FCC Part15.247 Test Report

Product Name	:	GSM Mobile Phone
Model No.	:	HUAWEI G6608
FCC ID	:	QISG6608

Applicant	:	HUAWEI TECHNOLOGIES CO.,LTD
Address	:	Administration Building, Huawei Base, Bantian, Longgang district, Shenzhen 518129

Date of Receipt	:	Mar. 14, 2011
Test Date	:	Mar. 14, 2011 ~ Mar. 17, 2011
Issued Date	:	Mar. 30, 2011
Report No.	:	113S016R-RF-US-P05V01
Report Version	:	V1.0

Test Report Certification

Issued Date : Mar. 30, 2011
Report No. : 113S016R-RF-US-P05V01

QuieTek

Product Name	:	GSM Mobile Phone
Applicant	:	HUAWEI TECHNOLOGIES CO.,LTD
Address	:	Administration Building, Huawei Base, Bantian, Longgang District, Shenzhen 518129
Manufacturer	:	HUAWEI TECHNOLOGIES CO.,LTD
Address	:	Administration Building, Huawei Base, Bantian, Longgang District, Shenzhen 518129
Model No.	:	HUAWEI G6608
FCC ID	:	QISG6608
EUT Voltage	:	DC 3.7V
Trade Name	:	HUAWEI
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C: 2008; ANSI C63.4: 2009; ANSI C63.10: 2009
Test Result	:	Complied
Performed Location	:	Suzhou EMC Laboratory No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392

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Approved By : Marlin Chen
(Engineering Supervisor: Marlin Chen)

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**

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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NVLAP Lab Code : 200347-0

1313

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0914

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NVLAP Lab Code : 200743-0

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1. General Information

1.1. EUT Description

Product Name	GSM Mobile Phone
Trade Name	HUAWEI
Model No.	HUAWEI G6608
FCC ID	QISG6608
Working Voltage	DC 3.7V
Frequency Range	802.11b/g: 2412 - 2462 MHz
Channel Number	802.11b/g: 11
Type of Modulation	802.11b: DSSS
	802.11g: OFDM
Data Rate	802.11g: 6/9/12/18/24/36/48/54 Mbps
	802.11b: 1/2/5.5/11 Mbps
Channel Control	1*Tx + 1*Rx
Antenna Type	Internal
Peak Antenna Gain	-2.2dBi
AC Adapter #1	Manufacturer: HUAWEI M/N: HS-050040U6 Input: 100-240V~50/60Hz 0.2A Output: DC 5V, 400mA
AC Adapter #2	Manufacturer: HUAWEI M/N: HS-050040E5 Input: 100-240V~50/60Hz 0.2A Output: DC 5V, 400mA

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

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

Note:

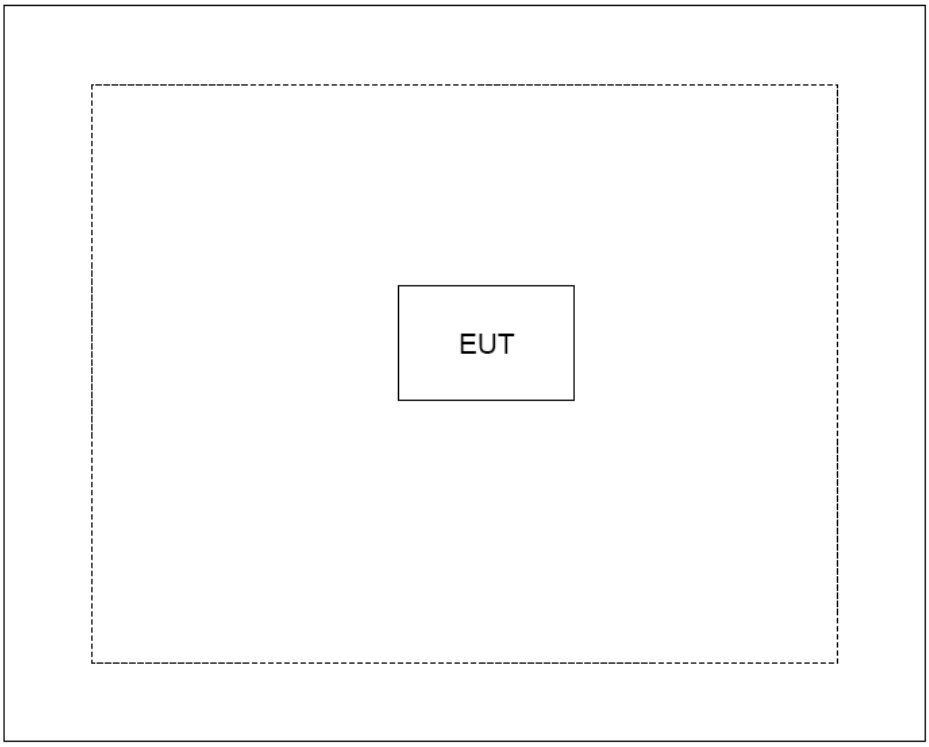
1. Regards to the frequency band operation: the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. For portable device, radiated spurious emission was verified over X, Y, Z axis, and shown the worst case on this report.
3. This device is a 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 113216R-RF-US-P01V02.

