

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)

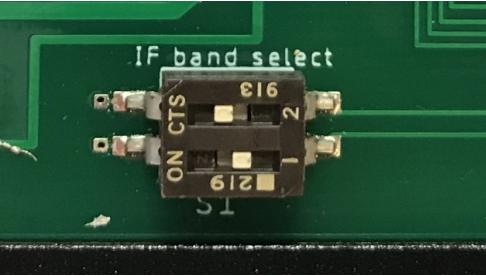
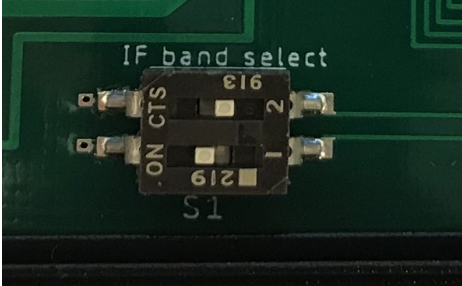
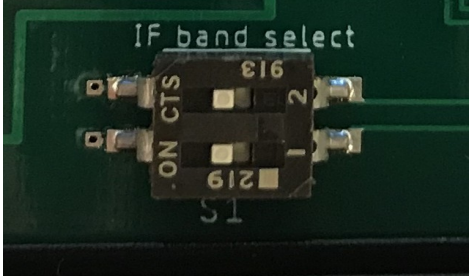
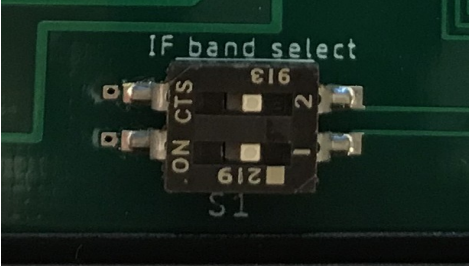


Caution !!!!!!!



>>>>>>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 on a green PCB. The PCB is labeled "IF band select" and "S1". The switch has two positions, "1" and "2". The switch is currently in position "1". The switch is labeled "ON CTS" and "916".
144.550MHz IF	 A photograph of a dip switch on a green PCB. The PCB is labeled "IF band select" and "S1". The switch has two positions, "1" and "2". The switch is currently in position "2". The switch is labeled "ON CTS" and "916".
28.550MHz IF	 A photograph of a dip switch on a green PCB. The PCB is labeled "IF band select" and "S1". The switch has two positions, "1" and "2". The switch is currently in position "1". The switch is labeled "ON CTS" and "916".
1296.550MHz IF	 A photograph of a dip switch on a green PCB. The PCB is labeled "IF band select" and "S1". The switch has two positions, "1" and "2". The switch is currently in position "2". The switch is labeled "ON CTS" and "916".

