



# FCC Part15.247 Test Report

Product Name : GSM Mobile Phone  
Model No. : HUAWEI G6800  
FCC ID : QISG6800

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 : 09/08/2012  
Test Date : 09/08/2012~20/08/2012  
Issued Date : 24/08/2012  
Report No. : 128S012R-RF-US-P06V02  
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 : 24/08/2012

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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 G6800

FCC ID : QISG6800

EUT Voltage : DC 3.7V

Trade Name : HUAWEI

Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2012; ANSI C63.4: 2009; ANSI C63.10: 2009

Test Result : Complied

Performed Location : Suzhou EMC Laboratory  
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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 G6800
Hardware Version	MAYA V1.0
Software Version	G6800V100R001C00B201SP08
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 downlink)
Antenna Gain	GSM850: -2dBi PCS1900: 0dBi
<b>Bluetooth</b>	
Bluetooth Frequency	2402~2480MHz
Bluetooth Version	V3.0 + HS
Type of modulation	FHSS
Data Rate	1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK)
Antenna Gain	-2.0dBi
<b>Wi-Fi</b>	
Wi-Fi Frequency	802.11b/g/n(20MHz): 2412 ~ 2462 MHz 802.11n(40MHz): 2422 ~ 2452 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	-2.0dBi

Components	
Headset Model Number #1	HUAWEI/ MEMD1532B315000
Headset Model Number #2	HUAWEI/ 1217+3256C#3.5MM
Battery #1	Brand Name: HUAWEI M/N: HB5I1 Rated Voltage and Capacitance: 3.7V/1100mAh S/N: GAGC531L87701111
Battery #2	Brand Name: HUAWEI M/N: HB5I1 Rated Voltage and Capacitance: 3.7V/1100mAh S/N: BAAC802F87700228
Adapter #1	Brand Name: HUAWEI M/N: HS-050040U6 Input: 100-240V~50/60Hz 0.2A Output: 5Vdc, 400mA S/N: HKAC60551422
Adapter #2	Brand Name: HUAWEI M/N: HS-050040U6 Input: 100-240V~50/60Hz 0.2A Output: 5Vdc, 400mA S/N: BYAC62215868

Note: Adapter #1 is used for RF test

**For 2.4GHz Band**

802.11b/g 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

802.11n(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
03	2422 MHz	04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 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)
Mode 4: Transmit by 802.11n(40MHz)

Note:

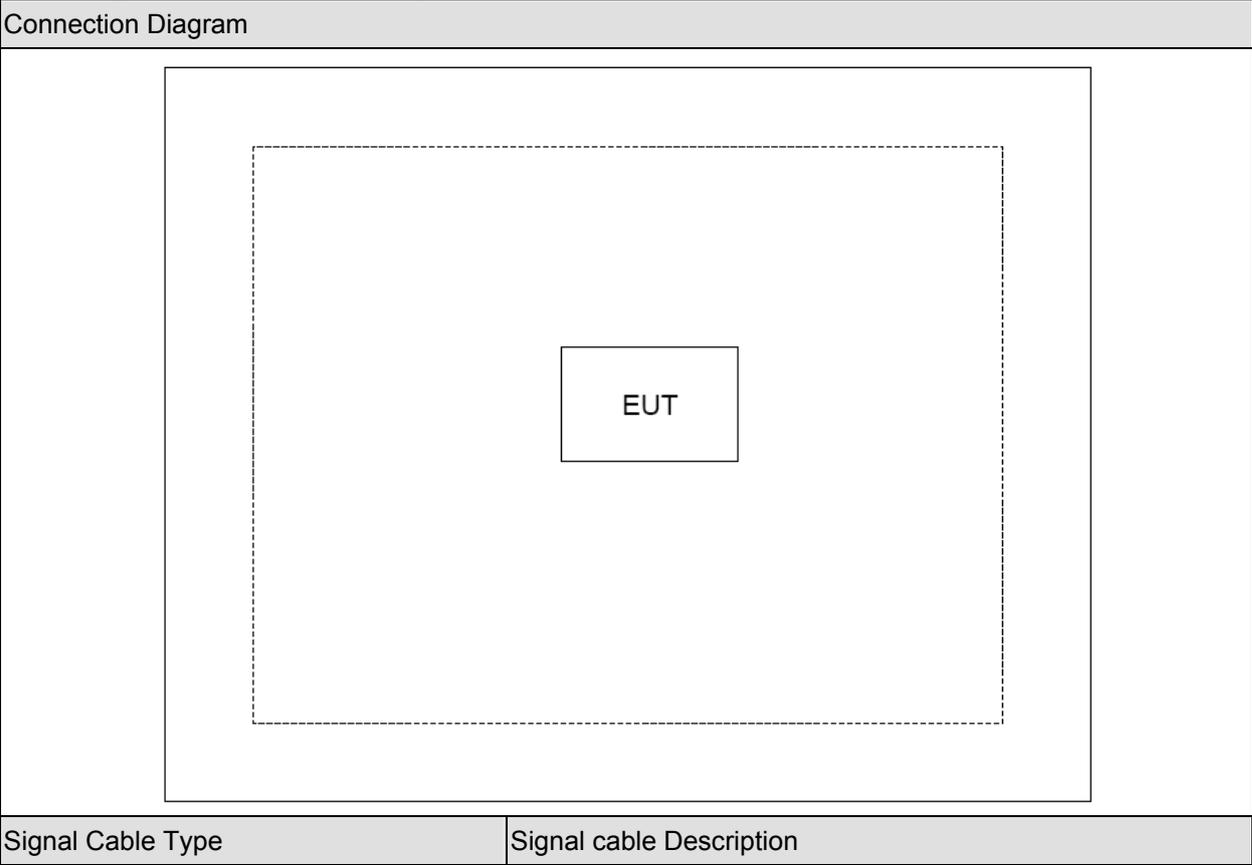
1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. For portable device, radiated spurious emission was verified over X, Y, Z axis, and shown the worst case on this report.
3. This device is a 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 128216R-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	Execute the software provided by applicant on the phone.
4	Select test channel and test mode to test.

## 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

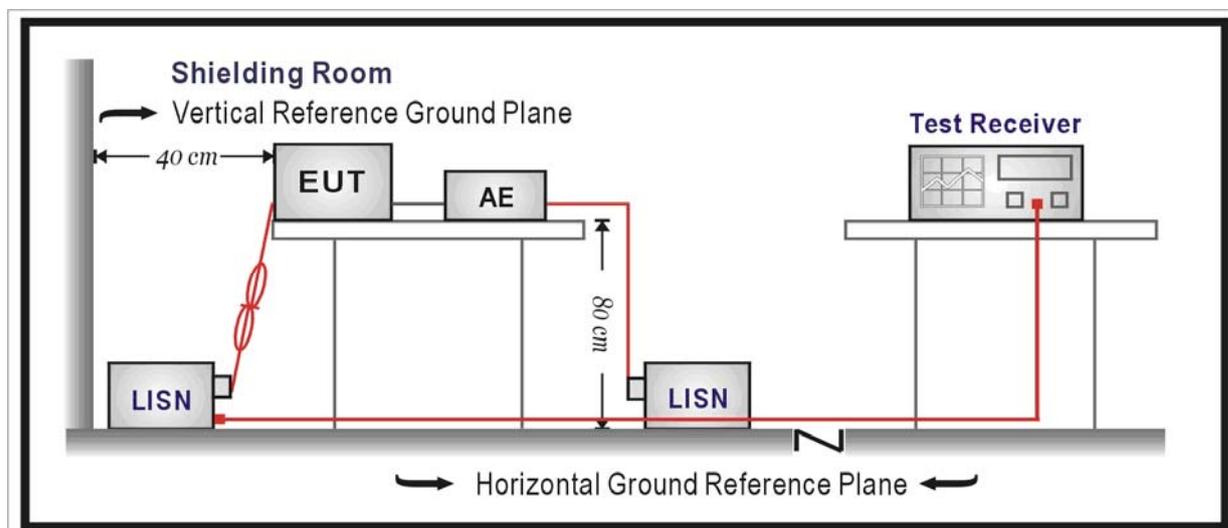
#### 3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due 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	2012.09.07
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2013.05.04
50ohm Termination	SHX	TF2	07081401	2012.09.22
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2013.01.10

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.

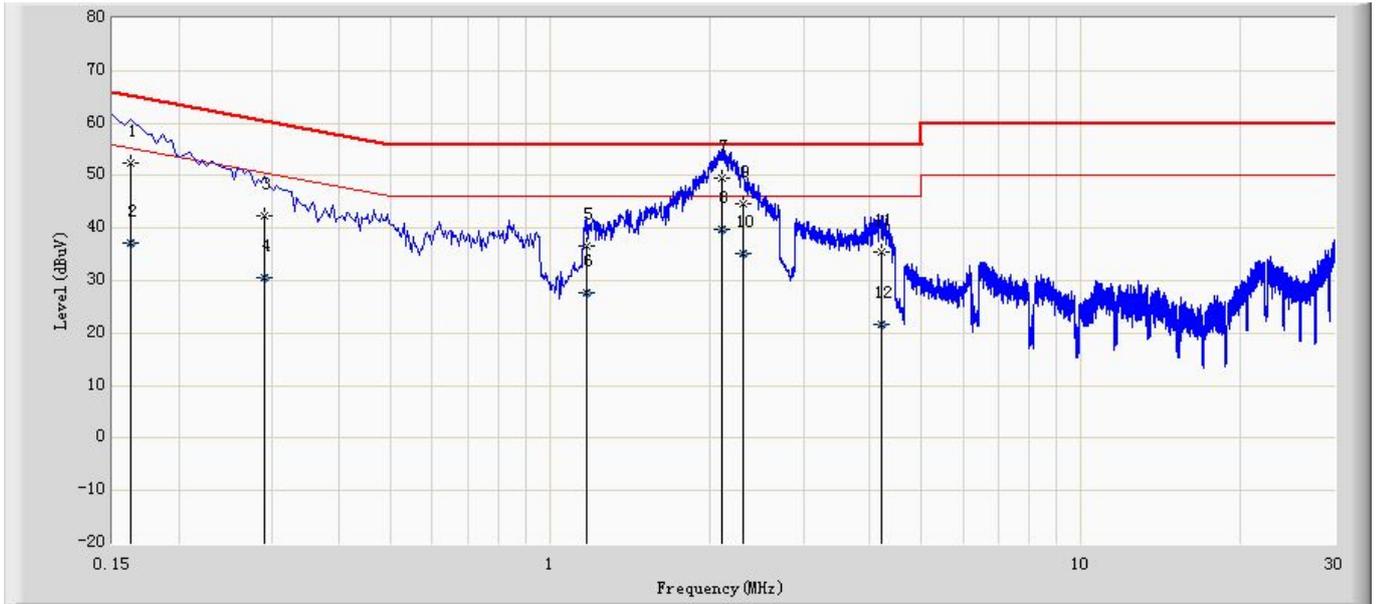
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

**3.5. Uncertainty**

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

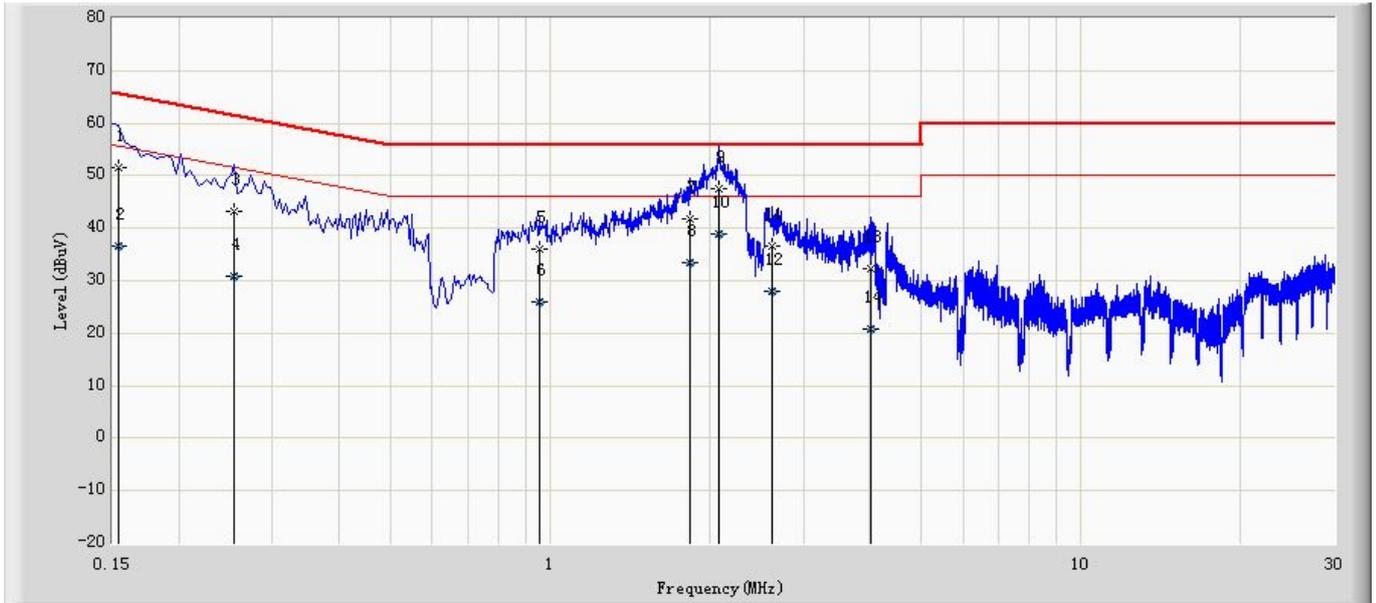
### 3.6. Test Result

Engineer: Brgant	
Site: TR1	Time: 2012/08/17 - 13:12
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		0.162	52.280	42.433	-13.081	65.361	9.847	QP
2		0.162	37.308	27.461	-18.053	55.361	9.847	AV
3		0.290	42.440	32.567	-18.085	60.524	9.872	QP
4		0.290	30.480	20.607	-20.045	50.524	9.872	AV
5		1.170	36.735	26.932	-19.265	56.000	9.803	QP
6		1.170	27.753	17.950	-18.247	46.000	9.803	AV
7		2.102	49.428	39.638	-6.572	56.000	9.790	QP
8	*	2.102	39.852	30.062	-6.148	46.000	9.790	AV
9		2.310	44.618	34.823	-11.382	56.000	9.795	QP
10		2.310	35.048	25.253	-10.952	46.000	9.795	AV
11		4.214	35.443	25.606	-20.557	56.000	9.837	QP
12		4.214	21.731	11.894	-24.269	46.000	9.837	AV

Engineer: Brgant	
Site: TR1	Time: 2012/08/17 - 13:21
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		0.154	51.654	41.671	-14.127	65.781	9.982	QP
2		0.154	36.626	26.644	-19.155	55.781	9.982	AV
3		0.254	43.188	33.261	-18.437	61.625	9.927	QP
4		0.254	30.884	20.958	-20.741	51.625	9.927	AV
5		0.954	36.010	25.994	-19.990	56.000	10.017	QP
6		0.954	25.982	15.966	-20.018	46.000	10.017	AV
7		1.830	41.705	31.743	-14.295	56.000	9.962	QP
8		1.830	33.465	23.504	-12.535	46.000	9.962	AV
9		2.078	47.454	37.502	-8.546	56.000	9.952	QP
10	*	2.078	38.966	29.014	-7.034	46.000	9.952	AV
11		2.618	36.594	26.615	-19.406	56.000	9.979	QP
12		2.618	27.867	17.888	-18.133	46.000	9.979	AV
13		4.018	32.344	22.294	-23.656	56.000	10.051	QP
14		4.018	20.725	10.675	-25.275	46.000	10.051	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	2012.11.22
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2012.10.18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2013.05.07

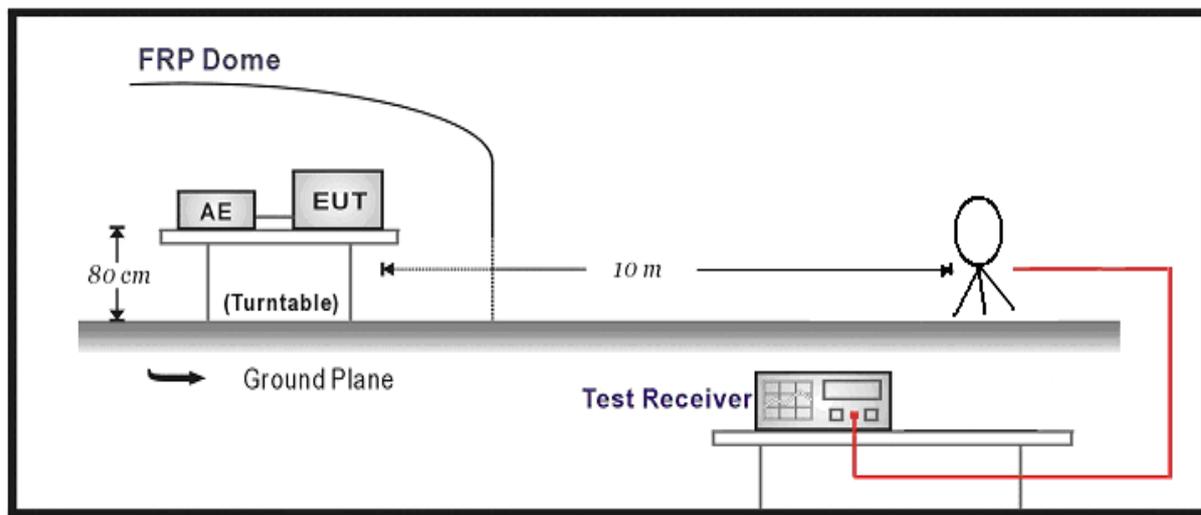
#### Radiated Emission / AC-5

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	2012.10.18
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	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2013.01.10

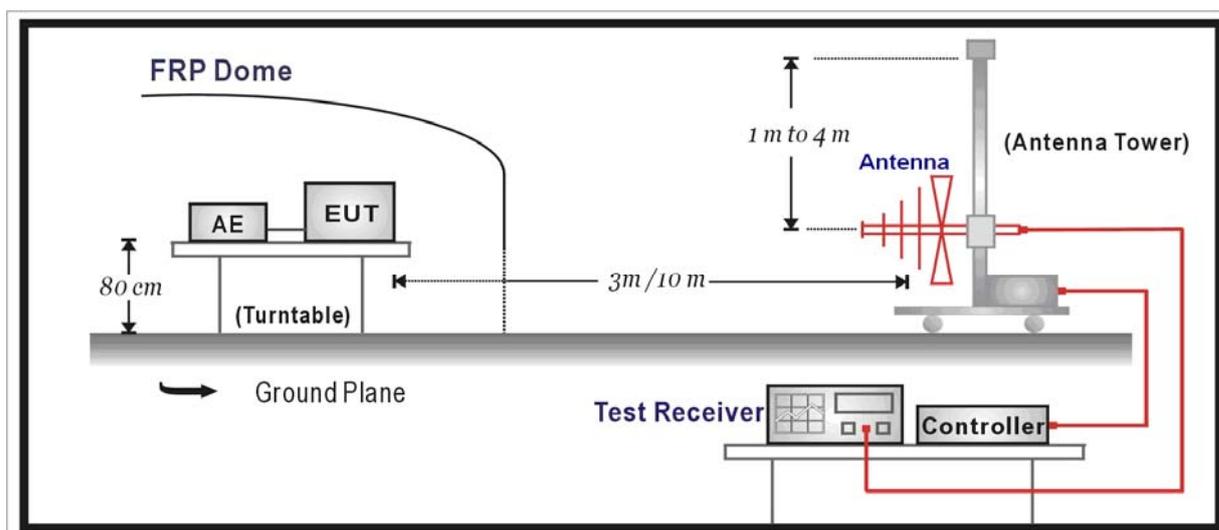
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

## 4.2. Test Setup

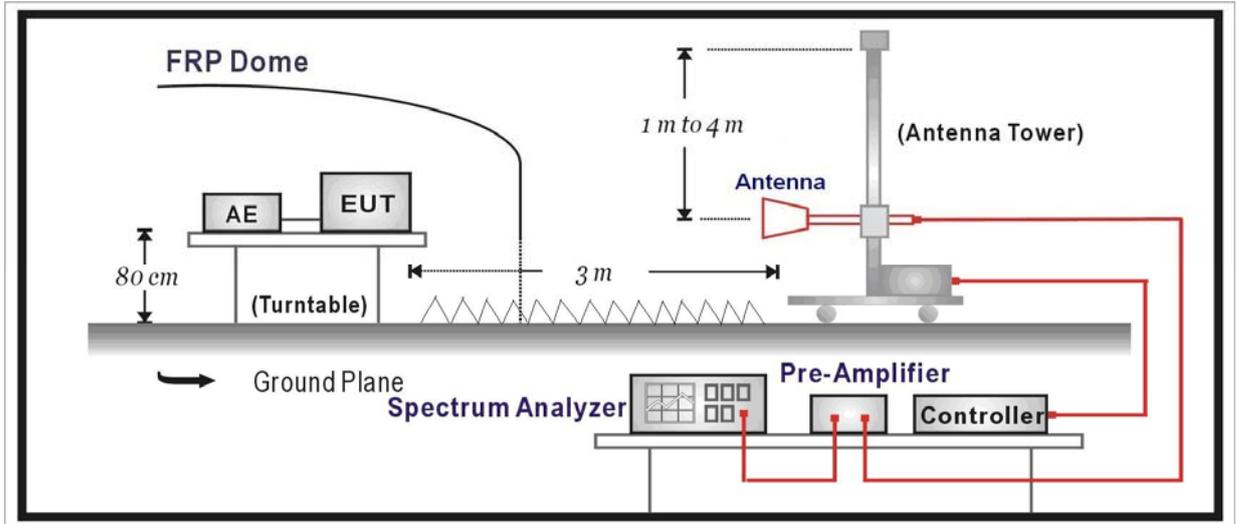
Below 30MHz Test Setup:



Under 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 ANSI C63.4: 2009 and tested according to ANSI C63.10: 2009 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.

Mode 1: Transmit by 802.11b

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	V	2413.4	80.0	31.2	111.2	Fundamental	/	PK
	V	340.0	-0.9	14.5	13.6	46	-32.4	QP
	H	550.0	-0.8	19.4	18.6	46	-27.4	QP
	H	3200.0	42.6	-5.7	36.9	54(Note 2)	-17.1	PK
	H	4824.0	40.9	-2.5	38.4	54(Note 2)	-15.6	PK
	V	7236.0	42.0	2.6	44.6	54(Note 2)	-9.4	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK
6	V	2438.5	80.5	31.3	111.8	Fundamental	/	PK
	V	287.5	1.4	13.5	14.9	46	-31.1	QP
	V	543.8	-0.7	19.3	18.6	46	-27.4	QP
	H	3200.0	42.1	-5.7	36.4	54(Note 2)	-17.6	PK
	V	4874.0	41.6	-2.4	39.2	54(Note 2)	-14.8	PK
	V	7311.0	43.6	2.7	46.3	54(Note 2)	-7.7	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK
11	V	2463.3	80.9	31.6	112.5	Fundamental	/	PK
	V	350.0	-1.7	14.8	13.1	46	-32.9	QP
	V	540.0	-0.6	19.1	18.5	46	-27.5	QP
	H	3200.0	42.3	-5.6	36.7	54(Note 2)	-17.3	PK
	H	4924.0	41.3	-2.2	39.1	54(Note 2)	-14.9	PK
	V	7386.0	47.4	2.7	50.1	54(Note 2)	-3.9	PK
	V	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK

Note 1: The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

2: 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.

Mode 2: Transmit by 802.11g

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	2415.3	75.9	31.3	107.2	Fundamental	/	PK
	H	543.8	-1.5	19.3	17.8	46	-28.2	QP
	V	543.8	-1.1	19.3	18.2	46	-27.8	QP
	V	3200.0	42.8	-5.6	37.2	54(Note 2)	-16.8	PK
	V	4824.0	40.9	-2.4	38.5	54(Note 2)	-15.5	PK
	V	7236.0	41.4	2.7	44.1	54(Note 2)	-9.9	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK
6	H	2438.5	76.1	31.7	107.8	Fundamental	/	PK
	H	540.0	-1.7	19.2	17.5	46	-28.5	QP
	V	540.0	-0.9	19.2	18.3	46	-27.7	QP
	H	3200.0	42.8	-5.6	37.2	54(Note 2)	-16.8	PK
	H	4874.0	40.9	-2.3	38.6	54(Note 2)	-15.4	PK
	V	7311.0	41.7	2.7	44.4	54(Note 2)	-9.6	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK
11	H	2463.5	76.5	31.6	108.1	Fundamental	/	PK
	H	539.3	-2.5	19.1	16.6	46	-29.4	QP
	V	539.3	3.3	19.2	22.5	46	-23.5	QP
	V	3200.0	42.5	-5.6	36.9	54(Note 2)	-17.1	PK
	V	4924.0	41.4	-2.2	39.2	54(Note 2)	-14.8	PK
	V	7386.0	47.1	2.8	49.9	54(Note 2)	-4.1	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK

Note 1: The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

2: 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.

Mode 3: Transmit by 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	2416.3	76.0	31.2	107.2	Fundamental	/	PK
	H	350.0	-0.4	14.8	14.4	46	-31.6	QP
	H	550.0	0.1	19.5	19.6	46	-26.4	QP
	V	3200.0	42.8	-5.6	37.2	54(Note 2)	-16.8	PK
	V	4824.0	41.3	-2.5	38.8	54(Note 2)	-15.2	PK
	V	7236.0	40.9	2.6	43.5	54(Note 2)	-10.5	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK
6	H	2438.5	75.5	31.3	106.8	Fundamental	/	PK
	H	350.0	-0.2	14.8	14.6	46	-31.4	QP
	V	540.9	-0.5	19.2	18.7	46	-27.3	QP
	H	3200.0	42.5	-5.6	36.9	54(Note 2)	-17.1	PK
	H	4874.0	40.9	-2.3	38.6	54(Note 2)	-15.4	PK
	V	7311.0	42.1	2.7	44.8	54(Note 2)	-9.2	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK
11	H	2466.3	74.5	31.6	106.1	Fundamental	/	PK
	H	555.0	-2.7	19.5	16.8	46	-29.2	QP
	V	555.0	-1.3	19.4	18.1	46	-27.9	QP
	H	3200.0	42.5	-5.6	36.9	54(Note 2)	-17.1	PK
	V	4924.0	41.0	-2.1	38.9	54(Note 2)	-15.1	PK
	V	7386.0	44.4	2.8	47.2	54(Note 2)	-6.8	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK

Note 1: The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

2: 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.

