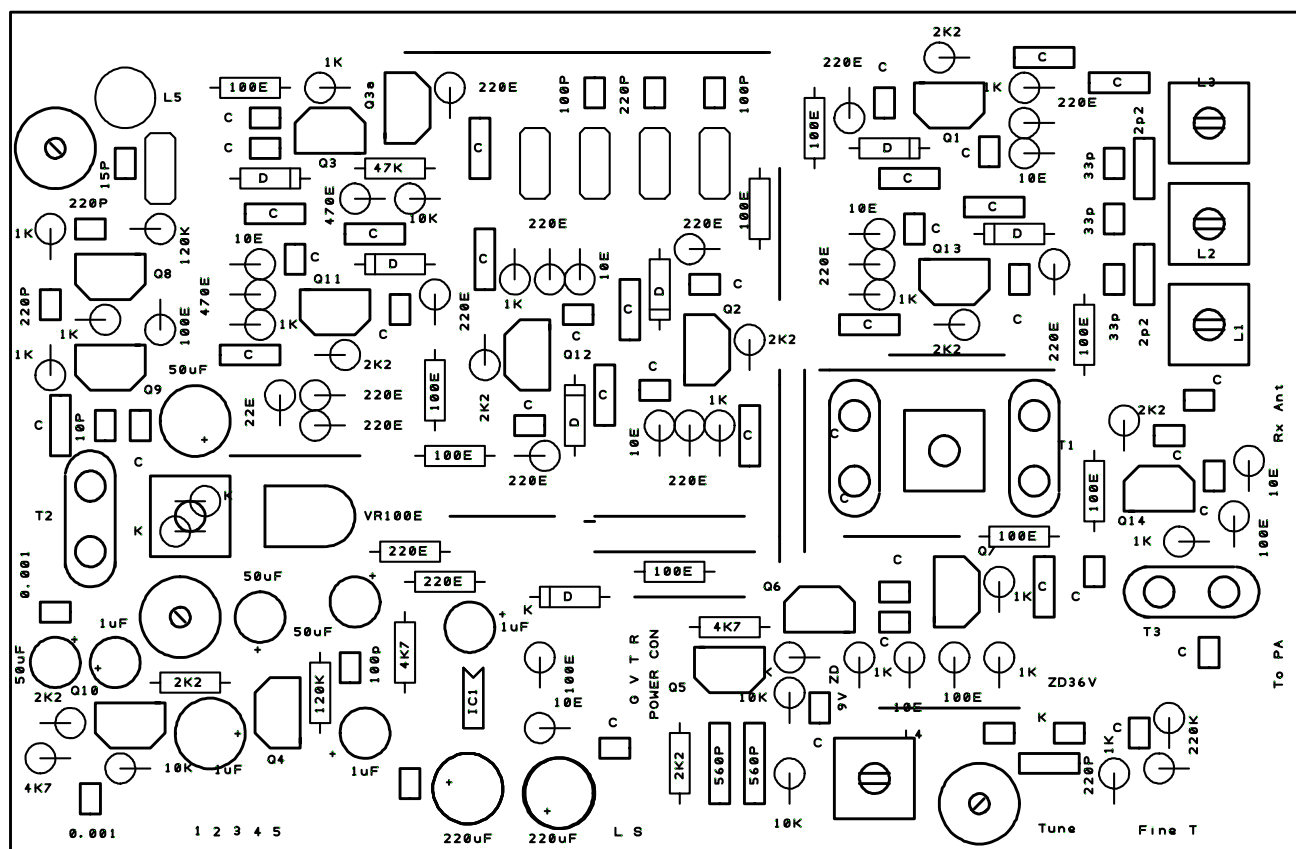


BTX 20

[c] Ashhar Farhan, 2004.

Schematics to follow with Ver 3 PCB layout by VU3WJM



Wed Jul 22, 2009
8:36 pm

This Article Posted As In Yahoo Bitx Forum: 15 Watts with Bitx

The following threads can be found on this topic in the Yahoo Bitx Forum.

7429 To #7454

Of late, I have been doing some self study of network analysis. This my application of some recent insights I have had ...

The IRF510 has very high input capacitance. This makes it very difficult to drive properly given it's reactive input. I have managed to (experts please correct me) null it out by simply adding a pi network in between the driver and the IRF510's gate.

