



FCC Part15.247 Test Report

Product Name : HUAWEI Ascend G 302D; Ascend G 302D; TINO; Tino;
HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with
Bluetooth

Model No. : HUAWEI U8812D-5, U8812D-5, HUAWEI U8812D,
U8812D

FCC ID : QISU8812D-5

Applicant : Huawei Technologies Co., Ltd.

Address : Bantian, Longgang District, Shenzhen, 518129
Guangdong, P. R. China

Date of Receipt : 17/05/2012

Test Date : 17/05/2012~26/06/2012

Issued Date : 28/06/2012

Report No. : 125S046R-RF-US-P06V02

Report Version : V 1.0

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

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Address : Bantian, Longgang District, Shenzhen, 518129 Guangdong, P.
R. China

Model No. : HUAWEI U8812D-5, U8812D-5, HUAWEI U8812D, U8812D
FCC ID : QISU8812D-5
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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FCC Registration Number: 800392

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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:

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

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/>

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1. General Information

1.1. EUT Description

Product Name	HUAWEI Ascend G 302D; Ascend G 302D; TINO; Tino; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth
Model No.	HUAWEI U8812D-5, U8812D-5, HUAWEI U8812D, U8812D
Hardware Version	A52_MB_V3.0
Software Version	U8812DV100R001C41B100SP04
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
GPS	
Operate Frequency	1575.42MHz
Type of modulation	BPSK
2G	
Support Band	GSM850/GSM900/DCS1800/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	Rel-6
Type of modulation	GMSK for GSM/GPRS; 8PSK for EDGE
Antenna Gain	GSM 850: -2.3dBi PCS1900: -0.5dBi
3G	
Support Band	WCDMA Band I/WCDMA Band II/WCDMA Band V/ WCDMA Band VIII
Uplink	WCDMA Band V: 824~849MHz WCDMA Band II: 1850~1910MHz
Downlink	WCDMA Band V: 869~894MHz WCDMA Band II: 1930~1990MHz
Release Version	UMTS FDD: Rel-6
Type of modulation	QPSK

Antenna Gain	WCDMA Band V: -2.3dBi WCDMA Band II: -0.5dBi
Bluetooth	
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	-4.0dBi
Wi-Fi	
Hotspots Function	YES
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	-4.0dBi
Components	
Headset Model Number #1	HUAWEI/ 125G#+3261# 3.5MM-2
Headset Model Number #2	HUAWEI/ MEMD1532A761A00
Battery #1	Brand Name: HUAWEI M/N: HB5N1 Rated Voltage and Capacitance: 3.7V/1350mAh S/N: BAAC227F98000344
Battery #2	Brand Name: HUAWEI M/N: HB5N1H Rated Voltage and Capacitance: 3.7V/1500mAh S/N: BAAC424F13800165
Battery #3	Brand Name: HUAWEI M/N: HB5N1 Rated Voltage and Capacitance: 3.7V/1350mAh S/N: GAGC219Z98008748
Adapter #1	Brand Name: HUAWEI M/N: HW-050100U1W Input: 100-240V~50/60Hz 0.2A MAX Output: 5Vdc, 1A S/N: TPAB61442672

Adapter #2	Brand Name: HUAWEI M/N: HW-050100U1W Input: 100-240V~50/60Hz 0.2A MAX Output: 5Vdc, 1A S/N: HKAB51621440
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Note 1: They are only for different marketing requirement.

Note 2: Headset #1 and #2 have the same circuit.

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

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:

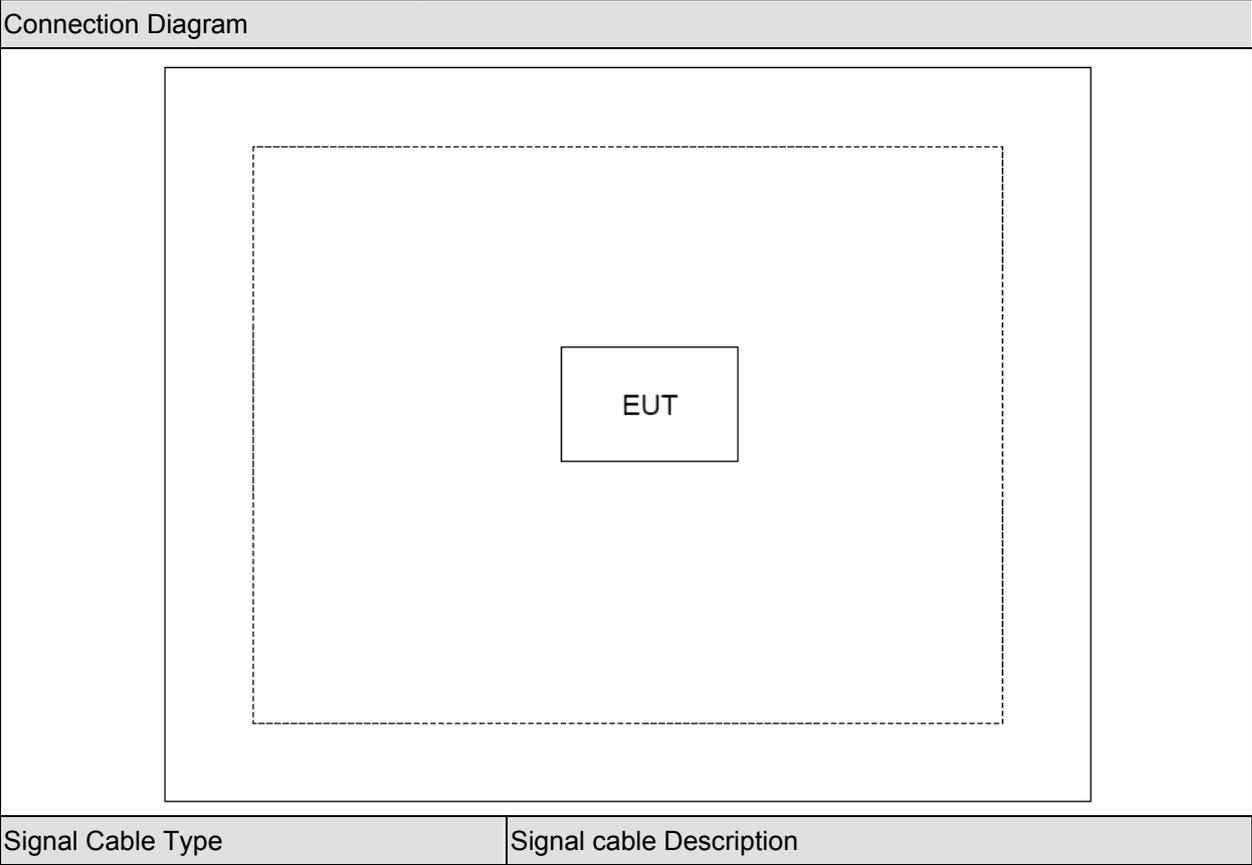
1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. For portable device, radiated spurious emission was verified over X, Y, Z axis, and shown the worst case on this report.
3. This device is a 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 125S046R-HP-US-P01V01.

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

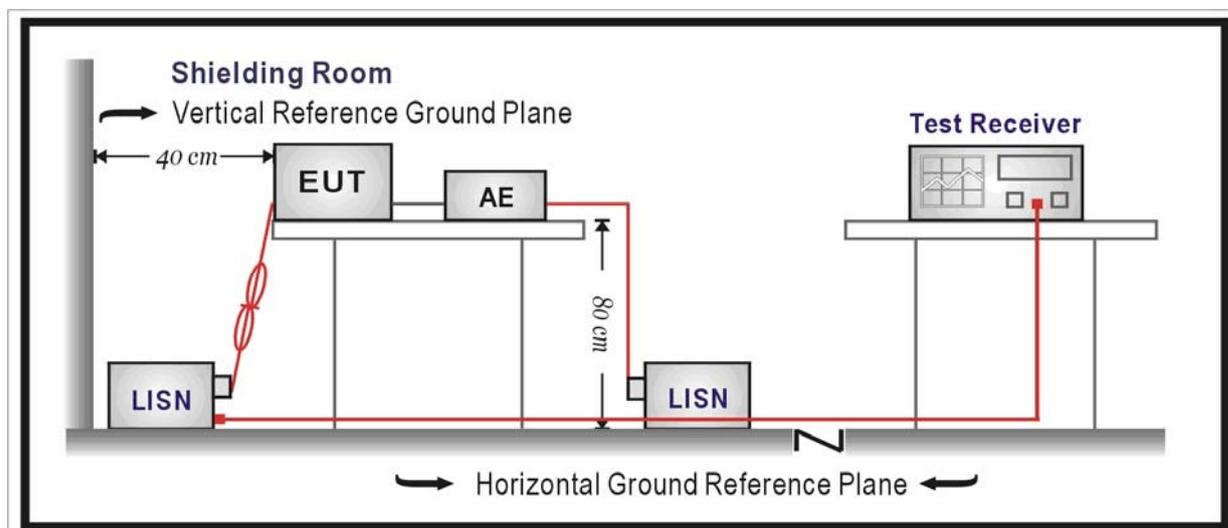
3.1. Test Equipment

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.

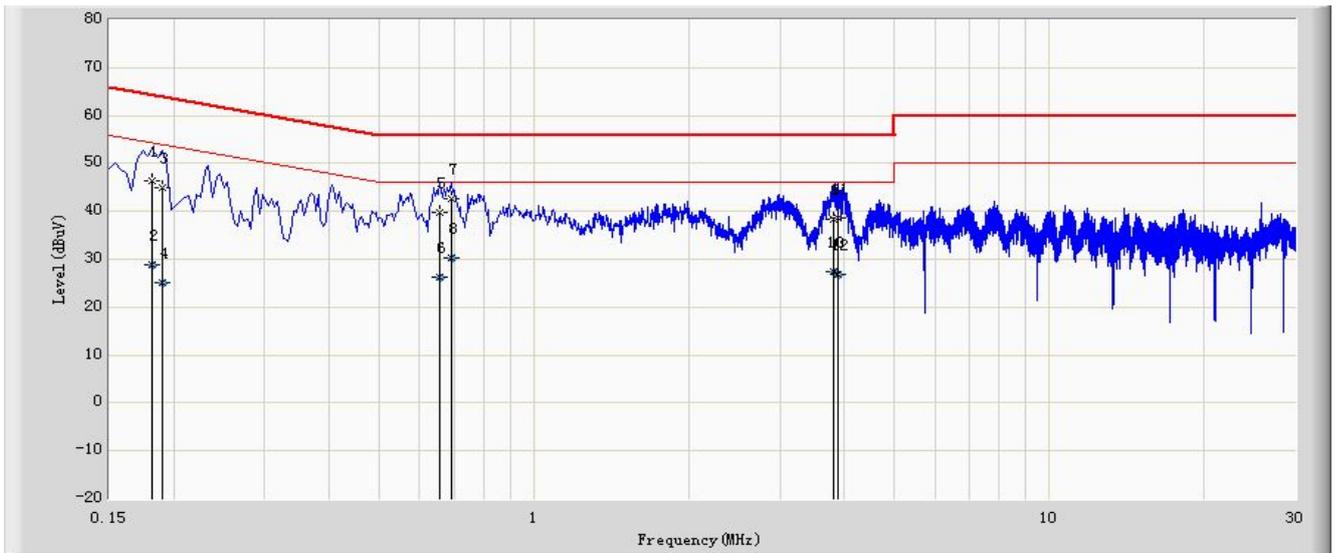
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

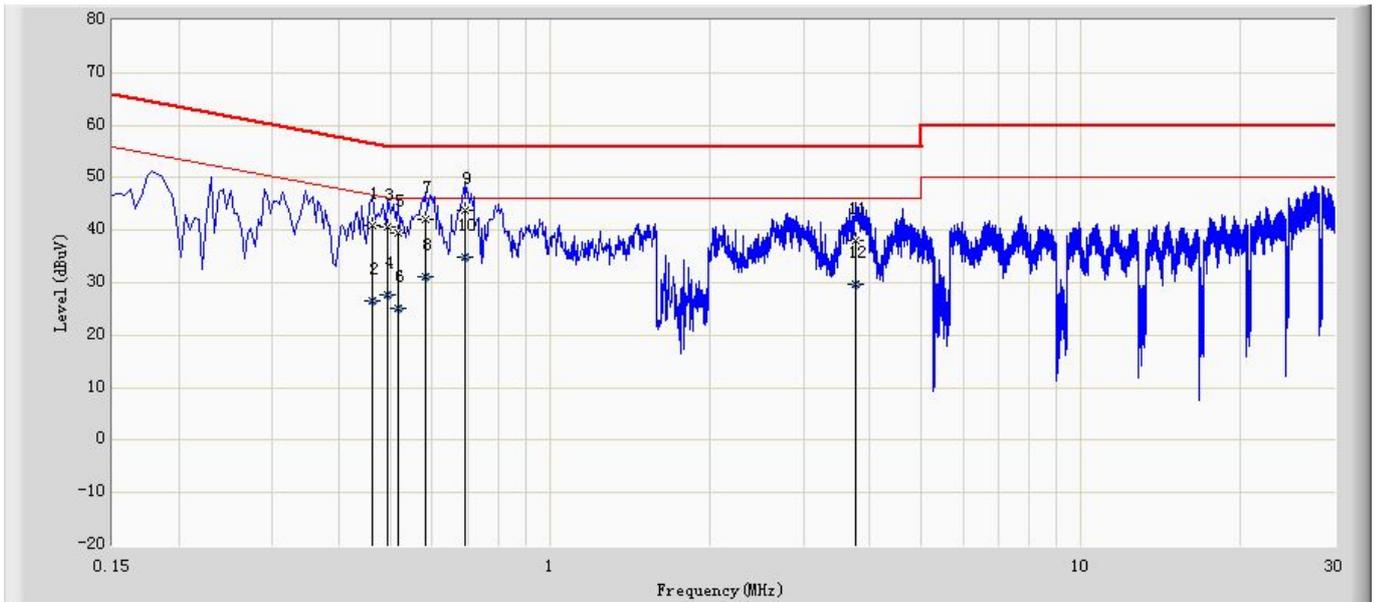
3.6. Test Result

Engineer: Jack	
Site: TR1	Time: 2012/06/20 - 12:35
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Line
EUT: 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		0.182	46.477	36.621	-17.917	64.394	9.857	QP
2		0.182	28.913	19.057	-25.481	54.394	9.857	AV
3		0.190	44.936	35.078	-19.100	64.037	9.858	QP
4		0.190	25.241	15.382	-28.796	54.037	9.858	AV
5		0.658	39.730	29.876	-16.270	56.000	9.855	QP
6		0.658	26.123	16.268	-19.877	46.000	9.855	AV
7	*	0.690	42.685	32.842	-13.315	56.000	9.843	QP
8		0.690	30.401	20.558	-15.599	46.000	9.843	AV
9		3.810	38.289	28.453	-17.711	56.000	9.836	QP
10		3.810	27.322	17.486	-18.678	46.000	9.836	AV
11		3.886	38.717	28.881	-17.283	56.000	9.836	QP
12		3.886	26.916	17.080	-19.084	46.000	9.836	AV

Engineer: Jack	
Site: TR1	Time: 2012/06/20 - 12:39
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Neutral
EUT: 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		0.462	40.838	30.797	-15.819	56.657	10.041	QP
2		0.462	26.671	16.631	-19.985	46.657	10.041	AV
3		0.494	40.763	30.711	-15.338	56.100	10.052	QP
4		0.494	27.593	17.541	-18.507	46.100	10.052	AV
5		0.518	39.604	29.560	-16.396	56.000	10.043	QP
6		0.518	25.050	15.007	-20.950	46.000	10.043	AV
7		0.582	42.140	32.154	-13.860	56.000	9.986	QP
8		0.582	31.125	21.139	-14.875	46.000	9.986	AV
9		0.690	43.768	33.879	-12.232	56.000	9.889	QP
10	*	0.690	34.922	25.033	-11.078	46.000	9.889	AV
11		3.766	38.022	27.978	-17.978	56.000	10.043	QP
12		3.766	29.820	19.776	-16.180	46.000	10.043	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

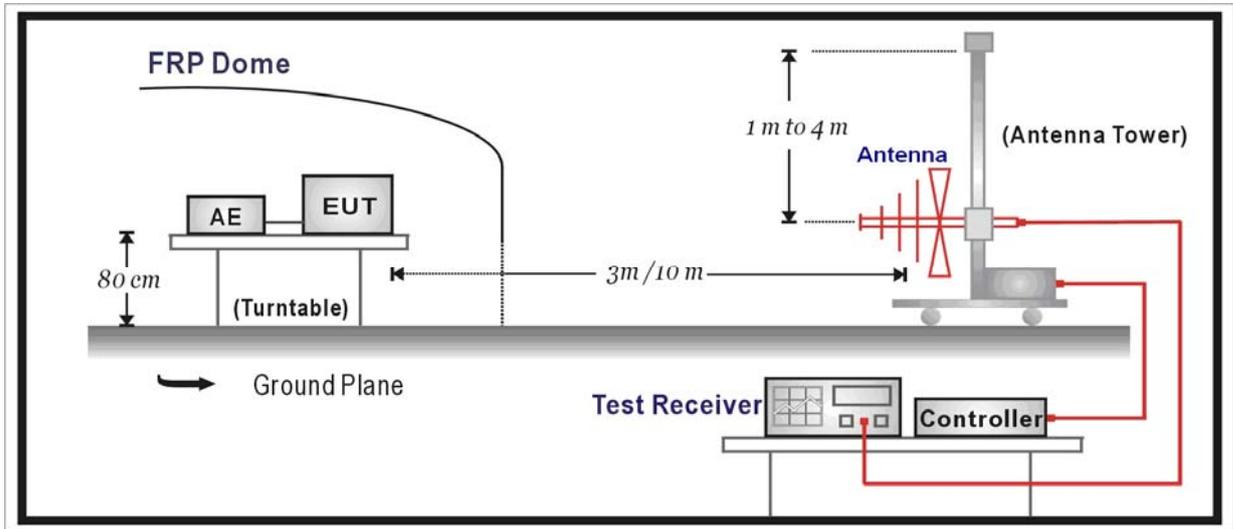
Radiated Emission / AC-5

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

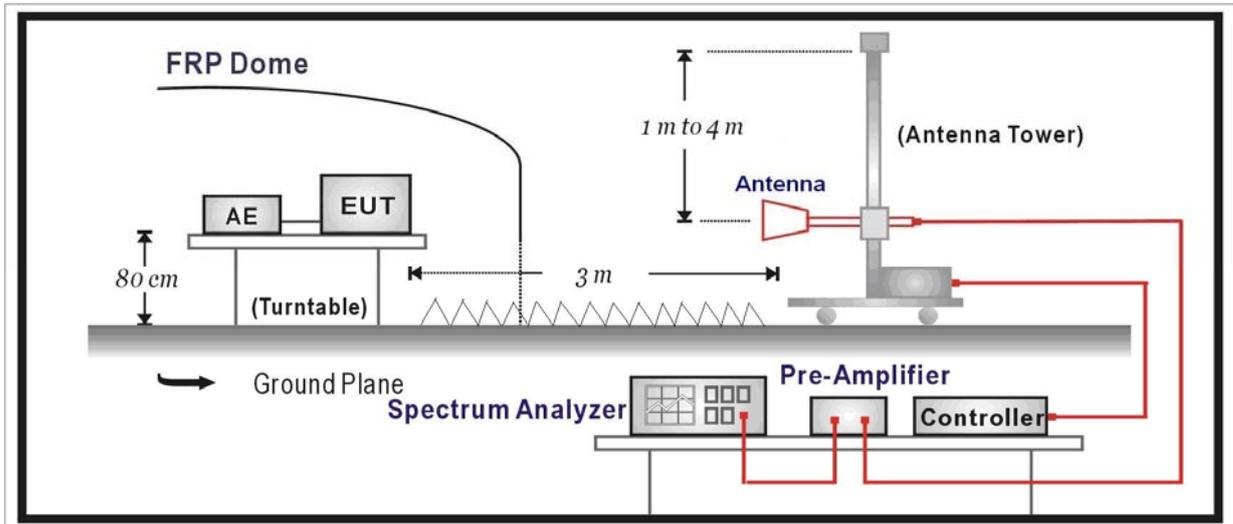
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup

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 ± 3.9 dB
 below 1G is defined as ± 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	H	2411.2	65.9	31.2	97.1	Fundamental	/	PK
	H	387.4	1.2	17.2	18.4	46	-27.6	PK
	H	456.3	1.6	18.9	20.5	46	-25.5	PK
	V	3220.0	49.1	-16.0	33.1	54(Note)	-20.9	PK
	V	4825.0	61.8	-11.9	49.9	54(Note)	-4.1	PK
	V	7236.0	46.4	-3.3	43.1	54(Note)	-10.9	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
6	H	2438.5	67.3	31.2	98.5	Fundamental	/	PK
	V	456.3	-0.2	18.9	18.7	46	-27.3	QP
	H	557.2	1.0	21.2	22.2	46	-23.8	PK
	H	3250.5	49.2	-16.0	33.2	54(Note)	-20.8	PK
	V	4876.0	64.6	-11.7	52.9	54(Note)	-1.1	PK
	V	7311.0	47.0	-3.0	44.0	54(Note)	-10	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
11	H	2462.0	69.7	31.2	100.9	Fundamental	/	PK
	H	457.3	1.2	18.9	20.1	46	-25.9	PK
	H	753.6	1.9	22.3	24.2	46	-21.8	PK
	H	3168.5	49.5	-15.8	33.7	54(Note)	-20.3	PK
	V	4927.0	62.0	-11.5	50.5	54(Note)	-3.5	PK
	V	7386.0	47.2	-2.8	44.4	54(Note)	-9.6	PK
	V	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK

Note : 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	2416.8	63.9	31.2	95.1	Fundamental	/	PK
	H	387.4	-0.7	17.2	16.5	46	-29.5	PK
	H	780.3	0.7	22.6	23.3	46	-22.7	PK
	H	3220.0	50.0	-16.0	34.0	54(Note)	-20.0	PK
	V	4816.5	58.8	-11.9	46.9	54(Note)	-7.1	PK
	V	7236.0	46.0	-3.3	42.7	54(Note)	-11.3	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
6	H	2438.5	64.2	31.2	95.4	Fundamental	/	PK
	H	557.2	0.5	21.2	21.7	46	-24.3	PK
	H	755.6	-0.3	22.3	22.0	46	-24	PK
	V	3250.5	50.7	-16.0	34.7	54(Note)	-19.3	PK
	V	4876.0	58.4	-11.7	46.7	54(Note)	-7.3	PK
	V	7311.0	46.7	-3.0	43.7	54(Note)	-10.3	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
11	H	2463.6	64.5	31.2	95.7	Fundamental	/	PK
	V	457.3	-0.5	18.9	18.4	46	-27.6	PK
	V	563.0	0.2	21.2	21.4	46	-24.6	PK
	H	3168.5	49.3	-15.8	33.5	54(Note)	-20.5	PK
	V	4927.0	57.8	-11.5	46.3	54(Note)	-7.7	PK
	V	7386.0	46.6	-2.8	43.8	54(Note)	-10.2	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK

Note : 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	2413.2	62.4	31.2	93.6	Fundamental	/	PK
	V	387.4	-0.7	17.2	16.5	46	-29.5	PK
	V	456.3	-0.1	18.9	18.8	46	-27.2	PK
	V	3220.0	49.3	-16.0	33.3	54(Note)	-20.7	PK
	V	4825.0	58.4	-11.9	46.5	54(Note)	-7.5	PK
	V	7236.0	45.9	-3.3	42.6	54(Note)	-11.4	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
6	H	2438.5	63.7	31.2	94.9	Fundamental	/	PK
	H	456.3	-0.1	18.9	18.8	46	-27.2	PK
	V	557.2	-1.1	21.2	20.1	46	-25.9	PK
	V	3250.5	49.0	-16.0	33.0	54(Note)	-21.0	PK
	V	4867.5	58.7	-11.7	47.0	54(Note)	-7.0	PK
	V	7311.0	46.6	-3.0	43.6	54(Note)	-10.4	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
11	H	2460.4	64.3	31.2	95.5	Fundamental	/	PK
	H	563.0	0.6	21.2	21.8	46	-24.2	PK
	H	631.9	-1.5	21.2	19.7	46	-26.3	PK
	V	3168.5	49.7	-15.8	33.9	54(Note)	-20.1	PK
	V	4927.0	58.3	-11.5	46.8	54(Note)	-7.2	PK
	H	7386.0	46.4	-2.8	43.6	54(Note)	-10.4	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK

Note : 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	2424.4	58.1	31.2	89.3	Fundamental	/	PK
	V	539.3	4.4	20.9	25.3	46	-20.7	PK
	V	652.7	2.6	21.3	23.9	46	-22.1	PK
	V	3220.0	49.5	-16.0	33.5	54(Note)	-20.5	PK
	V	4842.0	53.2	-11.8	41.4	54(Note)	-12.6	PK
	V	7266.0	45.5	-3.2	42.3	54(Note)	-11.7	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
6	H	2438.5	59.4	31.2	90.6	Fundamental	/	PK
	V	539.3	3.1	20.9	24.0	46	-22.0	PK
	V	652.7	2.4	21.3	23.7	46	-22.3	PK
	V	3250.5	49.4	-16.0	33.4	54(Note)	-20.6	PK
	V	4876.0	55.8	-11.7	44.1	54(Note)	-9.9	PK
	V	7311.0	45.0	-3.0	42.0	54(Note)	-12	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
9	H	2461.5	62.3	31.2	93.5	Fundamental	/	PK
	V	539.3	4.1	20.9	25.0	46	-21.0	PK
	V	795.3	0.4	22.9	23.3	46	-22.7	PK
	H	3168.5	49.4	-15.8	33.6	54(Note)	-20.4	PK
	V	4904.0	53.4	-11.6	41.8	54(Note)	-12.2	PK
	V	7356.0	44.7	-2.8	41.9	54(Note)	-12.1	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK

Note : 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

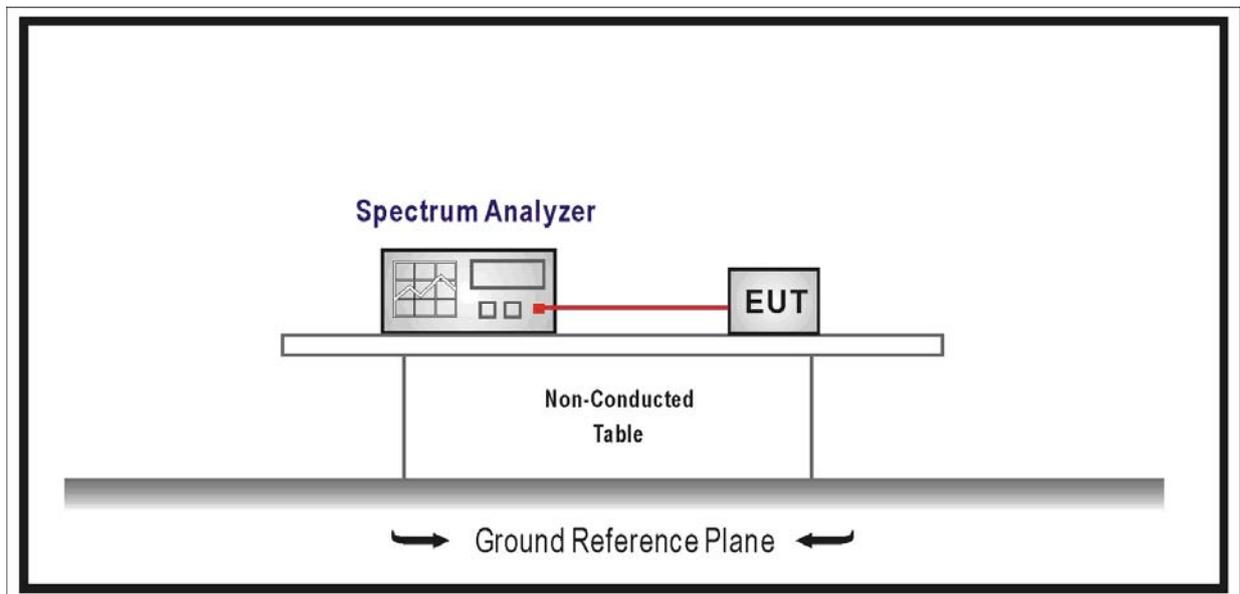
5.1. Test Equipment

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.

