

2300 / 432 MHz Transverter V1.4

Specifications

	Min.	Typ.	Max.
Frequency range RF	2300 MHz		2425MHz
Frequency range IF	430	432 MHz	440
LO Frequency:		see table	
LO Accuracy at 20 deg. C		+/- 1 ppm	
LO temp. stability -20 ...+70 deg . C		+/- 2.5 ppm	
Output Power	1.5 W	2.0 W	2.5W
Power Supply	12.0 V	12.0V	13.8 V
Current Consumption			1 A
Input Power	0.2 W		5 W
Receive Gain , Adjustable	0 dB		+10 dB
Noise Figure (Split mode)		1.5 dB	
Noise Figure (Rx/Tx mode)		1.9 dB	
Dimensions			124x94x25mm
Spurious response		< -55 dBc	

Features

2 W output power

Low noise figure , GaAs HEMT input stage

High performance UP / DOWN converters

High stability TCXO

Input for 10 MHz external reference oscillator

Internal Tx/Rx switch

Possibility to work with split Tx/Rx (selectable , required soldering)

Internal Directional Coupler

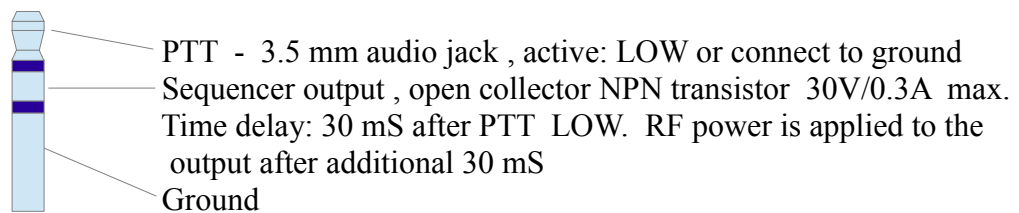
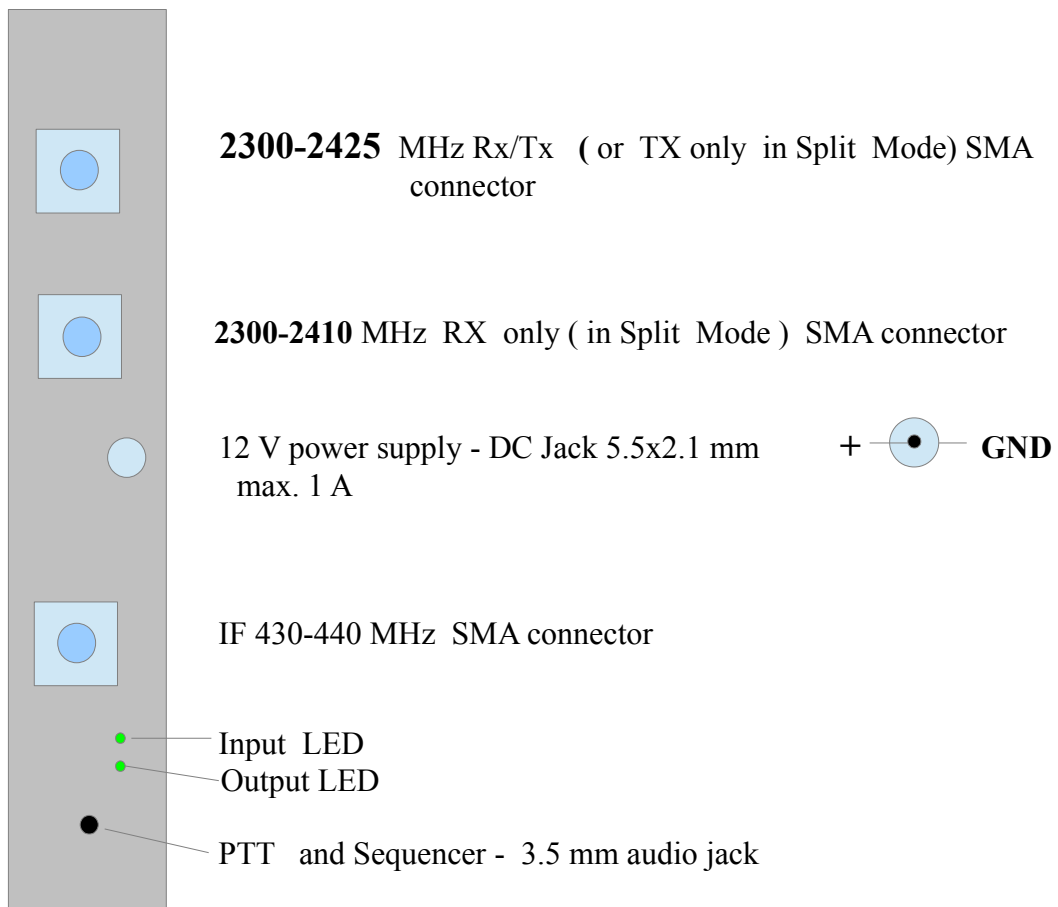
**PTT can be switched by connecting PTT to ground, by RF power (RF VOX)
or by DC voltage**

