



# Test Report

## FCC Part15 Subpart C

Product Name : GSM Mobile Phone  
Model No. : HUAWEI G7500  
FCC ID : QISG7500

Applicant : HUAWEI TECHNOLOGIES CO.,LTD  
Address : Administration Building, Headquarters of Huawei  
Technologies Co., Ltd., Bantian, Longgang  
District, Shenzhen, 518129, P.R.C

Date of Receipt : 26/02/2013  
Test Date : 26/02/2013~24/03/2013  
Issued Date : 25/03/2013  
Report No. : 132S031R-RF-US-P06V01  
Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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# Test Report Certification

Issued Date : 25/03/2013

Report No. : 132S031R-RF-US-P06V01



Product Name : GSM Mobile Phone

Applicant : HUAWEI TECHNOLOGIES CO.,LTD

Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

Manufacturer : HUAWEI TECHNOLOGIES CO.,LTD

Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

Model No. : HUAWEI G7500

FCC ID : QISG7500

EUT Voltage : DC 3.7V

Brand Name : HUAWEI

Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2012  
ANSI C63.4: 2009

Test Result : Complied

Performed Location : Suzhou EMC Laboratory  
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FCC Registration Number: 800392

Documented By : Alice Mi

Reviewed By : Sunny Sun

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## Laboratory Information

We, **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

<b>Taiwan R.O.C.</b>	<b>:</b>	<b>BSMI, NCC, TAF</b>
<b>Germany</b>	<b>:</b>	<b>TUV Rheinland</b>
<b>Norway</b>	<b>:</b>	<b>Nemko, DNV</b>
<b>USA</b>	<b>:</b>	<b>FCC, NVLAP</b>
<b>Japan</b>	<b>:</b>	<b>VCCI</b>
<b>China</b>	<b>:</b>	<b>CNAS</b>

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site :<http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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## 1. General Information

### 1.1. EUT Description

Product Name	GSM Mobile Phone
Model No.	HUAWEI G6007
Hardware Version	12750_1_21
Software Version	G7500V100R001C00B201SP08_ENG
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
<b>2G</b>	
Support Band	GSM850/PCS1900
GPRS Type	Class B
GPRS Class	Class 12
Uplink	GSM 850: 824~849MHz PCS 1900: 1850~1910MHz
Downlink	GSM 850: 869~894MHz PCS 1900: 1930~1990MHz
Release Version	R99
Type of modulation	GMSK for GSM/GPRS 8PSK for EDGE(only support downlink)
Antenna Gain	2.2dBi for GSM850 0dBi for PCS1900
<b>Bluetooth</b>	
Bluetooth Frequency	2402~2480MHz
Bluetooth Version	V2.1 + EDR
Type of modulation	FHSS
Data Rate	1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK)
Antenna Gain	-3.9dBi
<b>Wi-Fi</b>	
Wi-Fi Frequency	802.11b/g/n(20MHz): 2412 ~ 2462 MHz
Type of modulation	802.11b: DSSS; 802.11g/n: OFDM
Data Rate	802.11b: 1/2/5.5/11 Mbps
	802.11g: 6/9/12/18/24/36/48/54 Mbps
	802.11n: up to 150 Mbps
Antenna Gain	-4.1dBi

Components	
Headset Model Number #1	HUAWEI/ 125G#+3261# 3.5MM-122
Headset Model Number #2	HUAWEI/ MEMD1532B480000
Battery #1	Brand Name: HUAWEI M/N: HB5N1 Rated Voltage and Capacitance: 3.7V/1350mAh S/N: GAGCA16Z98002175
Battery #2	Brand Name: HUAWEI M/N: HB5N1H Rated Voltage and Capacitance: 3.7V/1500mAh S/N: MLCD218997508029
Adapter #1	Brand Name: HUAWEI M/N: HW-050055U1W Input: 100-240V~50/60Hz 0.2A Output: 5Vdc, 550mA S/N: HKAD12049340
Adapter #2	Brand Name: HUAWEI M/N: HW-050055U1W Input: 100-240V~50/60Hz 0.2A Output: 5Vdc, 550mA S/N: TPACC0448602

**For 2.4GHz Band**

802.11b/g/n(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz	04	2427 MHz
05	2432 MHz	06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	10	2457 MHz	11	2462 MHz	N/A	N/A

**1.2. Mode of Operation**

Quietek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmit by 802.11b
Mode 2: Transmit by 802.11g
Mode 3: Transmit by 802.11n (20MHz)

**Note:**

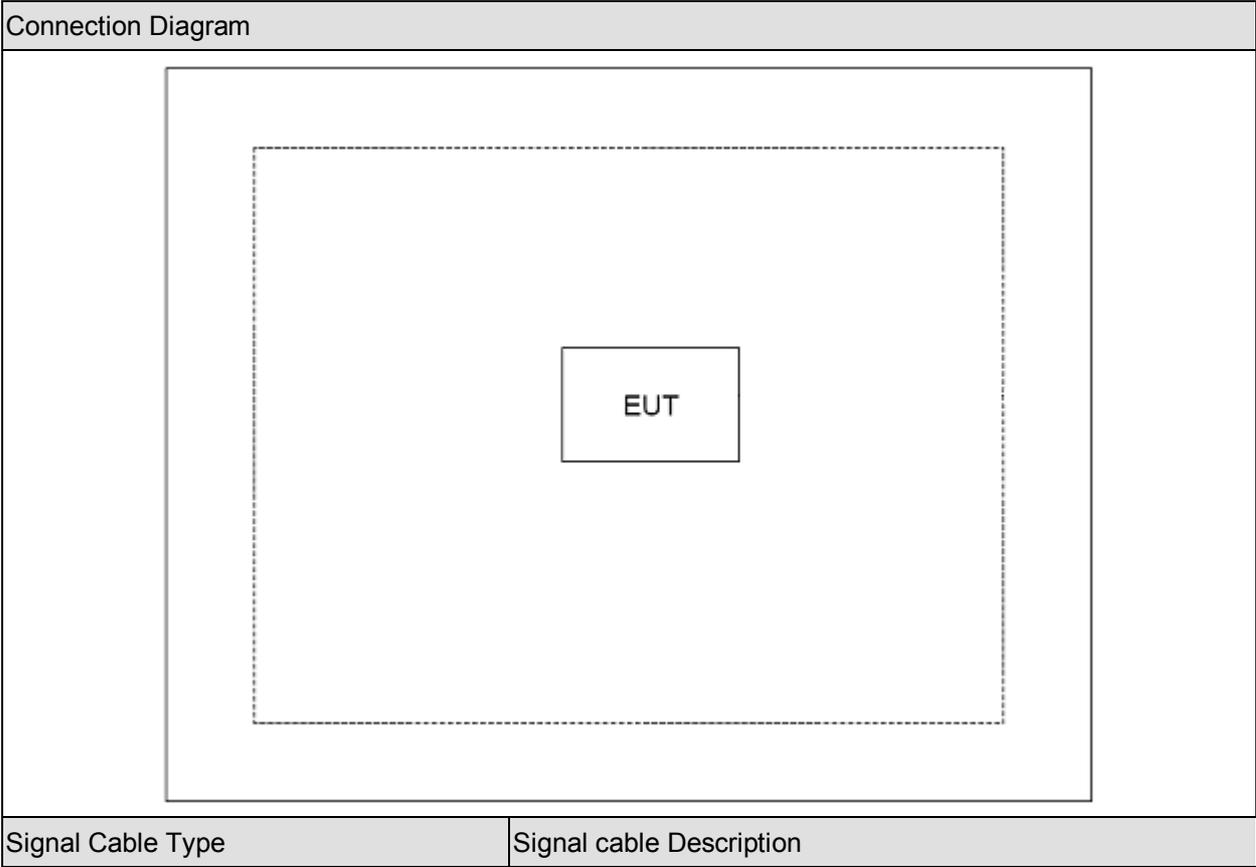
1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. This device is a composite device in accordance with Part 15 Subpart B regulations. The function for the receiver was measured and made a test report that the report number is 133025R-ITUSP01V02.

**1.3. Tested System Details**

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	N/A	N/A	N/A	N/A	N/A

1.4. Configuration of Tested System



## 1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Run the RF test software "ADB TOOL", and set the test mode and channel, then start continue transmit or receive.

**2. Technical Test**

**2.1. Summary of Test Result**

- No deviations from the test standards
- Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2012 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2012 Section 15.209	Yes	No
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2012 Section 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2012 15.247(d)	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2012 15.215(c)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2012 Section 15.247(a)(2)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2012 Section 15.247(b)(3)	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2012 Section 15.247(e)	Yes	No

**2.2. Test Environment**

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

### 3. Conducted Emission

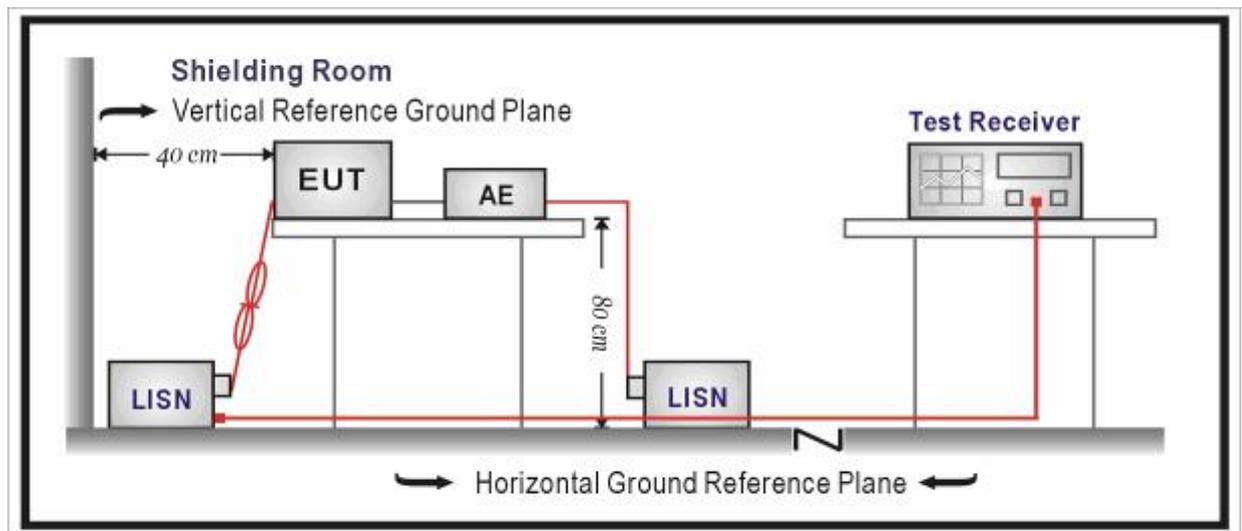
#### 3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2013.04.18
Two-Line V-Network	R&S	ENV216	100043	2013.04.18
Two-Line V-Network	R&S	ENV216	100044	2013.09.07
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2013.05.04
50ohm Termination	SHX	TF2	07081401	2013.09.17
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2014.01.10

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

#### 3.2. Test Setup



**3.3. Limit**

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

**3.4. Test Procedure**

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

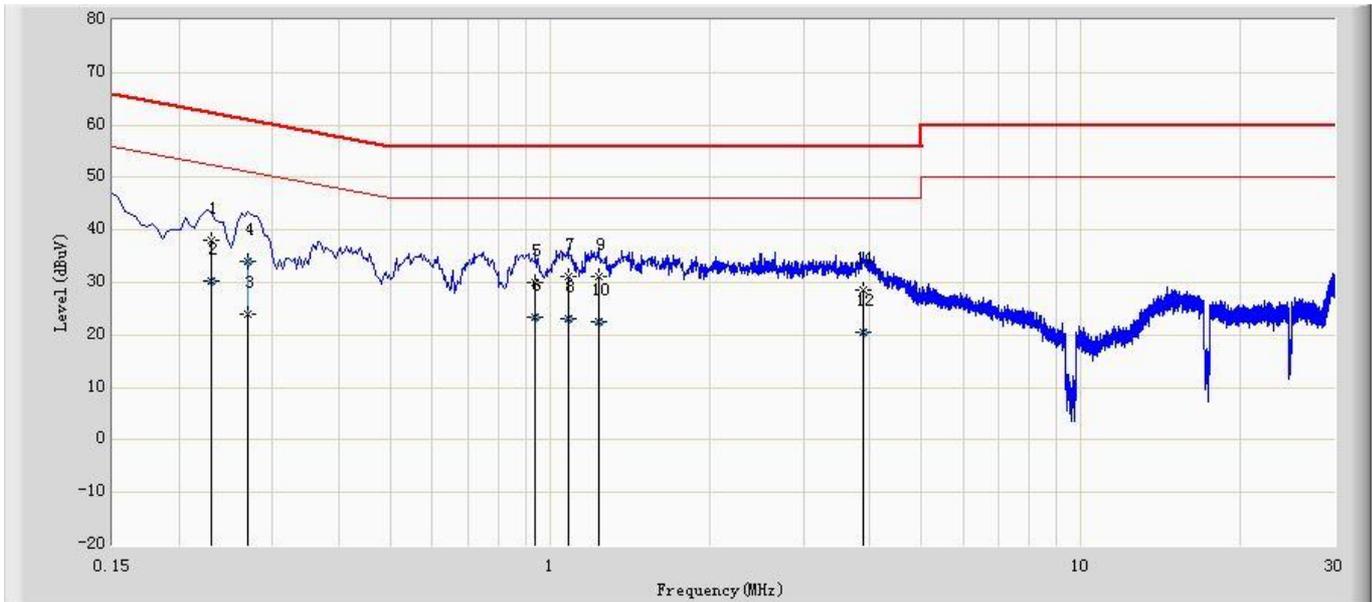
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

**3.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 2.02$  dB

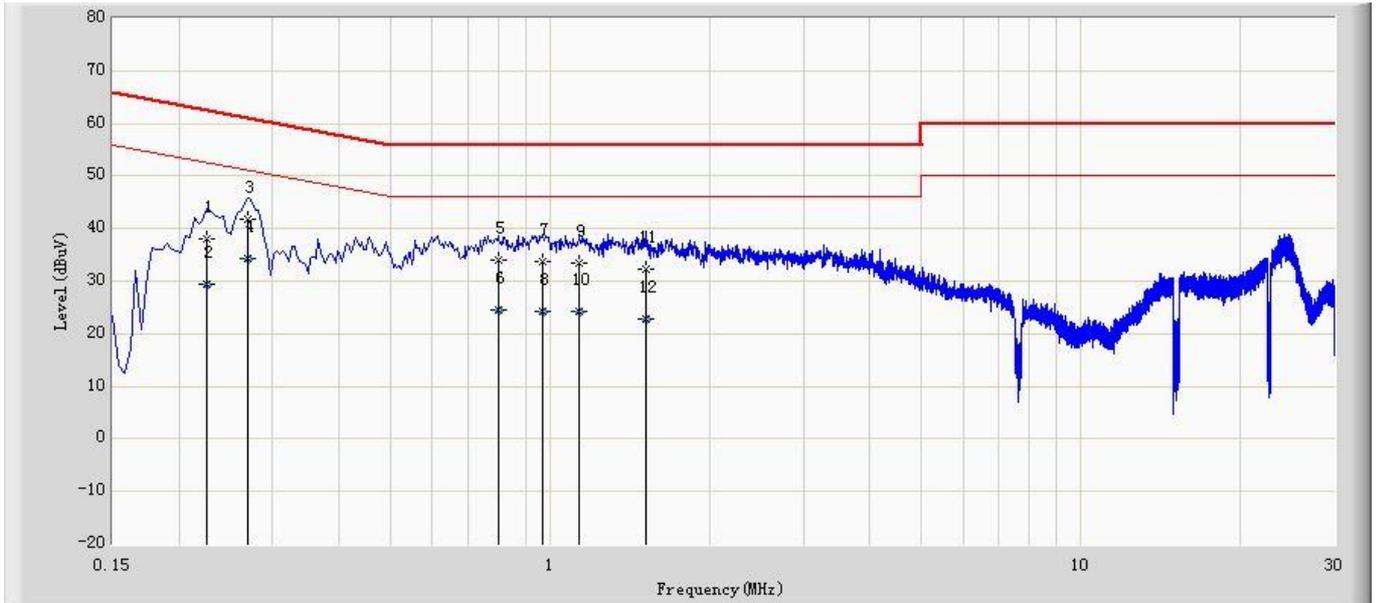
### 3.6. Test Result

Engineer: Brgant	
Site: TR1	Time: 2013/03/21 - 11:02
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Line
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.230	37.974	28.110	-24.476	62.450	9.864	QP
2		0.230	30.236	20.372	-22.214	52.450	9.864	AV
3		0.270	23.938	14.069	-37.179	61.118	9.870	QP
4	*	0.270	33.886	24.016	-17.232	51.118	9.870	AV
5		0.938	30.112	20.294	-25.888	56.000	9.818	QP
6		0.938	23.272	13.454	-22.728	46.000	9.818	AV
7		1.082	31.134	21.327	-24.866	56.000	9.806	QP
8		1.082	23.087	13.281	-22.913	46.000	9.806	AV
9		1.234	31.062	21.261	-24.938	56.000	9.800	QP
10		1.234	22.400	12.600	-23.600	46.000	9.800	AV
11		3.890	28.528	18.692	-27.472	56.000	9.836	QP
12		3.890	20.591	10.755	-25.409	46.000	9.836	AV

Engineer: Brgant	
Site: TR1	Time: 2013/03/21 - 11:07
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Neutral
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.226	37.984	28.071	-24.612	62.595	9.913	QP
2		0.226	29.548	19.635	-23.048	52.595	9.913	AV
3		0.270	41.740	31.805	-19.378	61.118	9.935	QP
4	*	0.270	34.306	24.371	-16.812	51.118	9.935	AV
5		0.798	34.094	24.165	-21.906	56.000	9.929	QP
6		0.798	24.565	14.636	-21.435	46.000	9.929	AV
7		0.970	33.666	23.642	-22.334	56.000	10.025	QP
8		0.970	24.345	14.321	-21.655	46.000	10.025	AV
9		1.138	33.361	23.336	-22.639	56.000	10.025	QP
10		1.138	24.276	14.251	-21.724	46.000	10.025	AV
11		1.514	32.341	22.347	-23.659	56.000	9.993	QP
12		1.514	22.953	12.960	-23.047	46.000	9.993	AV

## 4. Radiated Emission

### 4.1. Test Equipment

#### Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2013.11.17
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2013.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2014.03.01
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2013.05.07

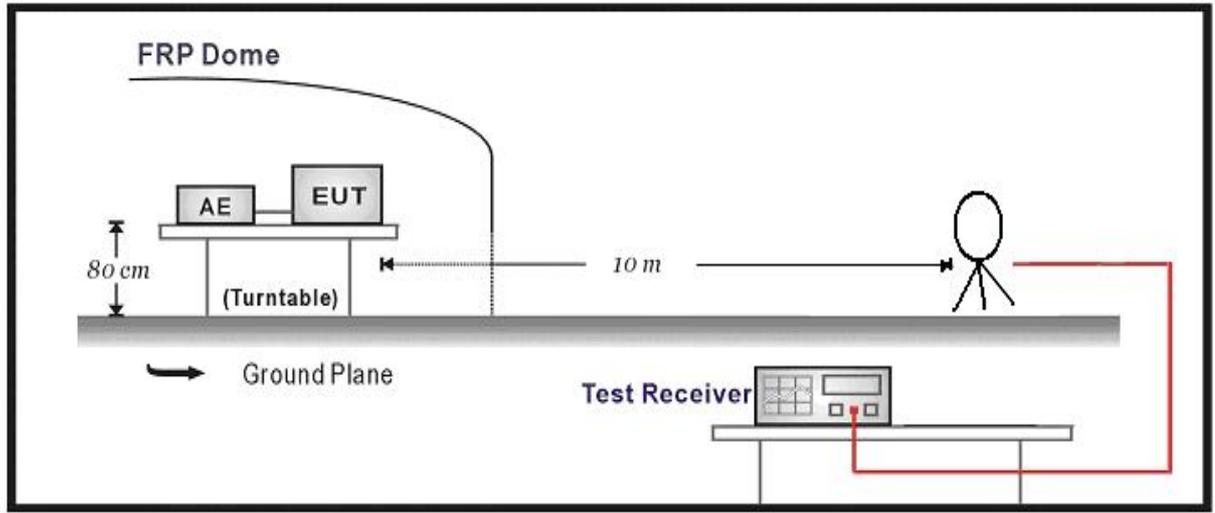
#### Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.04.18
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	Quietek	AP-040G	CHM-0906001	2013.05.04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2013.10.15
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2014.06.08
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2013.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2014.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2014.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2014.03.01
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2014.01.11

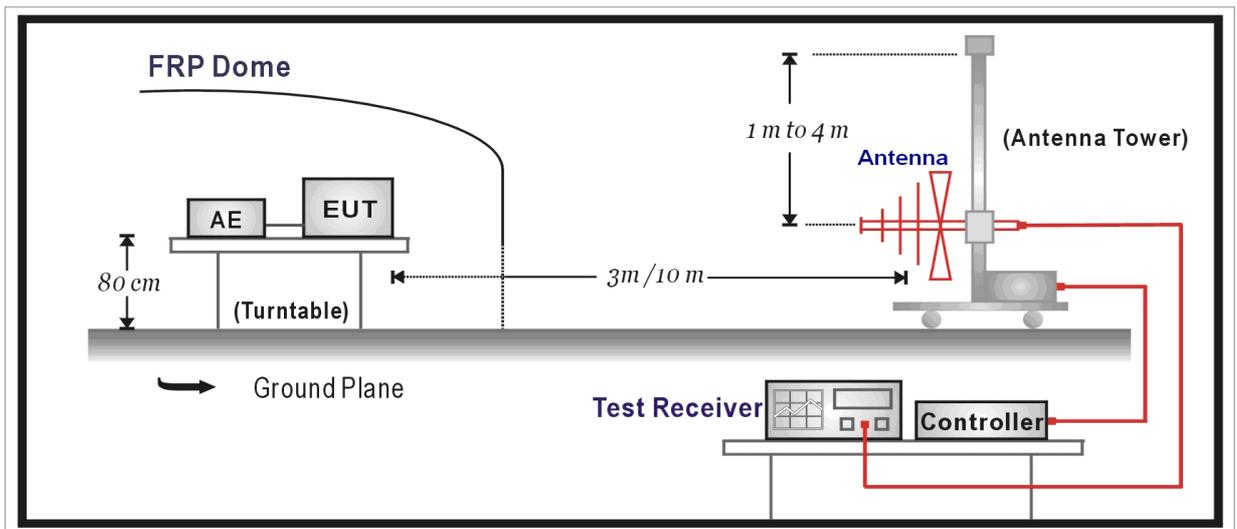
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 4.2. Test Setup

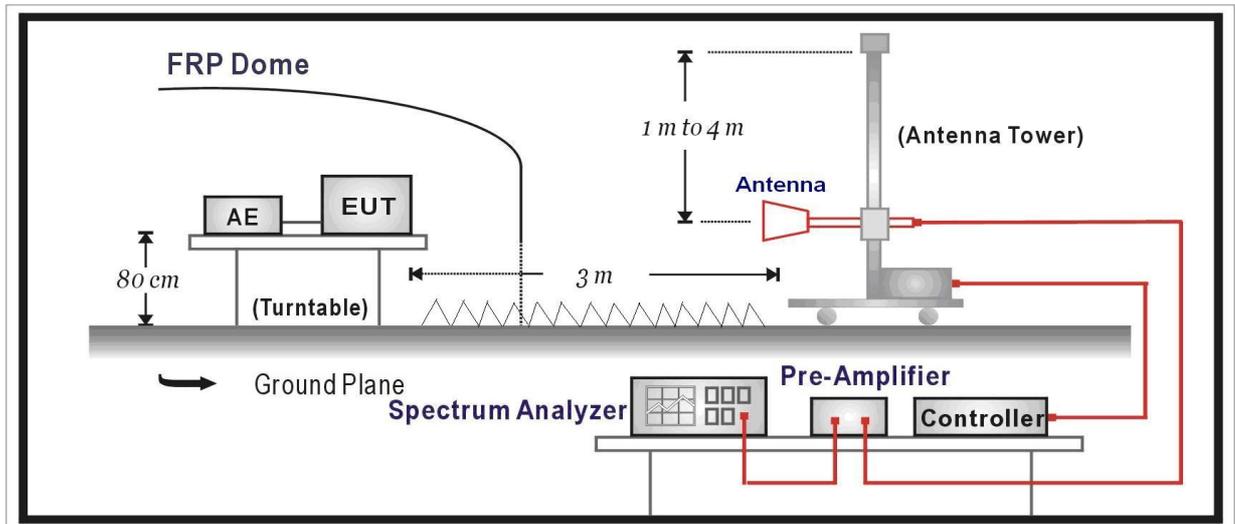
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This

is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4: 2009 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 60 degrees for H-plane and 90 degrees for E-plane.

