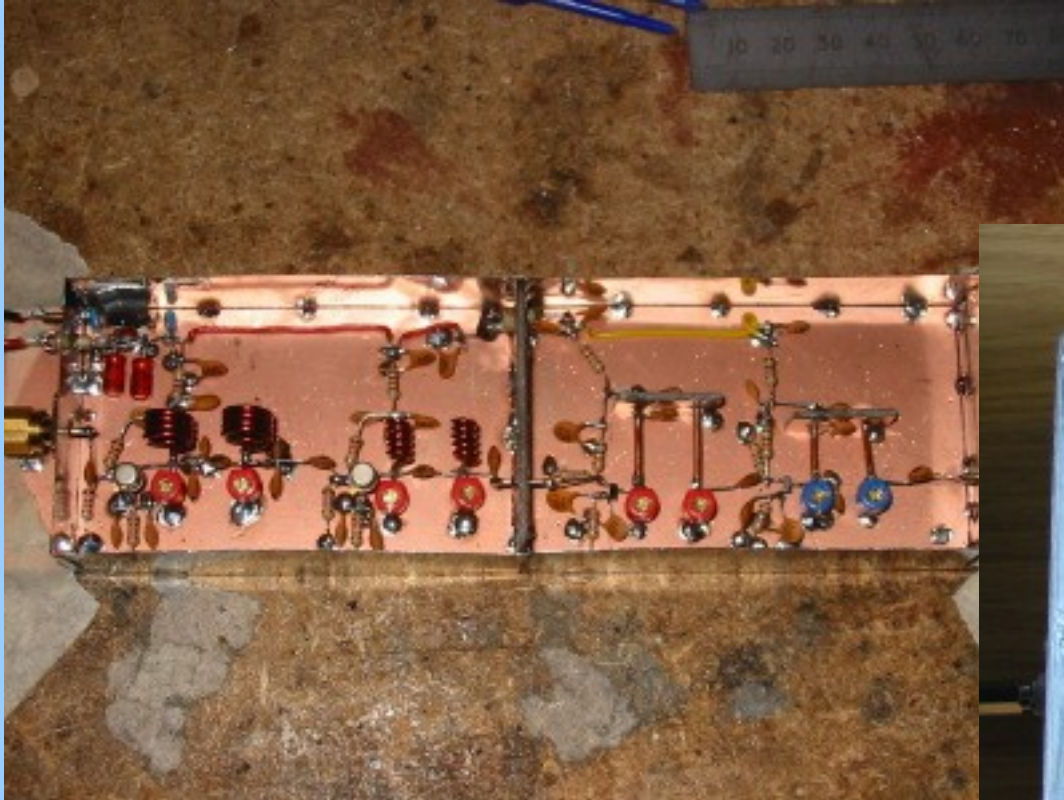
Receiver tests with GB3EDN

23cm Transverter



