Transverter HG-7028

TRANSVERTER OF 70MHZ WITH FI 28MHZ

Transverter HG-7028

Specifications:
Size WXDXH :125 mm x 160 mm x 45mm.
Weight :720 grm without cables .
Supply Voltage: 13,8 VDC +/- 10%
Current Drain :
Received : 100 mA
Transmit: 6 A
Frequency Range:69,500-70,500 MHZ
T/R Key Input :Ground for transmit

LO :42 Mhz Low phase noise +- 5ppm

TRANSMITTER
Power output (50 Ohm load) : 40W continuous carrier modes
Operatinf modes : SBB,FM,CW,Digital,etc
IF range :27,500-28,500 Mhz
TX RF Mixer Mini Circuits ADEX-10H+ (+17dbm)
SWR input : 1:1.1
IF input powe range :1mW to 6W (For low level transceiver like ICOM from -20dbm...0,01 mW)
Harmonic output suppressuib Better than 57 dB
RECEIVER
Front End : Gain >21 dB Noise Figure : About 0,70 dB Mini Circuits PSA4-5043+
Conversion gain : about 20dB
RX RF Mixer Mini Circuits ADEX-10H+(+17dbm)
3rd-Order Intercept :>+30 dbm

FEATURES
-10 Led Bargraph power output
-RA30H0608M Mitsubushi RF Power module
-Internal regulable power
-External PTT for PA's
-IF input/output BNC Connector
-Second RX output (Only with IF cable version)
-IF RX/TX ,PTT cables included

Transverter HG-7028

The HG-7028 transverter work in 4m band (70Mhz) with FI on 28Mhz (10m) in any mode SSB,CW,etc ready to use.Work with any transceiver with different configuration between 1mW and 6W on 28Mhz.The output power on 70Mhz is about 40W (Regulable 0 to >40W)with the power module of Mitsubishi RA30H0608M.The noise figure of front-end is about 0,70 dB (Mini-circuits PSA4-5043+) with more of 22 db of gain with IP3 of +31dBm.

Ten leds in bar graph indicate the output power.

With the different configuration we can use transceiver with output for transverter with 0dBm (1mw) like Elecraft K2,K3 or FLEX5000A or any transceiver with the output power below of 6W on 28Mhz.We can select input/output of FI on 28Mhz para RX y TX independent.The power meter with 10 led,we can select to light led to led,or all led .You can use also ICOM and YAESU with Low level.

The transverter included:
-Trasnveter
-Control cable for most transceiver (Ask for your transceiver)
-Coaxial cable between transverter and transceiver
-This manual

Transverter HG-7028

Connection of transverter

In the back of the transverter have 4 connectors : Control (CTRL) ,28 Mhz IN/OUT(BNC),28 Mhz IN (BNC) ,and SO-259 Antenna (ANT).

CONTROL (CTRL)
The control cable (CTRL) includes the wires to power supply,PTT for transverter and PTT external (for example to PTT of power amplifier).The cable red and black is for 13,8 V of power supply.Red (+),Black (-).The external PTT is a RCA male connector.The other cable is with the connector for use with your PTT Gnd of your transceiver (DIN,RCA,Mini Din,etc).The power supply wire included a FUSE of 6A.

