



DX-Patrol Converter for OSCAR-100

Specifications:

- TX output frequency 2400 MHz
- TX input Frequency 434MHz
- LO Input **Es'hail-2** satellite OSCAR-100 >>2400Mhz<<: +10dBm - 1966Mhz (434MHz)
- TX RF input: (100mW to 5W max) 434 MHz
- TX RF output: 20dBm (100mW)
- Power supply: 10-16V
- Connectors: SMA
- PCB dimension : 80mm/ 65mm
- Voltage : 10V to 16V
- Power consumption 300mA

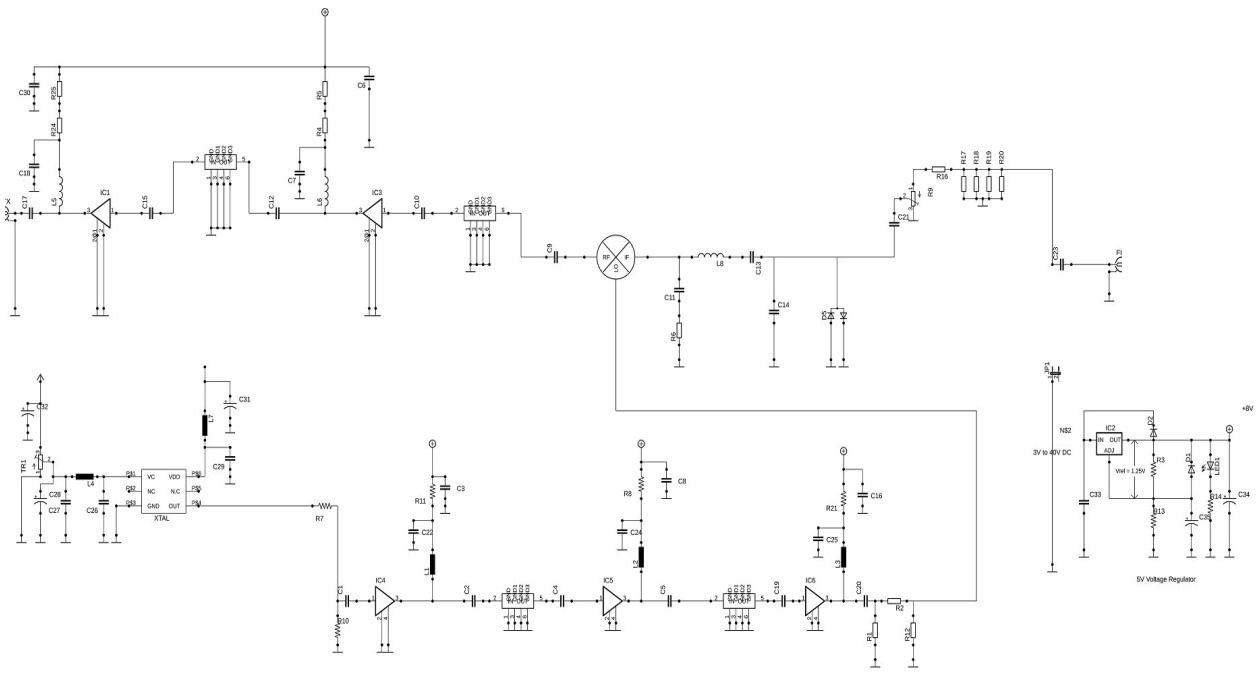


Fig 1 Circuit diagram

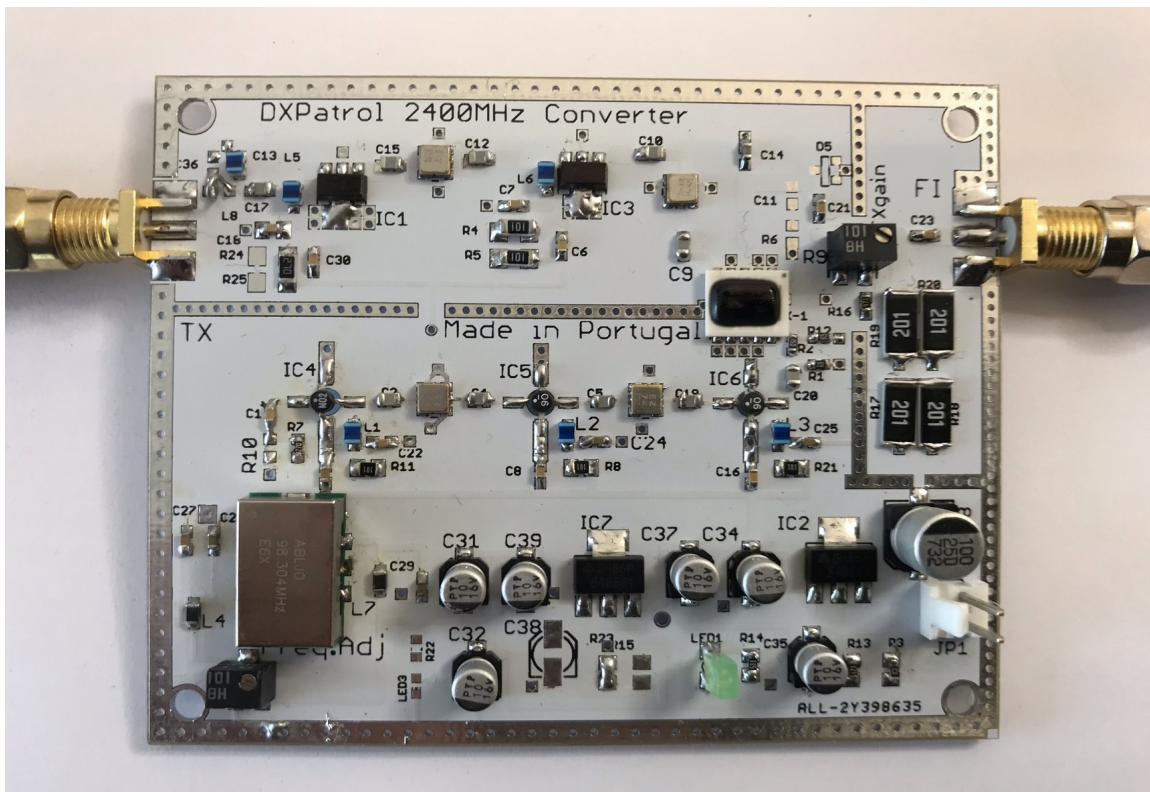


fig 2 PCB assembled and tested

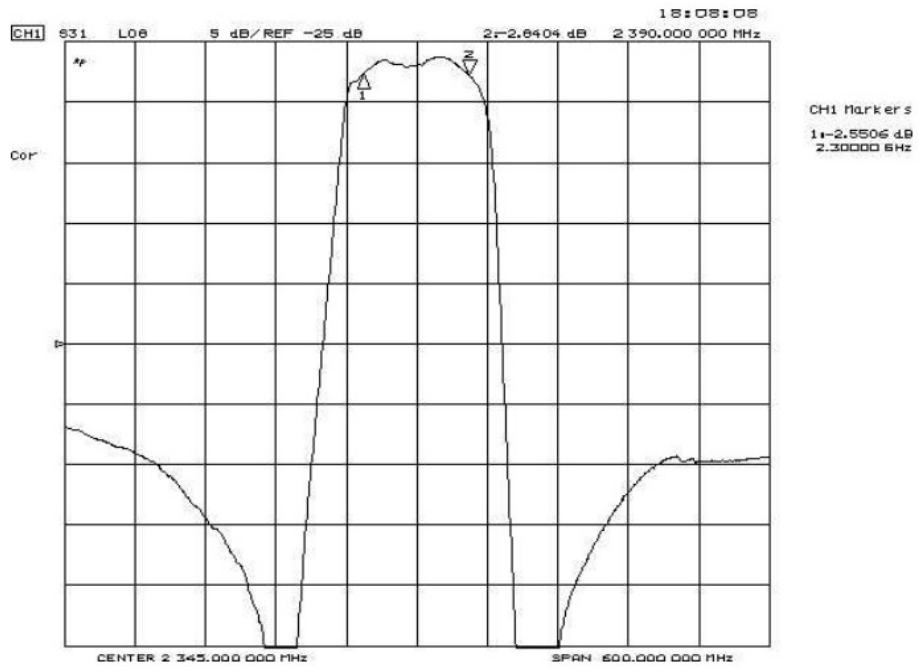


Fig 3 Typical Saw filter cut diagram.