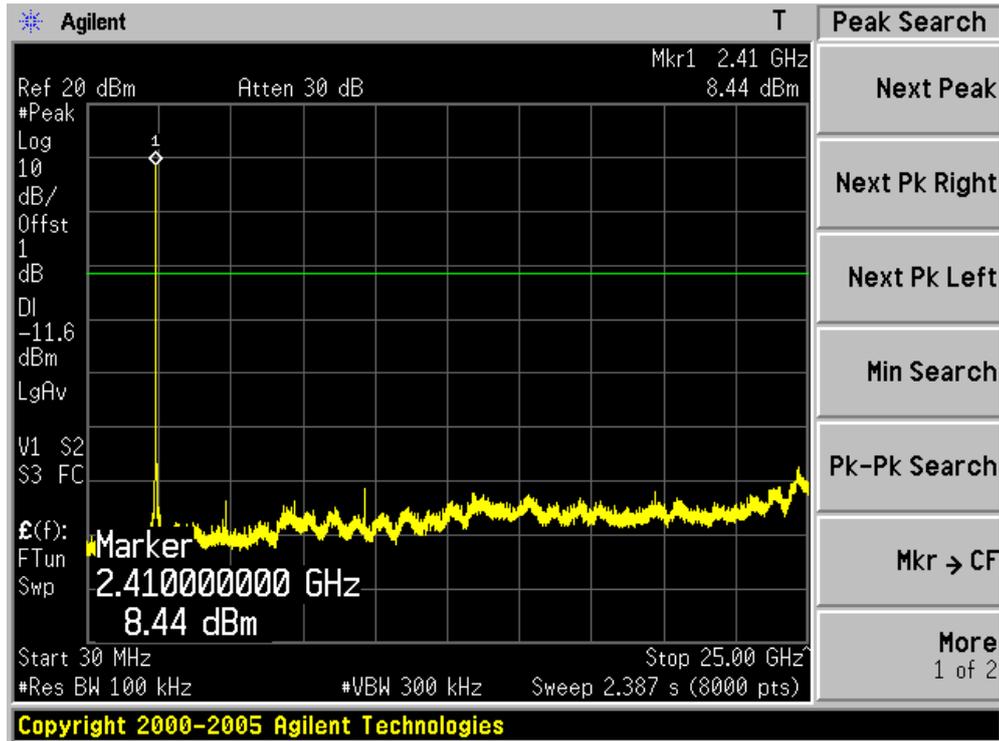
5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

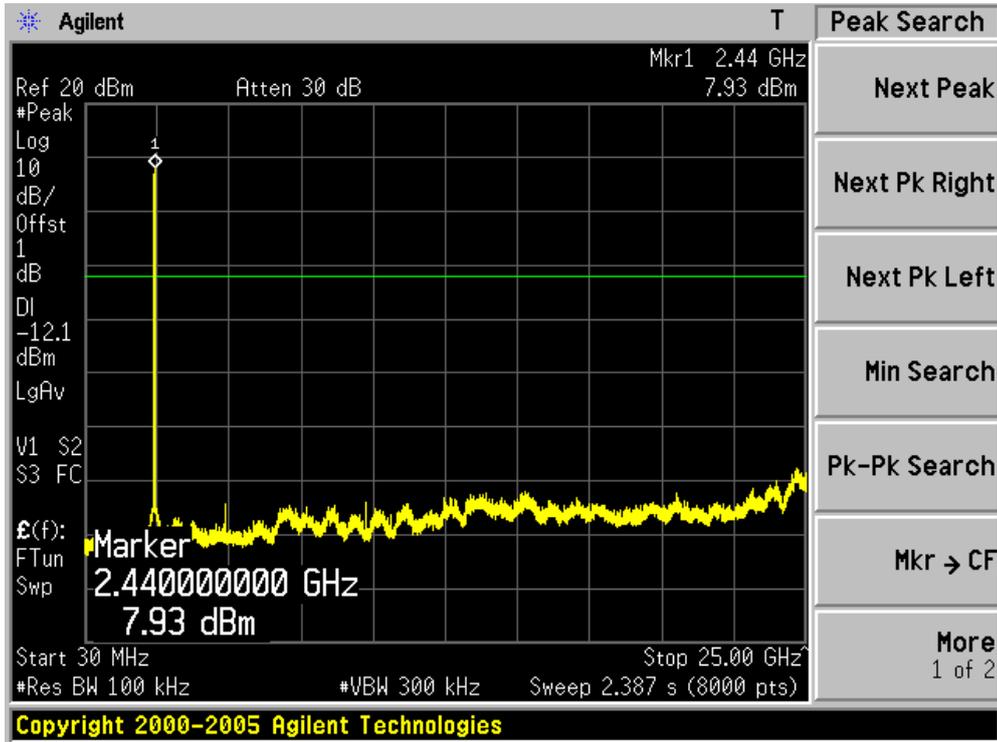
5.6. Test Result

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

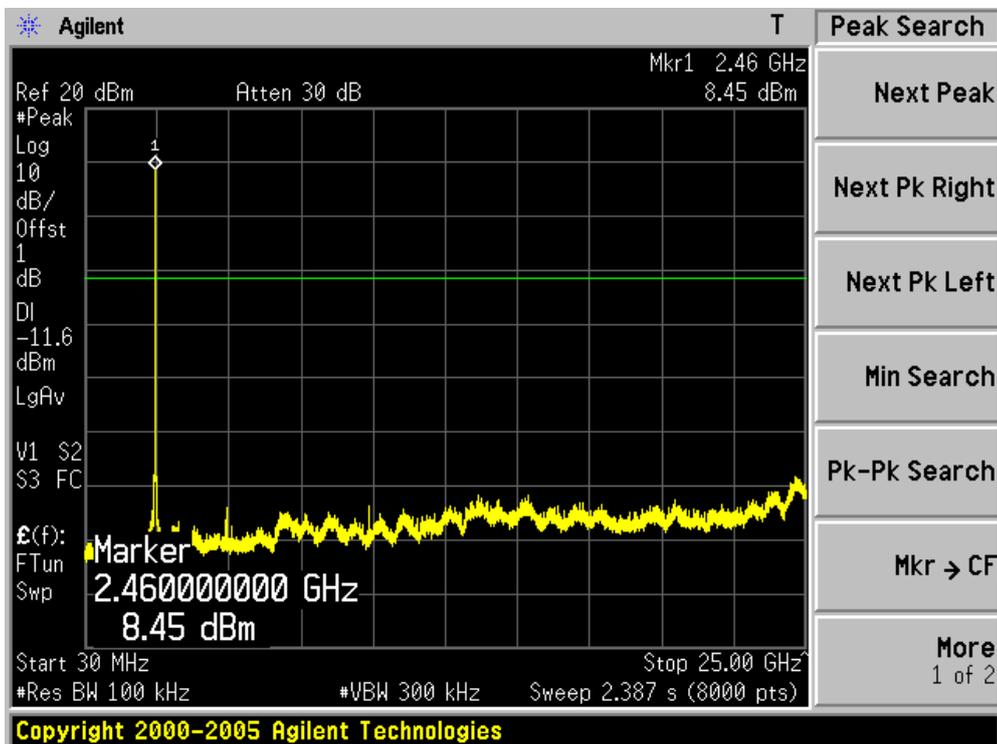
Channel 01 (2412MHz)



Channel 06 (2437MHz)

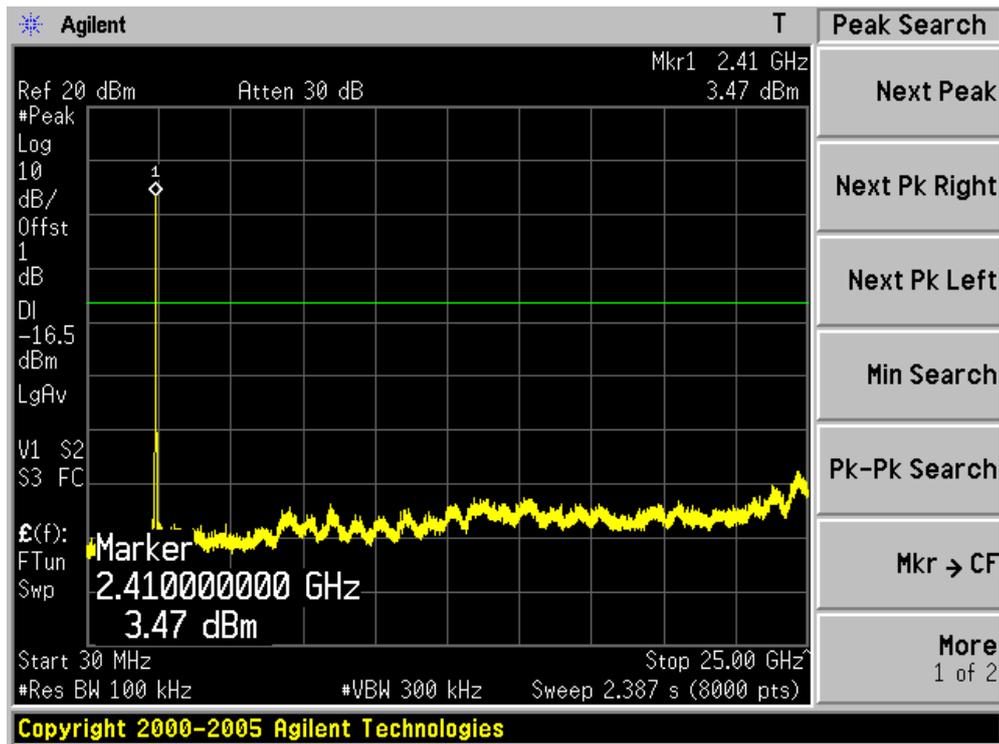


Channel 11 (2462MHz)

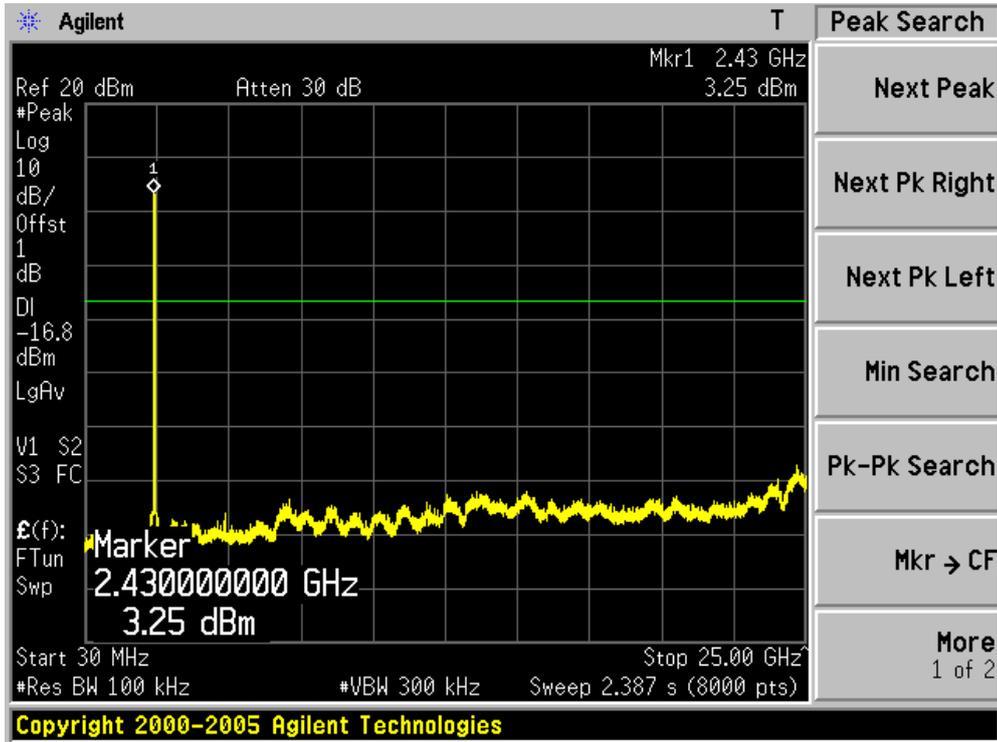


Product	:	Mobile Phone
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

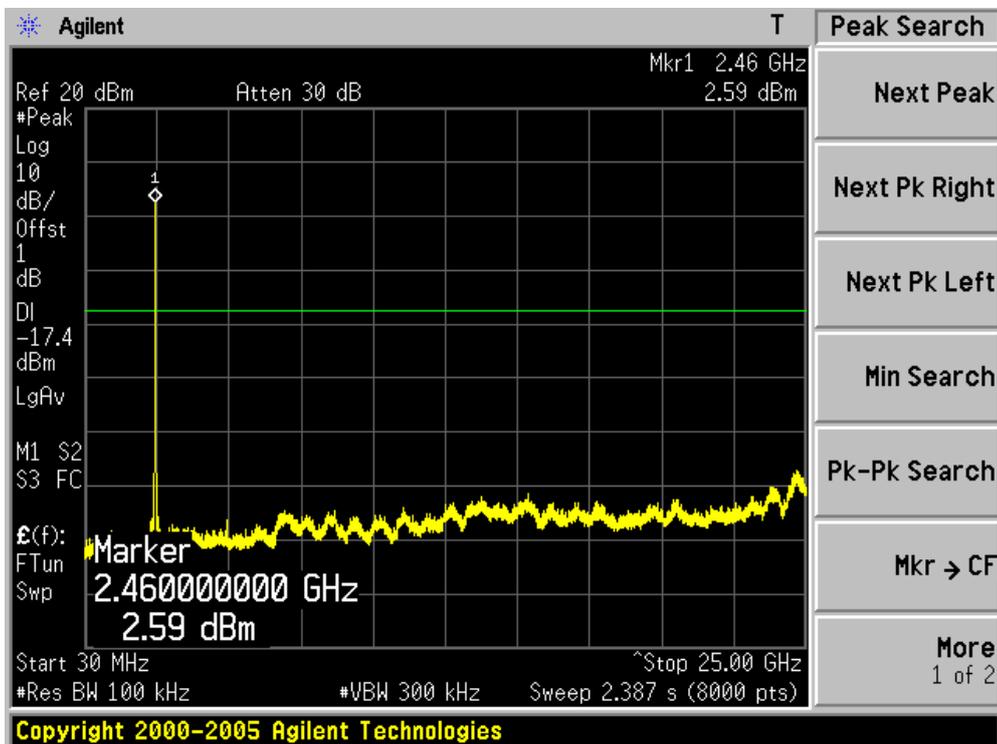
Channel 01 (2412MHz)



Channel 06 (2437MHz)

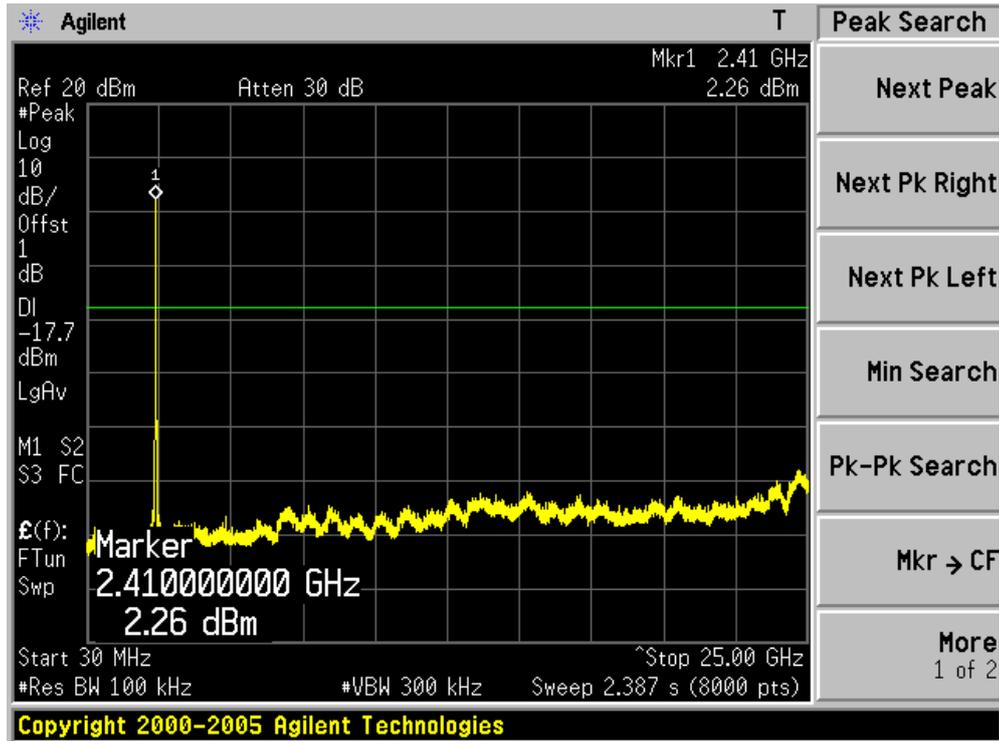


Channel 11 (2462MHz)

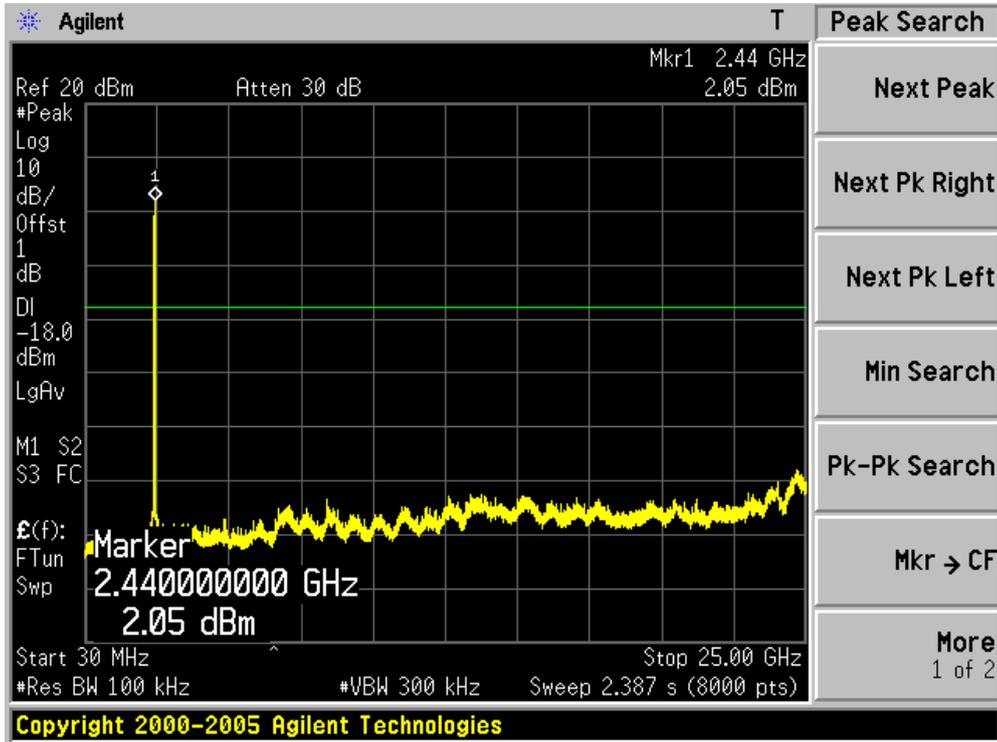


Product	:	Mobile Phone
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

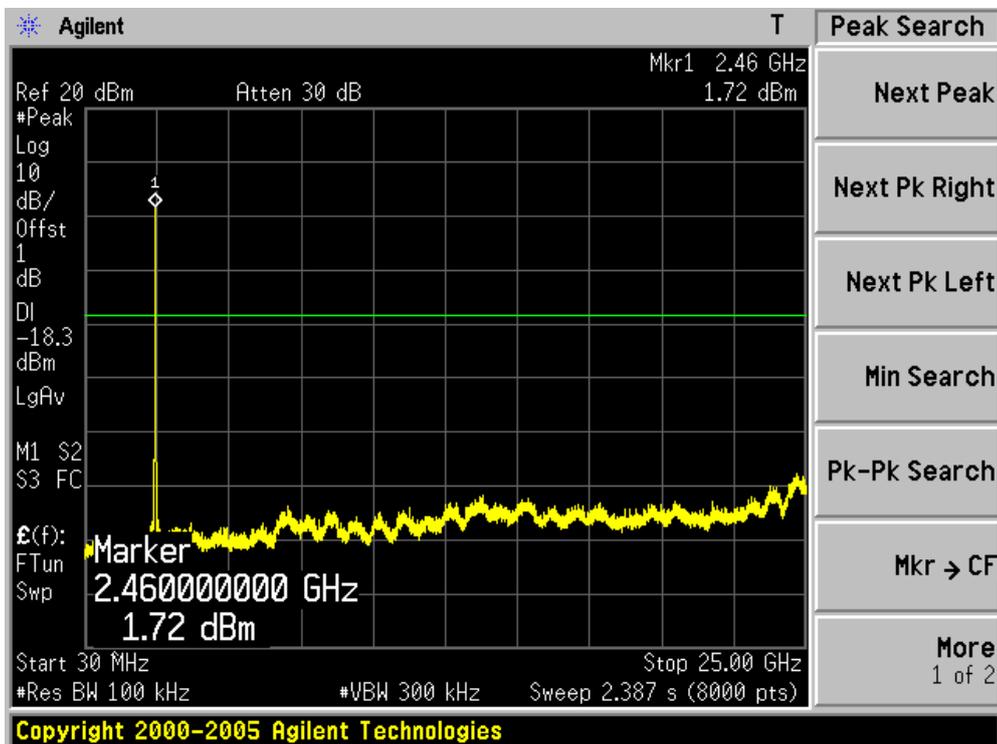
Channel 01 (2412MHz)



Channel 06 (2437MHz)

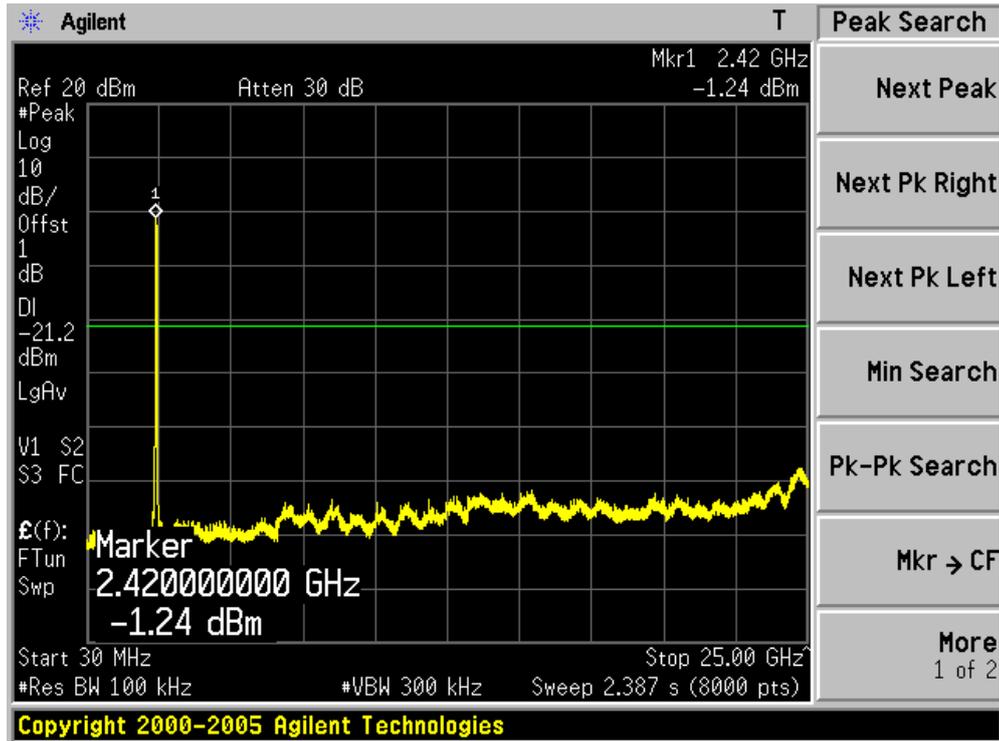


Channel 11 (2462MHz)

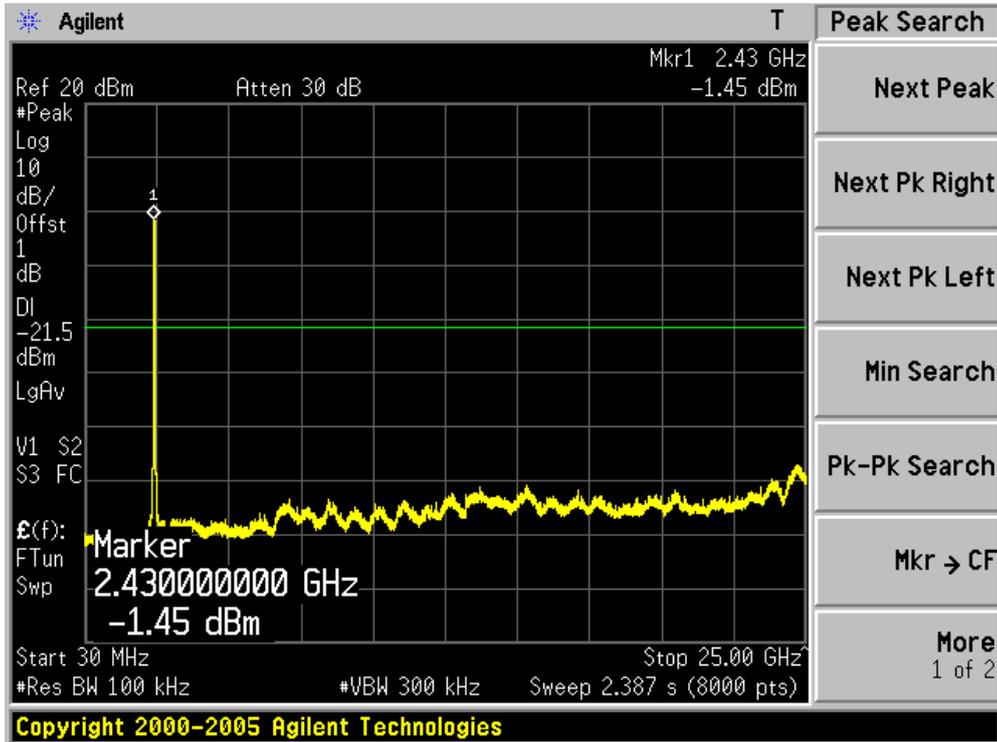


Product	:	Mobile Phone
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

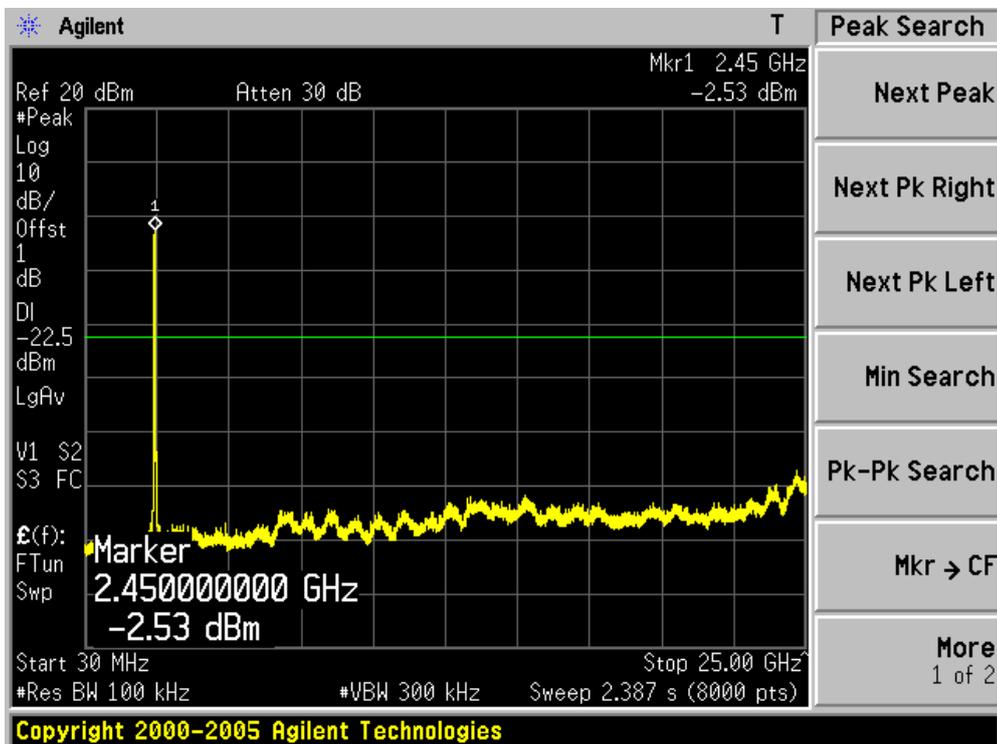
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



