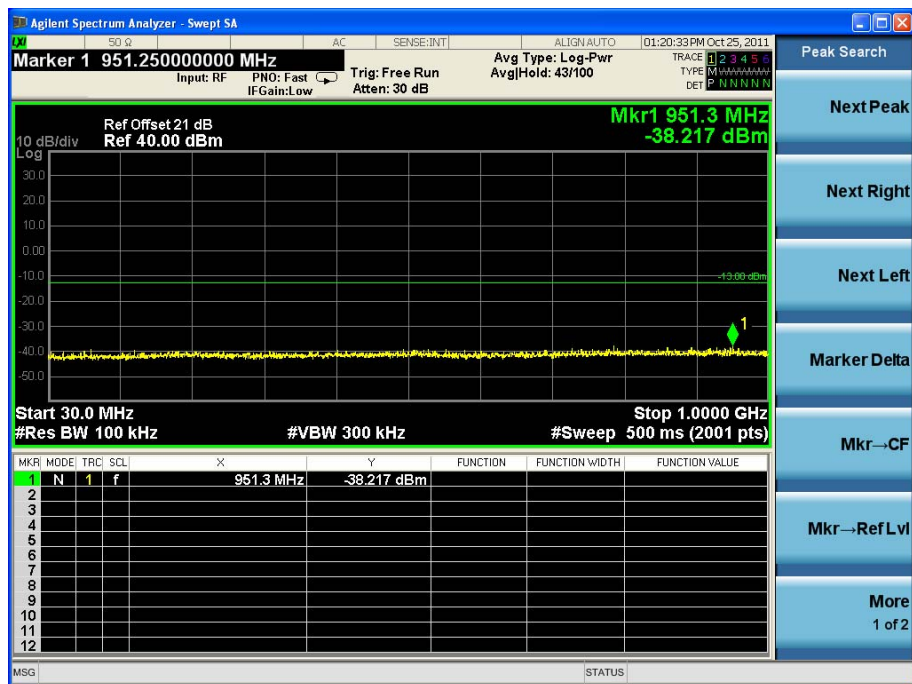
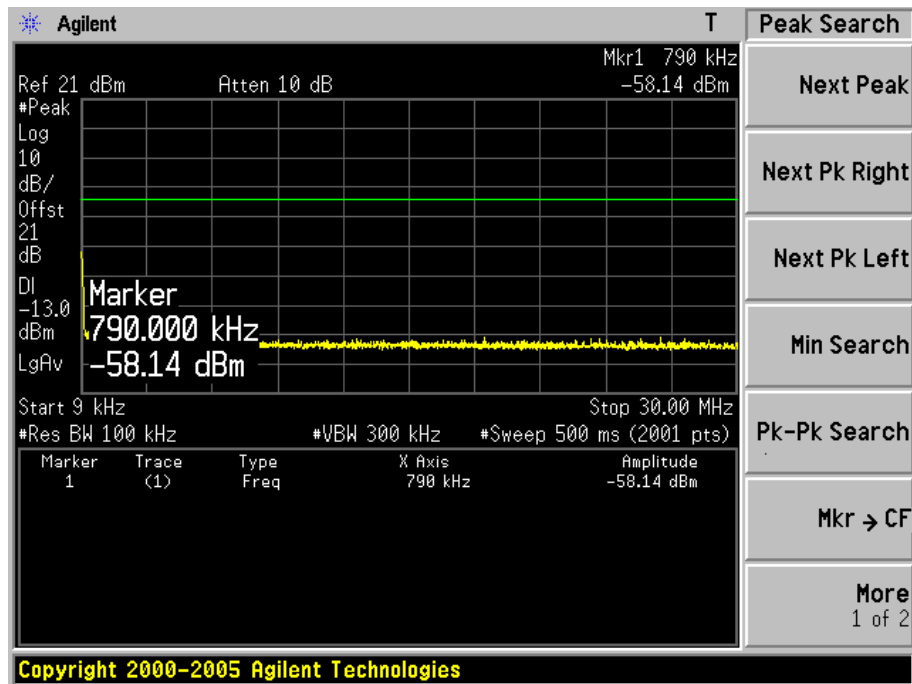
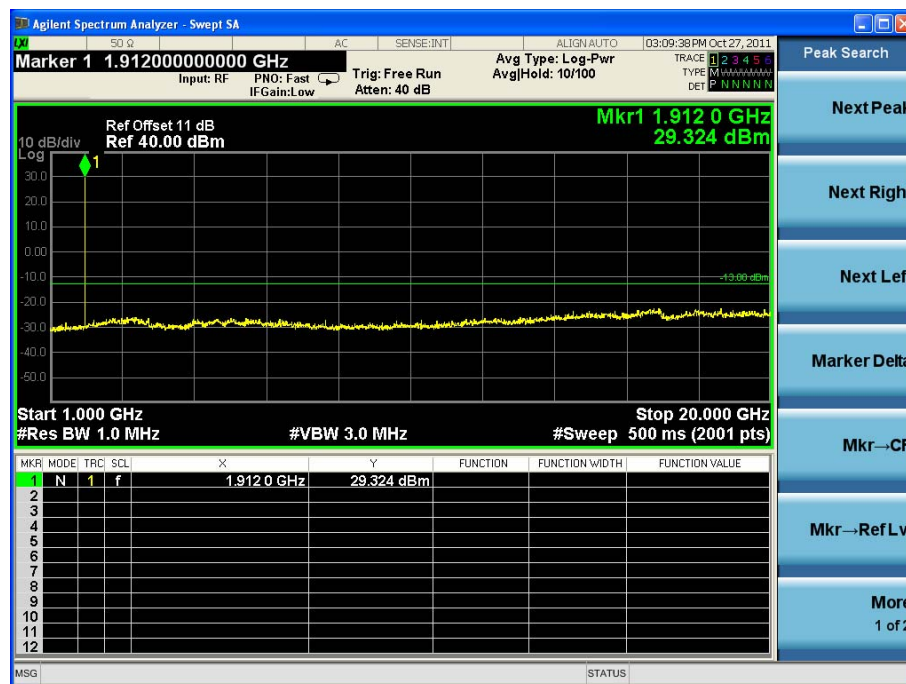