Mode 4: Transmit by 802.11n(40MHz)

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
3	H	2425.2	70.6	31.4	102.0	Fundamental	/	PK
	H	361.0	-0.7	15.0	14.3	46	-31.7	QP
	H	540.9	-0.4	19.2	18.8	46	-27.2	QP
	H	4844.0	41.6	-2.5	39.1	54(Note 2)	-14.9	PK
	V	3200.0	42.9	-5.6	37.3	54(Note 2)	-16.7	PK
	V	7266.0	40.5	2.6	43.1	54(Note 2)	-10.9	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK
6	H	2438.5	70.9	31.5	102.4	Fundamental	/	PK
	H	365.0	-1.0	15.2	14.2	46	-31.8	QP
	V	555.0	-0.7	19.5	18.8	46	-27.2	QP
	H	7311.0	40.7	2.7	43.4	54(Note 2)	-10.6	PK
	V	3200.0	42.7	-5.7	37.0	54(Note 2)	-17.0	PK
	V	4874.0	41.4	-2.4	39.0	54(Note 2)	-15.0	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK
9	H	2469.1	71.2	31.6	102.8	Fundamental	/	PK
	H	365.0	-0.7	15.2	14.5	46	-31.5	QP
	H	540.9	0.7	19.2	19.9	46	-26.1	QP
	H	3200.0	42.6	-5.6	37.0	54(Note 2)	-17.0	PK
	H	7356.0	41.2	2.8	44.0	54(Note 2)	-10.0	PK
	V	4904.0	41.1	-2.2	38.9	54(Note 2)	-15.1	PK
	H	24000.0	59.1	-8.9	50.2	54(Note 2)	-3.8	PK

Note 1: The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

2: 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

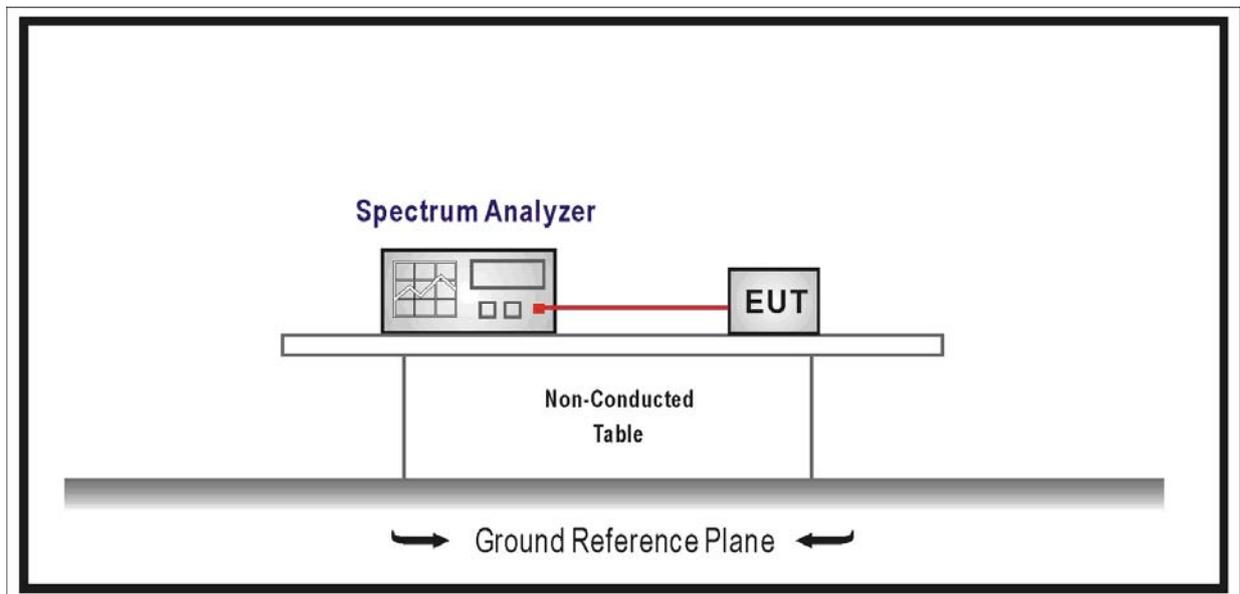
### 5.1. Test Equipment

RF Antenna Conducted Spurious / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due 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.

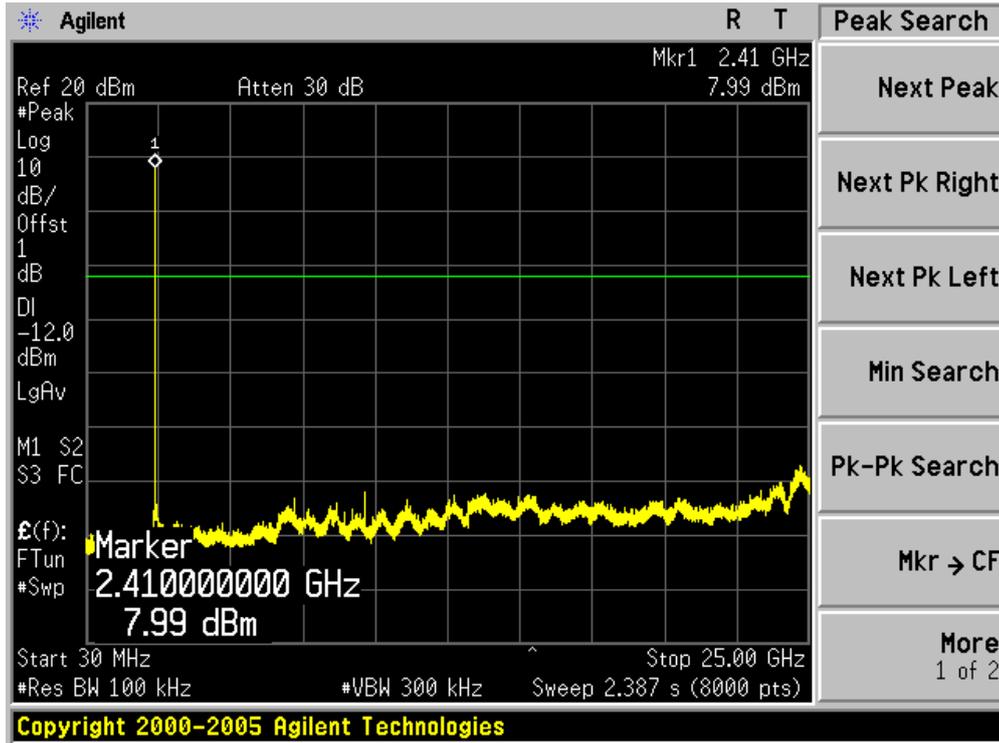
#### **5.5. Uncertainty**

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

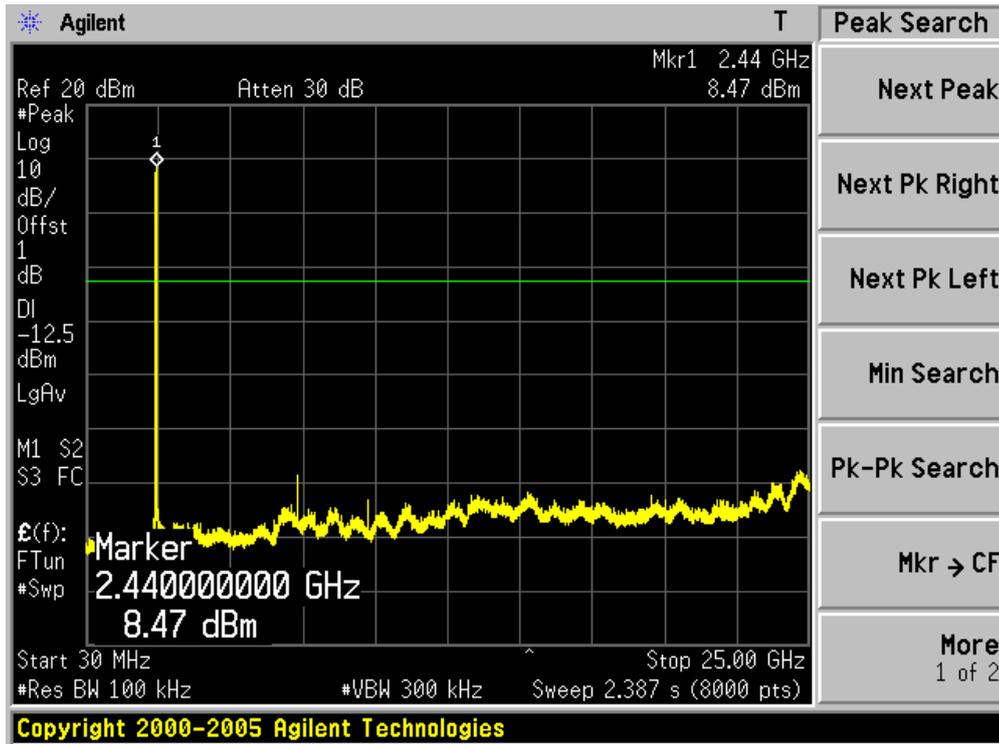
5.6. Test Result

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

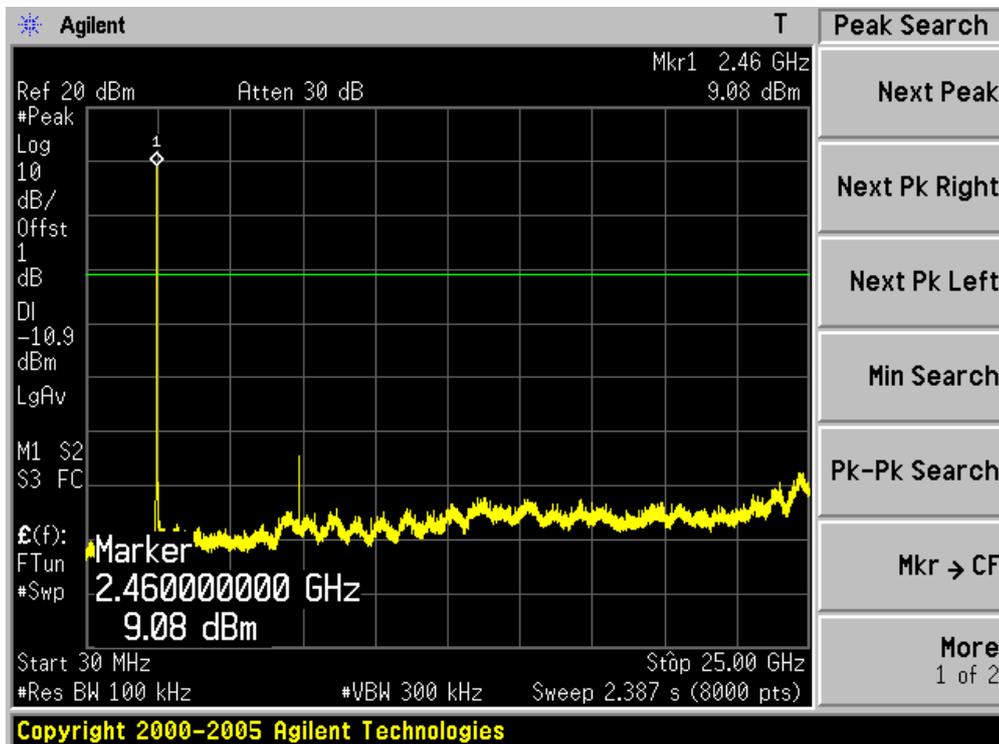
Channel 01 (2412MHz)



Channel 06 (2437MHz)

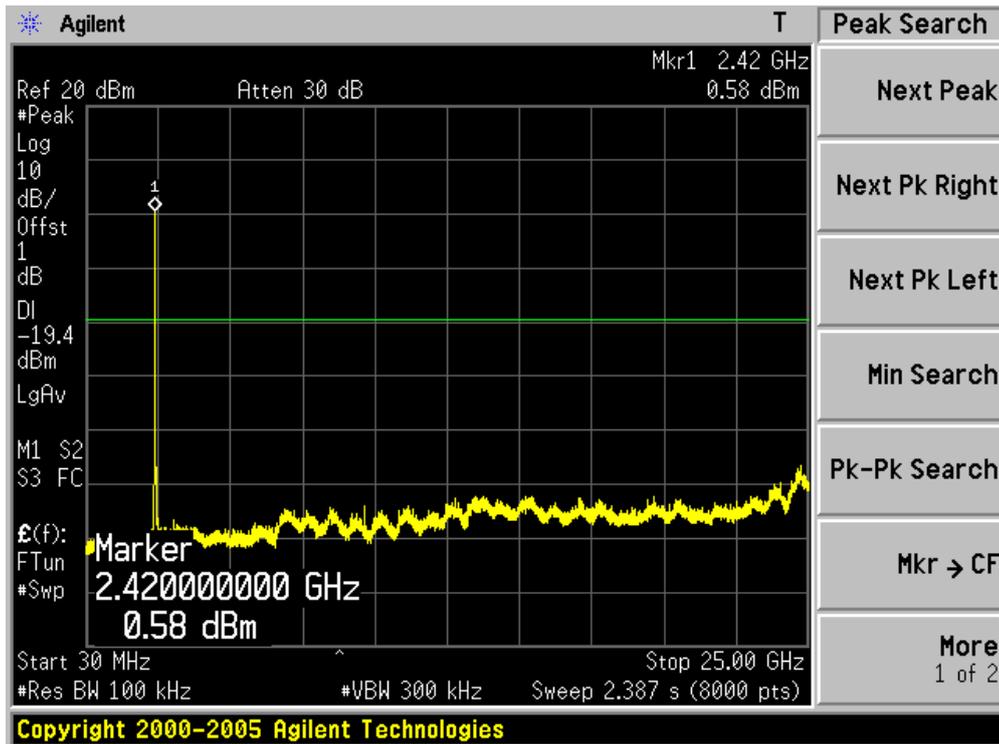


Channel 11 (2462MHz)

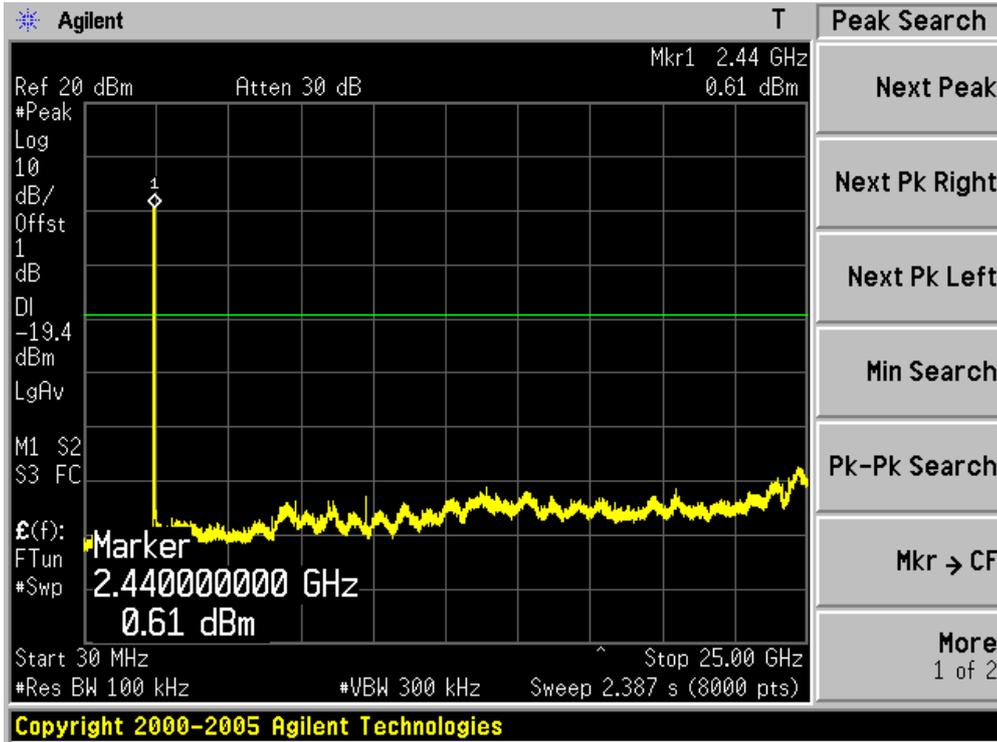


Product	: GSM Mobile Phone
Test Item	: RF Antenna Conducted Spurious
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g

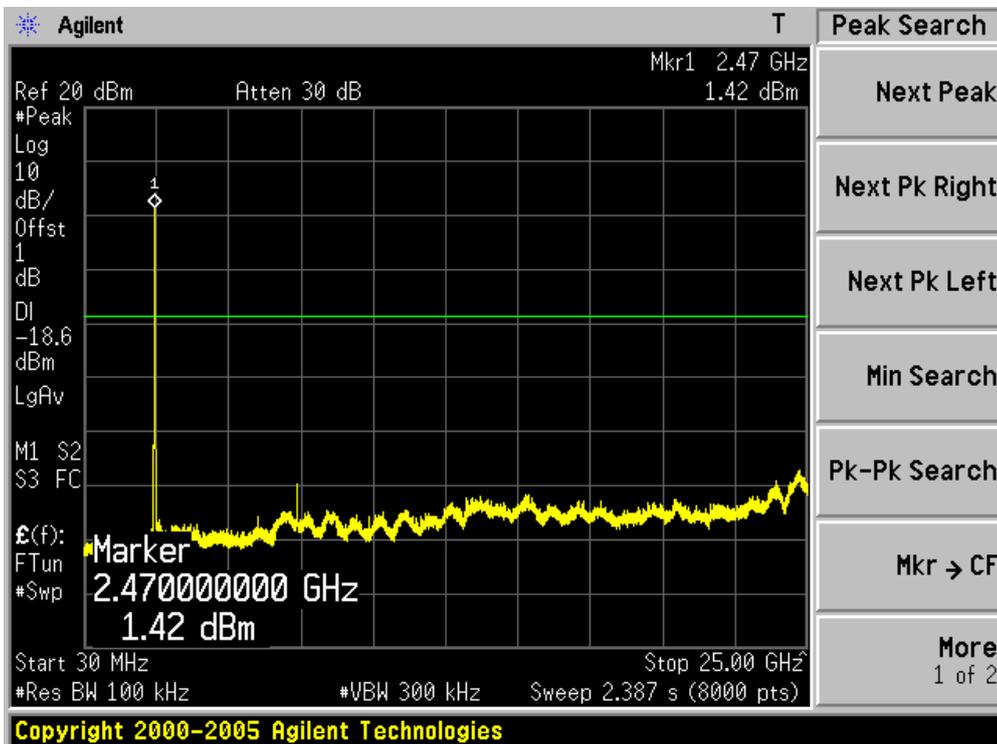
Channel 01 (2412MHz)



Channel 06 (2437MHz)

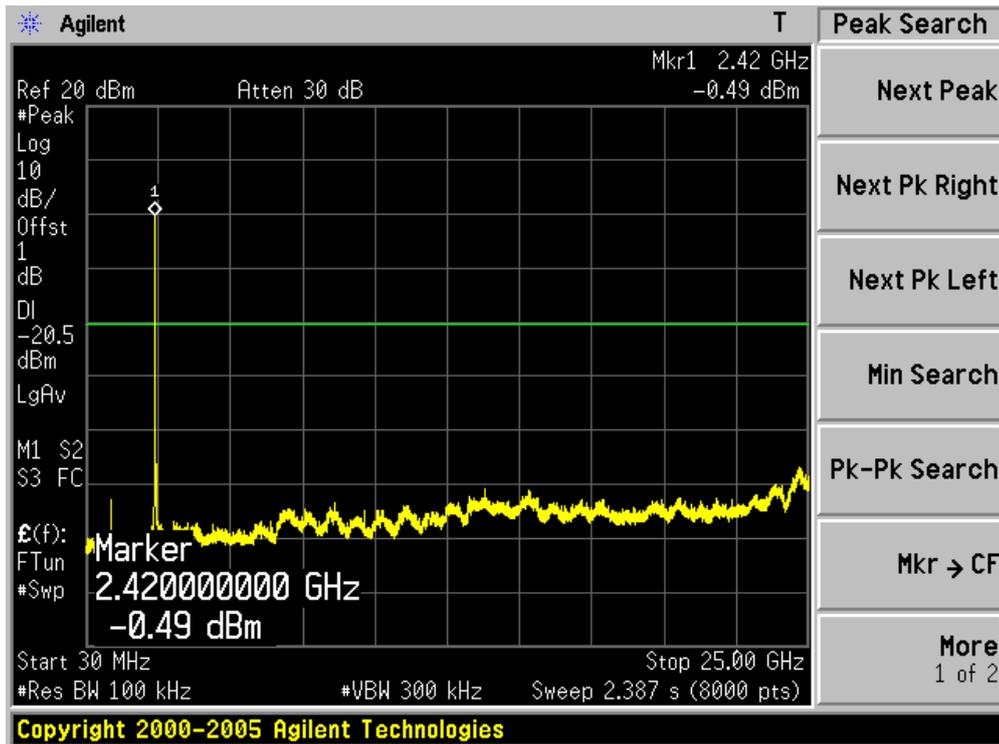


Channel 11 (2462MHz)

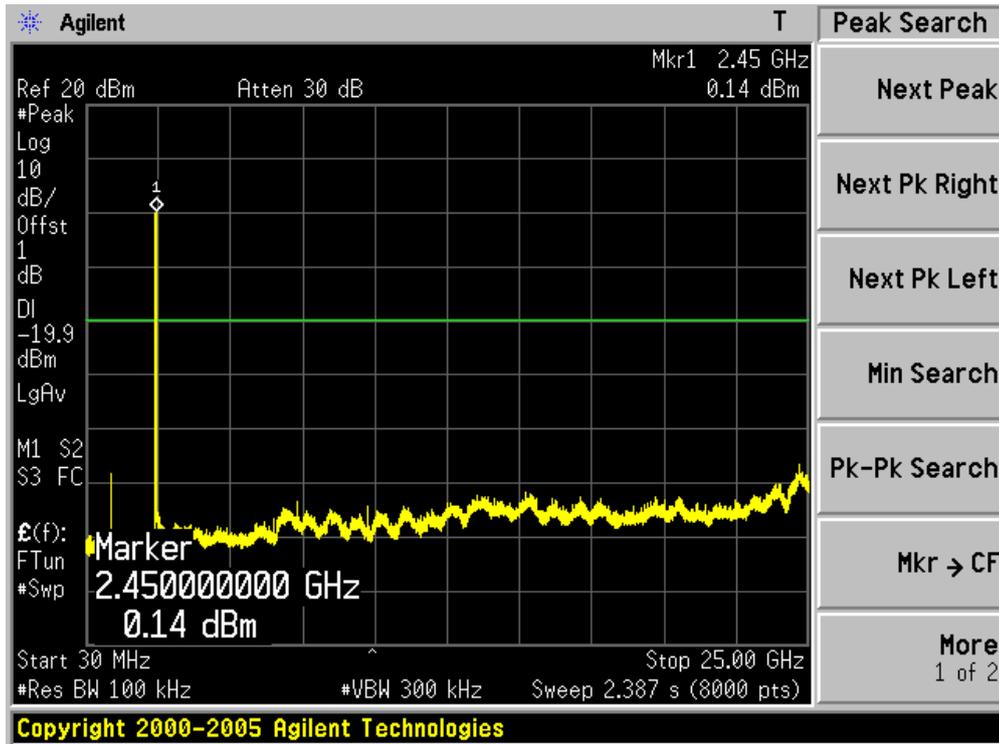


Product	: GSM Mobile Phone
Test Item	: RF Antenna Conducted Spurious
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n(20MHz)

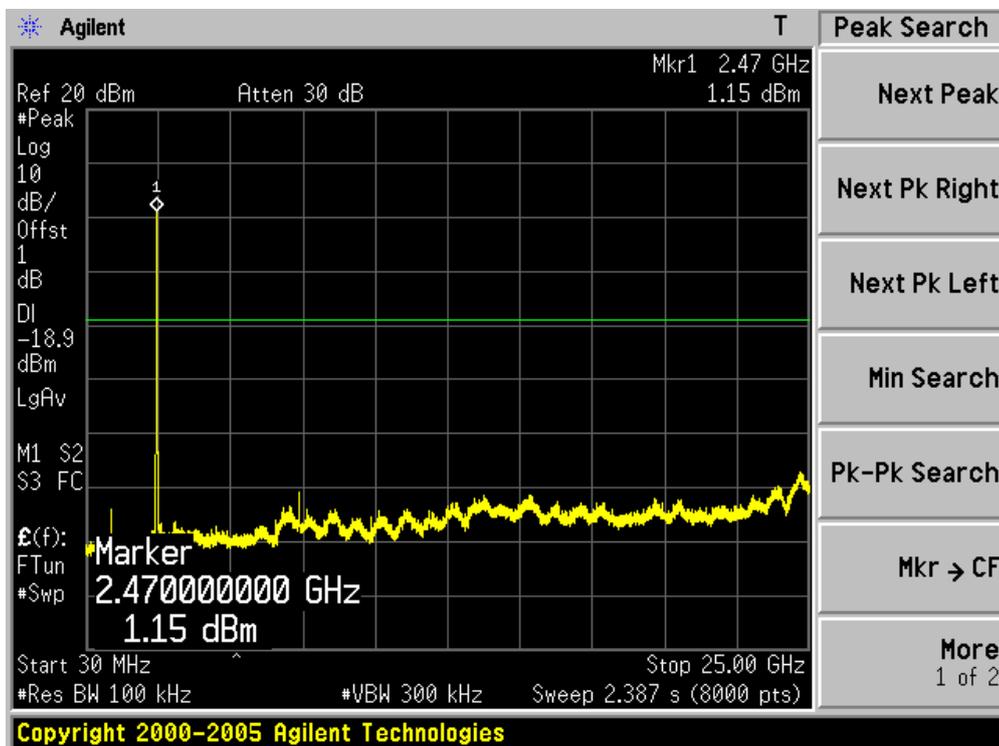
### Channel 01 (2412MHz)



Channel 06 (2437MHz)

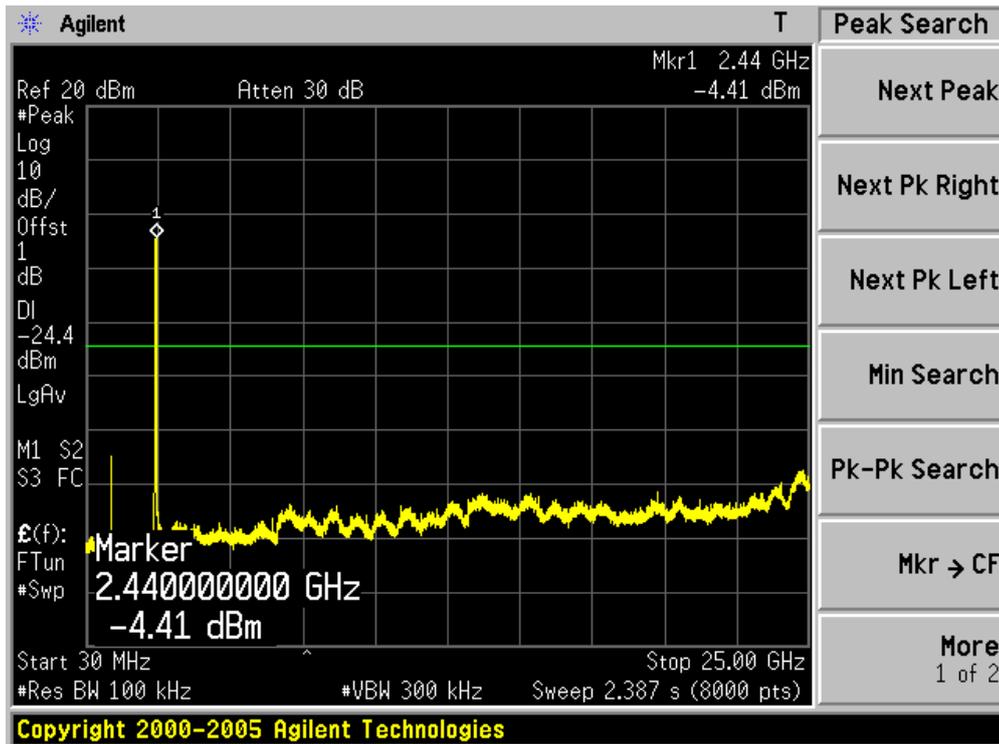


Channel 11 (2462MHz)

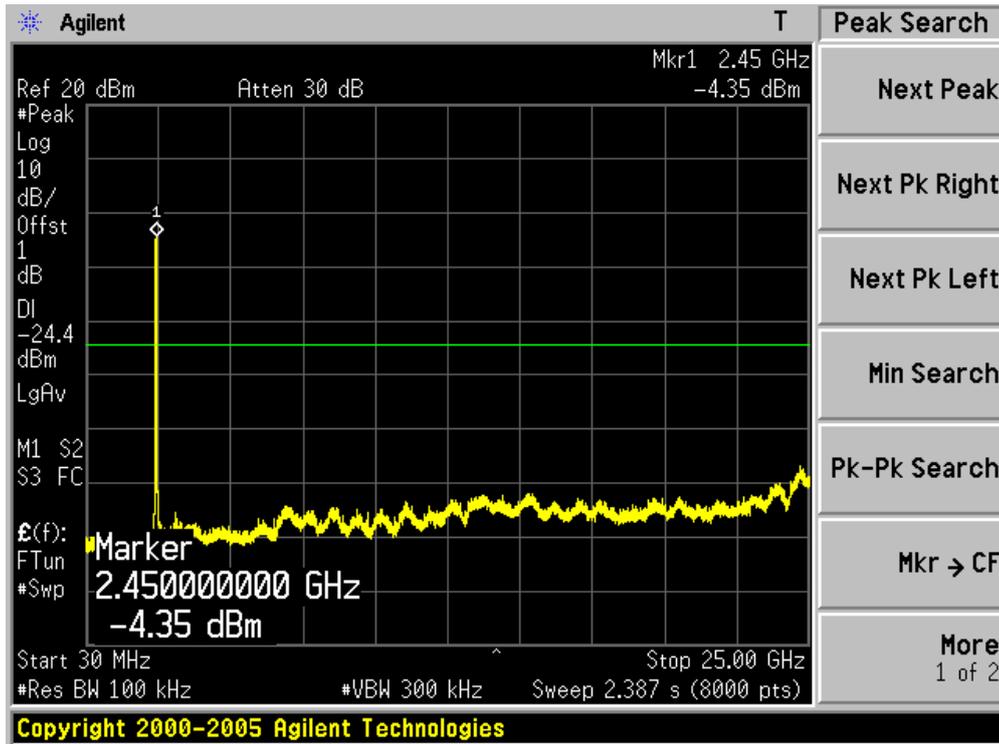


Product	: GSM Mobile Phone
Test Item	: RF Antenna Conducted Spurious
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n(40MHz)