6. Radiated Emission Band Edge

6.1. Test Equipment

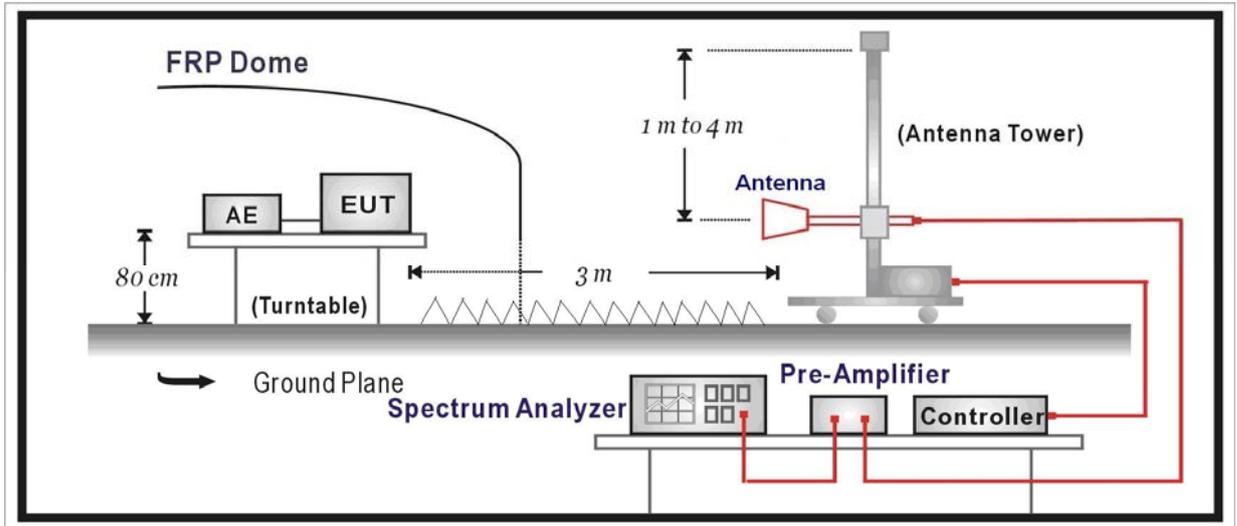
Radiated Emission Band Edge / AC-5

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

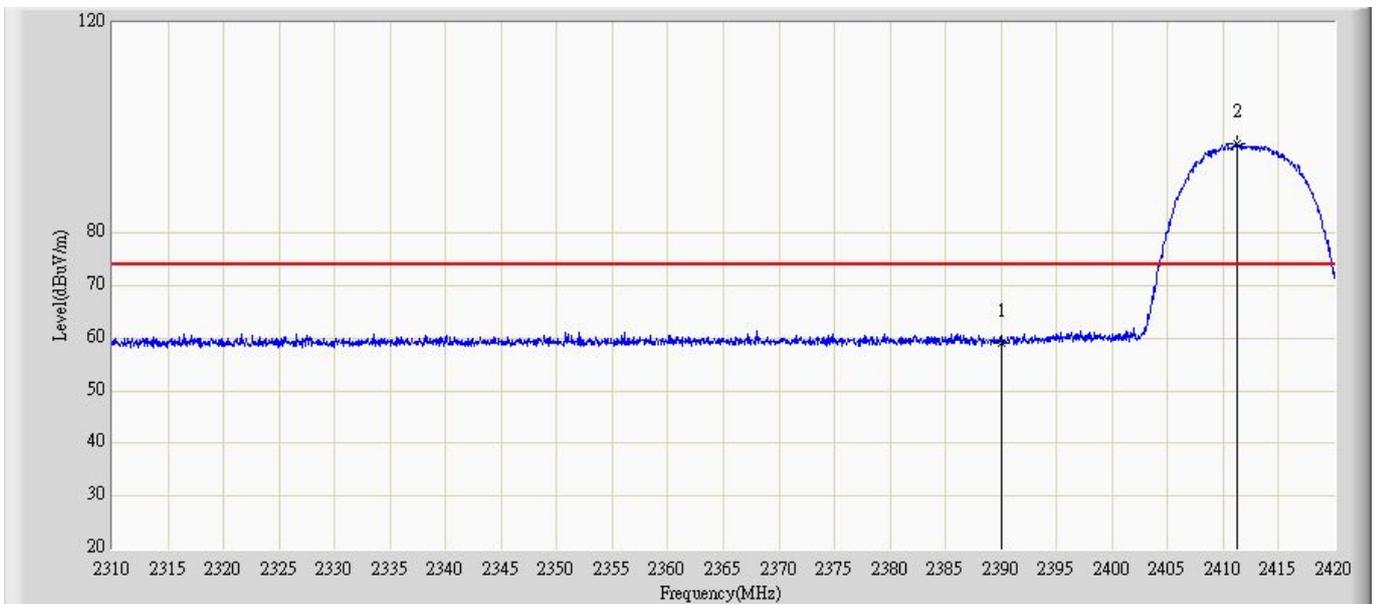
The measurement uncertainty above 1G is defined as ± 3.9 dB

6.6. Test Result

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

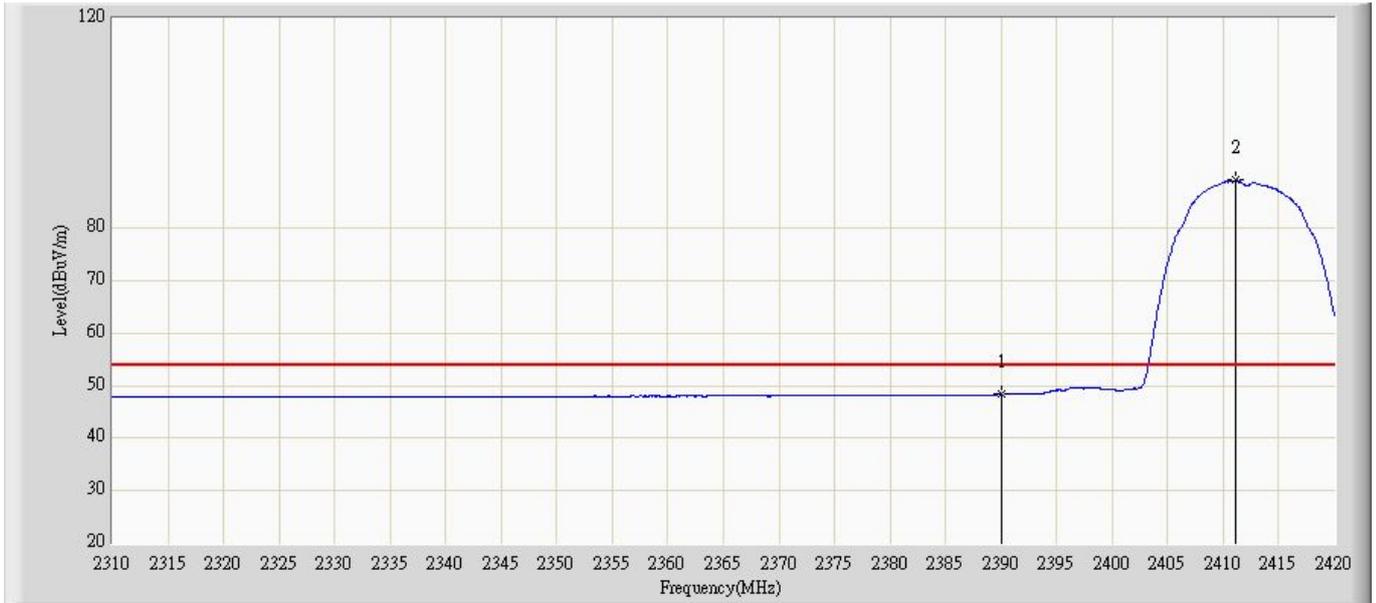
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



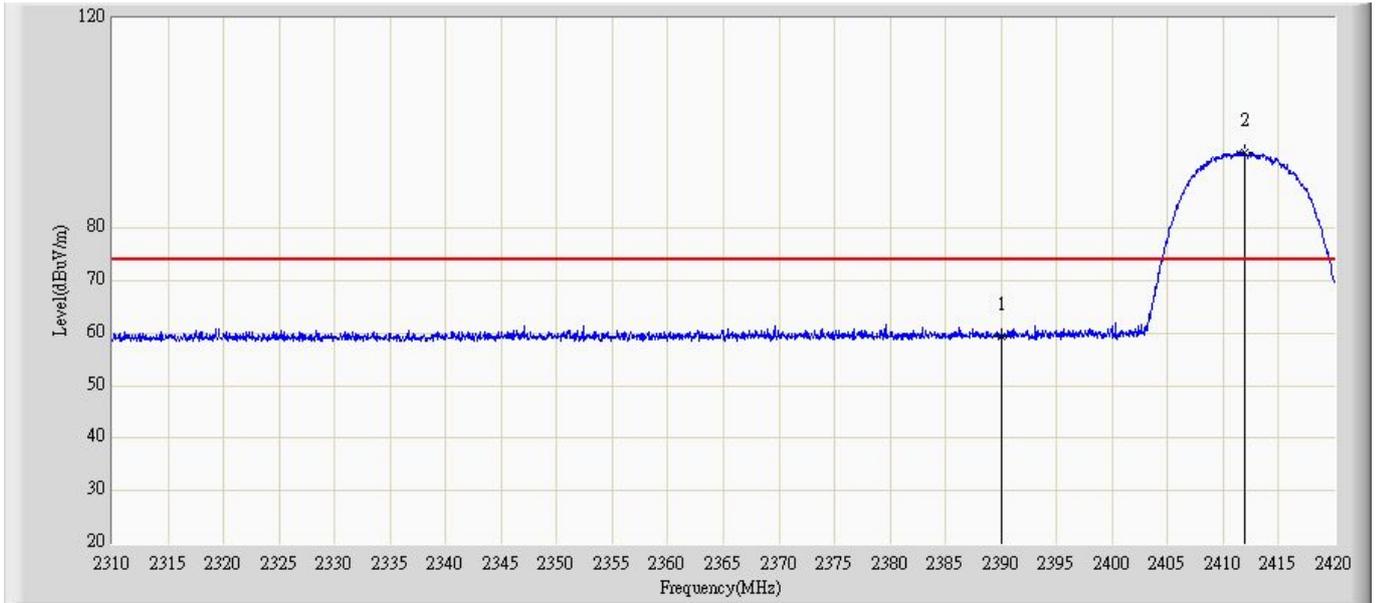
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.174	27.989	-14.826	74.000	31.185	PK
2		*	2411.200	97.098	65.922	N/A	N/A	31.176	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



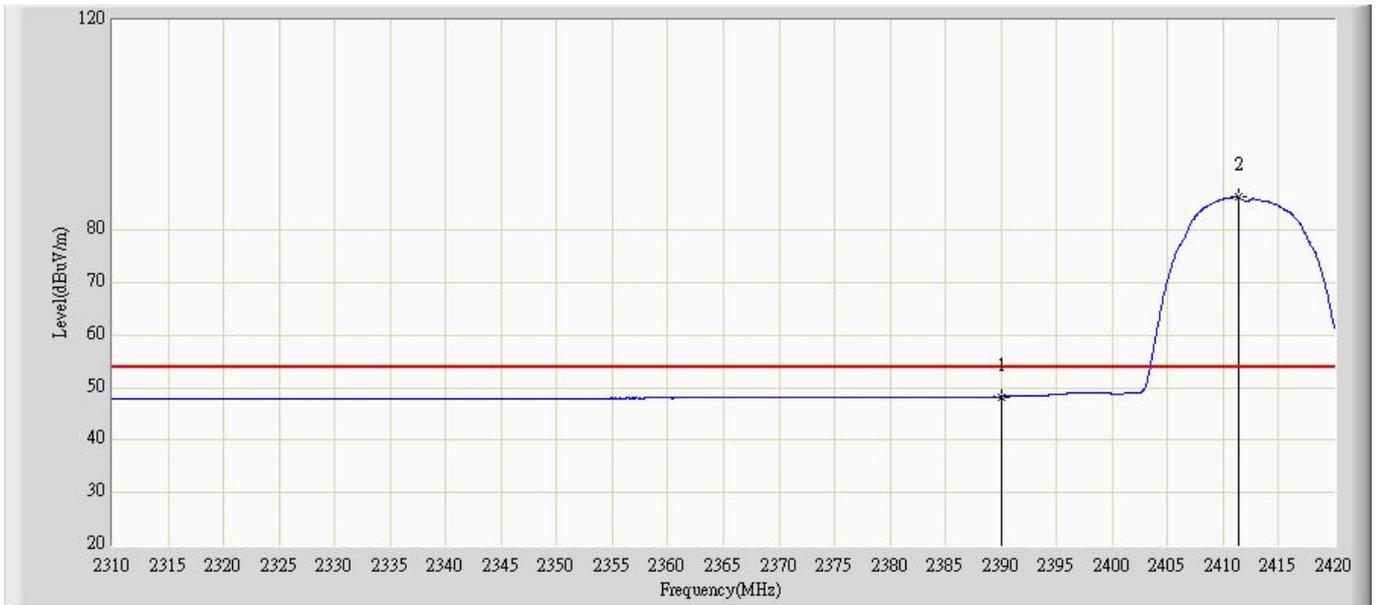
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.335	17.150	-5.665	54.000	31.185	AV
2		*	2411.090	89.122	57.946	N/A	N/A	31.176	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



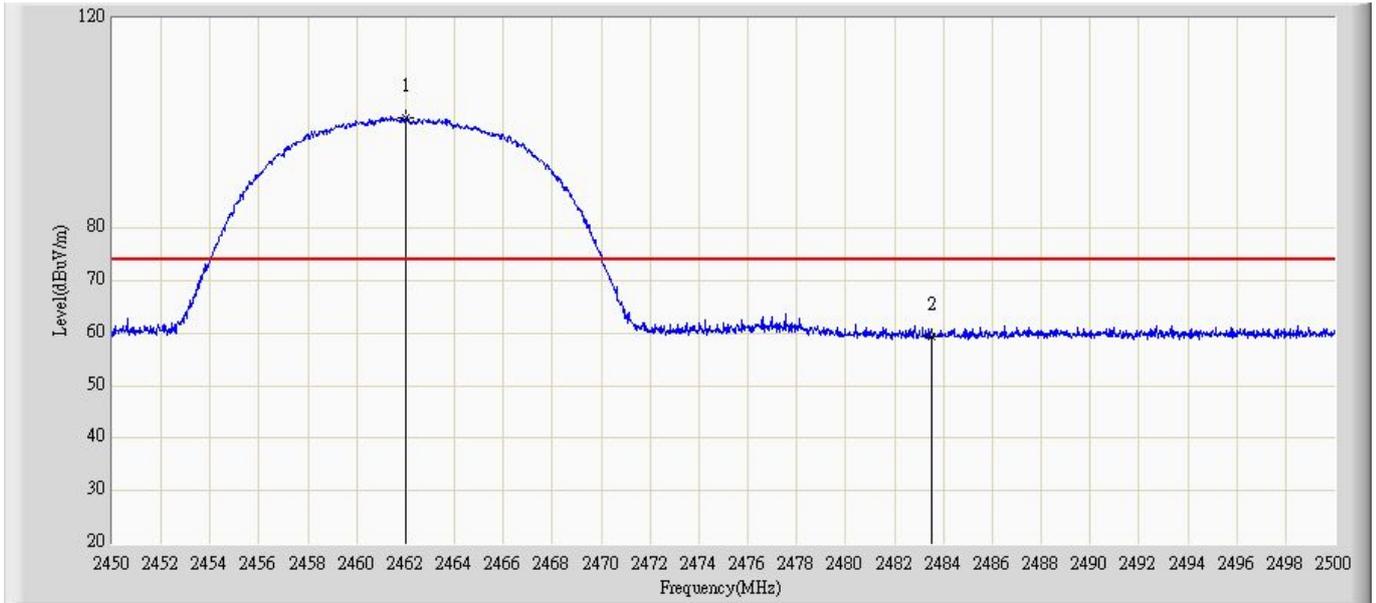
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.486	28.301	-14.514	74.000	31.185	PK
2		*	2411.915	94.444	63.268	N/A	N/A	31.177	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



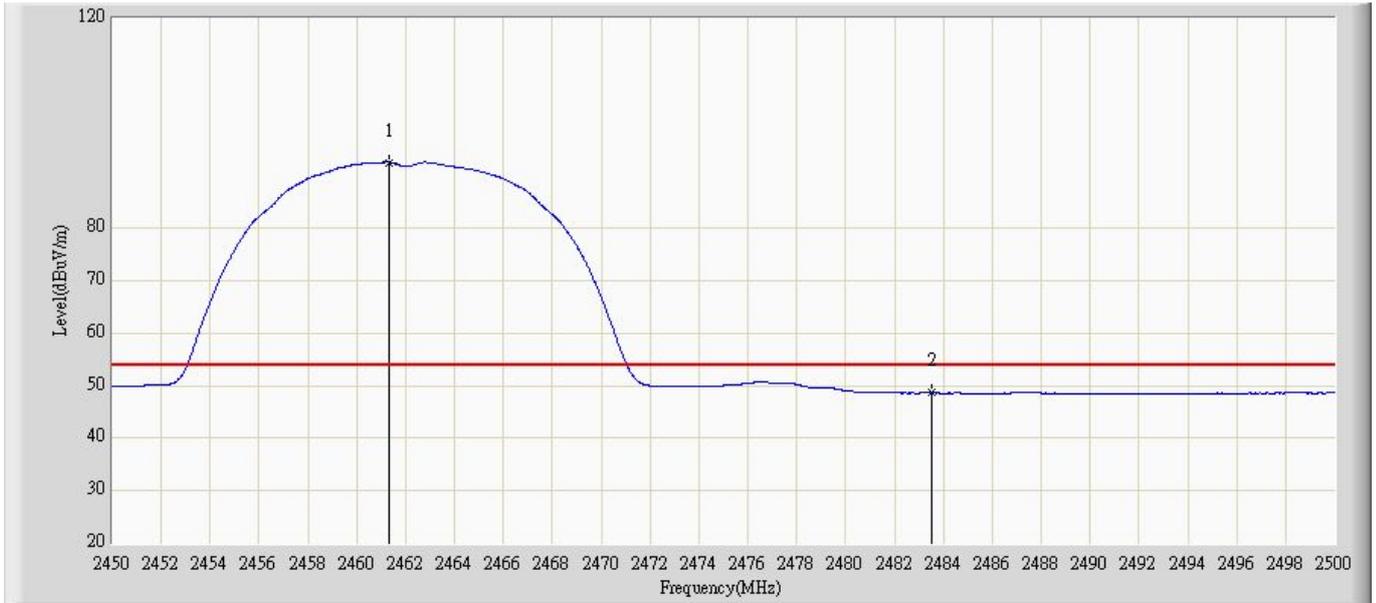
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.297	17.112	-5.703	54.000	31.185	AV
2		*	2411.365	86.323	55.147	N/A	N/A	31.176	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 1: Transmit at channel 2462MHz by 802.11b	



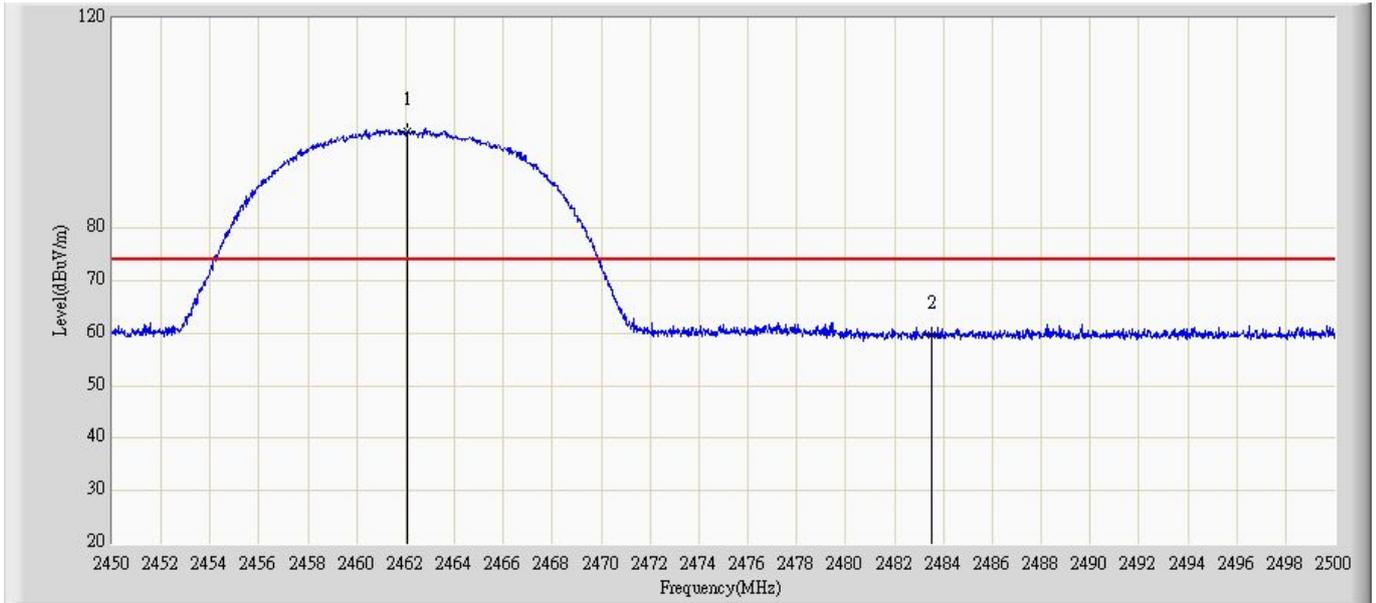
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.000	100.912	69.714	N/A	N/A	31.198	PK
2			2483.500	59.364	28.156	-14.636	74.000	31.208	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 1: Transmit at channel 2462MHz by 802.11b	



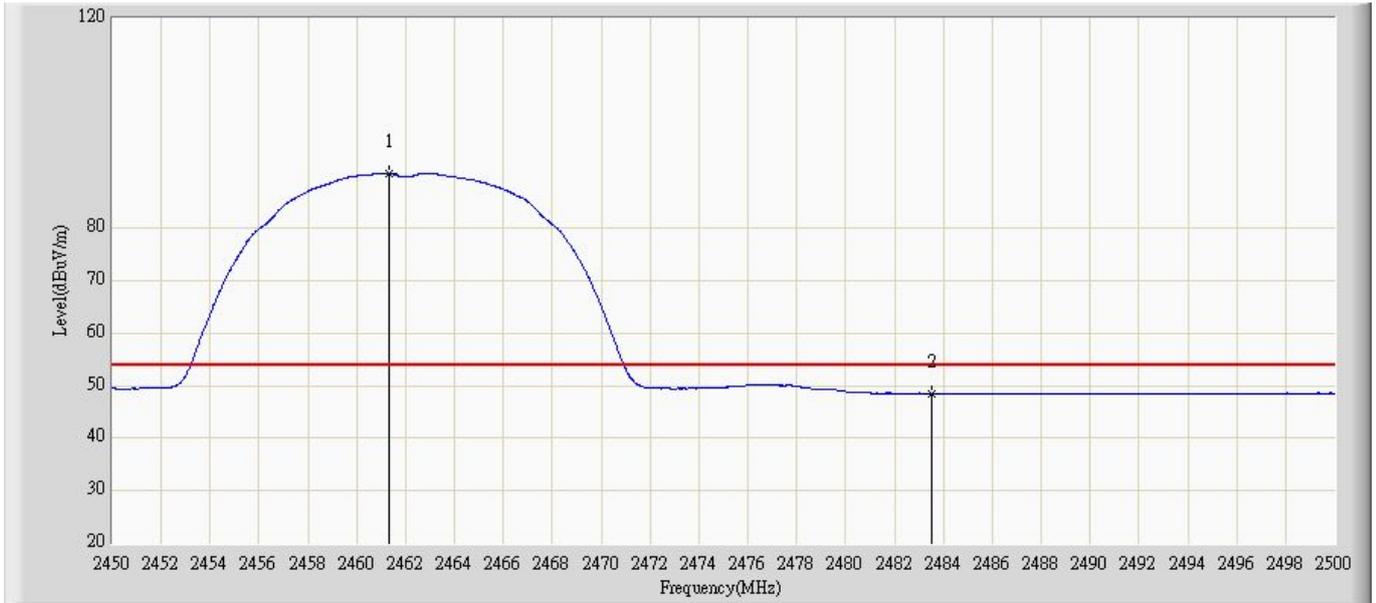
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.325	92.552	61.354	N/A	N/A	31.197	AV
2			2483.500	48.592	17.384	-5.408	54.000	31.208	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 1: Transmit at channel 2462MHz by 802.11b	



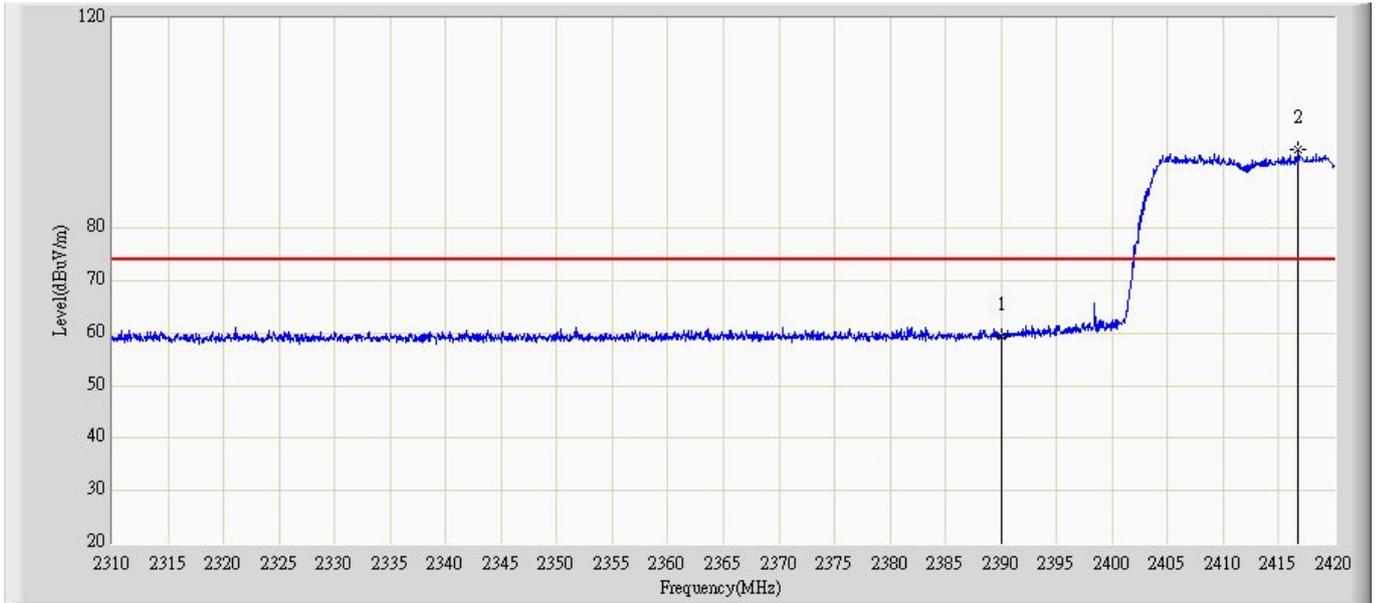
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.075	98.499	67.301	N/A	N/A	31.198	PK
2			2483.500	59.690	28.482	-14.310	74.000	31.208	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 1: Transmit at channel 2462MHz by 802.11b	



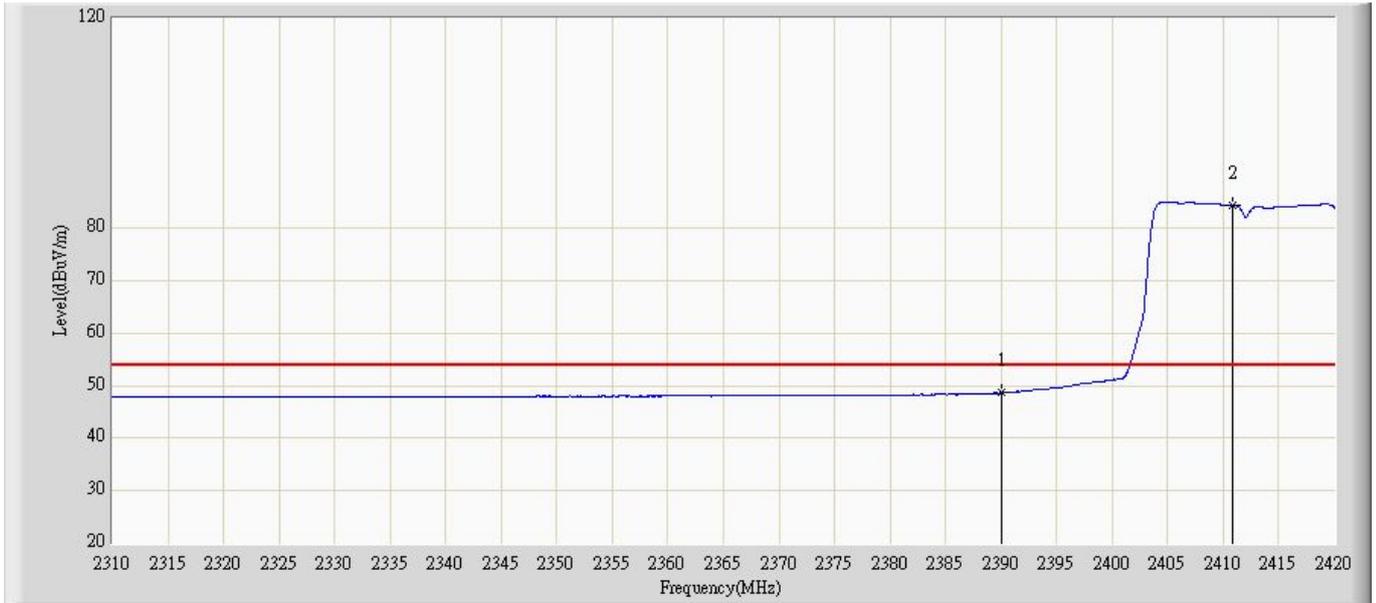
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.325	90.447	59.249	N/A	N/A	31.197	AV
2			2483.500	48.566	17.358	-5.434	54.000	31.208	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 2: Transmit at channel 2412MHz by 802.11g	