Channel 810





## 7.7. Test Photograph

Description: Conducted Spurious Emission Measurement Setup



Description: ERP Test Setup

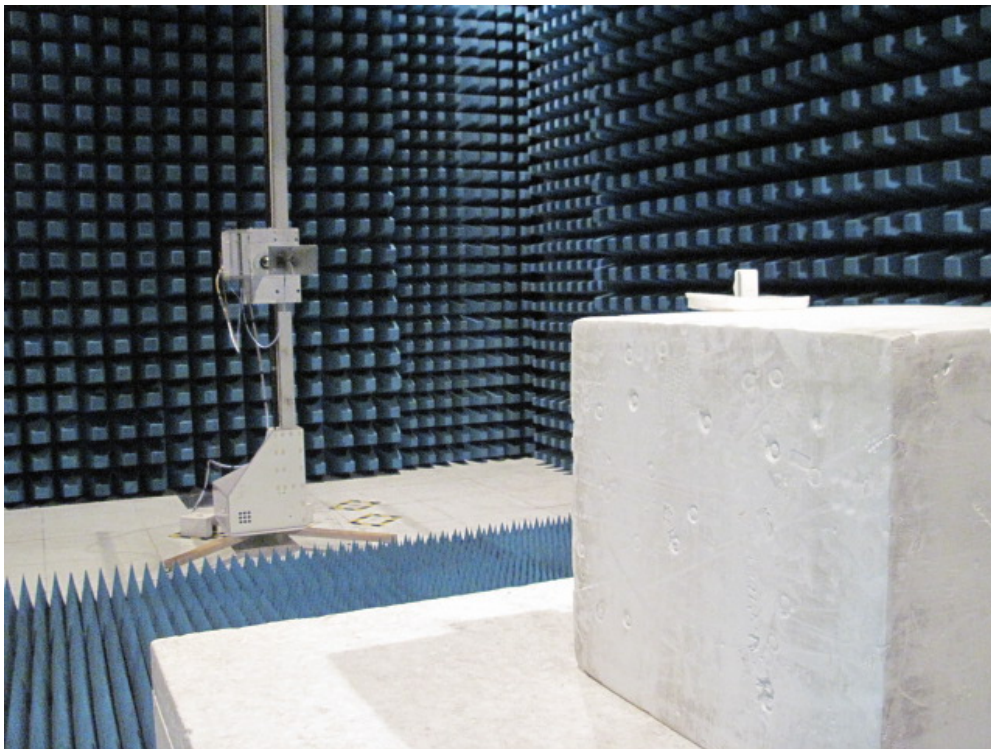




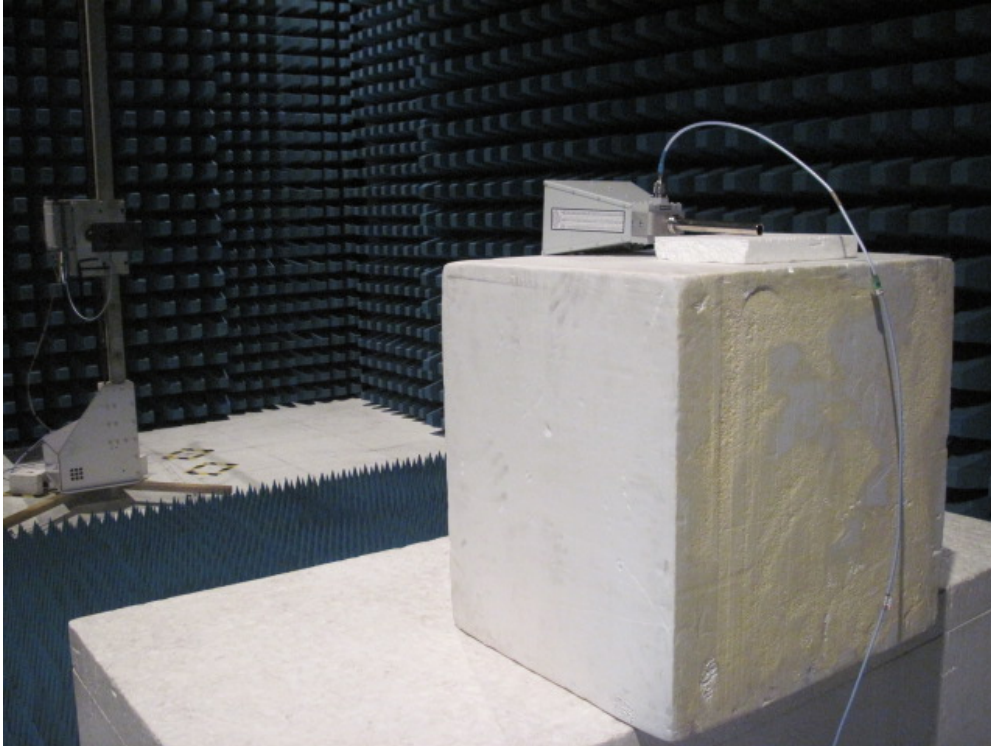