Transverter HG-7028

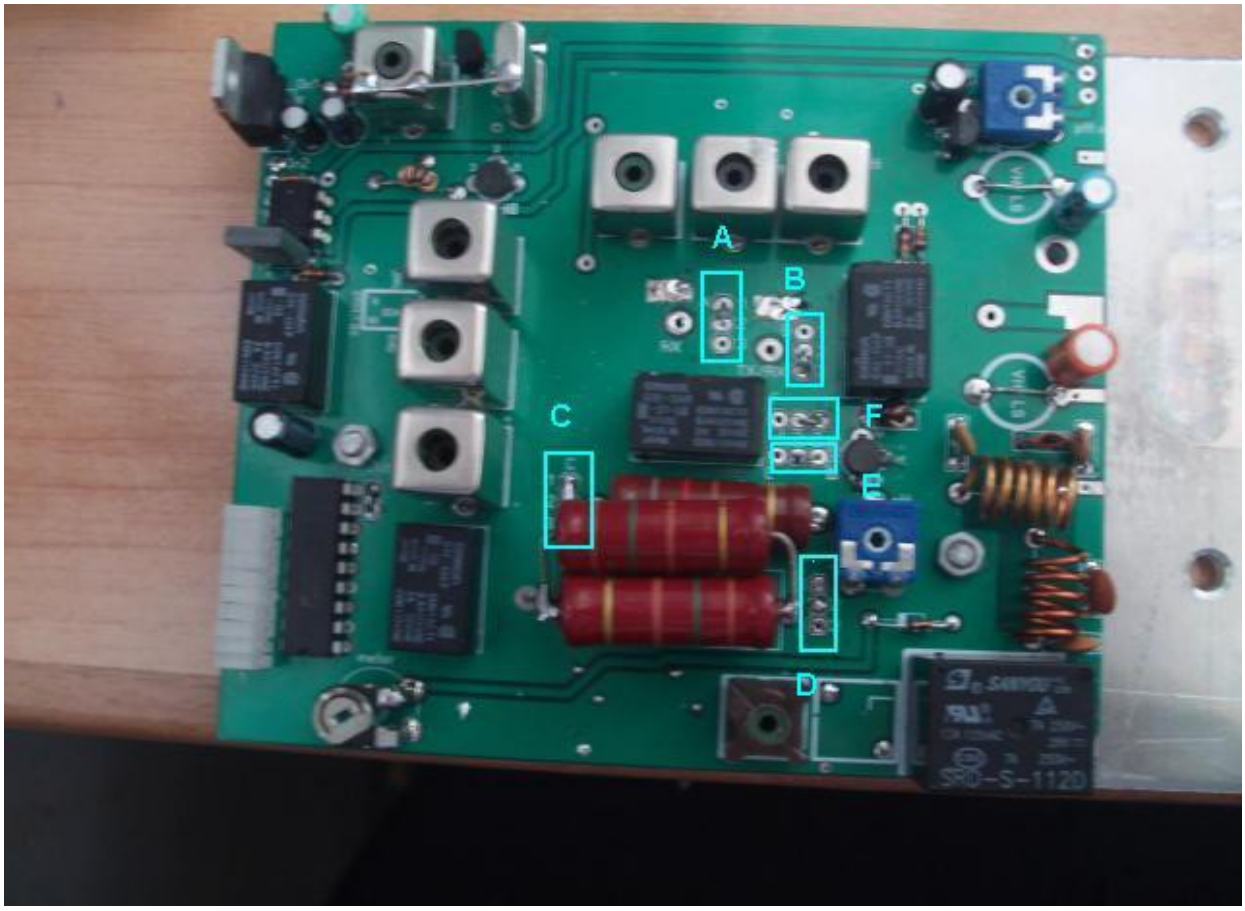
28 Mhz IN/OUT
If your transceiver not have separate connection between transmition and receive (Ej Yaesu FT817,897,100,TS-140,440,etc) you must use this connector.
Connect the coaxial between transverter and your transceiver connect the coaxial cable with BNC male and PL-259.BNC male on transverter and PL-259 on SO259 Antenna of your transceiver.
If your transceiver have separate connection on transmition and receive this connector is use to the input of 28Mhz on TX only (28Mhz Transmit)

28Mhz IN
If your transceiver have separate connection between transmition and receive (Ej Elecraft K2,Elecraft K3,Flex 5000A,etc) you must use this connector for RX only (28 Mhz Receive).
If you not have separate connection between transmition and receive you can use this 28Mhz reception like 2nd received , for example :with SDR

ANTENNA (ANT)
Connect your 4m antenna here.

Transverter HG-7028

INTERNAL CONFIG OPTIONS



There are 6 bridges to set the transverter to the input power on 28 Mhz,one or two connector input/output to IF on 28 Mhz.Bypassing should the numbers indicates in the next table according your transceiver.

Input power on 28 Mhz

	C	D	E	F
1mW (0dbm)	**2-3**	**2-3**	**2-3**	**2-3**
10 mW (10dBm)	**2-3**	**2-3**	**1-3**	**1-3**
6W (38 dBm)	**1-2**	**1-2**	**2-3**	**2-3**

Connector to IF

	A	B
One connector in/out	**2-3**	**1-2**
Two connector in/out	**1-2**	**2-3**

Transverter HG-7028

Examples of configuration

FlexRadio 5000A
Output power for transverter in FlexRadio 5000A is de 1mW (0dBm) we to by pass:
C = 2-3 D= 2-3 E=2-3 F=2-3
Like Flex5000A have one input and one output we to bypass A=1-2 B=2-3. If you use only the connector on Flex5000A XVTX/COM we to bypass A=2-3, B=1-2

The wire PTT In on transverter will be connected to any 3 outputs of PTT of Flex5000A configuring on FLEX5000A the output chosen.