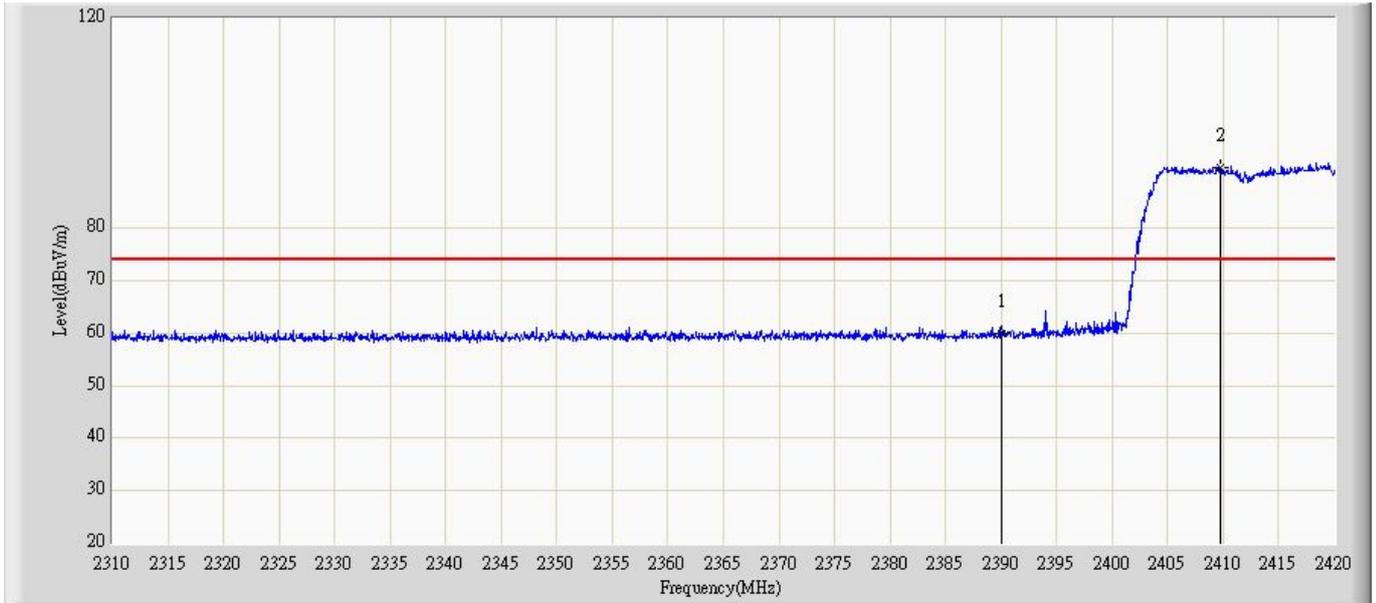
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.386	28.201	-14.614	74.000	31.185	PK
2		*	2416.755	95.110	63.931	N/A	N/A	31.179	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 2: Transmit at channel 2412MHz by 802.11g	



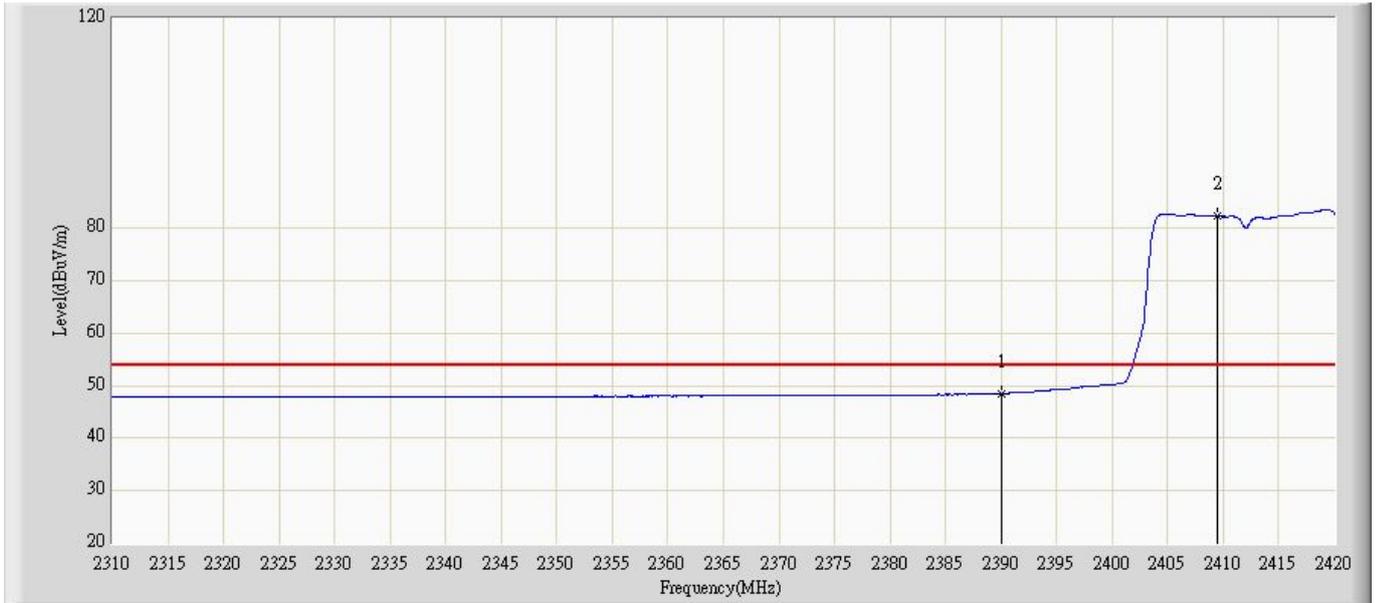
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.604	17.419	-5.396	54.000	31.185	AV
2		*	2410.870	84.467	53.291	N/A	N/A	31.176	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 2: Transmit at channel 2412MHz by 802.11g	



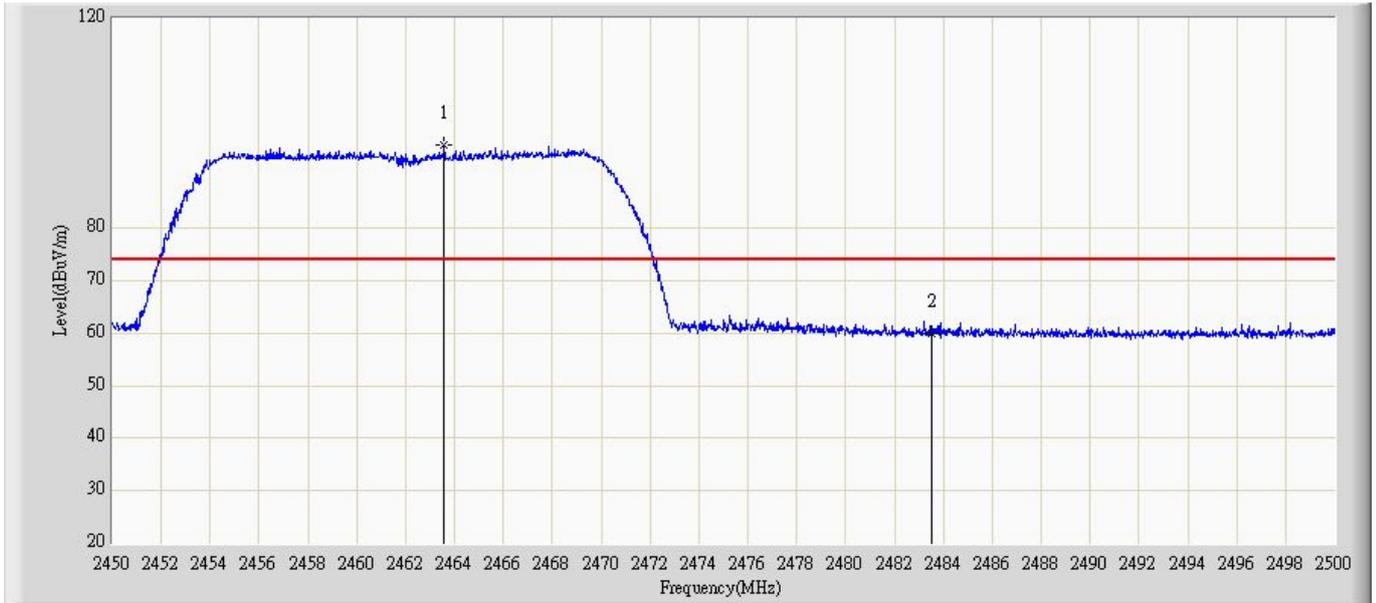
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.943	28.758	-14.057	74.000	31.185	PK
2		*	2409.770	91.653	60.476	N/A	N/A	31.176	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 2: Transmit at channel 2412MHz by 802.11g	



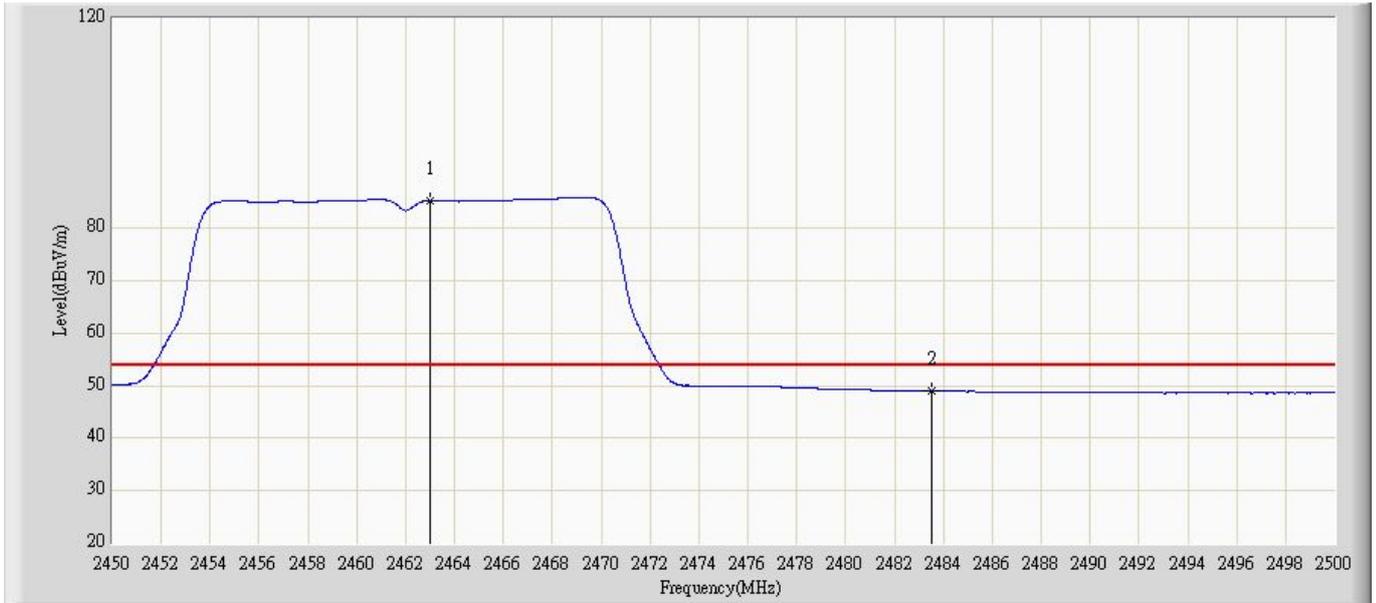
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.489	17.304	-5.511	54.000	31.185	AV
2		*	2409.495	82.368	51.191	N/A	N/A	31.176	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 15:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 2: Transmit at channel 2462MHz by 802.11g	



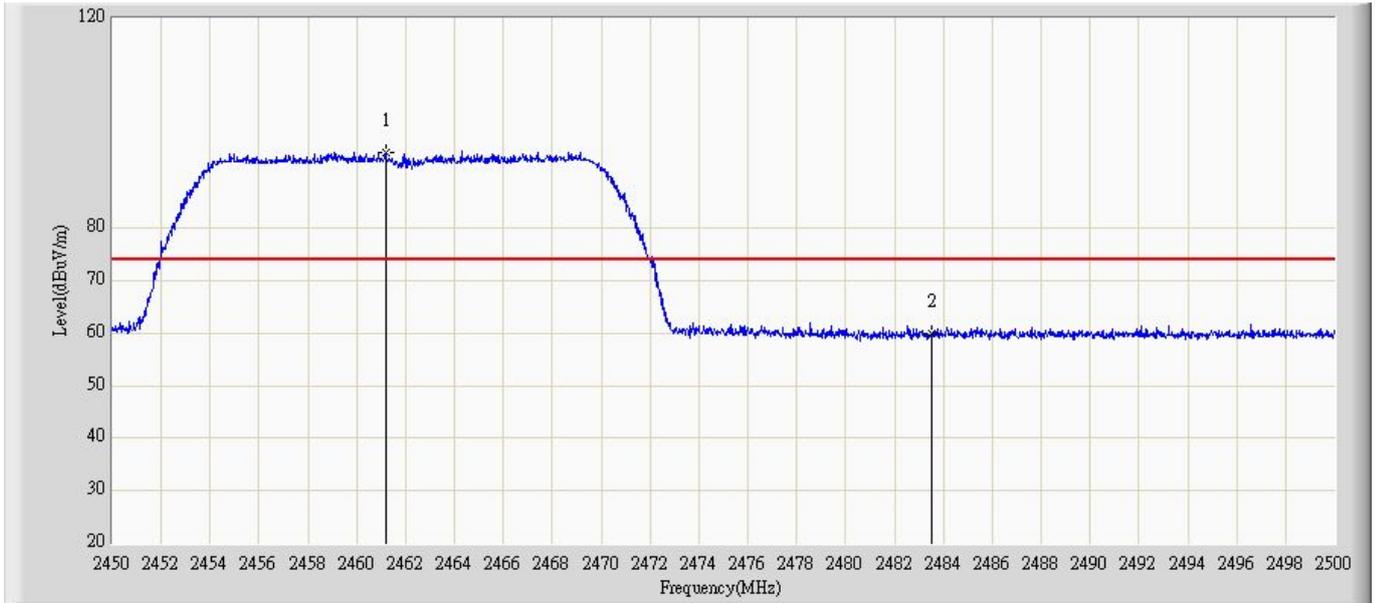
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2463.575	95.724	64.525	N/A	N/A	31.198	PK
2			2483.500	59.932	28.724	-14.068	74.000	31.208	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 2: Transmit at channel 2462MHz by 802.11g	



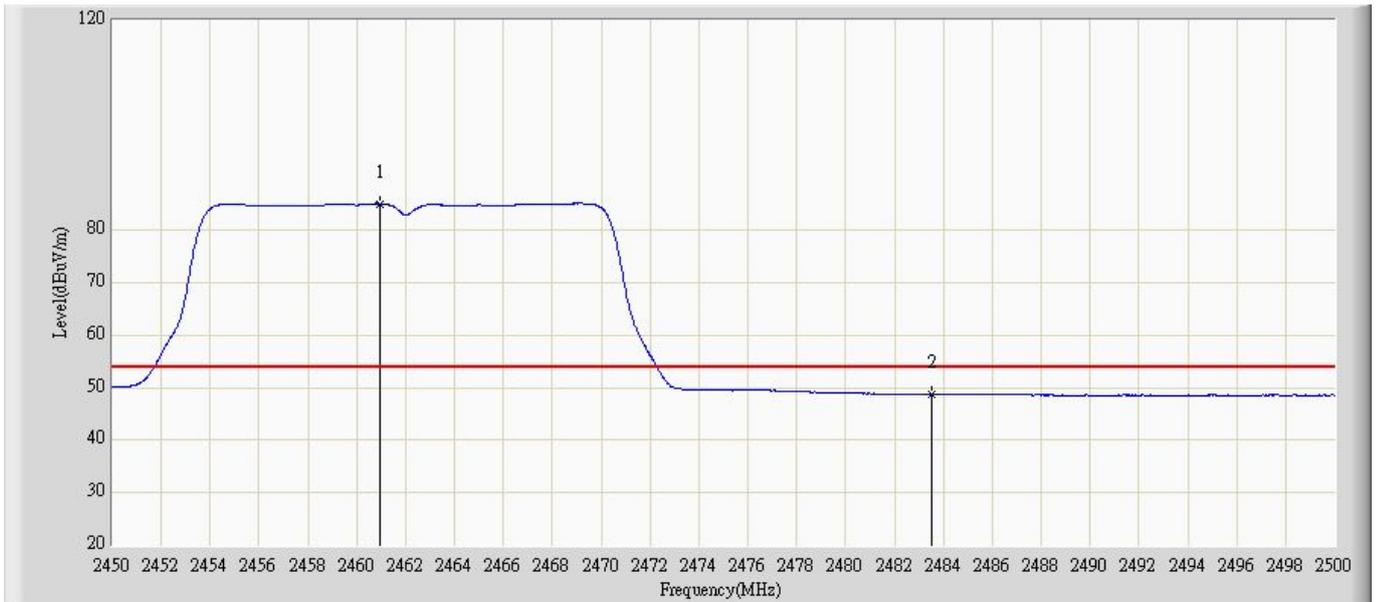
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2463.025	85.373	54.175	N/A	N/A	31.199	AV
2			2483.500	48.988	17.780	-5.012	54.000	31.208	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 2: Transmit at channel 2462MHz by 802.11g	



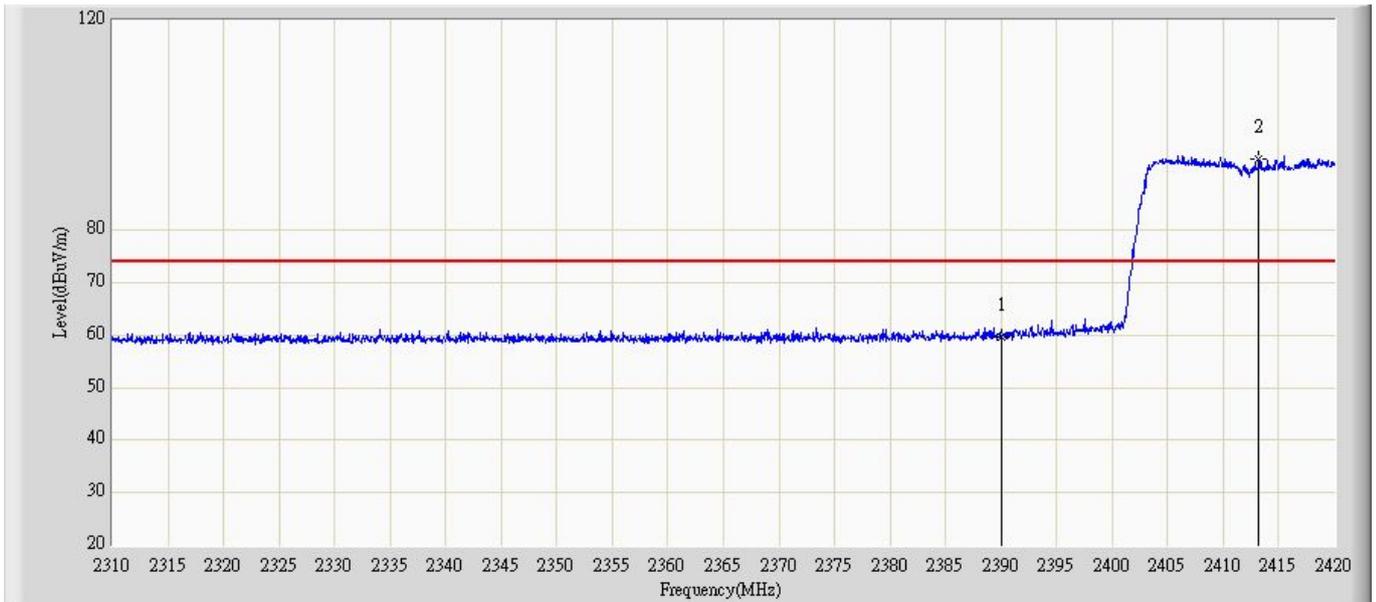
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.175	94.480	63.283	N/A	N/A	31.197	PK
2			2483.500	59.979	28.771	-14.021	74.000	31.208	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 2: Transmit at channel 2462MHz by 802.11g	



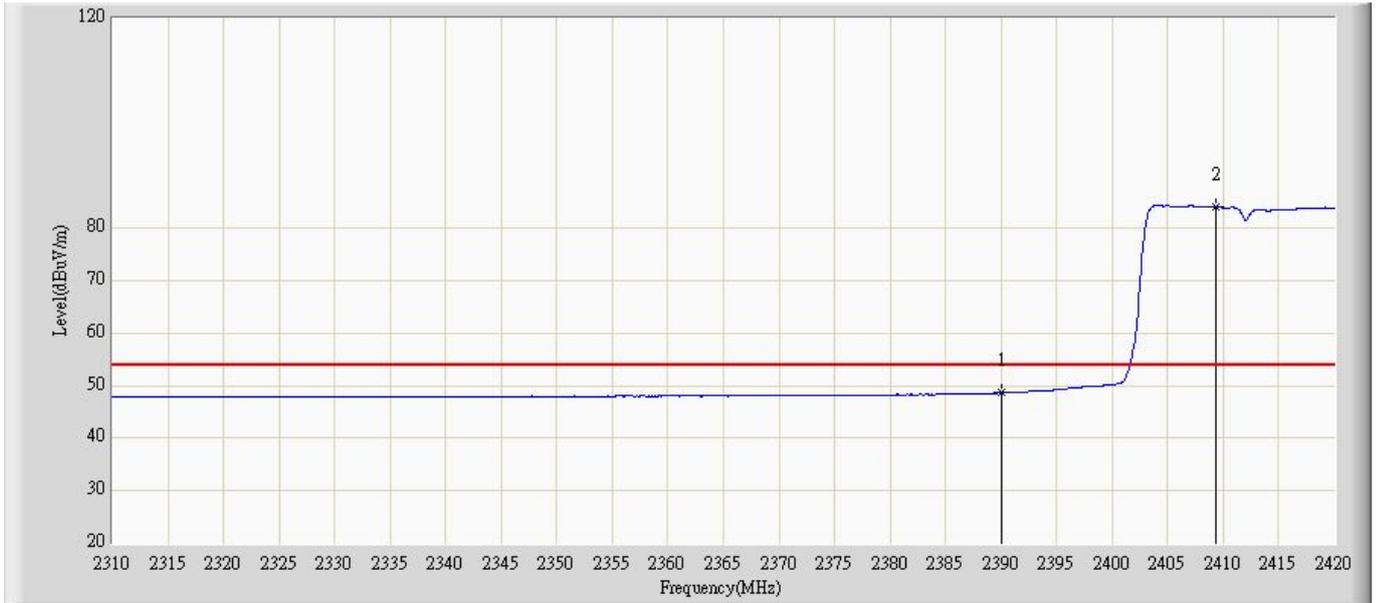
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2460.950	85.063	53.866	N/A	N/A	31.197	AV
2			2483.500	48.813	17.605	-5.187	54.000	31.208	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 3: Transmit at channel 2412MHz by 802.11n(20MHz)	



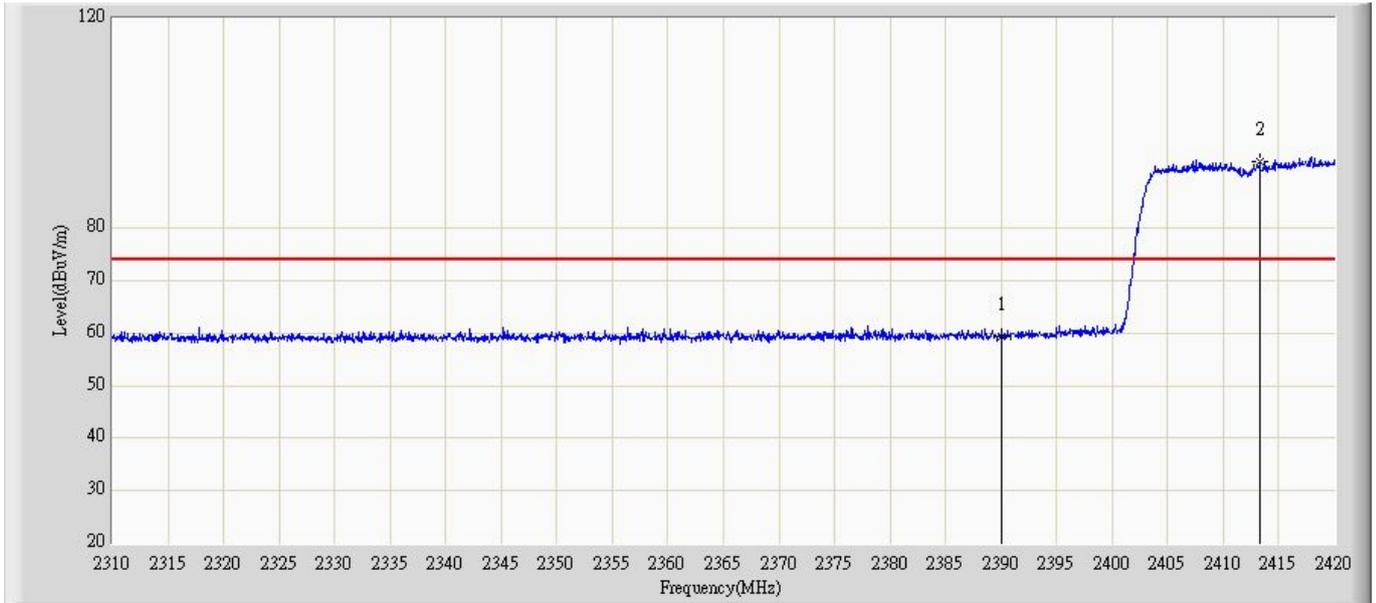
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.555	28.370	-14.445	74.000	31.185	PK
2		*	2413.180	93.548	62.371	N/A	N/A	31.177	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 3: Transmit at channel 2412MHz by 802.11n(20MHz)	



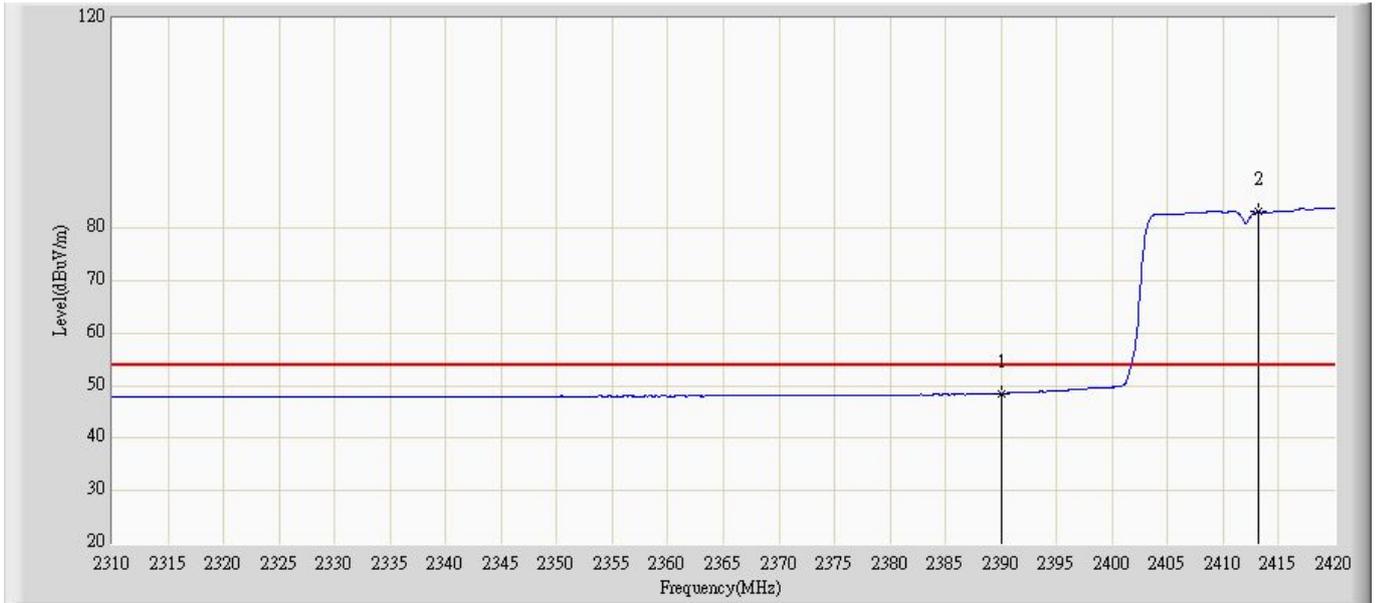
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.645	17.460	-5.355	54.000	31.185	AV
2		*	2409.330	84.139	52.962	N/A	N/A	31.176	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 3: Transmit at channel 2412MHz by 802.11n(20MHz)	