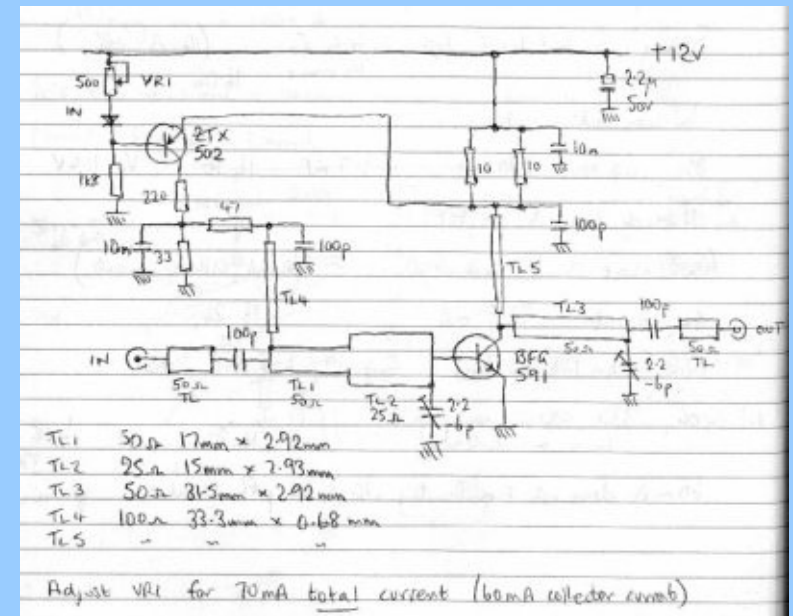
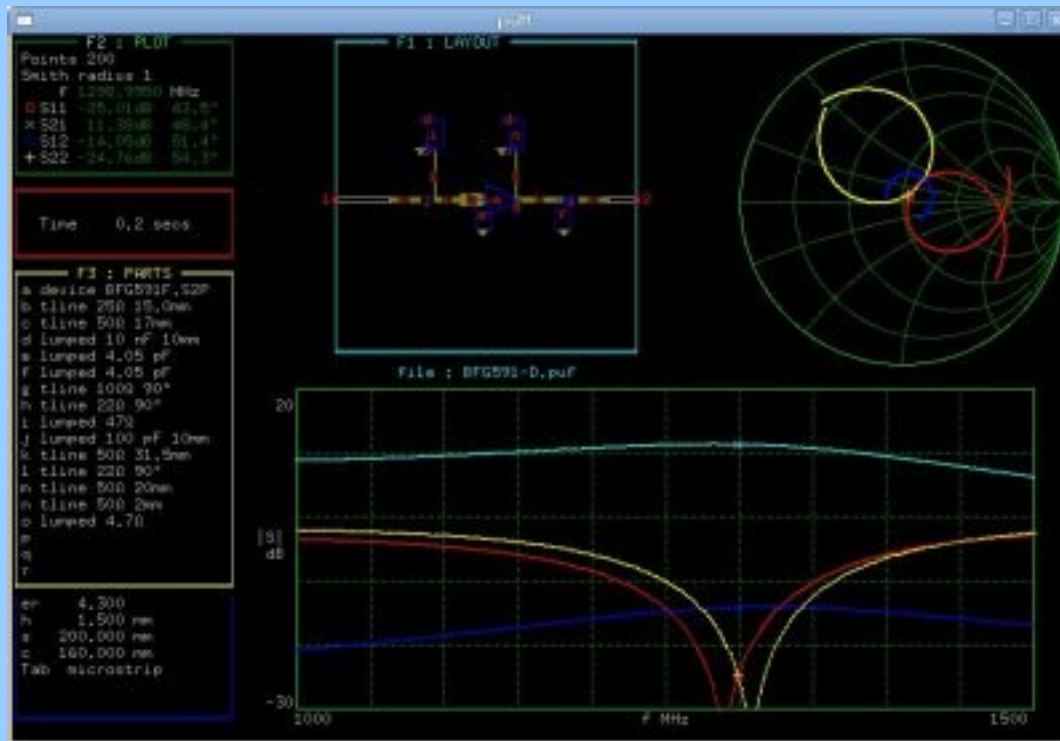
Completed board in tinplate box