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

Connection Diagram	
	
Signal Cable Type	Signal cable Description

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: 2008 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.209	Yes	No
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2008 15.247(d)	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2008 15.215(c)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(2)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(b)(3)	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2008 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

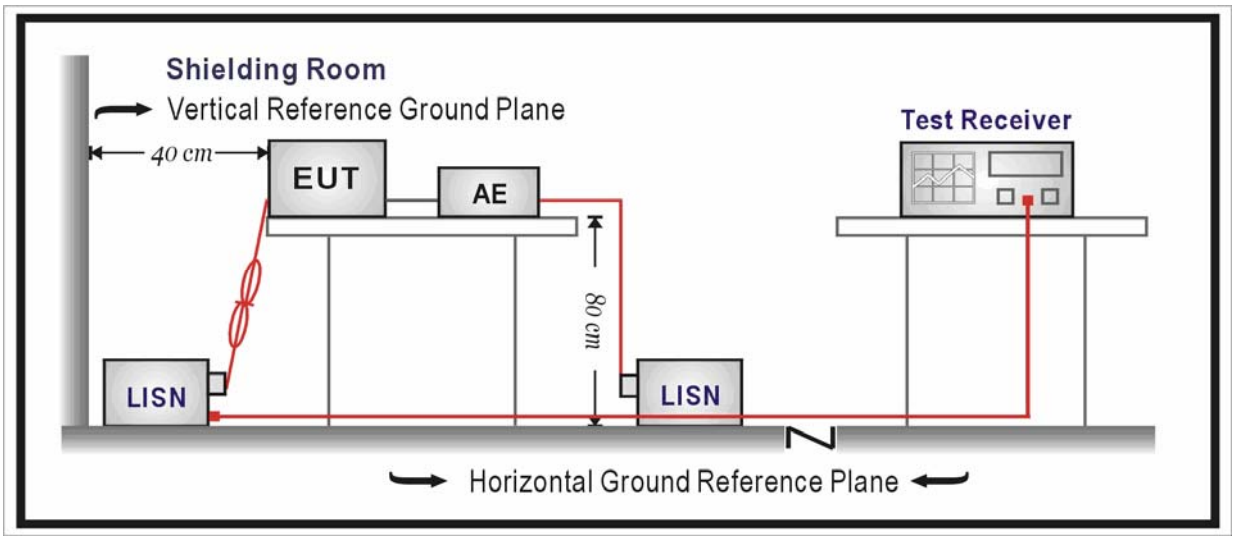
3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
EMI Test Receiver	R&S	ESCI	100726	2011.04.23
Two-Line V-Network	R&S	ENV216	100043	2011.06.18
Two-Line V-Network	R&S	ENV216	100044	2011.09.07
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2011.05.05
50ohm Termination	SHX	TF2	07081401	2011.09.27
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2012.01.14

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.

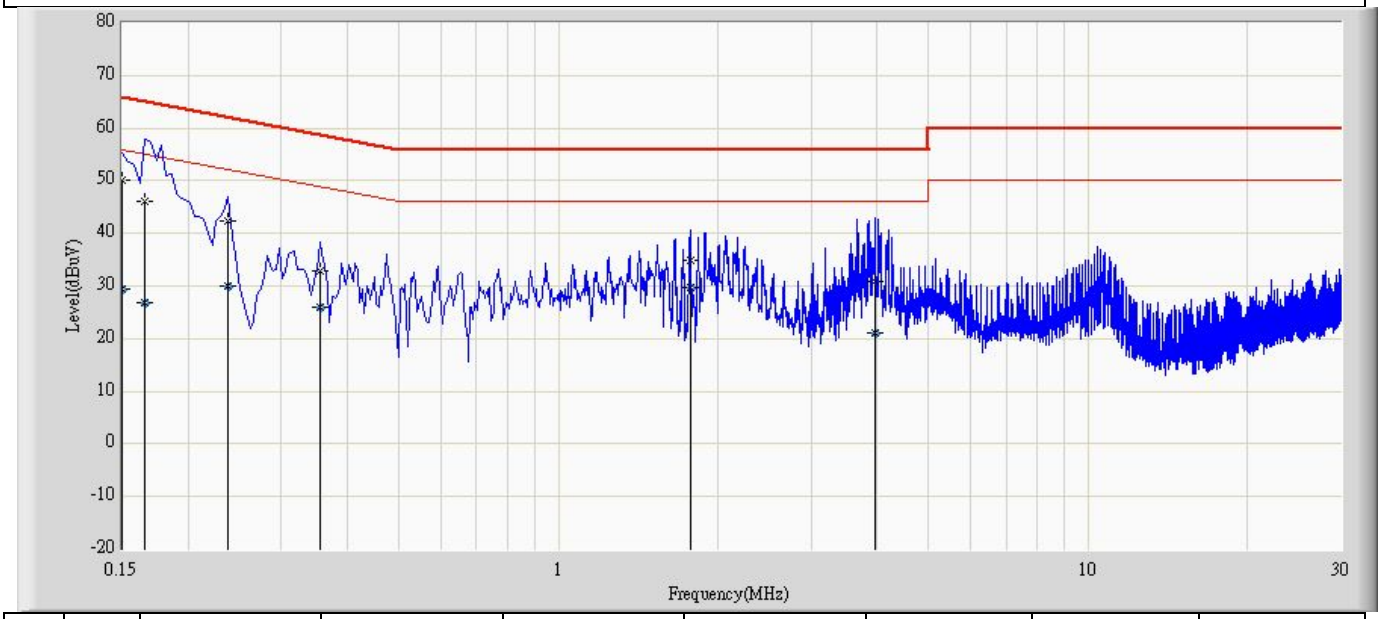
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