#### **4.5. Uncertainty**

The measurement uncertainty above 1G is defined as  $\pm 3.9$  dB

below 1G is defined as  $\pm 3.8$  dB

## 4.6. Test Result

All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:

Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;

Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Measure Level = Reading Level + Cable Loss + Antenna Factor - Preamplifier Gain

Mode1: Transmit at 802.11b

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	2411.9	71.3	27.8	99.1	Fundamental	/	PK
	H	350.6	1.0	16.3	17.3	46	-28.7	QP
	H	569.7	0.8	21.2	22.0	46	-24.0	QP
	V	3042.1	43.9	-5.6	38.3	54(note3)	-15.7	PK
	H	4825.0	55.8	-2.5	53.3	54(note3)	-0.7	PK
	H	7236.0	39.9	2.6	42.5	54(note3)	-31.5	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK
6	H	2437.0	70.5	27.7	98.2	Fundamental	/	PK
	V	349.7	0.2	16.3	16.5	46	-29.5	QP
	V	539.0	2.6	20.9	23.5	46	-22.5	QP
	H	3114.4	43.9	-5.7	38.2	54(note3)	-15.8	PK
	H	4873.9	55.2	-2.3	52.9	54(note3)	-1.1	PK
	V	7311.0	40.4	2.7	43.1	54(note3)	-10.9	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK
11	H	2462.1	69.4	27.9	97.3	Fundamental	/	PK
	H	367.3	1.1	16.7	17.8	46	-28.2	QP
	H	539.1	3.3	20.9	24.2	46	-21.8	QP
	V	3057.0	44.3	-5.6	38.7	54(note3)	-15.3	PK
	H	4924.9	53.4	-2.2	51.2	54(note3)	-2.8	PK
	H	7386.0	39.6	2.8	42.4	54(note3)	-11.6	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

Mode2: Transmit at 802.11g

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	2412.1	74.2	27.8	102.0	Fundamental	/	PK
	V	345.7	0.3	16.2	16.5	46	-29.5	QP
	V	539.1	3.0	20.9	23.9	46	-22.1	QP
	V	3129.3	44.7	-5.7	39.0	54(note3)	-15.0	PK
	H	4825.0	54.1	-2.5	51.6	54(note3)	-2.4	PK
	V	7236.0	40.0	2.6	42.6	54(note3)	-31.4	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK
6	H	2437.0	73.5	27.8	101.3	Fundamental	/	PK
	H	355.1	0.4	16.4	16.8	46	-29.2	QP
	H	539.1	2.5	21	23.5	46	-22.5	QP
	V	3129.3	44.9	-5.6	39.3	54(note3)	-14.7	PK
	H	4873.9	53.9	-2.3	51.6	54(note3)	-2.4	PK
	V	7311.0	40.2	2.7	42.9	74	-11.1	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK
11	H	2461.8	73.0	27.9	100.9	Fundamental	/	PK
	V	346.9	0.9	16.1	17.0	46	-29.0	QP
	V	539.1	3.9	20.9	24.8	46	-21.2	QP
	V	3112.3	44.2	-5.6	38.6	54(note3)	-15.4	PK
	H	4920.6	55.2	-2.2	53.0	54(note3)	-1.0	PK
	V	7386.0	40.7	2.7	43.4	54(note3)	-10.6	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

Mode3: Transmit at 802.11n(20MHz)

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	2411.6	71.3	27.7	99.0	Fundamental	/	PK
	H	353.6	0.9	16.3	17.2	46	-28.8	QP
	H	539.1	1.7	20.9	22.6	46	-23.4	QP
	V	3044.3	44.3	-5.7	38.6	54(note3)	-15.4	PK
	H	4820.8	50.2	-2.5	47.7	54(note3)	-6.3	PK
	V	7236.0	40.5	2.6	43.1	54(note3)	-30.9	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK
6	H	2437.0	70.3	28.3	98.6	Fundamental	/	PK
	V	347.2	0.3	16.2	16.5	46	-29.5	QP
	V	539.1	3.1	20.9	24.0	46	-22.0	QP
	H	3095.3	44.3	-5.6	38.7	54(note3)	-15.3	PK
	H	4873.9	50.8	-2.3	48.5	54(note3)	-5.5	PK
	H	7311.0	39.8	2.7	42.5	54(note3)	-11.5	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK
11	H	2461.6	69.7	27.9	97.6	Fundamental	/	PK
	H	353.3	0.3	16.4	16.7	46	-29.3	QP
	H	539.1	1.7	20.9	22.6	46	-23.4	QP
	V	3012.4	44.7	-5.7	39.0	54(note3)	-15.0	PK
	H	4929.1	49.5	-2.2	47.3	54(note3)	-6.7	PK
	V	7386.0	39.8	2.8	42.6	74	-11.4	PK
	H	24000.0	34.1	18.8	50.2	54(note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

**5. RF Antenna Conducted Spurious**

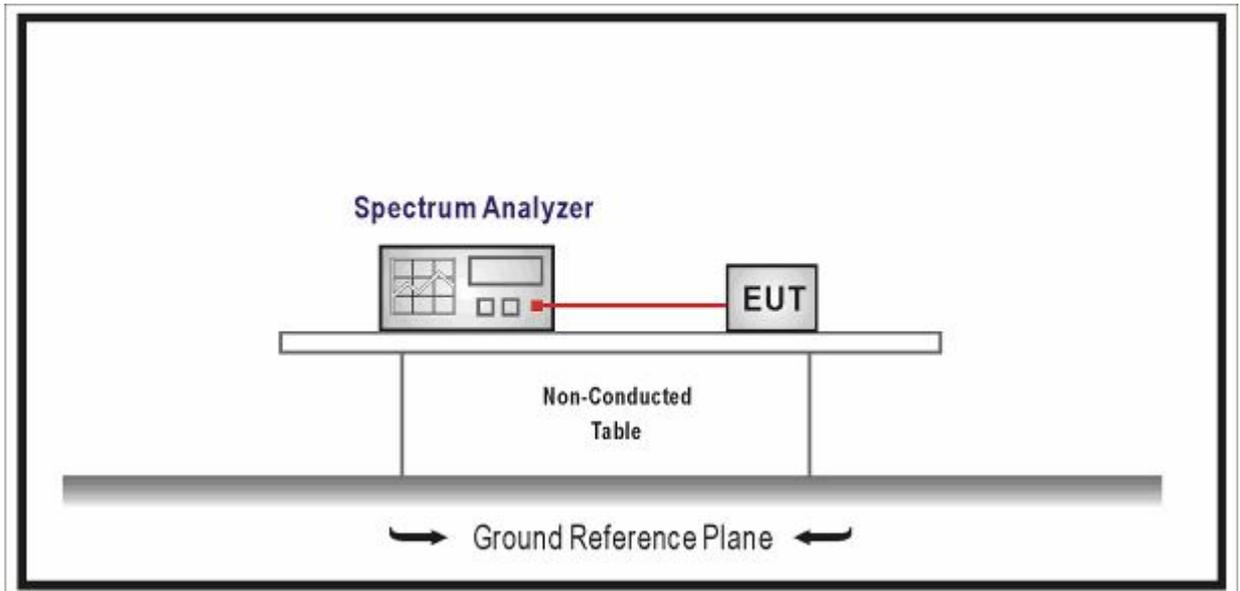
**5.1. Test Equipment**

RF Antenna Conducted Spurious / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

**5.2. Test Setup**



**5.3. Limit**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

#### **5.4. Test Procedure**

The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

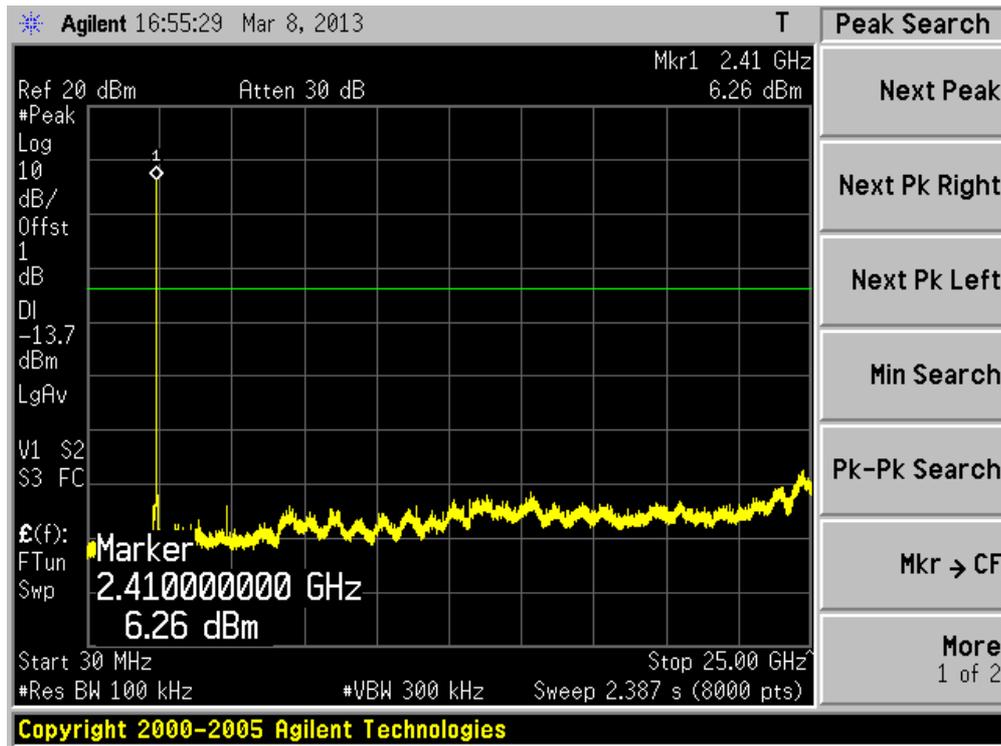
#### **5.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 1.27$  dB

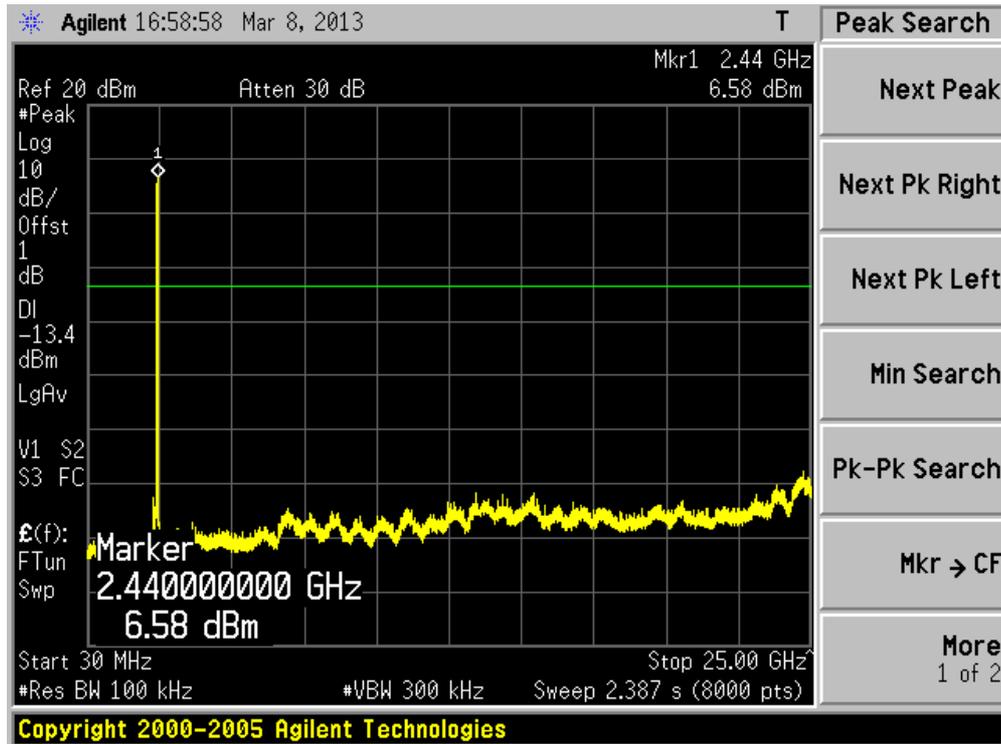
5.6. Test Result

Product	:	GSM Mobile Phone
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

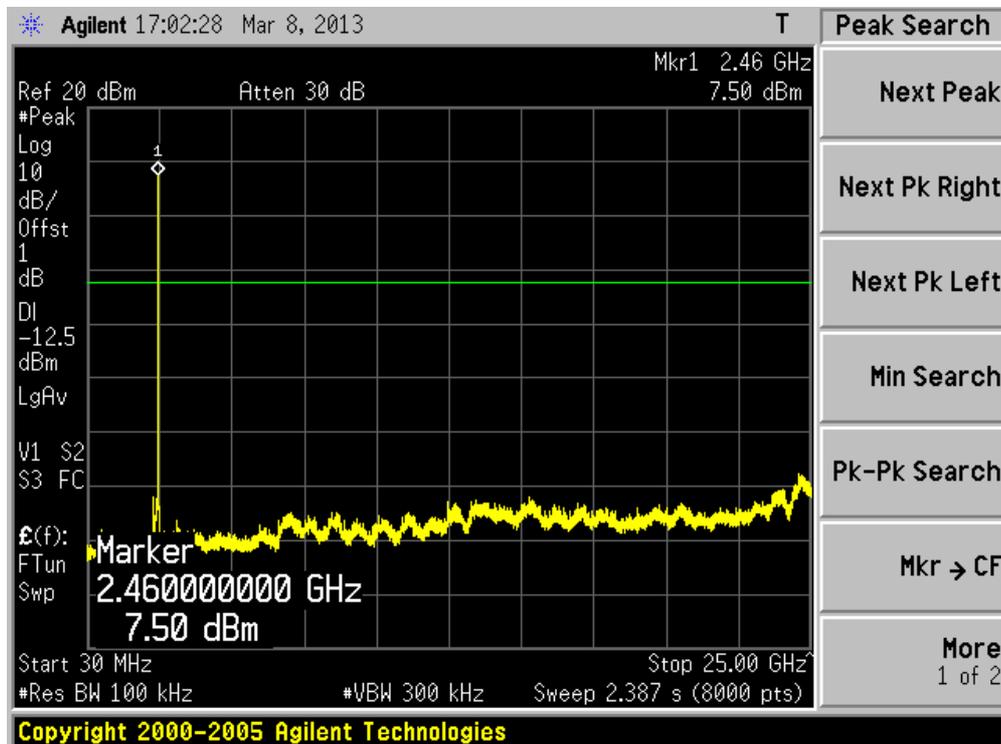
Channel 01 (2412MHz)



Channel 06 (2437MHz)

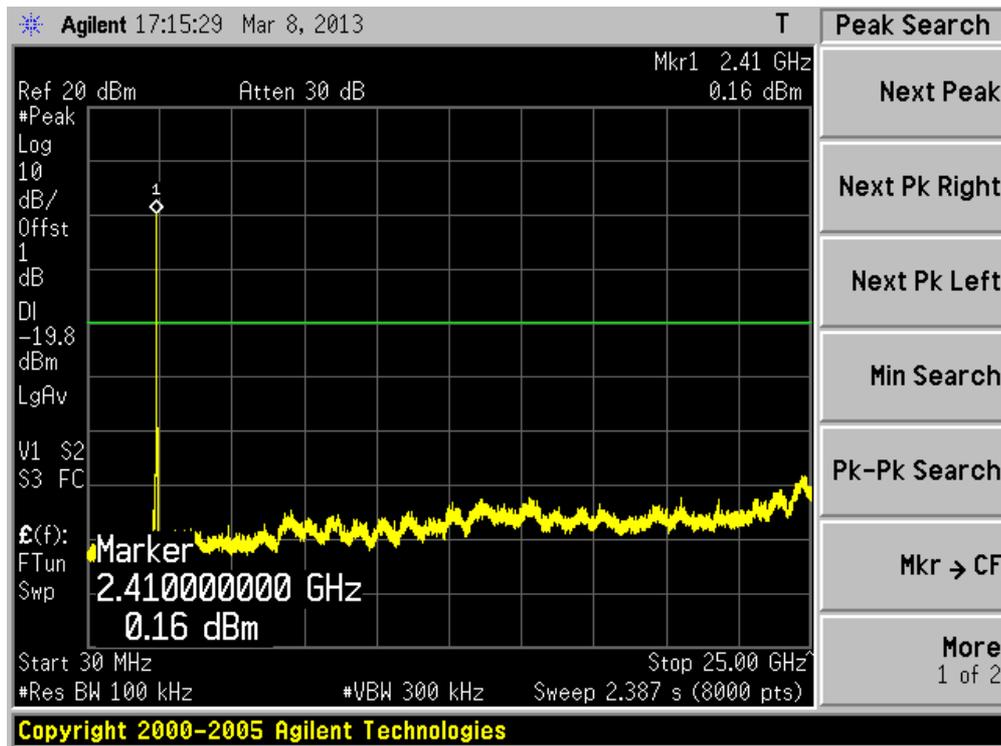


Channel 11 (2462MHz)

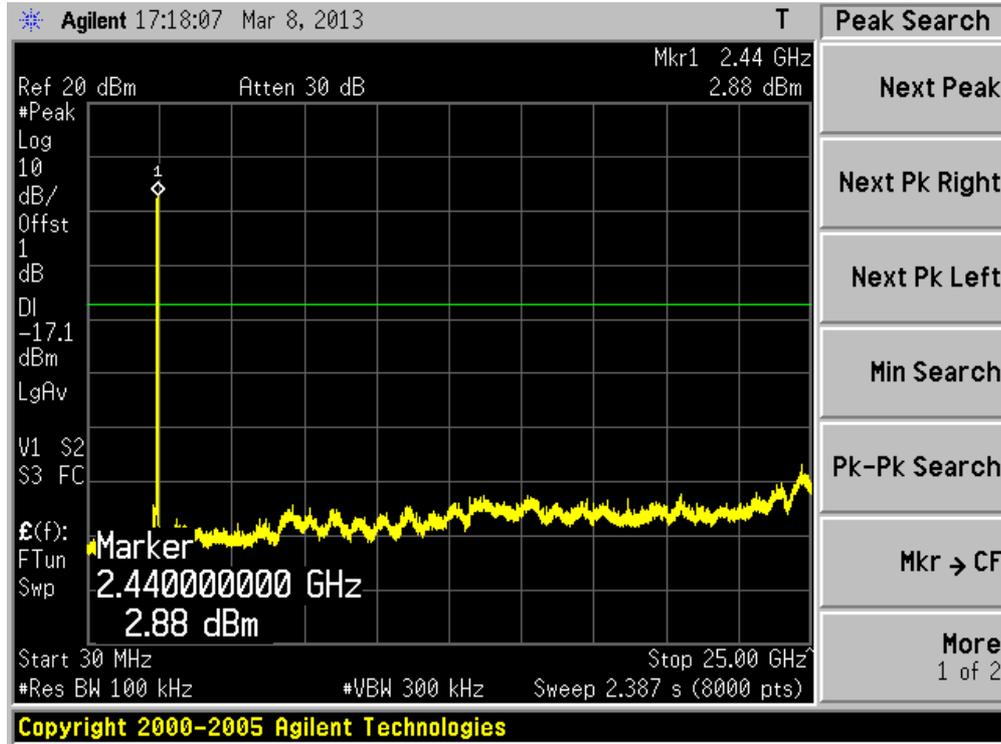


Product	: GSM Mobile Phone
Test Item	: RF Antenna Conducted Spurious
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g

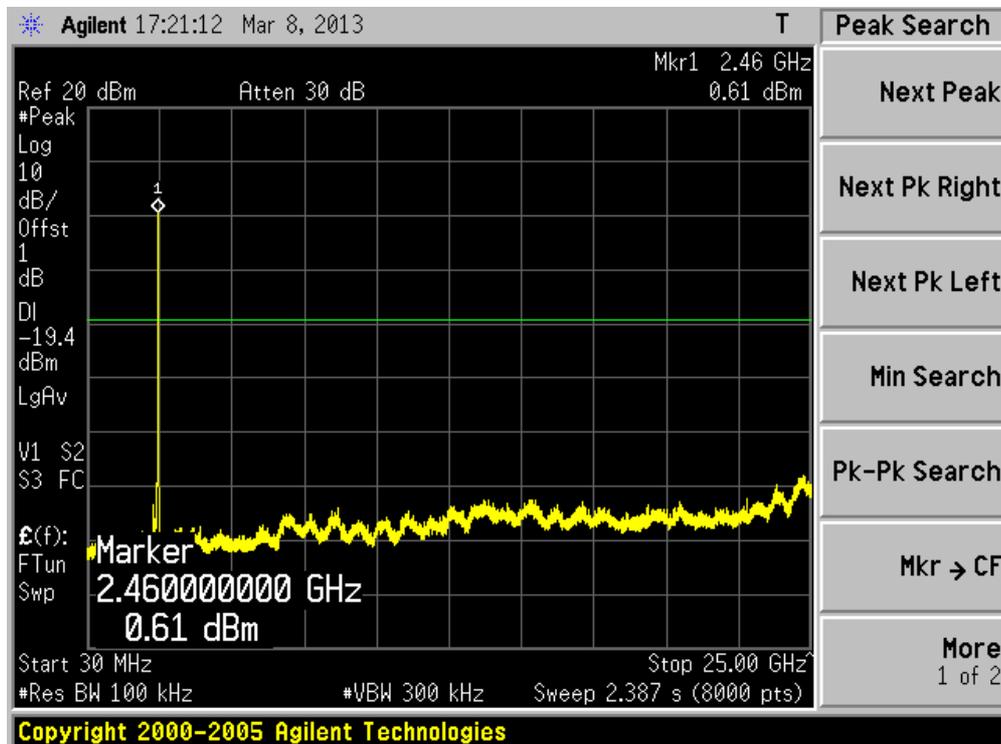
### Channel 01 (2412MHz)



Channel 06 (2437MHz)

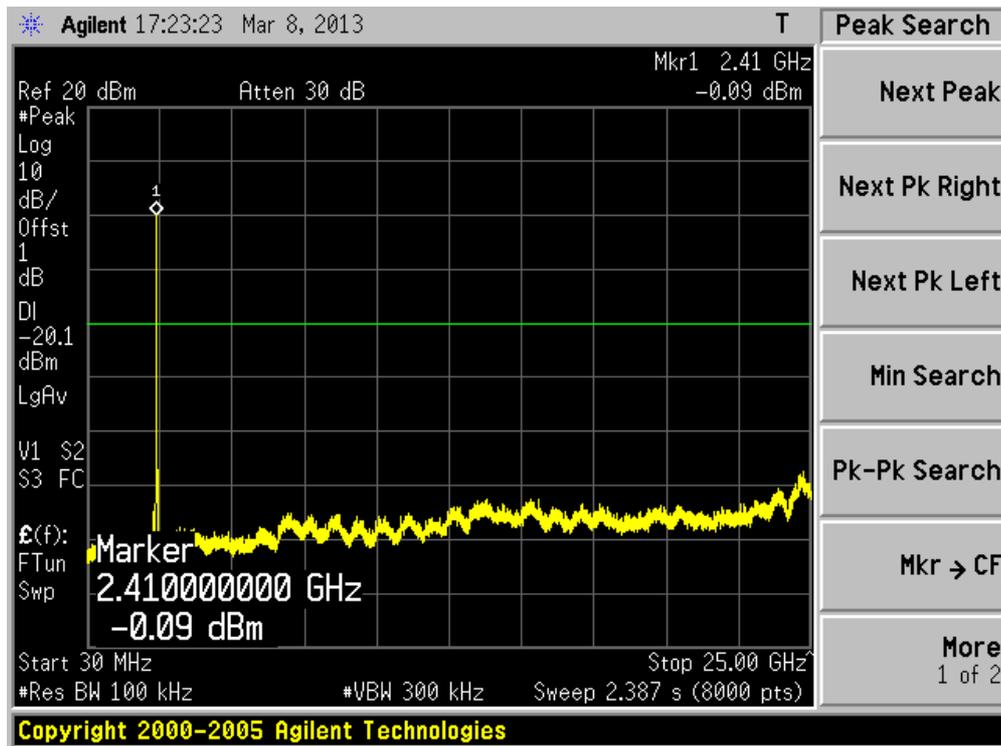


Channel 11 (2462MHz)

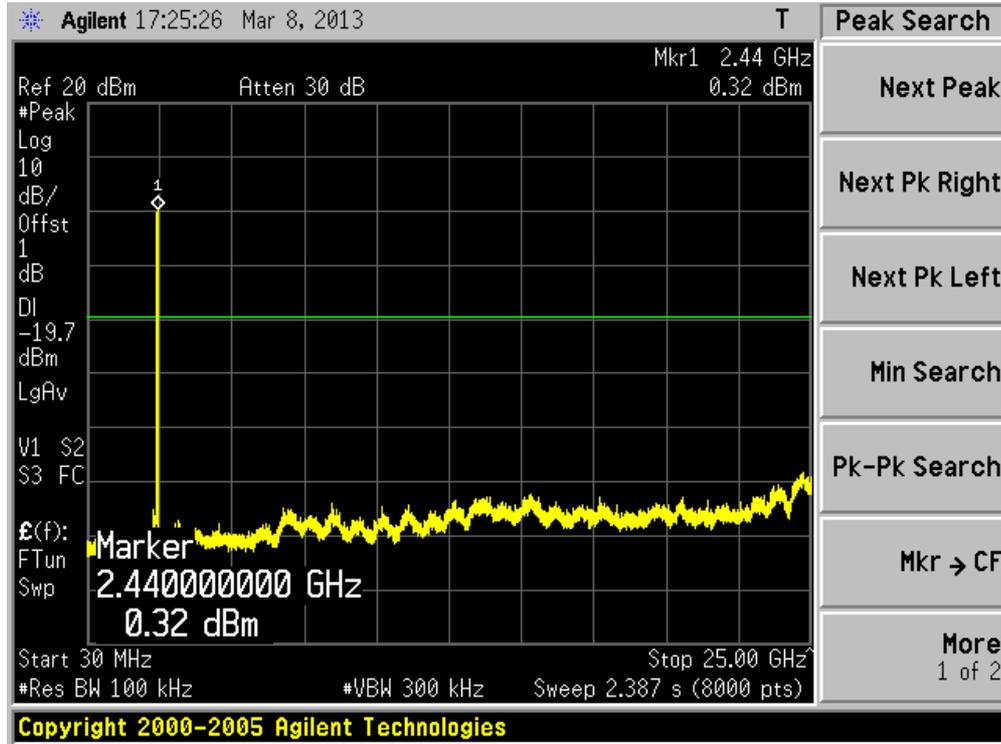


Product	: GSM Mobile Phone
Test Item	: RF Antenna Conducted Spurious
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n (20MHz)