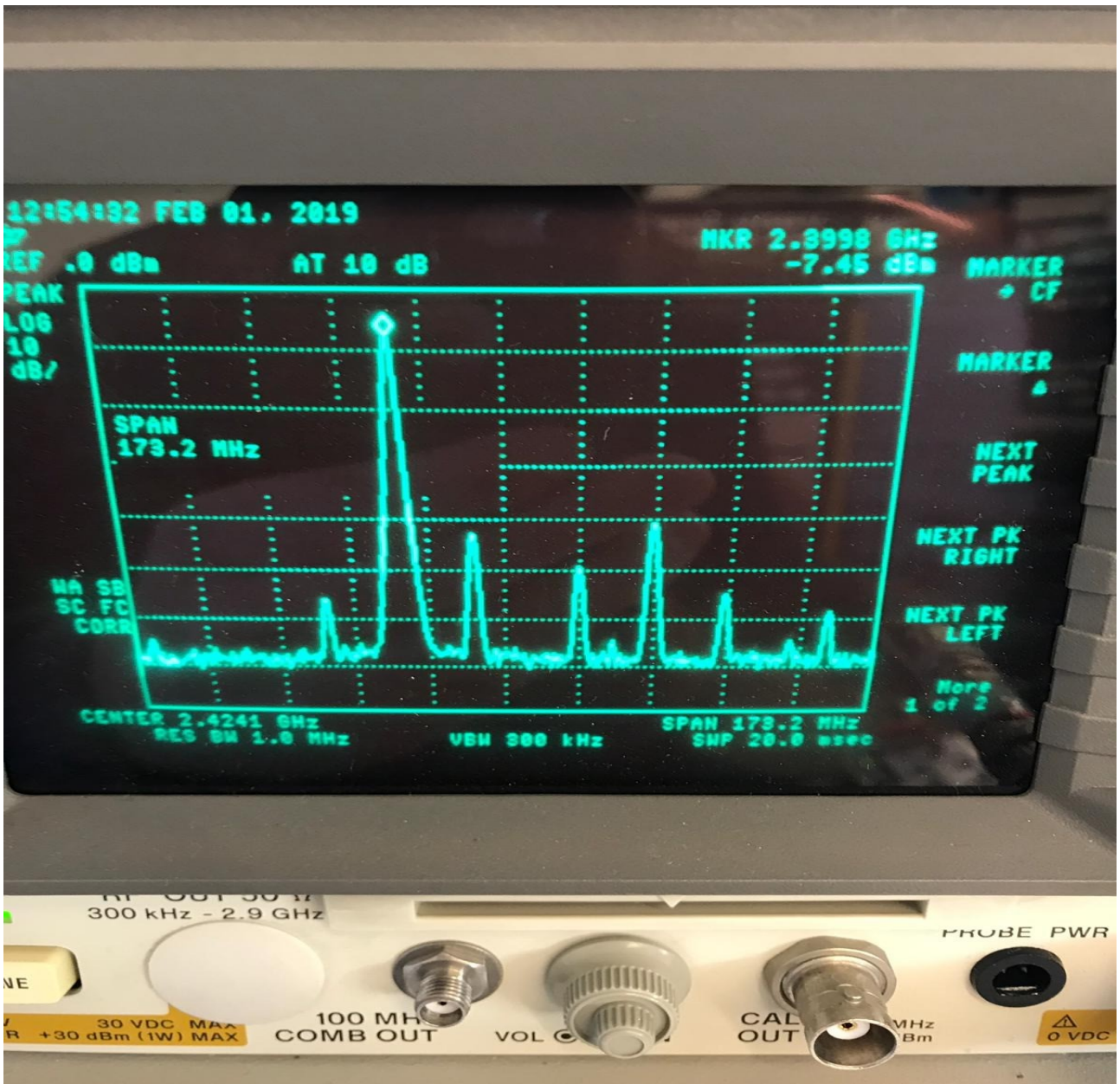


Fig4 TX RF spectrum (spurious emissions better than 30dB below)

This is a complete TX only module linear converter for 2400MHz (13cm band.)

Covers the SSB/CW/FM and Satellite segments of 13cm band

Local Oscillator.

Using a Ultra Low Jitter ABLJO from Abracon Crystal Oscillator.

- High "Q", 3rd Overtone Crystal Technology
- Ultra Low Jitter performance 0.10 ps Max. (12kHz to 20MHz)
- Standard LVCMOS RF Output
- Wide Operating Temperature (-40°C to +85°C) standard
- ± 40 ppm Max. All inclusive Stability (including Aging) over 10-years

The Frequency is multiplied several times and amplified to 7dBm level.