Description: Substitution Antenna for ERP Test



Description: EIRP Test Setup



Description: Substitution Antenna for EIRP Test



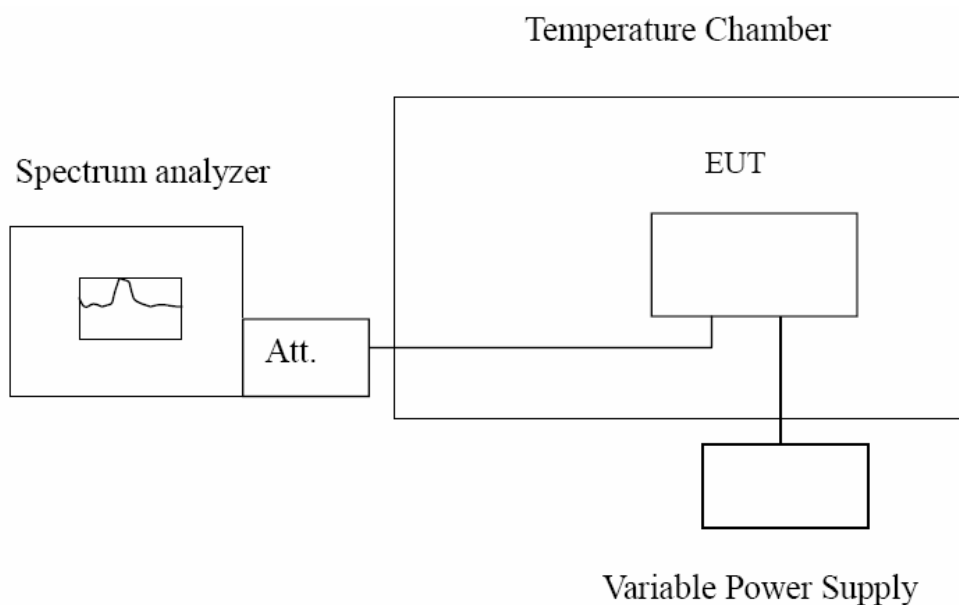
## 8. Frequency Stability Under Temperature & Voltage Variations