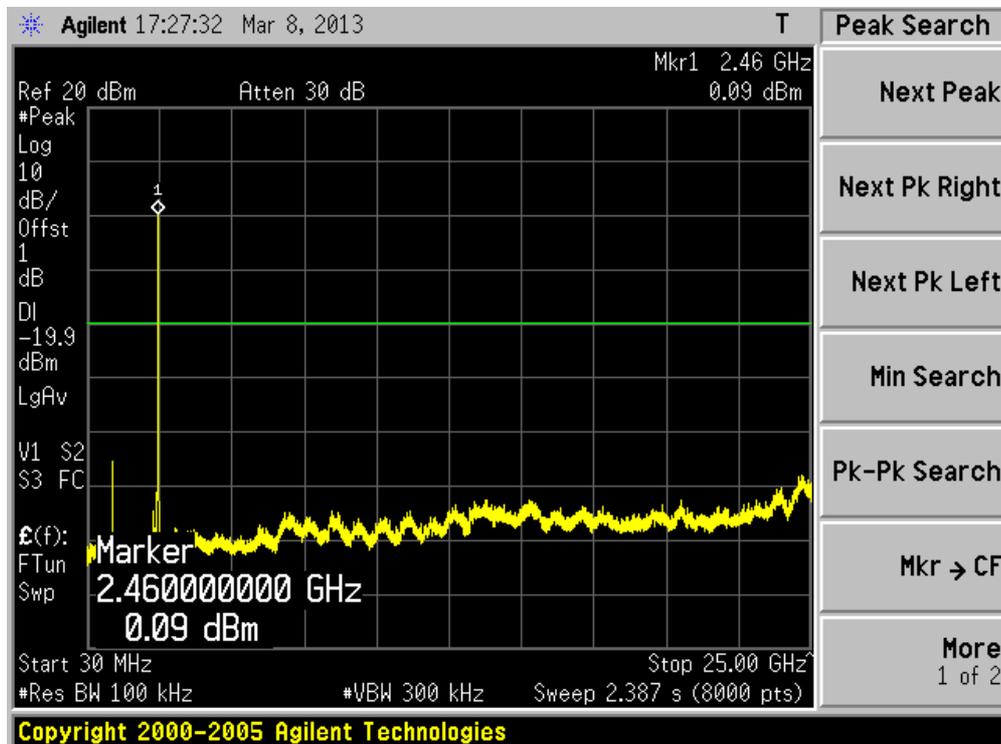
**Channel 01 (2412MHz) Ant 1**



Channel 06 (2437MHz)



Channel 11 (2462MHz)



**6. Radiated Emission Band Edge**

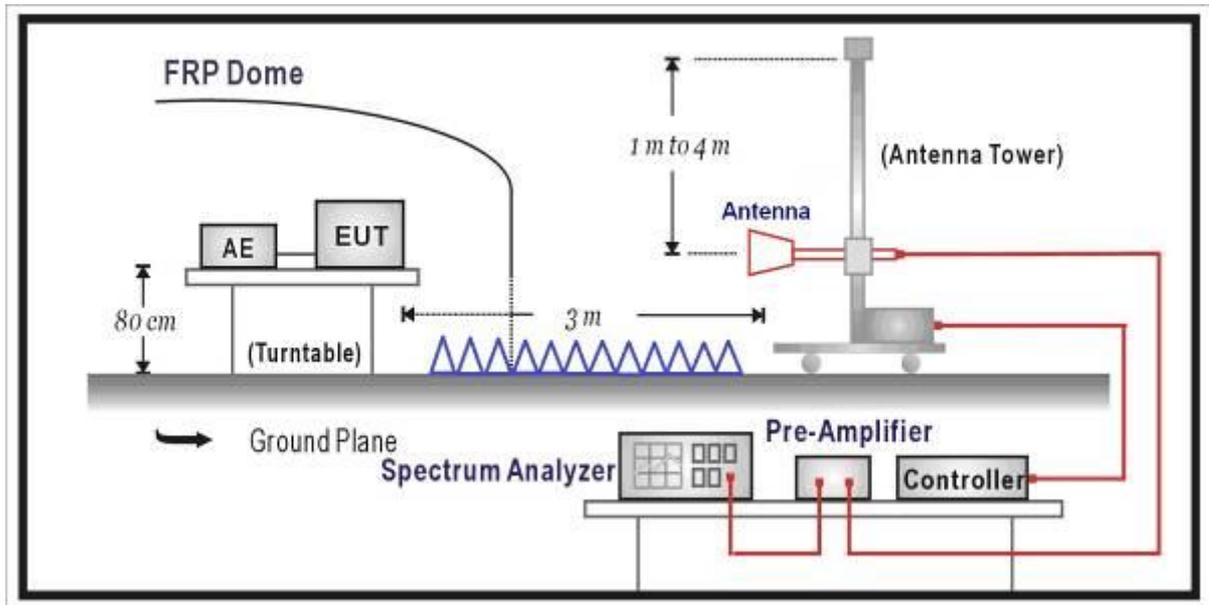
**6.1. Test Equipment**

Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.04.18
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	Quietek	AP-040G	CHM-0906001	2013.05.04
Bilog Type Antenna	Schaffner	CBL6112B	2932	2013.10.15
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2014.06.08
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2014.03.01
Temperature/Humidity Meter	zhicheng	ZC1-2	AC5-TH	2014.01.10

Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

**6.2. Test Setup**



**6.3. Limit**

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

**6.4. Test Procedure**

The EUT was setup according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4: 2009 on radiated measurement.

**6.5. Uncertainty**

The measurement uncertainty above 1G is defined as  $\pm 3.9$  dB

## 6.6. Test Result

All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:

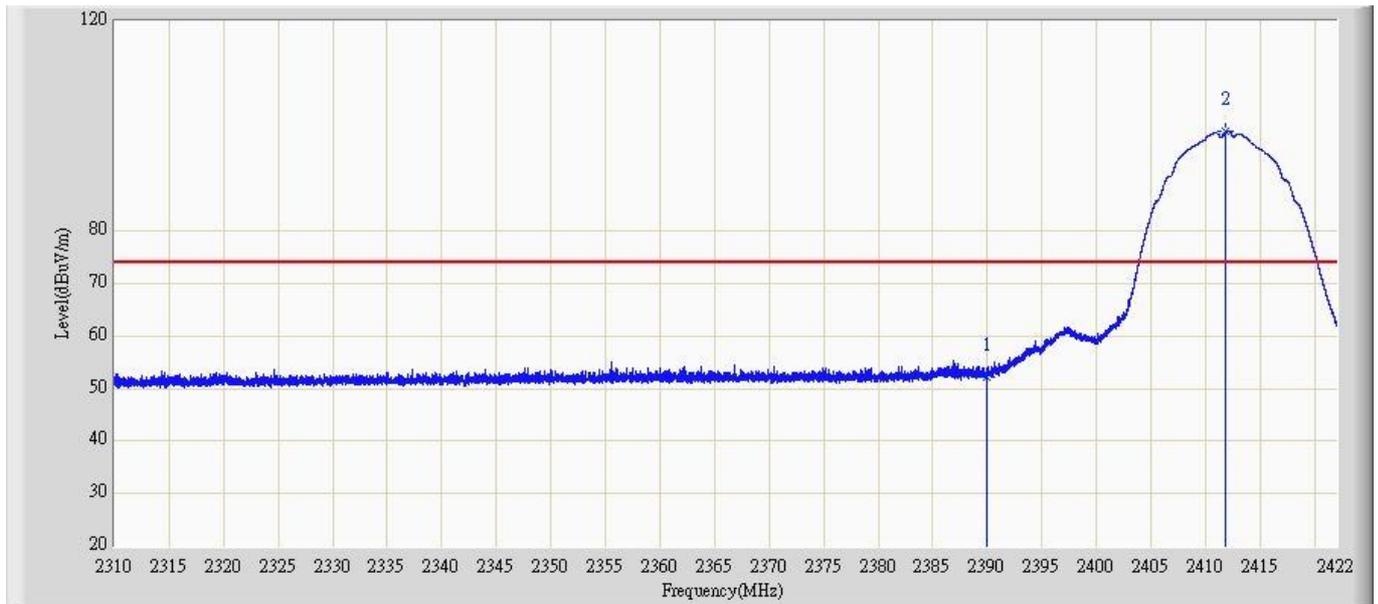
Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;

Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Measure Level = Reading Level + Cable Loss + Antenna Factor - Pre-amplifier Gain

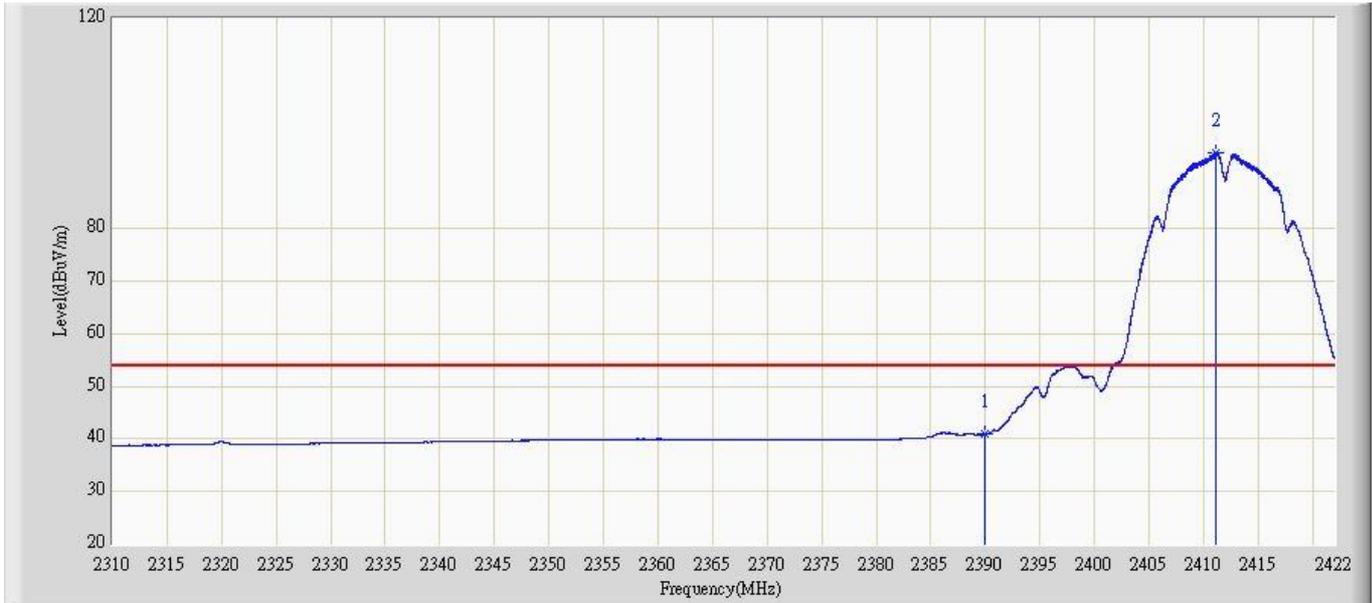
In case the emission is fail due to the used RB/VB is too wide, marker-delta method of FCC Public Notice will be followed.

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 22:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



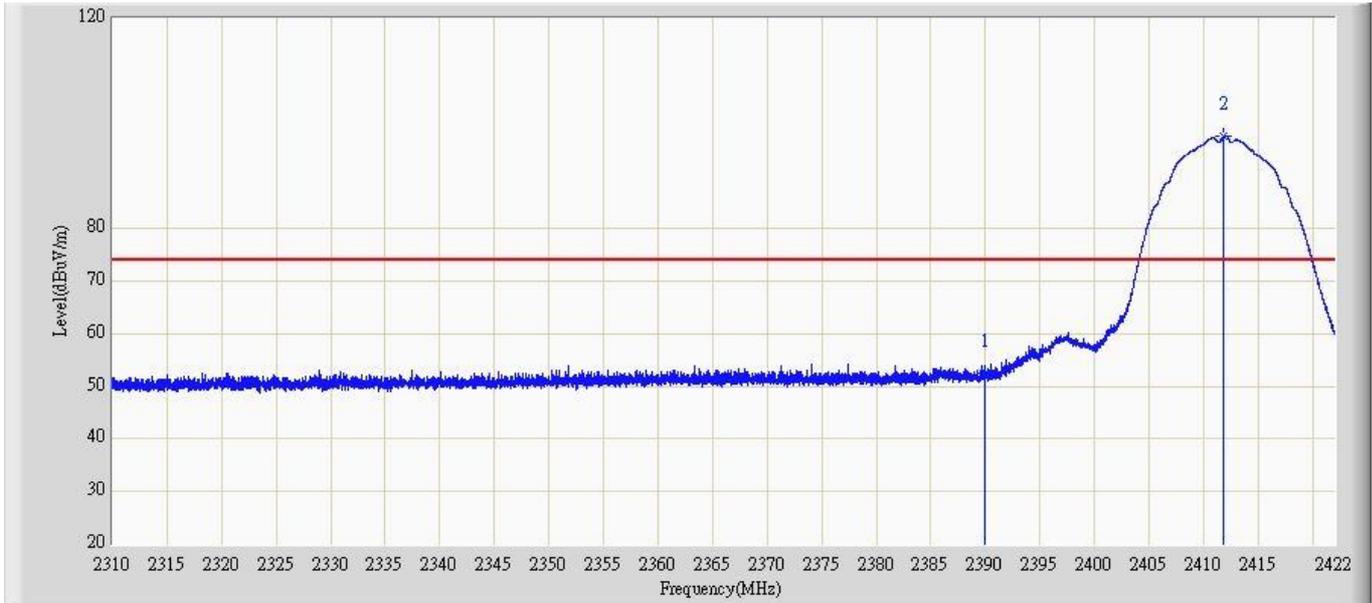
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.258	24.576	-21.742	74.000	27.682	PK
2	*	2411.892	99.062	71.292	N/A	N/A	27.769	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 22:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



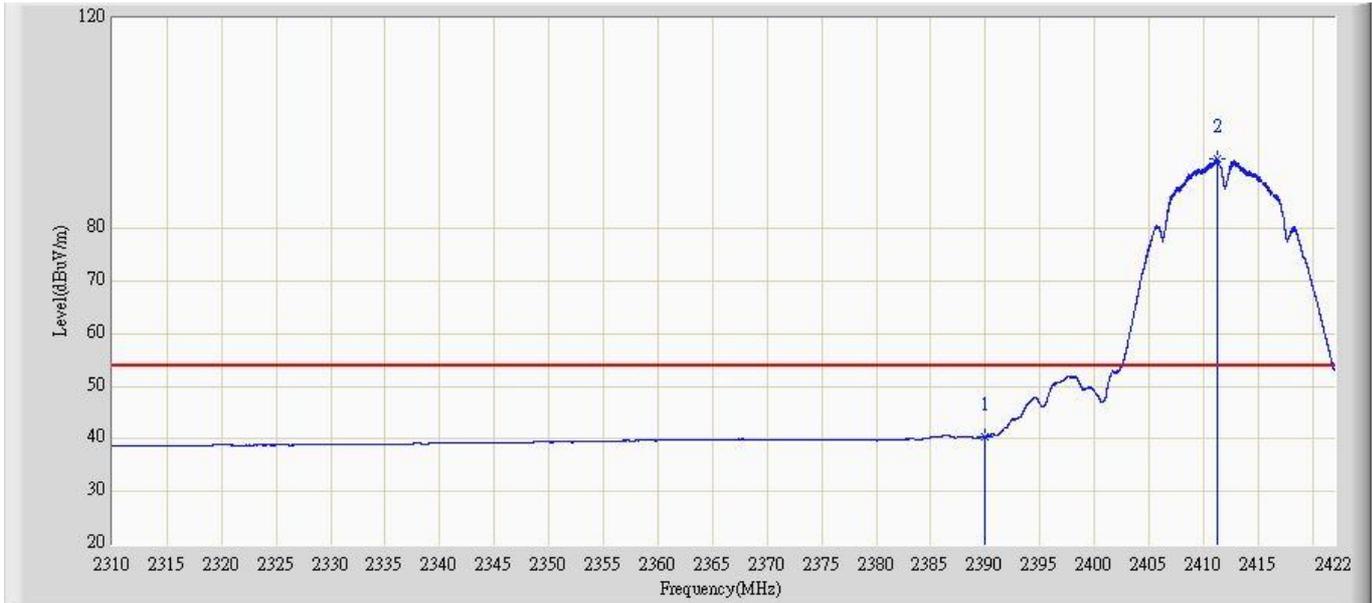
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.954	13.272	-13.046	54.000	27.682	AV
2	*	2411.066	94.402	66.636	N/A	N/A	27.766	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 22:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



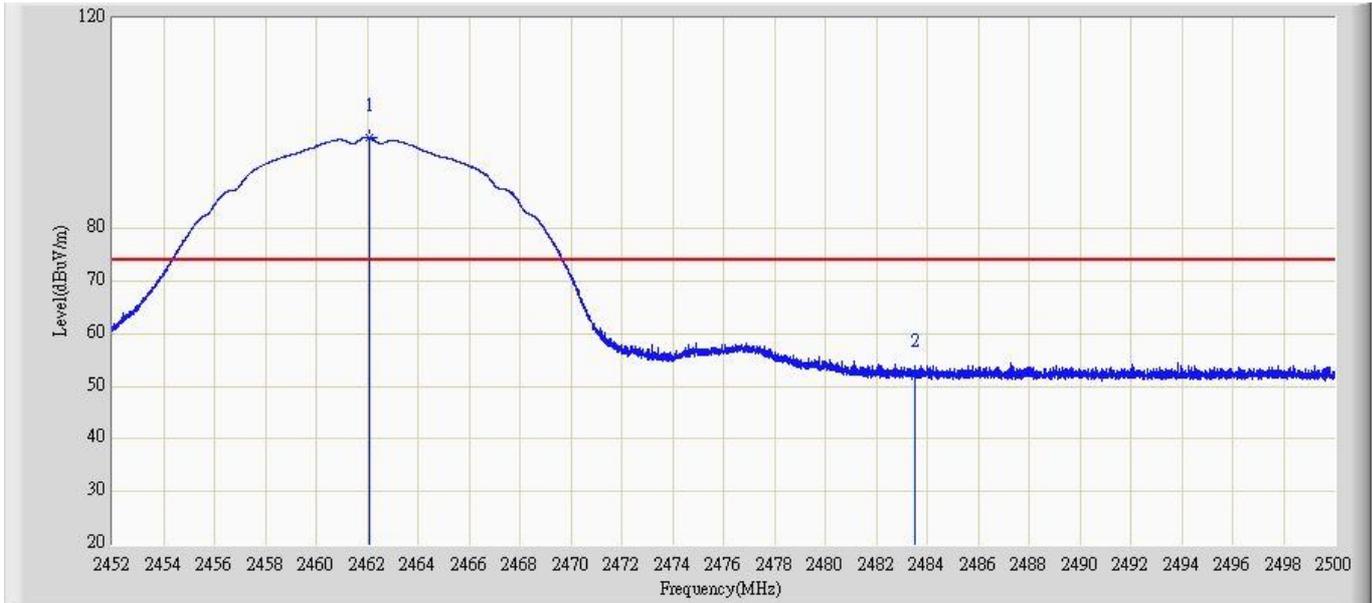
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.378	24.696	-21.622	74.000	27.682	PK
2	*	2411.892	97.544	69.774	N/A	N/A	27.769	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 22:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



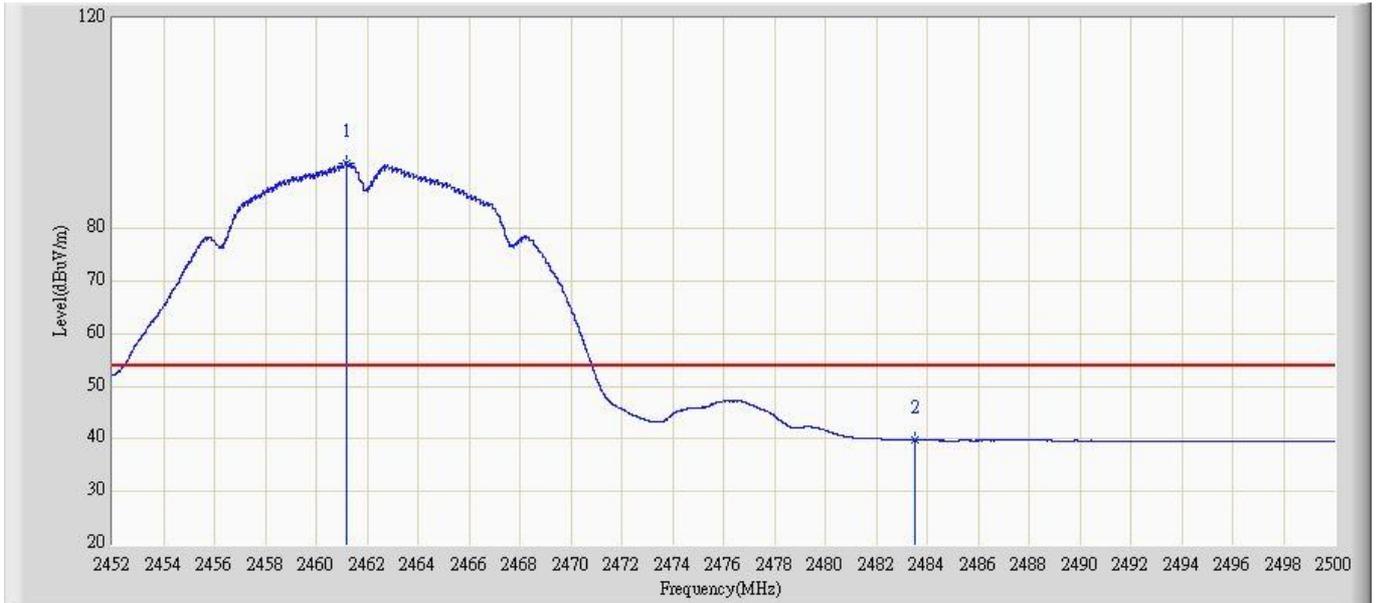
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.477	12.795	-13.523	54.000	27.682	AV
2	*	2411.248	93.139	65.372	N/A	N/A	27.767	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 1: Transmit at channel 2462MHz by 802.11b	



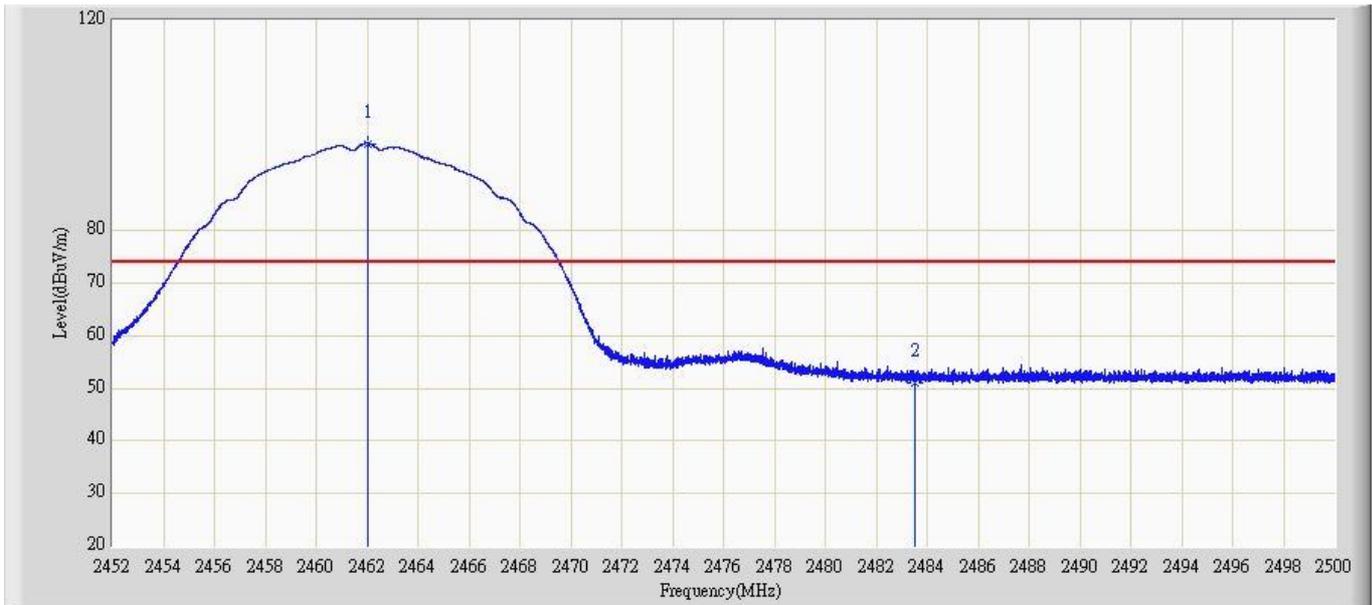
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.104	97.341	69.365	N/A	N/A	27.976	PK
2		2483.500	52.333	24.276	-21.667	74.000	28.057	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 1: Transmit at channel 2462MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.186	92.528	64.555	N/A	N/A	27.973	AV
2		2483.500	39.809	11.752	-14.191	54.000	28.057	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 1: Transmit at channel 2462MHz by 802.11b	



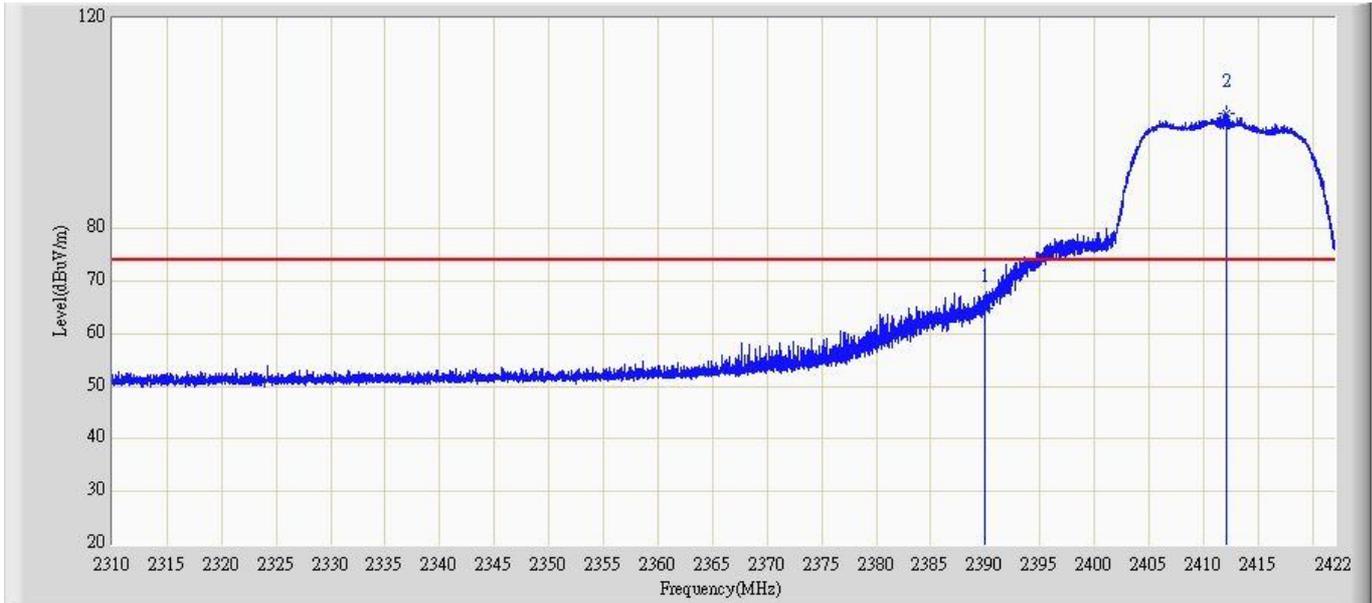
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.032	96.574	68.598	N/A	N/A	27.976	PK
2		2483.500	51.096	23.039	-22.904	74.000	28.057	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 1: Transmit at channel 2462MHz by 802.11b	