Output SWR indicator - bi color LED

Optimal input power indicator - bi color LED

Integrated Sequencer

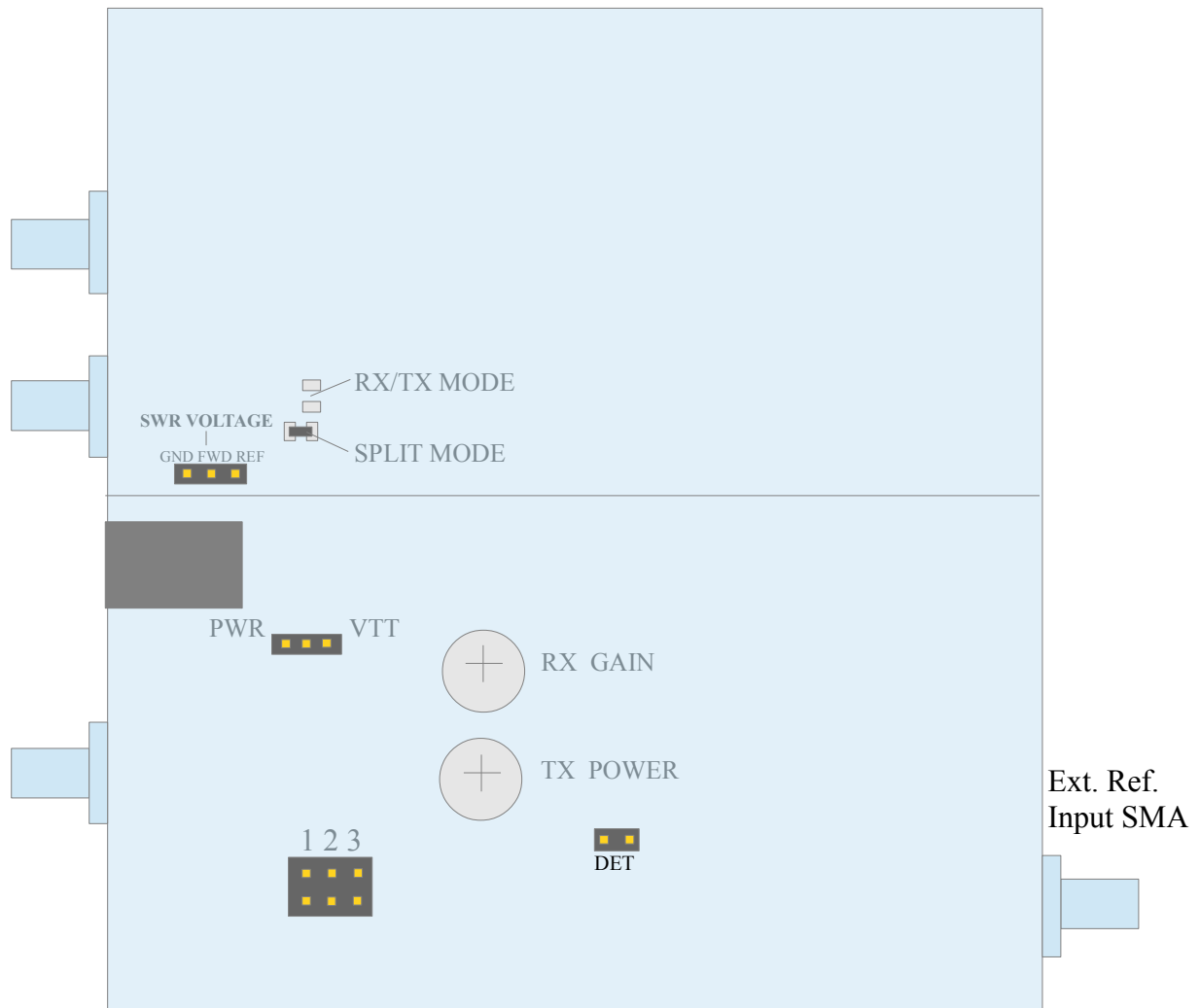
4 LO frequencies , programmable by PC (RS-232 , 3.3V levels)



Input power adjustment:

Input LED color: orange - Input power is low
 green - Input power is normal
 red - Input power is too high

Output LED color : green - Excellent output SWR
 orange - Moderate output SWR
 red - High output SWR



Trimmers

- RX GAIN - You can adjust the overall gain from 0 to +10dB
- TX POWER - When PTT is LOW and power supplied to the IF input , rotate until the LED lights up green

SWR Voltage

- Can be measured by high impedance voltmeter
- FWD - voltage of forward wave
- REF - voltage of reflected wave
- GND - ground

PWR / VTT

- PWR ON: The Transverter can be DC powered by coaxial cable.
 - VTT ON: PTT can be switched on by applying DC voltage 5-15 V in coaxial cable
- A bias tee is needed to insert DC power into coaxial cable.

DET

- OFF - RF VOX detector time low
- ON - RF VOX detector time high (0.3 - 0.5sec.)

RF VOX is always switched ON. The Transverter automatically switches to the TX mode when RF power is applied to IF (430-440 MHz input)

Jumper 3

- ON - Internal frequency reference is used
- OFF - Internal reference is switched OFF. External reference with 10 MHz frequency and -10...0 dBm power must be connected to **Ext Reference Input SMA**
The transverter needs **restart** to switch between two modes.

PLL unlock indicator: Blinking Input LED in Red means a PLL unlock.

Default LO Frequencies

Jumpers	1	2	LO Freq. , MHZ Rx / Tx
LO Frequency 1	off	off	1870 / 1870
LO Frequency 2	on	off	1886 / 1886
LO Frequency 3	off	on	1888 / 1888
LO Frequency 4	on	on	1968 / 1968

How to understand what is the current LO frequency:

After switching power ON, input LED lights up in Red for 3 sec. If you switch ON and hold PTT during this time, you can hear on CW , on 432.000 MHZ what are current LO frequencies - RX and TX .