In order to make use of the higher drive now available to the IRF510, I increased the output network to a trifilar winding and added a 220 pf in the drain to suppress higher frequency grass.

it is posted as

http://f1.grp.yahooofs.com/v1/cClnSlFoOoGXyz95aQQIIVabOoJo0JrObaWrOkeL2YHI3Z62c5O\ -NY-lbgke3yxQ3N-AiSoYeLKJkJ_031GXvA/15watts.GIF (15 watts amplifier under files).

Design notes:

1. the pi network has only 100 pf on the drain side, this is so that the internal capacitance of 130 pf adds up to effectively 230 pf.
2. as brute power is not required to get through the reactive input, the driver output is now directly taken from the collector.
3. the 220 pf in the drain is important. this prevents higher frequency currents in the output.

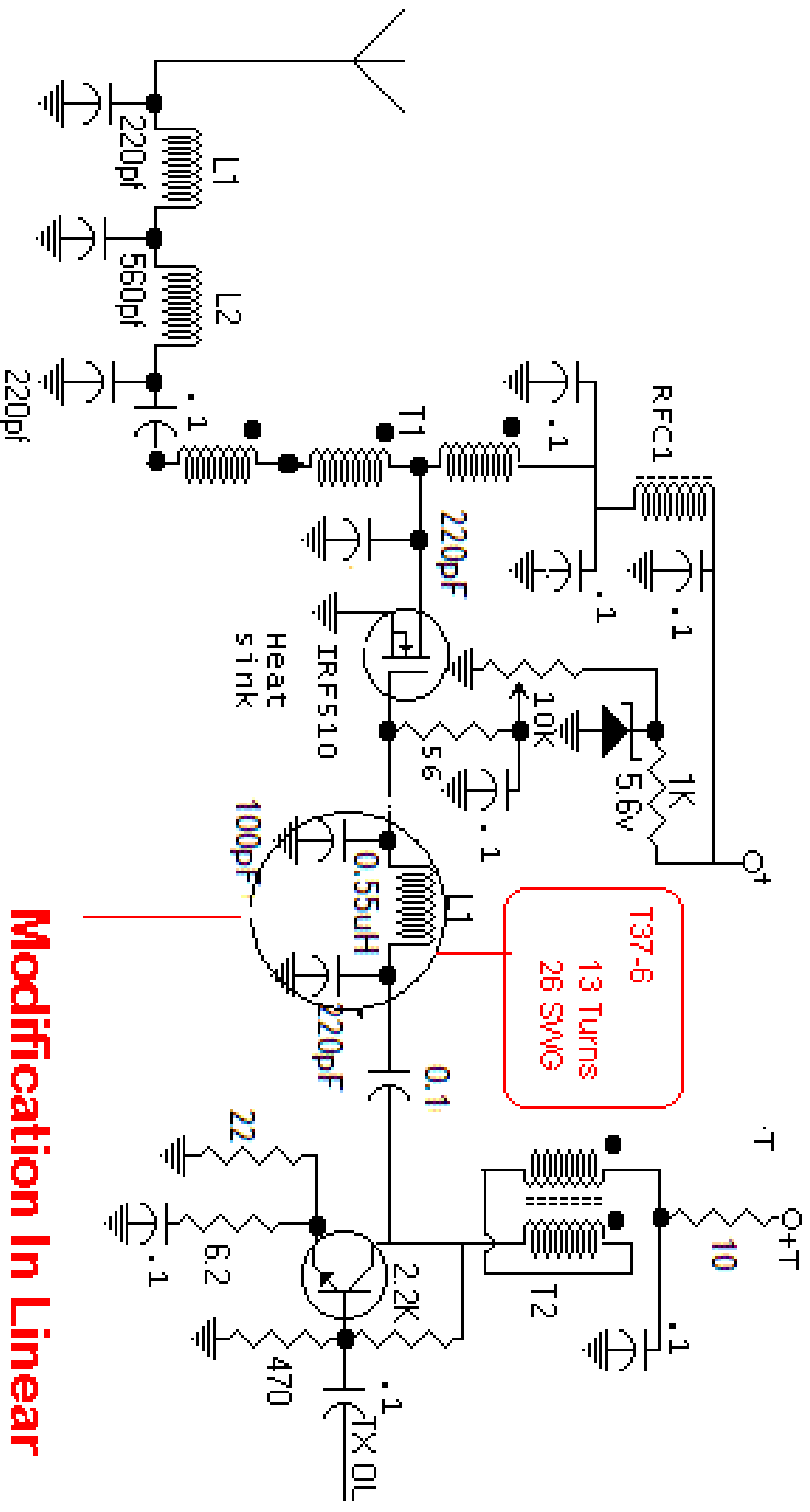
Now, i measure between 40-45 volts peak to peak on the dummy load, this points to almost 16 watts of output power. I must confess, my power supply is not 12 volts, but 15 volts. However, the output is significantly higher.