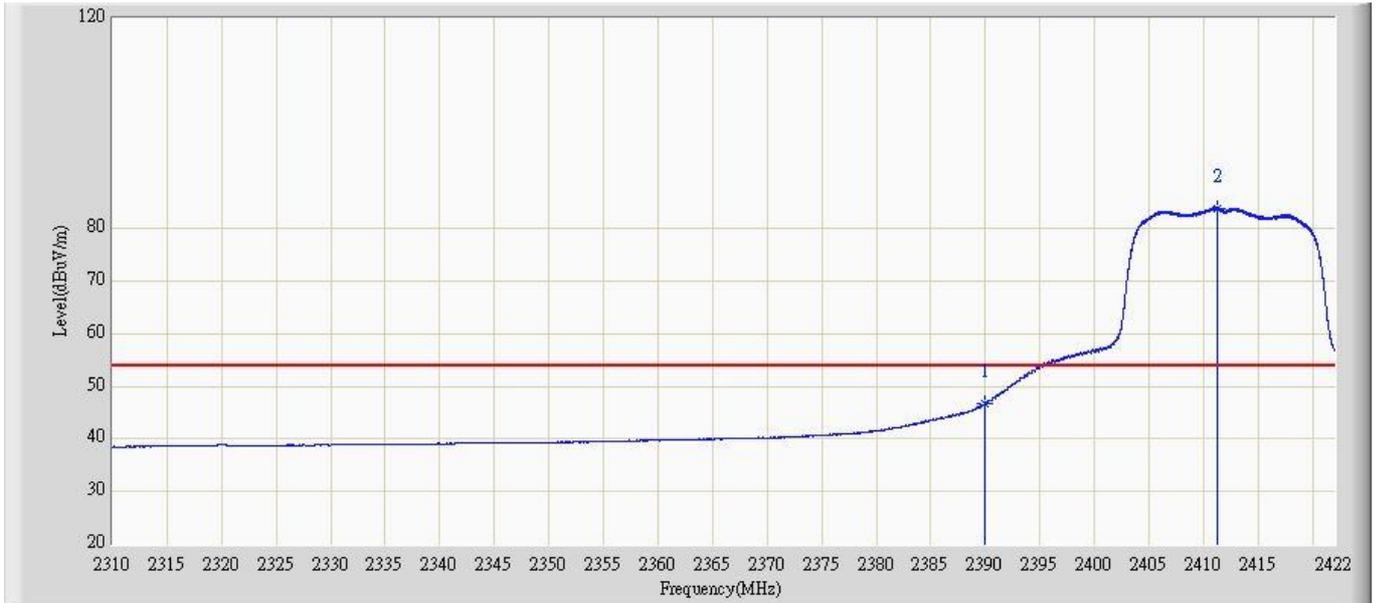
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.354	91.713	63.740	N/A	N/A	27.974	AV
2		2483.500	39.792	11.735	-14.208	54.000	28.057	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 2: Transmit at channel 2412MHz by 802.11g	



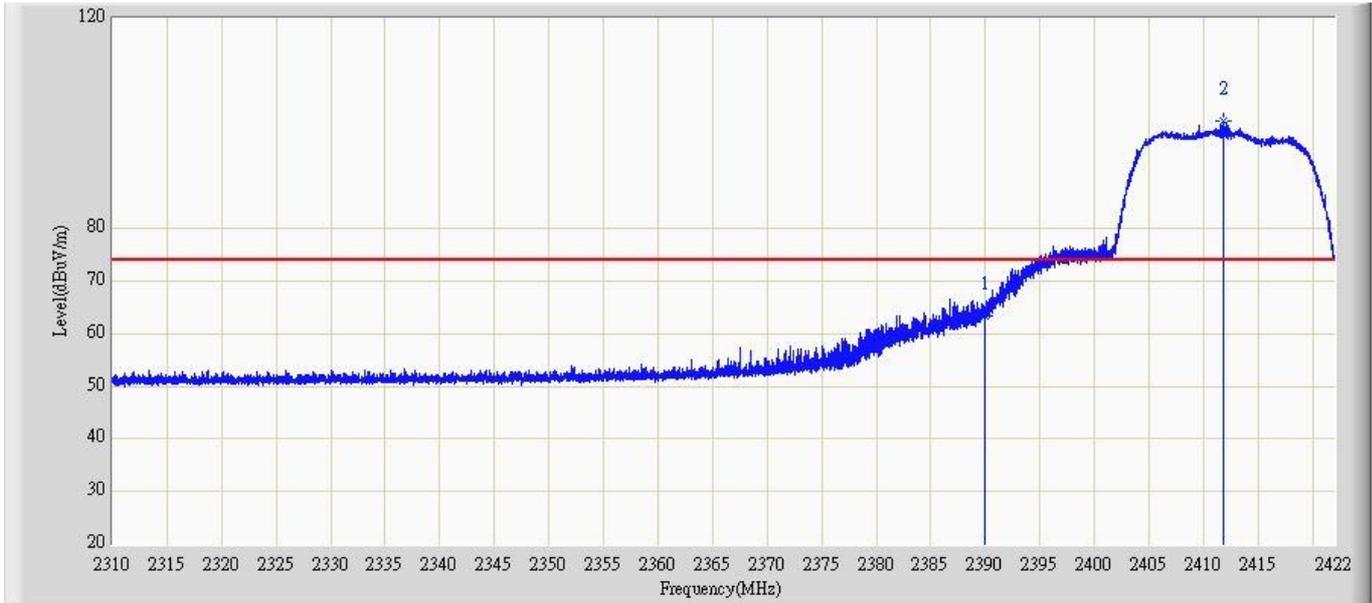
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	64.722	37.040	-9.278	74.000	27.682	PK
2	*	2412.116	101.962	74.191	N/A	N/A	27.770	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 2: Transmit at channel 2412MHz by 802.11g	



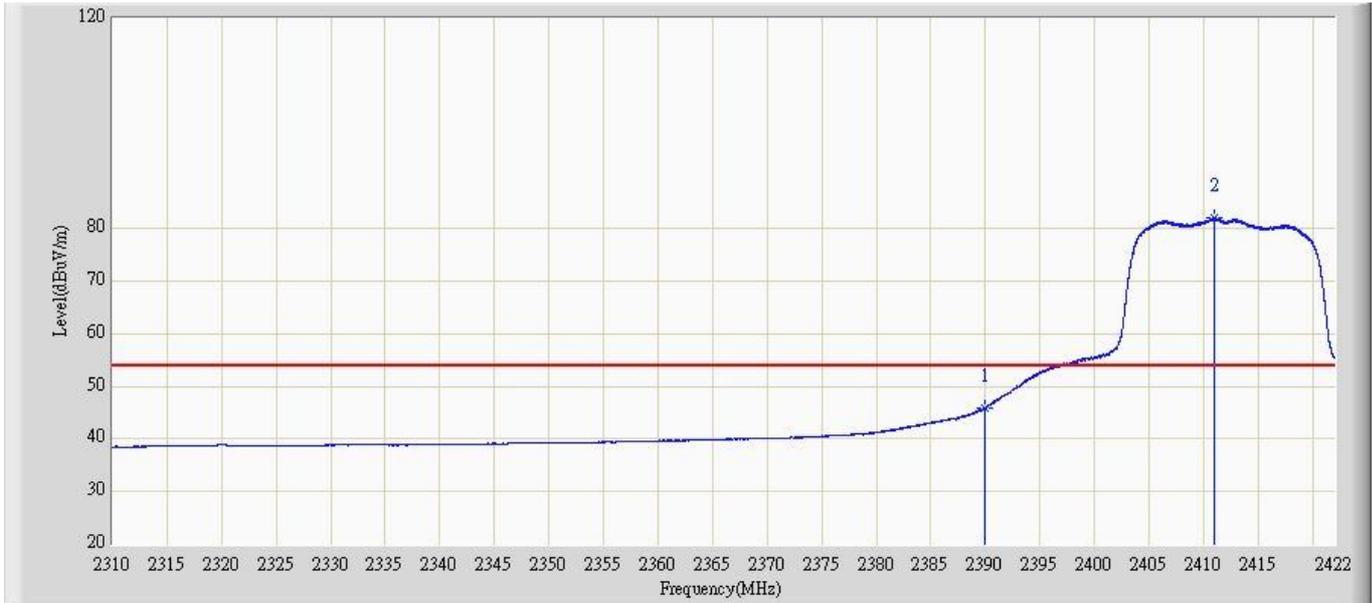
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	46.839	19.157	-7.161	54.000	27.682	AV
2	*	2411.248	83.924	56.157	N/A	N/A	27.767	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 2: Transmit at channel 2412MHz by 802.11g	



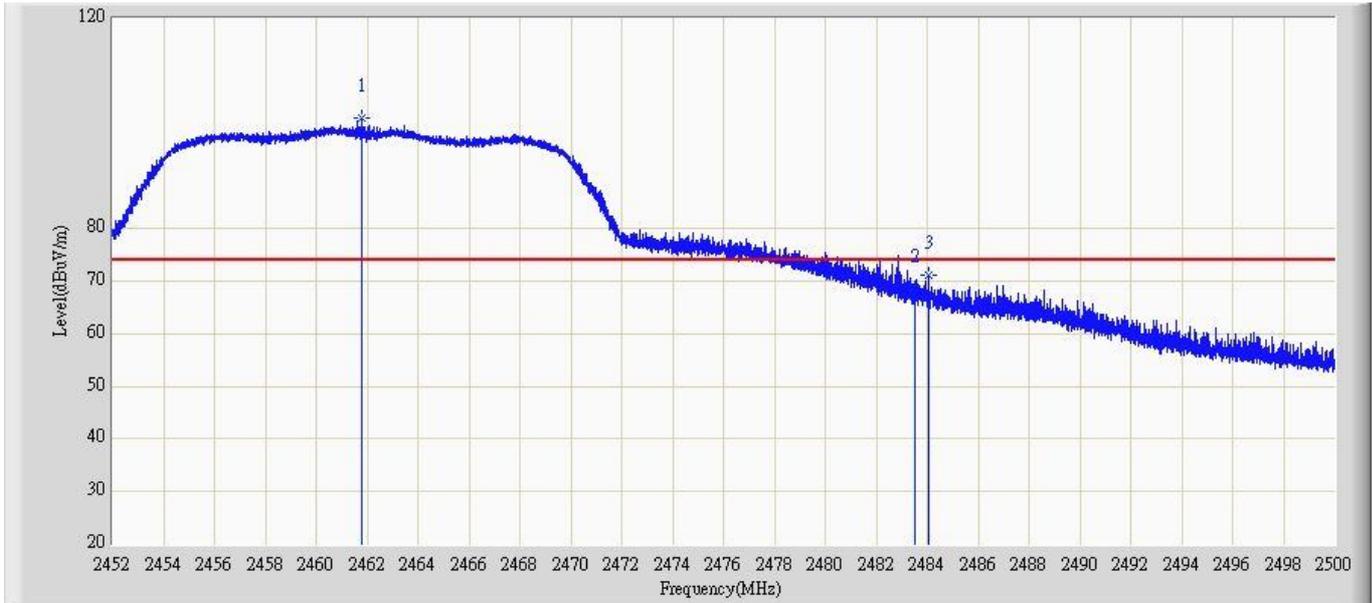
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	63.364	35.682	-10.636	74.000	27.682	PK
2	*	2411.766	100.433	72.664	N/A	N/A	27.769	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 2: Transmit at channel 2412MHz by 802.11g	



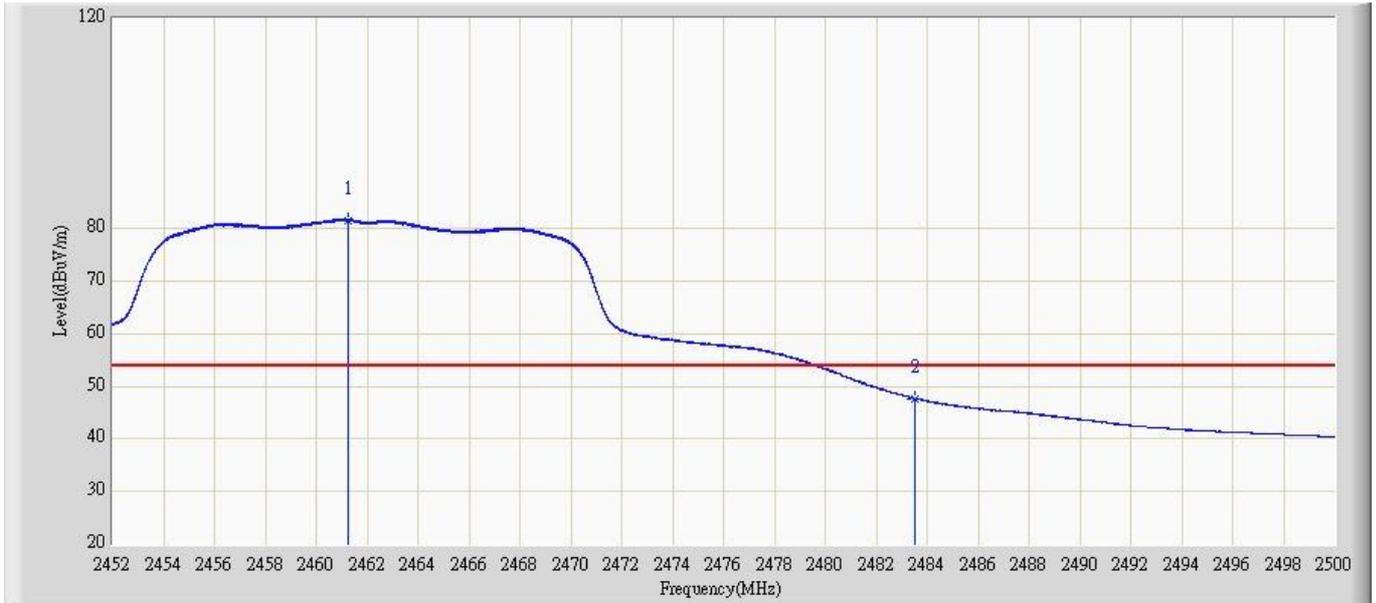
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.870	18.188	-8.130	54.000	27.682	AV
2	*	2410.968	81.969	54.203	N/A	N/A	27.766	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 2: Transmit at channel 2462MHz by 802.11g	



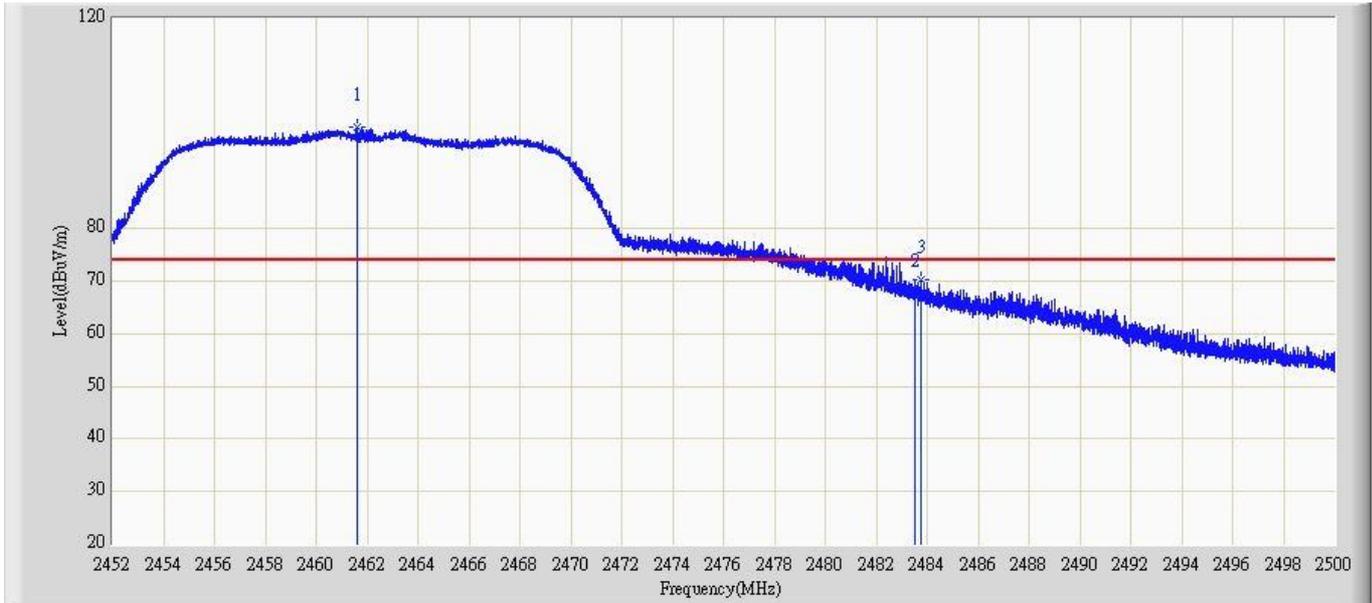
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.792	100.942	72.967	N/A	N/A	27.975	PK
2		2483.500	68.540	40.483	-5.460	74.000	28.057	PK
3		2484.088	71.130	43.071	-2.870	74.000	28.059	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 2: Transmit at channel 2462MHz by 802.11g	



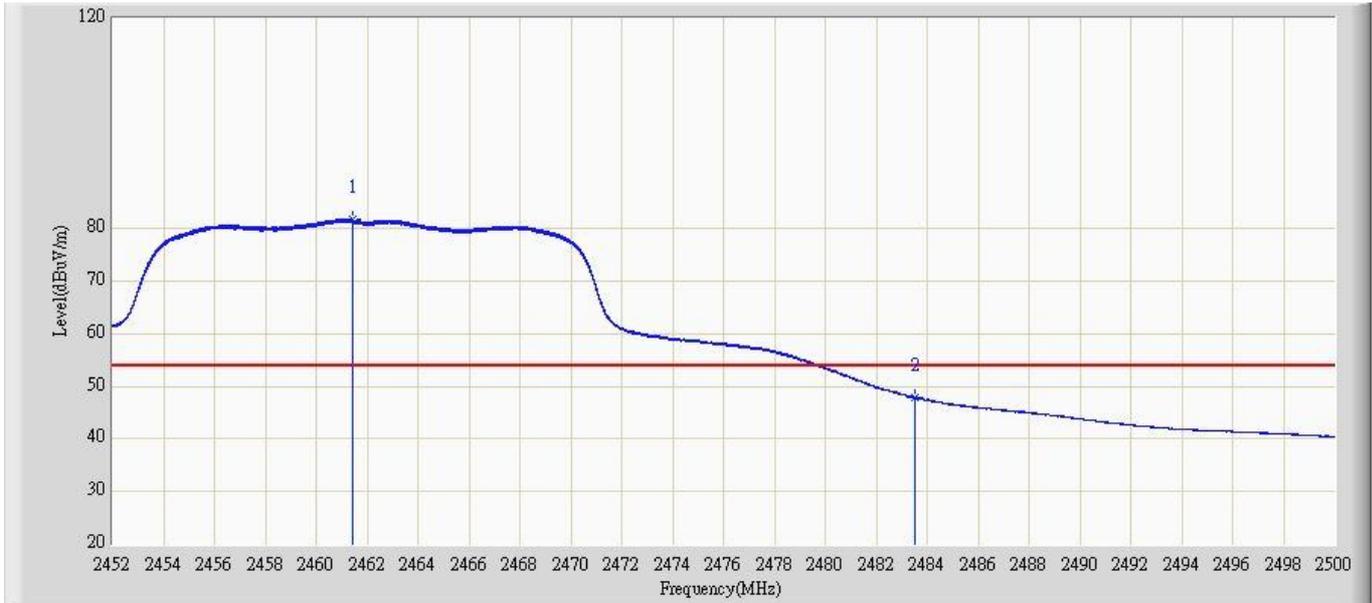
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.282	81.521	53.548	N/A	N/A	27.973	AV
2		2483.500	47.724	19.667	-6.276	54.000	28.057	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 2: Transmit at channel 2462MHz by 802.11g	



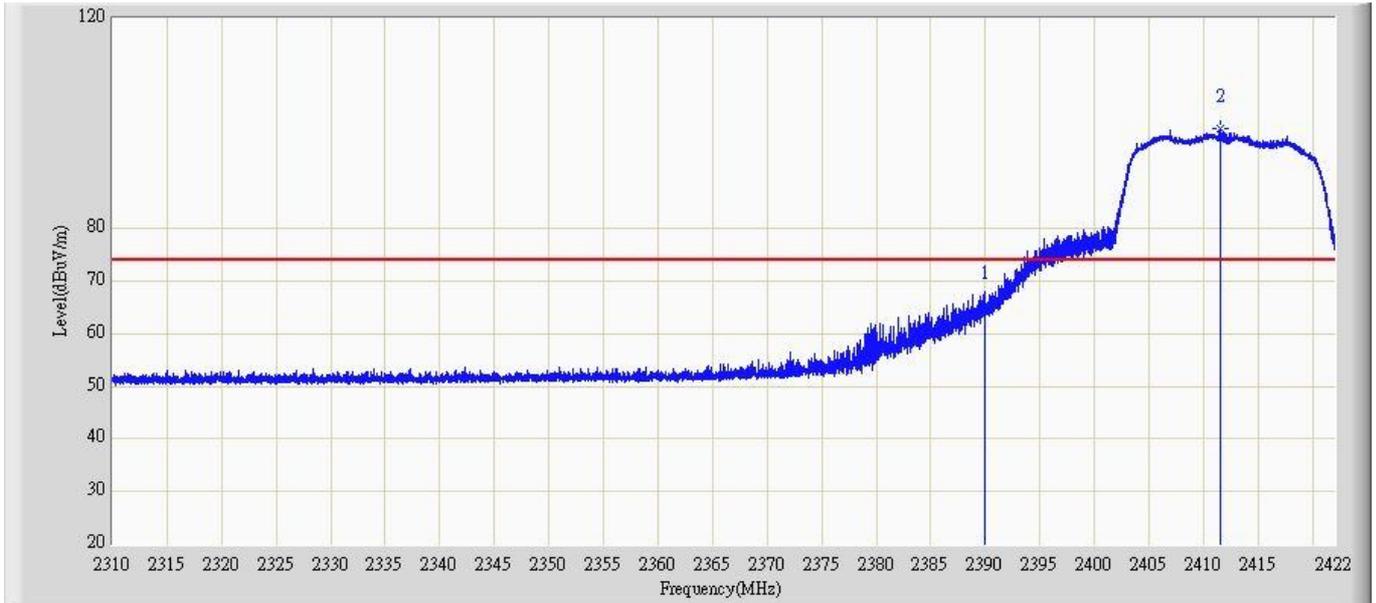
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.624	99.306	71.331	N/A	N/A	27.975	PK
2		2483.500	67.647	39.590	-6.353	74.000	28.057	PK
3		2483.752	70.236	42.178	-3.764	74.000	28.058	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 2: Transmit at channel 2462MHz by 802.11g	



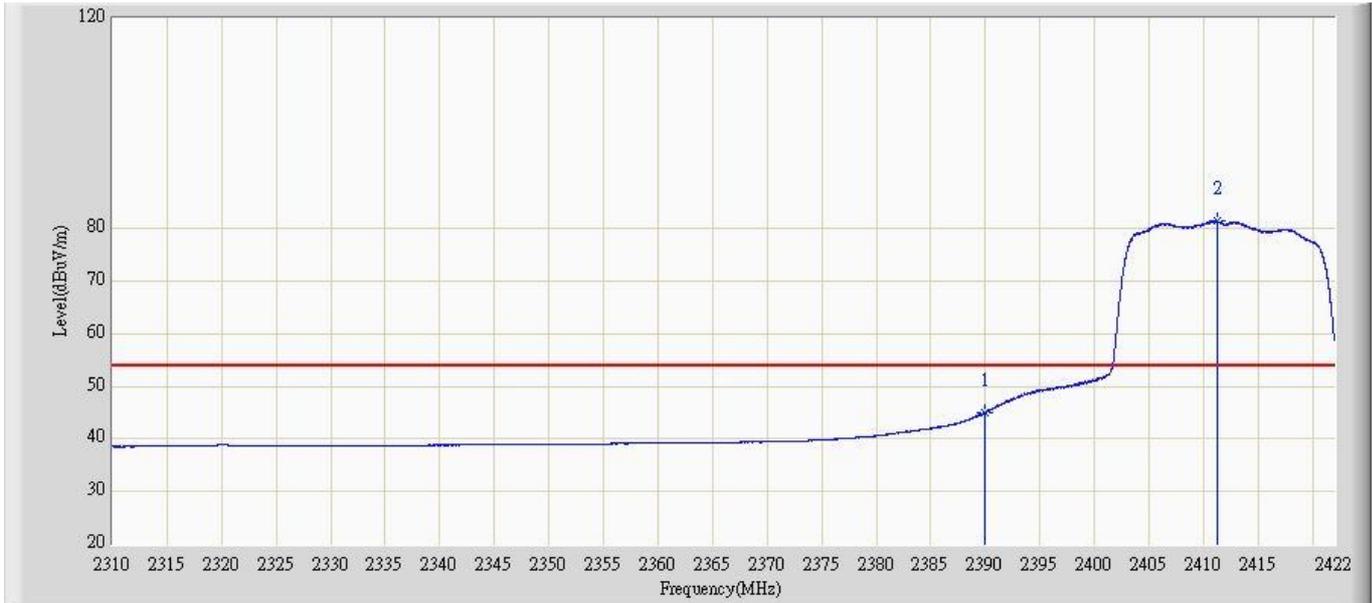
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.438	81.660	53.686	N/A	N/A	27.974	AV
2		2483.500	47.880	19.823	-6.120	54.000	28.057	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 3: Transmit at channel 2412MHz by 802.11n(20MHz)	