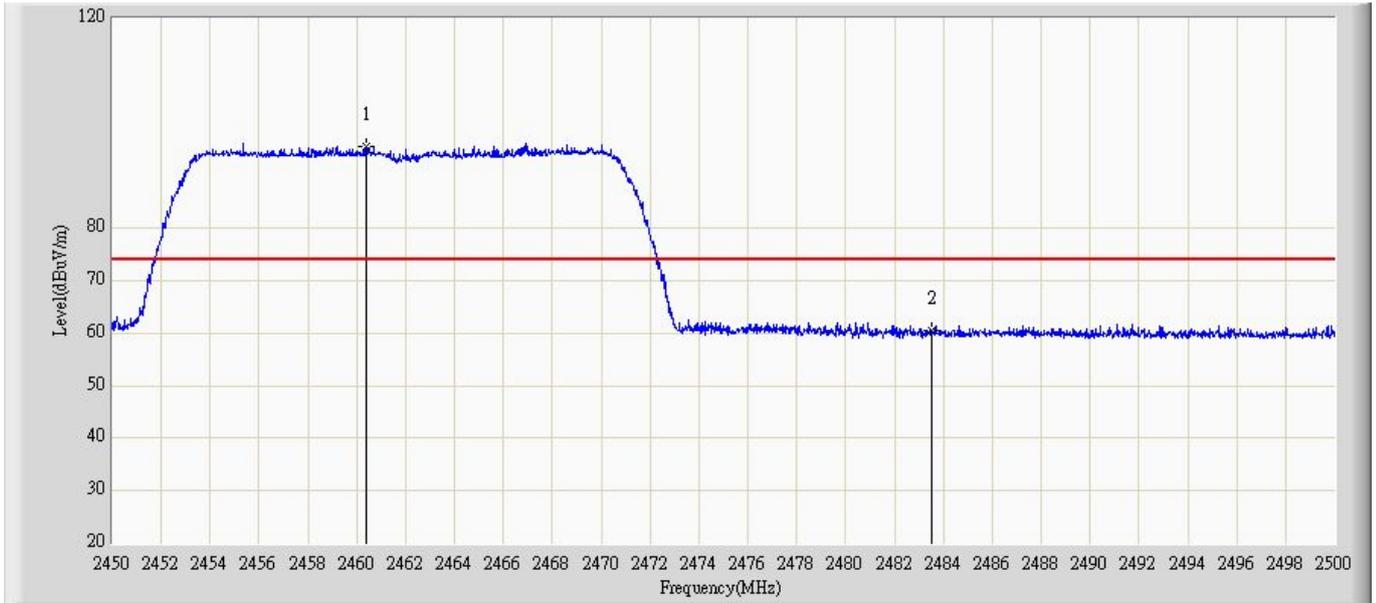
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.403	28.218	-14.597	74.000	31.185	PK
2		*	2413.290	92.695	61.518	N/A	N/A	31.177	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 3: Transmit at channel 2412MHz by 802.11n(20MHz)	



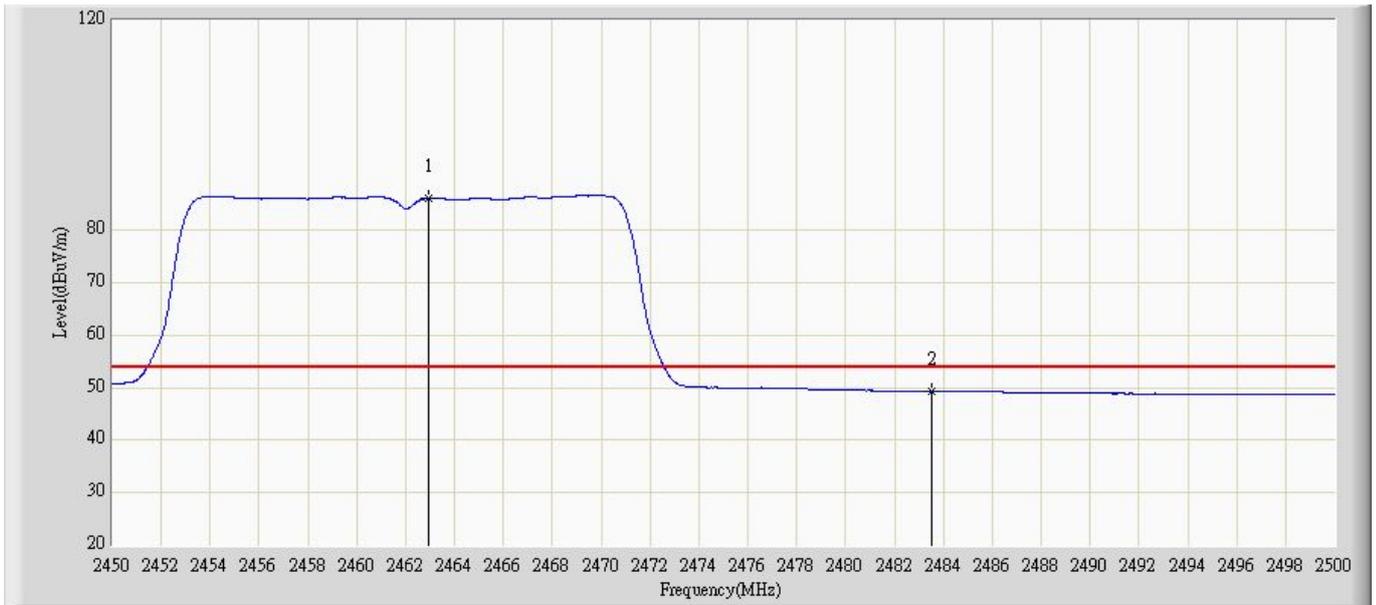
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.534	17.349	-5.466	54.000	31.185	AV
2		*	2413.125	83.095	51.918	N/A	N/A	31.177	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 3: Transmit at channel 2462MHz by 802.11n(20MHz)	



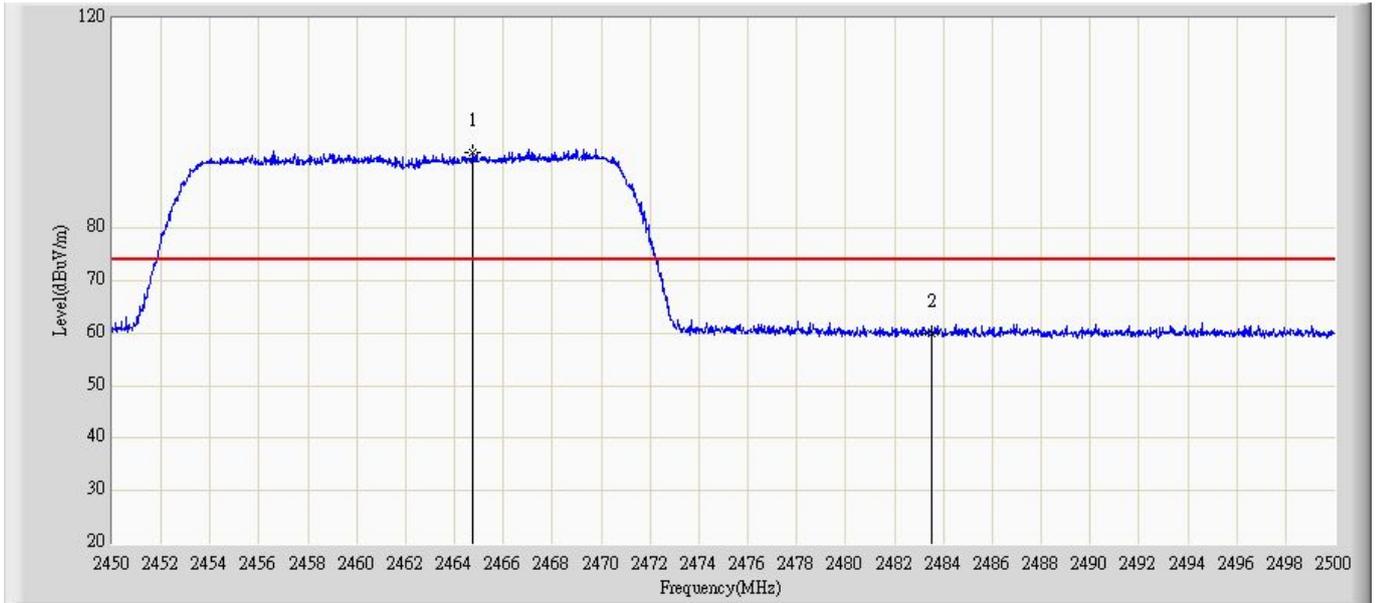
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2460.400	95.542	64.345	N/A	N/A	31.197	PK
2			2483.500	60.390	29.182	-13.610	74.000	31.208	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 3: Transmit at channel 2462MHz by 802.11n(20MHz)	



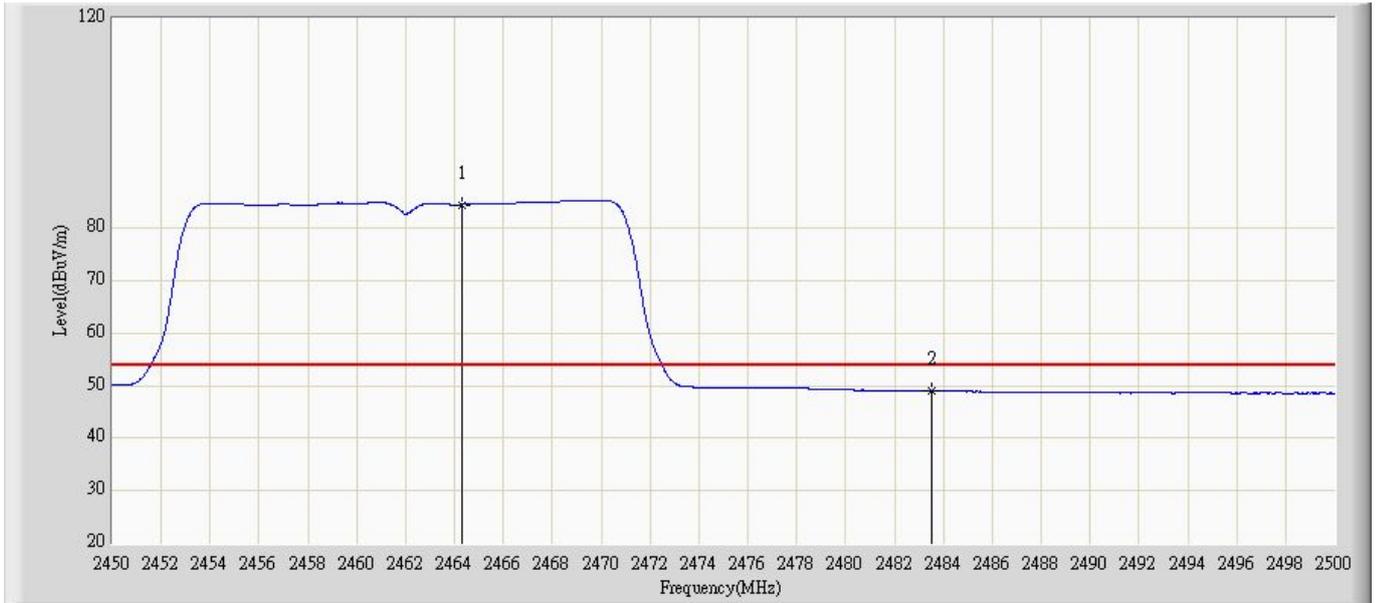
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.950	86.041	54.843	N/A	N/A	31.199	AV
2			2483.500	49.328	18.120	-4.672	54.000	31.208	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 3: Transmit at channel 2462MHz by 802.11n(20MHz)	



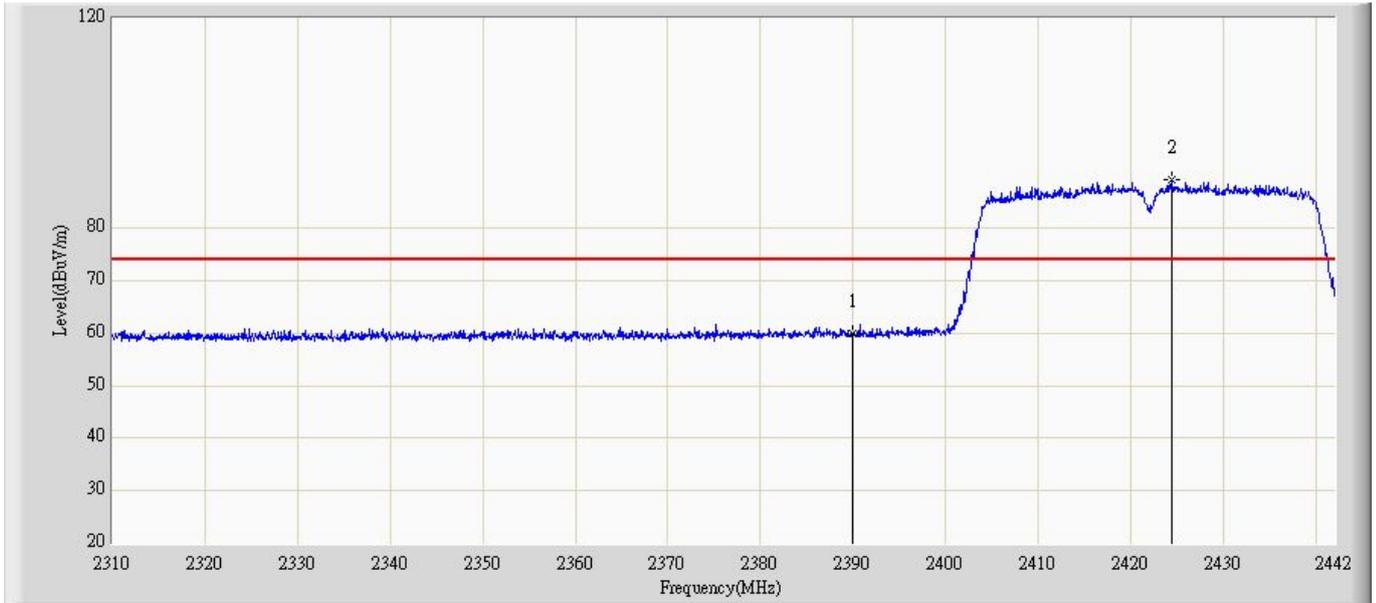
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2464.725	94.482	63.283	N/A	N/A	31.199	PK
2			2483.500	60.064	28.856	-13.936	74.000	31.208	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 3: Transmit at channel 2462MHz by 802.11n(20MHz)	



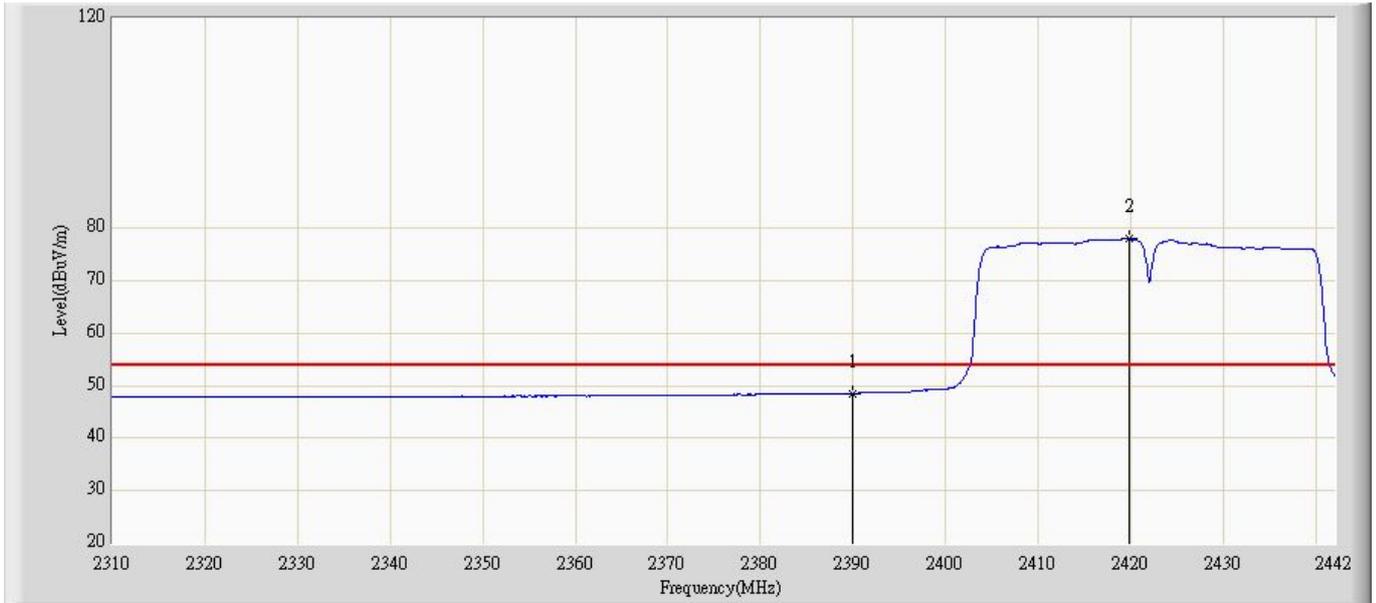
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2464.275	84.510	53.311	N/A	N/A	31.199	AV
2			2483.500	49.002	17.794	-4.998	54.000	31.208	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 4: Transmit at channel 2422MHz by 802.11n(40MHz)	



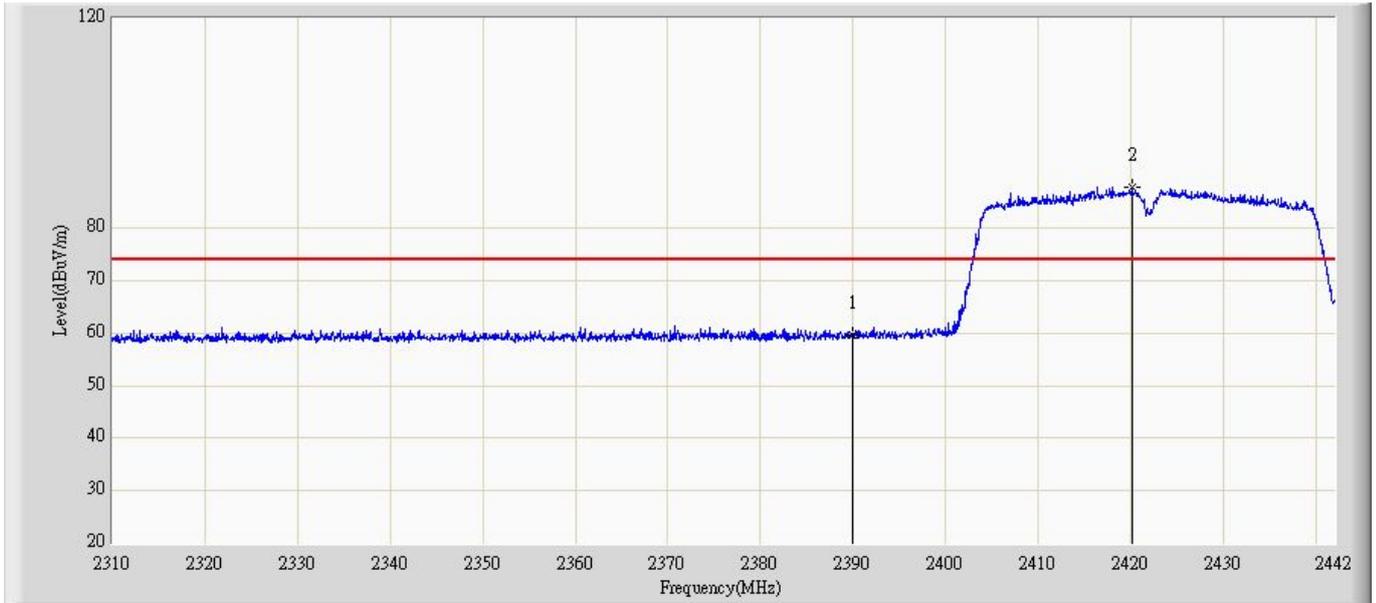
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.821	28.636	-14.179	74.000	31.185	PK
2		*	2424.378	89.295	58.112	N/A	N/A	31.183	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 4: Transmit at channel 2422MHz by 802.11n(40MHz)	



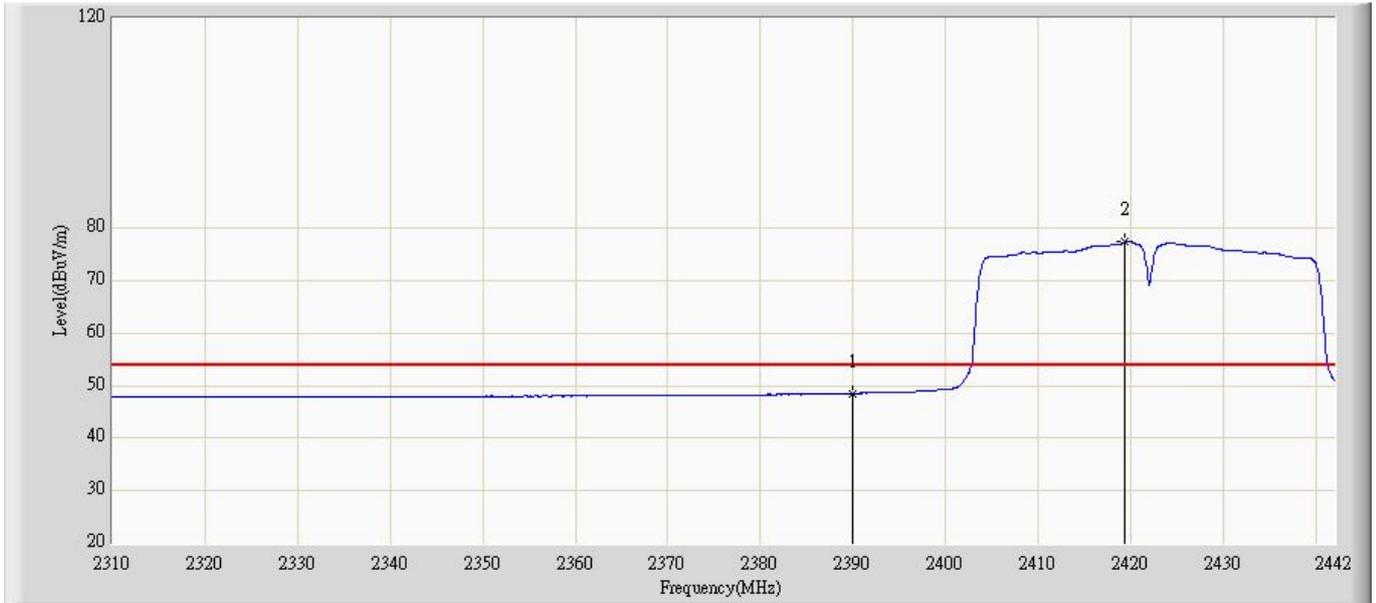
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.527	17.342	-5.473	54.000	31.185	AV
2		*	2419.758	78.108	46.927	N/A	N/A	31.180	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 4: Transmit at channel 2422MHz by 802.11n(40MHz)	



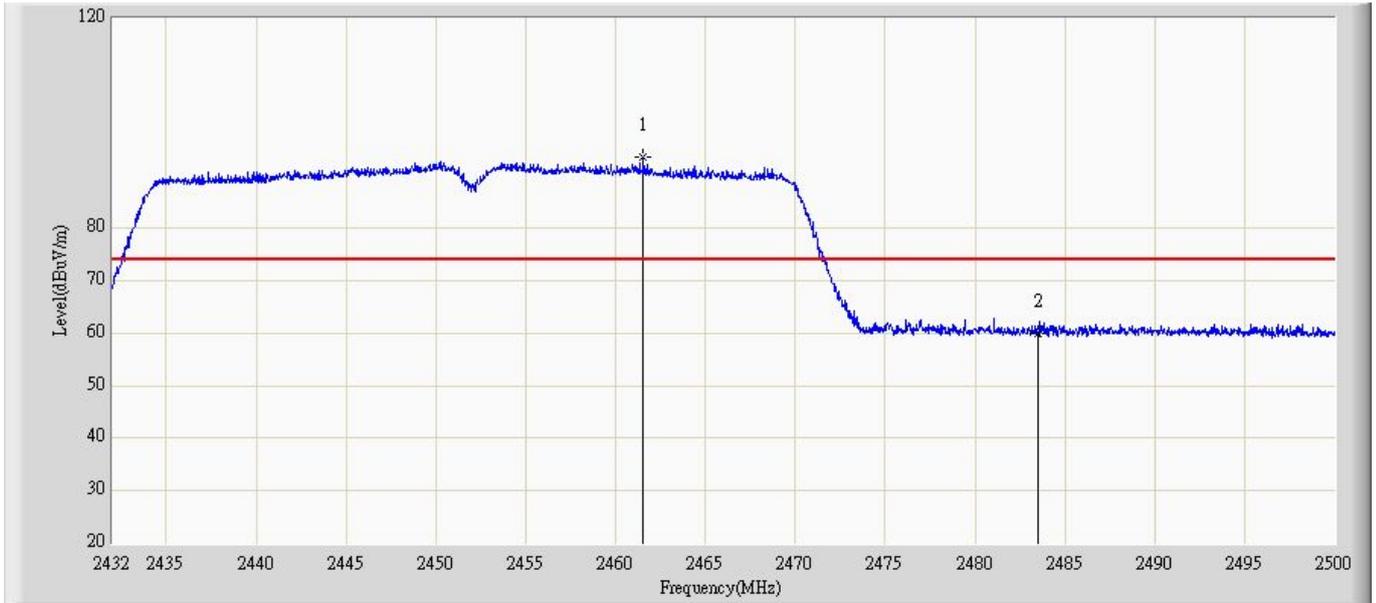
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.743	28.558	-14.257	74.000	31.185	PK
2		*	2420.088	87.913	56.732	N/A	N/A	31.181	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 4: Transmit at channel 2422MHz by 802.11n(40MHz)	



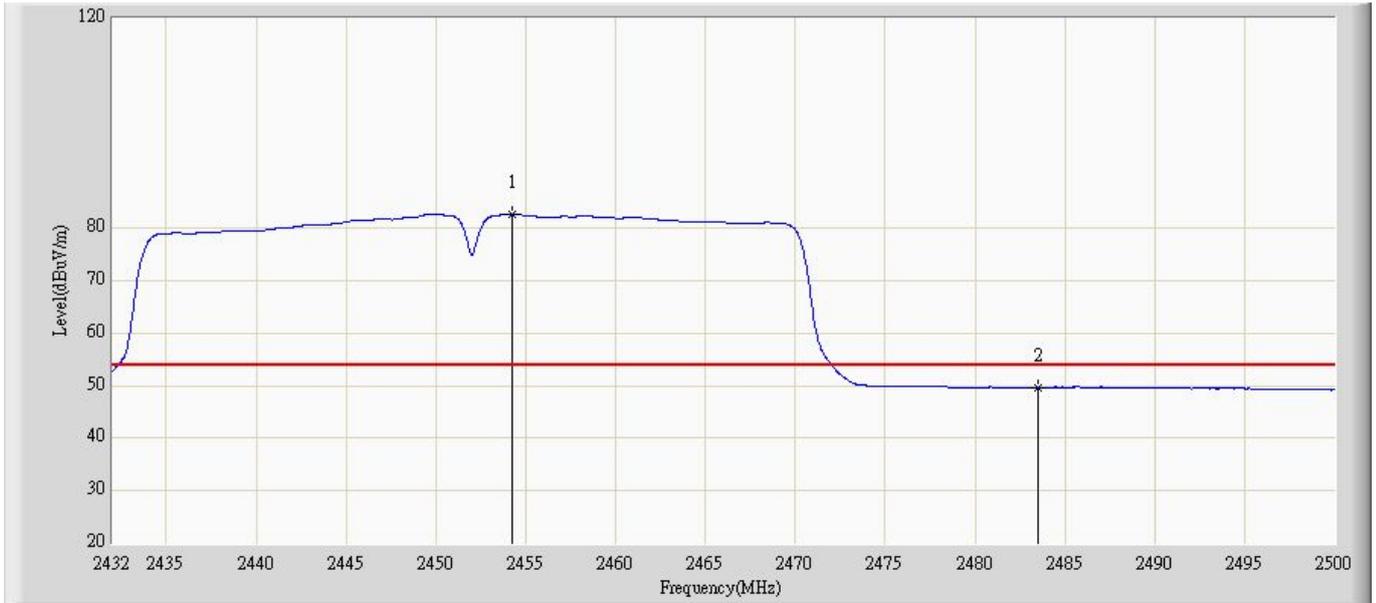
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.537	17.352	-5.463	54.000	31.185	AV
2		*	2419.362	77.378	46.198	N/A	N/A	31.181	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 4: Transmit at channel 2452MHz by 802.11n(40MHz)	



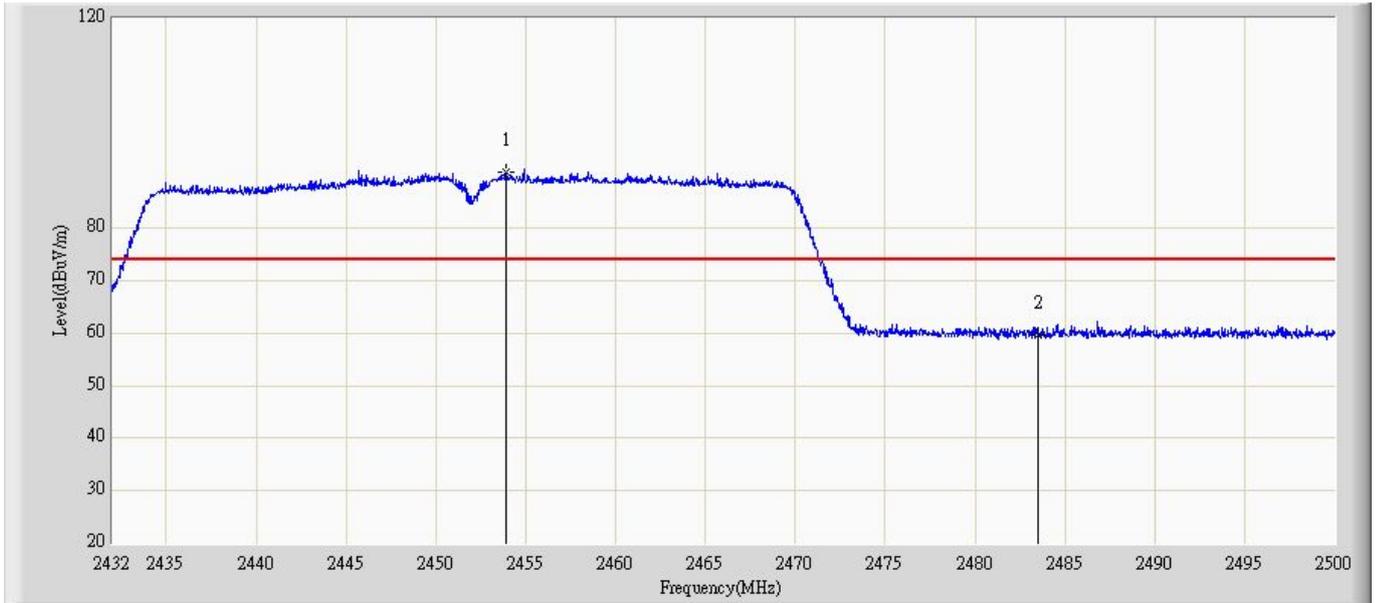
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.546	93.465	62.267	N/A	N/A	31.198	PK
2			2483.500	59.923	28.715	-14.077	74.000	31.208	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: By Battery
Note: Mode 4: Transmit at channel 2452MHz by 802.11n(40MHz)	



