

# DX-Patrol QO-100 Down Converter

The new Down-Converter for QO-100 from DX-Patrol with is a complete receiver Set with PLL lock for LNB, Bias-T, IF conversion for 4 possible Ham bands 28.550MHz, 144.550Mhz, 432.550Mhz and 1296.550Mhz

It's a easy set box *plug and play* ready to use on narrow or wide modes.



*Fig 1 a complete boxed Down converter*

## Features:

- 1- Input voltage 12V to 18V ( LBN polarization mode)
- 2- Internal 10Mhz Reference TCXO 0,5PPM
- 3- External 10MHz GPSDO Input optional\*
- 4- PLL lock LED indication
- 5- Internal RX pre-amplifier 12dB gain
- 6- RX gain adjust
- 7- Output IF rf protection

- 8- Four possible IF reception conversion selectable
- 9- Aluminum box
- 10- F- TV cable connectors
- 11- SMA IF and 10Mhz input connectors
- 12- DC voltage input connector ( ground on shield)
- 13- Extremely accurate and stable frequency reception from QO-100
- 14- Easy operation PC free
- 15- Loud and clear reception on radio speaker



fig 2 Inside PCB view.

REF-OUT = 25Mhz from PLL up to LNB  
 LNB-IN = RF signal input from LNB  
 IF= 28.550MHz, 144.550MHz, 432.550MHz, 1296.550MHz output.  
 IF Band Select= IF selection deep switch \*  
 LD1- Orange Color = LOCK PLL Red Color= No LOCK  
 10MHz= Optional GPSDO 10Mhz reference input

JP2 and JP1= Reference selection internal/external  
RFgain= pre-amplifier RFgain adjust ( set for noise floor below s1 on radio)

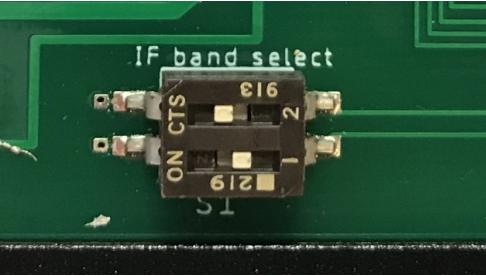
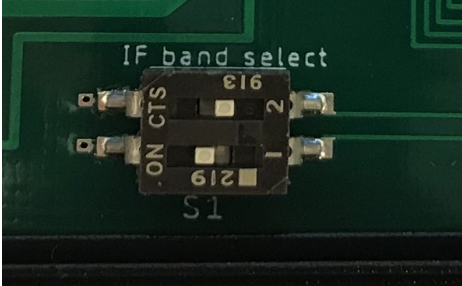
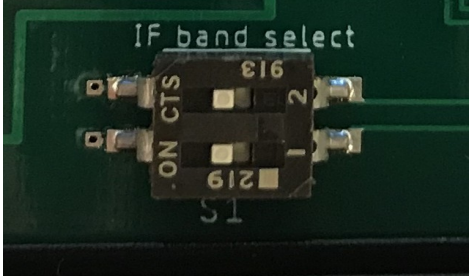
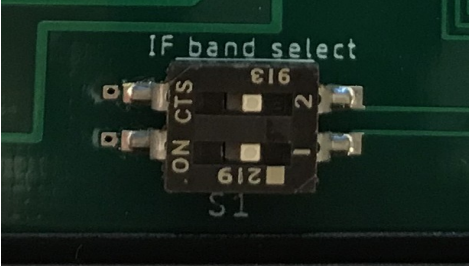


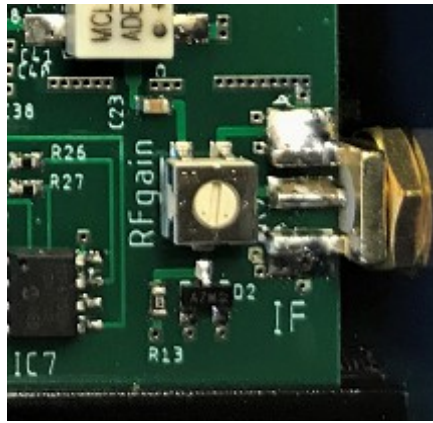
Caution !!!!!!!