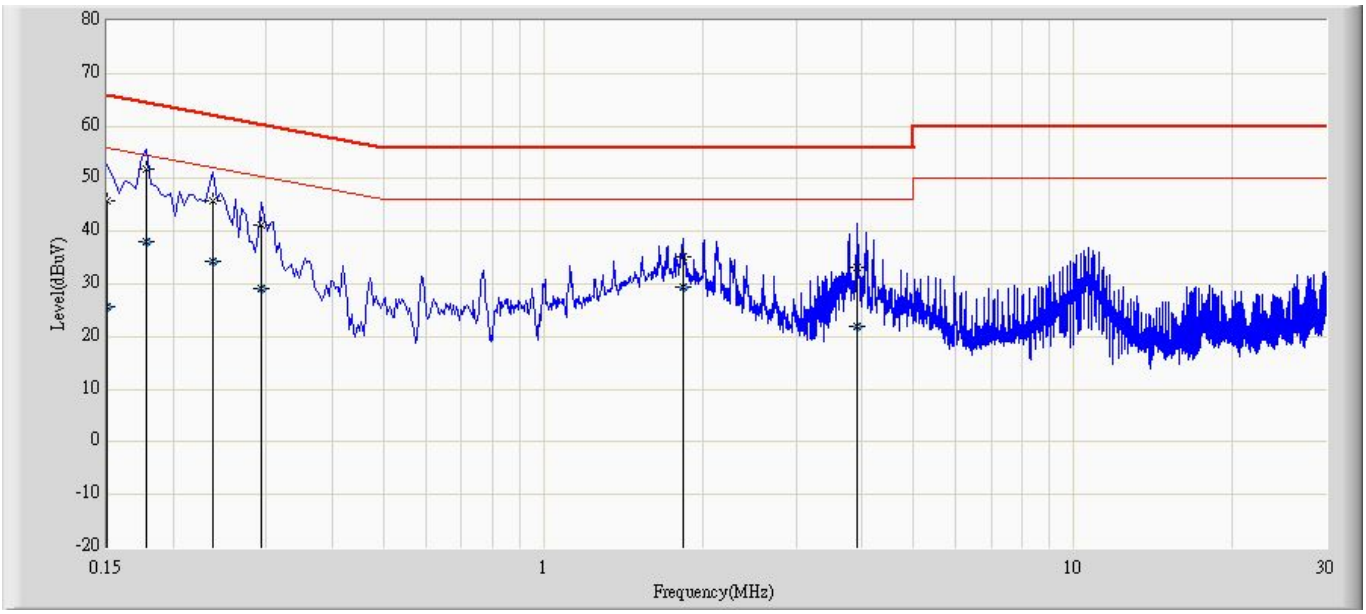
3.6. Test Result

Engineer: Sunny	
Site: TR1	Time: 2011/03/17 - 09:01
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101043(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	*	0.150	50.239	40.652	-15.761	66.000	9.588	QP
2		0.150	29.404	19.816	-26.596	56.000	9.588	AV
3		0.166	46.002	36.403	-19.157	65.158	9.598	QP
4		0.166	26.793	17.195	-28.365	55.158	9.598	AV
5		0.238	42.469	32.789	-19.697	62.166	9.680	QP
6		0.238	30.016	20.336	-22.150	52.166	9.680	AV
7		0.354	32.866	23.186	-26.002	58.868	9.680	QP
8		0.354	25.957	16.277	-22.912	48.868	9.680	AV
9		1.774	34.757	25.043	-21.243	56.000	9.713	QP
10		1.774	29.671	19.958	-16.329	46.000	9.713	AV
11		3.966	30.995	21.205	-25.005	56.000	9.790	QP
12		3.966	21.161	11.371	-24.839	46.000	9.790	AV

Engineer: Sunny	
Site: TR1	Time: 2011/03/17 - 09:04
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101043(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		0.150	45.910	36.169	-20.090	66.000	9.741	QP
2		0.150	25.689	15.948	-30.311	56.000	9.741	AV
3	*	0.178	51.975	42.272	-12.604	64.578	9.703	QP
4		0.178	38.058	28.355	-16.521	54.578	9.703	AV
5		0.238	45.781	36.130	-16.384	62.166	9.651	QP
6		0.238	34.395	24.744	-17.771	52.166	9.651	AV
7		0.294	41.155	31.502	-19.256	60.411	9.653	QP
8		0.294	29.238	19.585	-21.173	50.411	9.653	AV
9		1.830	35.227	25.503	-20.773	56.000	9.725	QP
10		1.830	29.458	19.734	-16.542	46.000	9.725	AV
11		3.898	33.299	23.510	-22.701	56.000	9.789	QP
12		3.898	22.083	12.294	-23.917	46.000	9.789	AV

4. Radiated Emission

4.1. Test Equipment

☒Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
EMI Test Receiver	R&S	ESCI	100573	2011.04.23
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2011.10.18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2011.05.05
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2012.01.14

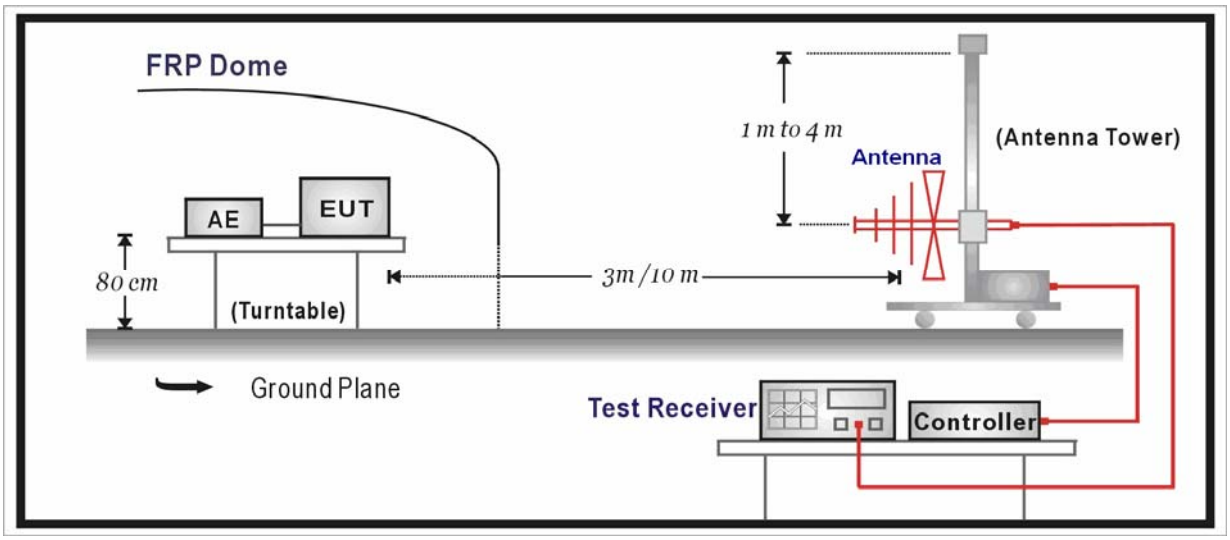
☒Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2011.04.23
EMI Test Receiver	R&S	ESCI	100906	2012.01.15
Preamplifier	Quietek	AP-180C	CHM-0602013	2011.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2011.05.05
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2011.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2011.06.11
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2011.03.03
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2011.03.03
Lowpass Filter	Wainwright	WLKS4500-9SS	SN2	2011.03.03
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2012.01.14