Connect the coaxial between FlexRadio5000A XVTX/COM connector to TX/RX of transverter.Connect the coaxial between FlexRadio 5000A XVRX connector and RX connector of transverter.

ELECRAFT K2 y K3 with KXV3,KXV3A or K60XV for transverter
If you have the adapter transverter in your K2 or K3 the output power is 1mW (0dBm) we to by pass:
C = 2-3 D= 2-3 E=2-3 F=2-3
Like K2,K3 have one input (RX out/if 2) and one output (TX in/if 1) we to bypass A=1-2 B=2-3. If you use only the connector on K2,K3 Txin/if 1 we to bypass A=2-3, B=1-2

The wire PTT In on transverter will be connected to Key out connector K3 and PTT Mic pin on K2.

Connect the coaxial between K2/K3 Out connector and connector to TX/RX of transverter.Connect the coaxial between K2,K3 IN connector and RX connector of transverter.

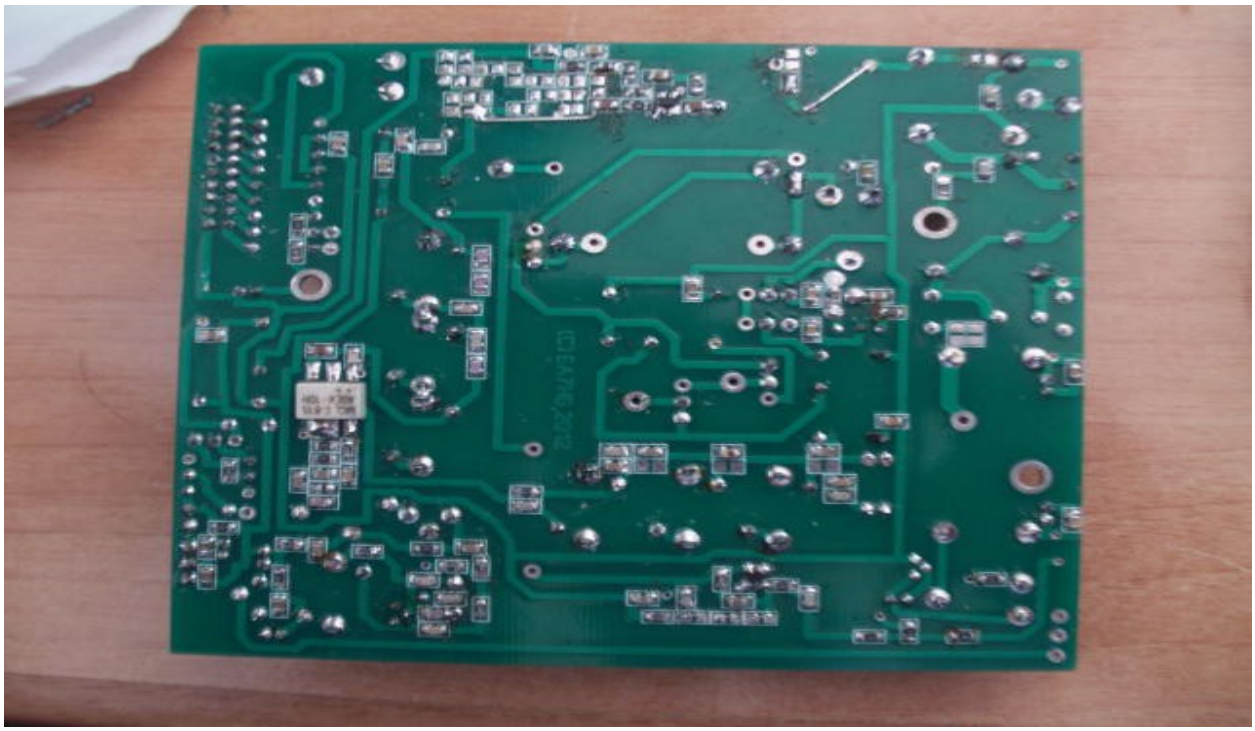
Others transceiver

If your transceiver not have input/output for transverter connect the coaxial between connector TX/RX of transverter and the antenna connecot of your transceiver.Must be connect the PTT in on transverter with the output in your transceiver like Key output PTT for lineal amplifier,Microphome,etc

REMEBER : MAX.OUTPUT POWER ON 28MHZ IS 6W.More power can damaged the transverter.