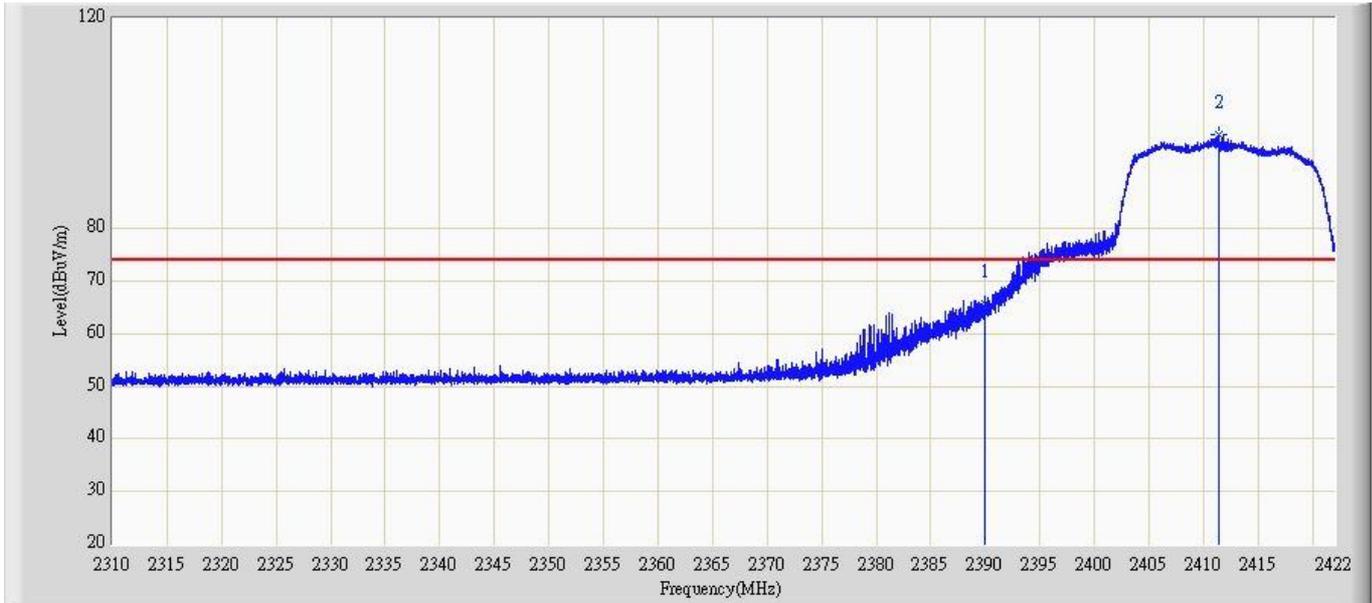
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	65.288	37.606	-8.712	74.000	27.682	PK
2	*	2411.612	99.036	71.267	N/A	N/A	27.768	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 3: Transmit at channel 2412MHz by 802.11n(20MHz)	



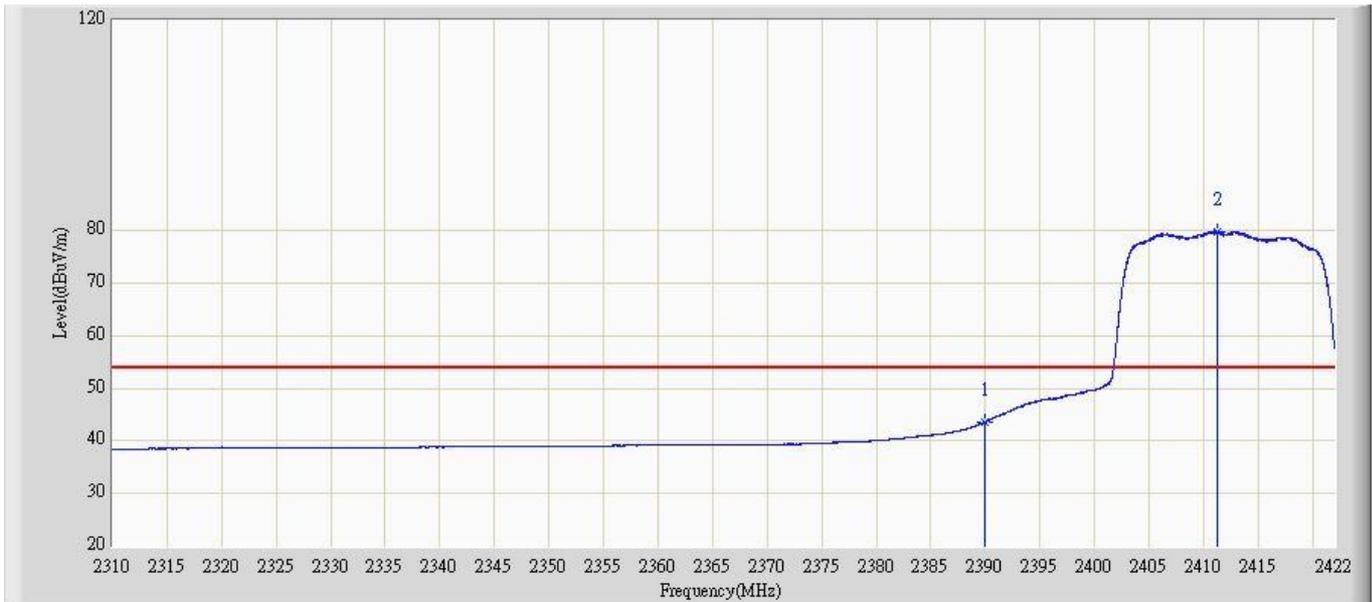
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.122	17.440	-8.878	54.000	27.682	AV
2	*	2411.234	81.400	53.633	N/A	N/A	27.767	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/15 - 23:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 3: Transmit at channel 2412MHz by 802.11n(20MHz)	



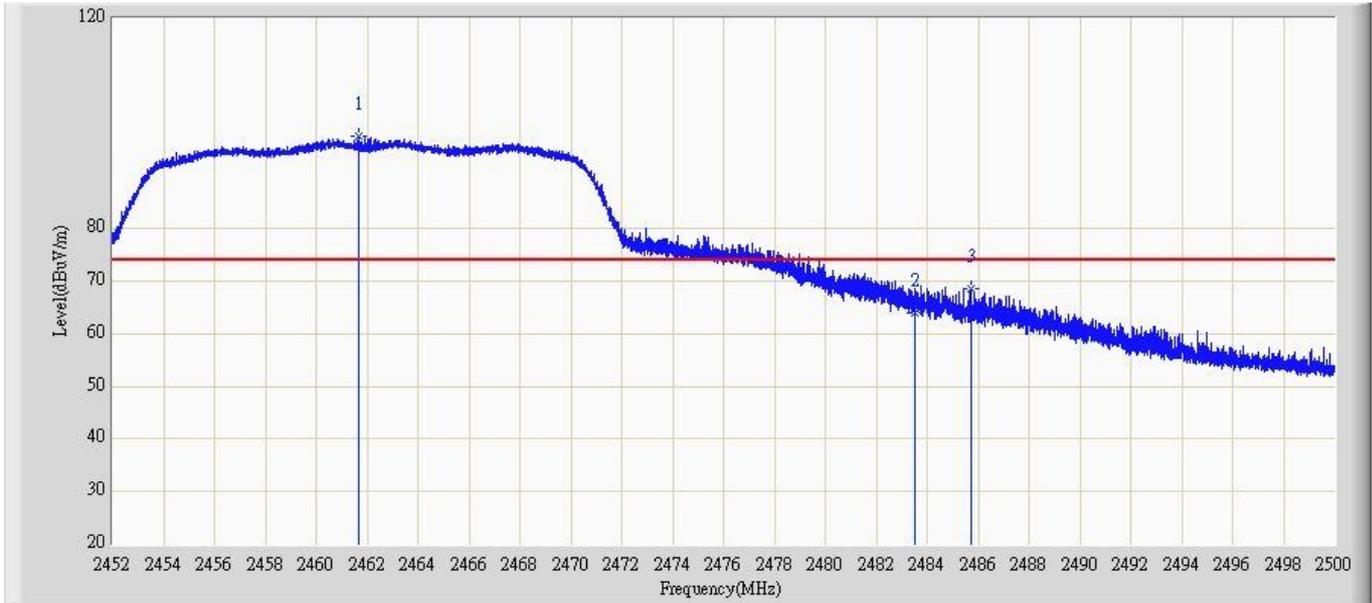
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	65.761	38.079	-8.239	74.000	27.682	PK
2	*	2411.360	97.935	70.167	N/A	N/A	27.767	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/16 - 00:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 3: Transmit at channel 2412MHz by 802.11n(20MHz)	



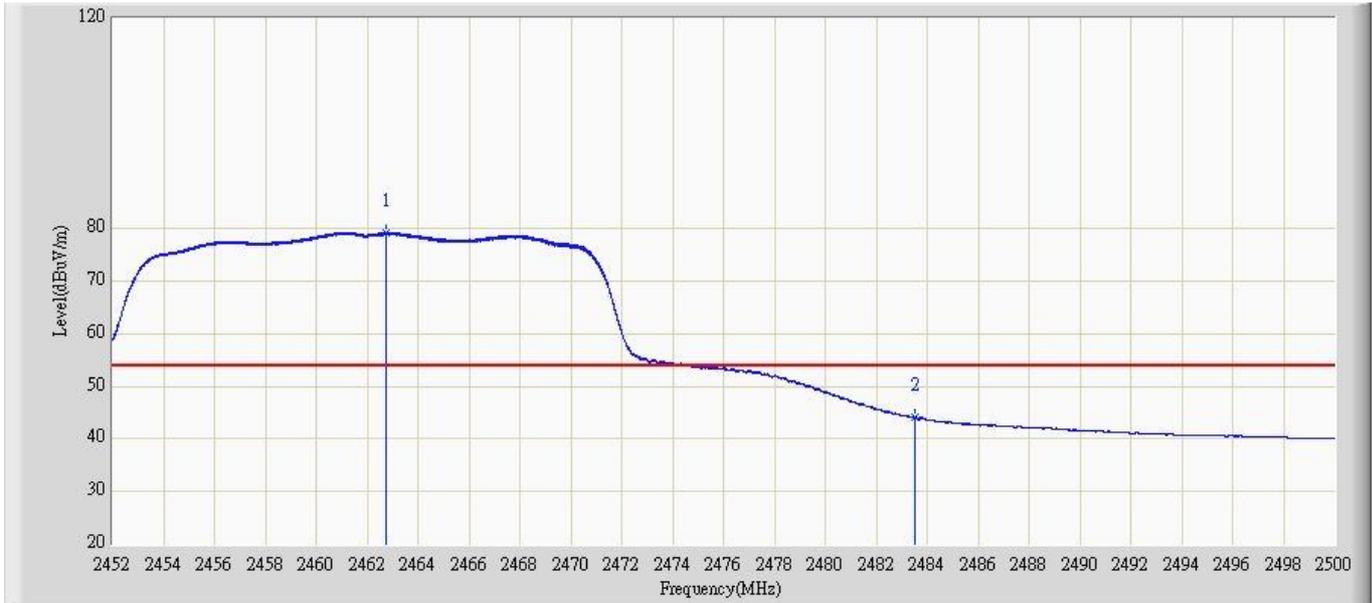
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	43.590	15.908	-10.410	54.000	27.682	AV
2	*	2411.234	79.810	52.043	N/A	N/A	27.767	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/16 - 00:02
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 3: Transmit at channel 2462MHz by 802.11n(20MHz)	



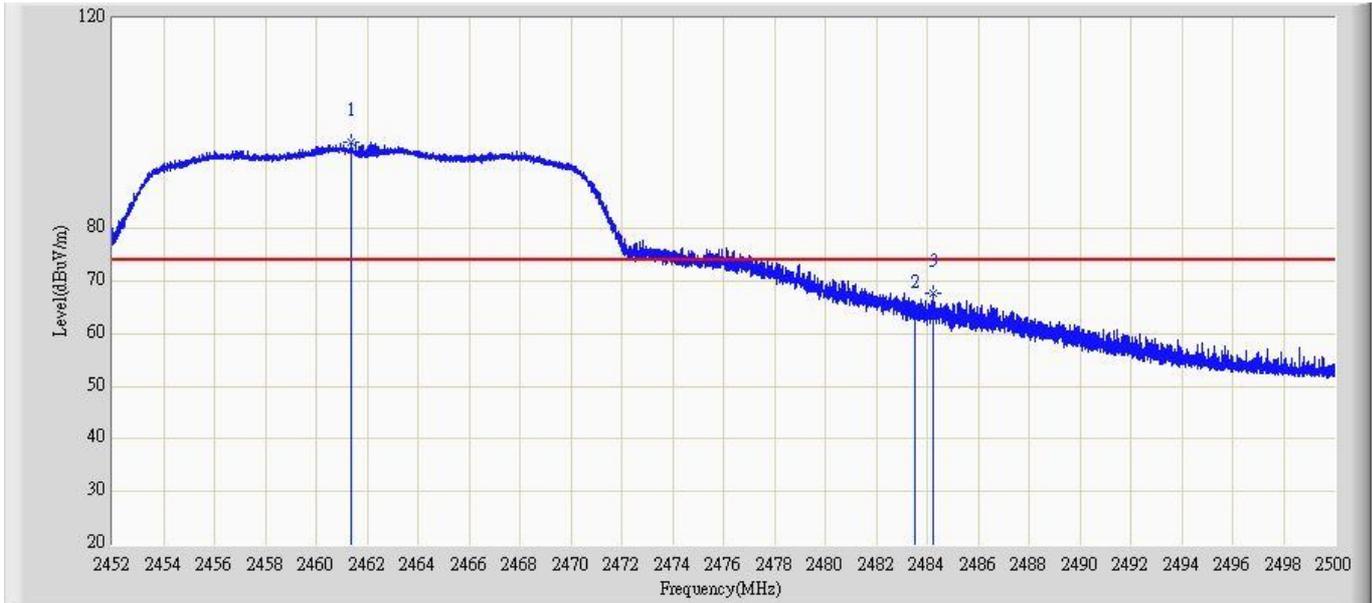
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.648	97.647	69.672	N/A	N/A	27.975	PK
2		2483.500	63.916	35.859	-10.084	74.000	28.057	PK
3		2485.702	68.684	40.618	-5.316	74.000	28.066	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/16 - 00:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 3: Transmit at channel 2462MHz by 802.11n(20MHz)	



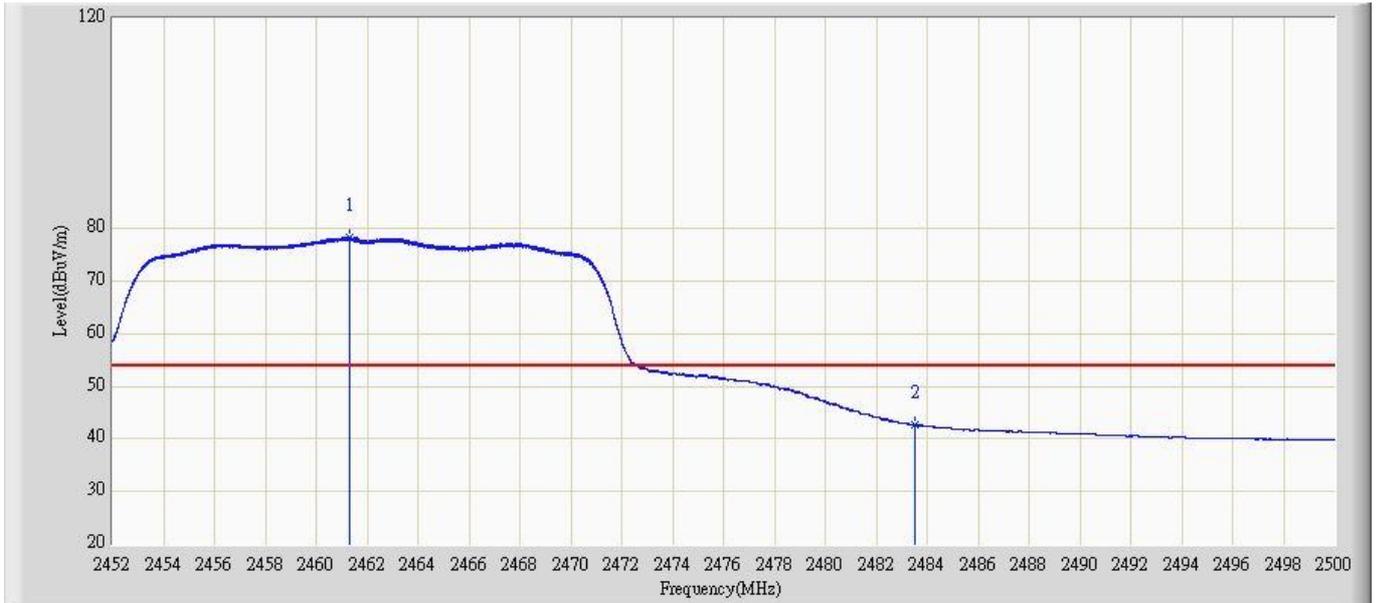
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.722	79.199	51.220	N/A	N/A	27.979	AV
2		2483.500	44.077	16.020	-9.923	54.000	28.057	AV

Engineer: Milo	
Site: AC5	Time: 2013/03/16 - 00:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 3: Transmit at channel 2462MHz by 802.11n(20MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.396	96.476	68.502	N/A	N/A	27.974	PK
2		2483.500	63.543	35.486	-10.457	74.000	28.057	PK
3		2484.232	67.839	39.779	-6.161	74.000	28.060	PK

Engineer: Milo	
Site: AC5	Time: 2013/03/16 - 00:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-737(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By battery
Note: Mode 3: Transmit at channel 2462MHz by 802.11n(20MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.294	78.231	50.258	N/A	N/A	27.973	AV
2		2483.500	42.725	14.668	-11.275	54.000	28.057	AV

## 7. Operation Frequency Range of 20dB Bandwidth

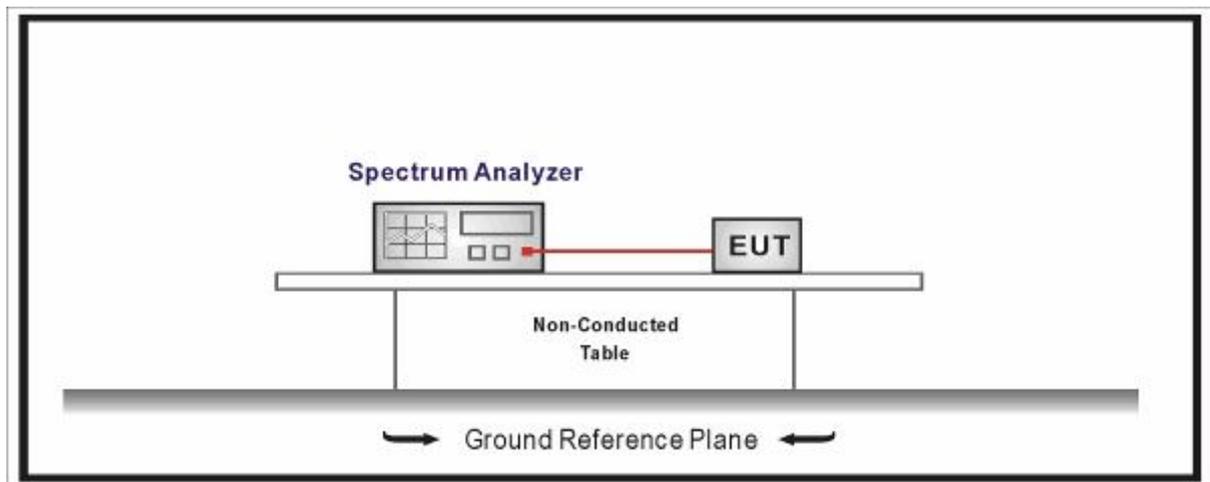
### 7.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 7.2. Test Setup



### 7.3. Limit

20 dB bandwidth of the emission is contained within the operation frequency band.

### 7.4. Test Procedure

The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

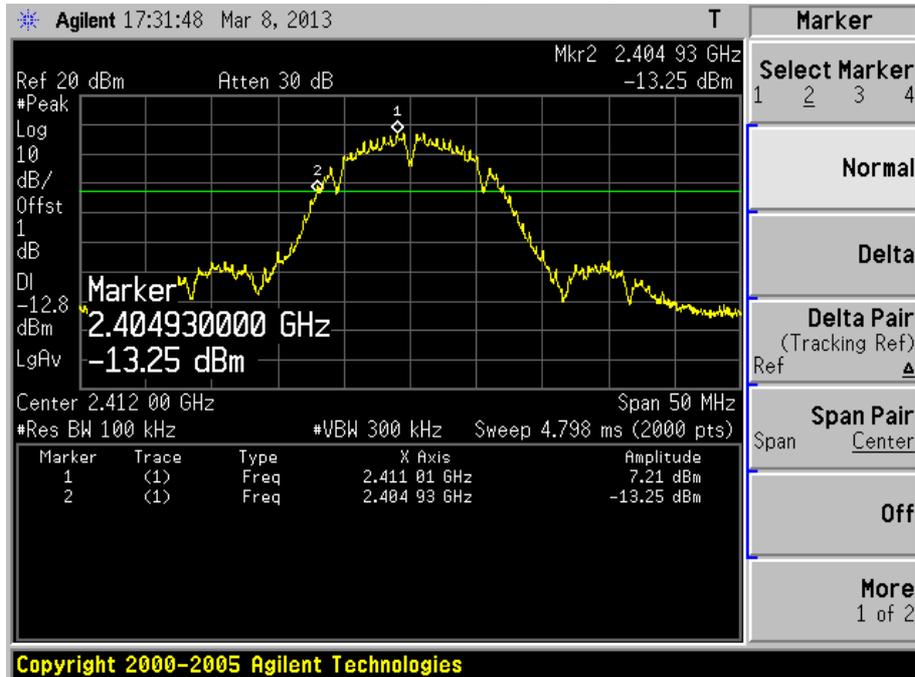
### 7.5. Uncertainty

The measurement uncertainty is defined as  $\pm 1$  kHz

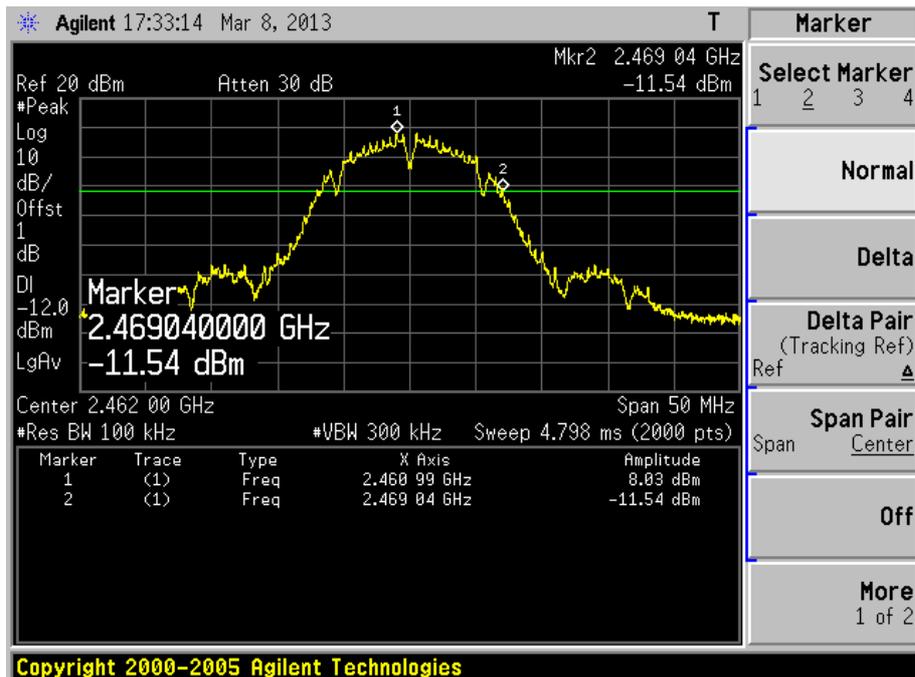
## 7.6. Test Result

Product	: GSM Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 1: Transmit by 802.11b