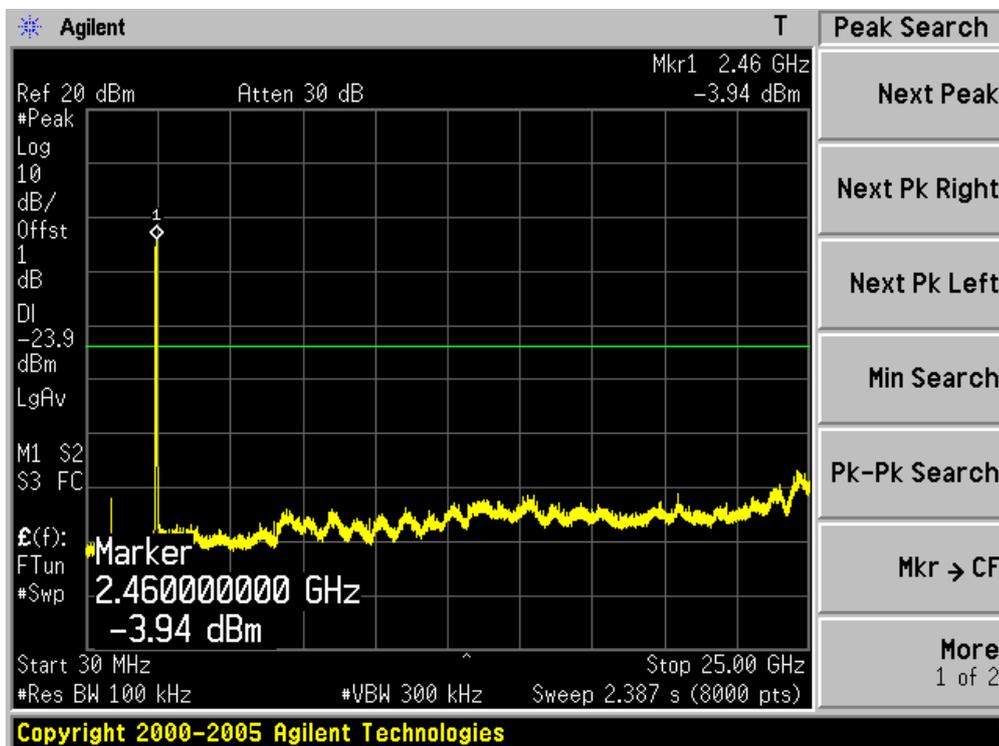
### Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



**6. Radiated Emission Band Edge**

**6.1. Test Equipment**

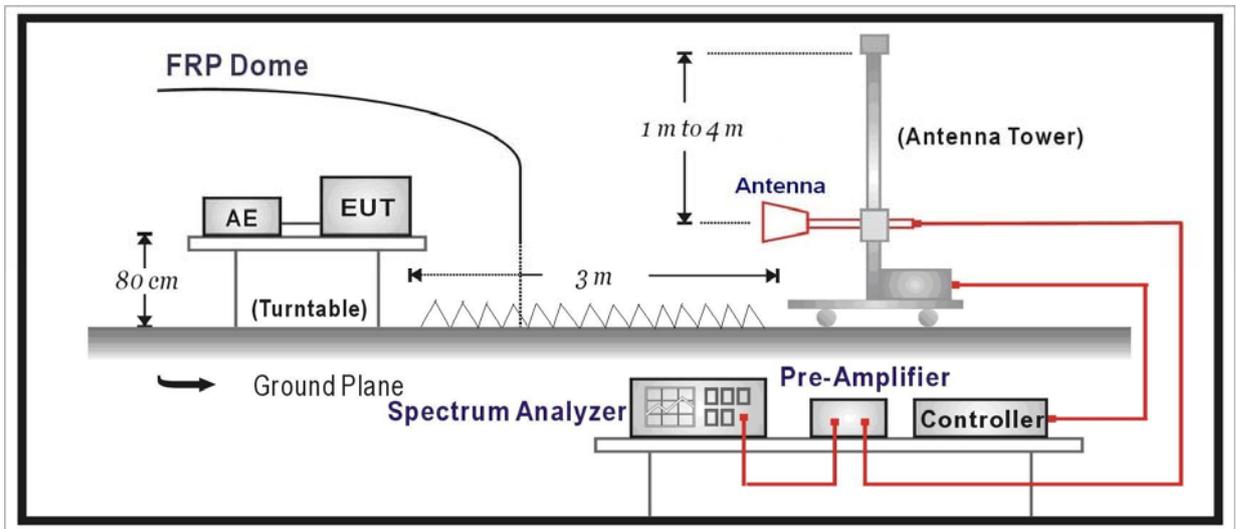
Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. 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 Antenna	Teseq GmbH	CBL6112D	27612	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2014.06.08
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2013.03.02
Temperature/Humidity Meter	zhicheng	ZC1-2	AC5-TH	2013.01.10

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

Note 2: The test instruments marked with "X" are used to measure the final test results.

**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 ANSI C63.4: 2009 and tested according to ANSI C63.10: 2009 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**

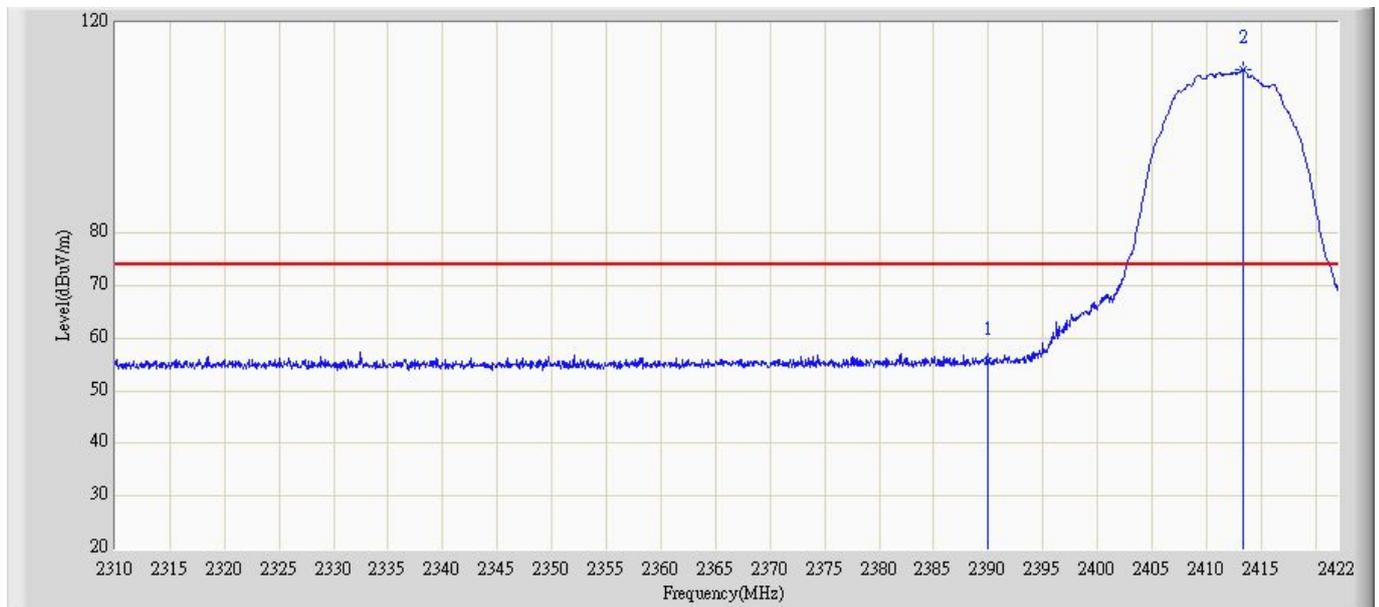
The measurement uncertainty above 1G is defined as  $\pm 3.9$  dB

6.6. Test Result

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

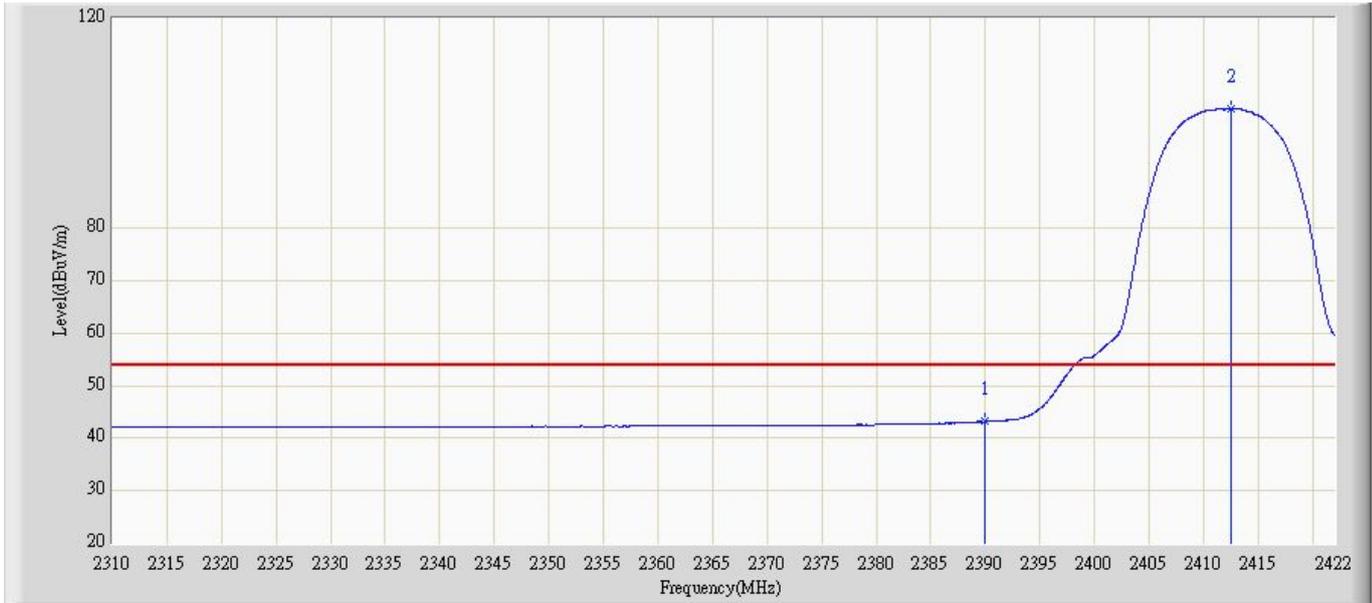
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 19:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode1: Transmit at channel 2412MHz by 802.11b	



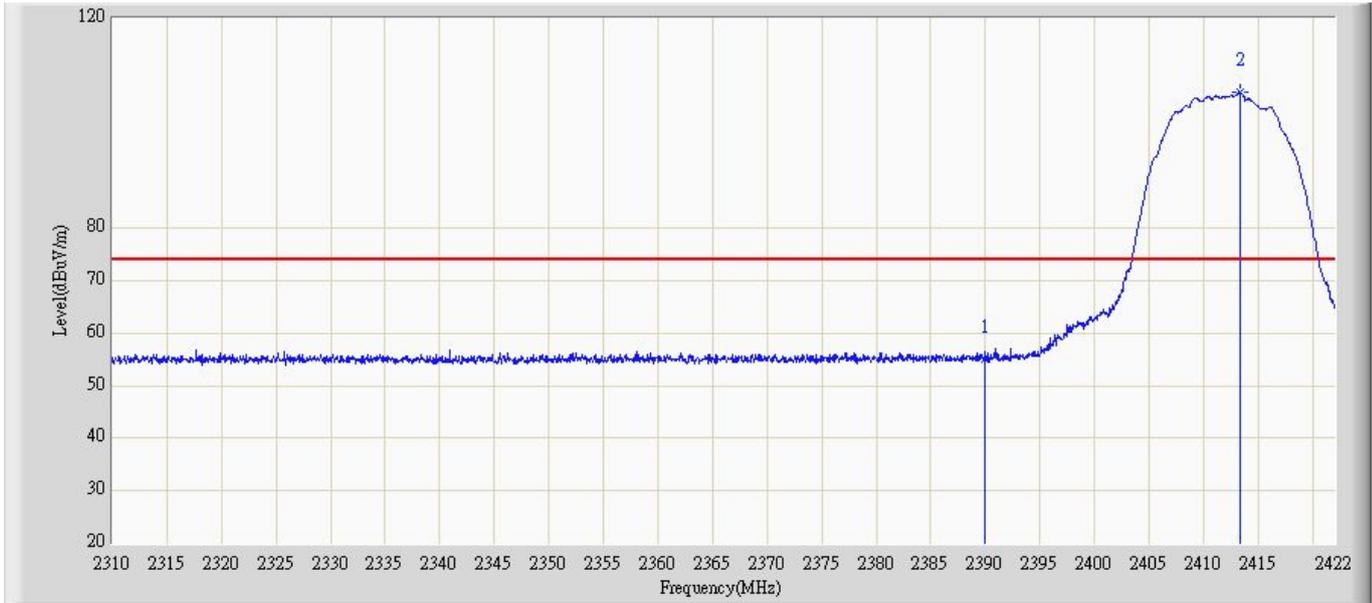
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	55.715	24.627	-18.285	74.000	31.088	PK
2	*	2413.376	111.224	79.981	N/A	N/A	31.243	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 19:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode1: Transmit at channel 2412MHz by 802.11b	



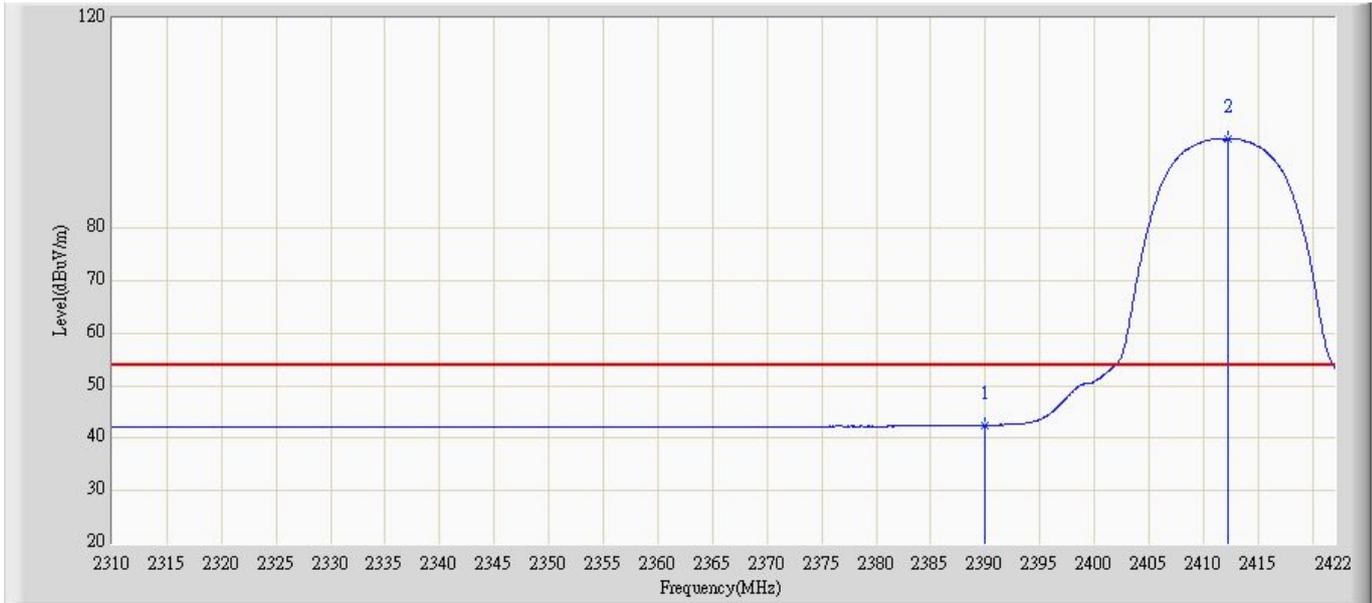
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	43.155	12.067	-10.845	54.000	31.088	AV
2	*	2412.480	102.771	71.536	N/A	N/A	31.235	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 19:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode1: Transmit at channel 2412MHz by 802.11b	



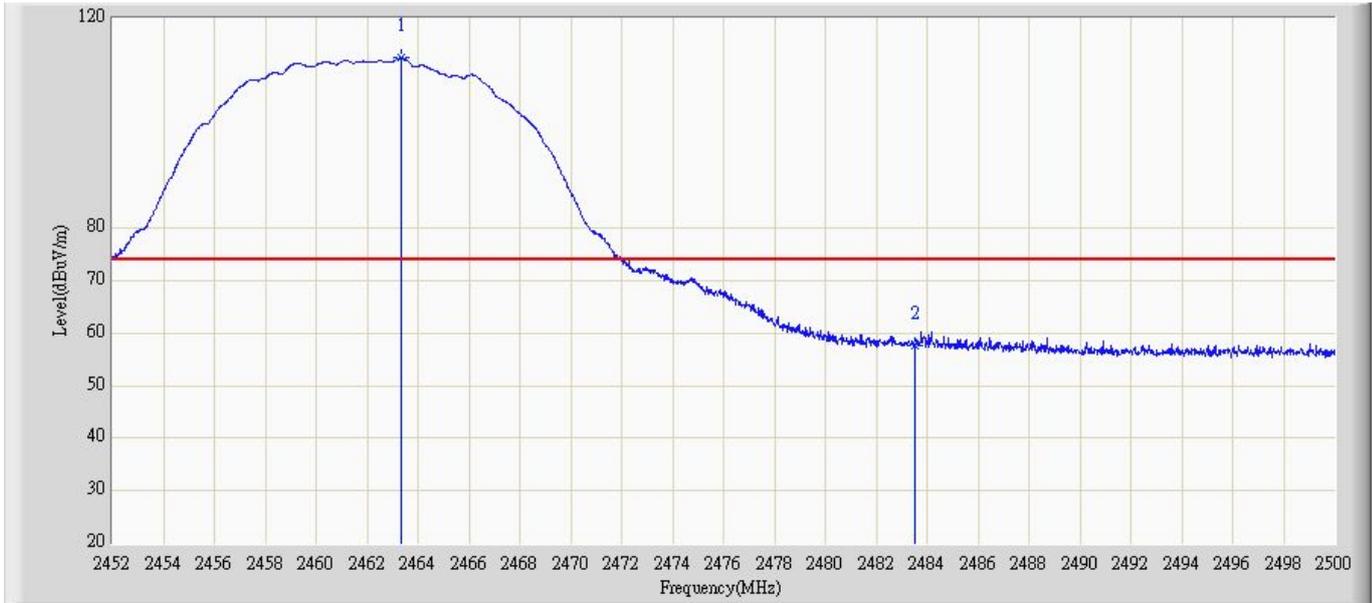
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	54.965	23.877	-19.035	74.000	31.088	PK
2	*	2413.376	105.927	74.684	N/A	N/A	31.243	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 19:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode1: Transmit at channel 2412MHz by 802.11b	



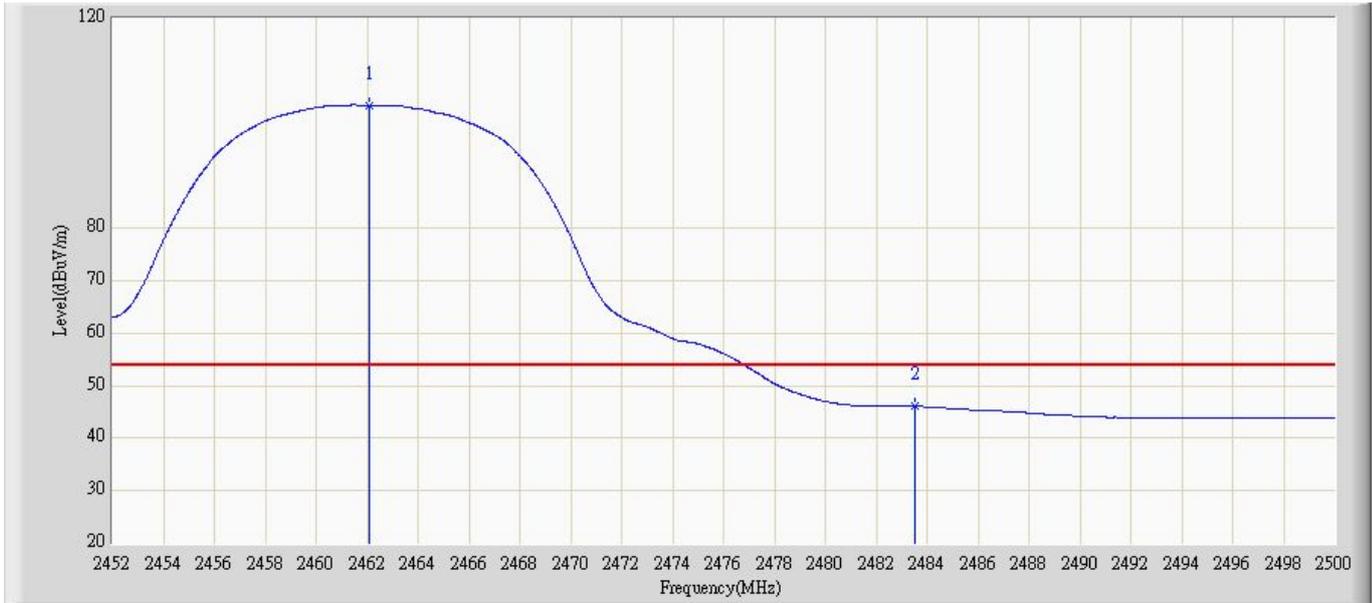
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	42.481	11.393	-11.519	54.000	31.088	AV
2	*	2412.312	96.974	65.741	N/A	N/A	31.233	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 19:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode1: Transmit at channel 2462MHz by 802.11b	



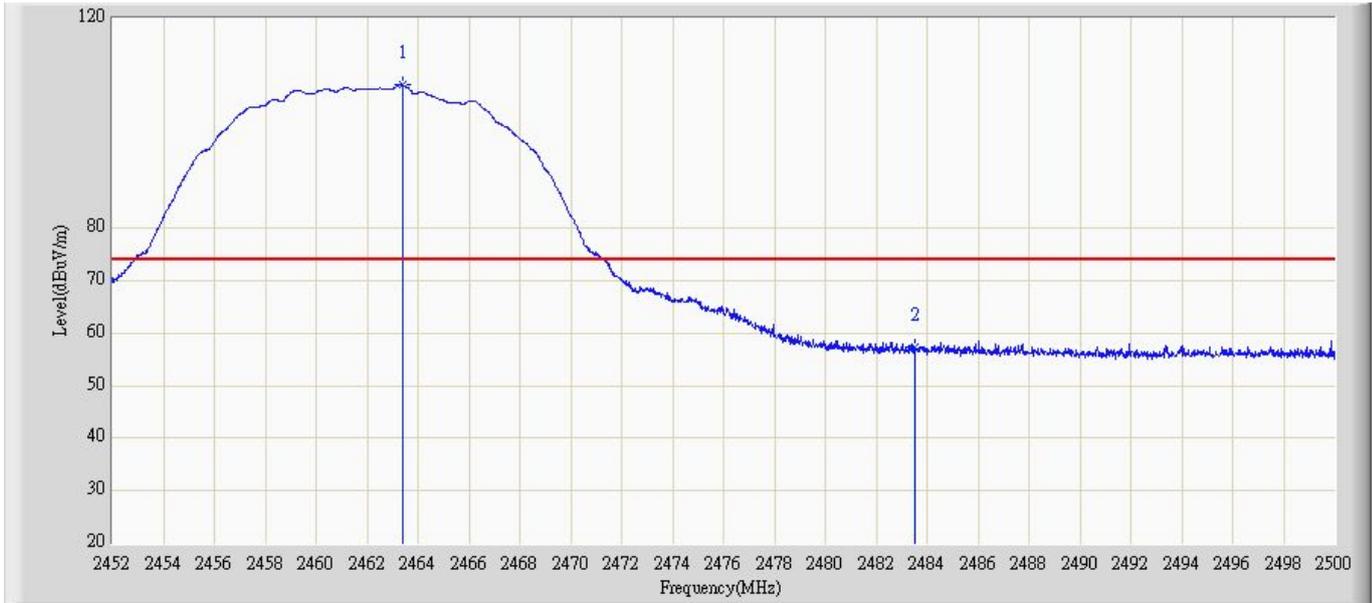
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.328	112.452	80.859	N/A	N/A	31.593	PK
2		2483.500	57.616	26.003	-16.384	74.000	31.613	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 19:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode1: Transmit at channel 2462MHz by 802.11b	



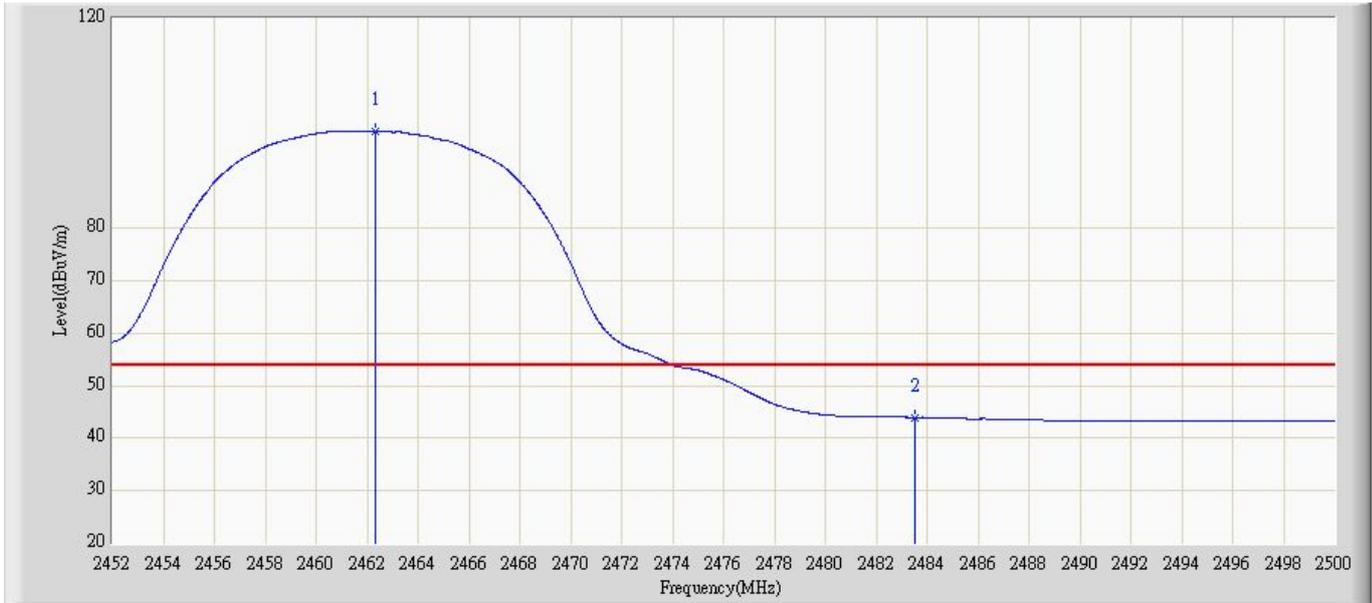
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.104	103.389	71.797	N/A	N/A	31.592	AV
2		2483.500	46.117	14.504	-7.883	54.000	31.613	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode1: Transmit at channel 2462MHz by 802.11b	