23cm Transverter



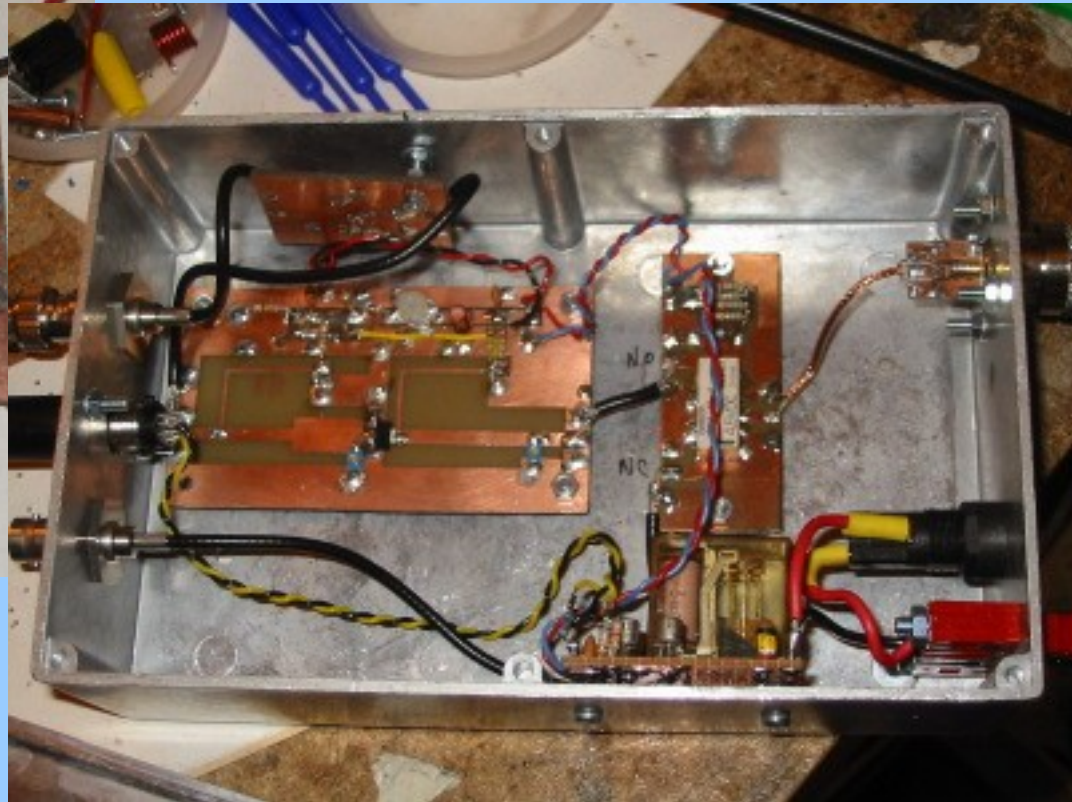
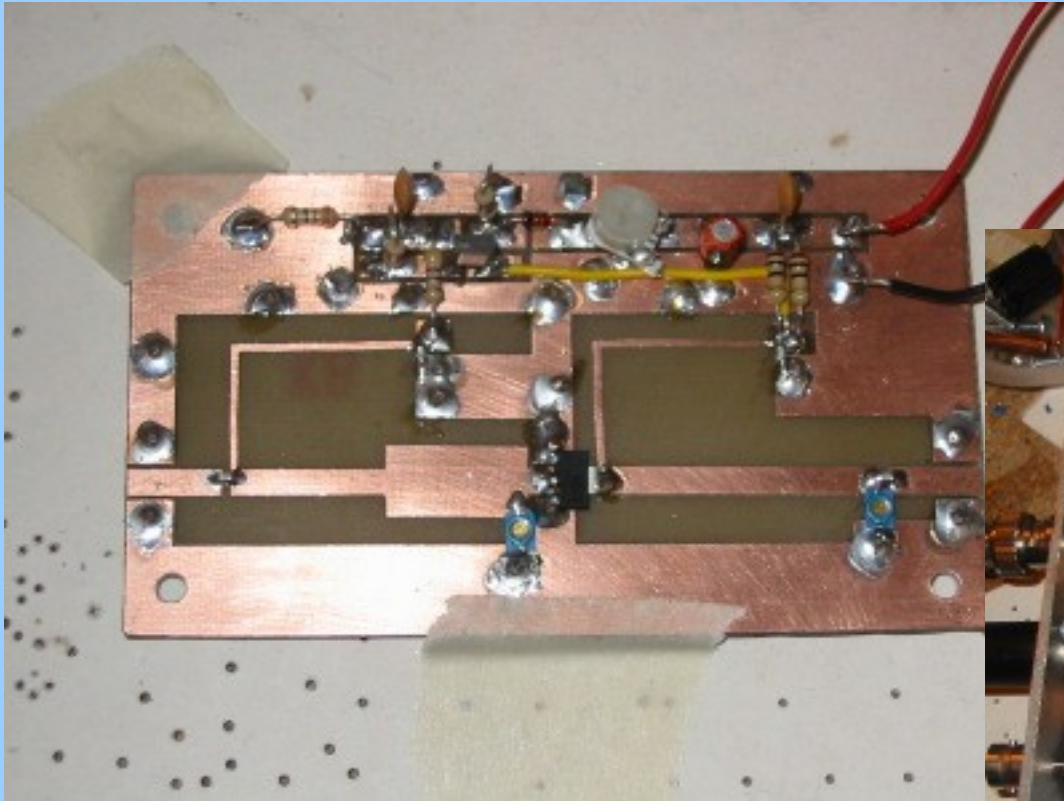
New local oscillator multiplier chain