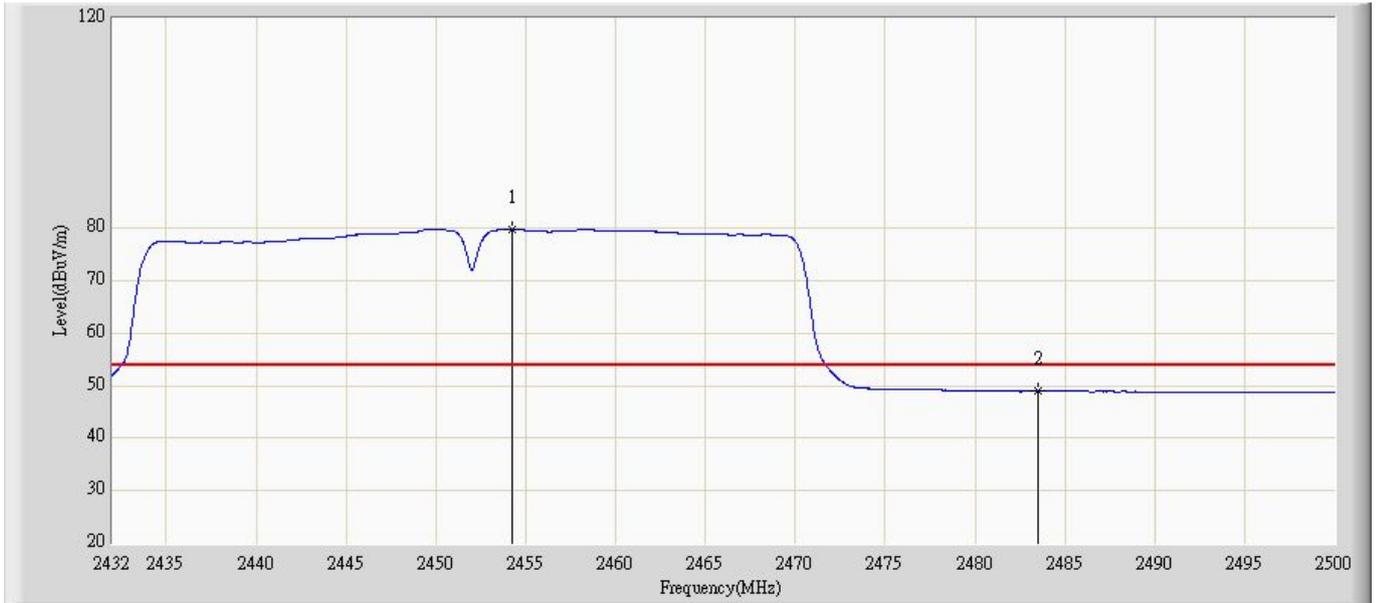
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2454.270	82.752	51.559	N/A	N/A	31.193	AV
2			2483.500	49.638	18.430	-4.362	54.000	31.208	AV

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 4: Transmit at channel 2452MHz by 802.11n(40MHz)	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2453.896	90.792	59.599	N/A	N/A	31.192	PK
2			2483.500	59.619	28.411	-14.381	74.000	31.208	PK

Engineer: Nancy	
Site: AC5	Time: 2012/05/22 - 16:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: By Battery
Note: Mode 4: Transmit at channel 2452MHz by 802.11n(40MHz)	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2454.270	79.894	48.701	N/A	N/A	31.193	AV
2			2483.500	48.945	17.737	-5.055	54.000	31.208	AV

7. Operation Frequency Range of 20dB Bandwidth

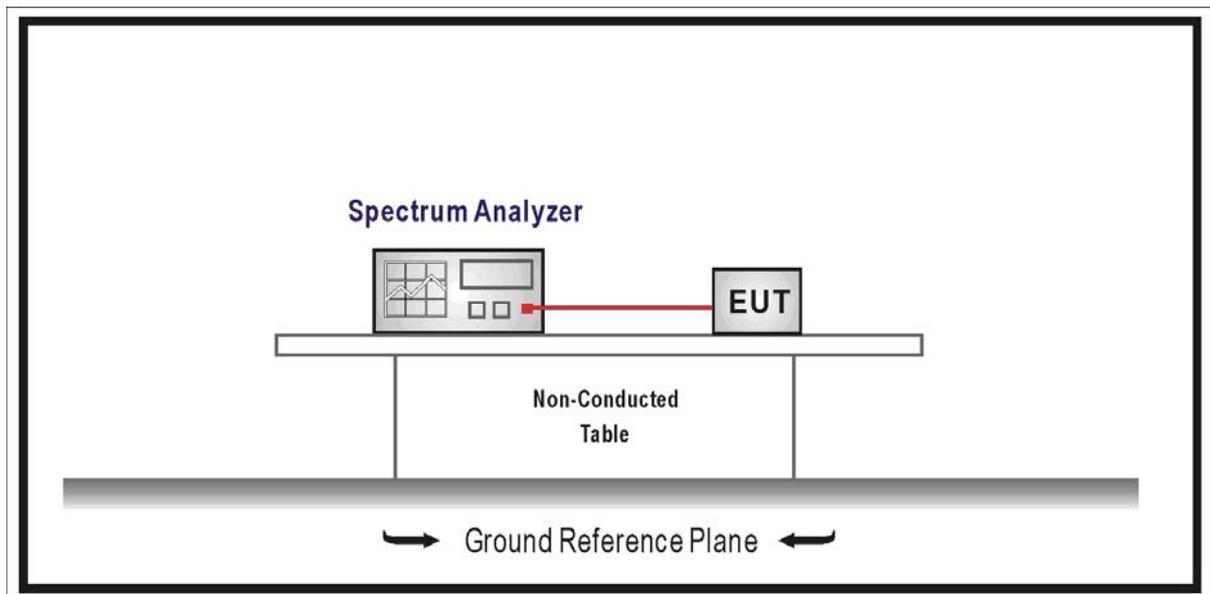
7.1. Test Equipment

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.

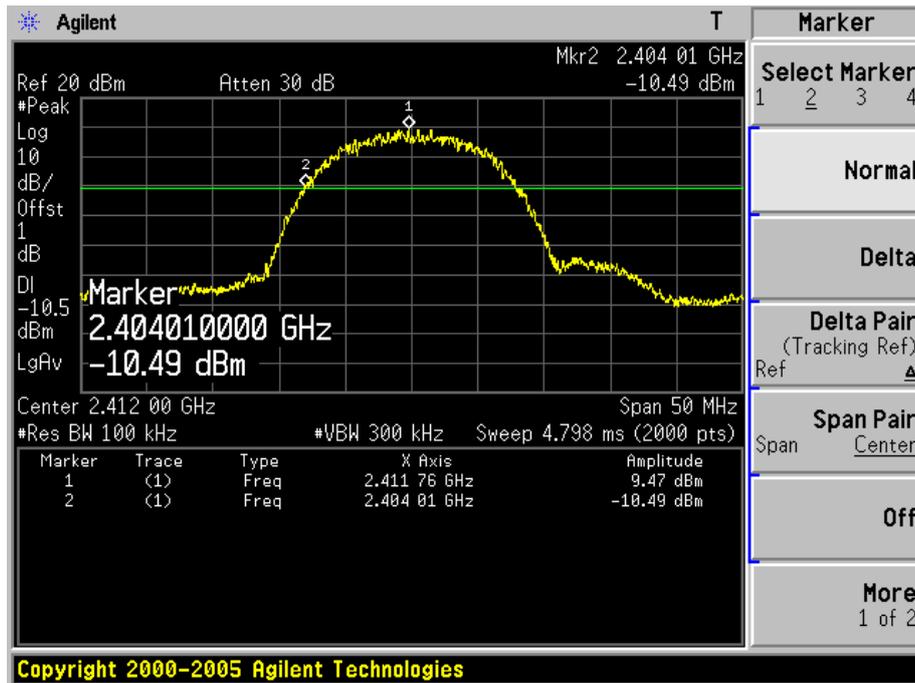
7.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

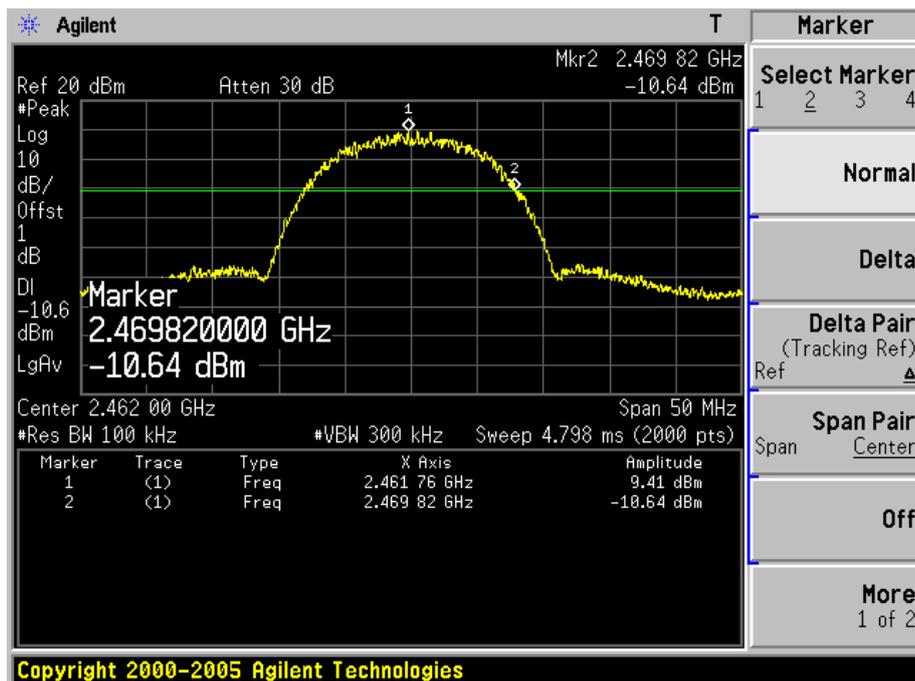
7.6. Test Result

Product	:	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)

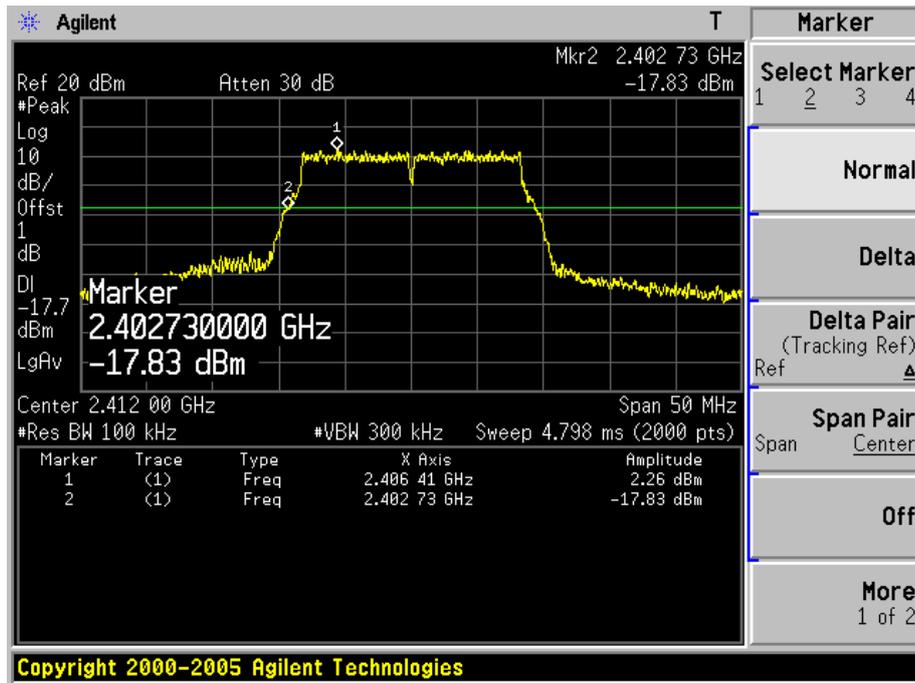


Channel 11 (2462MHz)

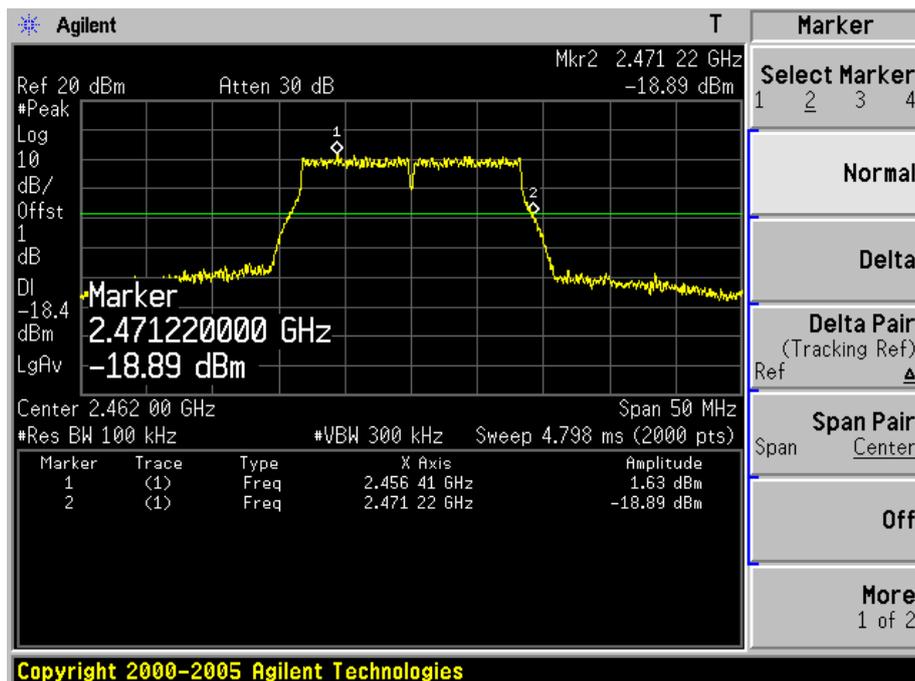


Product	: Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g

Channel 01 (2412MHz)

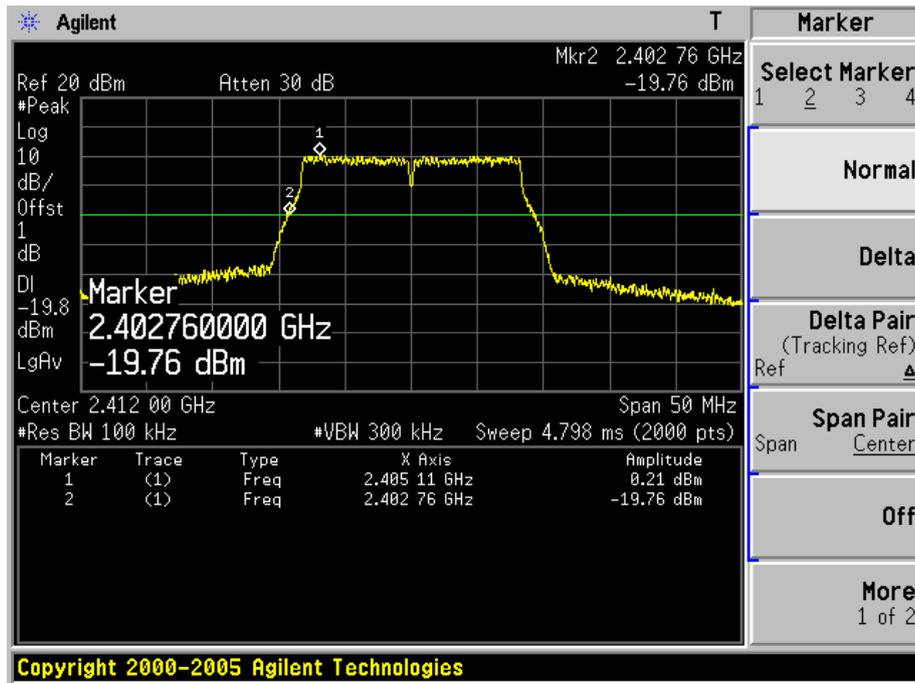


Channel 11 (2462MHz)

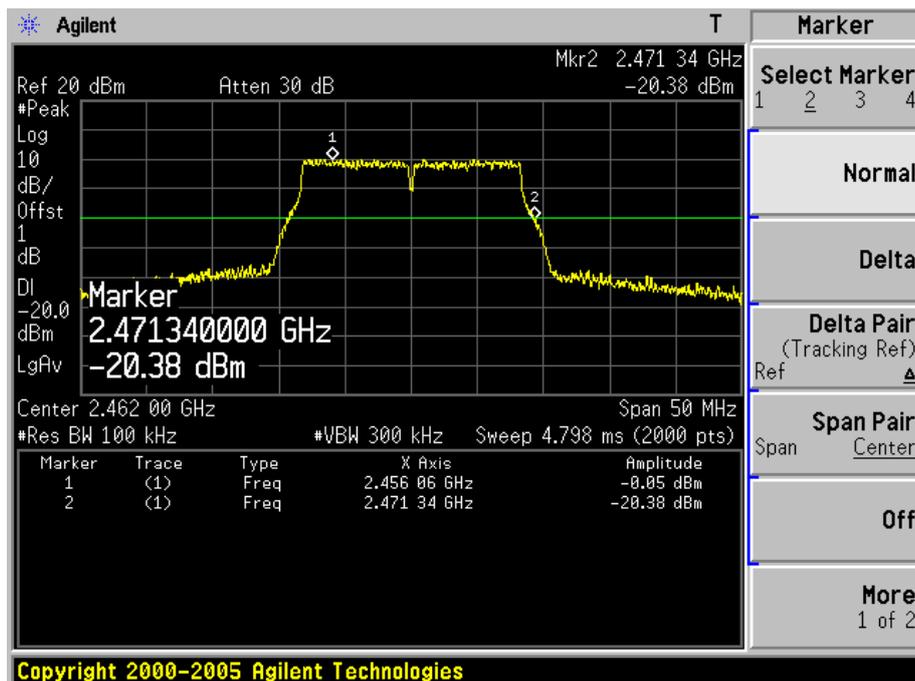


Product	: Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n(20MHz)

Channel 01 (2412MHz)

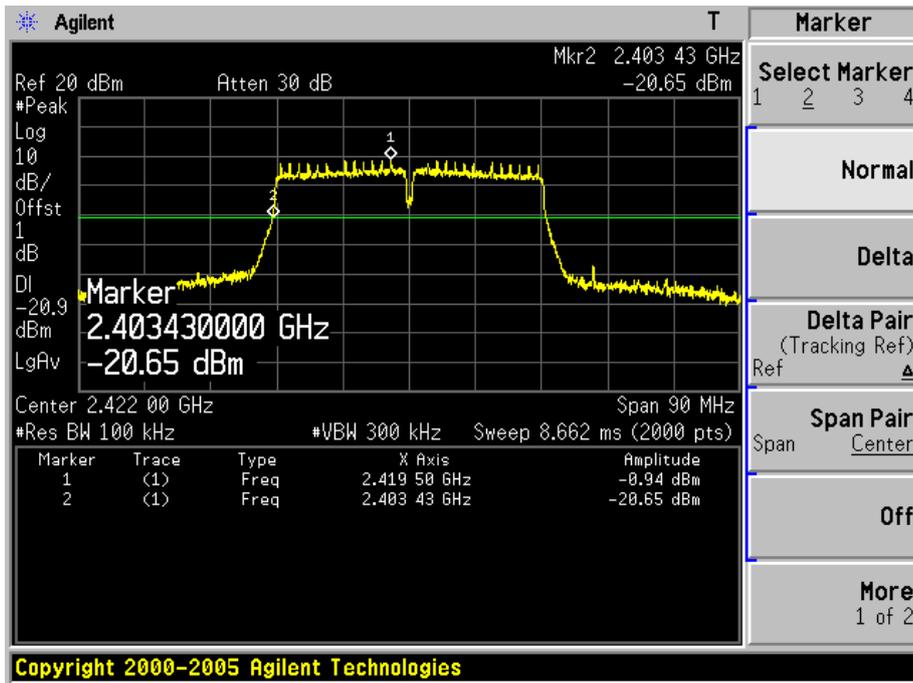


Channel 11 (2462MHz)

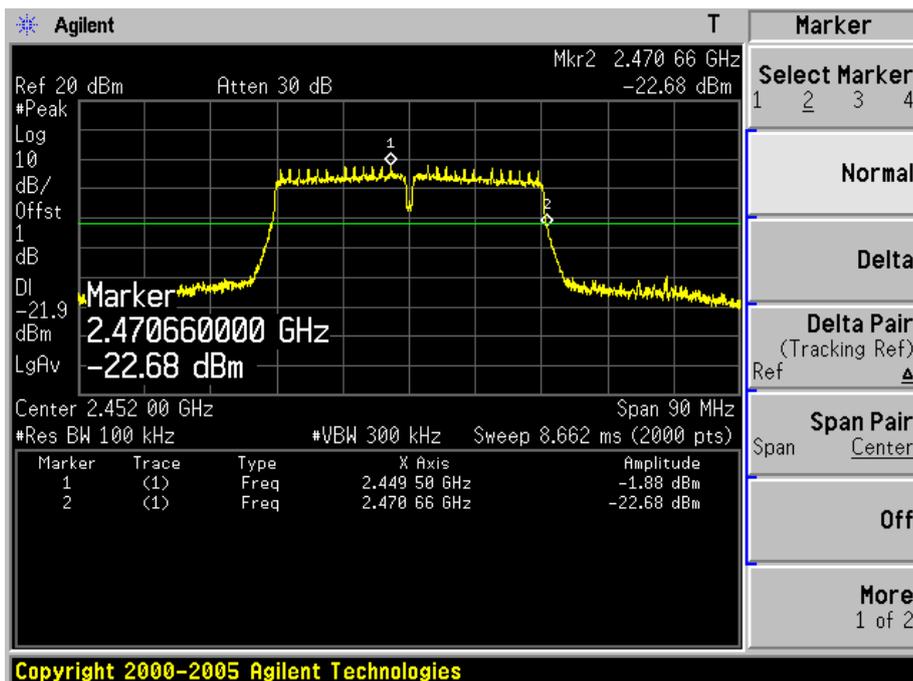


Product	: Mobile Phone
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n(40MHz)

Channel 03 (2422MHz)



Channel 09 (2452MHz)



8. Occupied Bandwidth

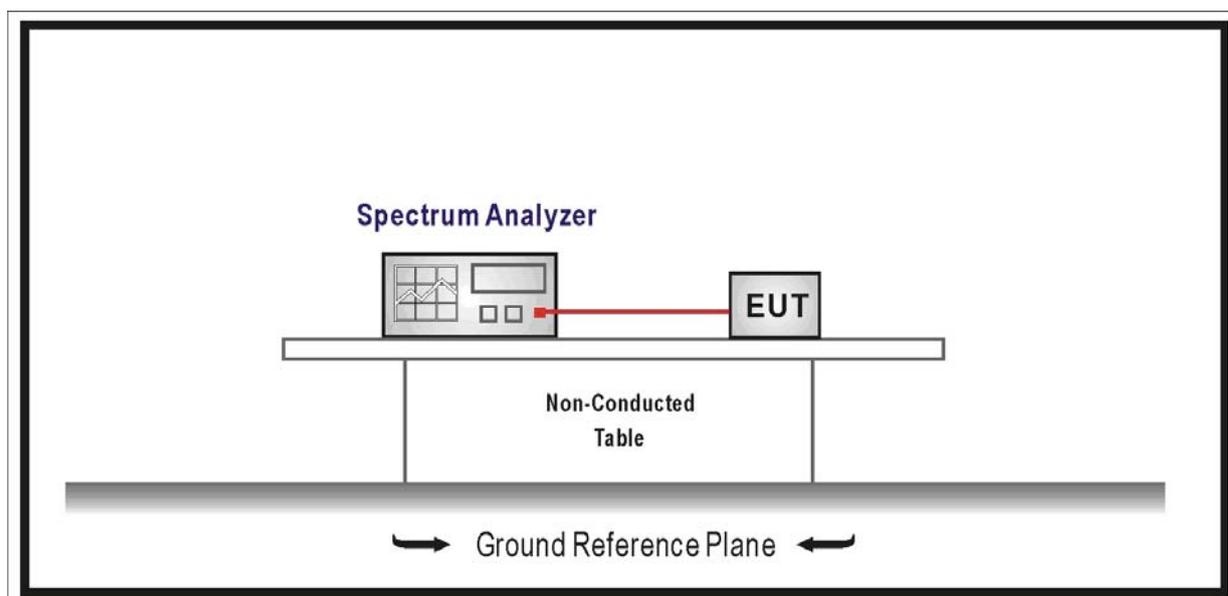
8.1. Test Equipment

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

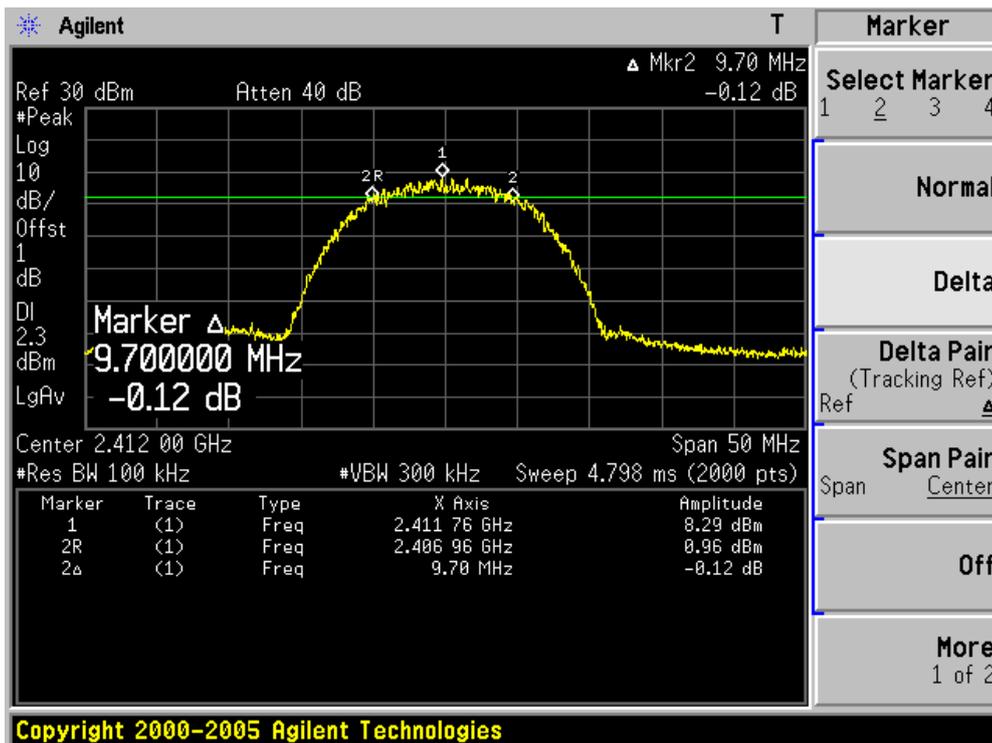
The measurement uncertainty is defined as ± 1 kHz