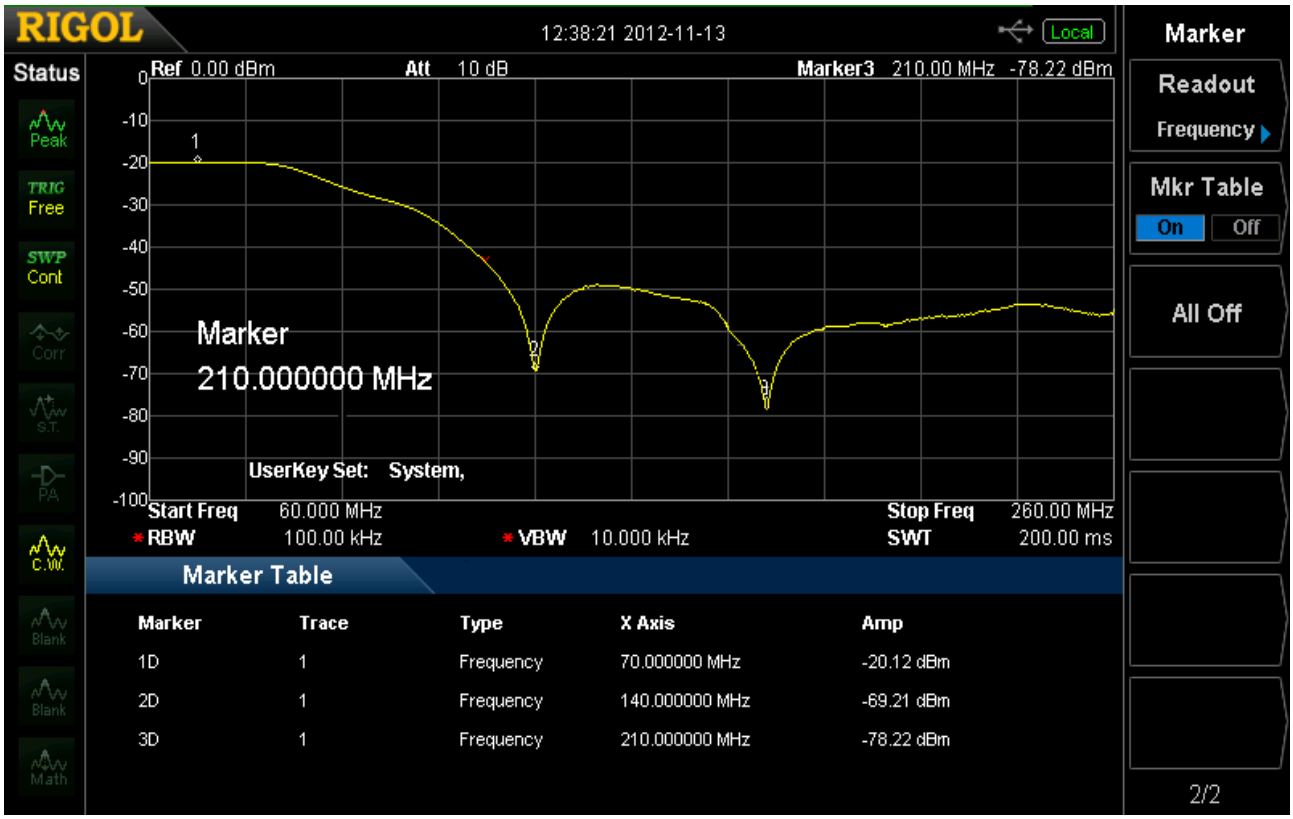
More infor
EA7HG, EA7HG@hotmail.com

Transverter HG-7028
OTHER SIDE OF PCB TRANSVERTER



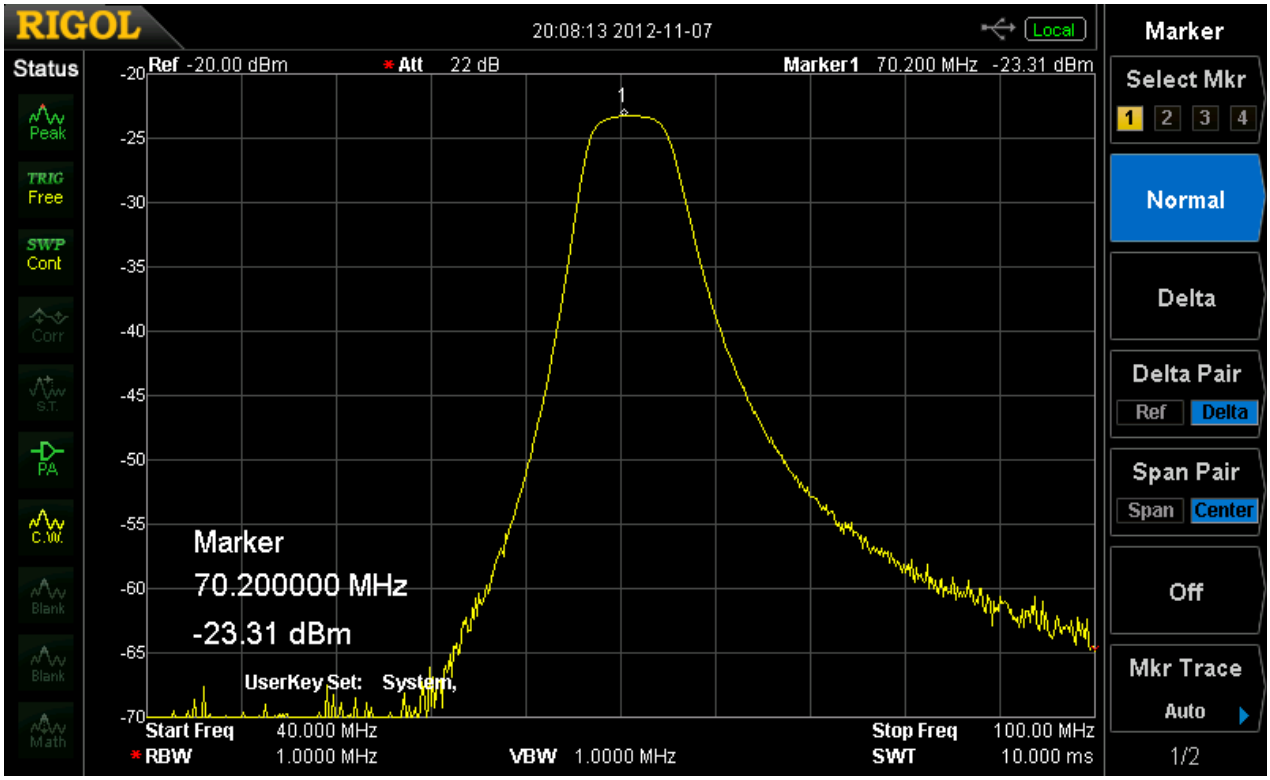
