



## DXpatrol 70Mhz Transverter User Manual

(beta test version)

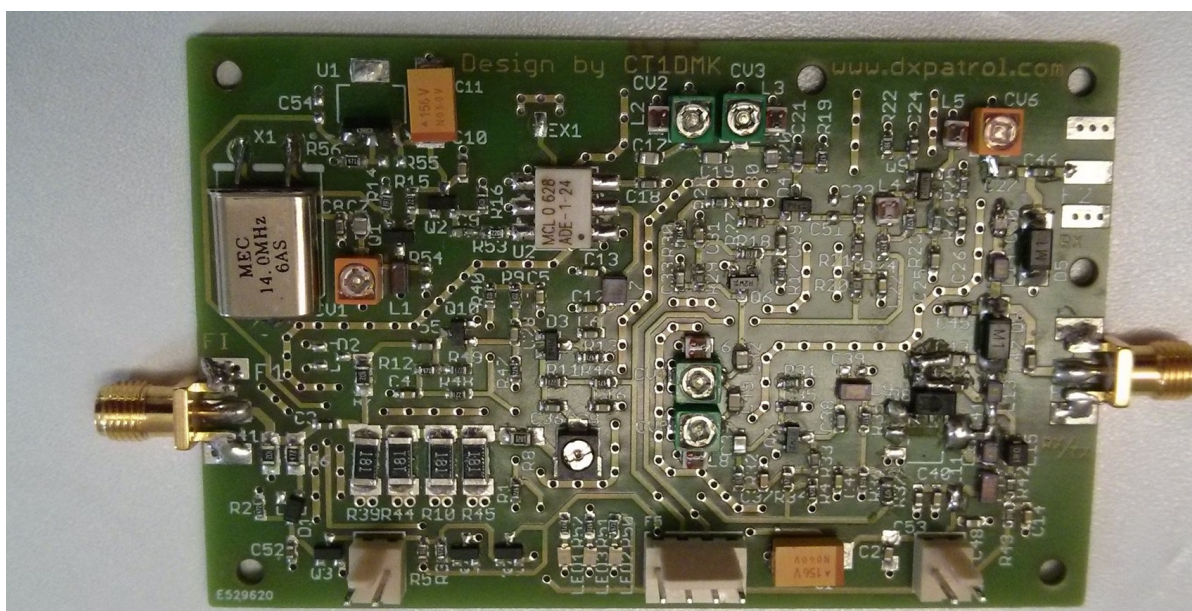


fig1

### Characteristics:

Freq: 50.00MHz - 70, 000Mhz - 144MHz

IF : 28MHz

Power Output: 1W

Power Input: 0,5W to 5W

RX Gain: >10dBs

Harmonic Suppression: 70 dBc

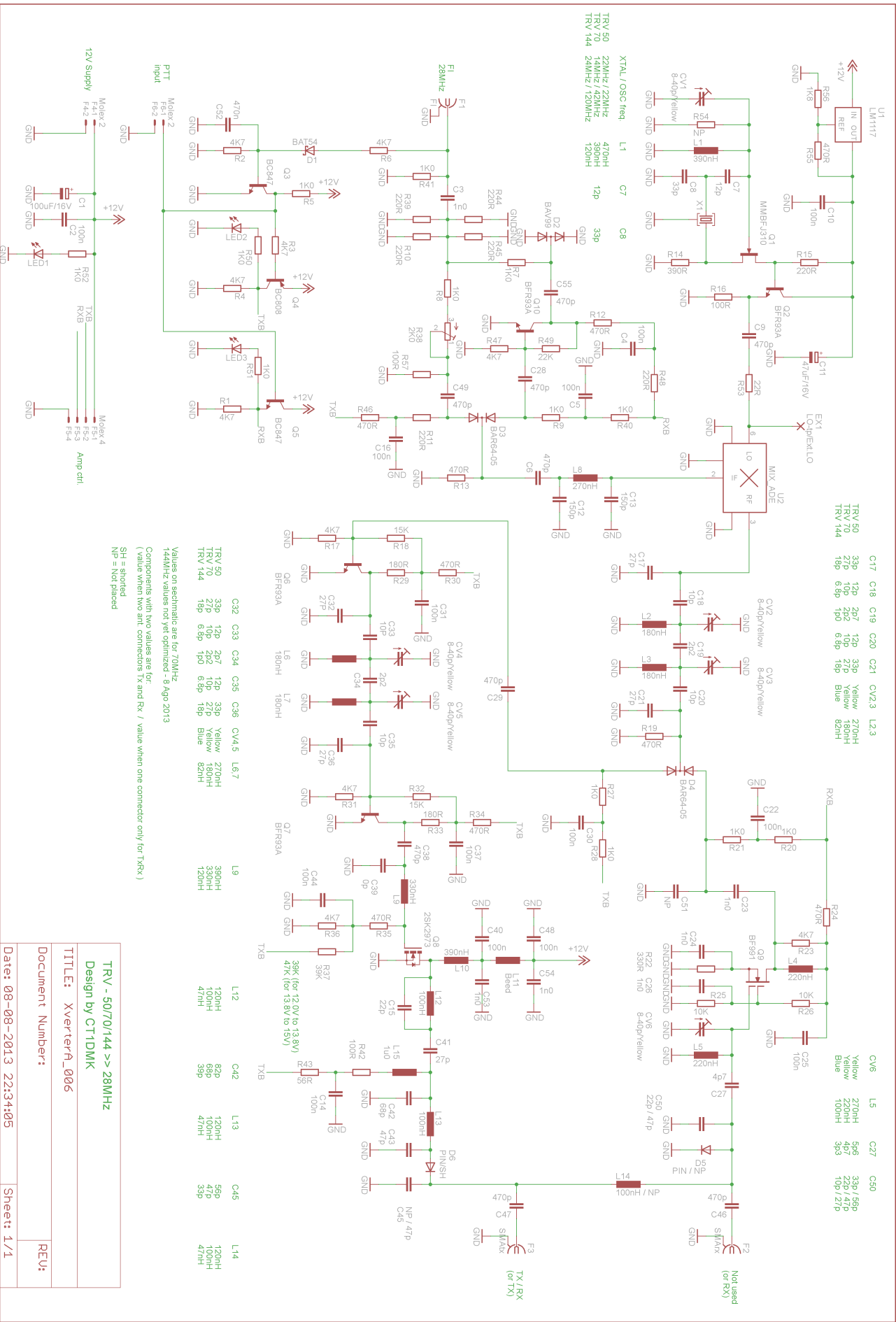


fig 2

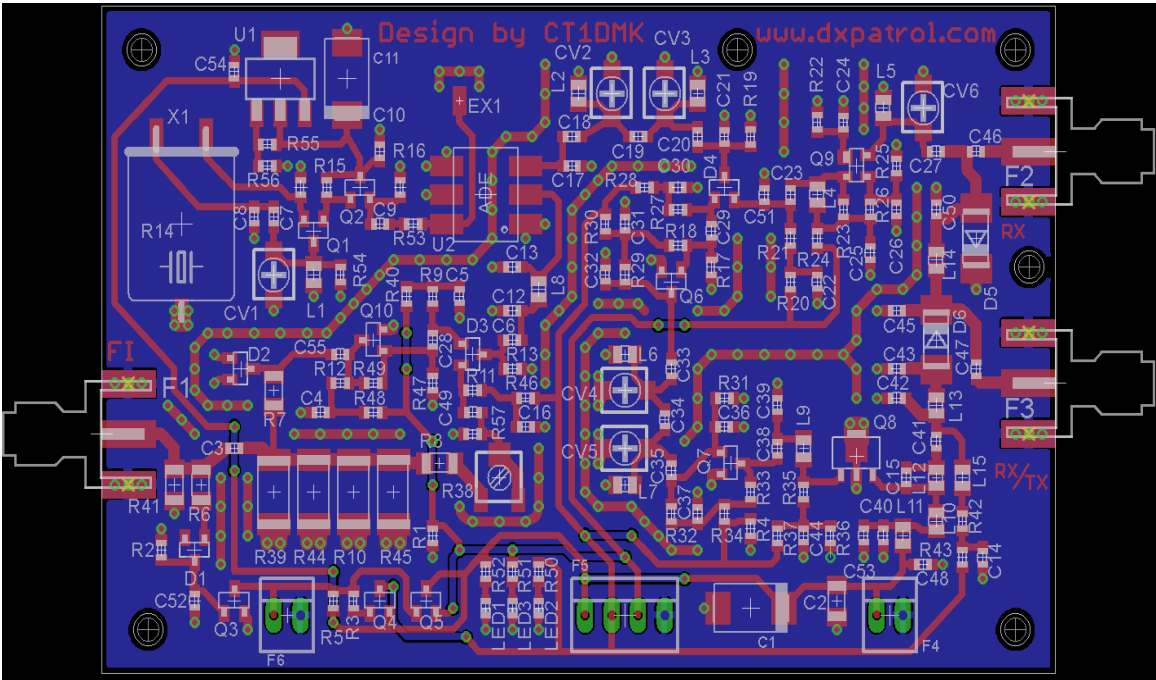


fig 3

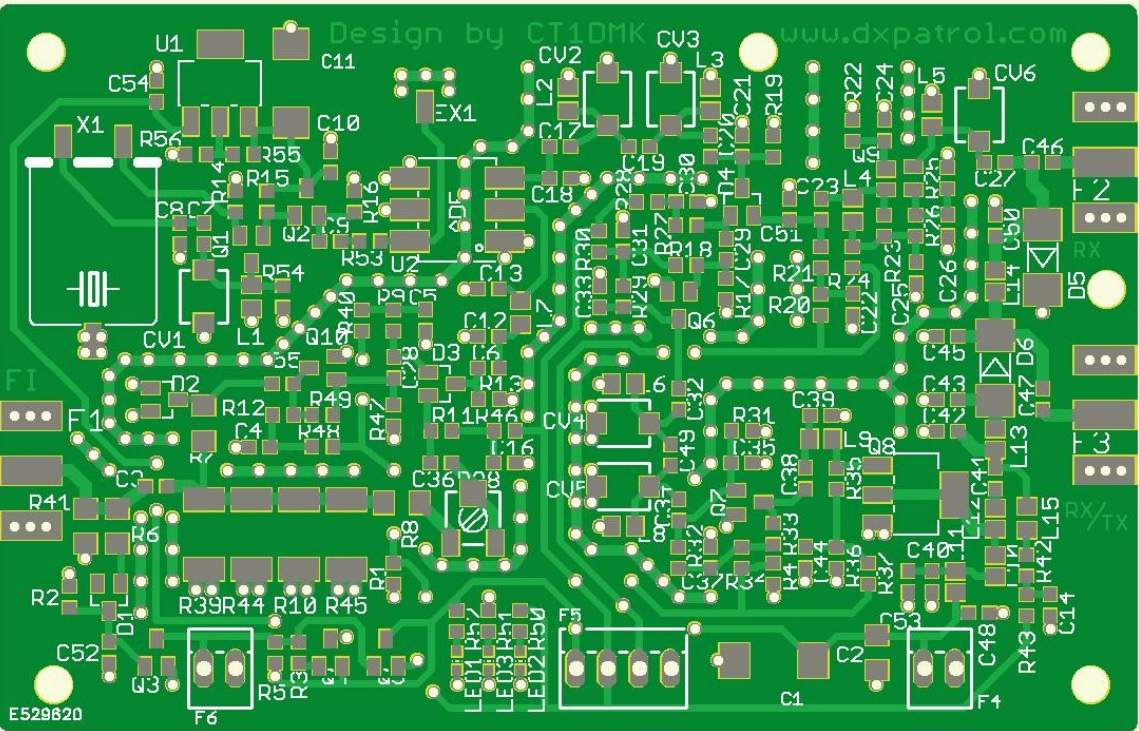


fig4



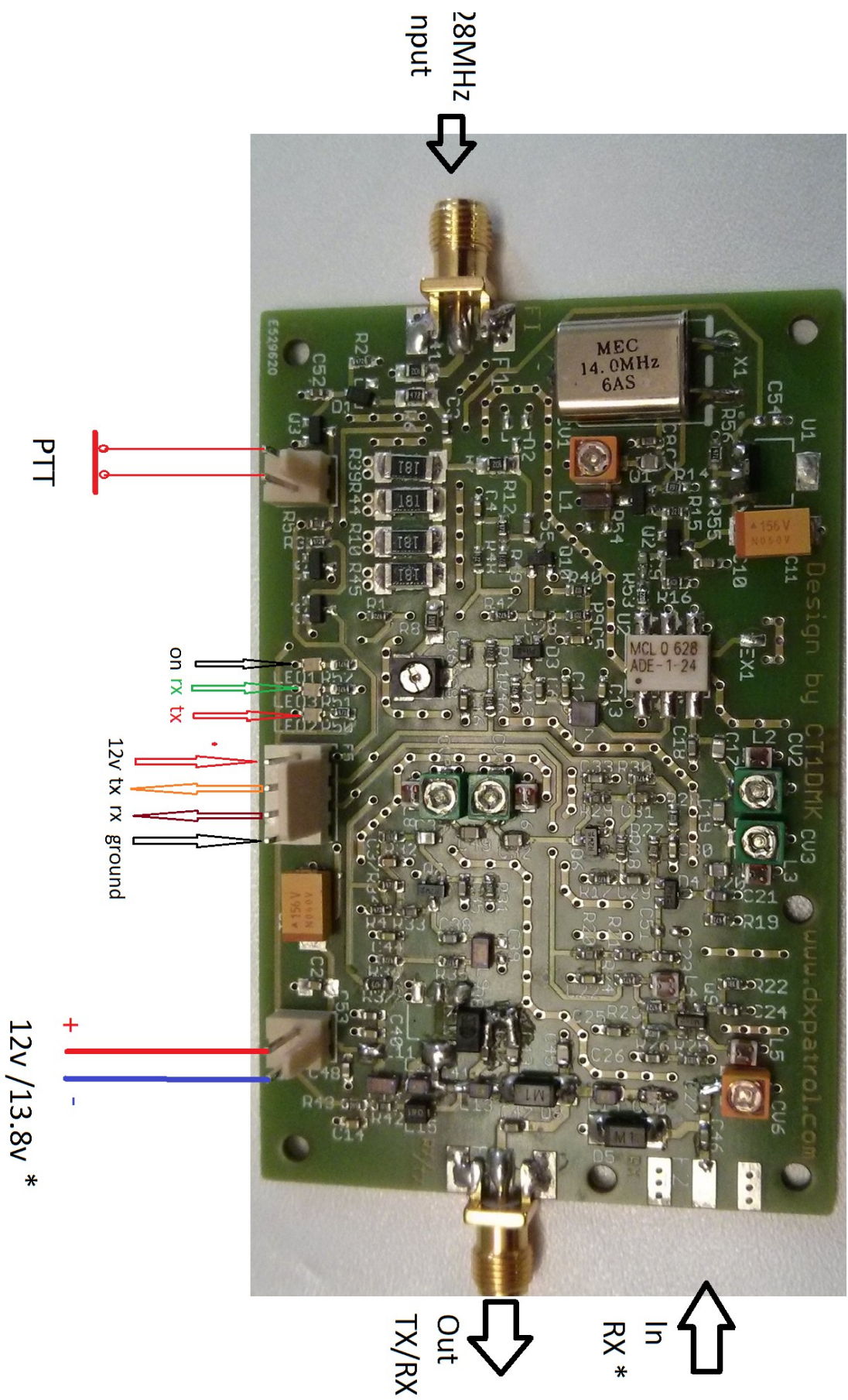


fig 5

# Transverter connections

As you can see on fig5 there are 2 x SMA, F1, F3 antenna connectors and another optional RX antenna F2

F1 = IF antenna, Here you will connect the 28MHz HF radio.

F3 = TX and RX antenna for 70Mhz.

F2 = only RX antenna. This will be used when you are using separated TX and RX cables, so you can drive an external Power Amplifier.

To do so, you will have to remove L14 and D5 and short-circuit the D6