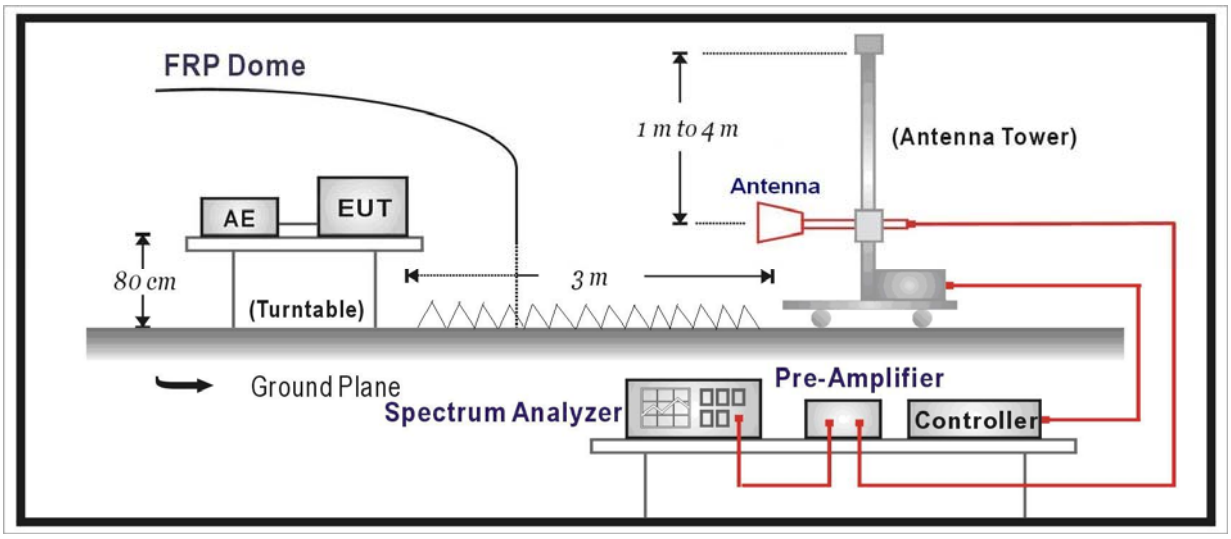
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

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	2411.9	67.7	32.0	99.7	Fundamental	/	PK
	H	226.9	27.9	-11.5	16.4	46	-29.6	QP
	H	524.7	27.3	-2.1	25.2	46	-20.8	QP
	V	3211.5	43.0	2.1	42.3	54(Note)	-11.7	PK
	H	4824.0	42.0	8.5	45.1	54(Note)	-8.9	PK
	V	7236.0	41.0	9.2	50.5	54(Note)	-3.5	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
6	V	2437.0	68.1	32.2	100.3	Fundamental	/	PK
	H	379.7	25.6	-4.9	20.7	46	-25.3	QP
	H	650.3	25.3	0.1	25.4	46	-20.7	QP
	H	3211.5	42.9	-0.8	42.1	54(Note)	-11.9	PK
	V	4874.0	42.2	3.1	45.3	54(Note)	-8.7	PK
	H	7311.0	41.6	9.4	51.0	54(Note)	-3.0	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
11	V	2462.0	68.9	31.9	100.8	Fundamental	/	PK
	H	355.9	25.4	-5.6	19.8	46	-26.2	QP
	H	567.4	27.5	-0.9	26.6	46	-19.4	QP
	H	3211.5	43.1	-0.7	42.4	54(Note)	-11.6	PK
	H	4924.0	41.8	3.3	45.1	54(Note)	-8.9	PK
	H	7386.0	41.4	9.7	51.1	54(Note)	-2.9	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 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	2417.1	69.3	32.0	101.3	Fundamental	/	PK
	H	306.9	25.1	-7.2	17.9	46	-28.1	QP
	H	567.4	26.0	-0.8	25.2	46	-20.8	QP
	V	3211.5	43.7	-0.4	43.3	54(Note)	-10.7	PK
	V	4824.0	42.0	3.1	45.1	54(Note)	-8.9	PK
	H	7236.0	41.7	9.5	51.2	54(Note)	-2.8	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
6	V	2436.9	69.5	33.0	102.5	Fundamental	/	PK
	H	357.4	25.8	-5.5	20.3	46	-25.7	QP
	H	539.3	26.9	-1.6	25.3	46	-20.7	QP
	H	3211.5	44.9	-0.5	44.4	54(Note)	-9.6	PK
	H	4874	42.2	3.1	45.3	54(Note)	-8.7	PK
	V	7311	41.4	9.5	50.9	54(Note)	-3.1	PK
	H	24000.0	59.1	-8.9	50.2	54(Note)	-3.8	PK
11	H	2462.3	70.8	31.9	102.7	Fundamental	/	PK
	H	226.9	27.8	-11.6	16.2	46	-29.8	QP
	H	439.8	26.5	-3.6	22.9	46	-23.1	QP
	V	3211.5	43.1	-0.8	42.3	54(Note)	-11.7	PK
	H	4924.0	41.9	3.3	45.2	54(Note)	-8.8	PK
	H	7386.0	41.8	9.7	51.5	54(Note)	-2.5	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