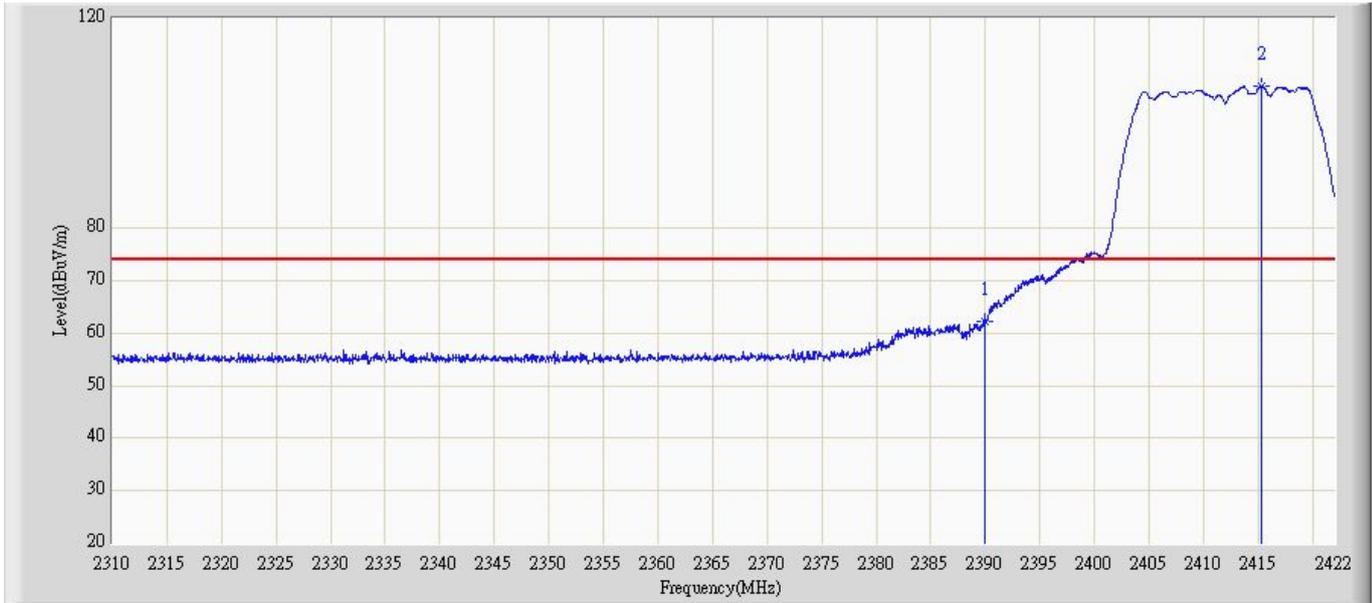
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.400	107.253	75.660	N/A	N/A	31.593	PK
2		2483.500	57.348	25.734	-16.652	74.000	31.613	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode1: Transmit at channel 2462MHz by 802.11b	



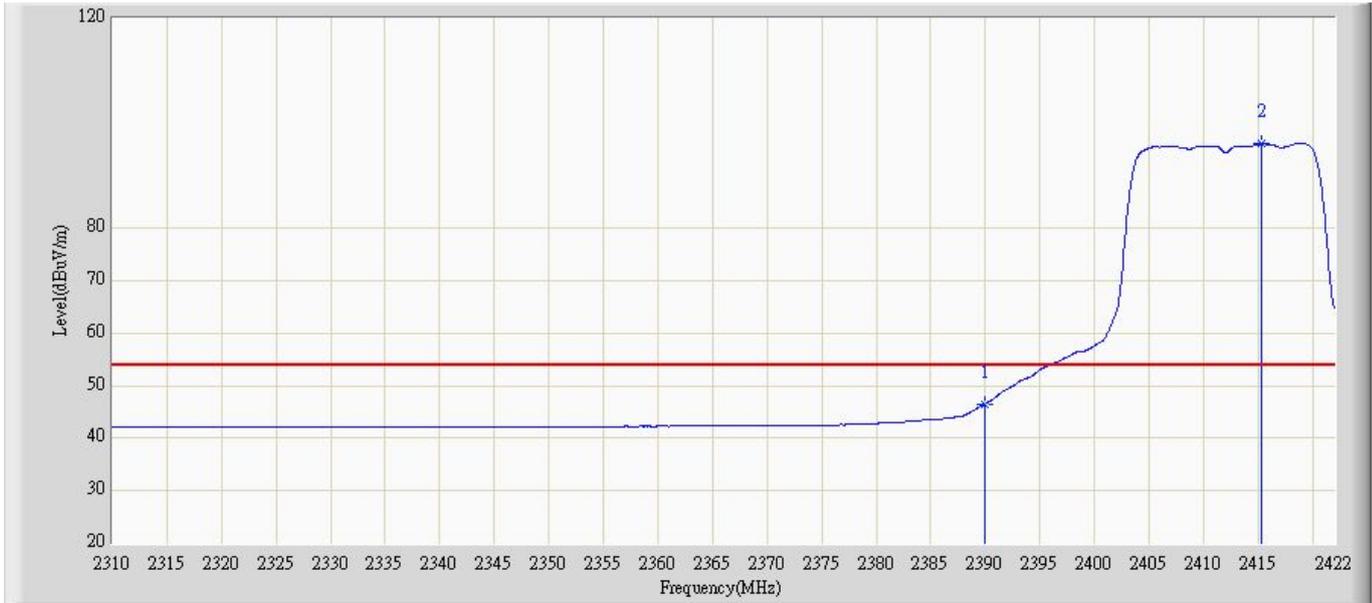
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.344	98.479	66.887	N/A	N/A	31.592	AV
2		2483.500	43.931	12.318	-10.069	54.000	31.613	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode2: Transmit at channel 2412MHz by 802.11g	



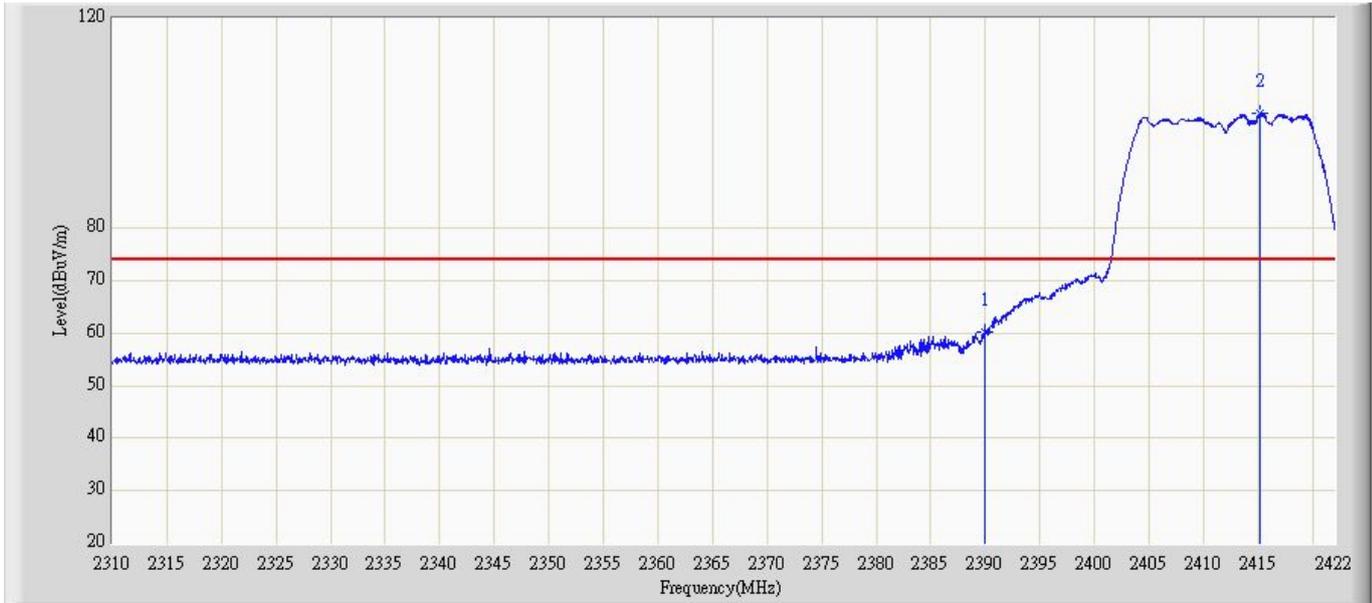
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	62.162	31.074	-11.838	74.000	31.088	PK
2	*	2415.280	107.157	75.897	N/A	N/A	31.260	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode2: Transmit at channel 2412MHz by 802.11g	



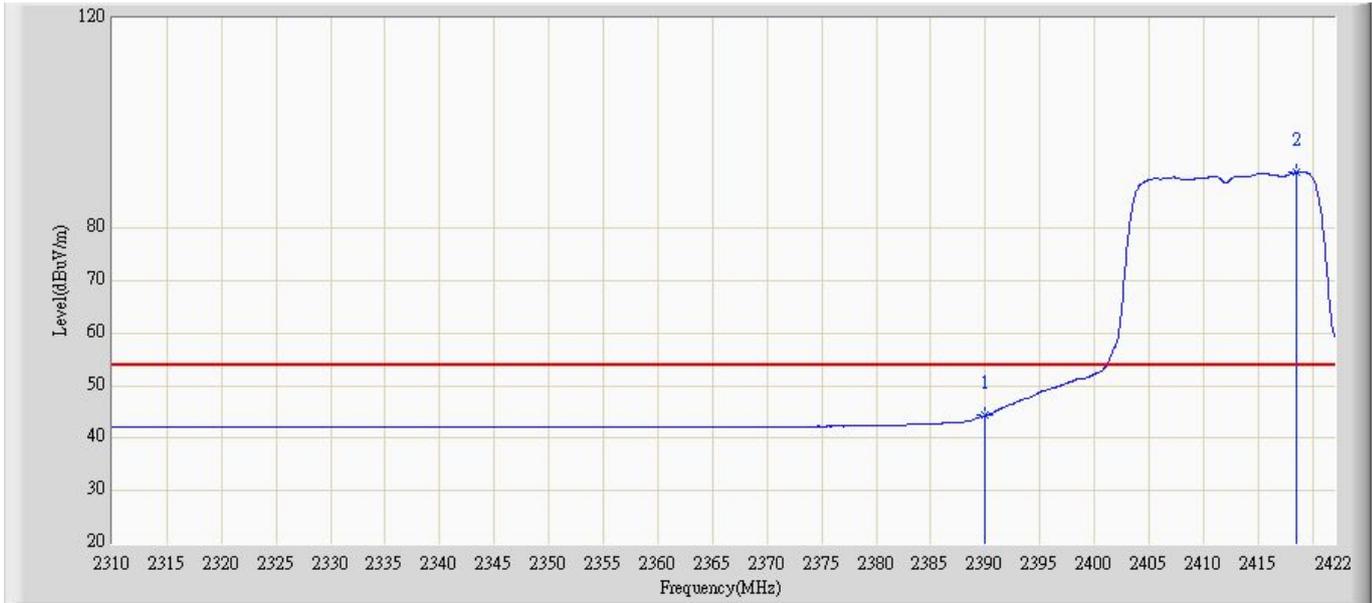
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	46.546	15.458	-7.454	54.000	31.088	AV
2	*	2415.280	96.112	64.852	N/A	N/A	31.260	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode2: 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	60.170	29.082	-13.830	74.000	31.088	PK
2	*	2415.224	101.841	70.581	N/A	N/A	31.260	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode2: Transmit at channel 2412MHz by 802.11g	



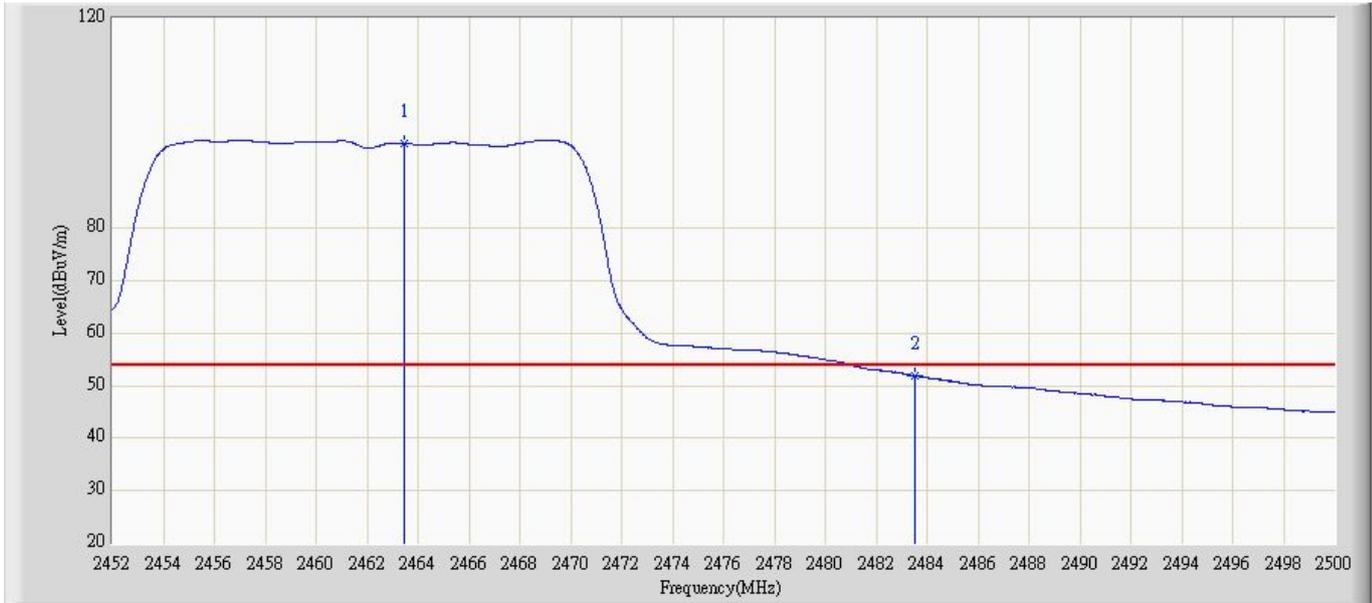
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	44.357	13.269	-9.643	54.000	31.088	AV
2	*	2418.584	90.671	59.380	N/A	N/A	31.291	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode2: 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	*	2463.544	108.093	76.499	N/A	N/A	31.594	PK
2		2483.500	72.019	40.405	-1.981	74.000	31.613	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode2: Transmit at channel 2462MHz by 802.11g	



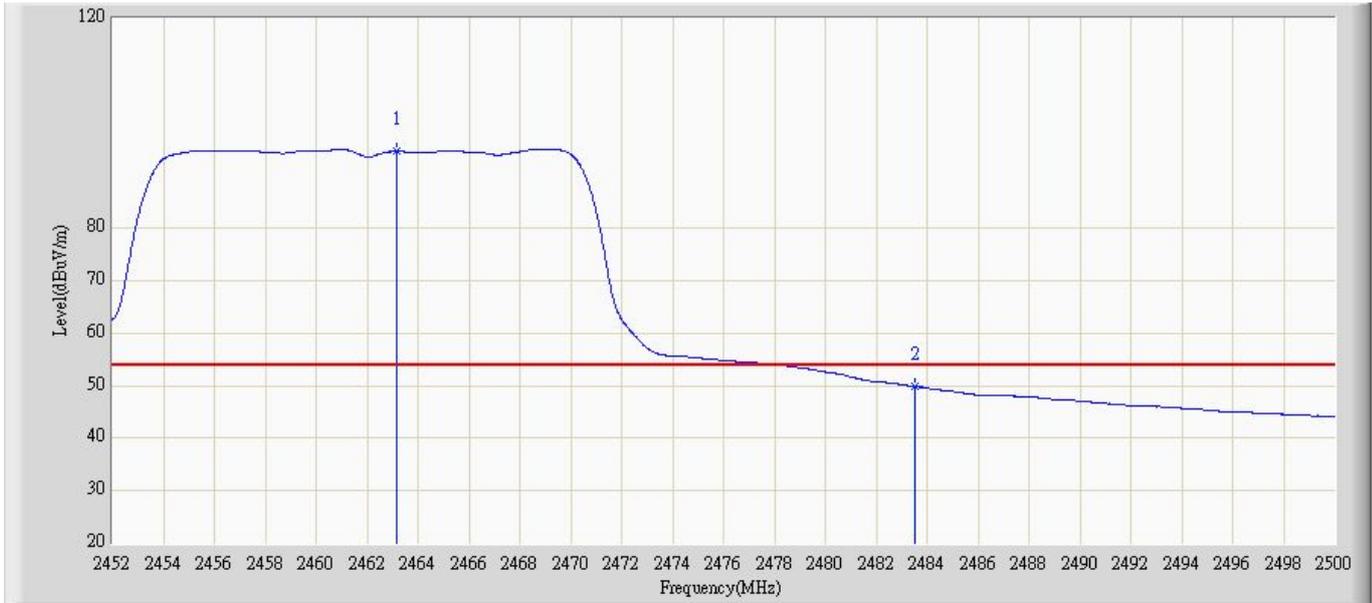
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.472	96.153	64.560	N/A	N/A	31.594	AV
2		2483.500	51.905	20.292	-2.095	54.000	31.613	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode2: 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	*	2463.472	105.908	74.315	N/A	N/A	31.594	PK
2		2483.500	70.881	39.267	-3.119	74.000	31.613	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode2: Transmit at channel 2462MHz by 802.11g	



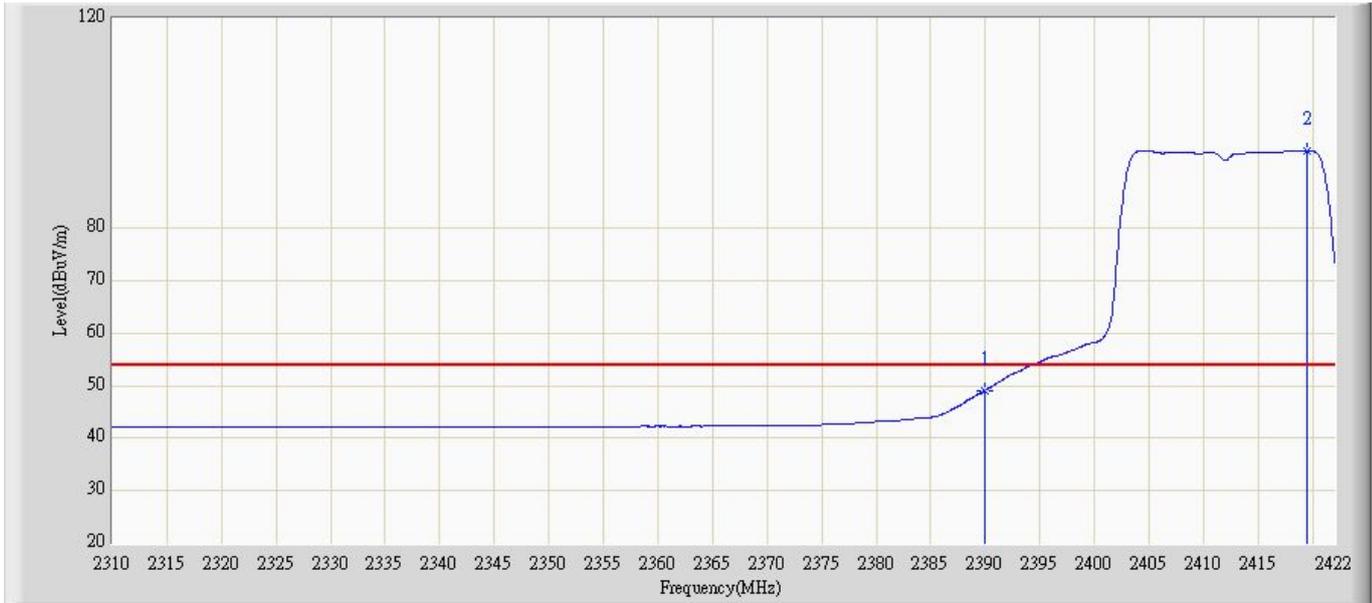
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.160	94.574	62.981	N/A	N/A	31.593	AV
2		2483.500	49.892	18.279	-4.108	54.000	31.613	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode3: Transmit at channel 2412MHz by 802.11n(20MHz)	



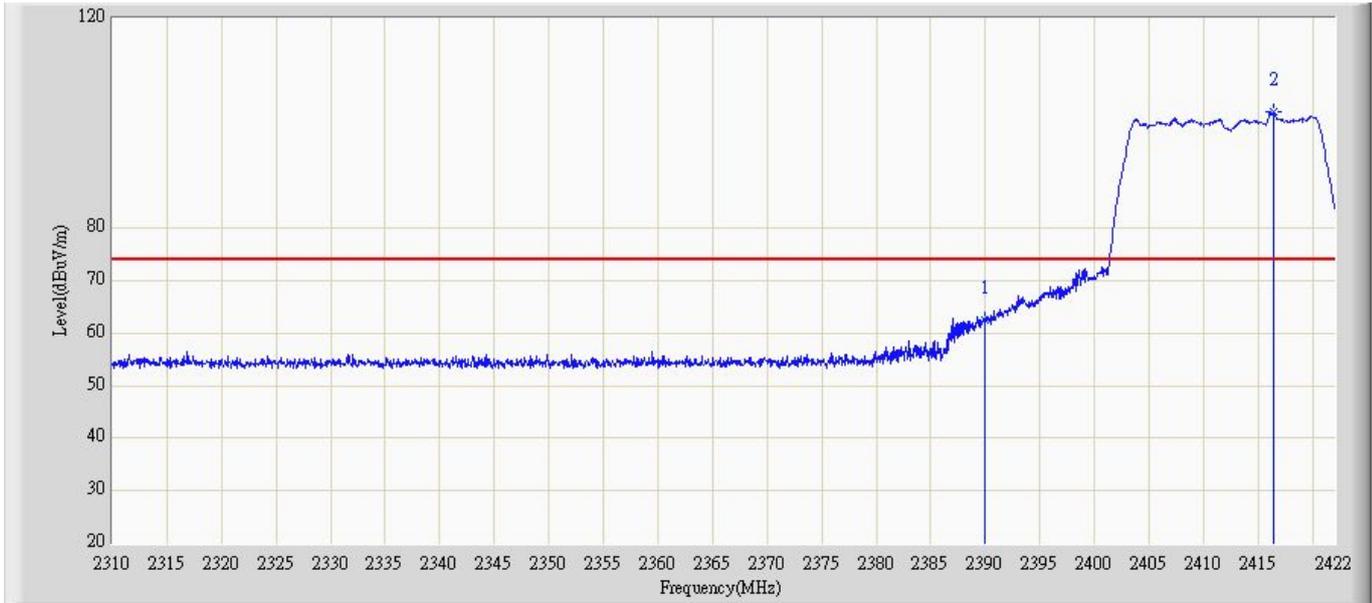
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	65.819	34.731	-8.181	74.000	31.088	PK
2	*	2416.344	107.247	75.977	N/A	N/A	31.270	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode3: Transmit at channel 2412MHz by 802.11n(20MHz)	



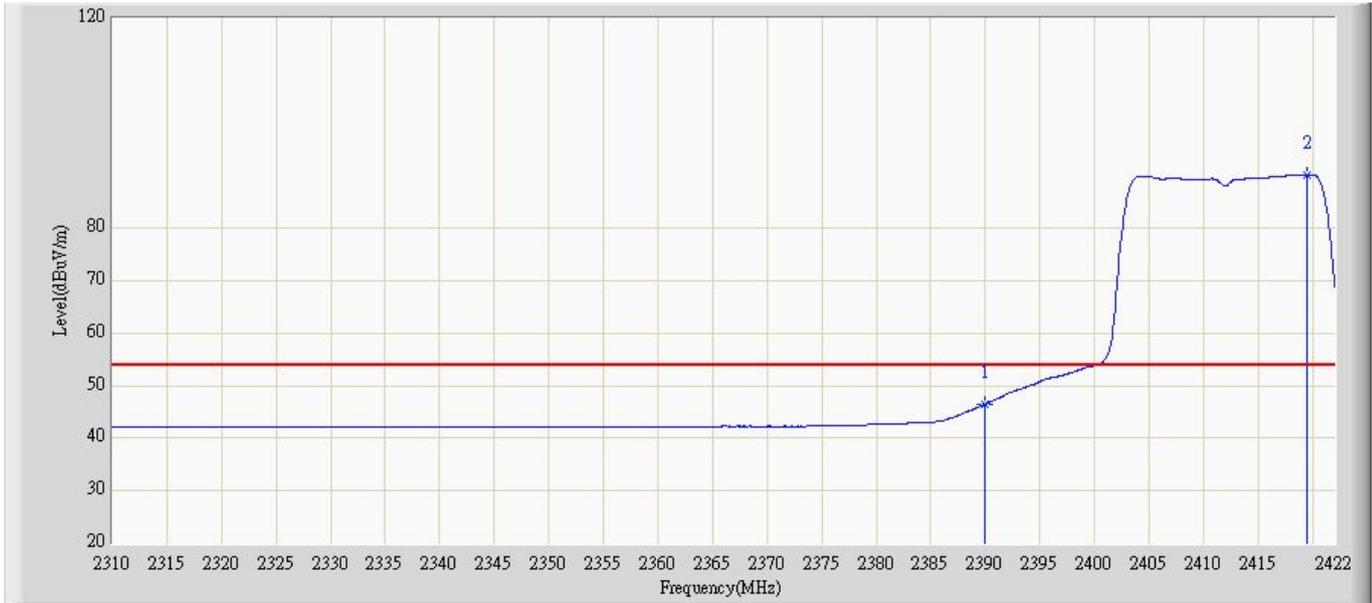
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	49.126	18.038	-4.874	54.000	31.088	AV
2	*	2419.480	94.714	63.415	N/A	N/A	31.299	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode3: Transmit at channel 2412MHz by 802.11n(20MHz)	



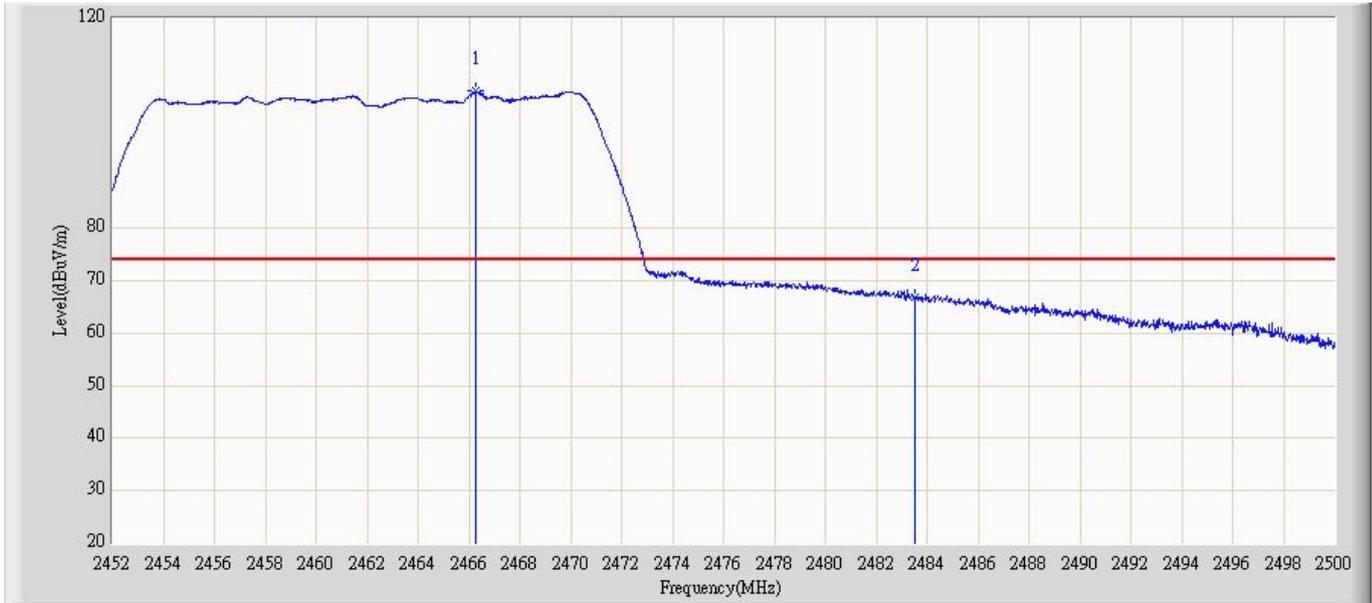
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	62.406	31.318	-11.594	74.000	31.088	PK
2	*	2416.400	102.170	70.899	N/A	N/A	31.270	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 20:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode3: Transmit at channel 2412MHz by 802.11n(20MHz)	