Will someone with an ugly build try out this mod and report back the results?

- farhan

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Modification In Linear

Adjustments For S.Meter For Bitx

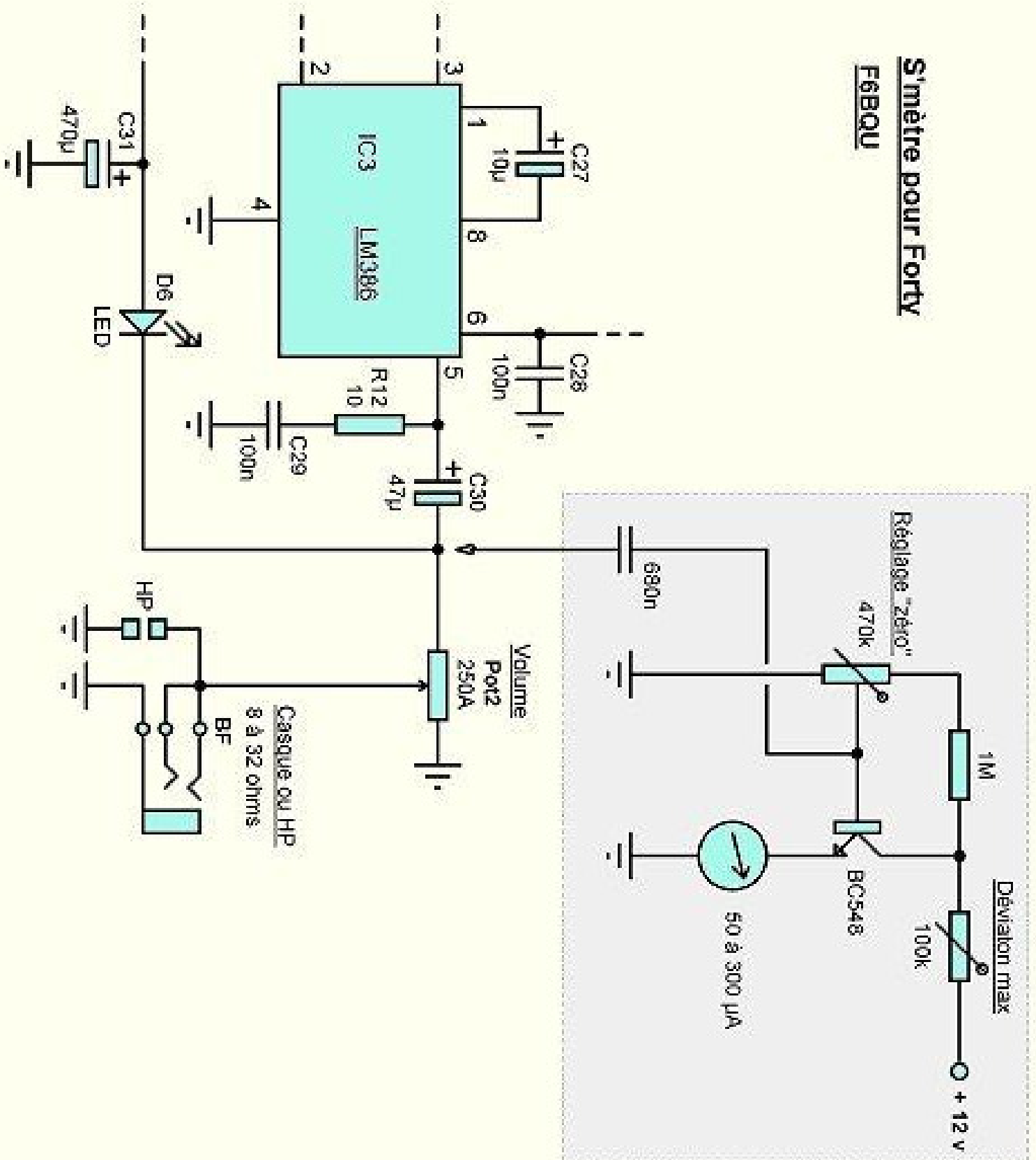
First Solder all components to PCB

1. Connect Potentiometer 470K to Audio in Bitx Volume Control. 10K
2. Disconnect Antenna to regulate the adjustment for Potentiometer 470K, to Zero for

least deviation of the needle of the meter. It needs to regulate to the position where the needle extends as soon as to move itself

Finally connect antenna and adjust 100K Pot to S9 on a strong signal of 50uv to the antenna entrance.