### 8.1. Test Equipment

Frequency Stability Under Temperature & Voltage Variations / TR-7

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
PSA Series Spectrum Analyzer	Agilent	E4440A	MY49420184	2012.04.10
Radio Communication Tester	R&S	CMU 200	117088	2012.04.29
Dual Directional Coupler	Agilent	778D	20160	2012.04.20
10dB Coaxial Coupler	Agilent	87300C	MY44300299	2012.04.20
DC Power Supply	IDRC	CD-035-020PR	977272	2012.09.22
Temperature & Humidity Chamber	Gaoyu	TH-1P-B	WIT-05121302	2012.01.19
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC6-TH	2012.01.14

### 8.2. Test Setup



### 8.3. Limit

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Limit	$< \pm 2.5 \text{ ppm}$
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### 8.4. Test Procedure

#### Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C (EUT Spec). After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

#### Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ( $\pm 15\%$ ) and endpoint, record the maximum frequency change.

### 8.5. Uncertainty

The measurement uncertainty is defined as  $\pm 10 \text{ Hz}$ .

## 8.6. Test Result

Product	GPS Locator		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 1: GPRS 850 Link		
Date of Test	2011/10/23	Test Site	TR-7

Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation		Limit (ppm)
		(Hz)	(ppm)	
-30	836.40	-32	-0.04	$< \pm 2.5$
-20	836.40	-28	-0.03	$< \pm 2.5$
-10	836.40	-22	-0.03	$< \pm 2.5$
0	836.40	-24	-0.03	$< \pm 2.5$
10	836.40	-16	-0.02	$< \pm 2.5$
20	836.40	-19	-0.02	$< \pm 2.5$
30	836.40	-27	-0.03	$< \pm 2.5$
40	836.40	-30	-0.04	$< \pm 2.5$
50	836.40	-38	-0.04	$< \pm 2.5$

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation		Limit (ppm)
		(Hz)	(ppm)	
4.200	836.40	-28	-0.03	$< \pm 2.5$
3.800	836.40	-22	-0.03	$< \pm 2.5$
3.400	836.40	-30	-0.04	$< \pm 2.5$



Product	GPS Locator		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 2: GPRS 1900 Link		
Date of Test	2011/10/23	Test Site	TR-7

#### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation		Limit (ppm)
		(Hz)	(ppm)	
-30	1880.00	-41	-0.02	$< \pm 2.5$
-20	1880.00	-36	-0.02	$< \pm 2.5$
-10	1880.00	-33	-0.02	$< \pm 2.5$
0	1880.00	-24	-0.01	$< \pm 2.5$
10	1880.00	-31	-0.02	$< \pm 2.5$
20	1880.00	-36	-0.02	$< \pm 2.5$
30	1880.00	-37	-0.02	$< \pm 2.5$
40	1880.00	-44	-0.02	$< \pm 2.5$
50	1880.00	-46	-0.02	$< \pm 2.5$

#### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation		Limit (ppm)
		(Hz)	(ppm)	
4.200	1880.00	-41	-0.02	$< \pm 2.5$
3.800	1880.00	-33	-0.02	$< \pm 2.5$
3.600	1880.00	-39	-0.02	$< \pm 2.5$