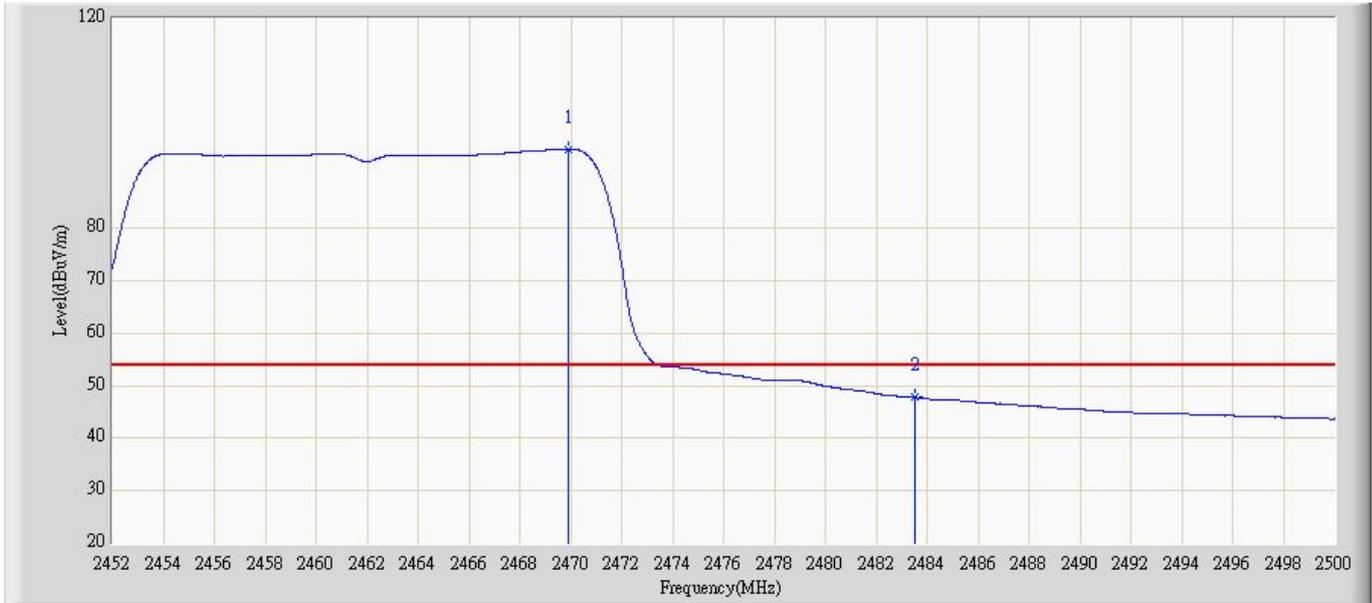
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	46.428	15.340	-7.572	54.000	31.088	AV
2	*	2419.480	90.181	58.882	N/A	N/A	31.299	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode3: Transmit at channel 2462MHz by 802.11n(20MHz)	



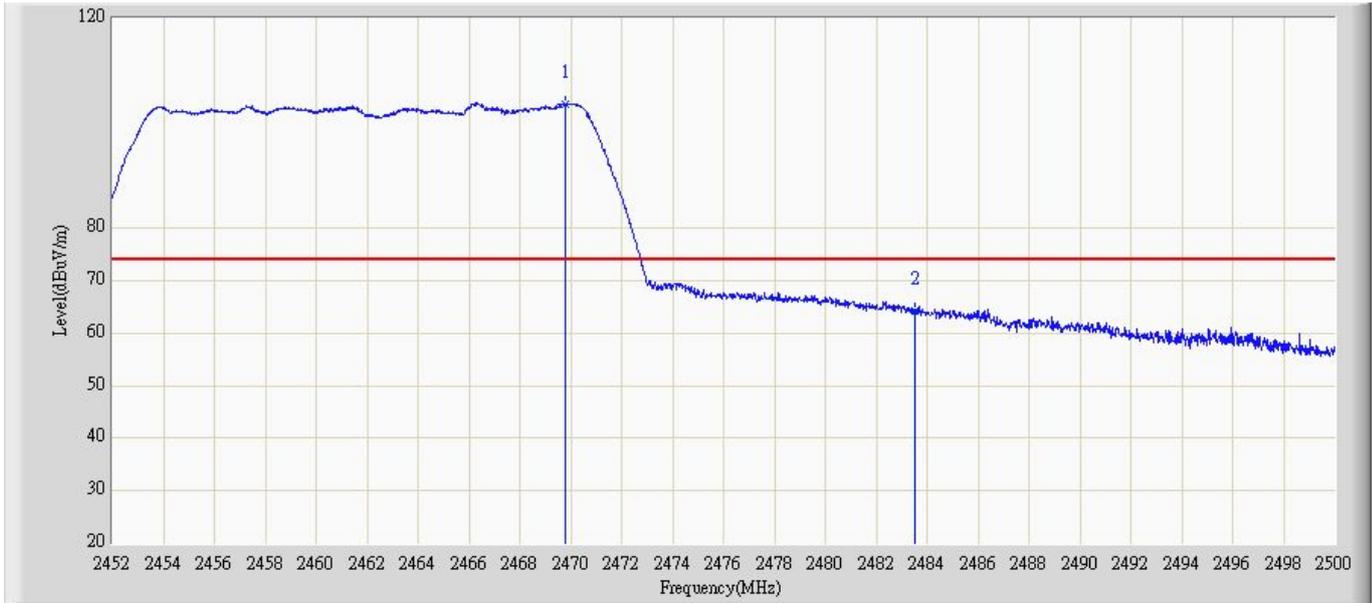
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2466.280	106.112	74.516	N/A	N/A	31.596	PK
2		2483.500	66.955	35.341	-7.045	74.000	31.613	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode3: Transmit at channel 2462MHz by 802.11n(20MHz)	



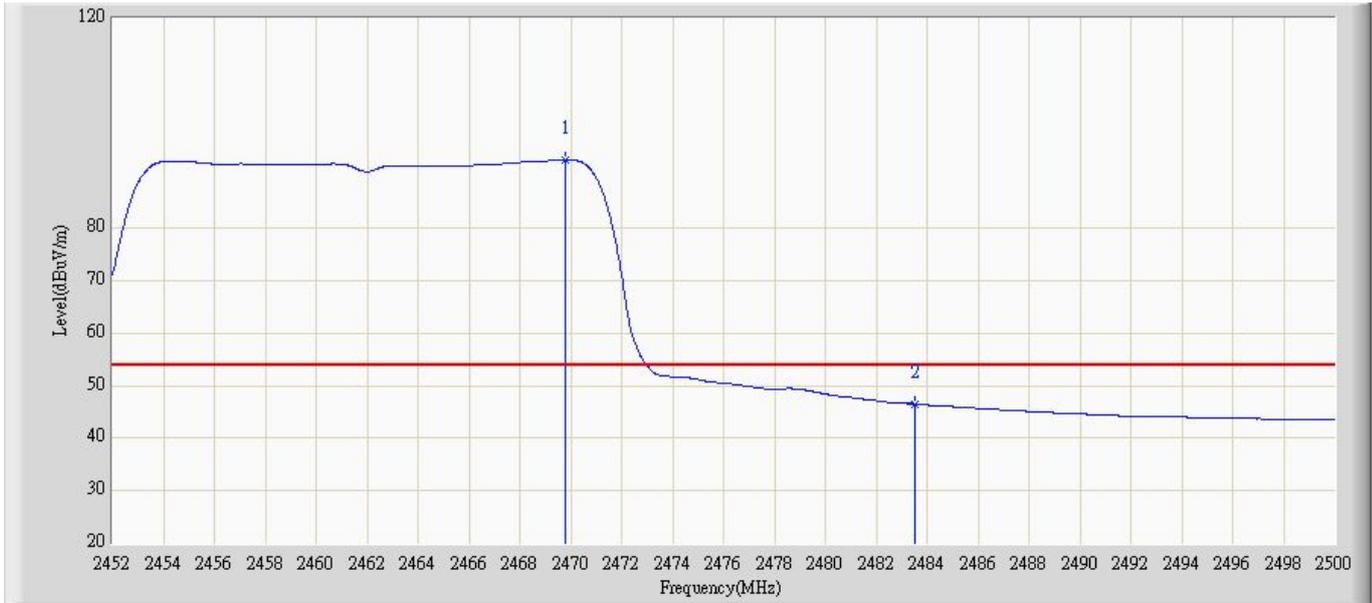
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2469.928	95.025	63.425	N/A	N/A	31.600	AV
2		2483.500	47.794	16.180	-6.206	54.000	31.613	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode3: Transmit at channel 2462MHz by 802.11n(20MHz)	



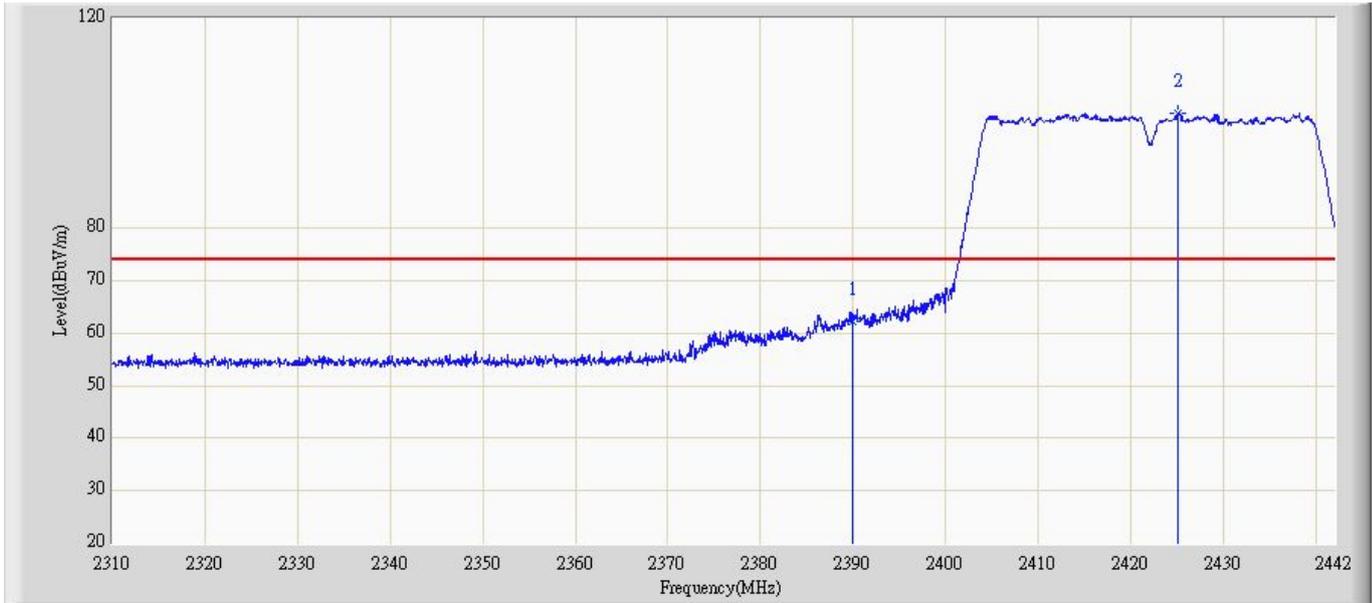
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2469.784	103.755	72.155	N/A	N/A	31.599	PK
2		2483.500	64.184	32.570	-9.816	74.000	31.613	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode3: Transmit at channel 2462MHz by 802.11n(20MHz)	



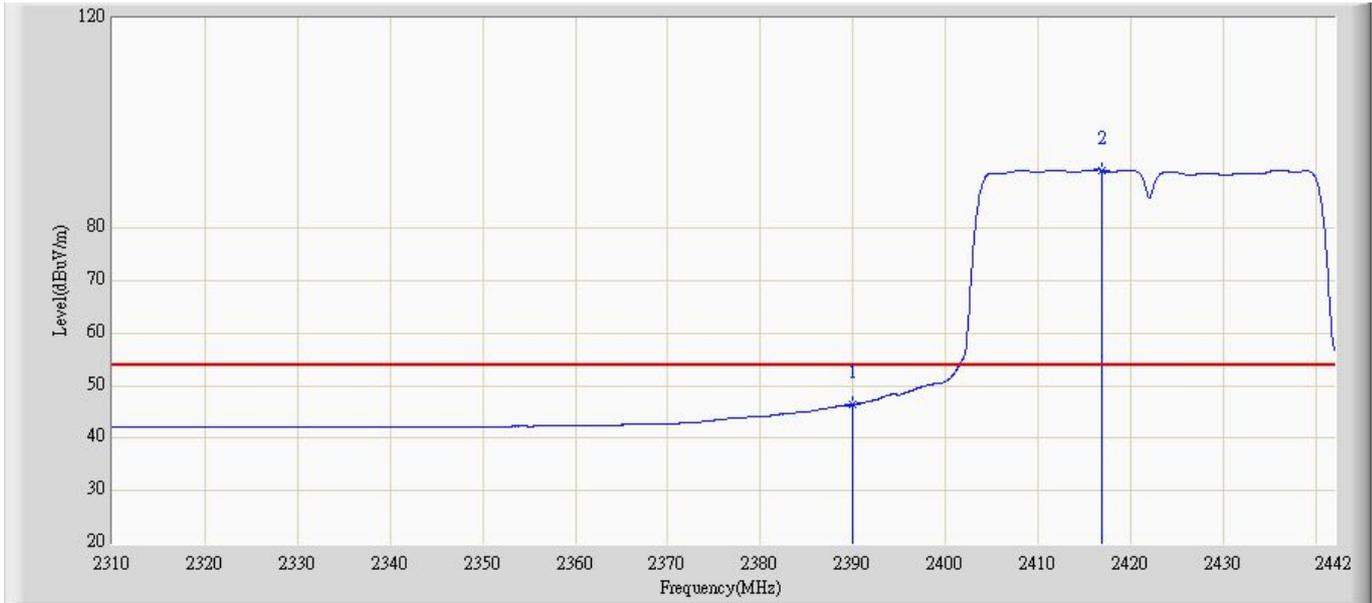
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2469.784	92.938	61.338	N/A	N/A	31.599	AV
2		2483.500	46.544	14.931	-7.456	54.000	31.613	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode4: Transmit at channel 2422MHz by 802.11n(40MHz)	



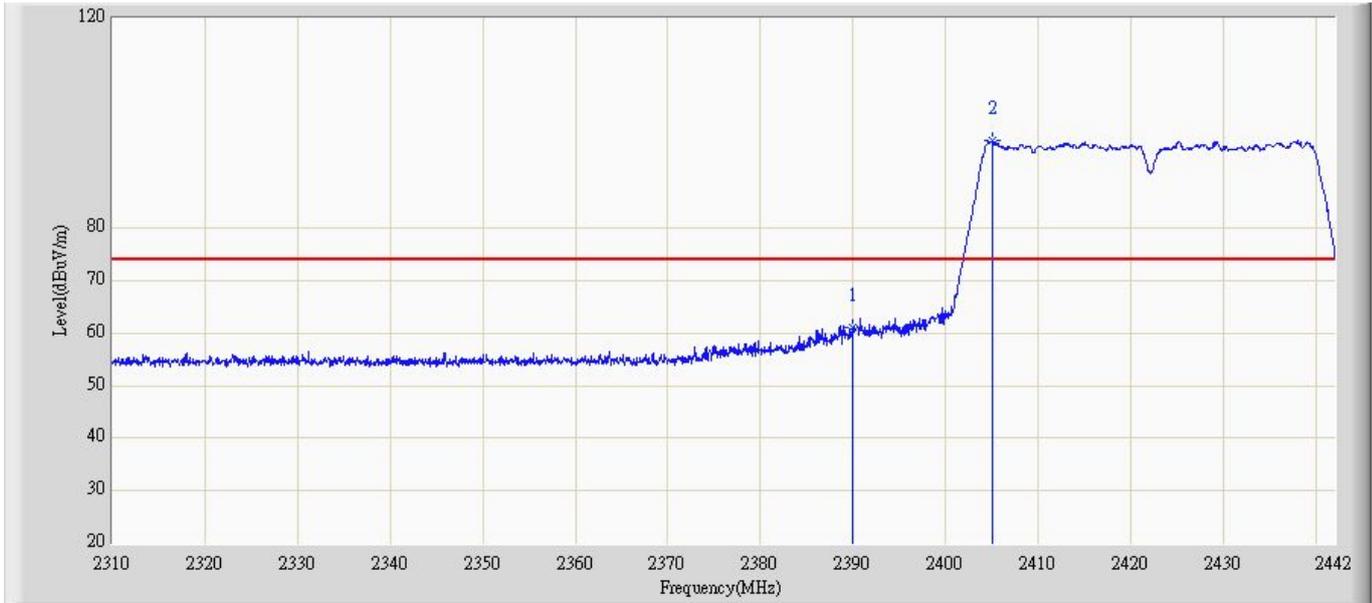
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	62.336	31.248	-11.664	74.000	31.088	PK
2	*	2425.170	101.977	70.626	N/A	N/A	31.351	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode4: Transmit at channel 2422MHz by 802.11n(40MHz)	



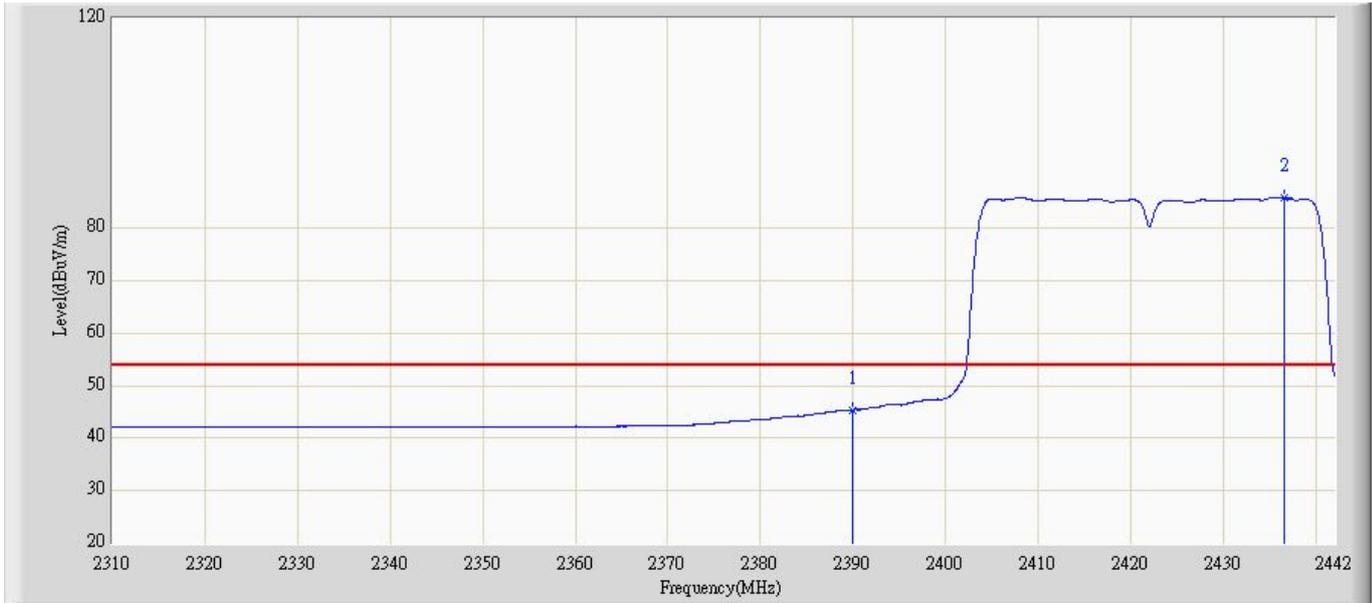
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	46.439	15.351	-7.561	54.000	31.088	AV
2	*	2416.920	91.019	59.744	N/A	N/A	31.275	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode4: Transmit at channel 2422MHz by 802.11n(40MHz)	



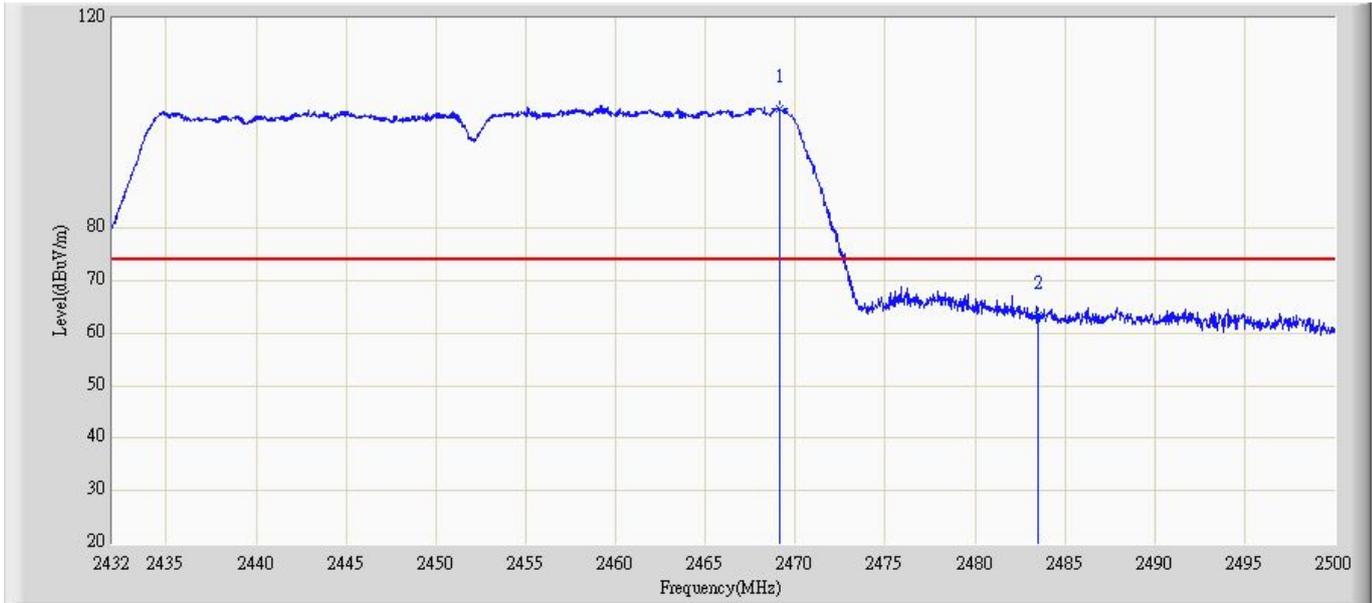
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	61.093	30.005	-12.907	74.000	31.088	PK
2	*	2405.040	96.637	65.458	N/A	N/A	31.179	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode4: Transmit at channel 2422MHz by 802.11n(40MHz)	



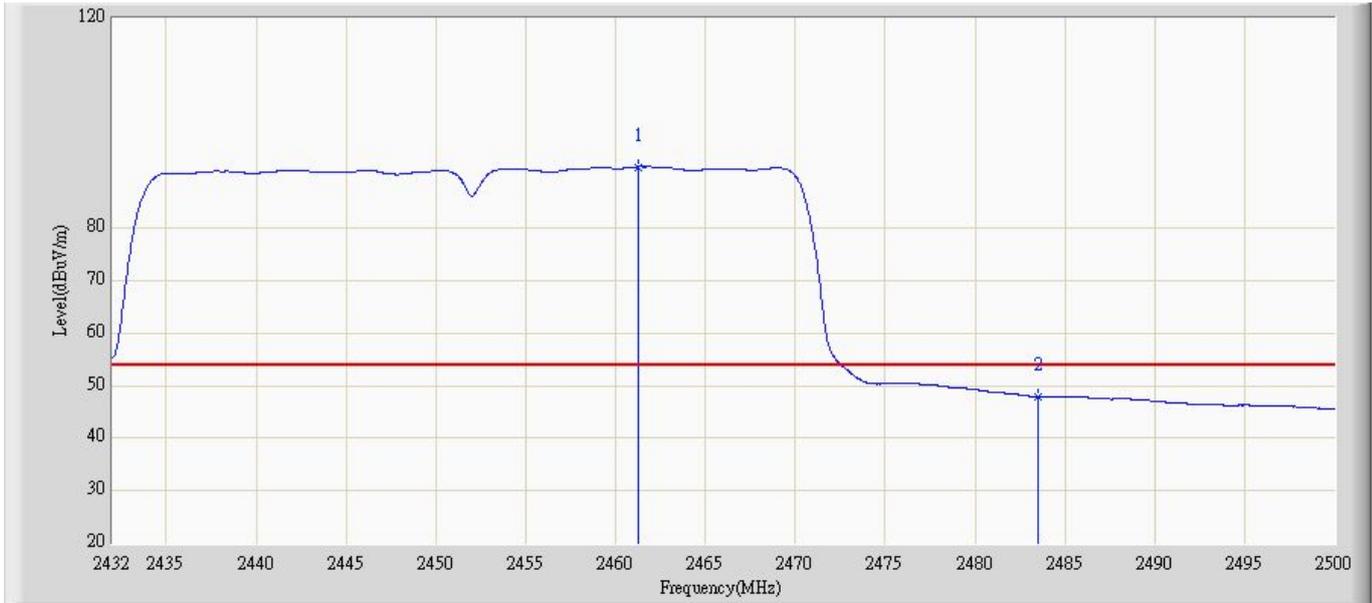
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.353	14.265	-8.647	54.000	31.088	AV
2	*	2436.588	85.772	54.316	N/A	N/A	31.456	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode4: Transmit at channel 2452MHz by 802.11n(40MHz)	



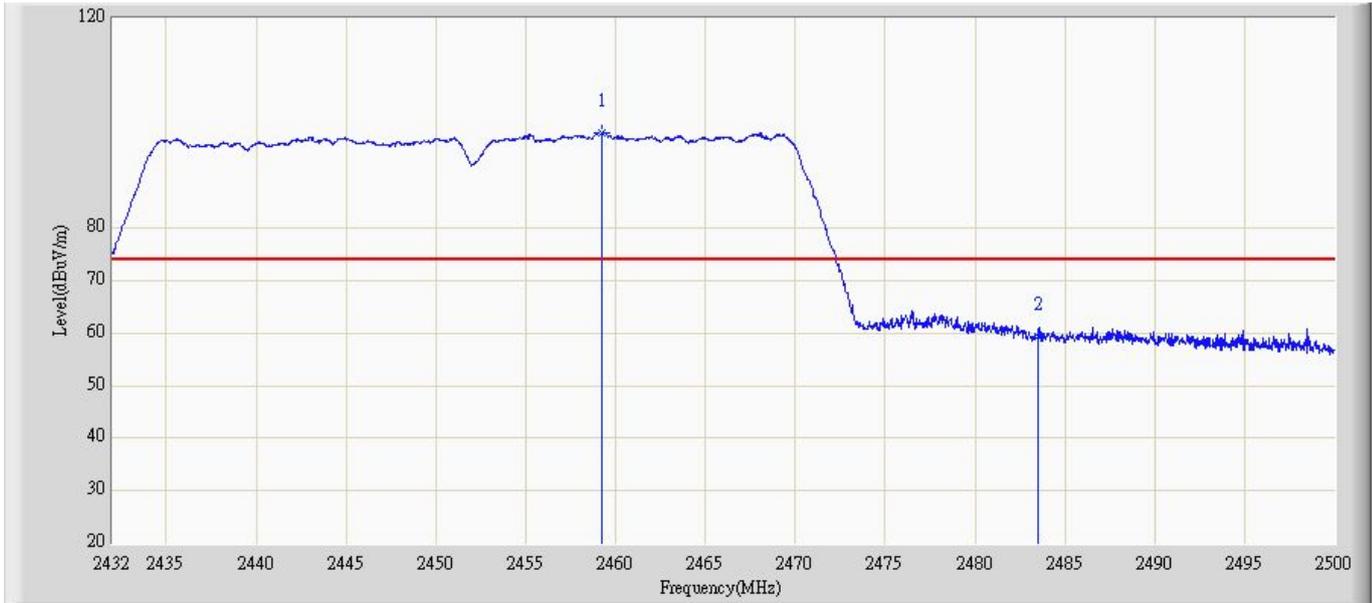
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2469.094	102.793	71.194	N/A	N/A	31.599	PK
2		2483.500	63.449	31.835	-10.551	74.000	31.613	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode4: Transmit at channel 2452MHz by 802.11n(40MHz)	