**Channel 01 (2412MHz)**

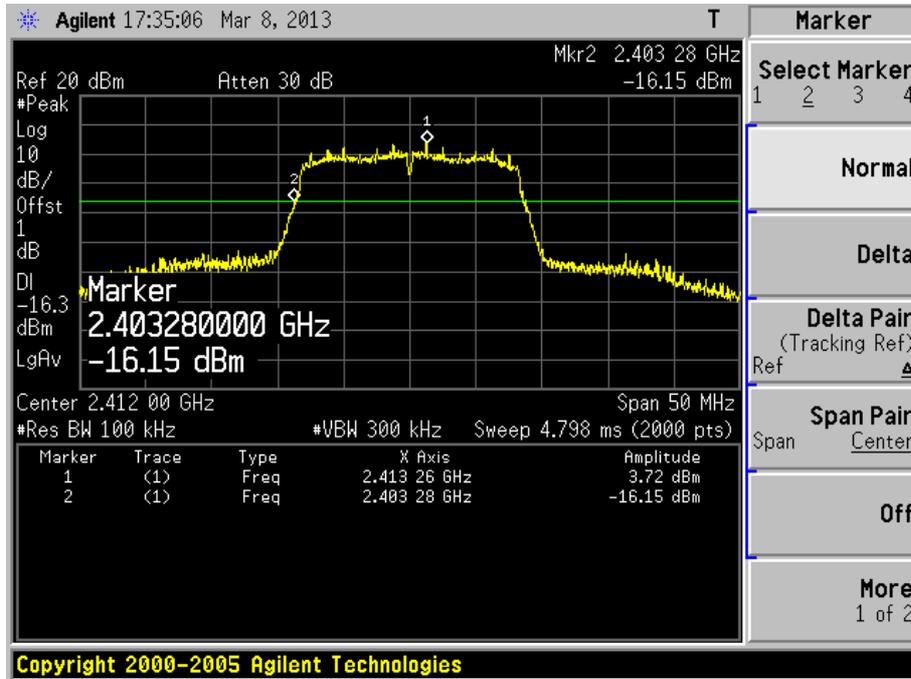


**Channel 11 (2462MHz)**

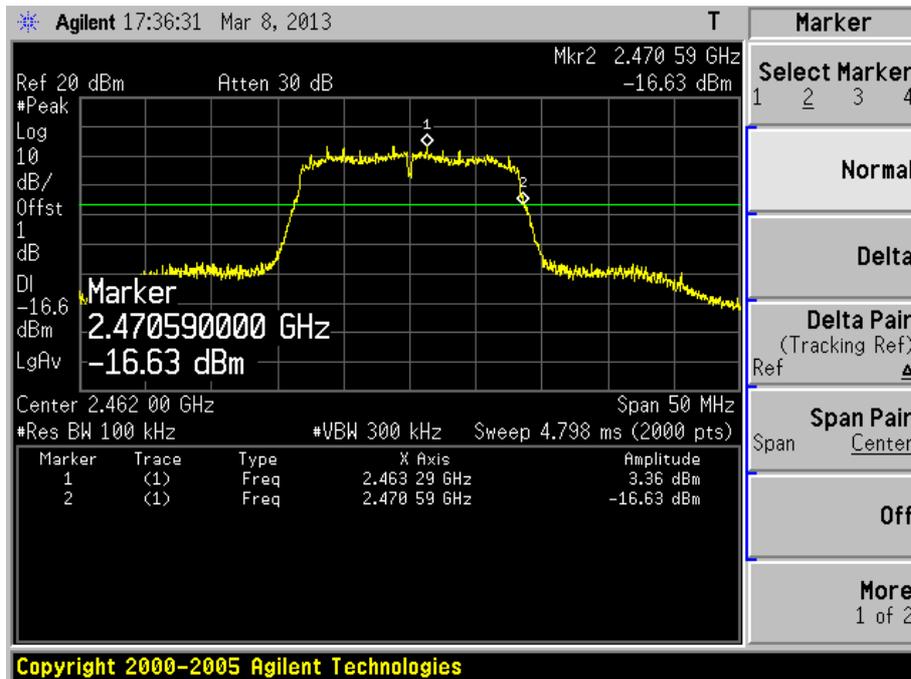


Product	: GSM Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g

### Channel 01 (2412MHz)

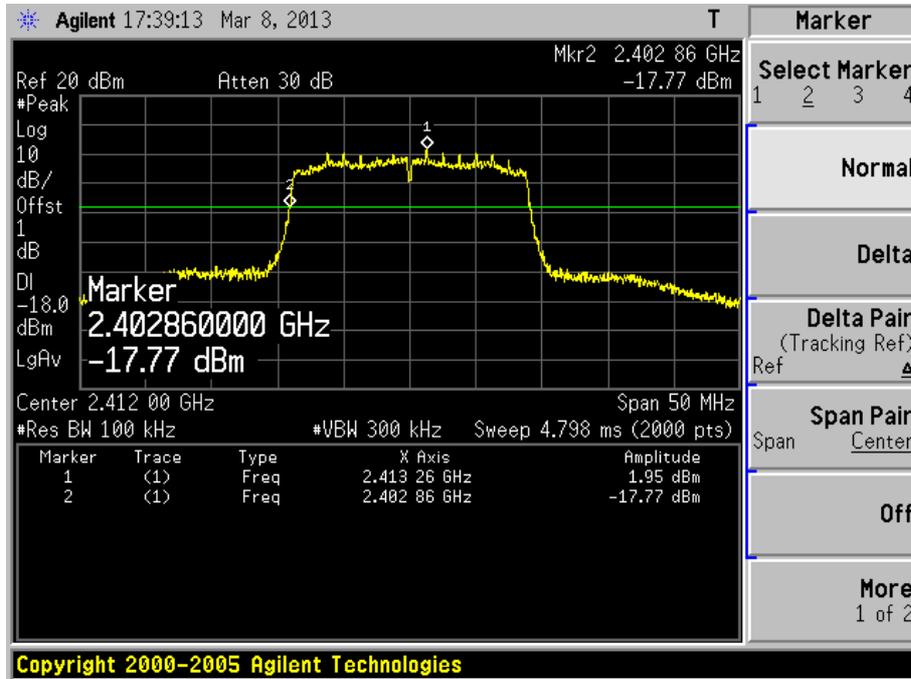


### Channel 11 (2462MHz)

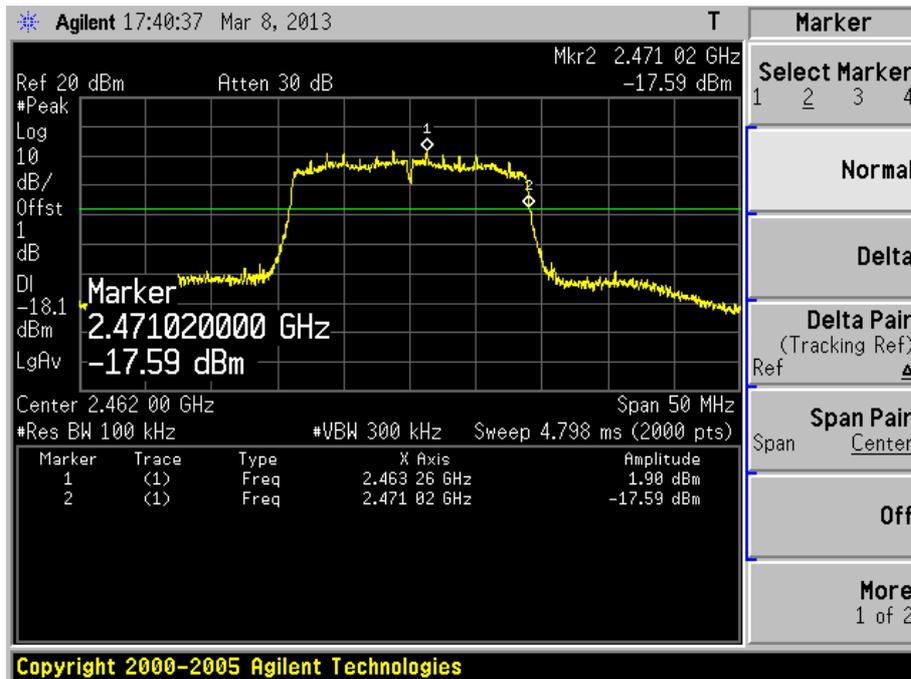


Product	: GSM Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n (20MHz)

### Channel 01 (2412MHz)



### Channel 11 (2462MHz)



**8. Occupied Bandwidth**

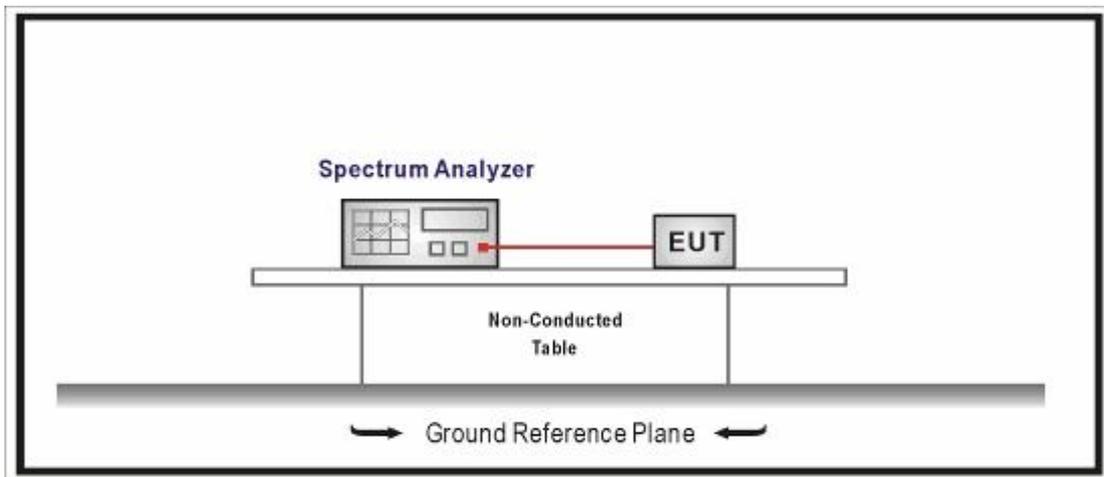
**8.1. Test Equipment**

Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

**8.2. Test Setup**



**8.3. Limit**

The minimum 6 dB bandwidth shall be at least 500 kHz.

**8.4. Test Procedure**

The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

**8.5. Uncertainty**

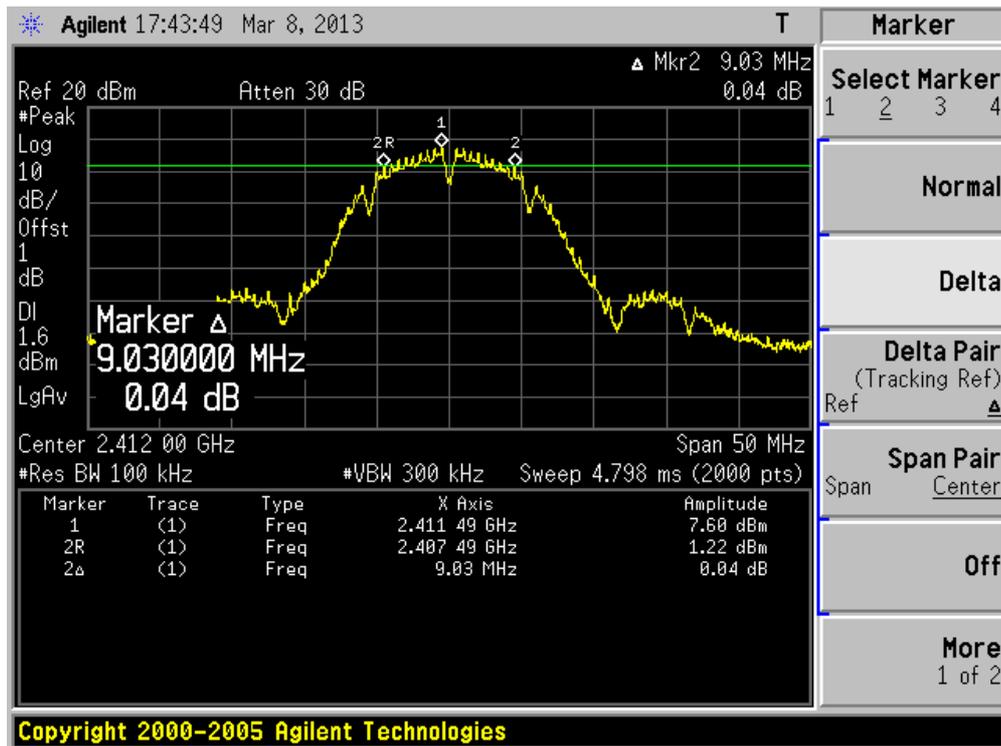
The measurement uncertainty is defined as  $\pm 1$  kHz

## 8.6. Test Result

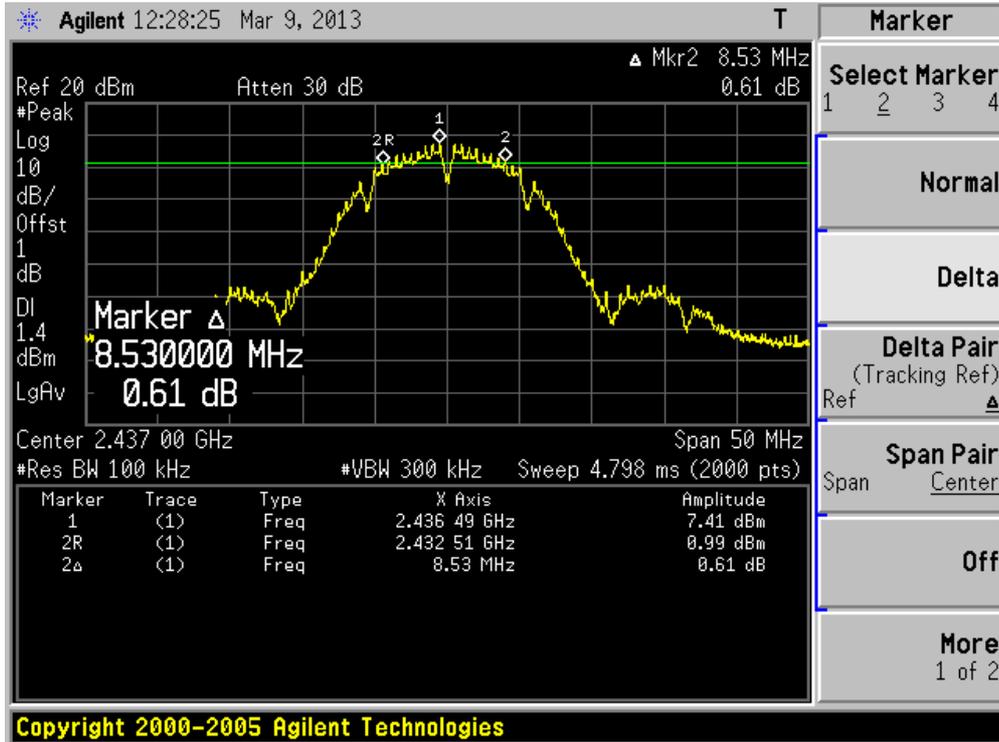
Product	:	GSM Mobile Phone
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	9030	500	Pass
06	2437	8530	500	Pass
11	2462	8530	500	Pass

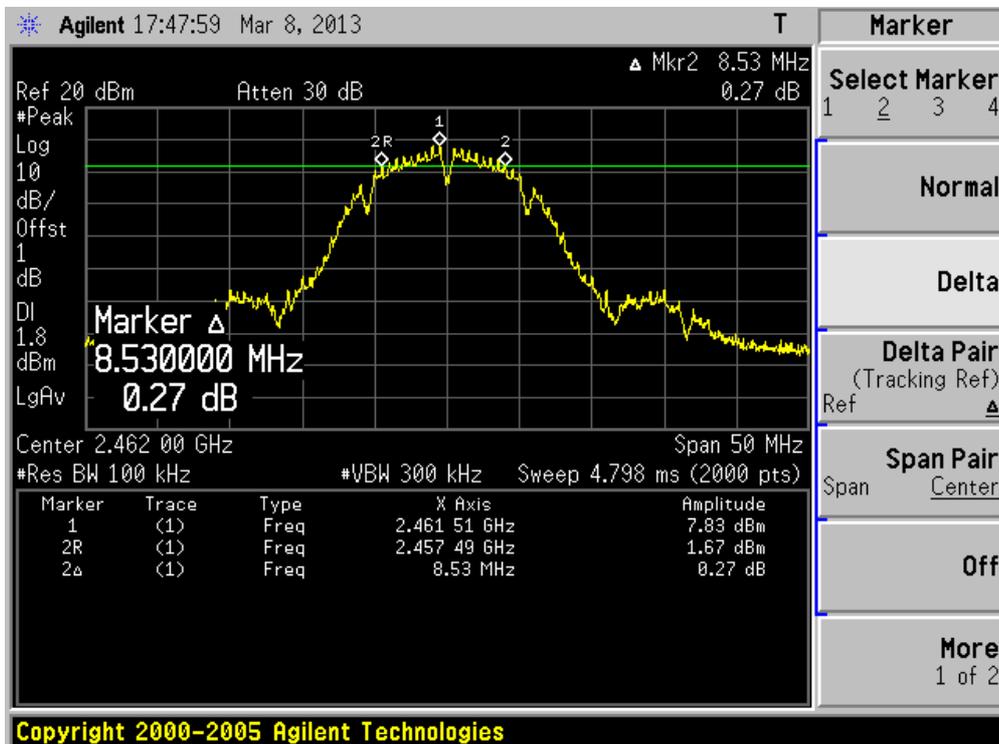
Channel 01 (2412MHz)



Channel 06 (2437MHz)



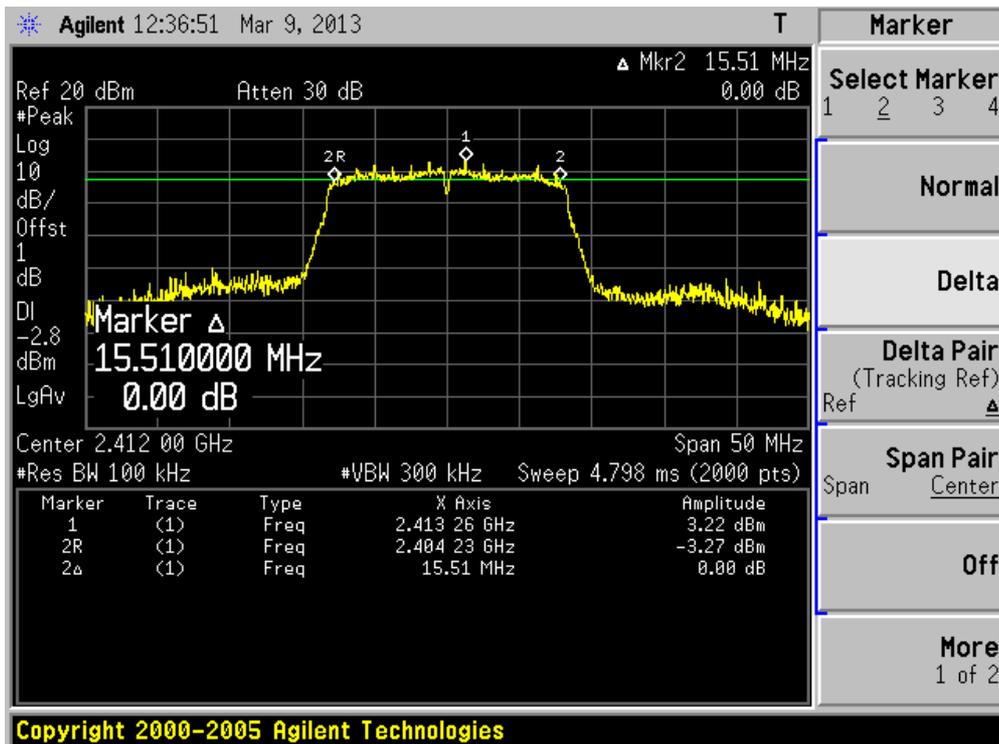
Channel 11 (2462MHz)



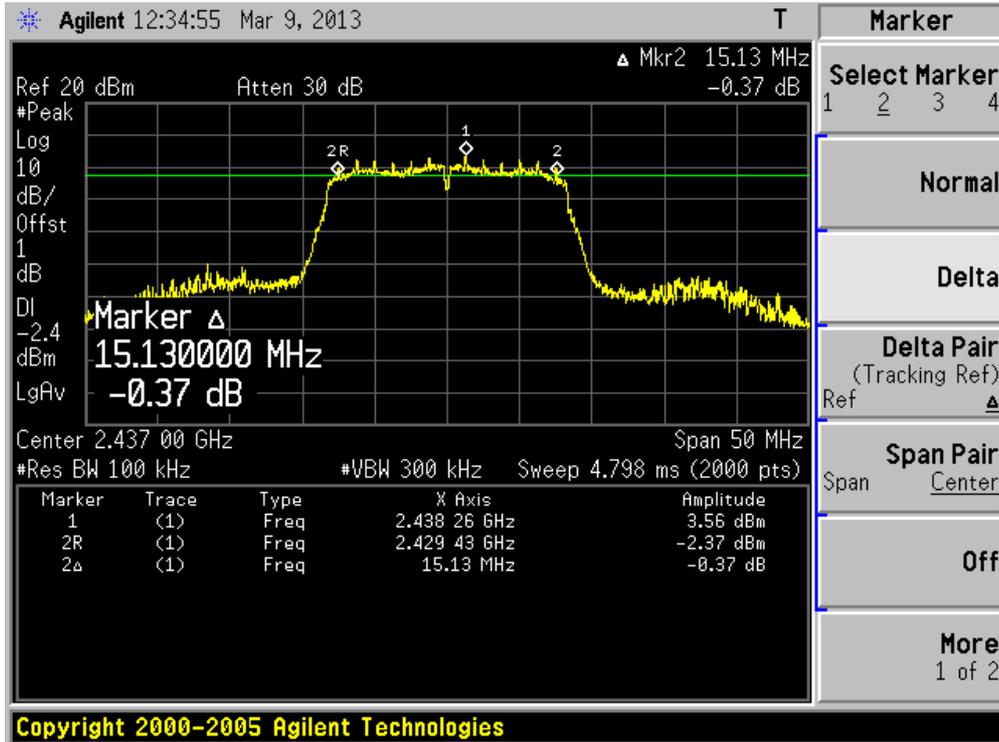
Product	: GSM Mobile Phone
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	15510	500	Pass
06	2437	15130	500	Pass
11	2462	15310	500	Pass

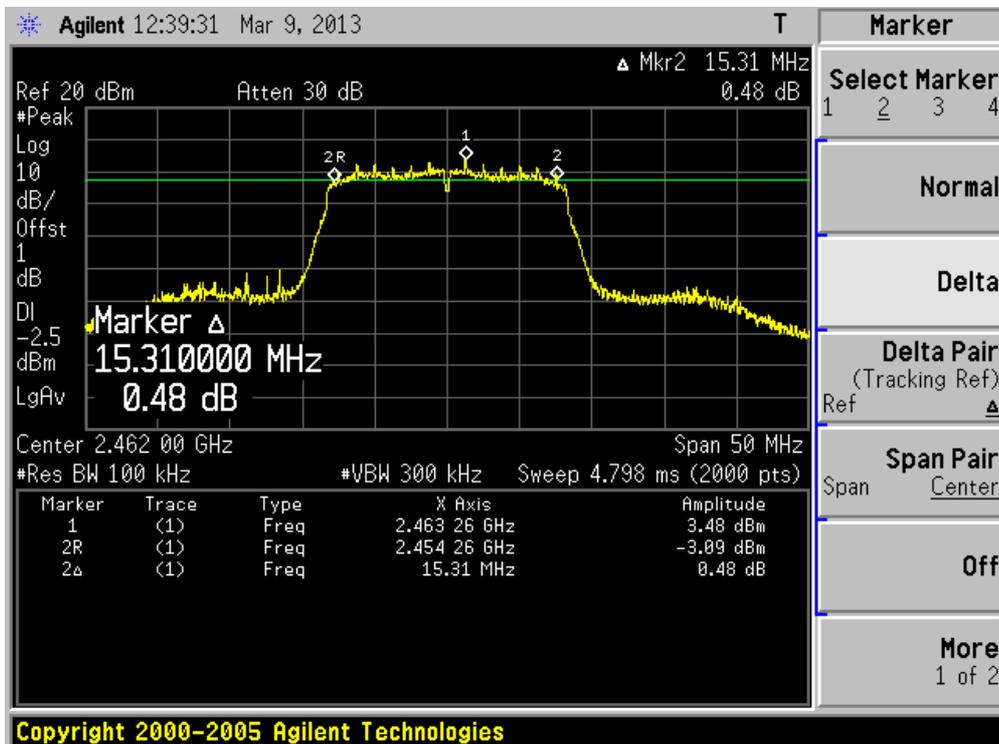
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



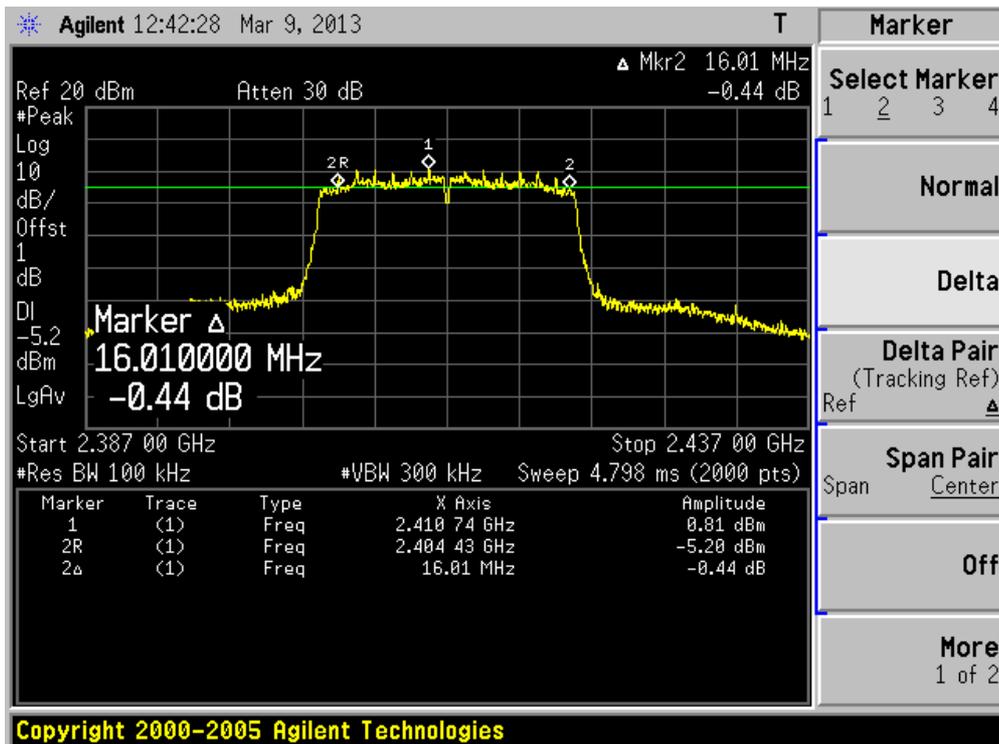
Channel 11 (2462MHz)



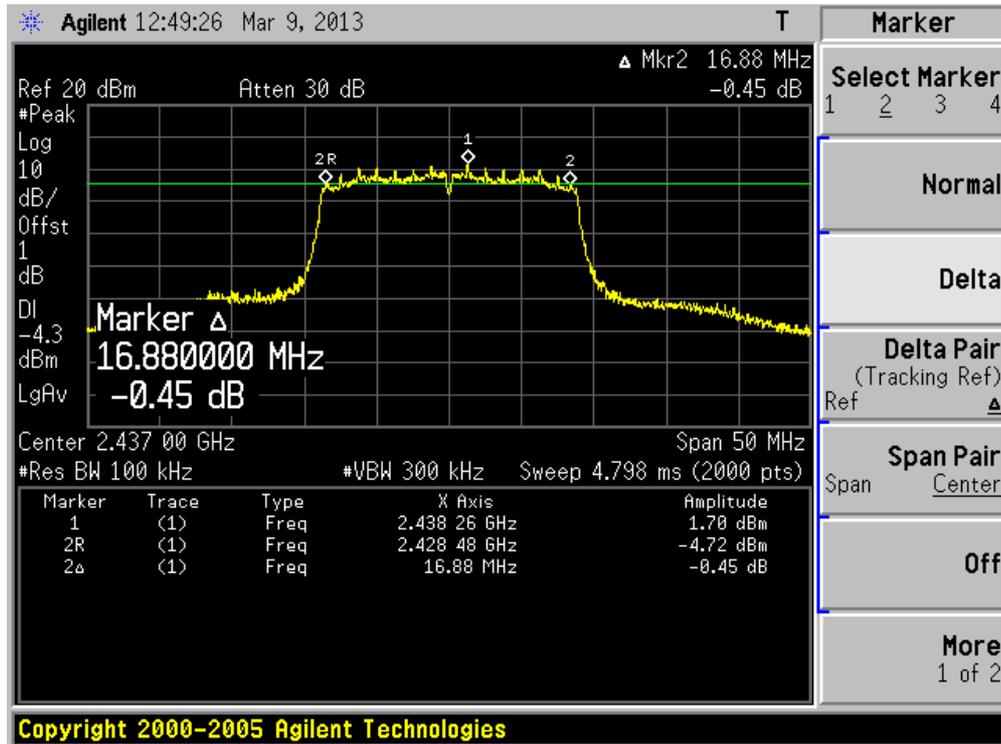
Product	: GSM Mobile Phone
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	16010	500	Pass
06	2437	16880	500	Pass
11	2462	16010	500	Pass