F5= External optional connections. TX/RX and supply

PTT is made by TX-ground on F6 pin 1 or shortening both pins

Despite the transverter having a "Vox" for RF input and will self switch on TX mode when drive is detected.

However Vox not recommended for SSB or CW modes.

Drive can be from 0.5W to 5W.

The transverter has a built in attenuator capable of reducing the drive into a satisfactory level to feed the mixer.

This level can be adjusted on R38 for maximum RF output.

Power Supply is on F4 and need careful with polarity.

When 13.8 are connected the LED1 and LED 3 will light green. On this RX mode the current consumption is about 120mA.

If you have a frequency meter, you can check the Local oscillator frequency on EX1 test-point

Take a note of the frequency on a paper. It is very near 42Mhz.

You will use a 28MHz as IF. Many new radios have the Offset function on menu. You can insert the shift on offset and the radio will display the correct frequency you need.

Ex: LO reading = 42,005 Mhz

HF radio Shift = 28.195MHz will Display 70,200MHz

$$LO+IF= RF$$

If you don't have a frequency meter just go on the band and try listen a local

beacon. Then adjust the IF shift frequency by same steps.

## Receiving

The 70Mhz is a VHF band, so there is not much activity except on summer solstice via sporadic E, occasional tropo or meteor scatter signals

However there's always some beacons on air or some friend to call.

With the transverter ON and the 4m antenna connected you can search the band for local signals.

If you have a signal generator, you can check the reception easy, but if you don't have one, you can try your receptions like this:

Get another HF radio you have on 20m band with a 20m antenna connected.

Reduce the 20m band power to minimum.

Tune on 14,040MHz USB and transmit.( must be different and distant antenna)

You will receive the 5<sup>th</sup> harmonic on 70,200Mhz very clear and strong.

There you have you first 4m signal. The signal might be sharp and hard to tune. That's OK.

## Transmitting

First you need to have a look in the international 70Mhz band-plan and check what is the band you have available in your country.

This can be found in the 4m website [www.70mhz.org](http://www.70mhz.org)

On CW or FM mode, reduce the output power to 1 or 2W on you IF 28MHz radio.

Wen you TX, the transverter will automatic switch to TX and the LED 2 will light.

( on FM you wont need F6 cable to TX)

Adjust R38 to maximum output power.

Transverter will give 1W RF clean on 70MHz.

On max power output the power consumption is about 700mA

With all antennas and cables you can now use full modes, SSB, MGM or FM.

Good luck

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