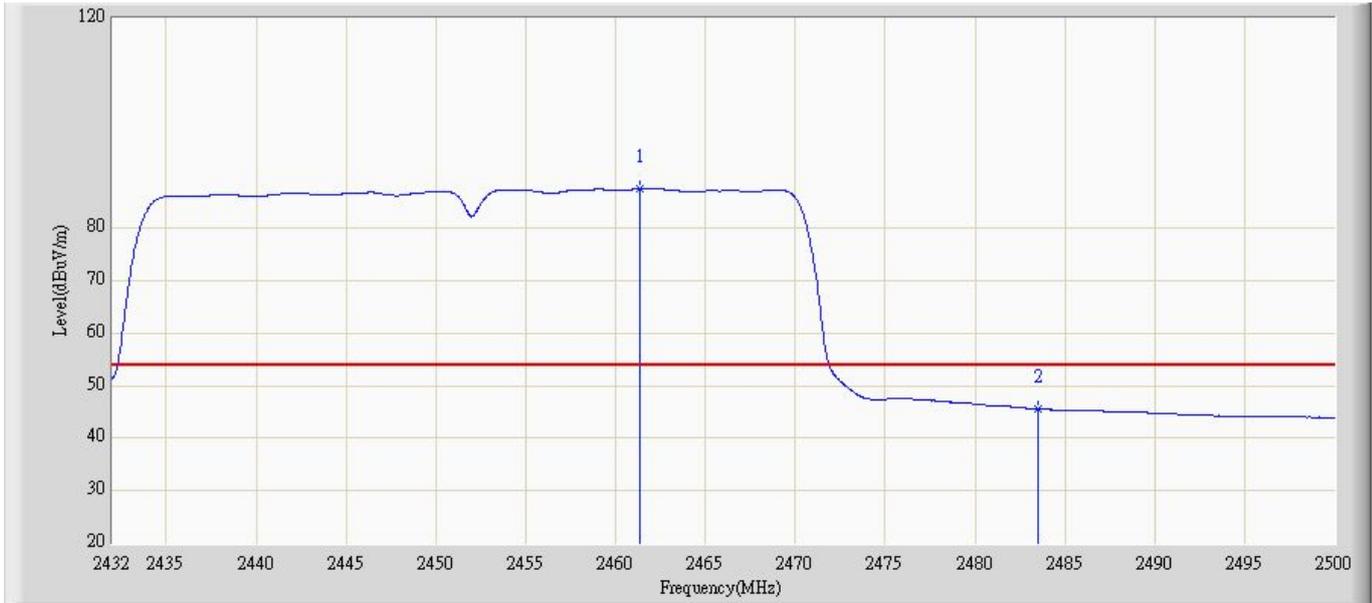
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.240	91.688	60.099	N/A	N/A	31.589	AV
2		2483.500	47.901	16.287	-6.099	54.000	31.613	AV

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode4: Transmit at channel 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.234	98.272	66.689	N/A	N/A	31.582	PK
2		2483.500	59.431	27.817	-14.569	74.000	31.613	PK

Engineer: Sunny	
Site: AC5	Time: 2012/08/15 - 21:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: By Battery
Note: Mode4: Transmit at channel 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.342	87.578	55.988	N/A	N/A	31.589	AV
2		2483.500	45.511	13.897	-8.489	54.000	31.613	AV

## 7. Operation Frequency Range of 20dB Bandwidth

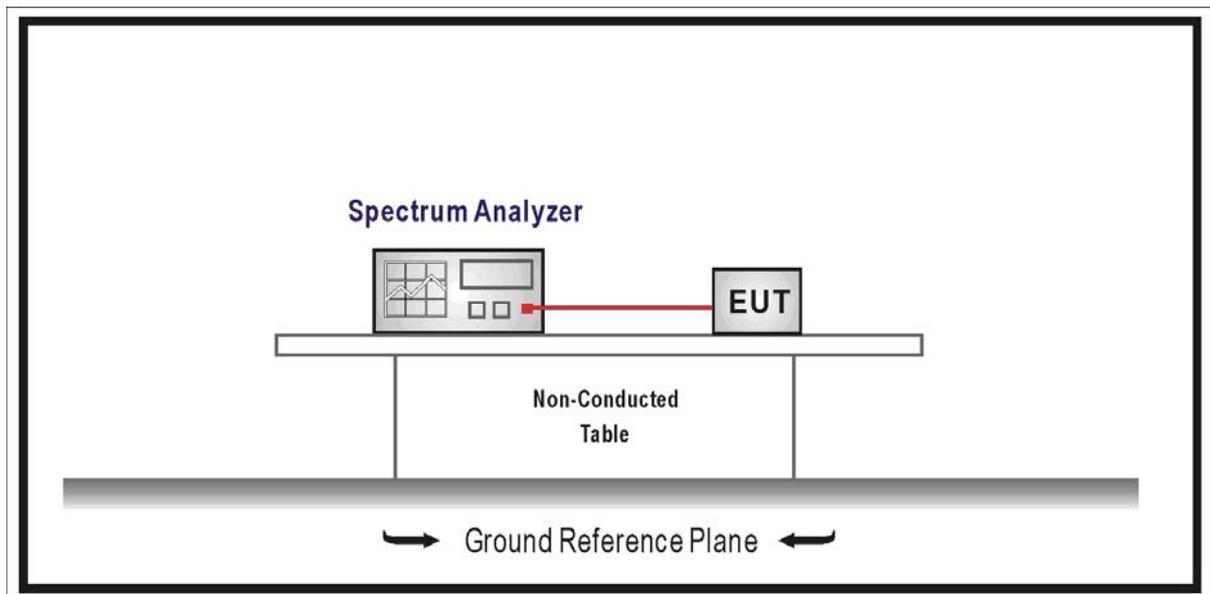
### 7.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due 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.

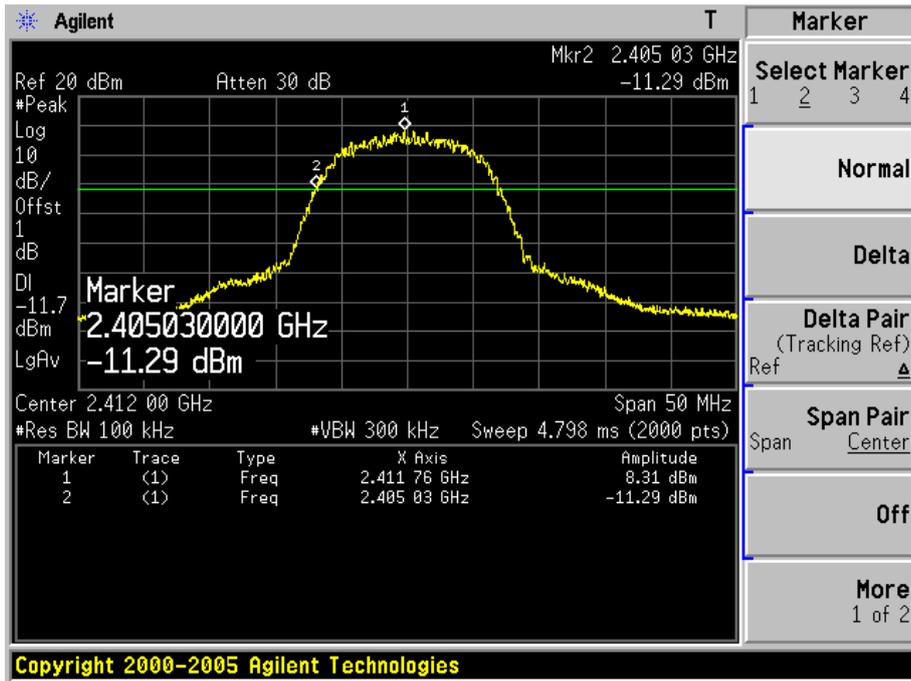
### 7.5. Uncertainty

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

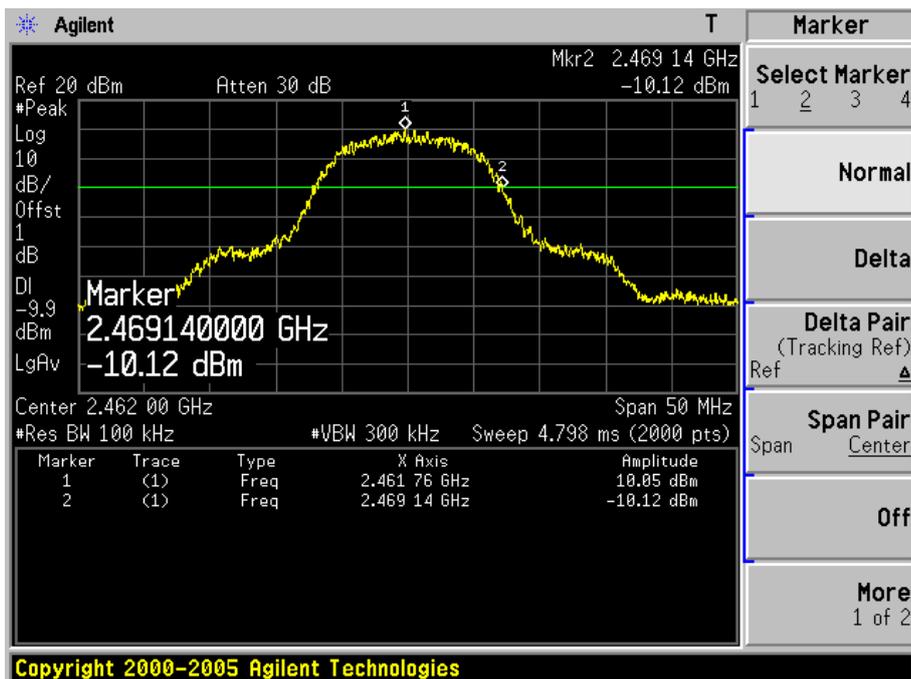
7.6. Test Result

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)

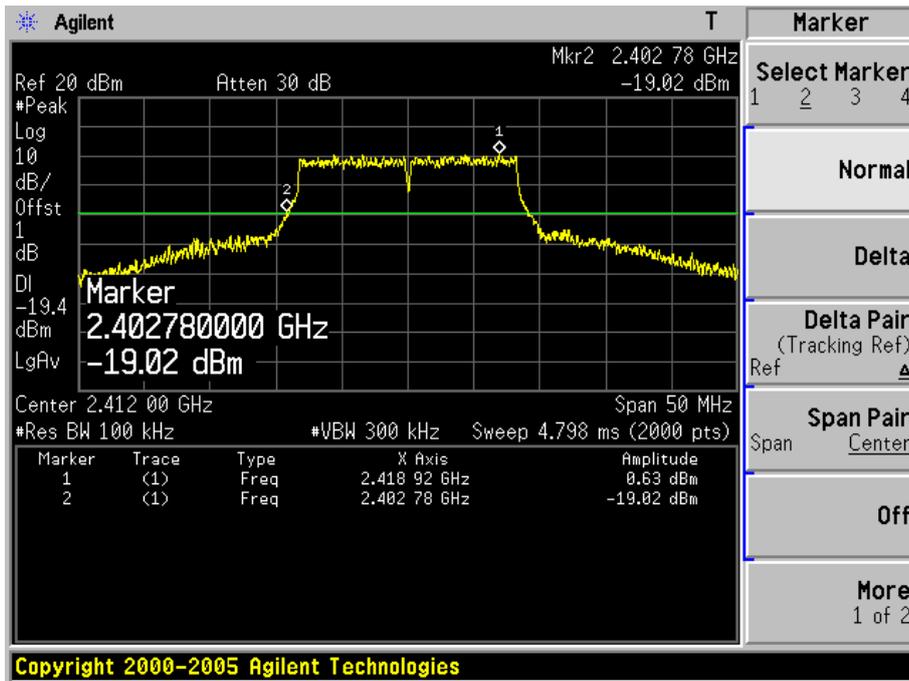


Channel 11 (2462MHz)

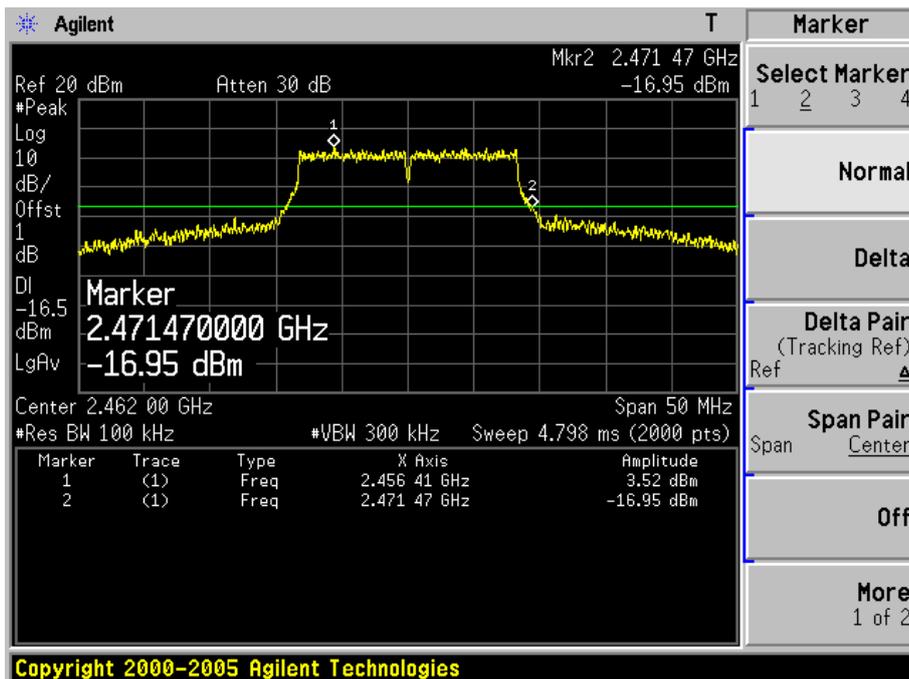


Product	: GSM Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g

### Channel 01 (2412MHz)

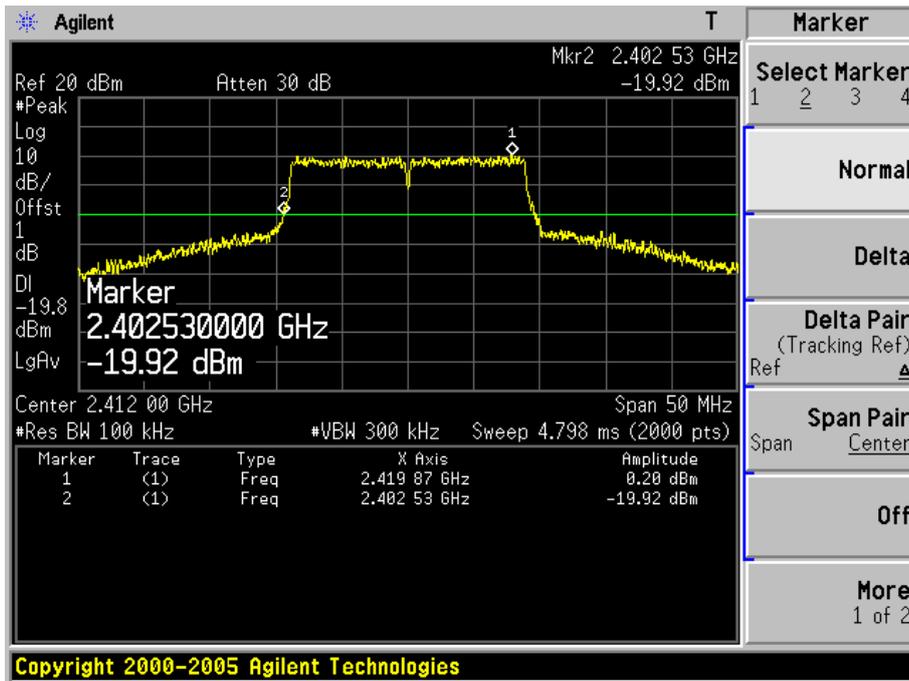


### Channel 11 (2462MHz)

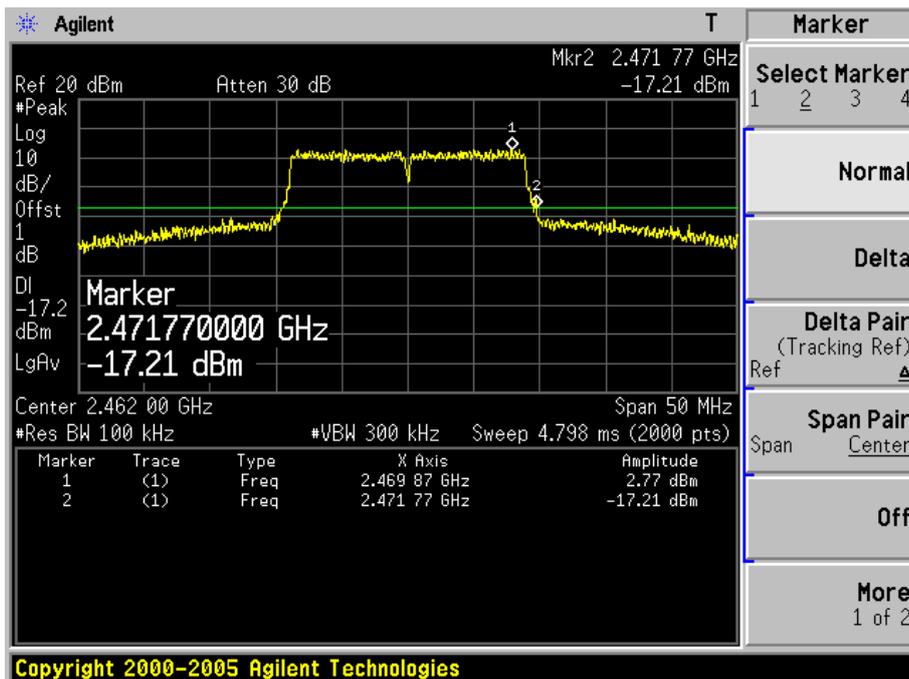


Product	: GSM Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n(20MHz)

### Channel 01 (2412MHz)

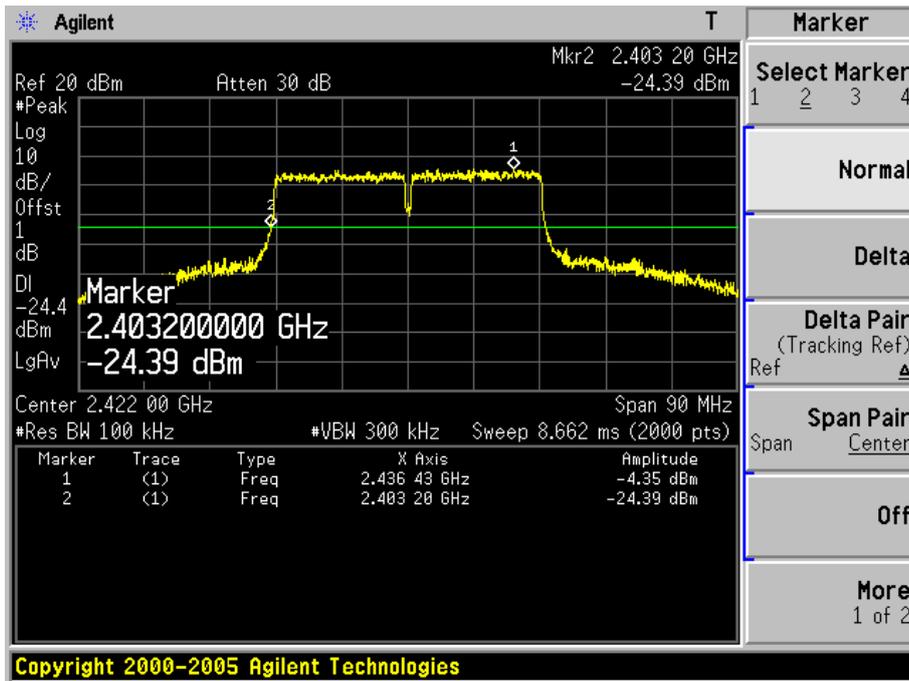


### Channel 11 (2462MHz)

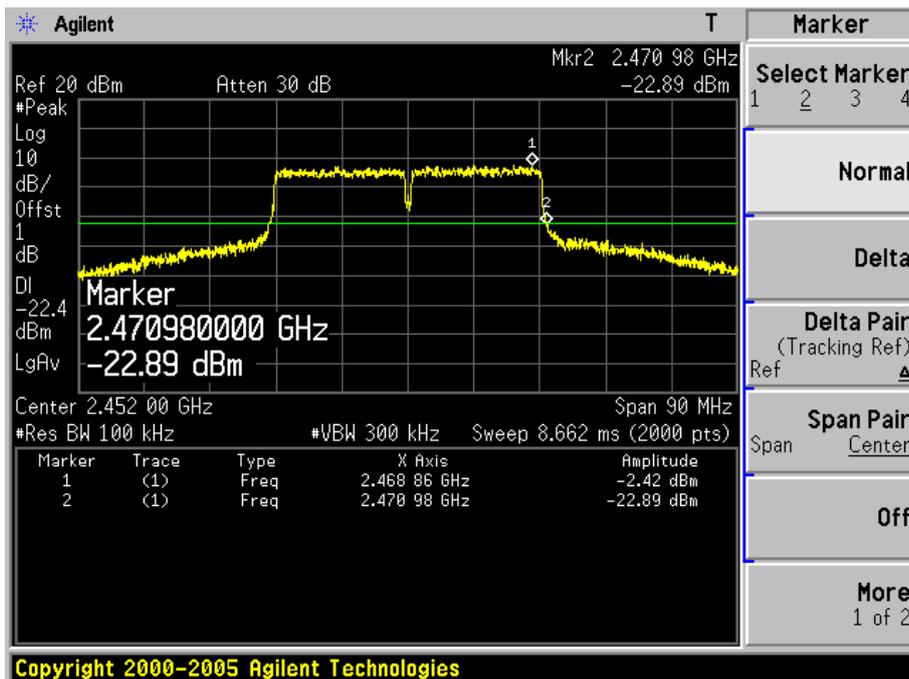


Product	: GSM Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n(40MHz)

### Channel 03 (2422MHz)



### Channel 09 (2452MHz)



## 8. Occupied Bandwidth

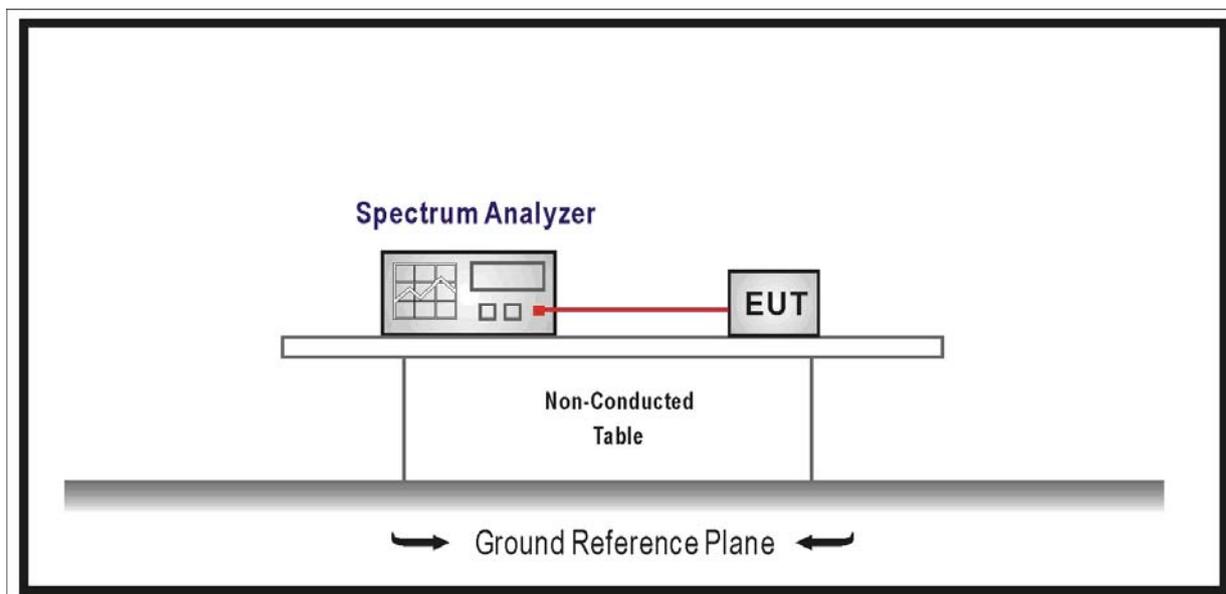
### 8.1. Test Equipment

Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due 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

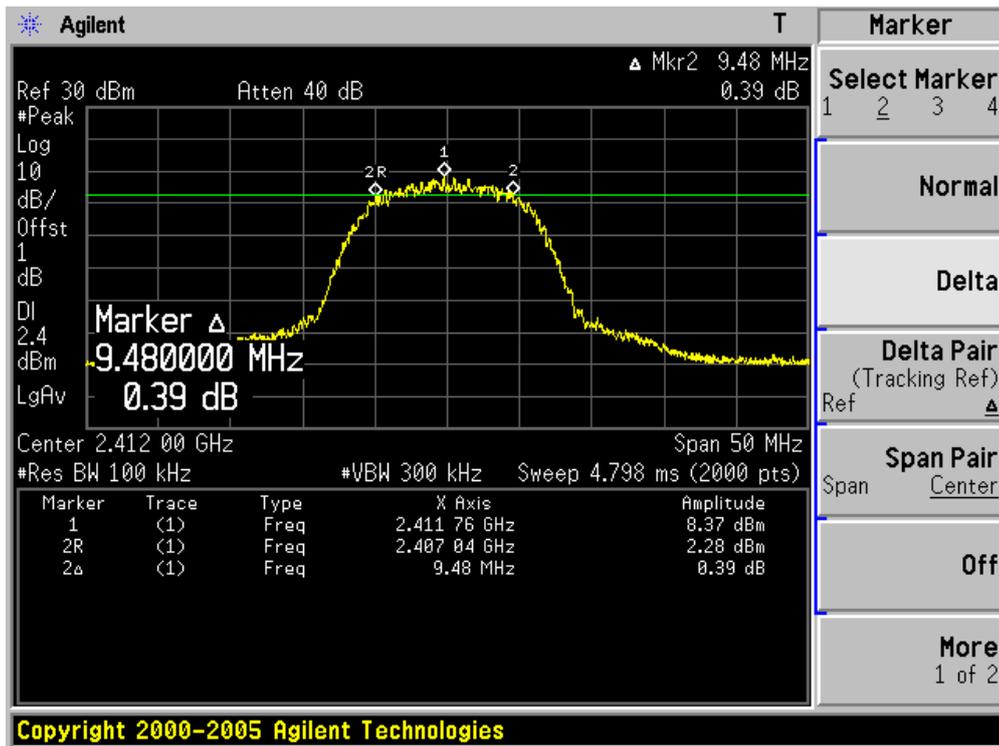
The measurement uncertainty is defined as  $\pm 1$  kHz

8.6. Test Result

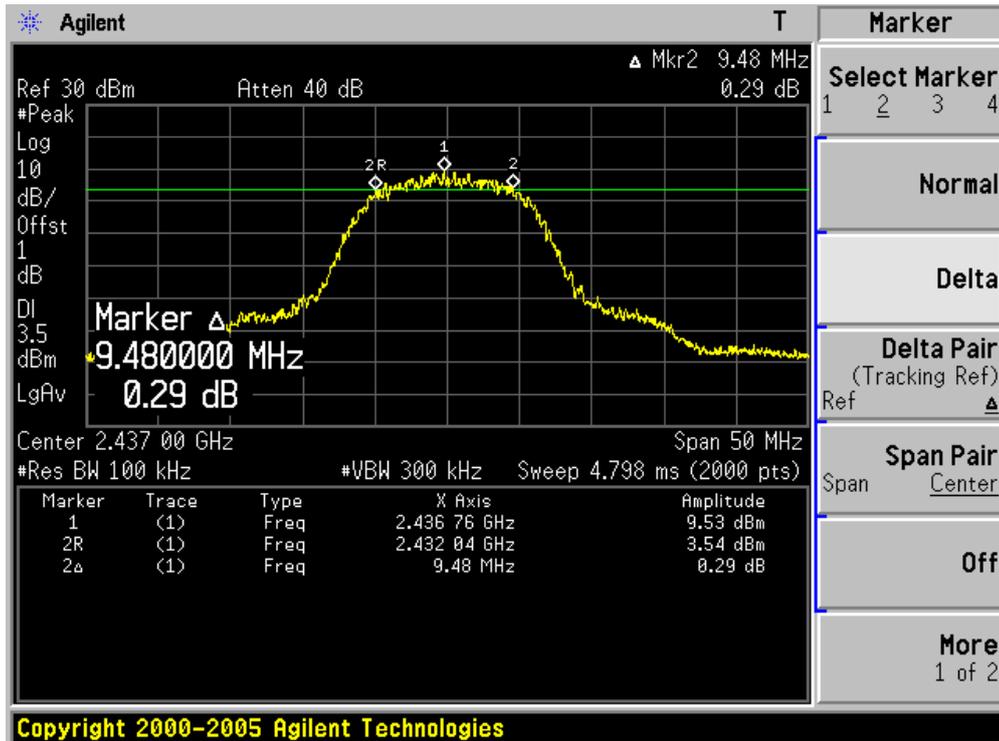
Product	:	GSM Mobile Phone
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	9480	500	Pass
06	2437	9480	500	Pass
11	2462	9500	500	Pass