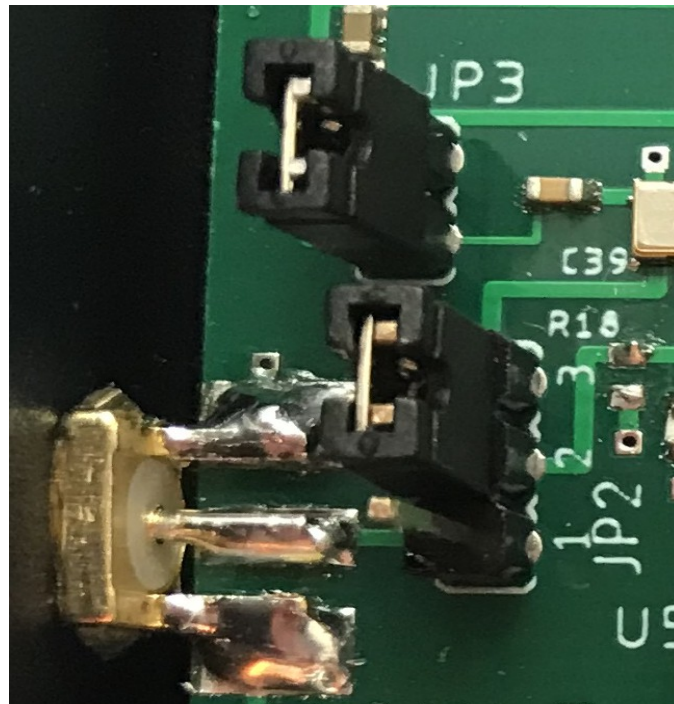
>>>>>>>DO NOT CONNECT CABLES WITH POWER ON<<<<<<<<<  
There is 12V on central wire of coaxial cable, even a quick touch on LNB ground  
will make a short circuit and damage the Downconverter Bias-T  
(easy destroy if you use your shack PSU with 30A)

Our new design using a pre-programmed IF's switchable easily by dip-switched

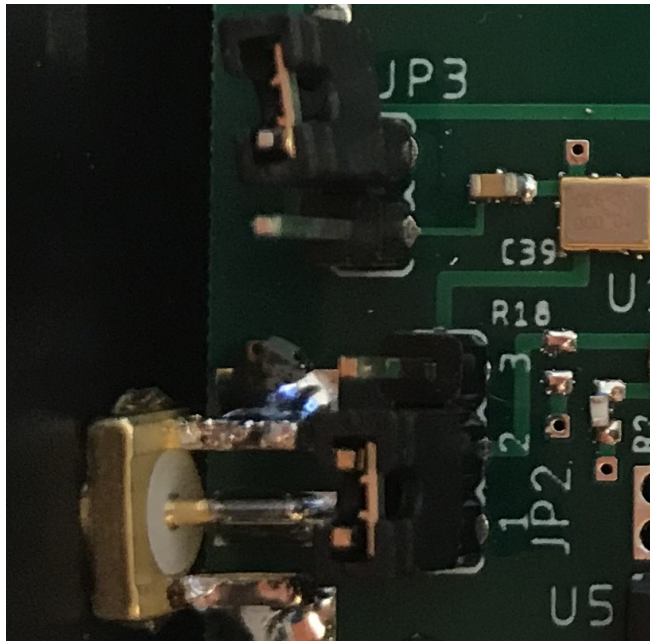
432,550Mhz IF	 A photograph of a dip switch labeled 'S1' on a green PCB. The switch is in position 1. The PCB has the text 'IF band select' and 'ON CTS' printed on it. The switch has two positions, 1 and 2, and is currently set to 1.
144.550MHz IF	 A photograph of a dip switch labeled 'S1' on a green PCB. The switch is in position 2. The PCB has the text 'IF band select' and 'ON CTS' printed on it. The switch has two positions, 1 and 2, and is currently set to 2.
28.550MHz IF	 A photograph of a dip switch labeled 'S1' on a green PCB. The switch is in position 1. The PCB has the text 'IF band select' and 'ON CTS' printed on it. The switch has two positions, 1 and 2, and is currently set to 1.
1296.550MHz IF	 A photograph of a dip switch labeled 'S1' on a green PCB. The switch is in position 2. The PCB has the text 'IF band select' and 'ON CTS' printed on it. The switch has two positions, 1 and 2, and is currently set to 2.