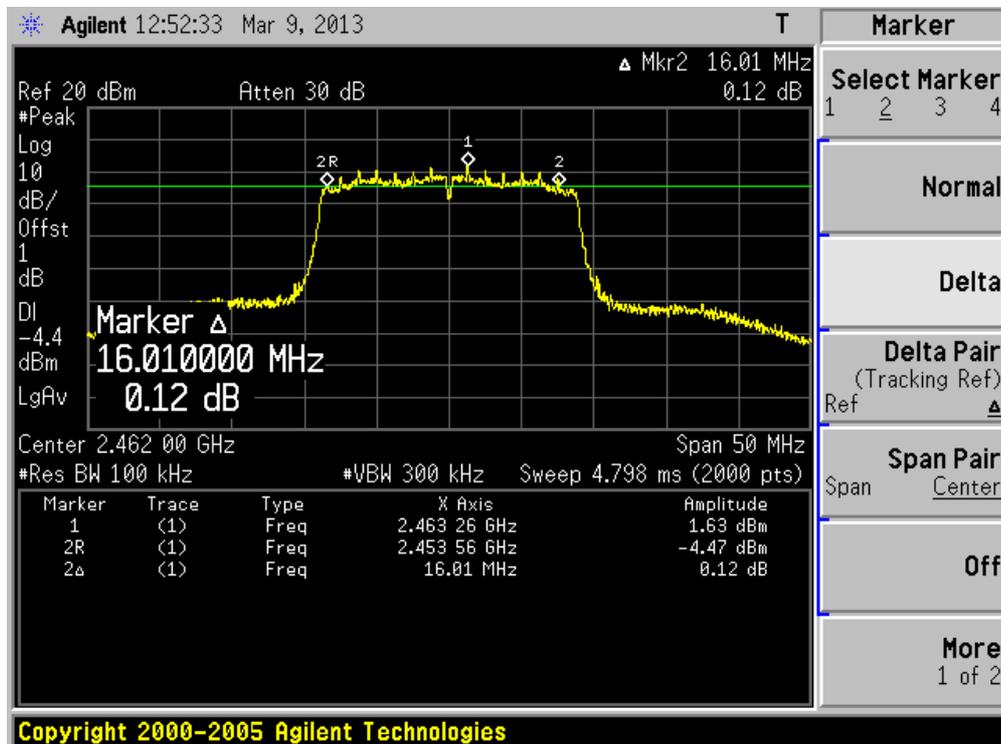
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



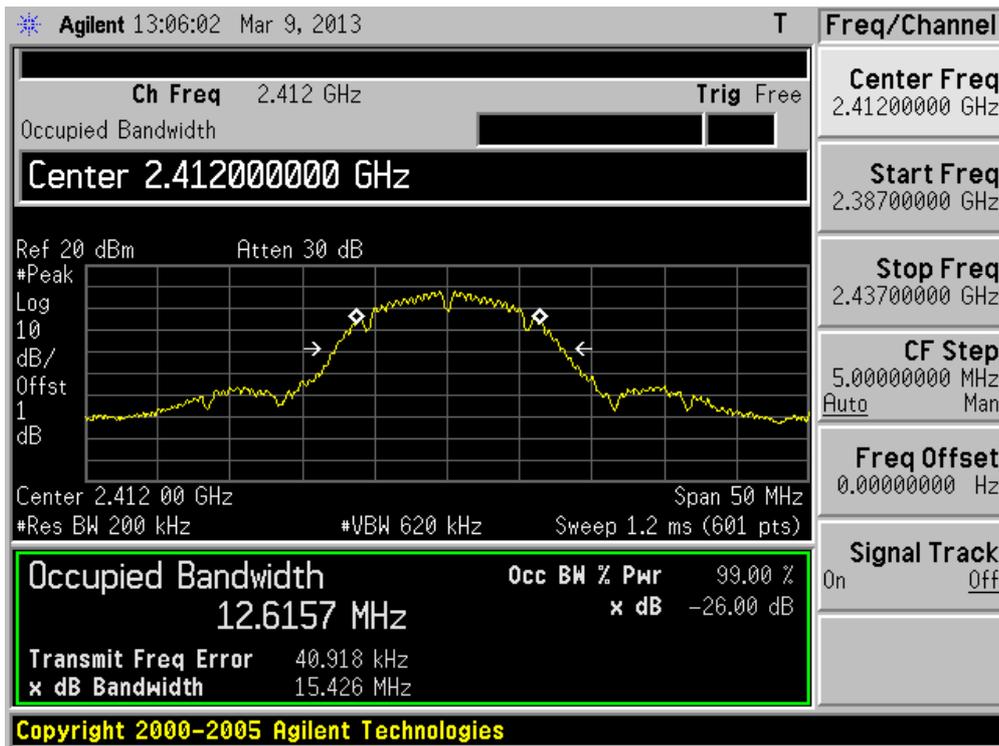
Channel 11 (2462MHz)



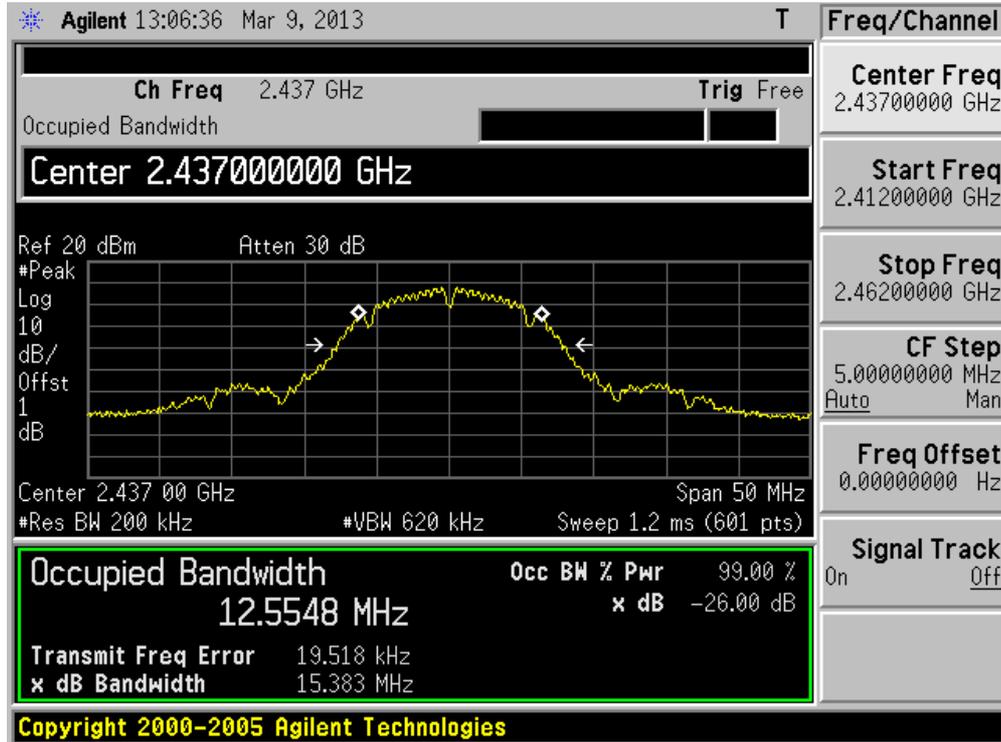
Product	:	GSM Mobile Phone
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	12615.7
06	2437	12554.8
11	2462	12538.2

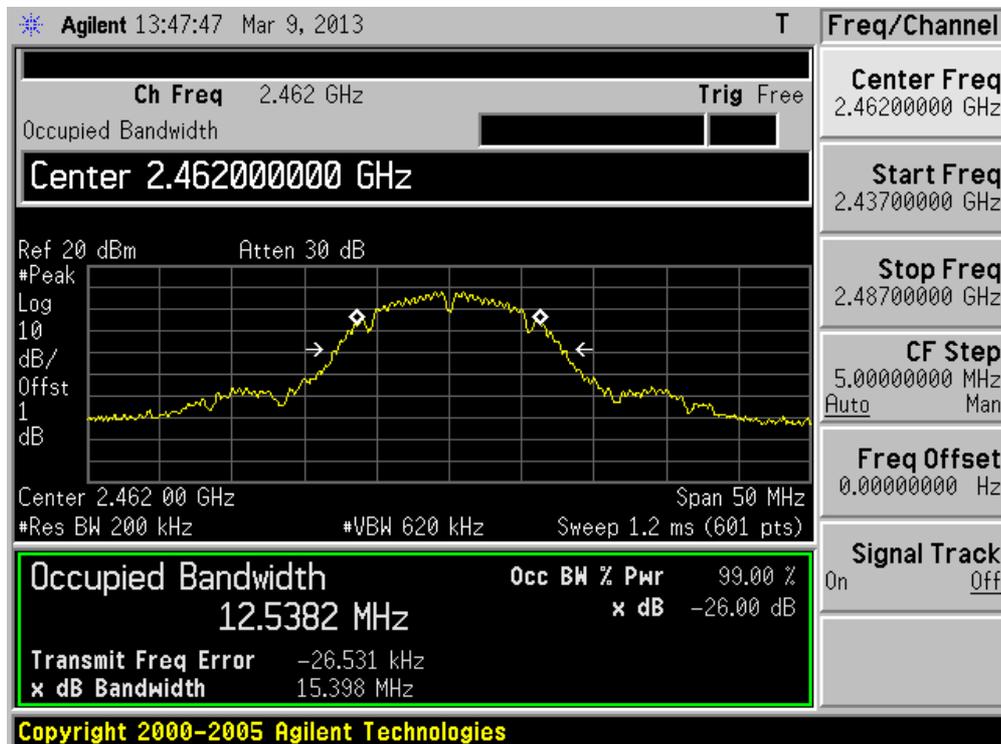
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



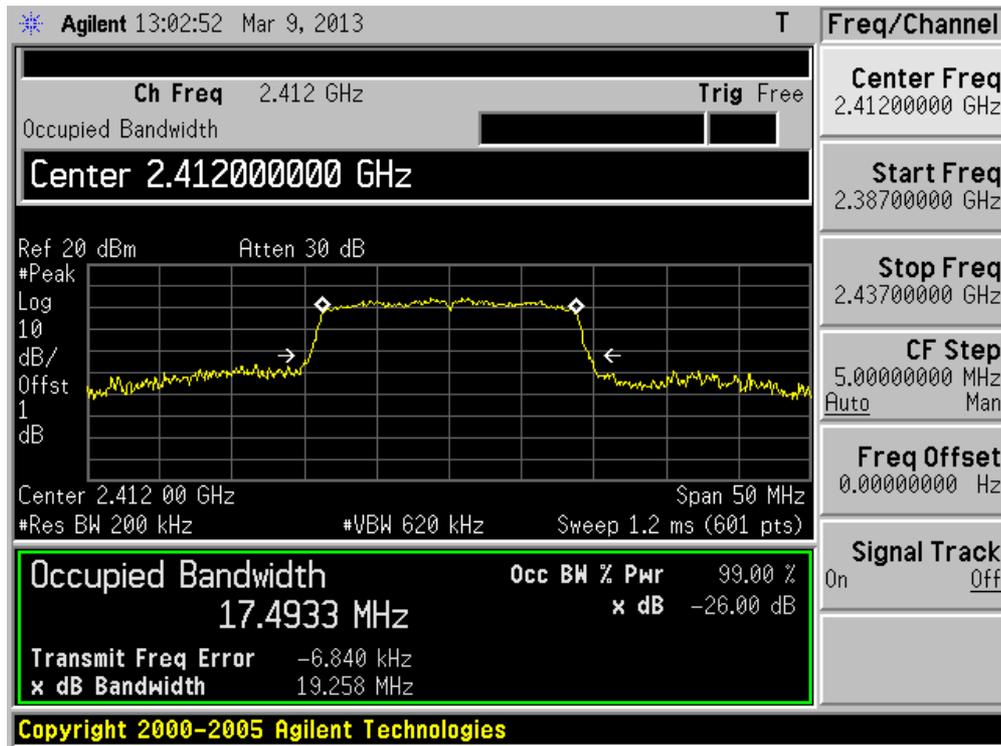
Channel 11 (2462MHz)



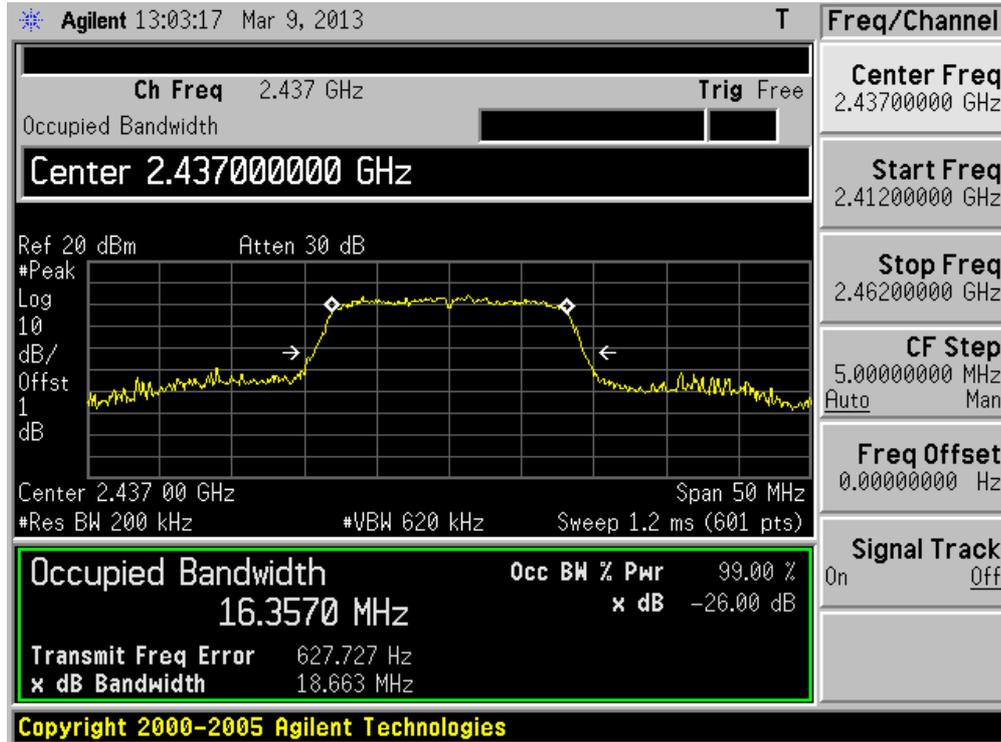
Product	:	GSM Mobile Phone
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	17493.3
06	2437	16357.0
11	2462	16360.8

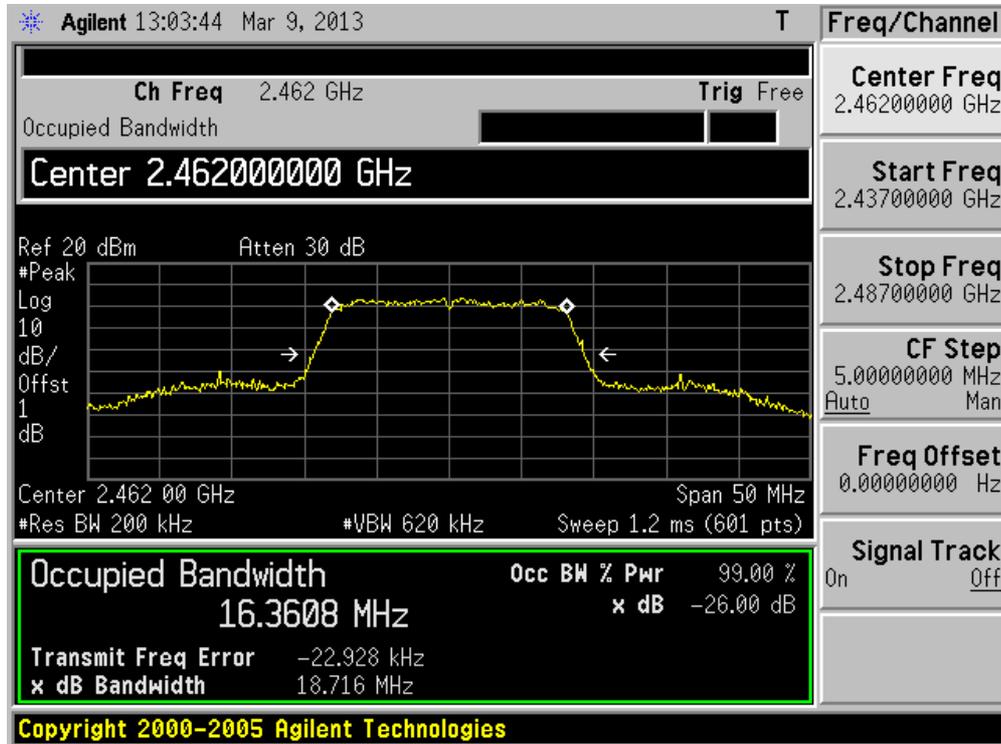
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



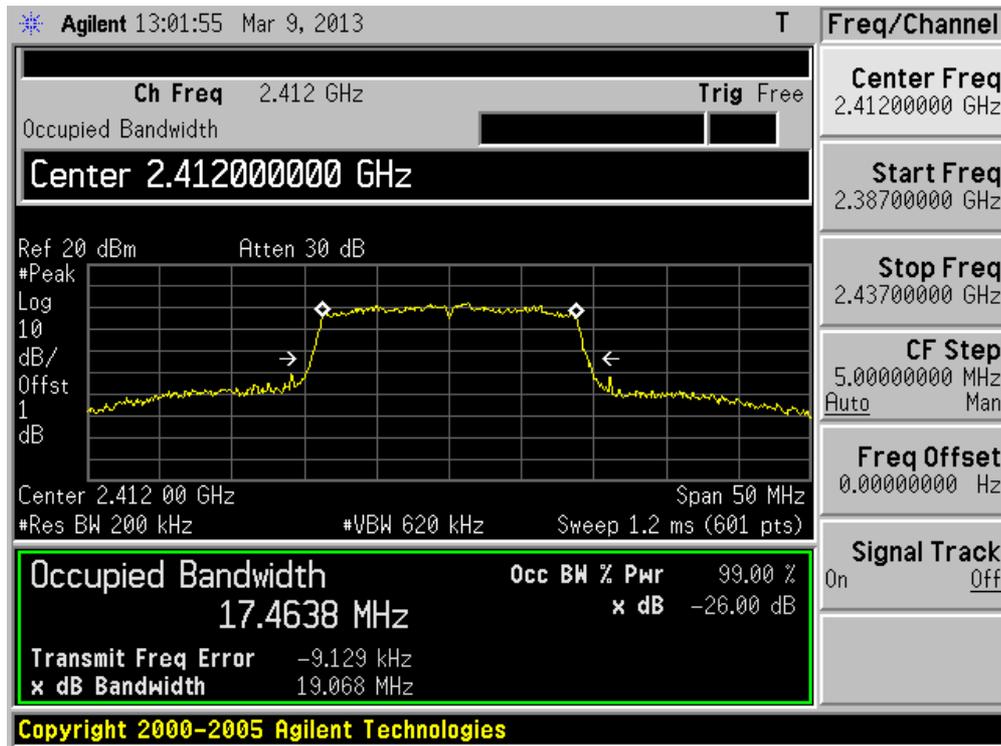
Channel 11 (2462MHz)



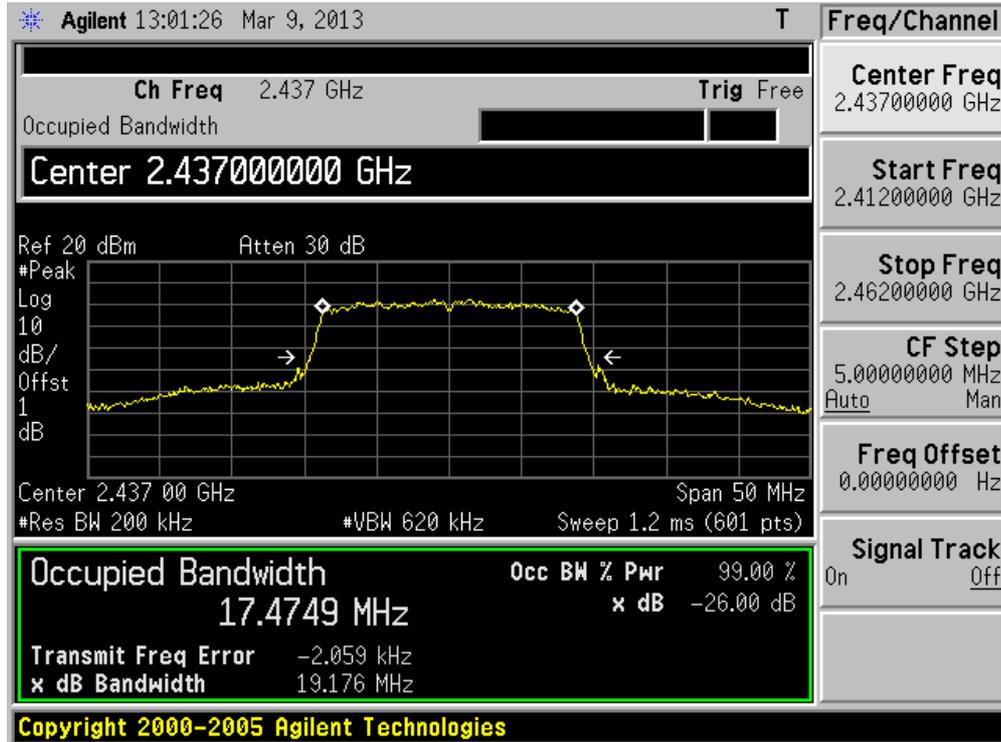
Product	:	GSM Mobile Phone
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	17463.8
06	2437	17474.9
11	2462	17452.9

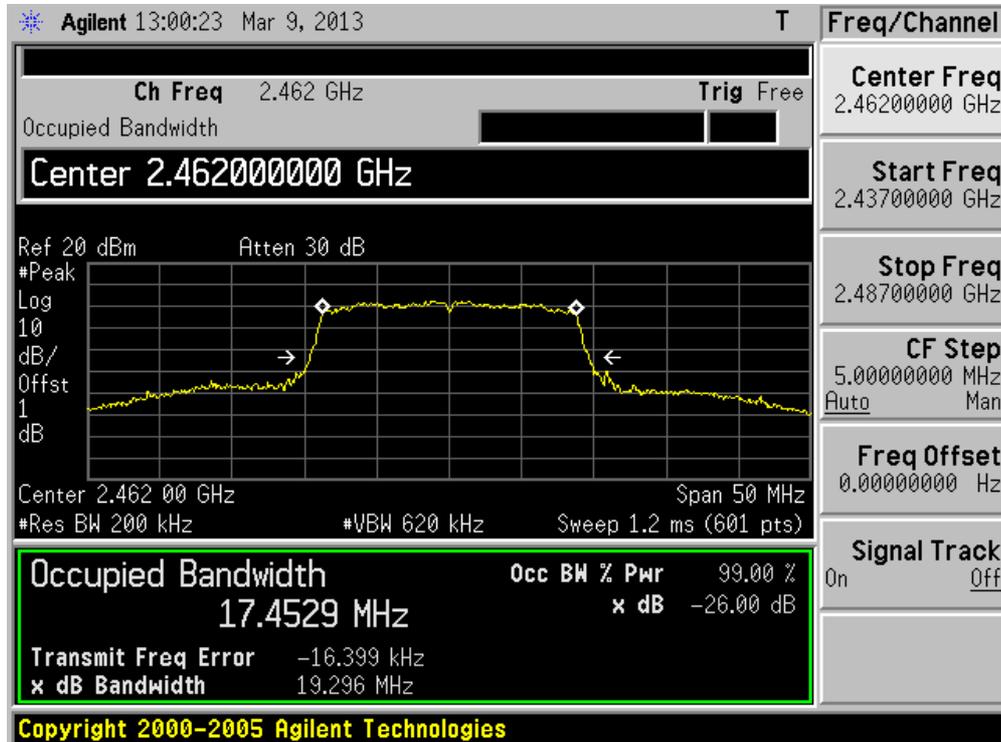
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 06 (2462MHz)



9. Power Output

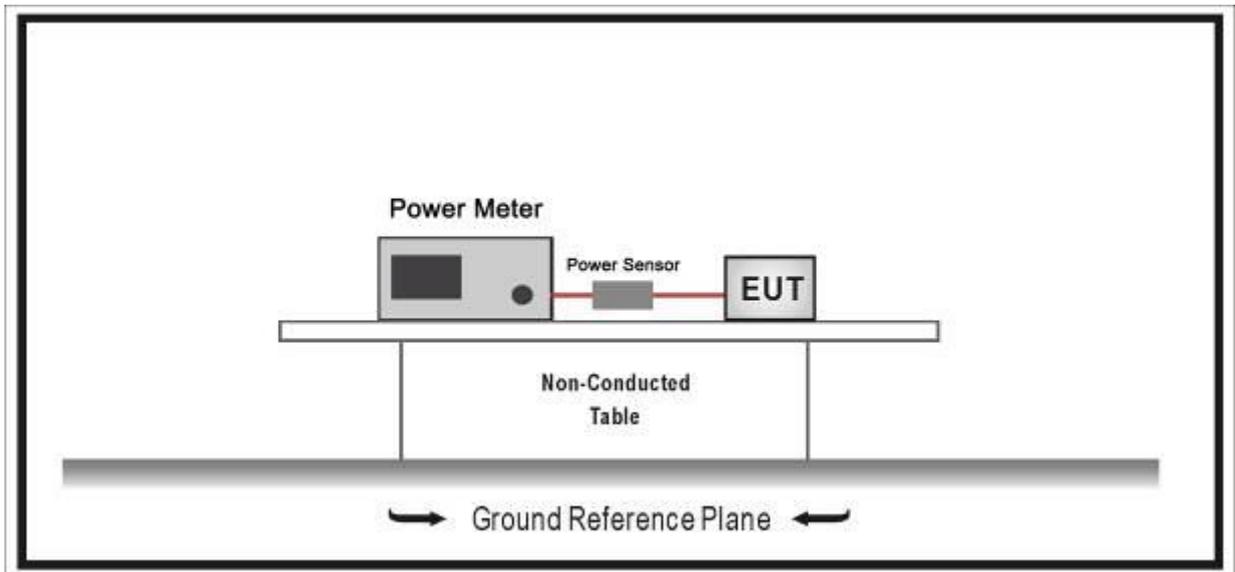
9.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2013.11.10
Power Sensor	Anritsu	MA2411B	0846014	2013.11.10
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

9.2. Test Setup



9.3. Limit

The maximum peak power shall be less 1 Watt (30dBm).

