

# RCL-T700N\_TRANSMITTER TUNE UP PROCEDURE

## PERFORMANCE TEST

The procedure in this chapter allows the verification of the electrical performance of transmitter. These tests do not require access to the interior of the instrument.

1. Selected reason of the frequency :  
=> Use were selected at random from the desired frequency band.
2. How to adjust the maximum output :  
=> use capacitor, coil, trimmer (max output : 2W below)
3. Max output and Output Tolerance :  
=> Max output : 33dBm  
Output Tolerance : -1dB ~ 2 dB

### Recommended test equipment

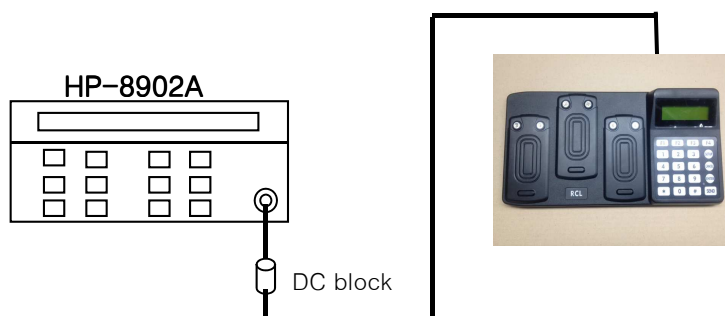
| Description        | Minimum specification                           | Model         |
|--------------------|-------------------------------------------------|---------------|
| Power meter        | + / - 0.2dB, - 60 to -20dBm. 100 KHz to 1GHz    | HP-436A/8481D |
| Spectrum analyzer  | 100KHz to 12GHz, up to -120 dBm                 | HP-8591E      |
| Measuring receiver | 0.2 to 1300MHz, 0 to -125dBm, Freq Counter      | HP-8902A      |
| Oscilloscope       | DC to 100MHz, 5mV to 1V/div, Rise Time capavity | TEK TDS360    |
| Frequency Counter  | + / - 0.1ppm, 10Hz ~ 1GHz, 9digit               | HP-53181A     |
| Attenuator         | 10W, 20dB Att, DC to 1GHz                       | Tescom 99910  |

### 1. Frequency Accuracy

Frequency : 457.5750MHz

Stavility : Same as reference oscillator accuracy. Internal 1ppm 0 to 50degC

#### 1.Test Setup (Connect RCL-T700N RF Line without case)



#### Carrier frequency accuracy test

2. HP-8902A : auto tuning, frequency display

### 3. RCL-T700N TRANSMITTER

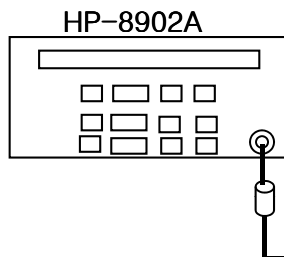
- 1) Push button
- 2) check frequency accuracy

## 2. RF Output Level Accuracy

RF level : 33dBm below

Accuracy :  $-1\text{dB} \sim 2\text{ dB}$

### 1. Test Setup



(Connect RCL-T700N RF Line without case)

2. HP-8902A : Auto-tuning, RF Power

3. RCL-T700N TRANSMITTER

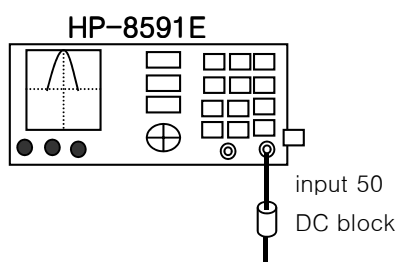
1) Connect DC block

2) Push button and check RF Level

## 3. Harmonic Spurious

Harmonic Level at  $2 \times \text{FOUT}$  :  $< -40\text{dBc}$

### 1. Test Setup.



RF OUT

### Harmonice test

(Connect RCL-T700N RF Line without case)

2. HP 8591E : Span = 500KHz, RBW = 10KHz, VBW = 30KHz.

3. RCL-T700N TRANSMITTER:

1) Connect DC block

3) Push button and check harmonic

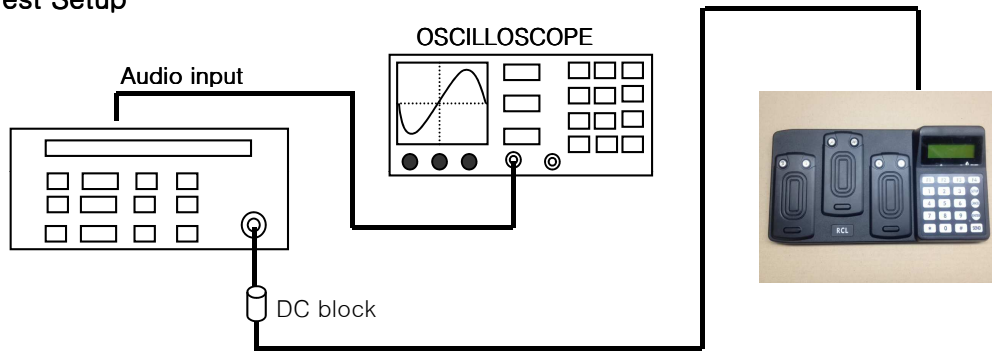
### RCL-T700N TRANSMITTER Harmonic Spurious

| Fout(MHz)   | Spurious(MHz) | Level(dBm) | Fout-2*Fout | Limit  | Remark |
|-------------|---------------|------------|-------------|--------|--------|
| 457.5750MHz | 915.15Mhz     |            |             | -40dbc |        |

#### 4. Modulation

##### 4.1. FM(RECT) (Internal GFSK Test Patterns)

##### 1.Test Setup



##### GFSK Deviation and Noise Test

(Connect RCL-T700N RF Line without case)

##### 2.Equipment

HP-8902A : FM

TDS360 : 250us/div, 500mV/div Average : 16

##### 3.RCL-T700N TRANSMITTER:

- 1) Connect DC block
- 2) Push button and check modulation