S'mètre pour Forty F6BAU

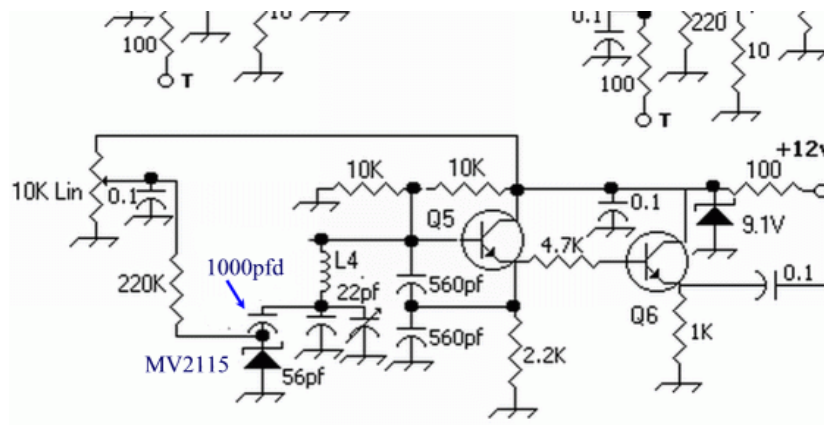


I made a modification to my Bitx vfo circuit. I had a 10 turn, 10k pot and a turns counting dial so I converted the original circuit into a varactor tuned circuit. I removed the 365pfd variable cap, replaced the 10pfd capacitor with a 1000pfd, replaced the zener diode with a MV2115 varactor diode, and removed 9 turns from L4 inductor. You may have to adjust the # of turns according to what you have the wire wound on. If you assemble the circuit without changing the inductor, you can keep removing turns until it is the correct frequency. The 1000pfd capacitor will vary the tuning spread. Decreasing its value will decrease the tuning range.

Just a warning, I haven't had mine on the air yet but this appears to work well. It is a minor circuitry change so if you don't like it, you can go back to the original design easily. Another advantage is not needing a variable capacitor and 1 less hole in the front panel.

Leonard

KC0WOX



CAPACITORS DISK

0.001uf	2
0.1uf	44
100 pf	4
10pf	2
15pf	1
2.2pf	2
220pf	5
560pf	3
39pf	3

ELECTROLYTIC CAPACITORS

1uf 25v	4
47uf 25v	4
220uf 25v	2
2200uf 50v	2
10uf 25v	1
Main Tune FM Gang	1
Trimmers 22 PF	3

RESISTANCE 1/4 WATT

6.2 ohms	1
10 ohms	9
22 ohms	3
56 ohms	1
100 ohms	13
220 ohms	14
470 ohms	3
47 K	1
10 K	4
120 K	2
1 K	14
220 K	1
2k2	11
4K7	3
LINEAR 10 K	2
Preset 100E	1
Preset 10K	1

XTAL FILTER SET 10 MHZ	1
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TRANSISTORS

2N3904	14
IRF510	1
2N3866	1
LM317T	1
2SC2570	1

I.C

LM 386N	1
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DIODES

IN4148	13
IN4007	5
ZENER	
36 volts	1
9.1 volts	1
5.6 volts	1
<u>TOROIDS</u>	
T37-6	4
T37-43	7
RFC	
10uH	1
HEATSINKS	3
BAND PASS METAL IF COILS	4 ONE EXTRA
MICROPHONE	1
LOUD SPEAKER 8 OHMS	1
RELAY 12 VOLTS	2
VU METER 250UA	1
<u>COPPER WIRE</u>	
SWG 26	5 MT
SWG 34	5 MT
RF CABLE 50 OHMS	1 MT
TIN WIRE	1 MT
<u>RELIMATE CONNECTORS</u>	
2 PIN	4
5 PIN	1
3 PIN	1
4 PIN	4
S.Meter Kit	1