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

**9.4. Test Procedure**

The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Use the wideband power meter to test peak power and record the result.

**9.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 1.27$  dB

**9.6. Test Result**

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (blue marker) for final test of each channel.

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)					
		802.11b	802.11g	20MHz Bandwidth		40MHz Bandwidth	
				800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	6.5	7.2	13.5	15.0
1	1	2	9	13.0	14.4	27.0	30.0
0	1	5.5	12	19.5	21.7	40.5	45.0
1	1	11	18	26.0	28.9	54.0	60.0
4	1	---	24	39.0	43.3	81.0	90.0
5	1	---	36	52.0	57.8	108.0	120.0
6	1	---	48	58.5	65.0	121.5	135.0
7	1	---	54	65.0	72.2	135.0	150.0
8	2	---	---	13.0	14.4	27.0	30.0
9	2	---	---	26.0	28.9	54.0	60.0
10	2	---	---	39.0	43.3	81.0	90.0
11	2	---	---	52.0	57.8	108.0	120.0
12	2	---	---	78.0	86.7	162.0	180.0
13	2	---	---	104.0	115.6	216.0	240.0
14	2	---	---	117.0	130.0	243.0	270.0
15	2	---	---	130.0	144.0	270.0	300.0

Power output at various data rates:

Test Mode	Bandwidth	Frequency (MHz)	Channel	Data Rate	Peak Power (dBm)
802.11b	20	2437	6	1	18.21
				5.5	18.17
				11	18.11
802.11g	20	2437	6	6	24.87
				24	24.22
				54	24.04
802.11n	20	2437	6	MCS0	22.79
				MCS4	22.43
				MCS7	22.29

Product	:	GSM Mobile Phone
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
1	2412	18.24	30.00	Pass	14.14
6	2437	18.21	30.00	Pass	14.11
11	2462	18.47	30.00	Pass	14.37

Max.EIRP=Measurement Power + Antenna Gain

Product	:	GSM Mobile Phone
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
1	2412	24.71	30.00	Pass	20.61
6	2437	24.87	30.00	Pass	20.77
11	2462	25.14	30.00	Pass	21.04

Max.EIRP=Measurement Power + Antenna Gain

Product	:	GSM Mobile Phone
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
1	2412	23.22	30.00	Pass	19.12
6	2437	22.79	30.00	Pass	18.69
11	2462	22.87	30.00	Pass	18.77

Max.EIRP=Measurement Power + Antenna Gain

## 10. Power Spectral Density

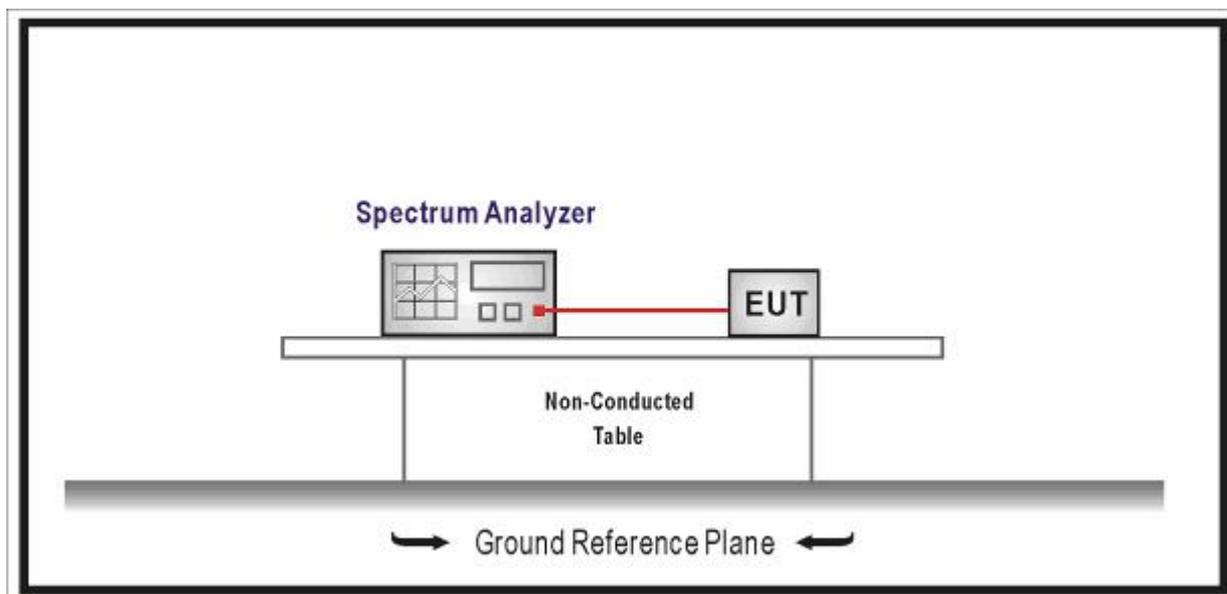
### 10.1. Test Equipment

Power Spectral Density / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 10.2. Test Setup



### 10.3. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiated to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

#### **10.4. Test Procedure**

The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Set the Span to 1.5 times the DTS channel bandwidth,  $RBW \cong 3 \text{ kHz}$ ,  $VBW \cong 3*RBW$ , Sweep time = auto couple, detector = Peak, trace mode = max hold, allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level.

#### **10.5. Uncertainty**

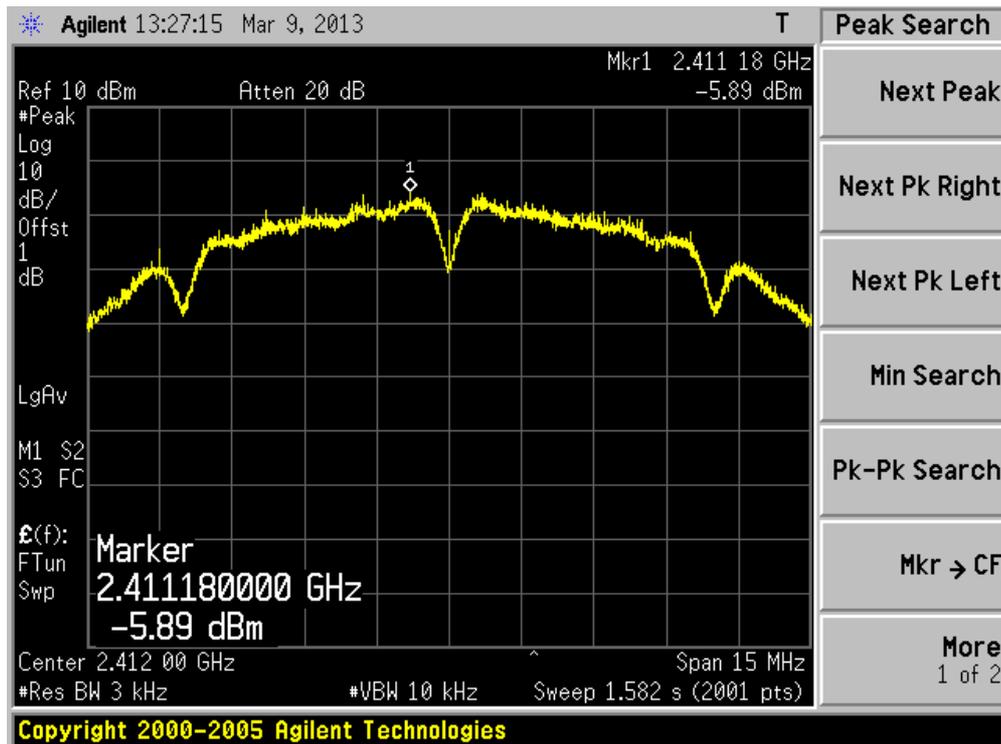
The measurement uncertainty is defined as  $\pm 1.27 \text{ dB}$

## 10.6. Test Result

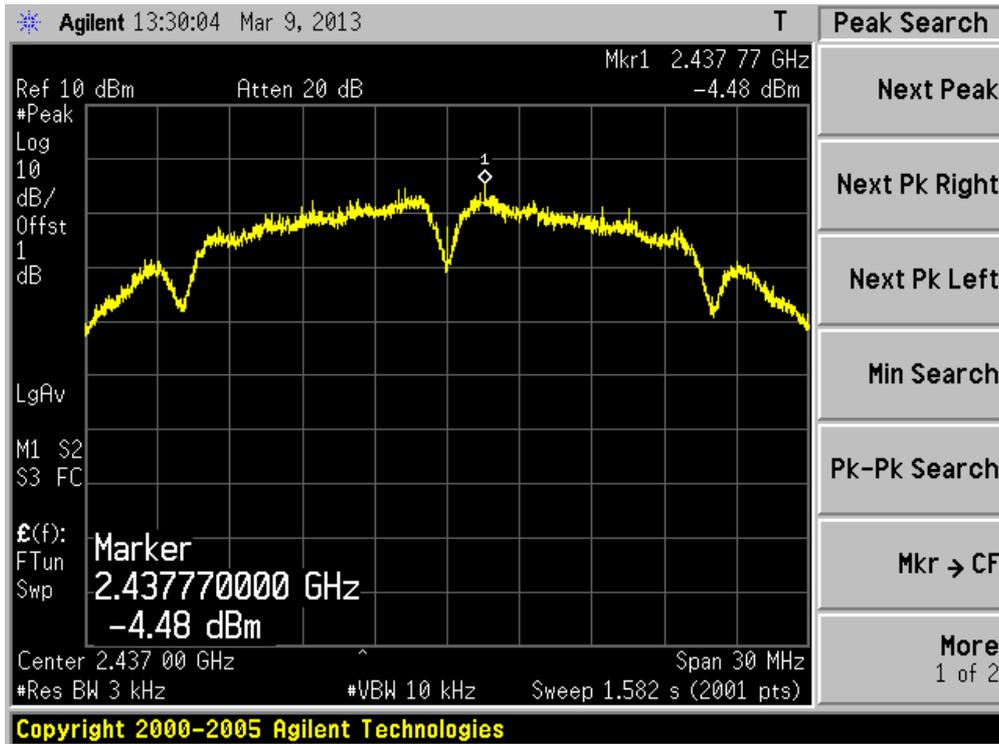
Product	:	GSM Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Result
01	2412	-5.89	8	Pass
06	2437	-4.48	8	Pass
11	2462	-6.62	8	Pass

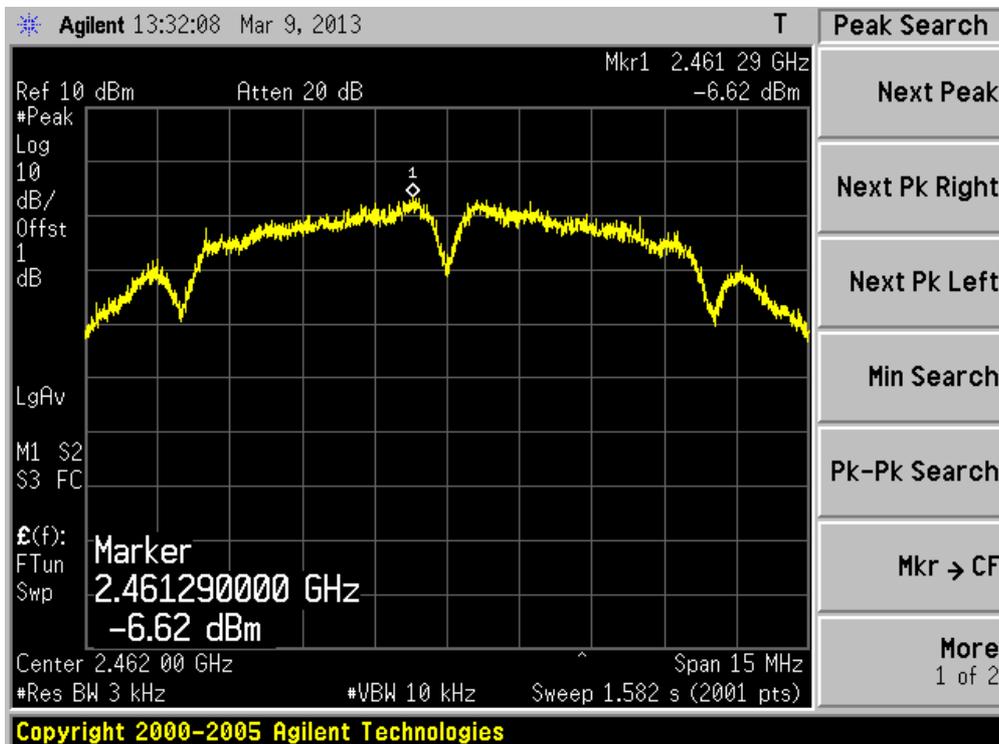
**Channel 01 (2412MHz)**



Channel 06 (2437MHz)



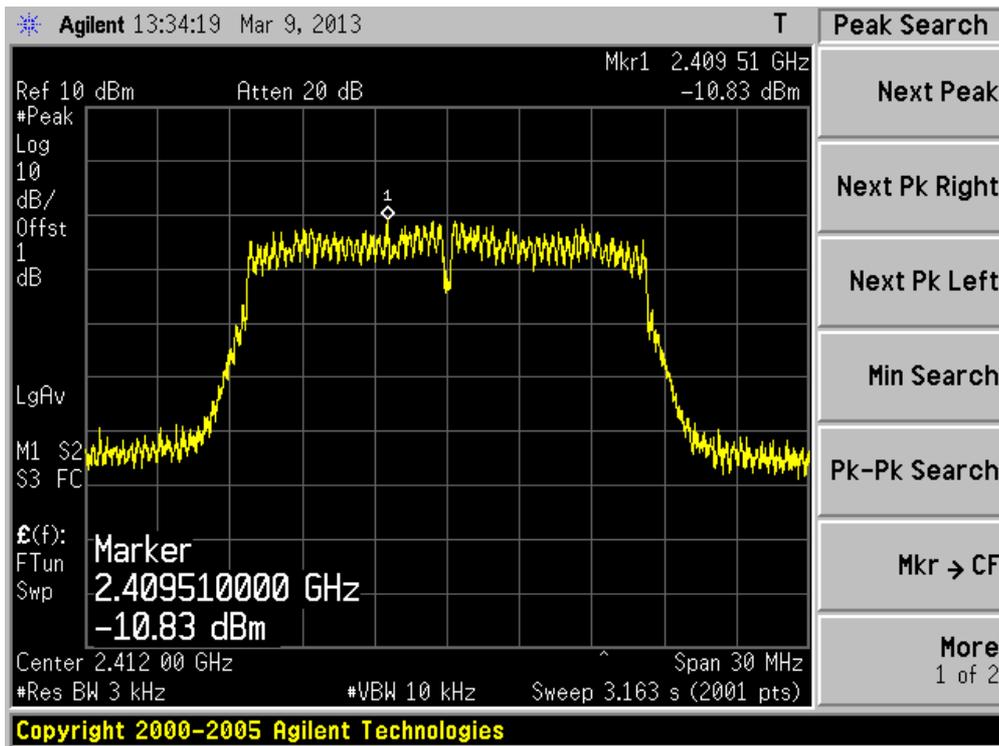
Channel 11 (2462MHz)



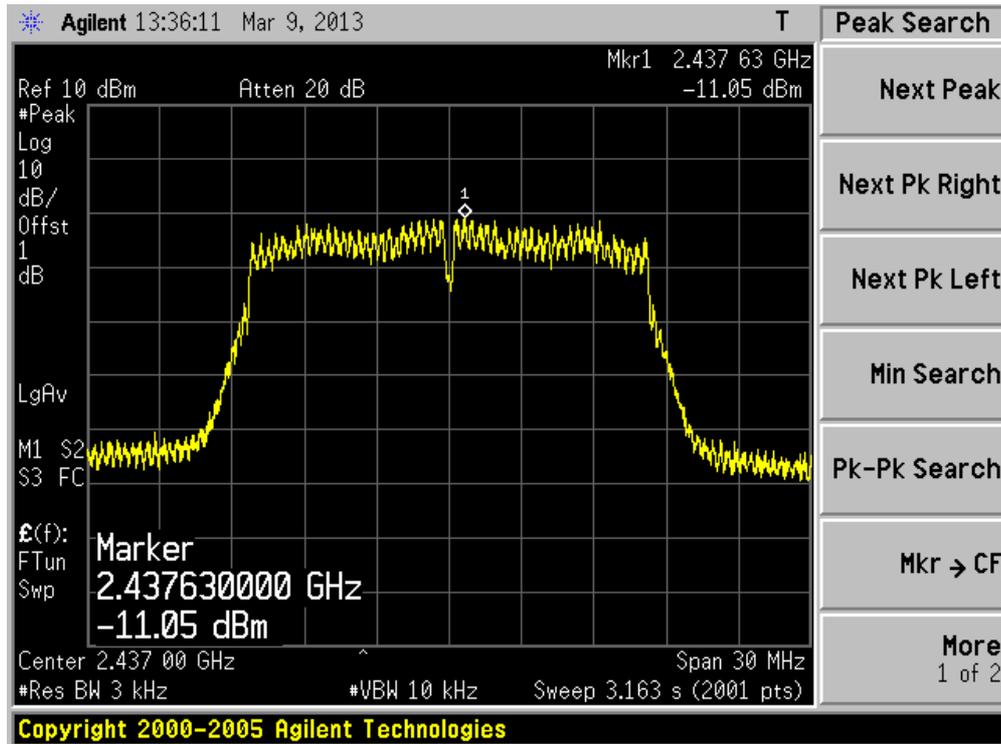
Product	:	GSM Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Reading Value (dBm)	Limit (dBm)	Result
01	2412	-10.83	8	Pass
06	2437	-11.05	8	Pass
11	2462	-10.54	8	Pass

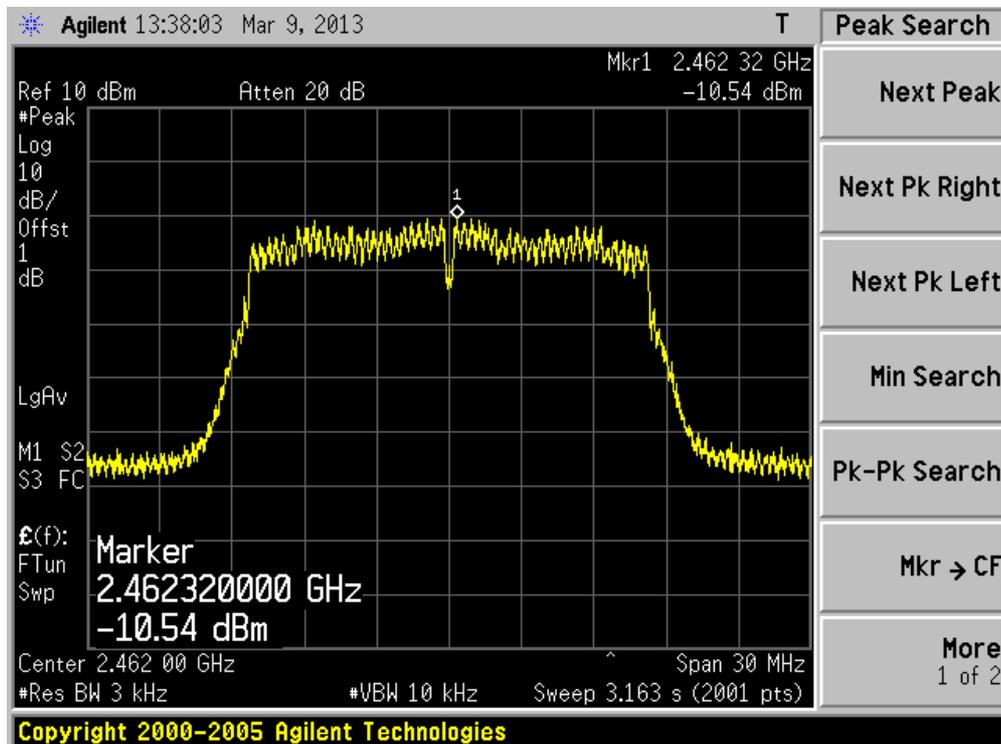
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



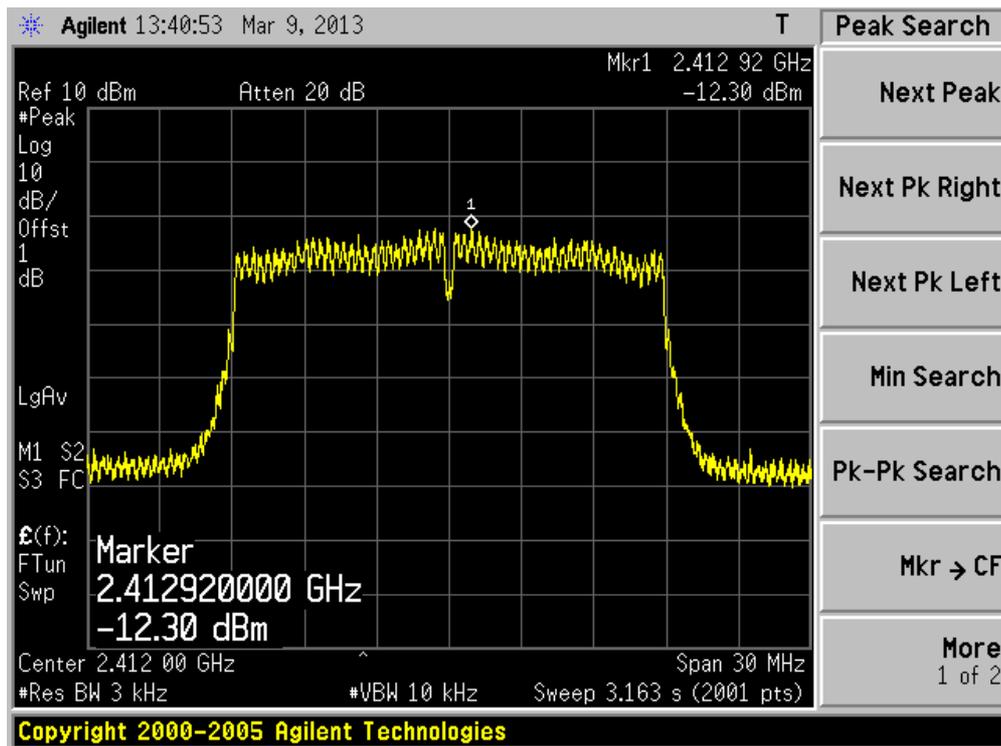
Channel 11 (2462MHz)



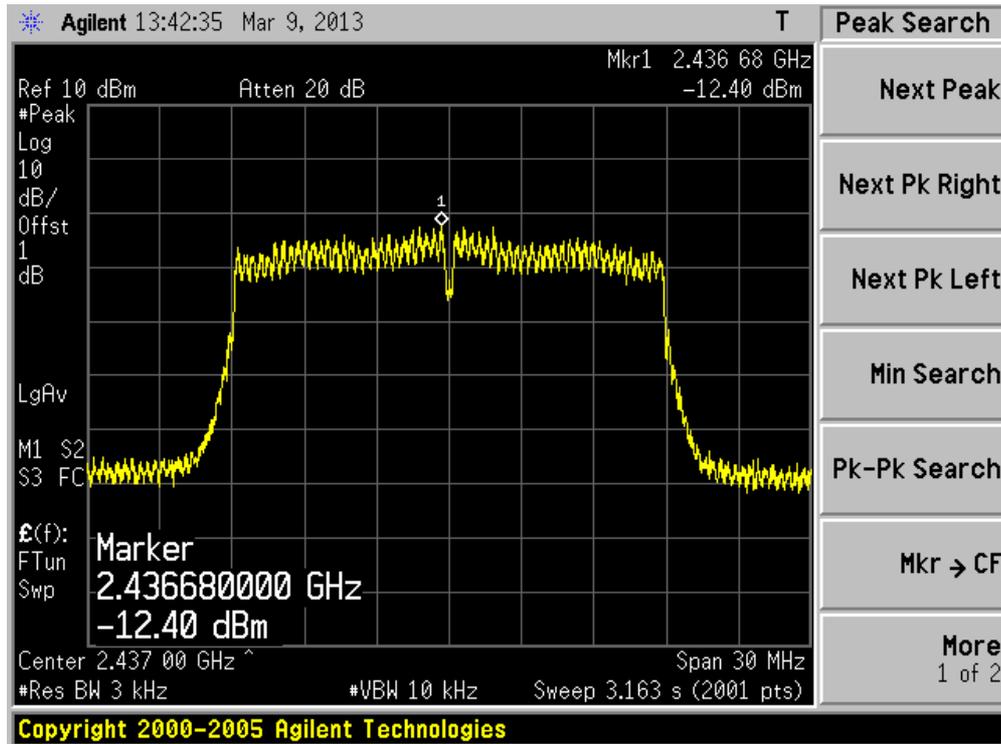
Product	:	GSM Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (20MHz)

Channel No.	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Result
01	2412	-12.30	8	Pass
06	2437	-12.40	8	Pass
11	2462	-12.08	8	Pass

### Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