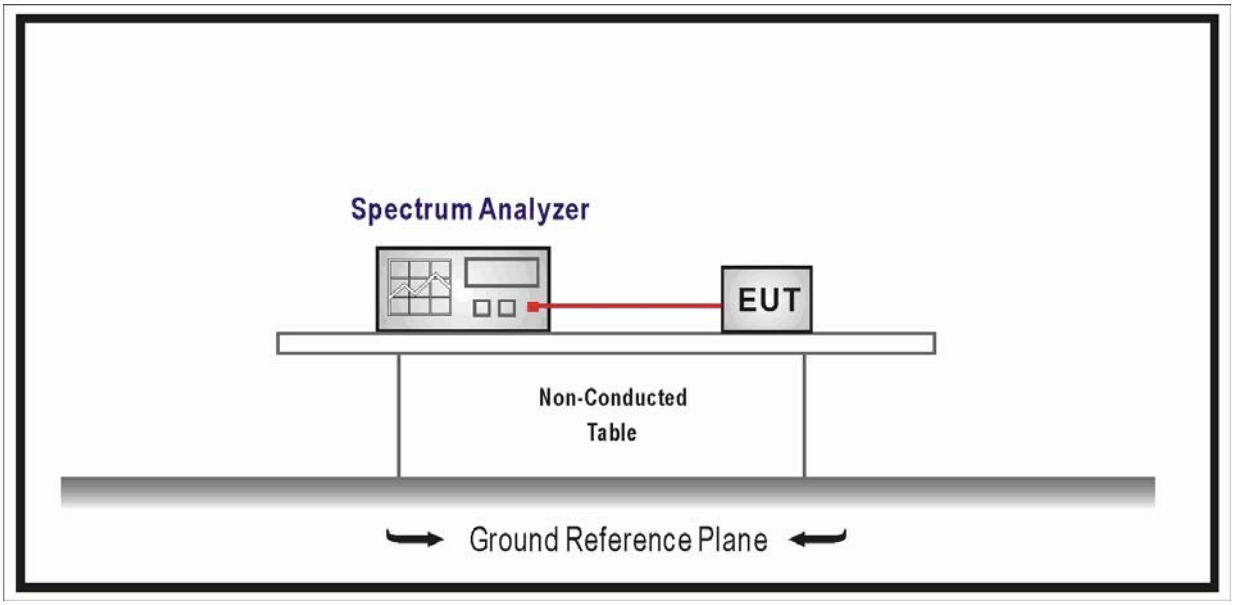
5.1. Test Equipment

RF Antenna Conducted Spurious / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2011.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.01.14

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 ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

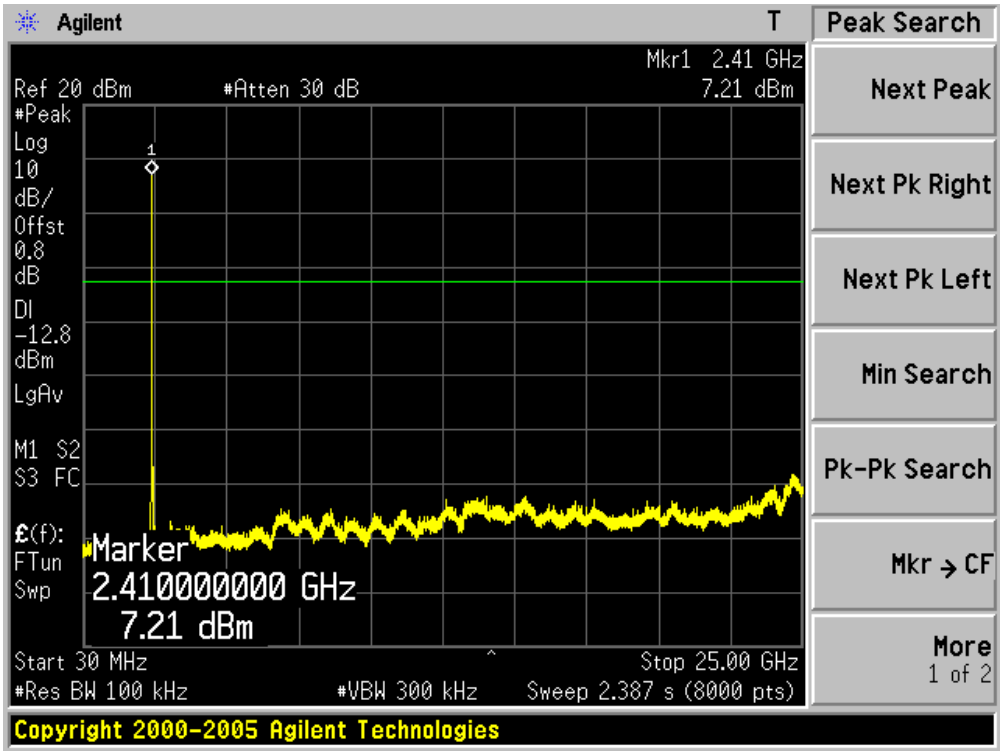
5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