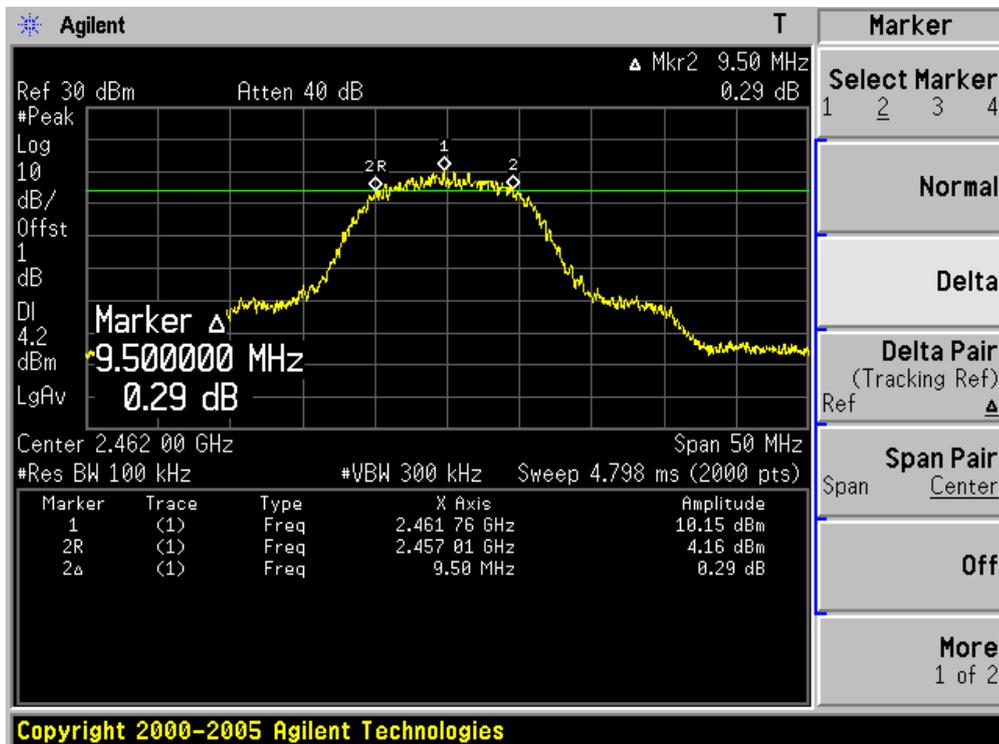
Channel 01 (2412MHz)



Channel 06 (2437MHz)



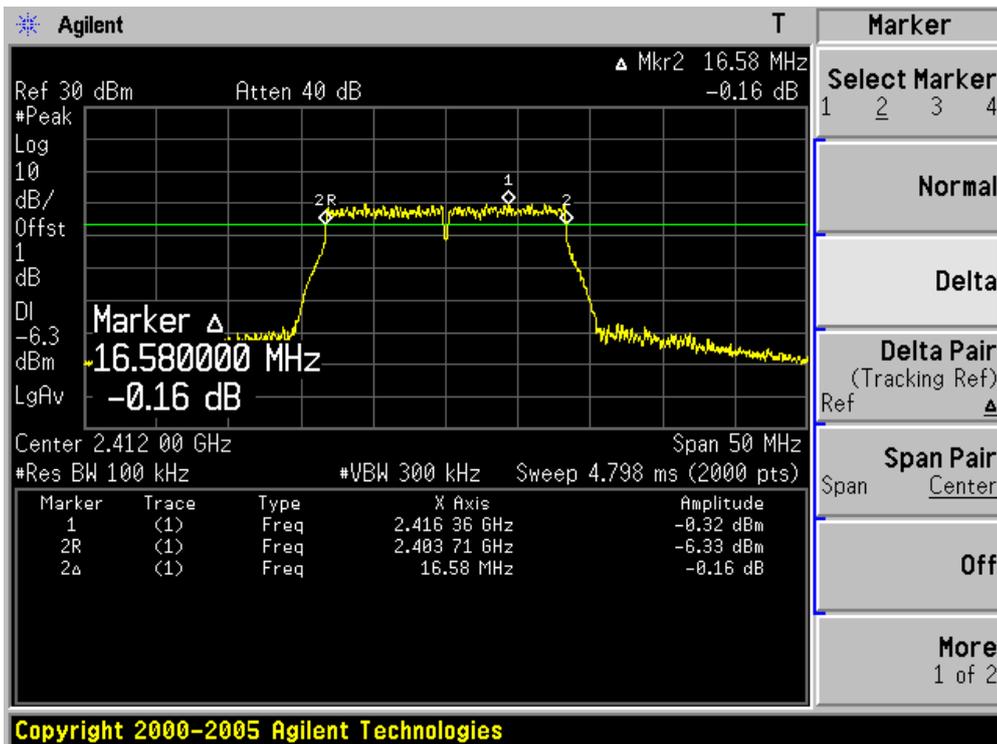
Channel 11 (2462MHz)



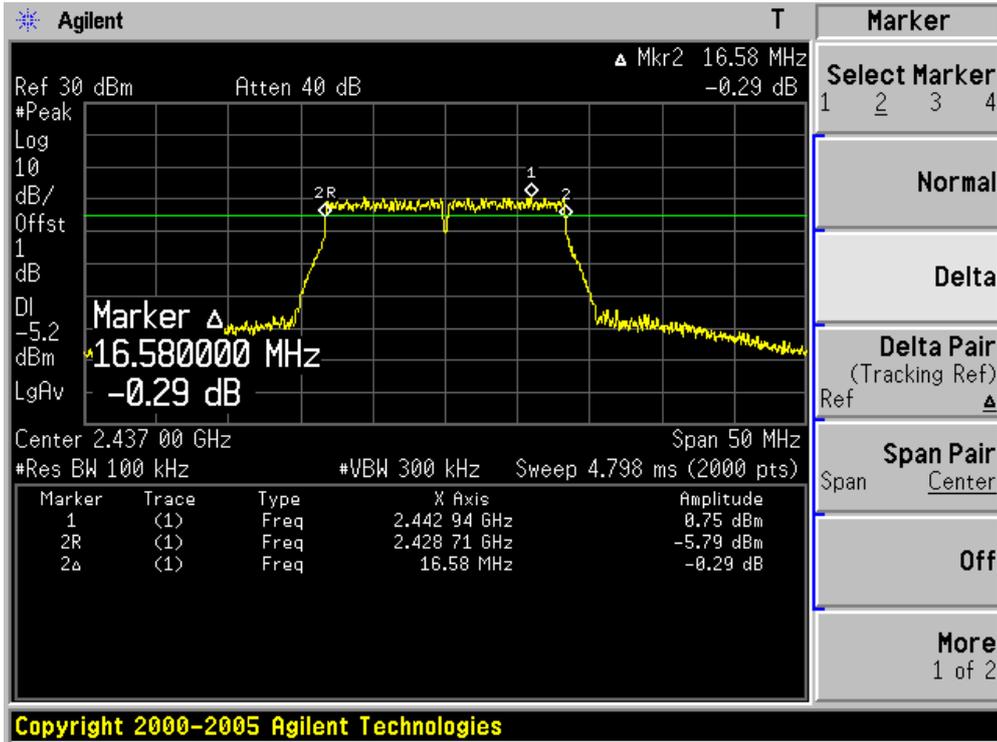
Product	: GSM Mobile Phone
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	16580	500	Pass
06	2437	16580	500	Pass
11	2462	16580	500	Pass

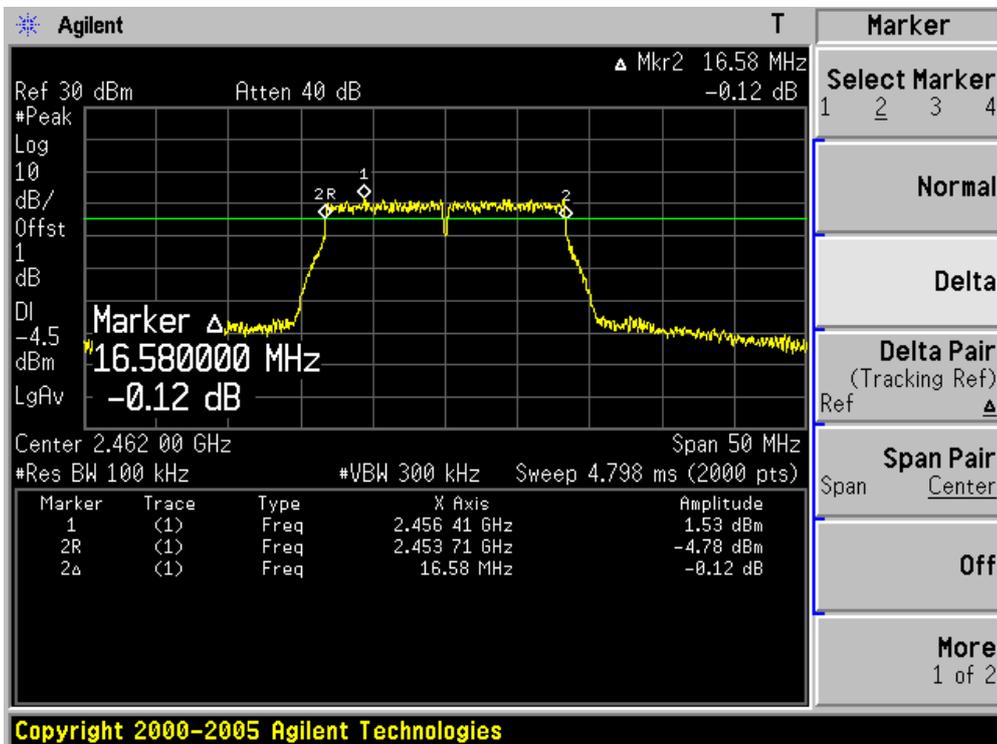
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



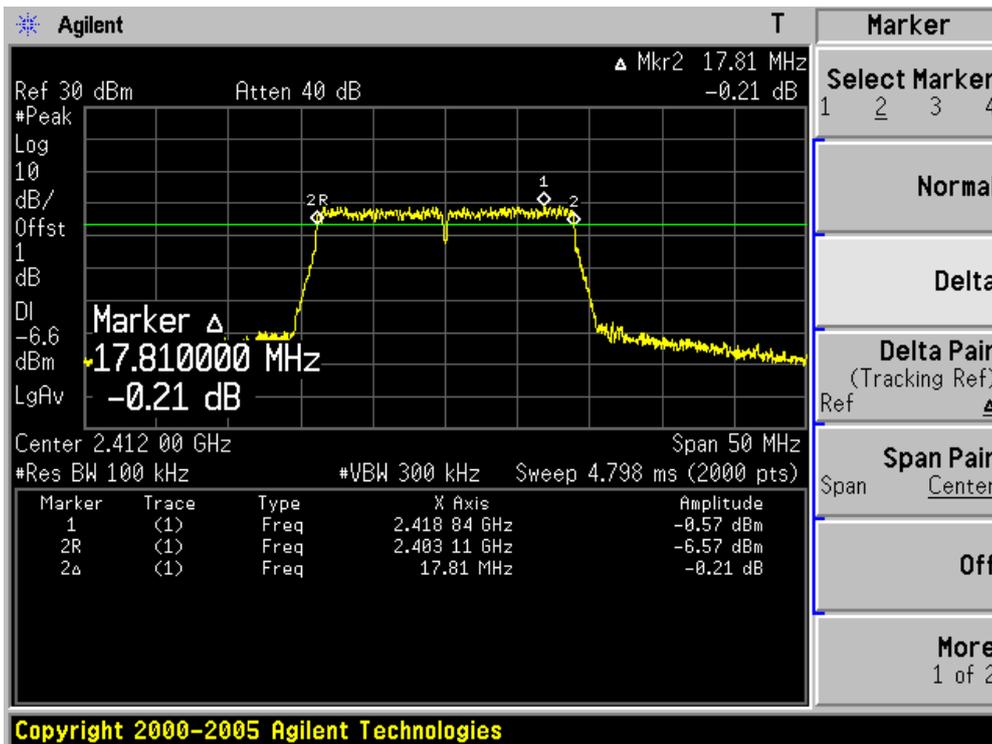
Channel 11 (2462MHz)



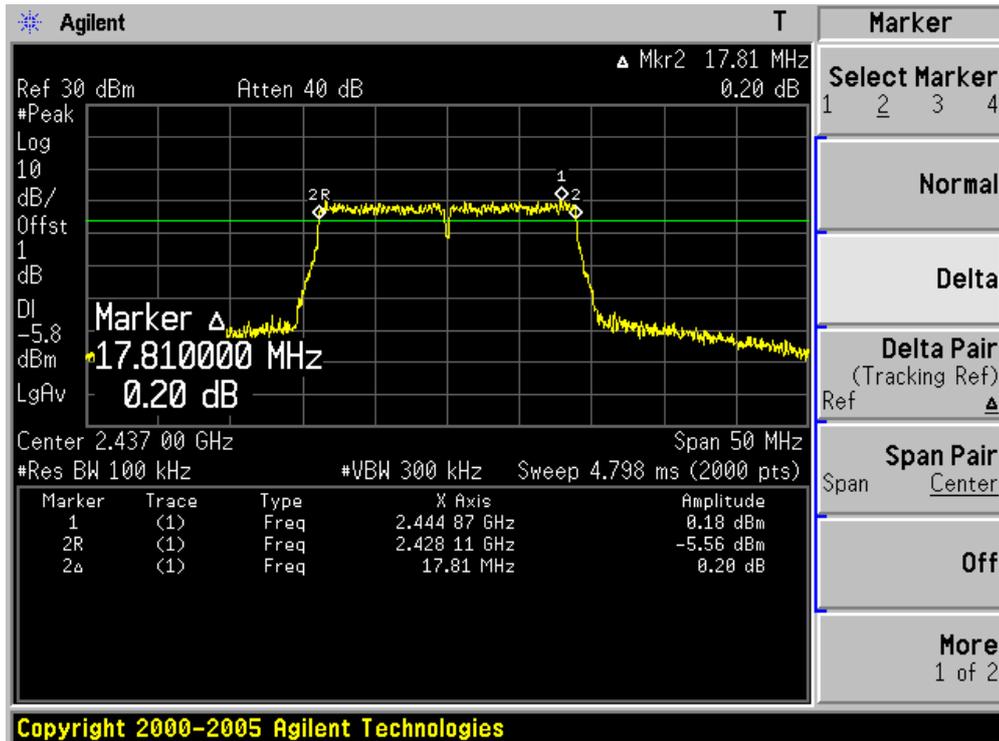
Product	: GSM Mobile Phone
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	17810	500	Pass
06	2437	17810	500	Pass
11	2462	17810	500	Pass

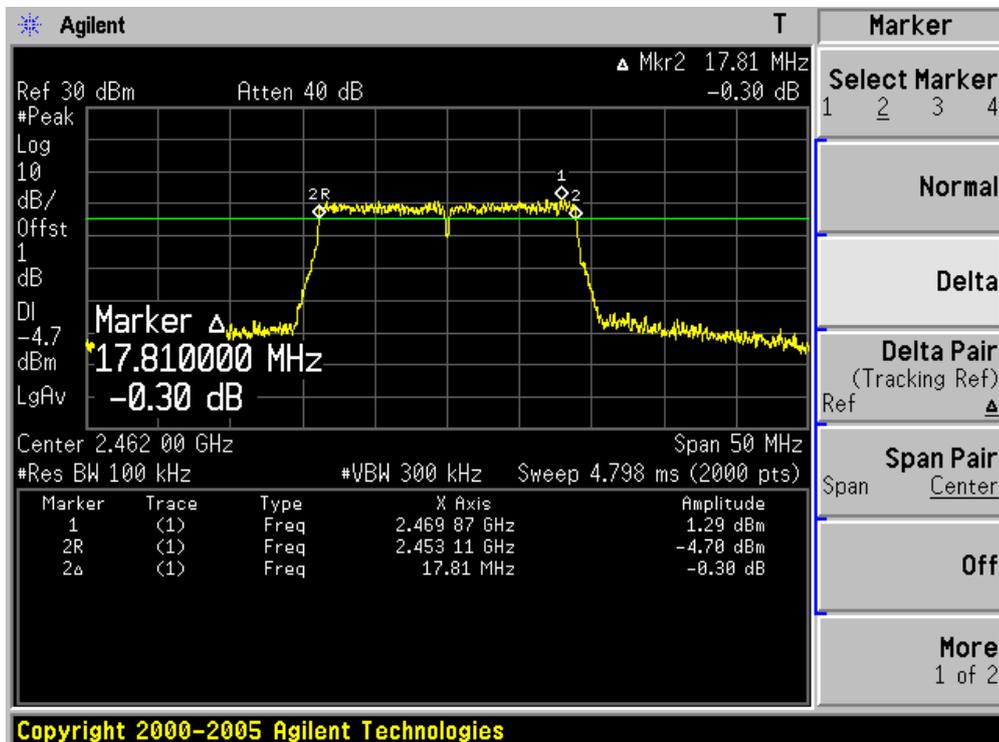
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



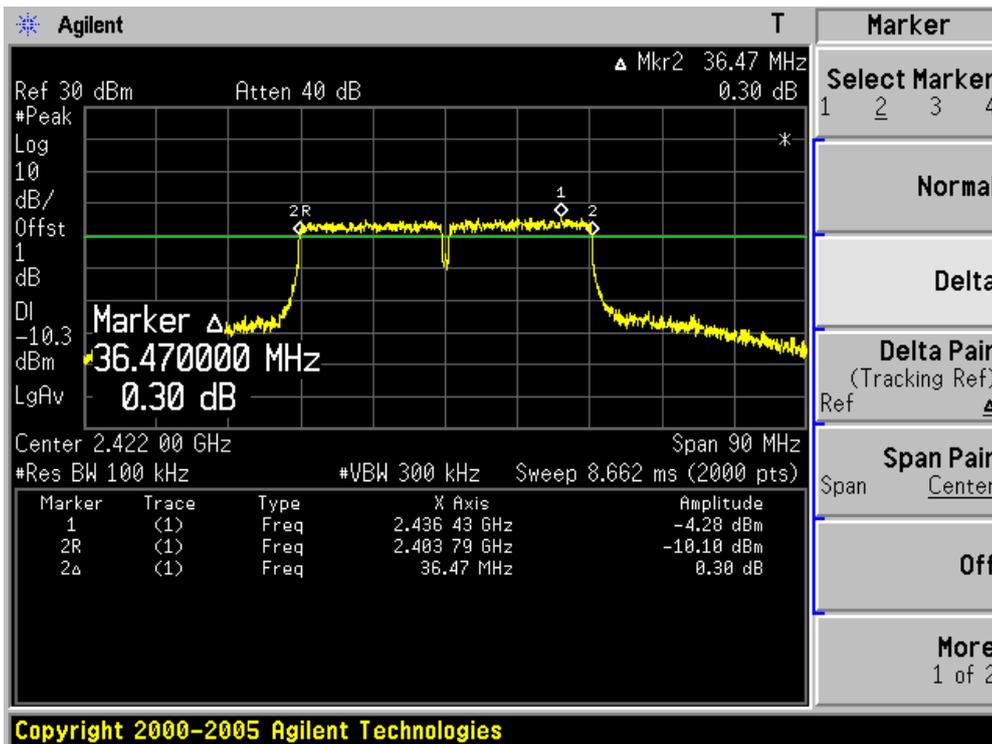
Channel 11 (2462MHz)



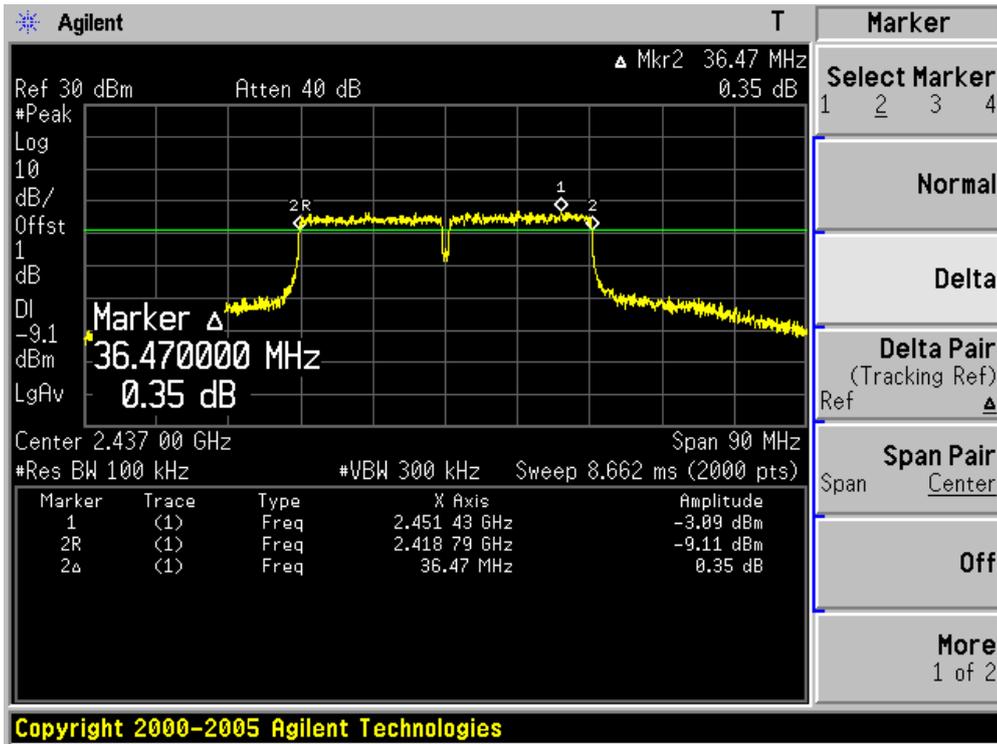
Product	: GSM Mobile Phone
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n(40MHz)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
03	2422	36470	500	Pass
06	2437	36470	500	Pass
09	2452	36470	500	Pass

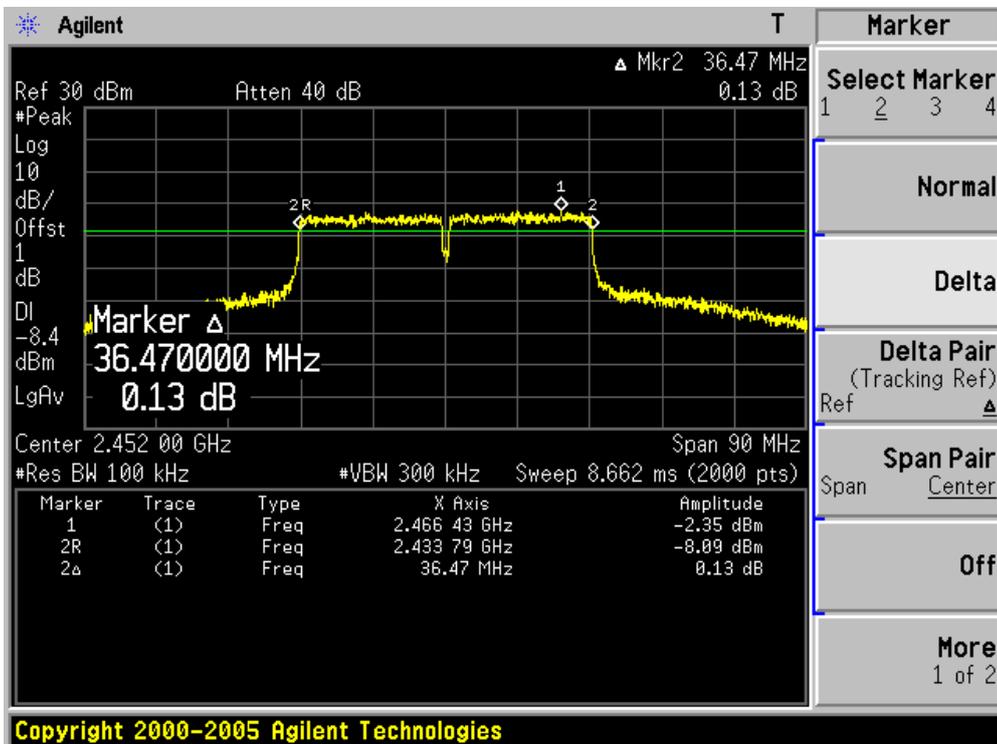
### Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



9. Power Output

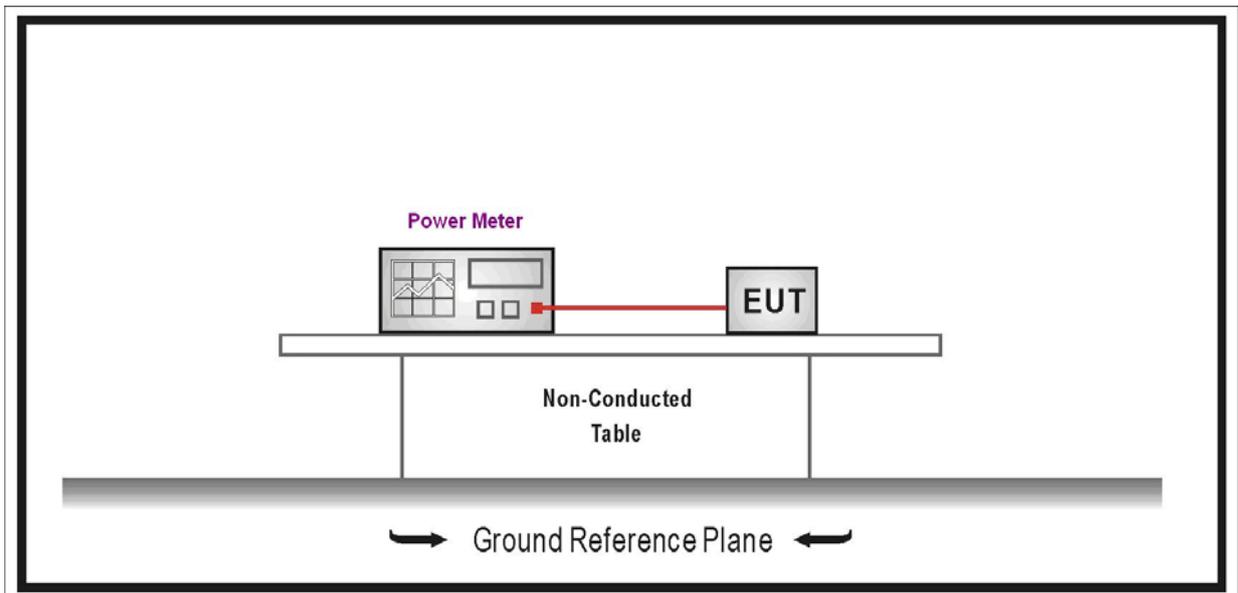
9.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2013.01.12
Power Sensor	Anritsu	MA2411B	0846014	2013.01.12
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
2	1	5.5	12	19.5	21.7	40.5	45.0
3	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	19.72
				5.5	21.30
				11	22.17
802.11g	20	2437	6	6	19.74
				24	20.27
				54	20.29
802.11n(20MHz)	20	2437	6	6.5	20.16
				39	19.97
				65	20.30
802.11n(40MHz)	40	2437	6	13.5	17.76
				81	18.15
				135	18.16

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
01	2412	21.66	30.00	Pass
06	2437	22.17	30.00	Pass
11	2462	23.55	30.00	Pass

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
01	2412	19.22	30.00	Pass
06	2437	20.29	30.00	Pass
11	2462	21.93	30.00	Pass

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
01	2412	19.00	30.00	Pass
06	2437	20.30	30.00	Pass
11	2462	21.67	30.00	Pass

Product	:	GSM Mobile Phone
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
03	2422	17.37	30.00	Pass
06	2437	18.16	30.00	Pass
09	2452	18.92	30.00	Pass

## 10. Power Spectral Density

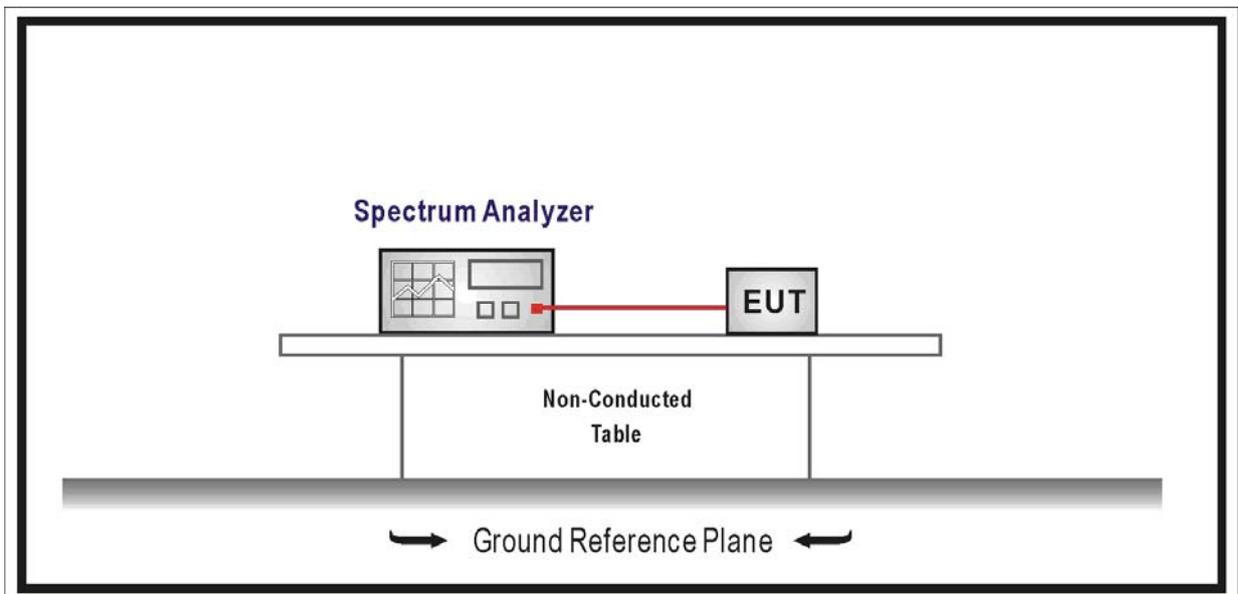
### 10.1. Test Equipment

Power Spectral Density / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due 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 RBW= 100 kHz, VBW $\geq$ 300KHz, SPAN to 5-30 % greater than the EBW, Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{kHz} = -15.2\text{ dB})$ .