THIS IS REAL...NOT SIMULATION

SPECTRUM ANALYSER : 70 MHZ LOW-PASS FILTER PA

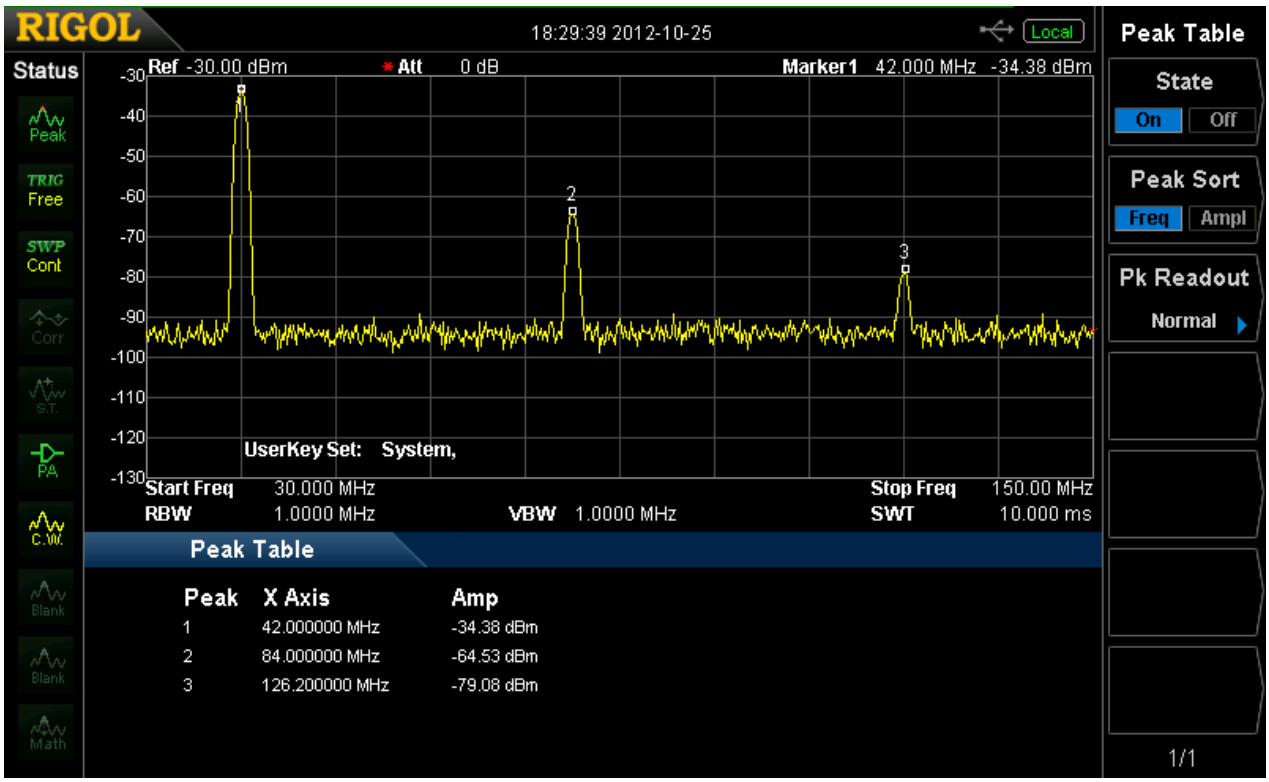


Transverter HG-7028

SPECTRUM ANALYSER :70 MHZ BAND-PASS FILTER