*Fig 3- RX-gain adjust*



*fig 4- Internal 10MHz ref jumper set*



*fig 6 External 10 Mhz reference ( GPSDO) jumpers set*



*Fig 7 Orange LED = PLL LOCKED*



*Fig 8 RED led = No Lock*

Notes:

The reception signal level can be different from band to band.

The adjust it's easy on RFGain potentiometer. Adjust the Satellite ground noise to s1 or a little less.

External 10Mhz input level:

Minimum- 0,7VPP

Maximum- 3v3 VPP

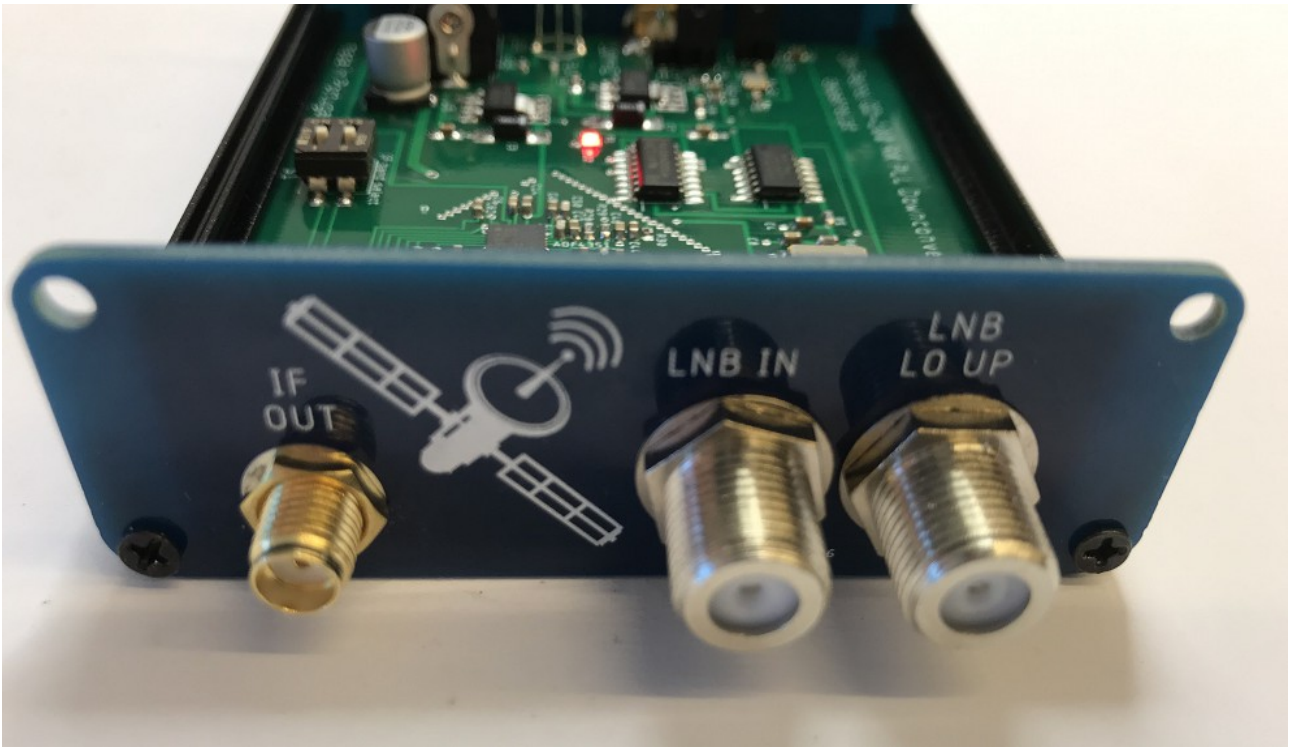
Power consumption: 150mA ( without LNB )

Minimum voltage : 11V

Maximum voltage 25V ( note 18V is LNB polarization rotation)

TCXO stability: 500 PPBillion

Maximum Temperature: 40°C ( after 1hour ON @ 13.8V DC)



*Fig9 F-connectors and SMA*

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