#### 10.5. Uncertainty

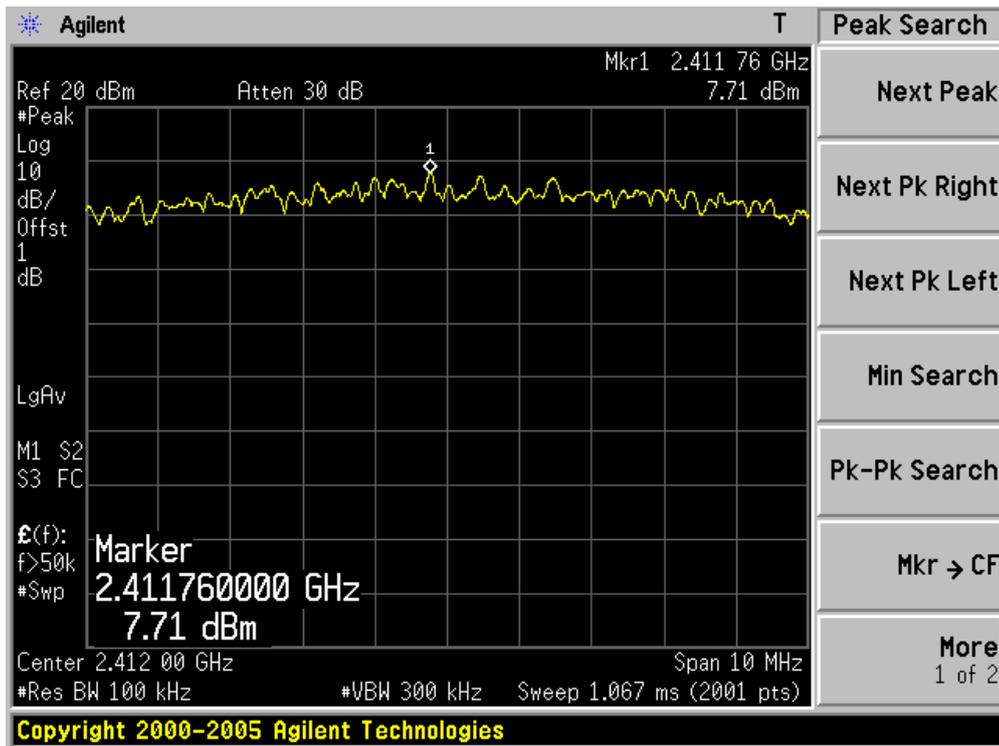
The measurement uncertainty is defined as  $\pm 1.27\text{ dB}$

10.6. Test Result

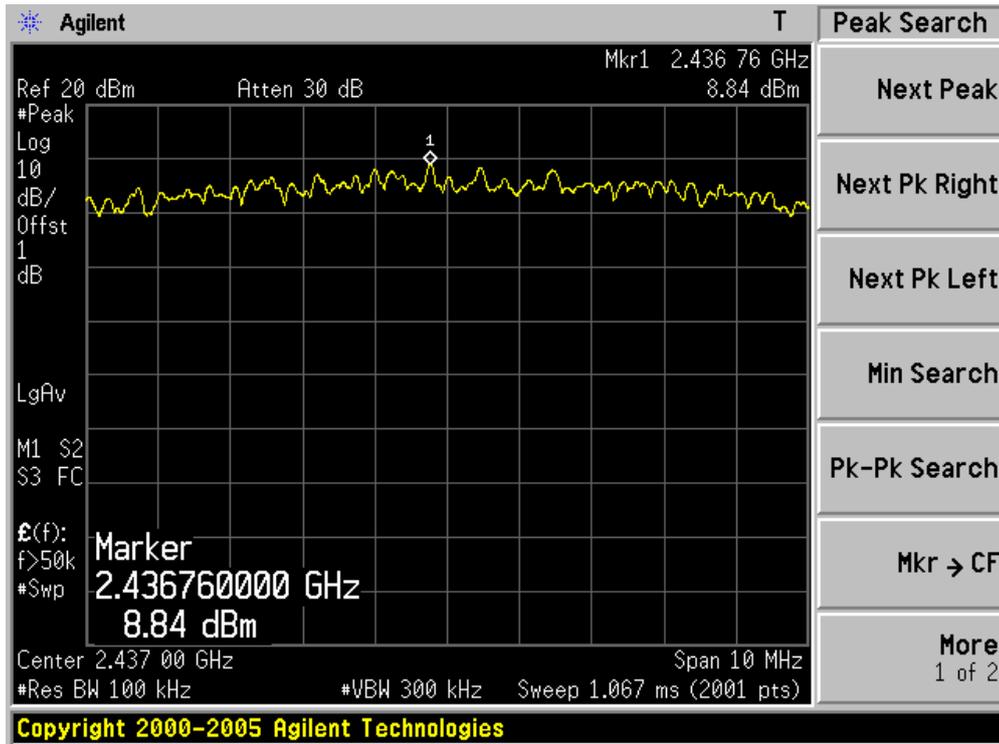
Product	:	GSM Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
01	2412	7.71	-15.2	-7.49	8	Pass
06	2437	8.84	-15.2	-6.36	8	Pass
11	2462	9.58	-15.2	-5.62	8	Pass

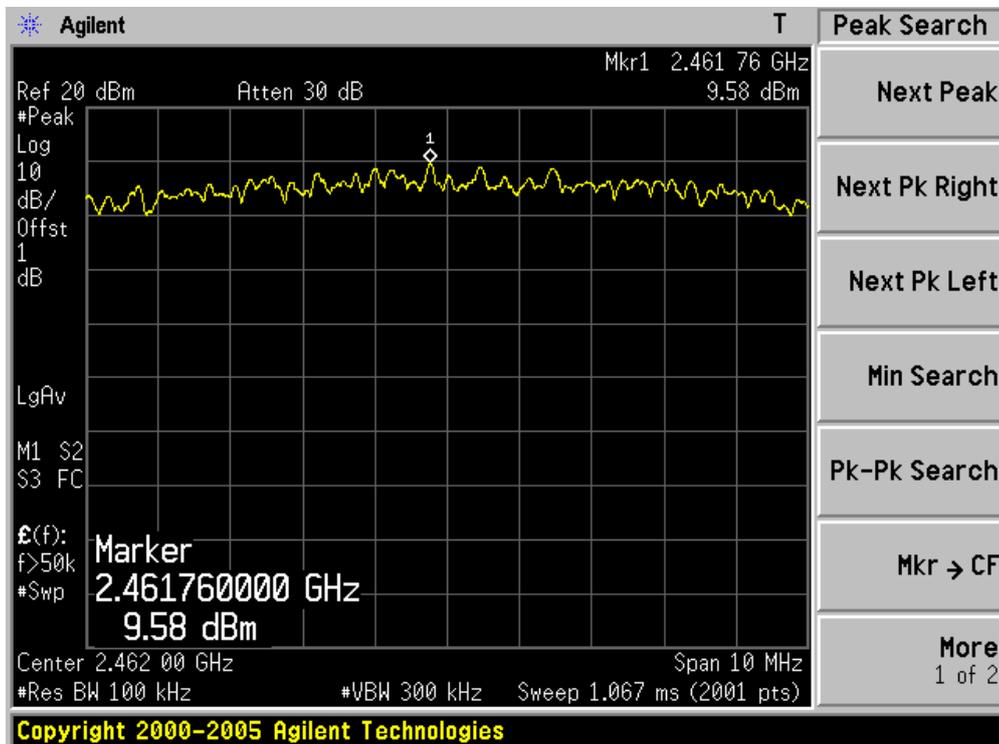
Channel 01 (2412MHz)



Channel 06 (2437MHz)



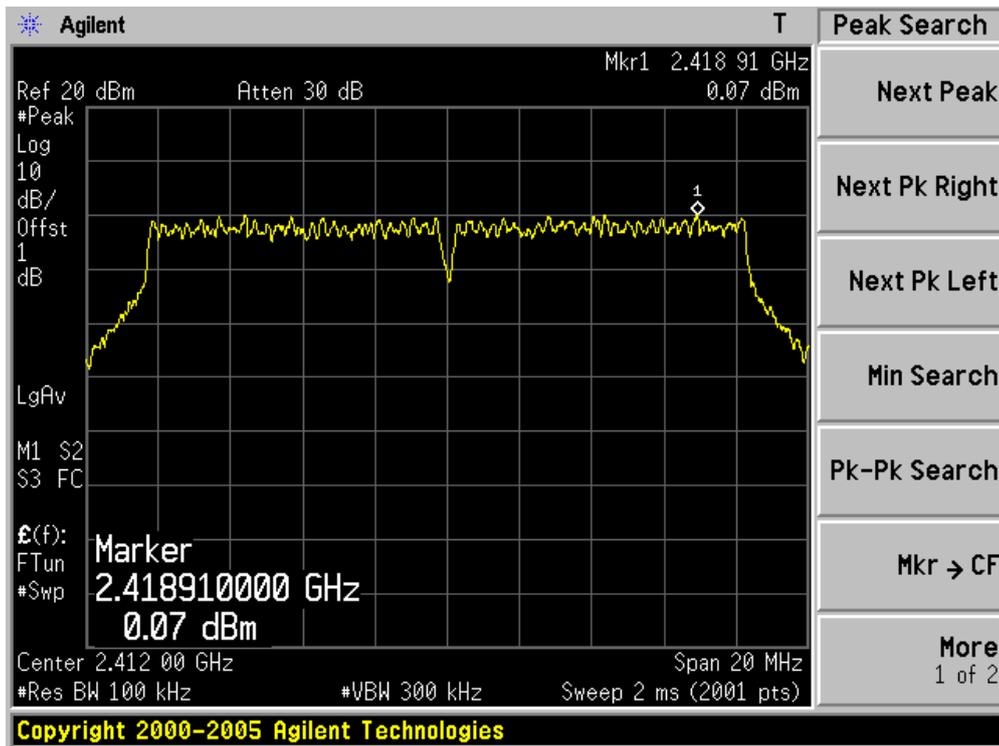
Channel 11 (2462MHz)



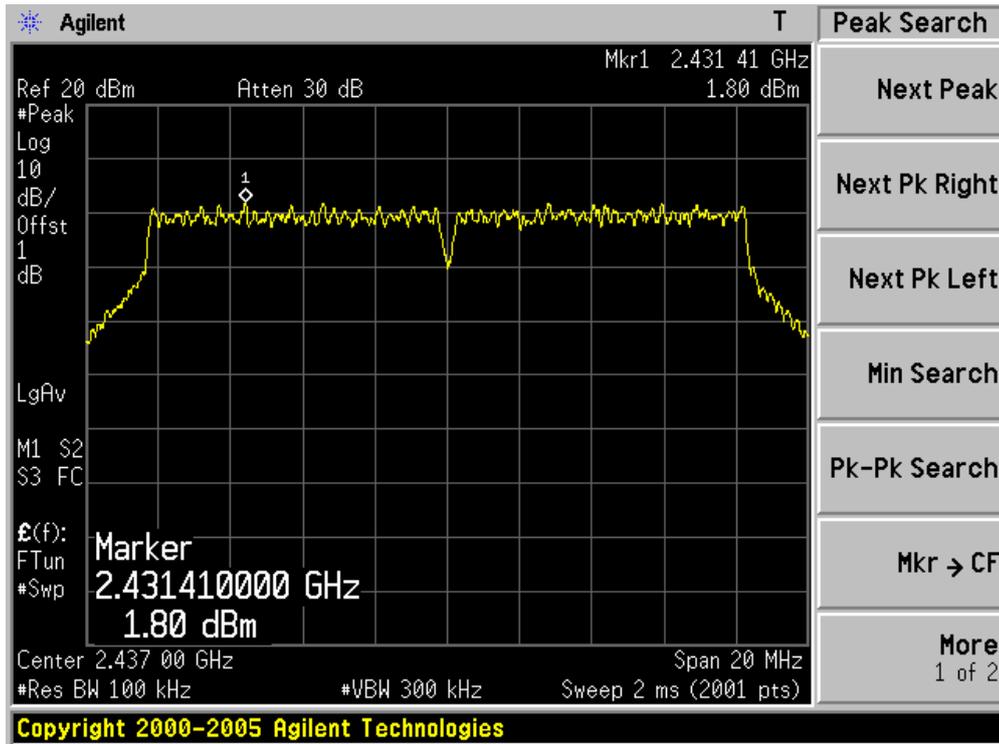
Product	:	GSM Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
01	2412	0.07	-15.2	-15.13	8	Pass
06	2437	1.80	-15.2	-13.40	8	Pass
11	2462	3.01	-15.2	-12.19	8	Pass

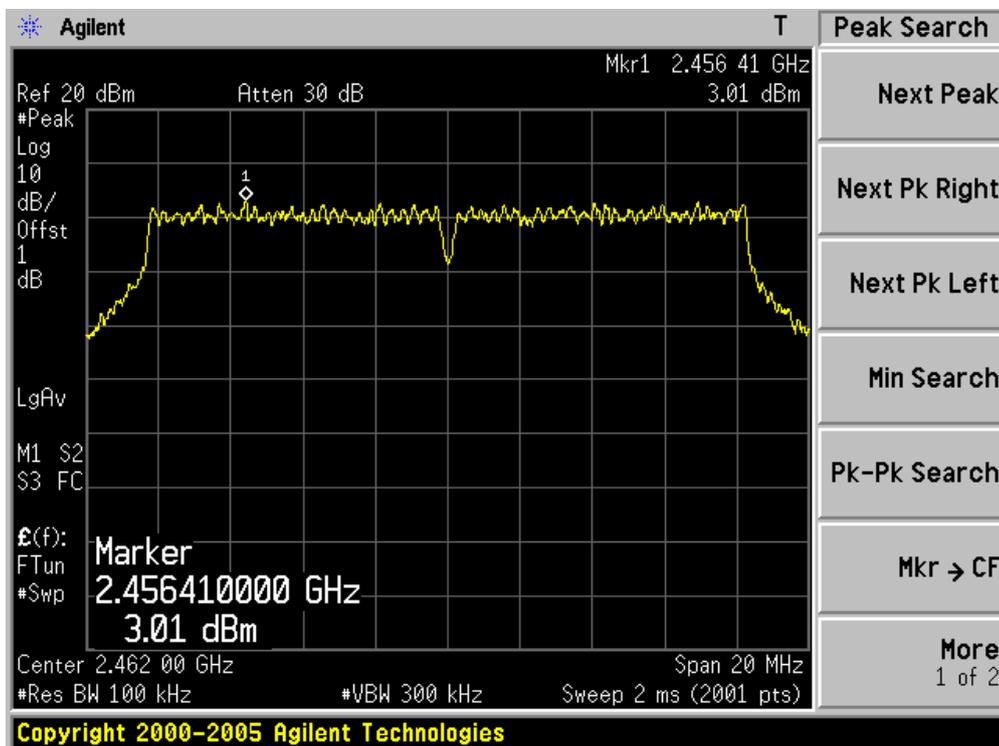
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



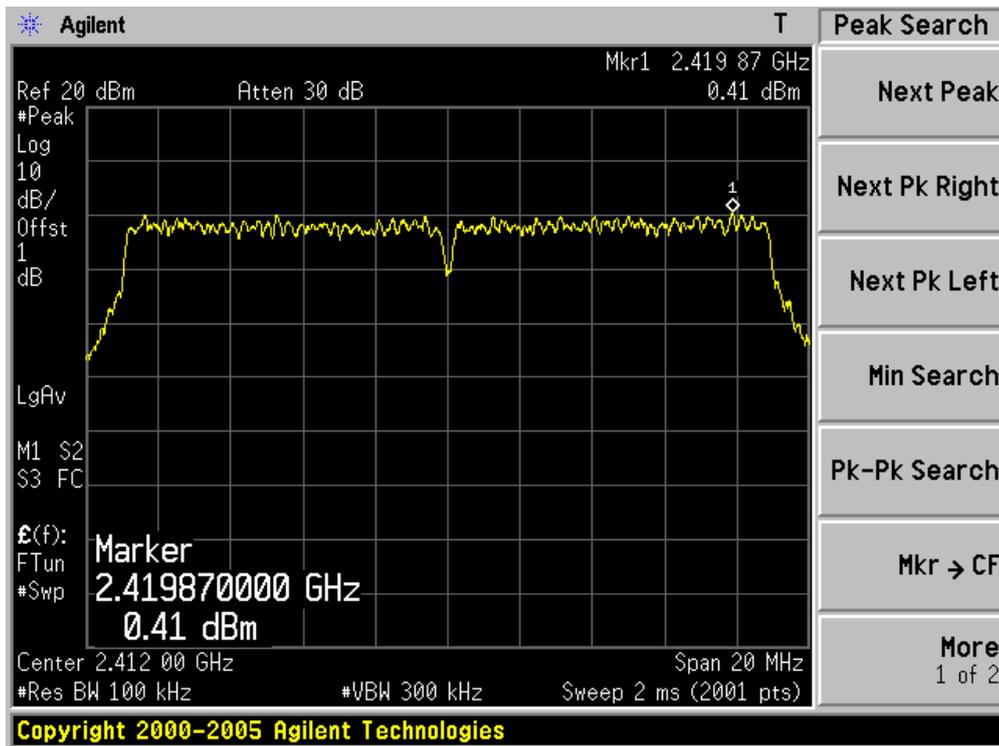
Channel 11 (2462MHz)



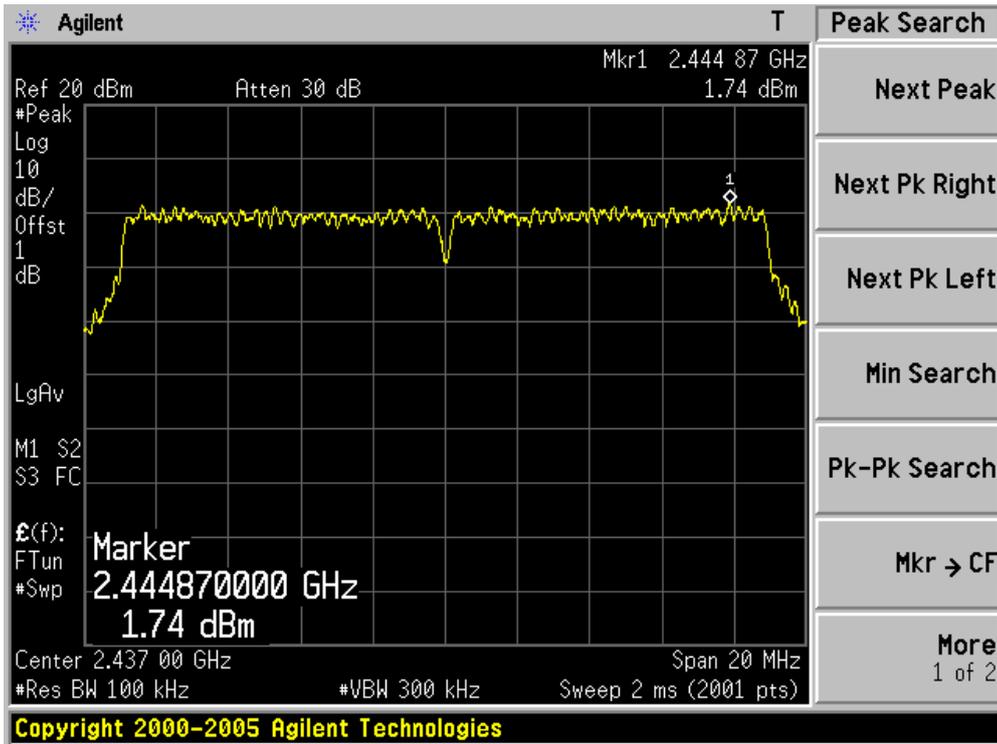
Product	: GSM Mobile Phone
Test Item	: Power Spectral Density
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
01	2412	0.41	-15.2	-14.79	8	Pass
06	2437	1.74	-15.2	-13.46	8	Pass
11	2462	2.49	-15.2	-12.71	8	Pass

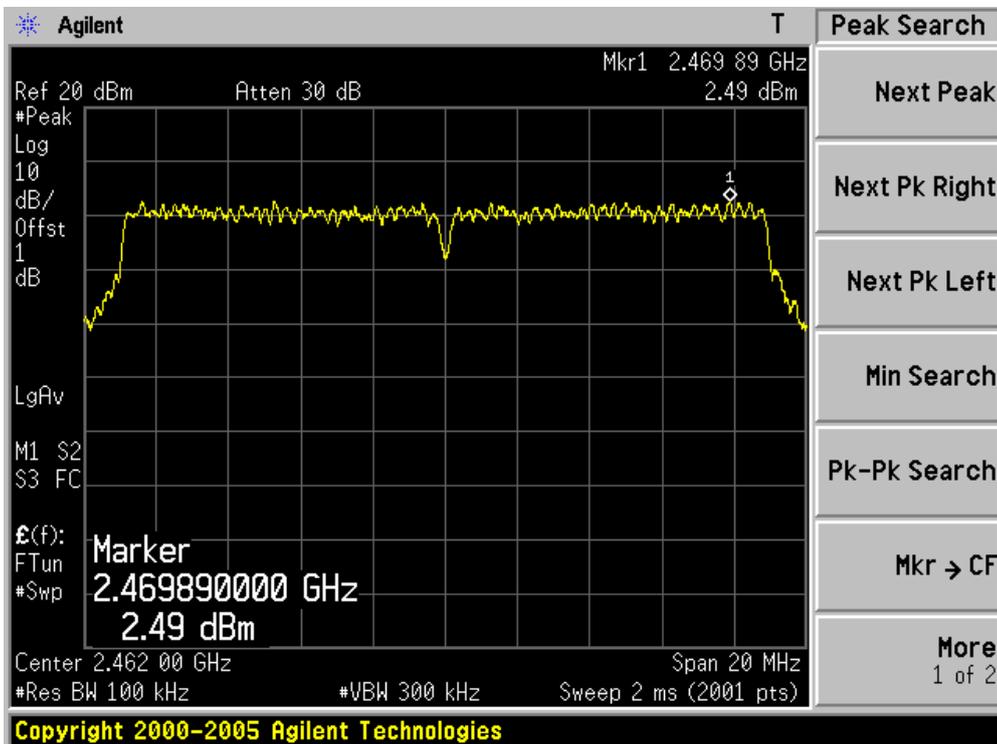
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



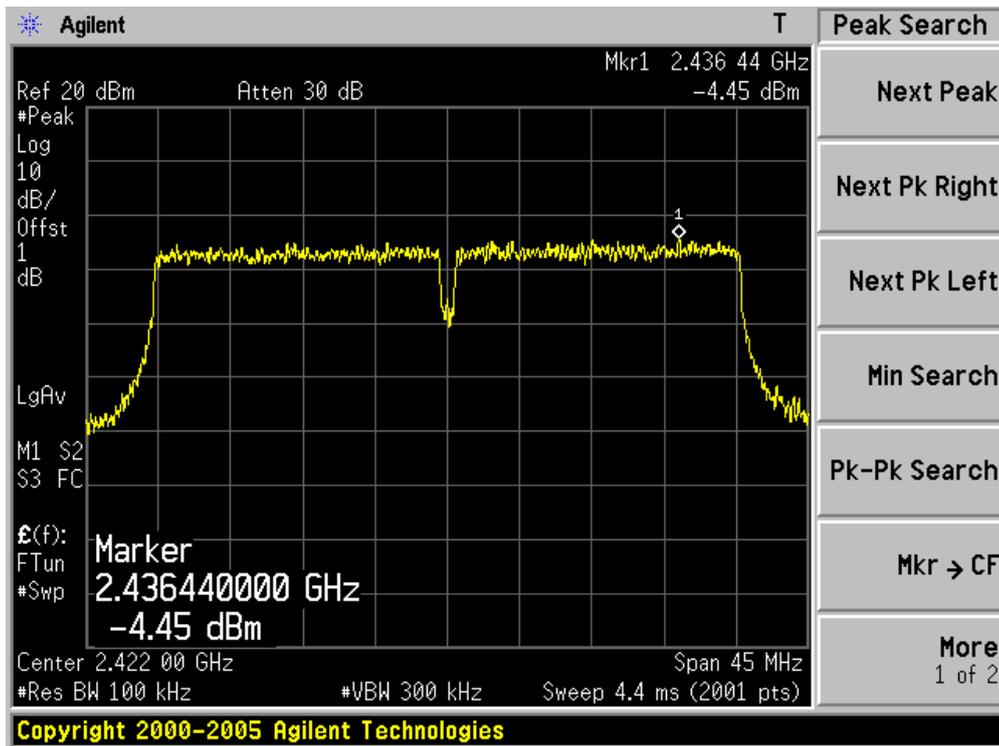
Channel 11 (2462MHz)



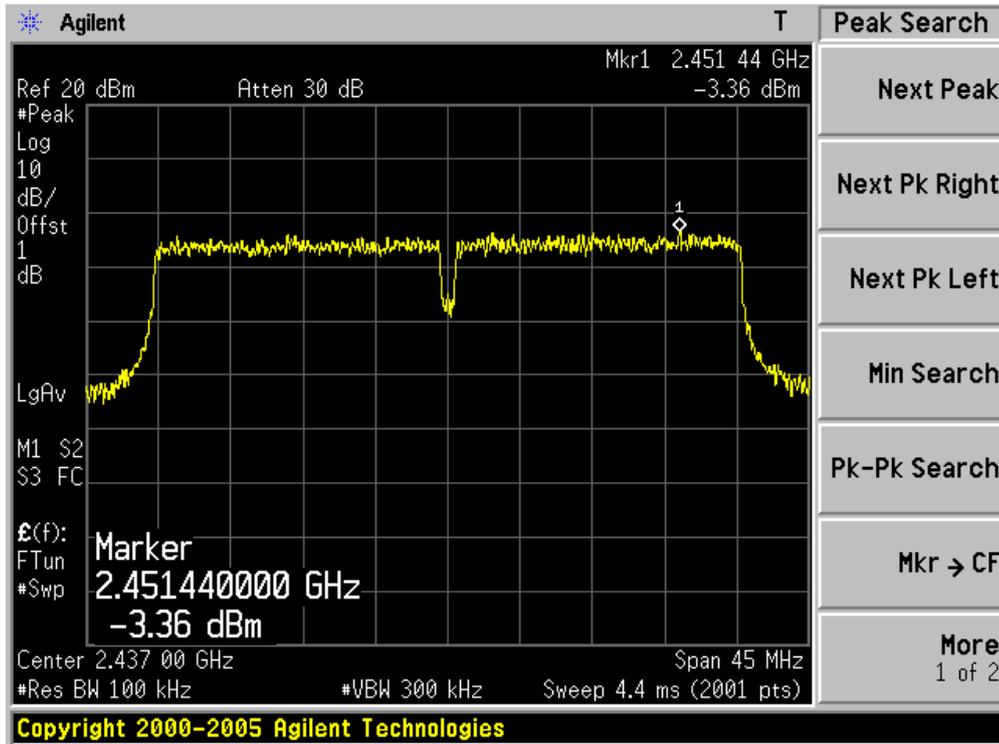
Product	: GSM Mobile Phone
Test Item	: Power Spectral Density
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n(40MHz)

Channel No.	Frequency (MHz)	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
03	2422	-4.45	-15.2	-19.65	8	Pass
06	2437	-3.36	-15.2	-18.56	8	Pass
09	2452	-2.81	-15.2	-18.01	8	Pass

### Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)

