New DX-Patrol  QO-100 Up converter MK2

**fig 1, Upconverter full assembled PCB**

- Full lockable into a internal TCXO 10 Mhz reference or a external GPSDO
- Extreme accuracy and precision transmission frequency.
- Local Oscillator has 4 factory pre-programmed frequencies for 4 IF usages. *(see table)*
- Easy selection by dip switch (s1) on board.
- Clean and stable signal.
- Spurious emissions = < 50dB
- 100mW output 20dBm
- Local Oscillators uses a Analog Devices AF4351 synthesizer locked into **10MHz TCXO Clipped Sine Wave Oscillator Frequencies Stability 500ppb**
- power supply 10 to 15V
- Current consumption 300mA
- Dimensions: 84mm/65mm
- Connectors SMA
- PLL Lock red LED indication
- RF input 1 to 3 W *(6W absolute maximum)*
Fig 2 spectrum view 3.8Ghz span (local oscillator)
<table>
<thead>
<tr>
<th>IF frequency</th>
<th>RF frequency</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF 28MHz *</td>
<td>RF 2372Mhz</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>IF 144MHz</td>
<td>RF 2256MHz</td>
<td><img src="image2.png" alt="Image" /></td>
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<tr>
<td>IF 432MHz</td>
<td>RF 1968MHz</td>
<td><img src="image3.png" alt="Image" /></td>
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<tr>
<td>IF 1296MHz</td>
<td>RF 1104MHz</td>
<td><img src="image4.png" alt="Image" /></td>
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</table>

*Table 1. IF frequencies options*

External 10MHz reference:

- Remove JP2 Off *(this jumpers turns OFF the TCXO; this avoid any dual reference signal on input resulting in erratic output signal.)*
- Swap JP1 from Internal position, to External position

*fig 3 external 10Mhz reference jumper selection*
• Low IF input can increase the converter spurious emissions. Using this IF, some external Band Pass Filters might be needed between the converter and power amplifier.
• 144Mhz and UP IFs are well recommended.