## 9. Attachment

### ➤ EUT Photograph

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



(4) EUT Photo





(5) EUT Photo



(6) EUT Photo



(7) EUT Photo



(8) EUT Photo





(9) EUT Photo



(10) EUT Photo

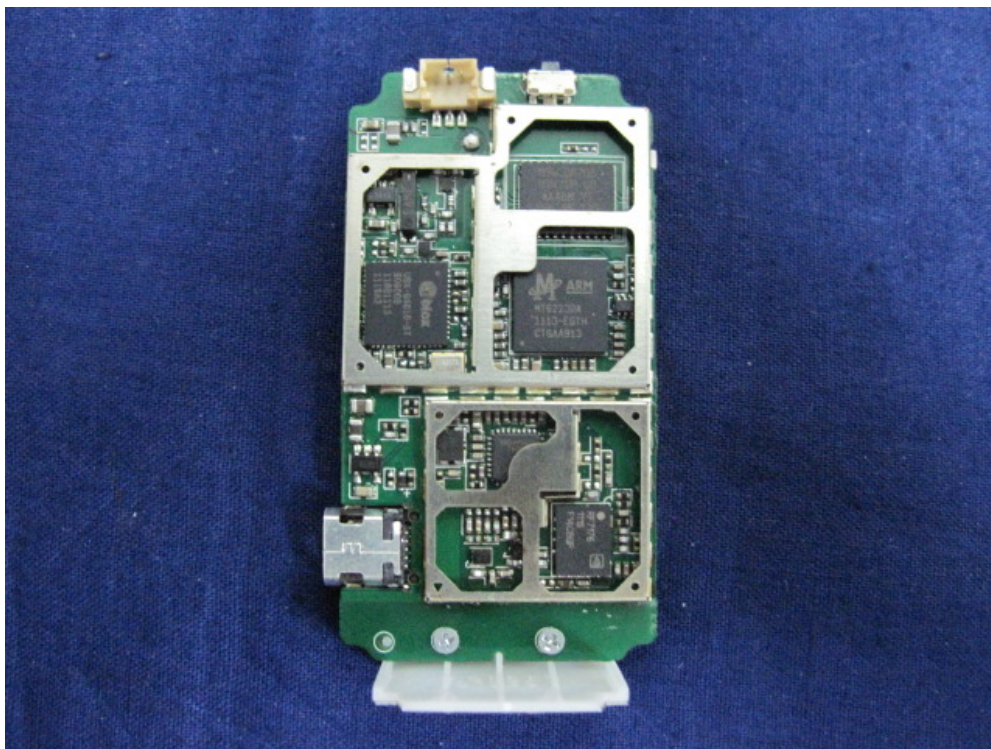




(11) EUT Photo



(12) EUT Photo

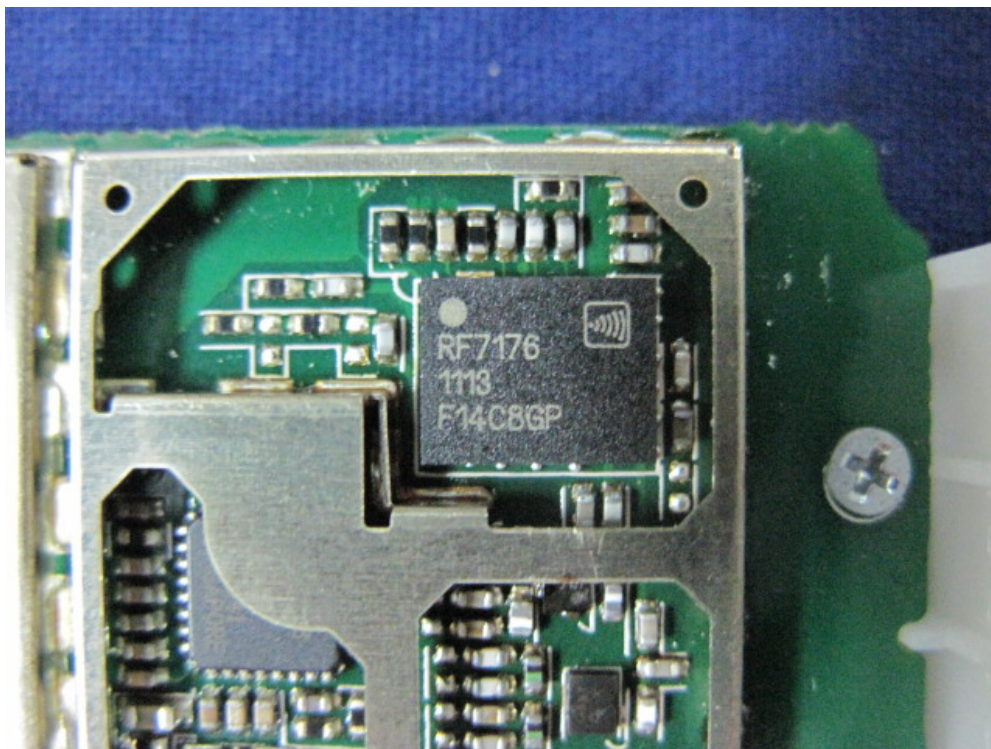




(13) EUT Photo



(14) EUT Photo



(15) EUT Photo



(16) EUT Photo