23cm Transverter



“Puff” design of driver amplifier

23cm Transverter



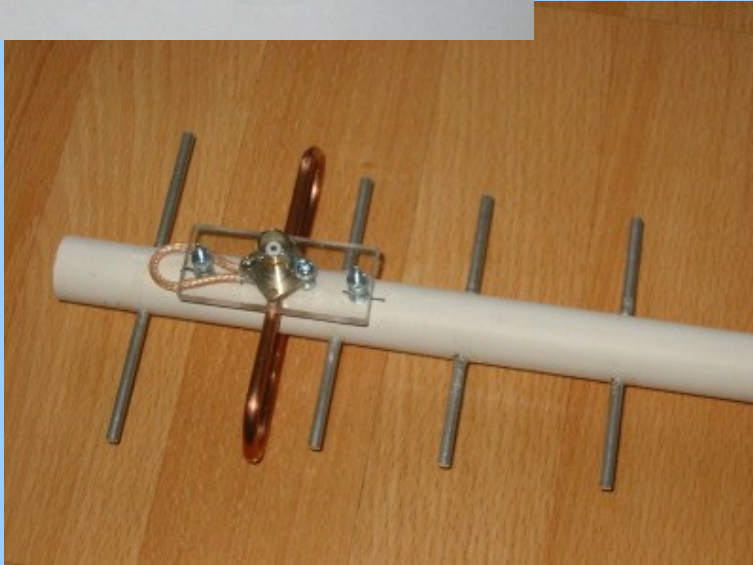
Driver amplifier and relays

Antennas for 23cm



- Bi-quad loop
- DL5NEG design
- Flat “twin and earth” wire

Antennas for 23cm



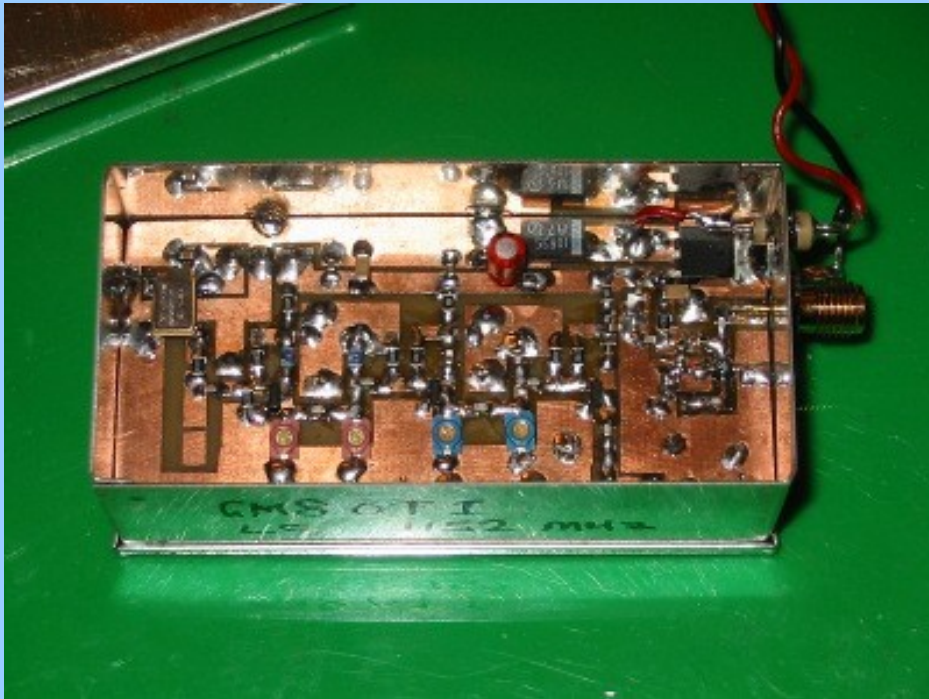
- 15-ele Yagi
- DL6WU design
- Solid copper folded dipole
- Co-ax balun
- Aluminium rod directors and reflector
- Plastic water pipe support

Antennas for 23cm



- 15-ele Yagi
- DL6WU design
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Current project



- More compact 23cm transverter
- 2m IF
- Cheap crystal oscillator block
- Simpler circuit
- PA in the same box?

Where next?

- 'photo' PCBs
- 23cm – PA, integrated into transverter
- 23cm – 2m portable dish antenna
- 13cm – transverter with PLL / synthesised LO
- Phasing method SSB driver
- Hardware for a software defined radio (probably not /P)