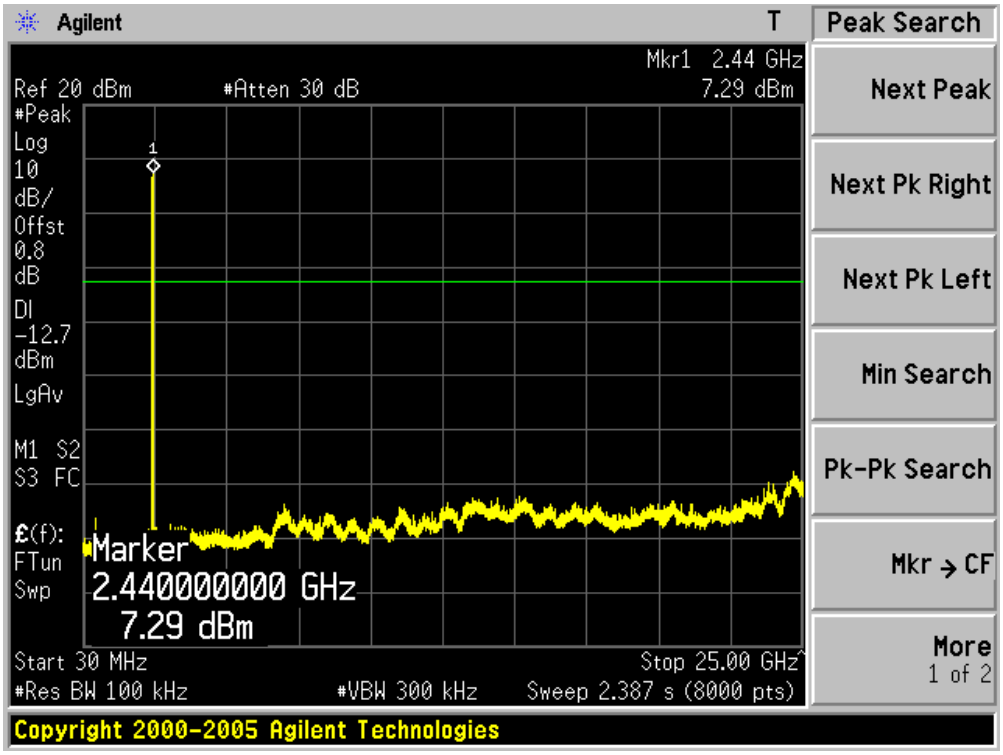
5.6. Test Result

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

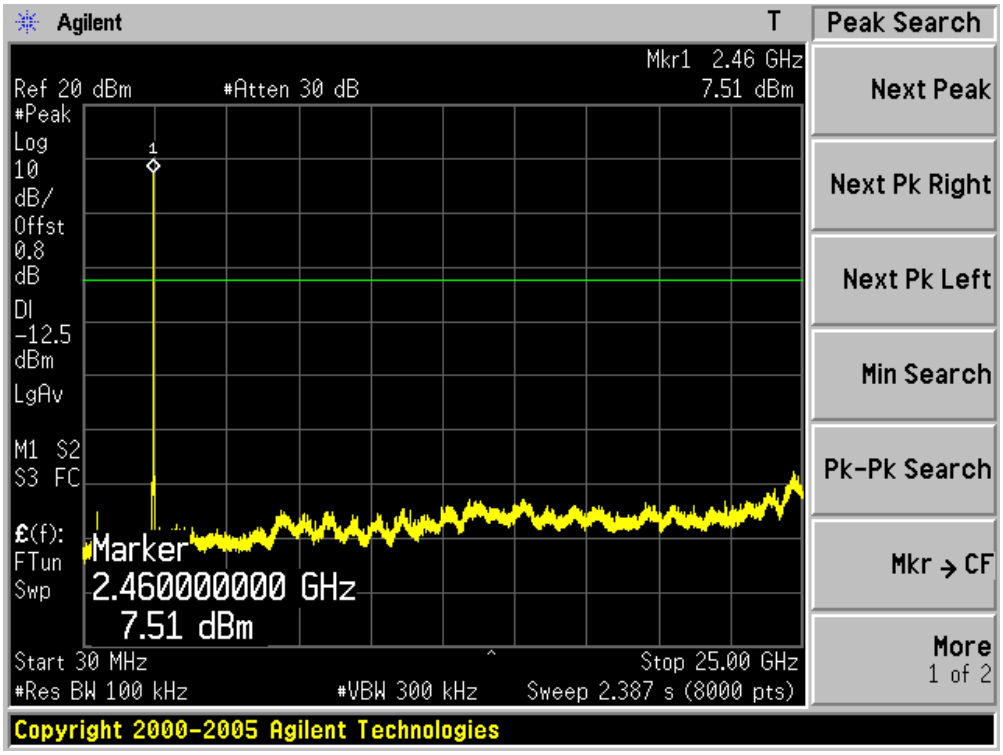
Channel 01 (2412MHz)



Channel 06 (2437MHz)