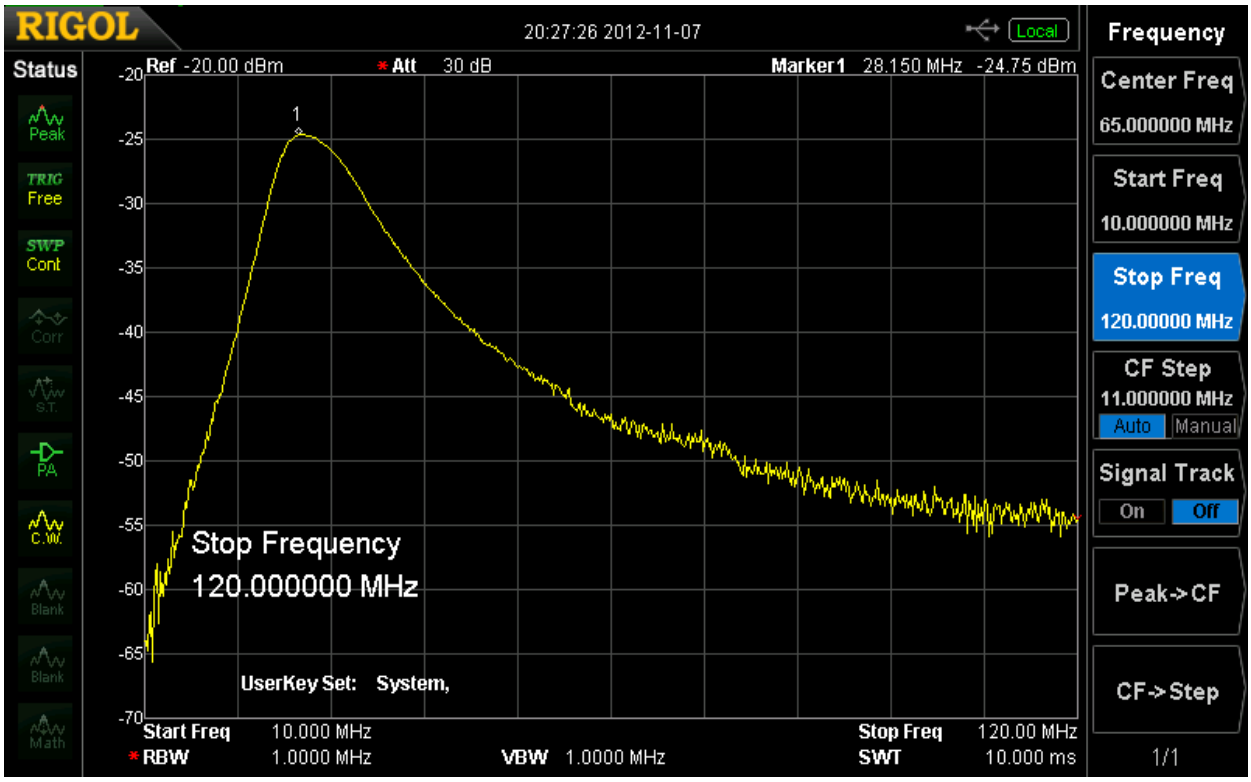


SPECTRUM ANALYSER :42 MHZ OSCILATOR OUTPUT WITHOUT FILTER

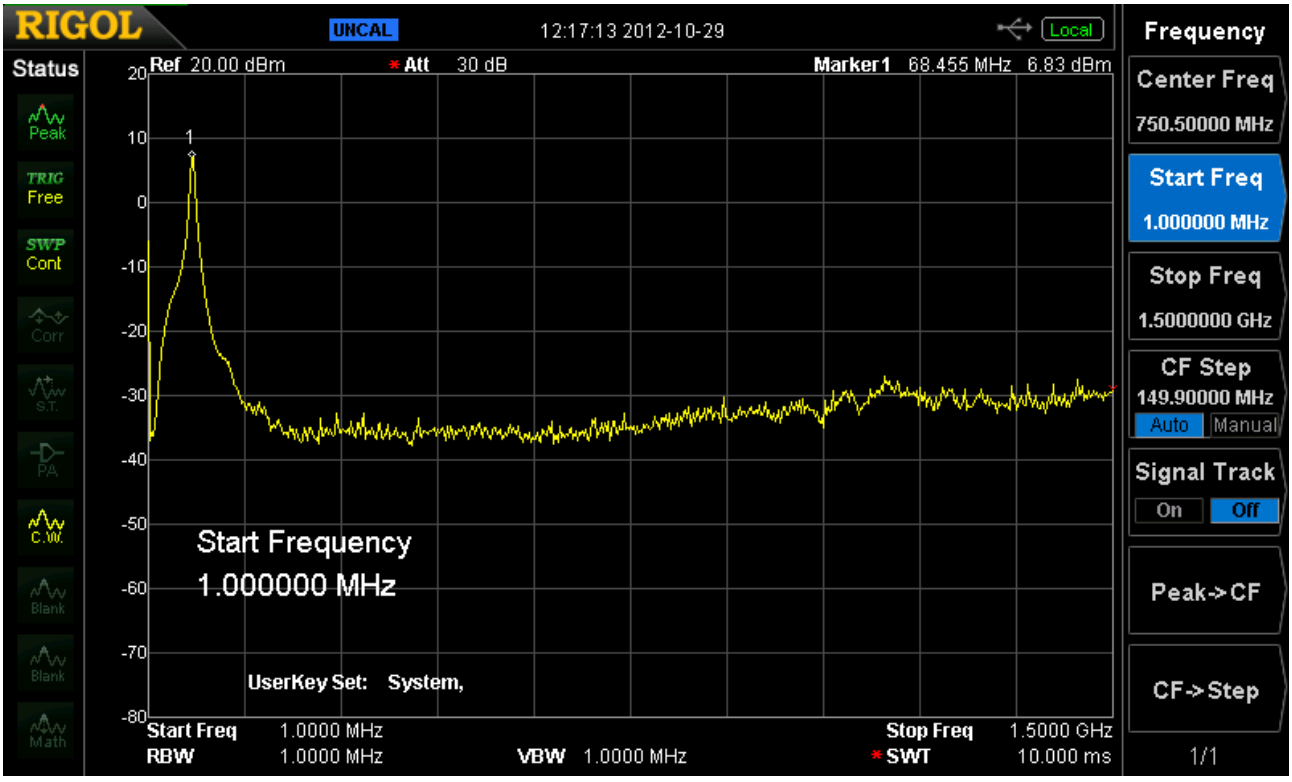


Transverter HG-7028

SPECTRUM ANALYSER :28MHZ BAND-PASS FILTER



SPECTRUM ANALYSER :70MHZ PREAMPLIFIER..INPUT -16dbm



Transverter HG-7028
OSCILATOR FREQUENCY : 42MHZ.

TRANSVERTER (FRONT).

Transverter HG-7028
TRANSVERTER (REAR).