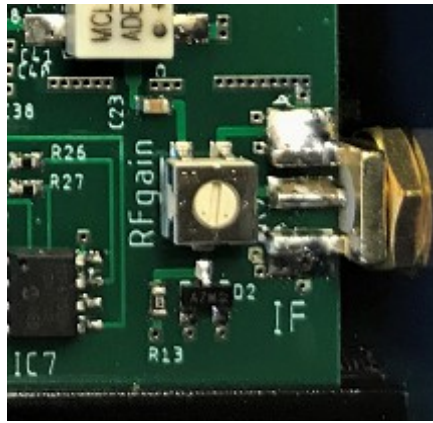


Fig 3- RX-gain adjust

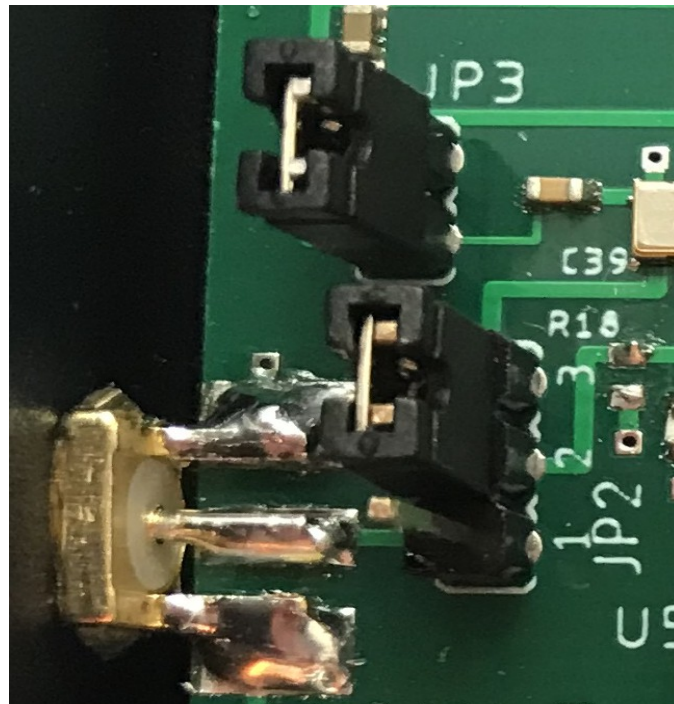


fig 4- Internal 10MHz ref jumper set

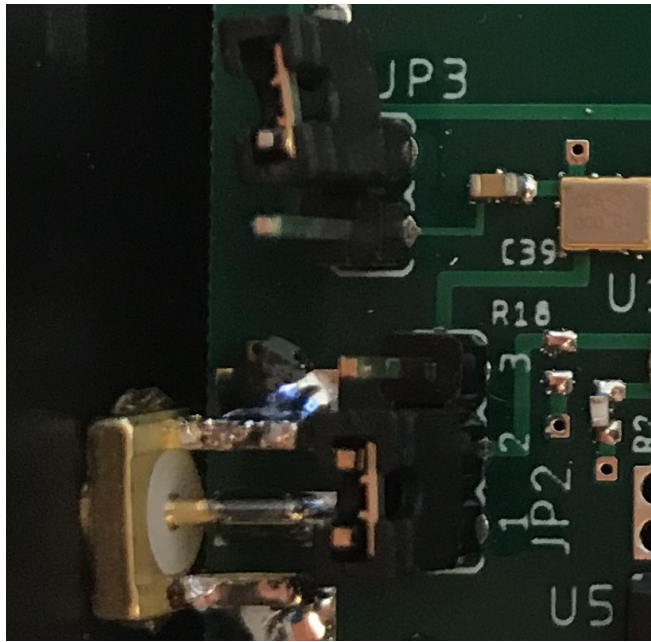


fig 6 External 10 Mhz reference (GPSDO) jumpers set



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)

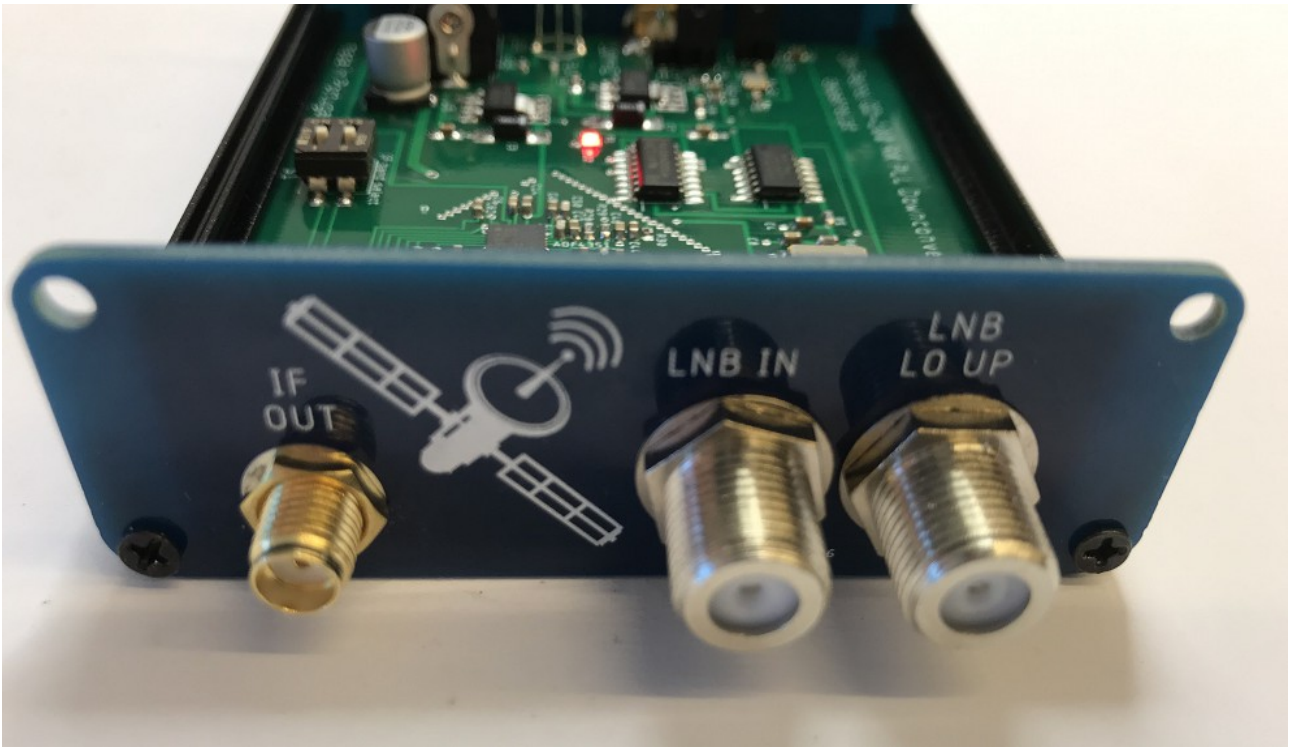


Fig9 F-connectors and SMA

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