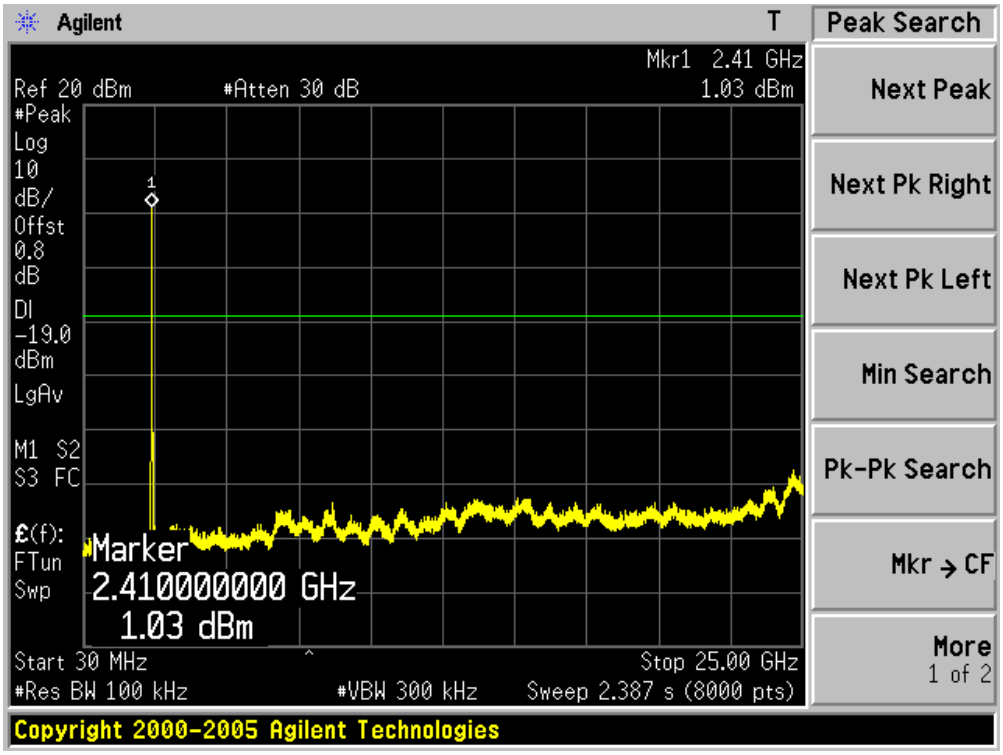


Channel 11 (2462MHz)

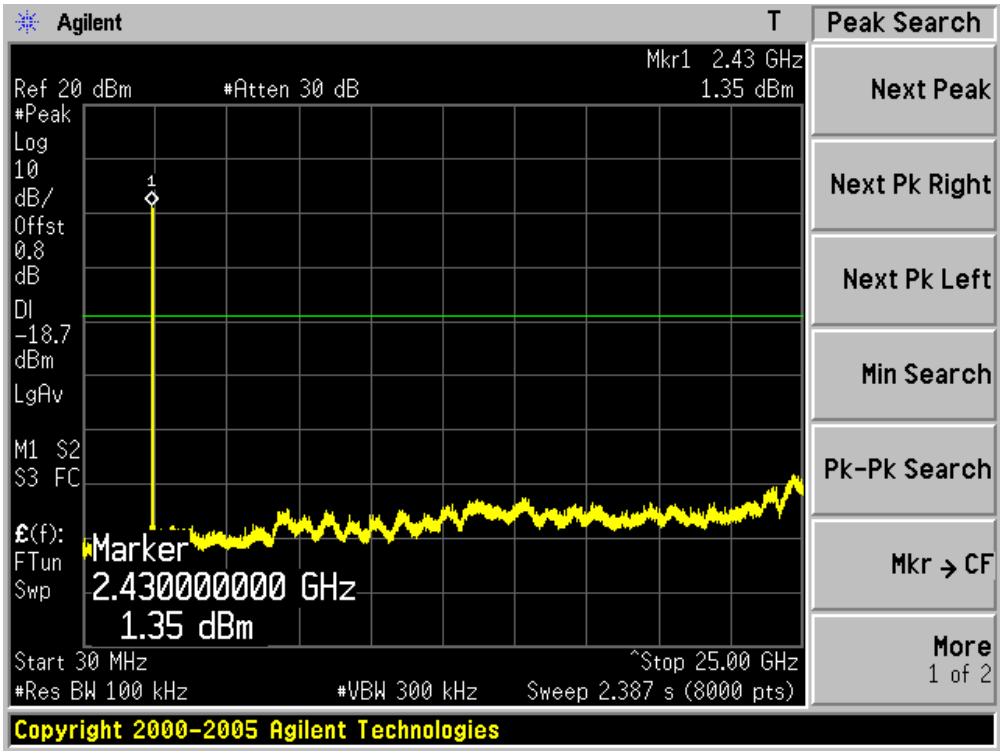


Product	:	GSM Mobile Phone
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

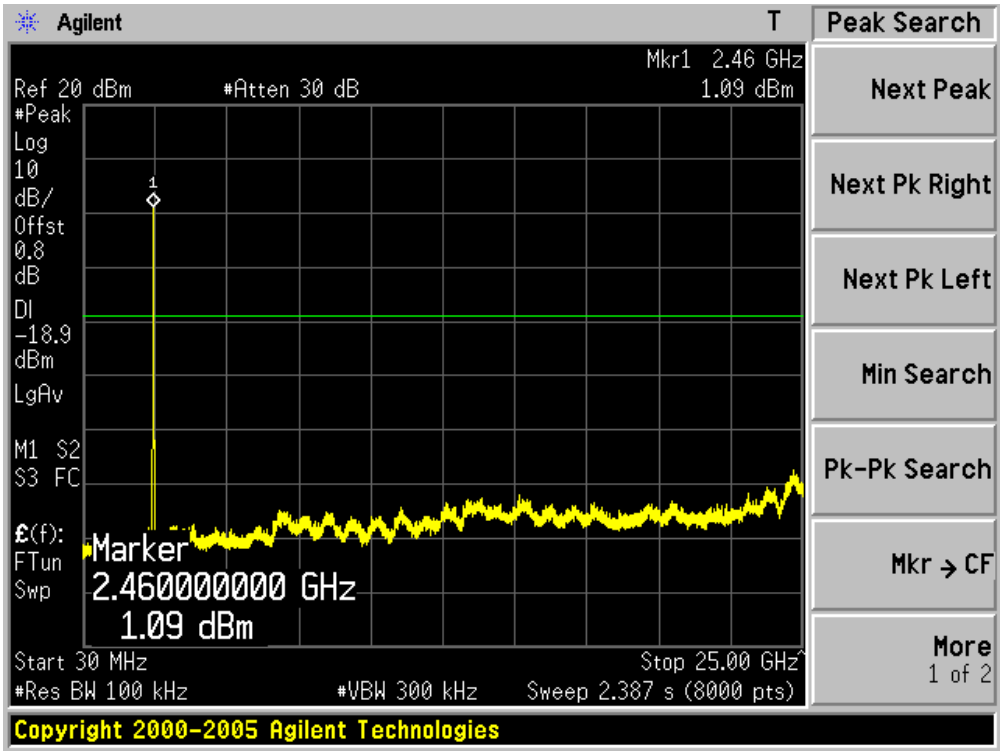
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