8.6. Test Result

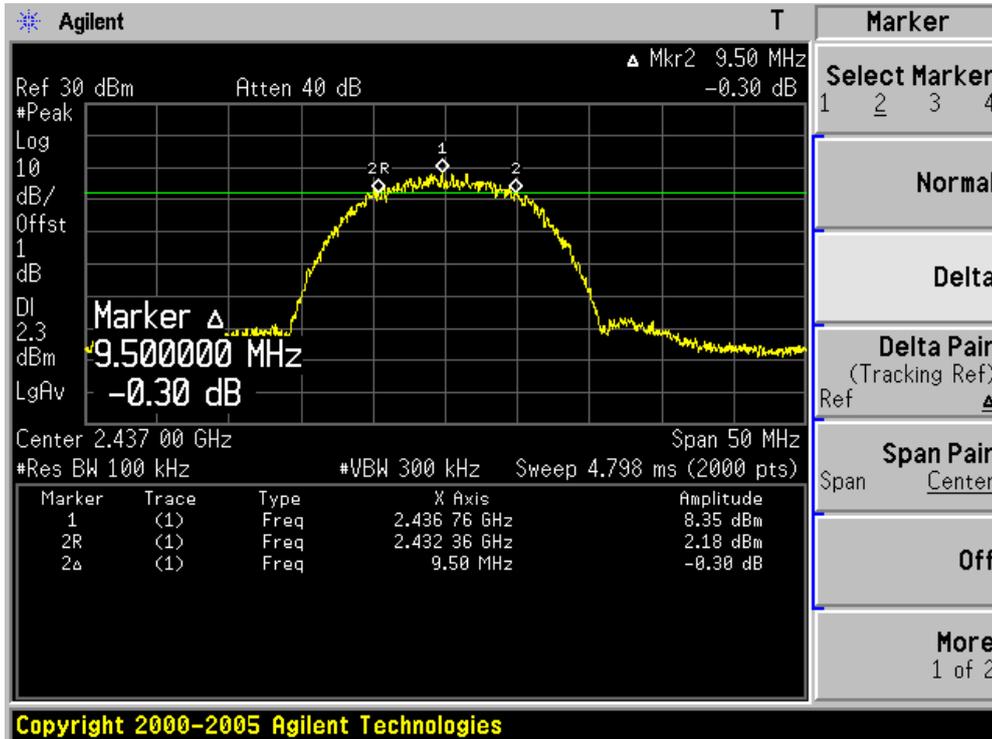
Product	:	Mobile Phone
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	9700	500	Pass
06	2437	9500	500	Pass
11	2462	9030	500	Pass

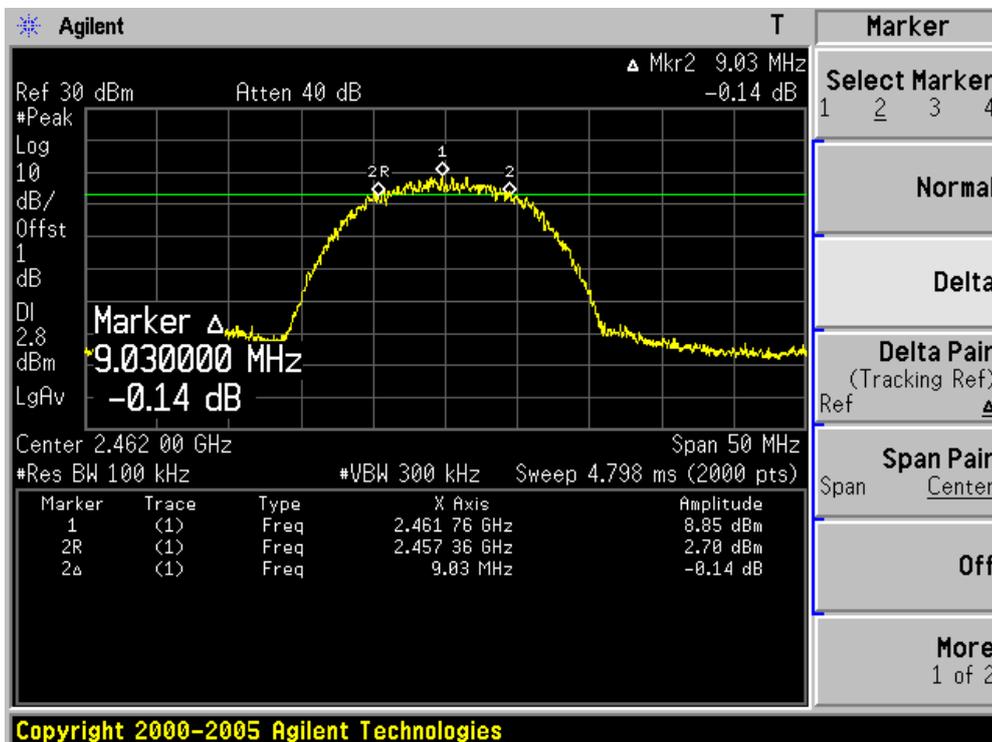
Channel 01 (2412MHz)



Channel 06 (2437MHz)



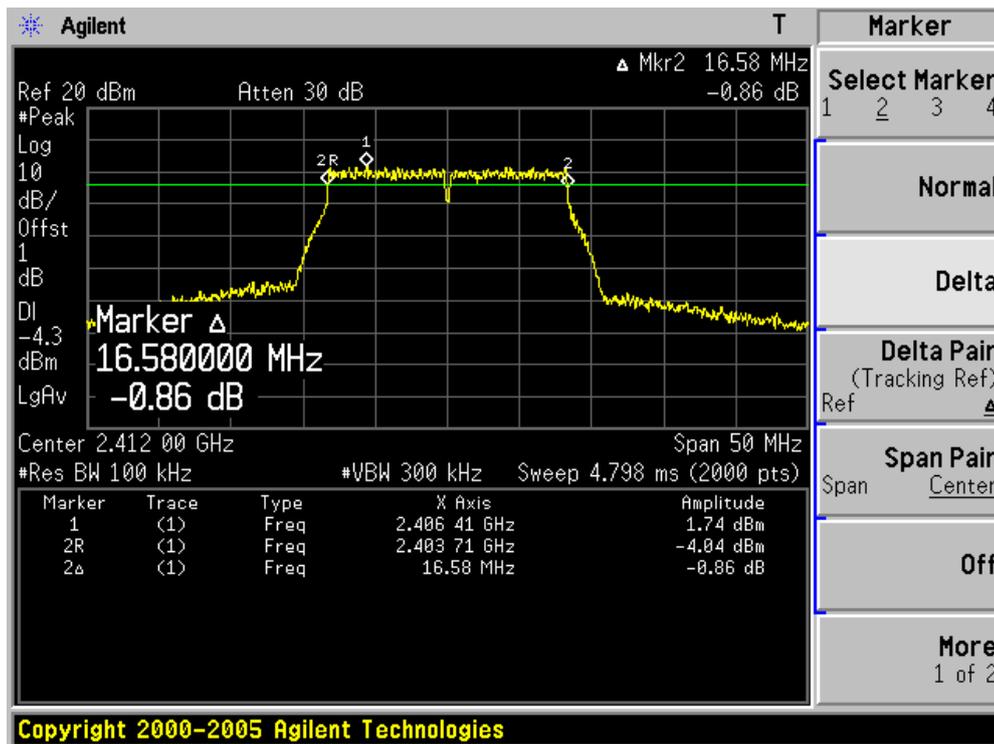
Channel 11 (2462MHz)



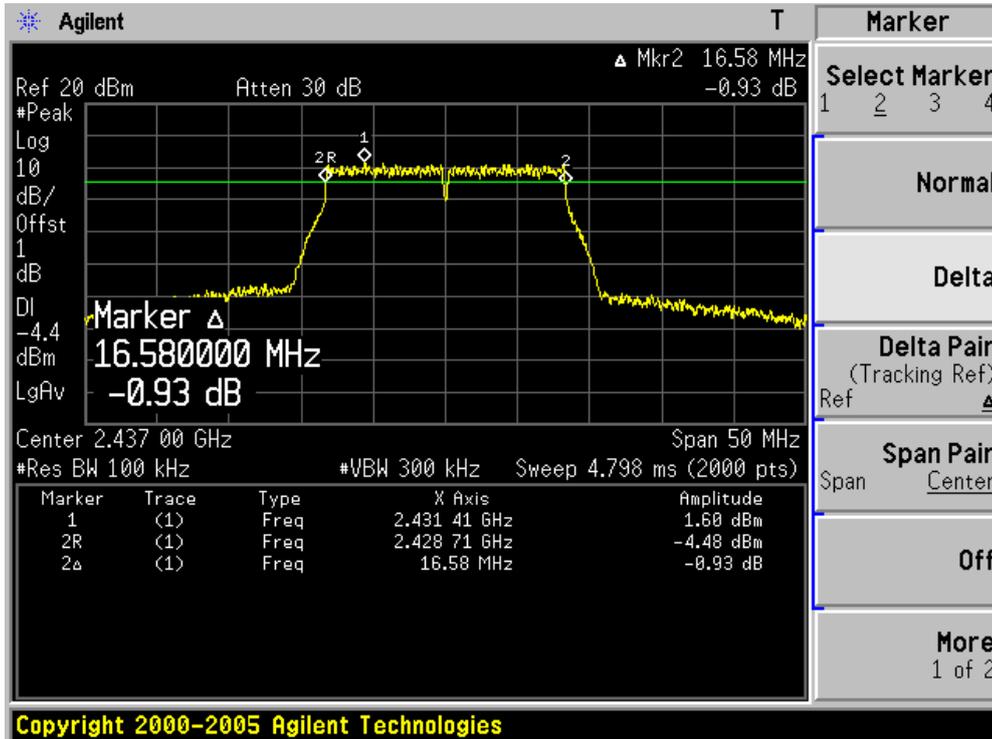
Product	: Mobile Phone
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g

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

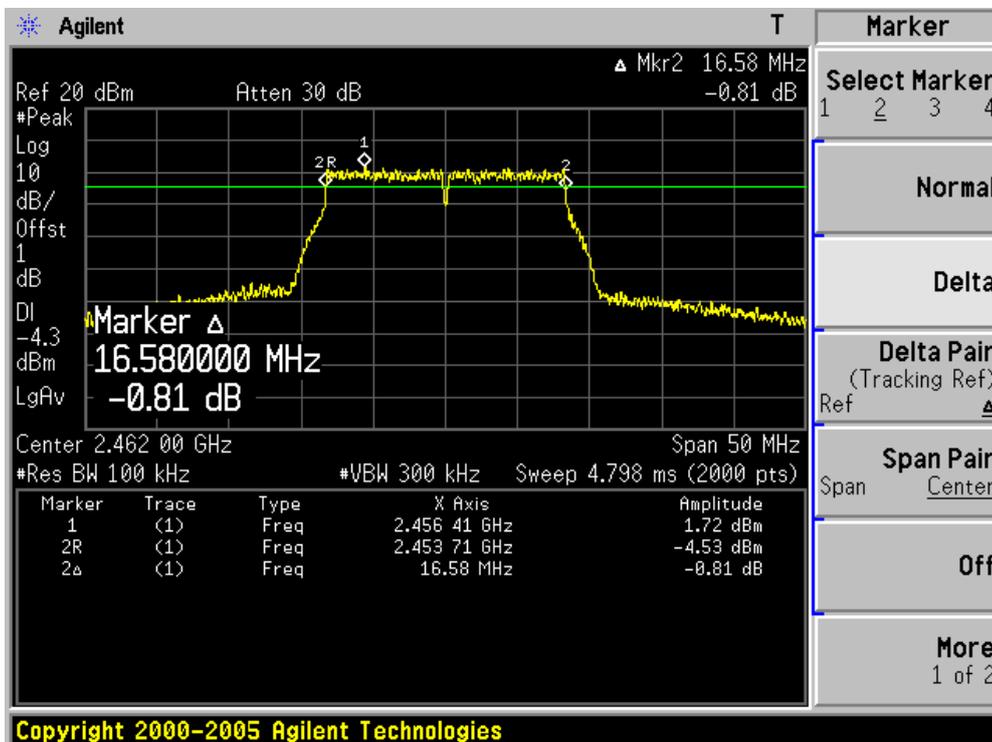
Channel 01 (2412MHz)



Channel 06 (2437MHz)



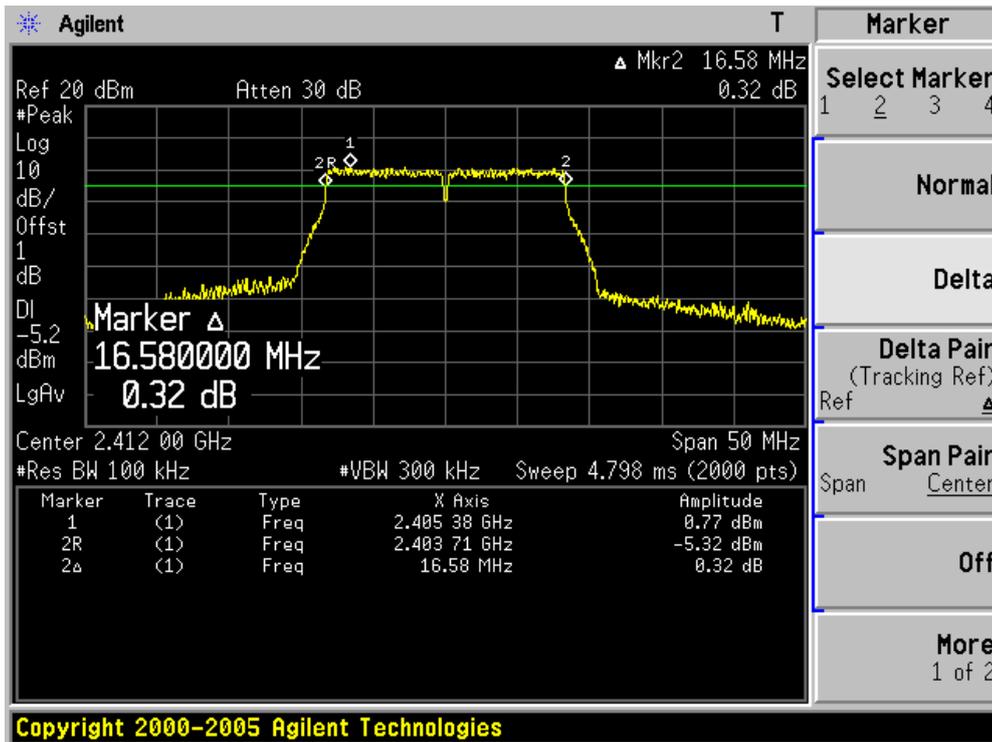
Channel 11 (2462MHz)



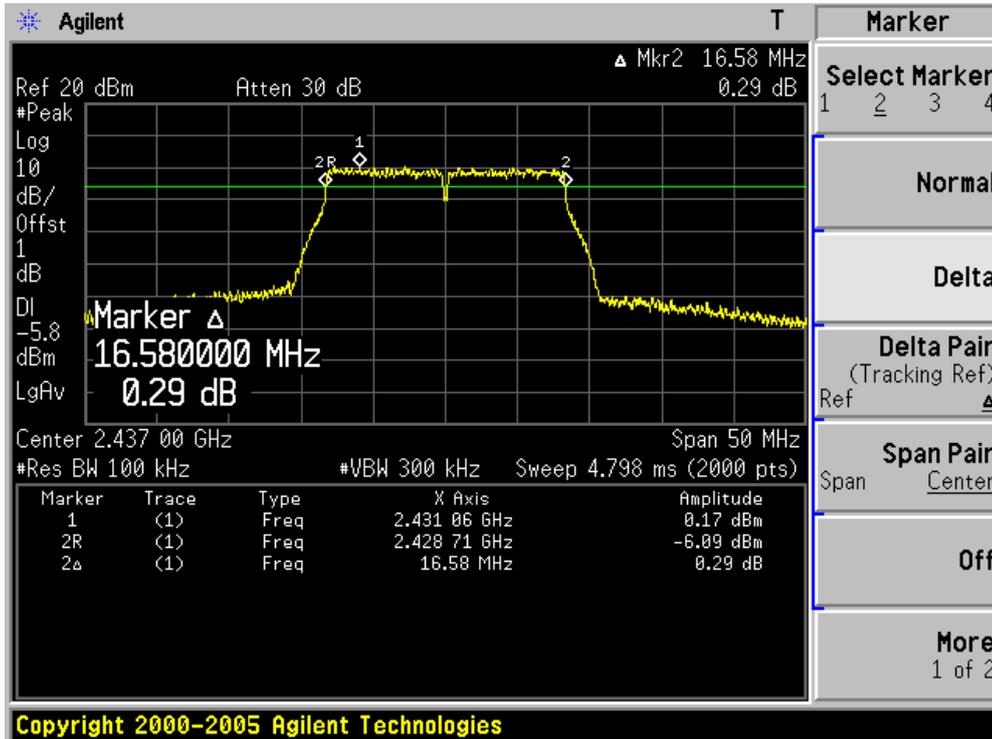
Product	: Mobile Phone
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n(20MHz)

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

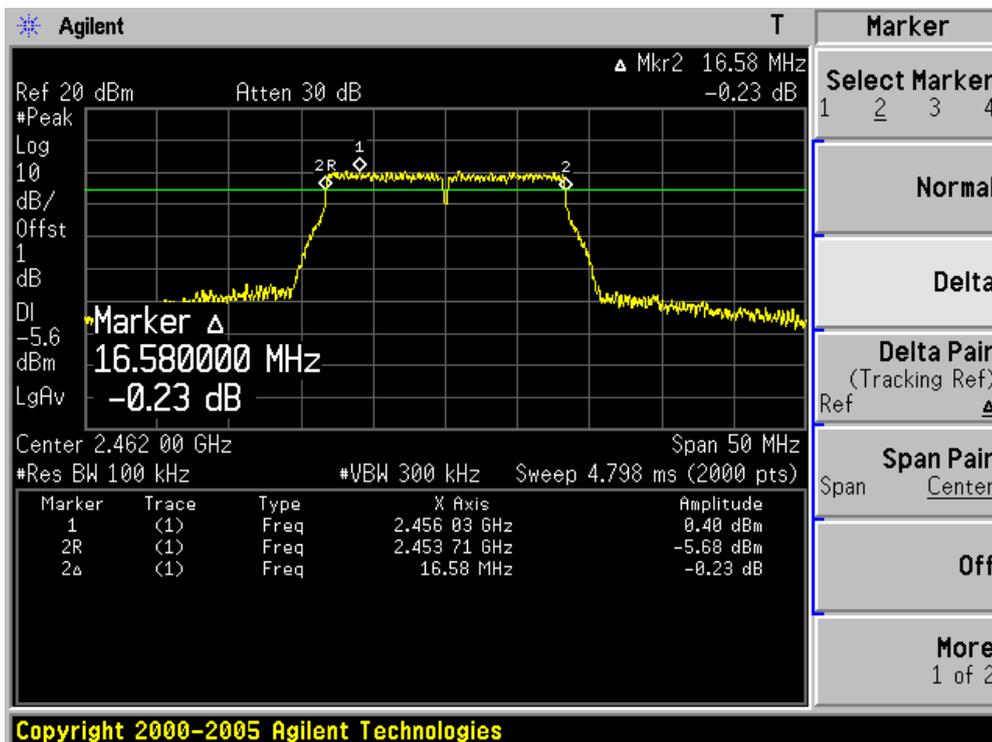
Channel 01 (2412MHz)



Channel 06 (2437MHz)



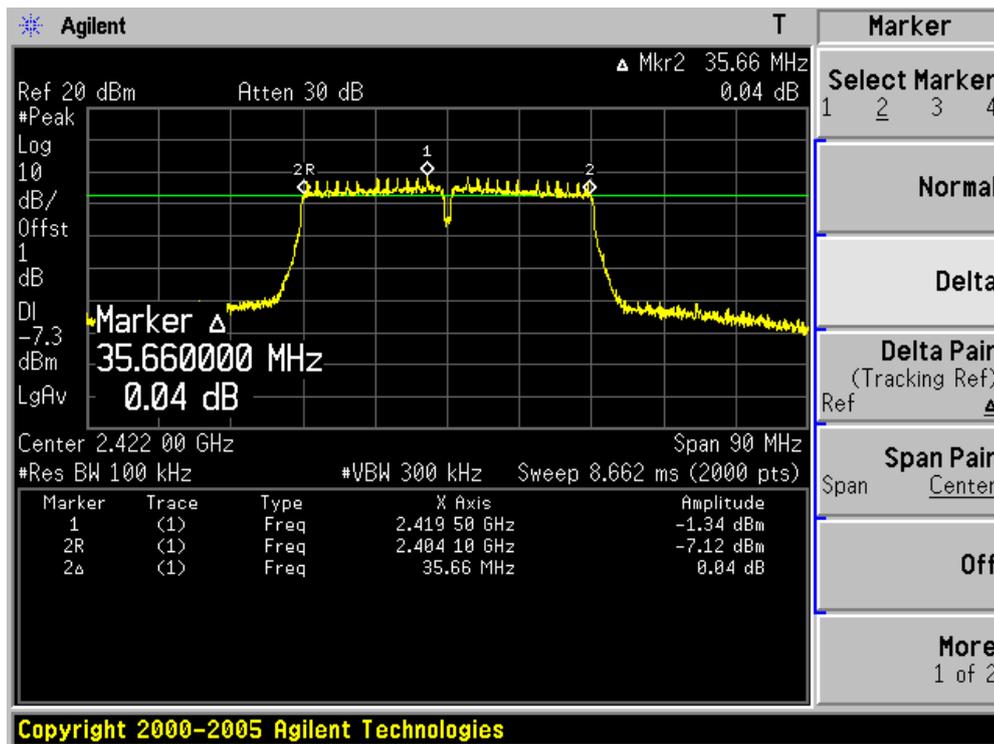
Channel 11 (2462MHz)



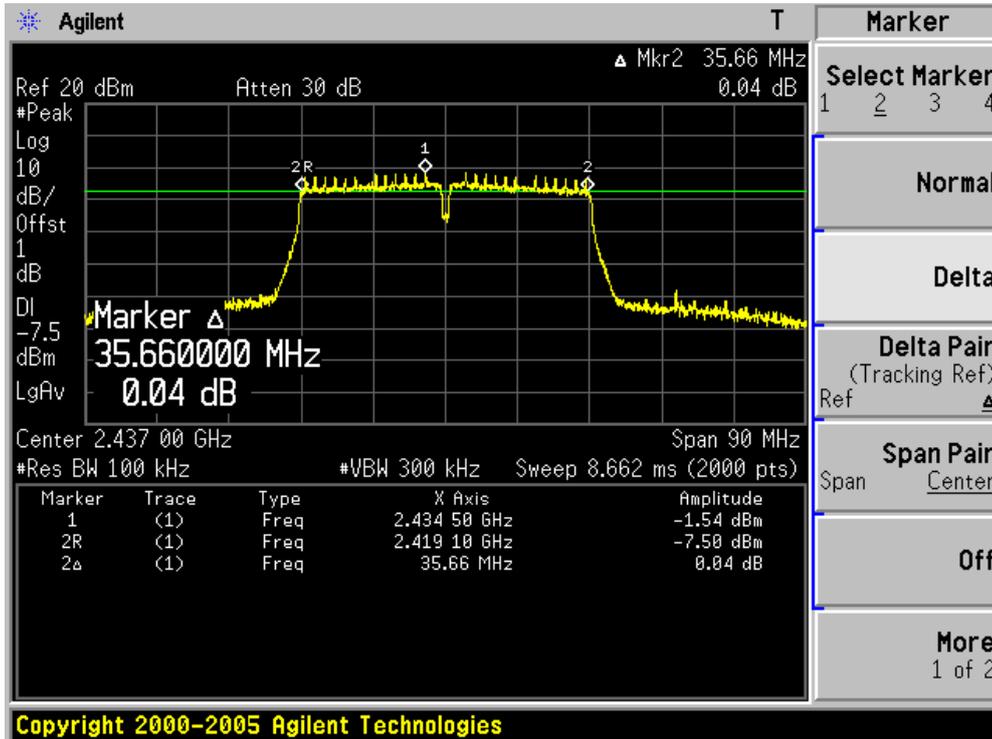
Product	: Mobile Phone
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n(40MHz)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
03	2422	35660	500	Pass
06	2437	35660	500	Pass
09	2452	35430	500	Pass

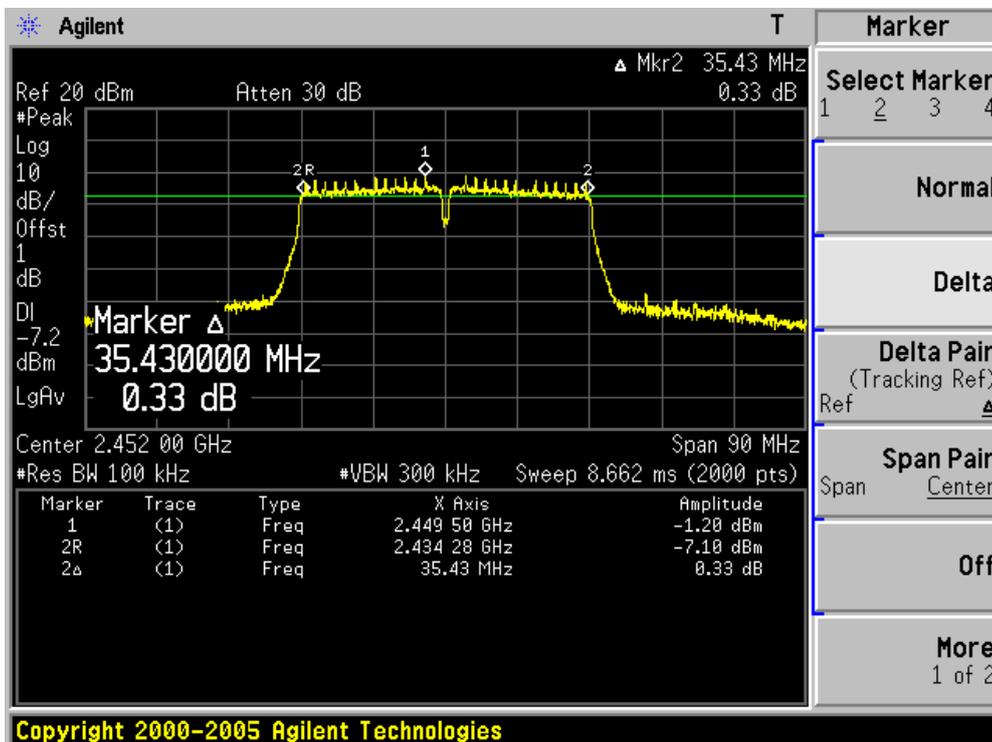
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



9. Power Output

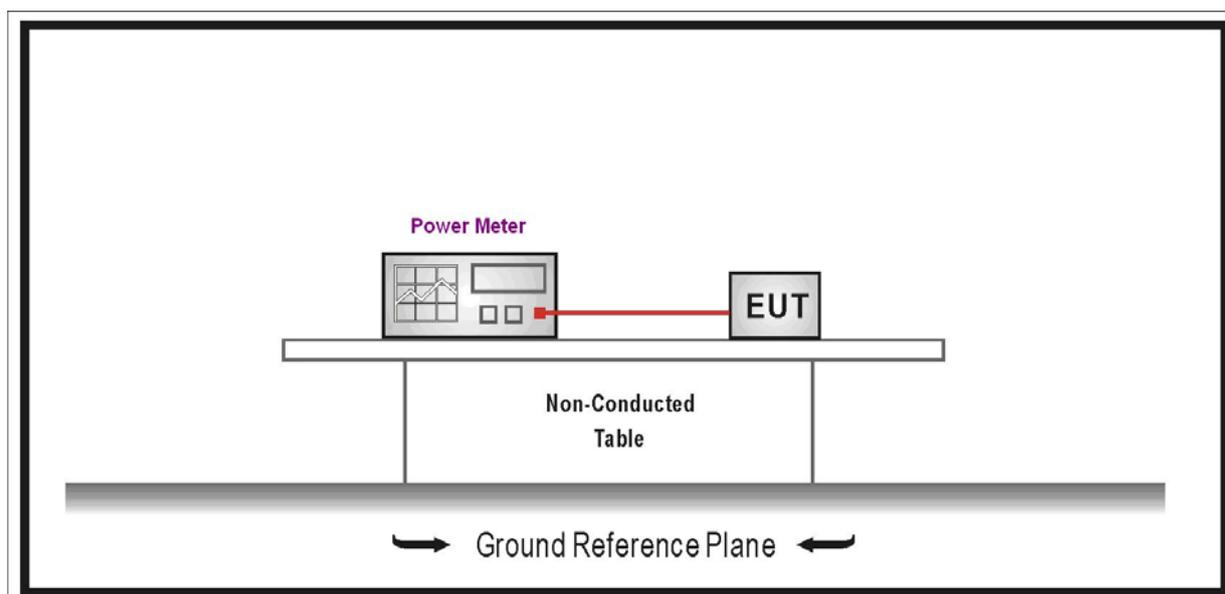
9.1. Test Equipment

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 ± 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	17.91
				5.5	18.62
				11	19.12
802.11g	20	2437	6	6	18.27
				24	18.09
				54	18.01
802.11n(20MHz)	20	2437	6	6.5	18.63
				39	18.12
				65	17.74
802.11n(40MHz)	40	2437	6	13.5	16.76
				81	15.93
				135	15.41

Product	:	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	18.91	30.00	Pass
06	2437	19.12	30.00	Pass
11	2462	19.05	30.00	Pass

Product	:	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	18.98	30.00	Pass
06	2437	18.27	30.00	Pass
11	2462	18.53	30.00	Pass

Product	:	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	18.47	30.00	Pass
06	2437	18.63	30.00	Pass
11	2462	18.90	30.00	Pass

Product	:	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	15.96	30.00	Pass
06	2437	16.76	30.00	Pass
09	2452	16.60	30.00	Pass