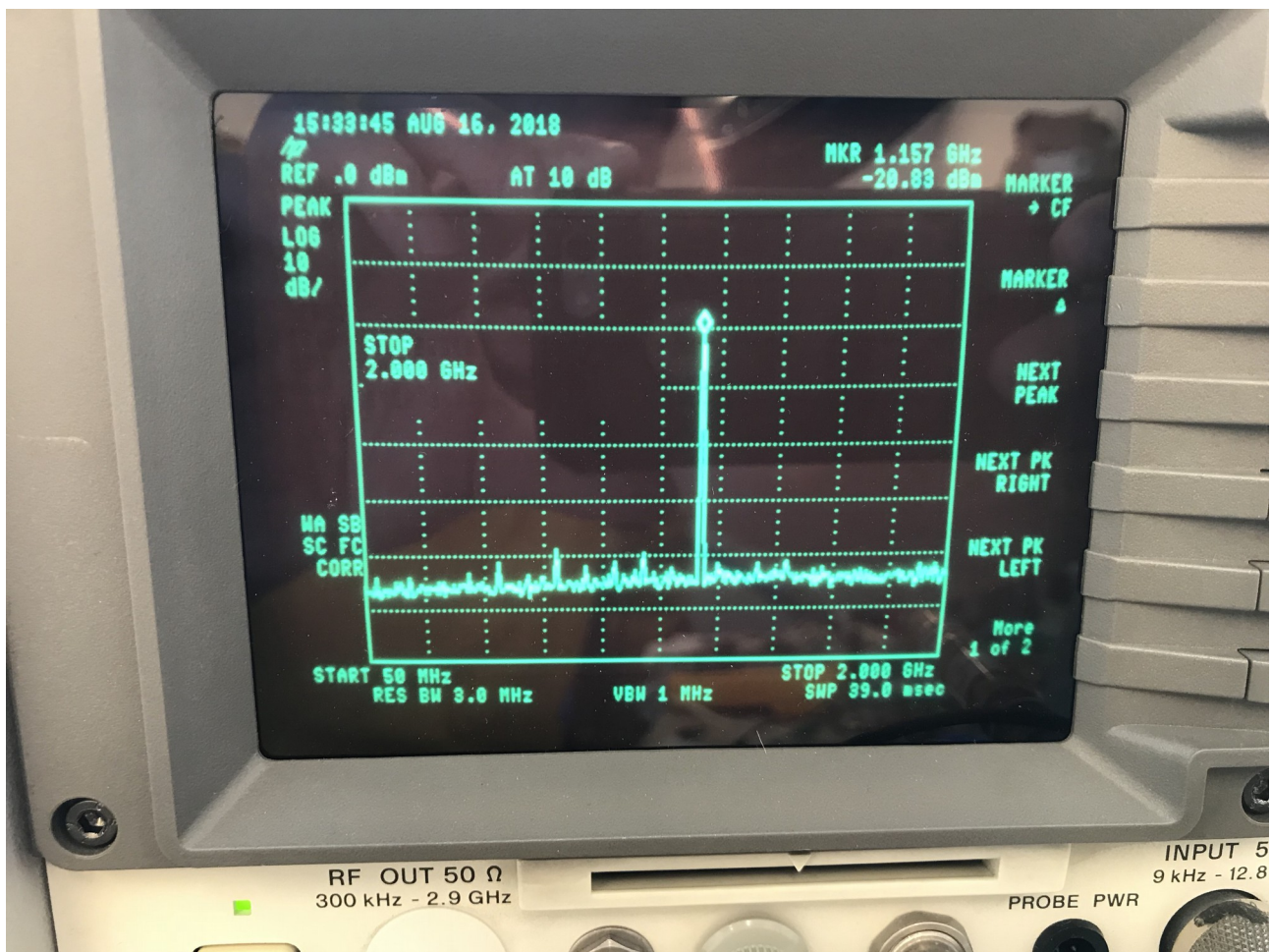


Fig 5 Local Oscillator signal over a 50Mhz to 2Ghz span.

The Converter TX power is 100mW, enough power to drive a Wi-Fi booster amplifier for 4W or 8W versions

You can order one of these amps cheap on eBay or Amazon.

These amps have an internal VOX-TX really fast switching. No PTT required.

8W is sufficient for Uplink to the satellite. Very clean and linear output.

WiFi Signal Booster



8W 2.4GHz



Due to the power losses on 2.4GHz, we recommend you to use a very good waterproof box, the closest to the antenna as possible, and fit the converter and booster inside.

The signal will be transported on IF, 434MHz, with a good low-loss coaxial cable.

Depending on the length and loss of cable, you can adjust the TX gain on the *tx gain R9*.

TR1 freq. Adjust It's where you can adjust the Local oscillator frequency. You can correct with a good frequency meter or by listening to CW by the feedback over the satellite on 10.490GHz

Enjoy this great fun geostationary satellite Qatar OSCAR 100.

Best 73

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