

# RCL-T700 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.

### Recommended test equipment

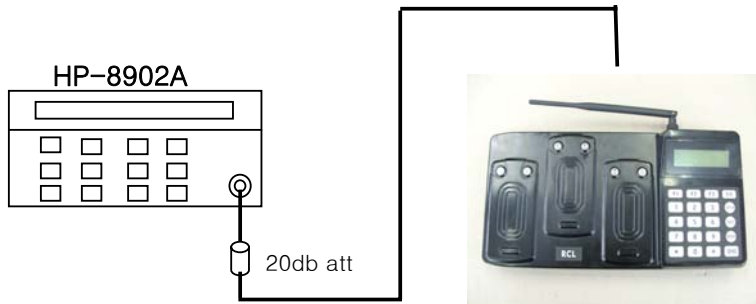
Description	Minimum specification	Model
Power meter	+ / - 0.2dB, - 60 to -20dBm. 100 KHz to 1GHz	HP-436A/8481D
Spectrum analyzer	100KHz to 3GHz, up to -120 dBm	HP-8591E
Measuring receiver	0.2 to 1300MHz, 0 to -125dBm, Freq Counter	HP-8902A
Oscilloscope	DC to 100MHz, 5mV to 1V/div, Rise Time capavity	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

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

#### 1.Test Setup



#### Carrier frequency accuracy test

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

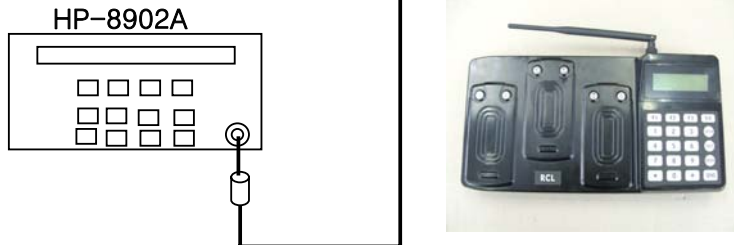
### 3. RCL-T700 TRANSMITTER

- 1) Connect 20dB Attenuators
- 2) Power On
- 3) Setup key, enter, password 2386 key enter, Use # key to select " SYNC OFF, RF ON

TC-1950A FREQ	Lower Limit	Actual	Upper Limit	Remarks
457.5750MHz	457.5748		457.5752	

2. RF Output Level Accuracy  
 RF level : 30dBm  
 Accuracy : +/-1dB

1. Test Setup



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

3. RCL-T700 TRANSMITTER

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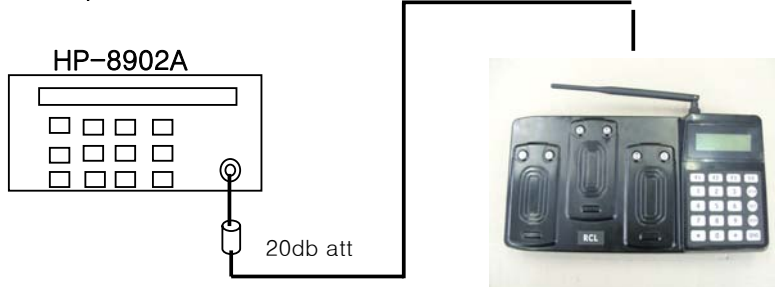
3. Spectral Purity

3.1. Residual FM Noise

RMS Noise : <10Hz Typ, 300Hz ~ 3KHz

<70Hz Typ, 50Hz ~ 3KHz

1. Test Setup.



2. HP 8902A : FM, RMS, Filter BW 300Hz ~ 3KHz

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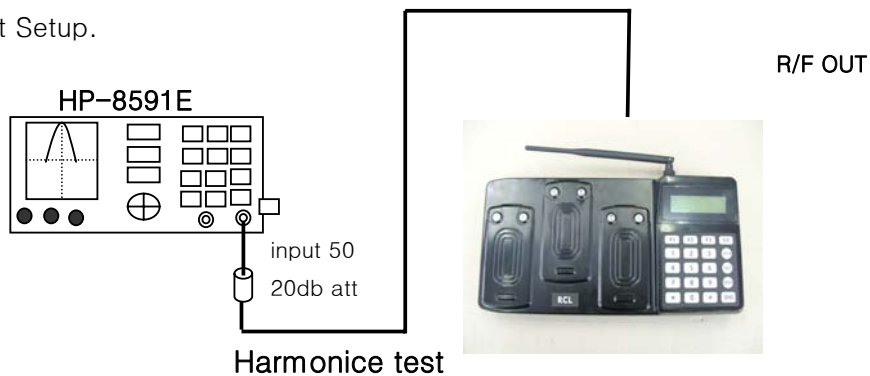
TC-1950A Signal Generator Residual FM

8902 Filter BW		Actual	Limit (Hz)	Remark
HPF	LPF			
300Hz	3KHz		10Hz	
50Hz	3KHz		70Hz	

### 3.2. Harmonic Spurious :

Harmonic Level at 2xFOUT : <-60dBc

#### 1. Test Setup.



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

3.RCL-T700 TRANSMITTER:

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RCL-T700 TRANSMITTER Harmonic Spurious

Fout(MHz)	Spurious(MHz)	Level(dBm)	Fout-2*Fout	Limit	Remark
457,.575	915.15			-60dbc	

#### 4. Modulation

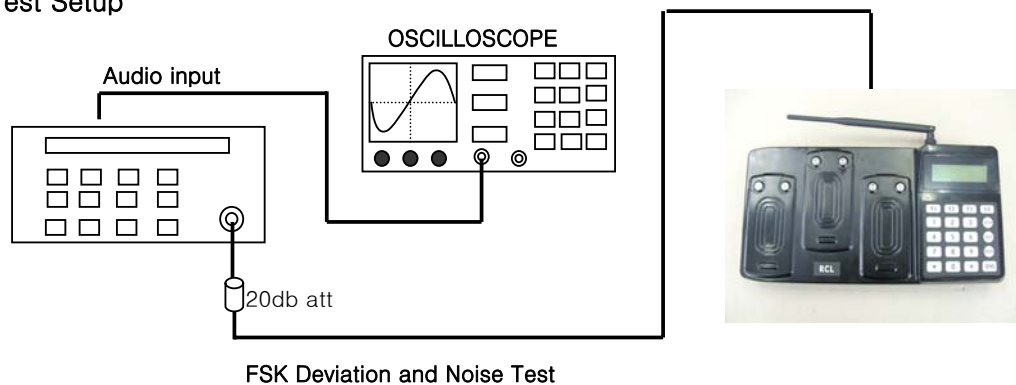
4.1. FM(RECT) (Internal FSK Test Patterns)

Deviation Accuracy

Deviation : 9KHz,

Accuracy : +/-5% (8.55 < FM < 9.45)@4.5KHz

#### 1.Test Setup



#### 2.Equipment

HP-8902A : FM, AVG, HPF=OFF, LPF=15KHz

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

3.RCL-T700 TRANSMITTER:

- 1) Connect 20dB Attenuators
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4. Read FM Deviation in RMS.

DEV(LTK-1100H)

4.5KHz

Limit

4.5KHz + - 5%

Table : FSK Deviation Accuracy

Item	Lower	Actual	Upper	Remark
Deviation (AVG)	8.55		9.45	