10. Power Spectral Density

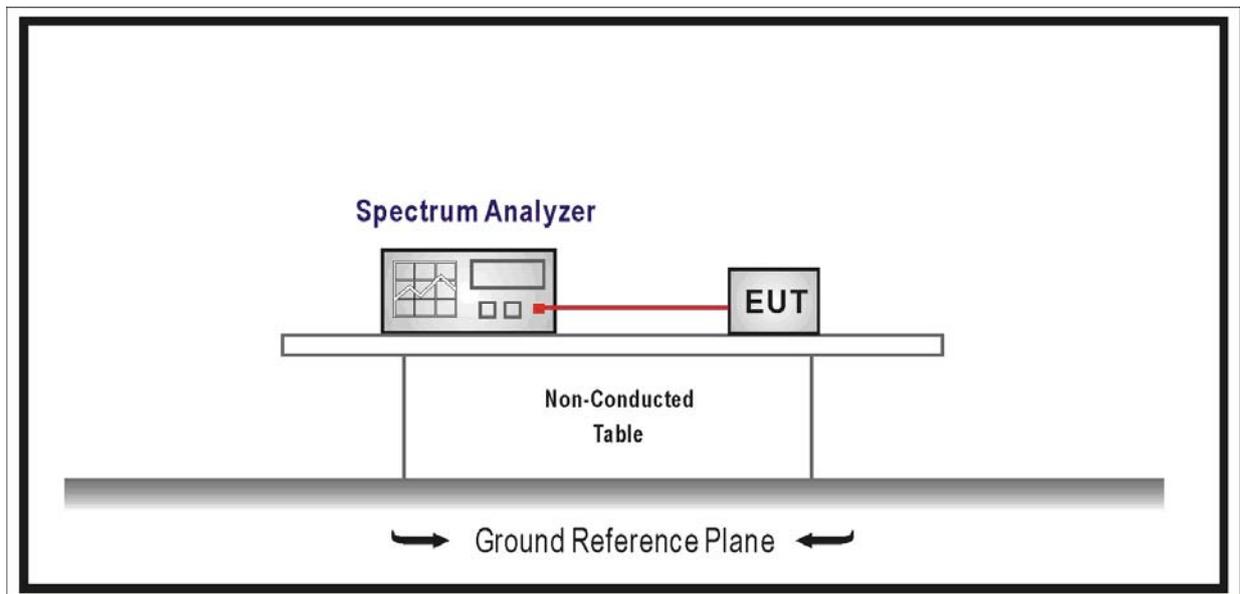
10.1. Test Equipment

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

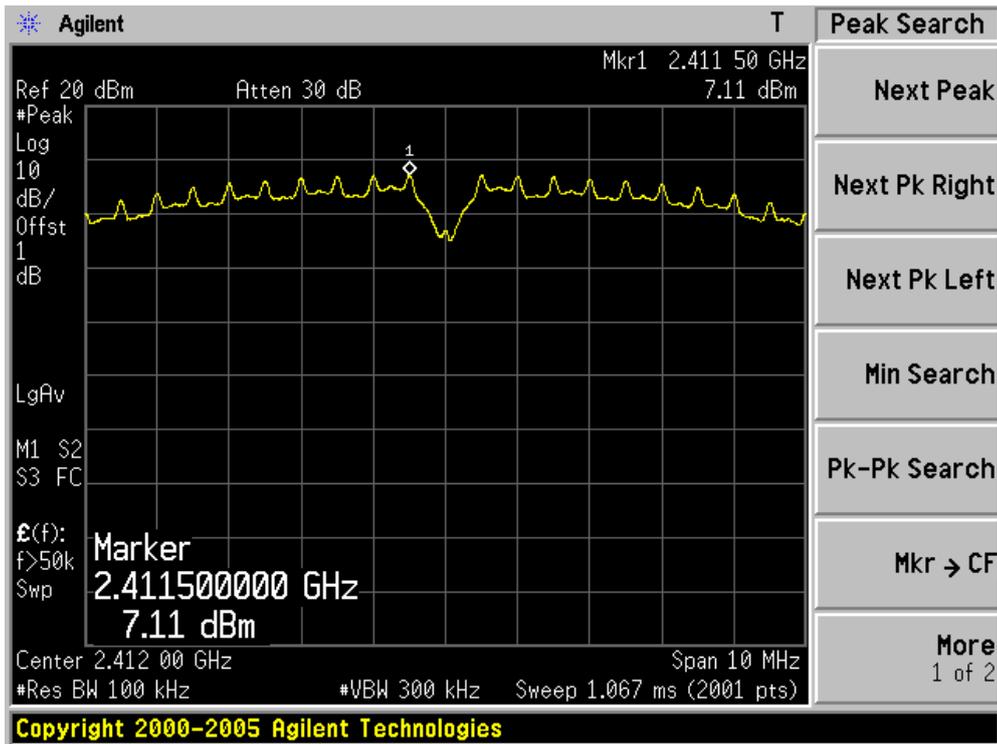
The measurement uncertainty is defined as $\pm 1.27\text{ dB}$

10.6. Test Result

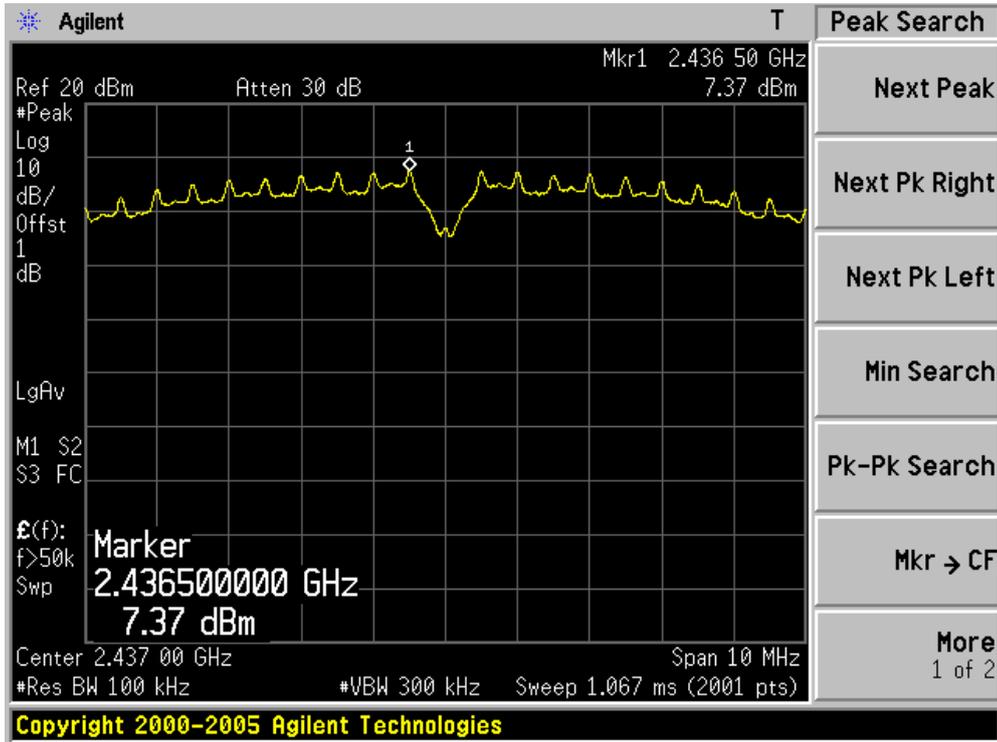
Product	:	Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
01	2412	7.11	-15.2	-8.09	8	Pass
06	2437	7.37	-15.2	-7.83	8	Pass
11	2462	7.66	-15.2	-7.54	8	Pass

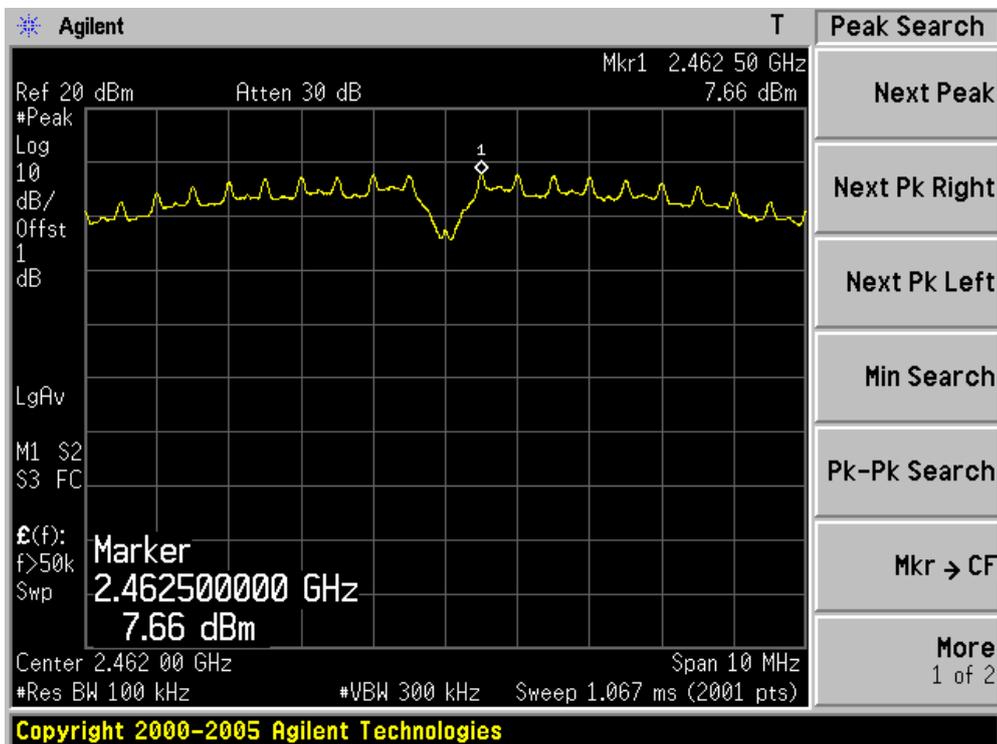
Channel 01 (2412MHz)



Channel 06 (2437MHz)



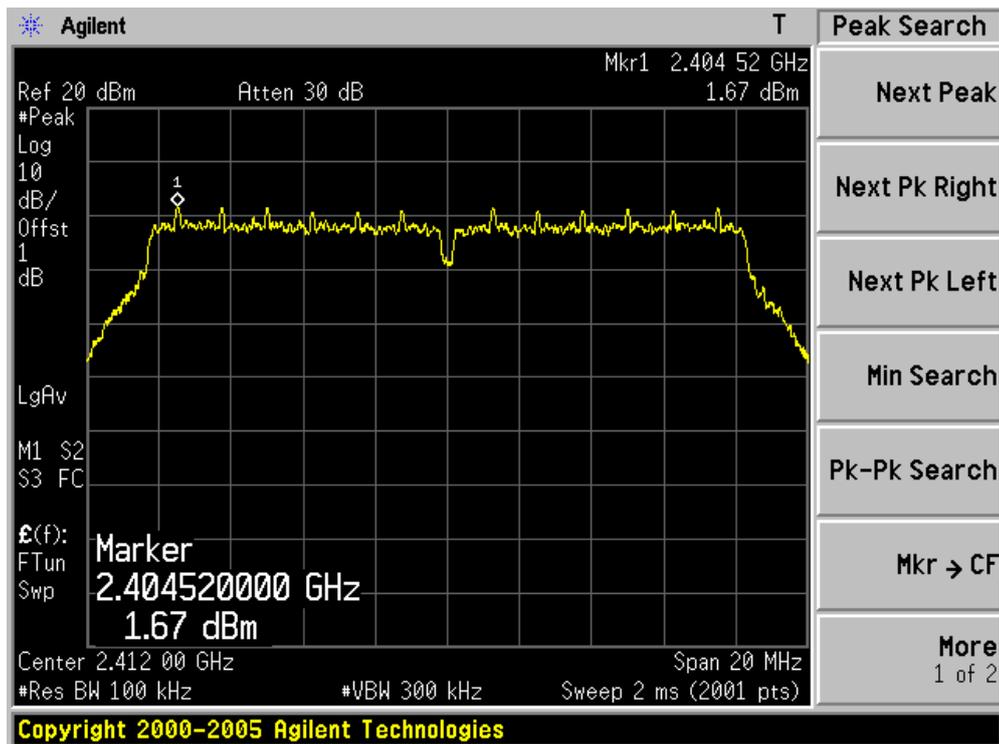
Channel 11 (2462MHz)



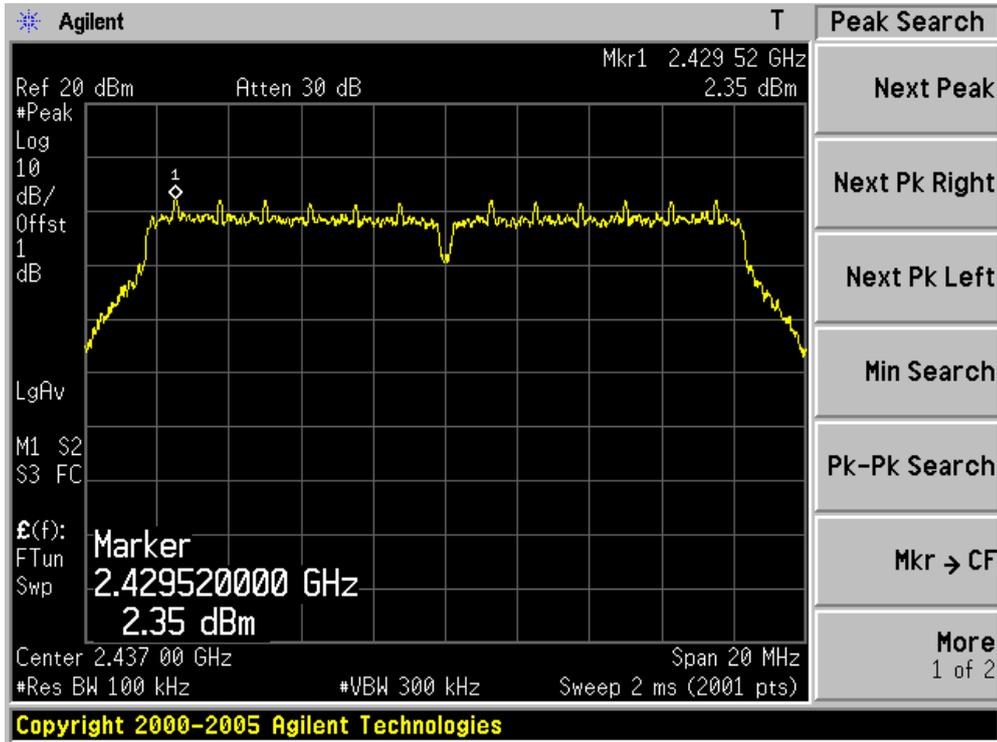
Product	:	Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
01	2412	1.67	-15.2	-13.53	8	Pass
06	2437	2.35	-15.2	-12.85	8	Pass
11	2462	2.24	-15.2	-12.96	8	Pass

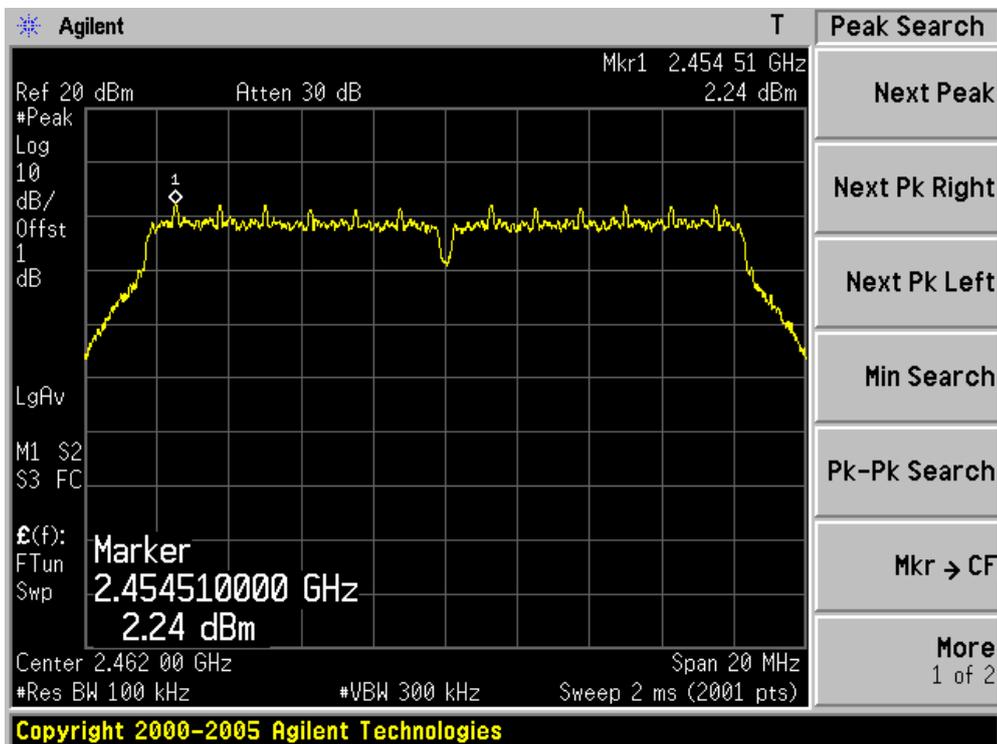
Channel 01 (2412MHz)



Channel 06 (2437MHz)



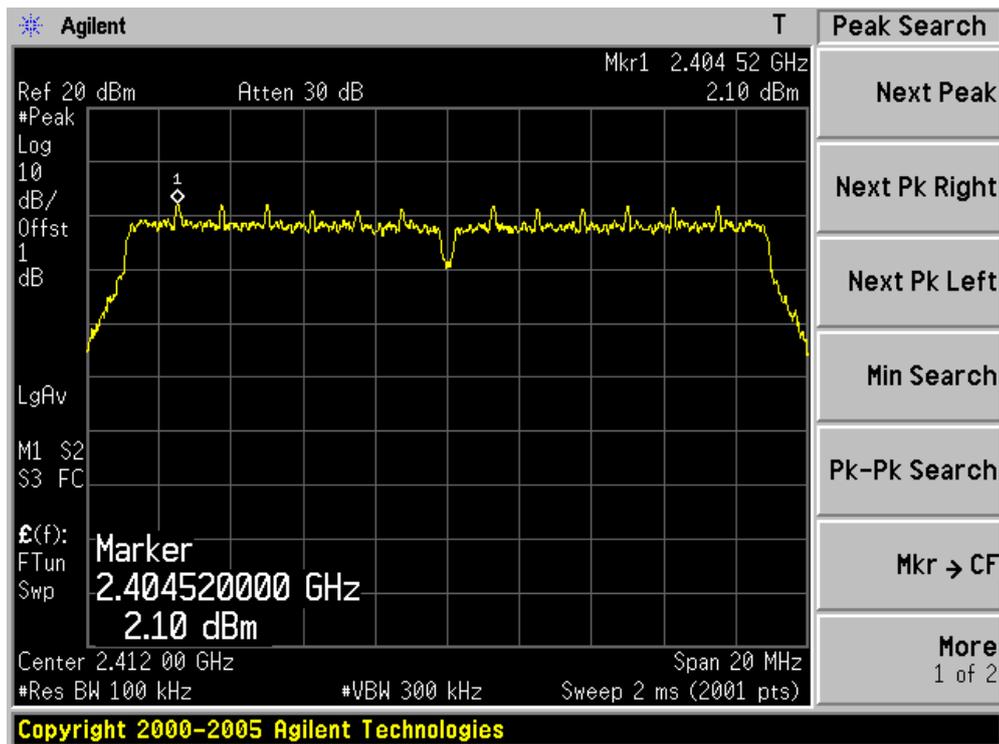
Channel 11 (2462MHz)



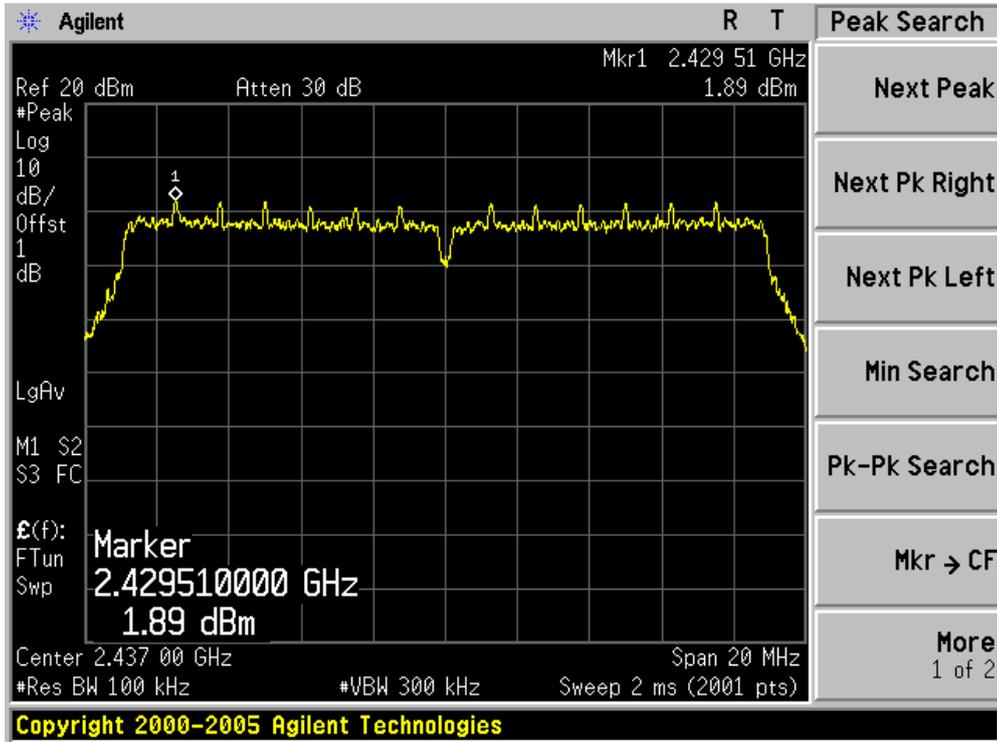
Product	:	Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
01	2412	2.10	-15.2	-13.10	8	Pass
06	2437	1.89	-15.2	-13.31	8	Pass
11	2462	2.26	-15.2	-12.94	8	Pass

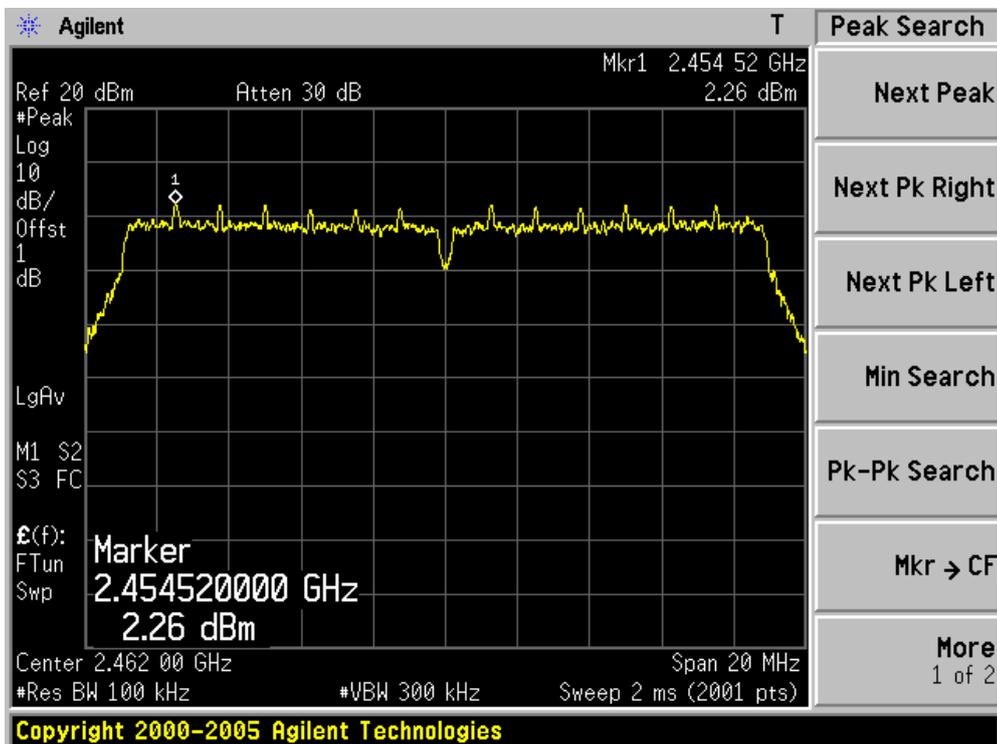
Channel 01 (2412MHz)



Channel 06 (2437MHz)



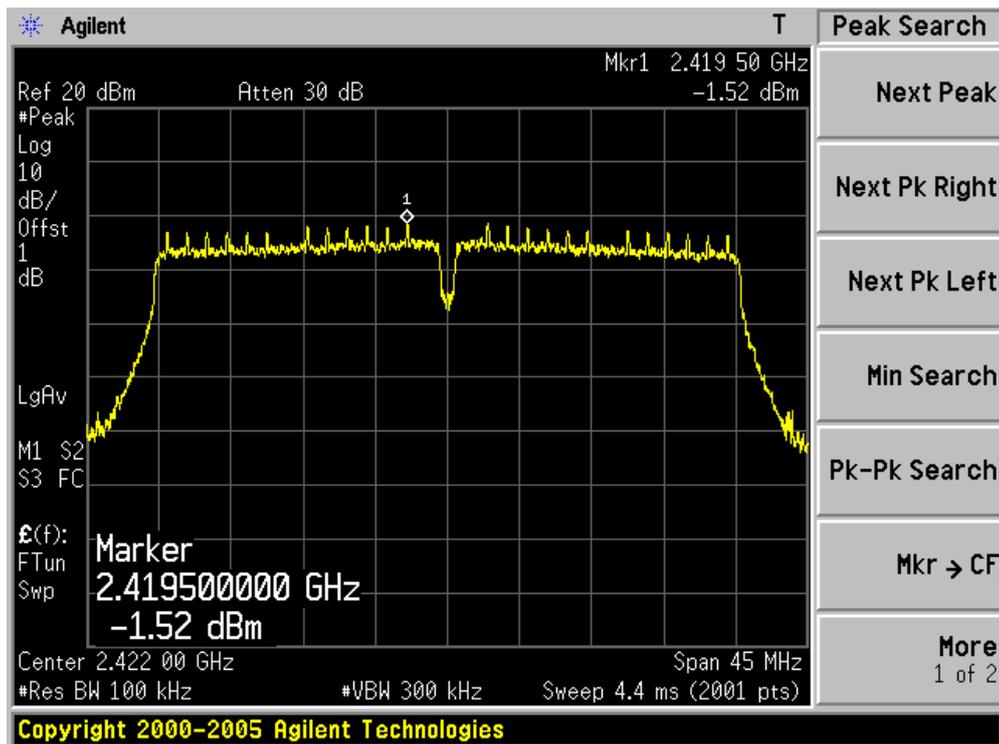
Channel 11 (2462MHz)



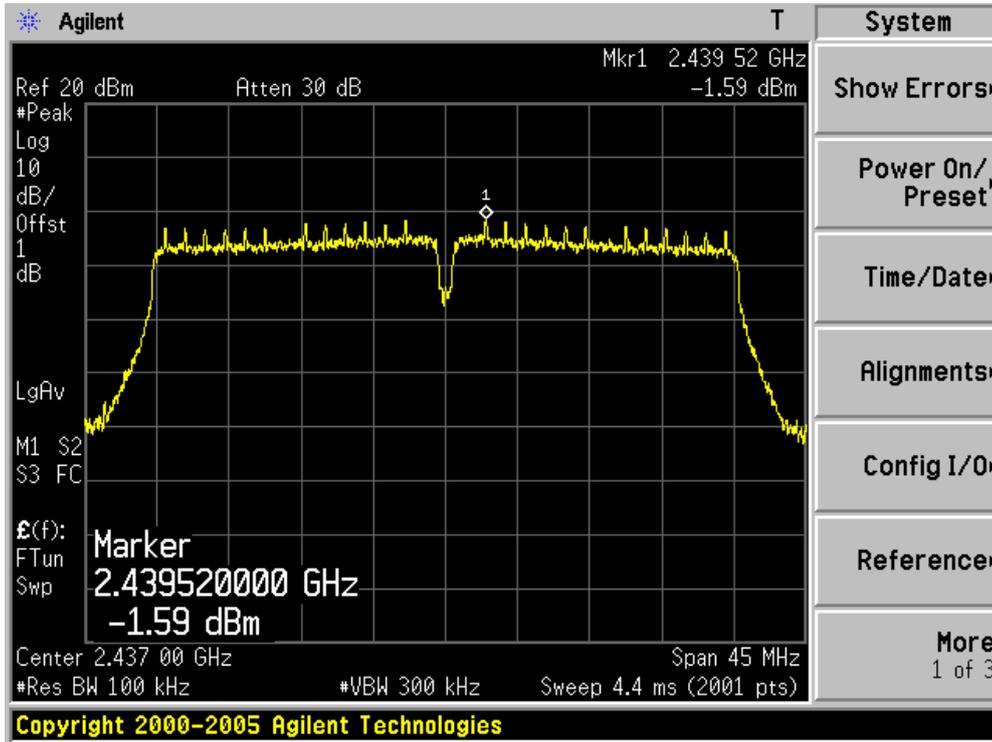
Product	:	Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

Channel No.	Frequency (MHz)	Reading Value (dBm)	BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
03	2422	-1.52	-15.2	-16.72	8	Pass
06	2437	-1.59	-15.2	-16.79	8	Pass
09	2452	-1.55	-15.2	-16.75	8	Pass

Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)