6. Radiated Emission Band Edge

6.1. Test Equipment

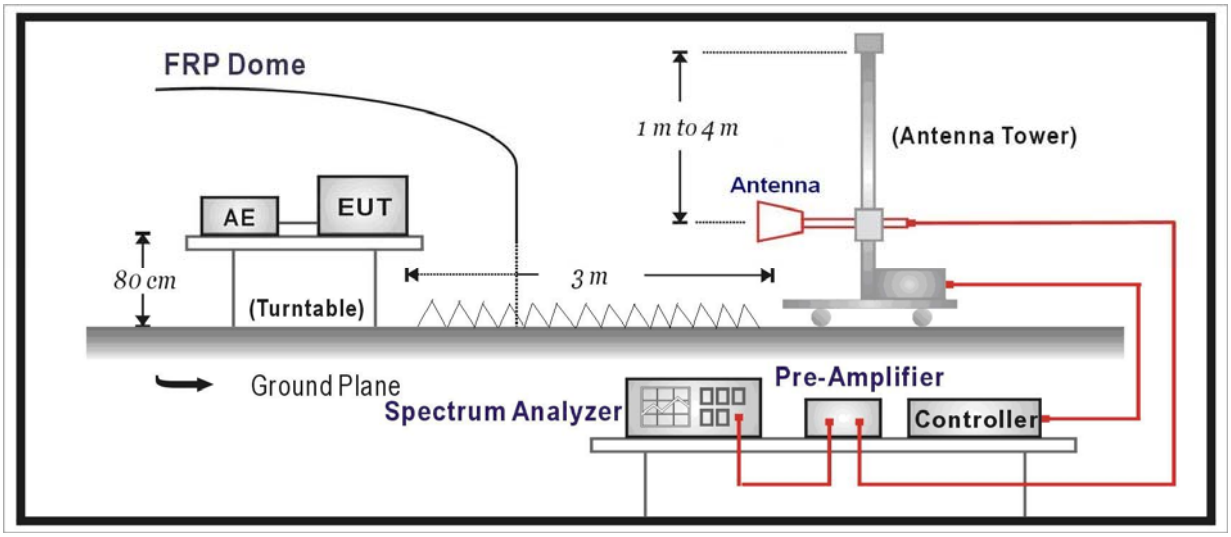
☒Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2011.04.23
EMI Test Receiver	R&S	ESCI	100573	2011.04.23
Preamplifier	Quietek	AP-025C	CHM-0511006	2011.05.05
Preamplifier	Quietek	AP-180C	CHM-0602013	2011.05.05
Bilog Type Antenna	Schaffner	CBL6112B	2932	2011.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2011.06.11
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2011.05.05
Temperature/Humidity Meter	zhicheng	ZC1-2	AC5-TH	2012.01.14

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.

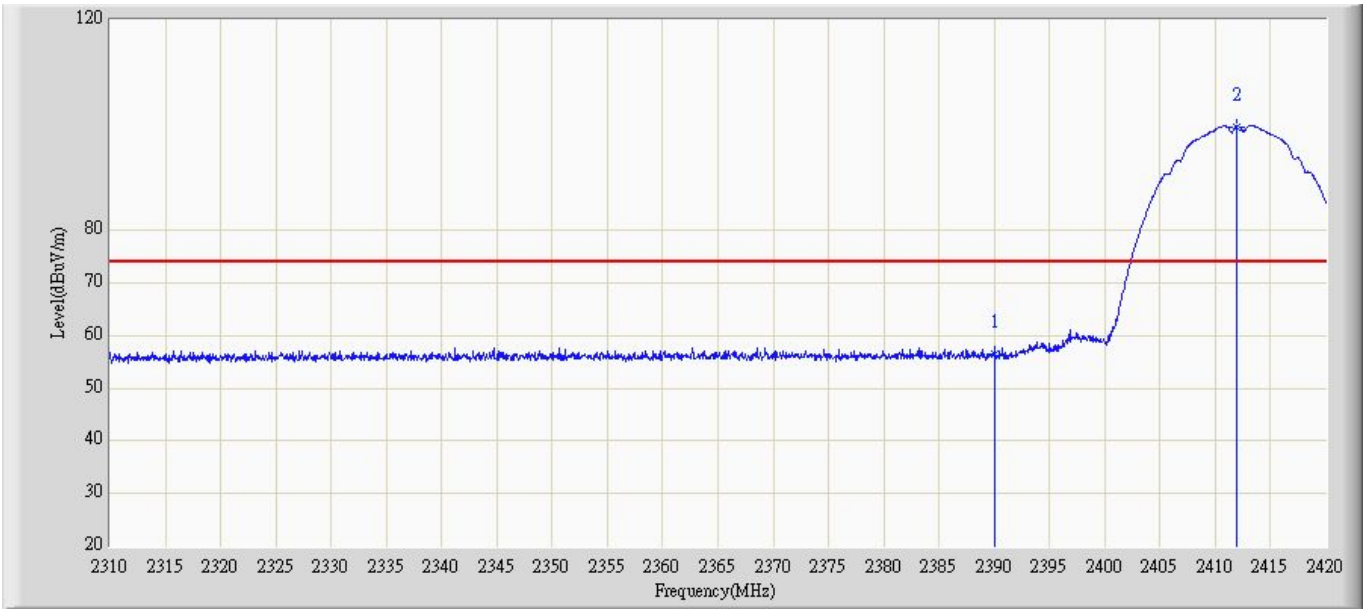
6.5. Uncertainty

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

6.6. Test Result

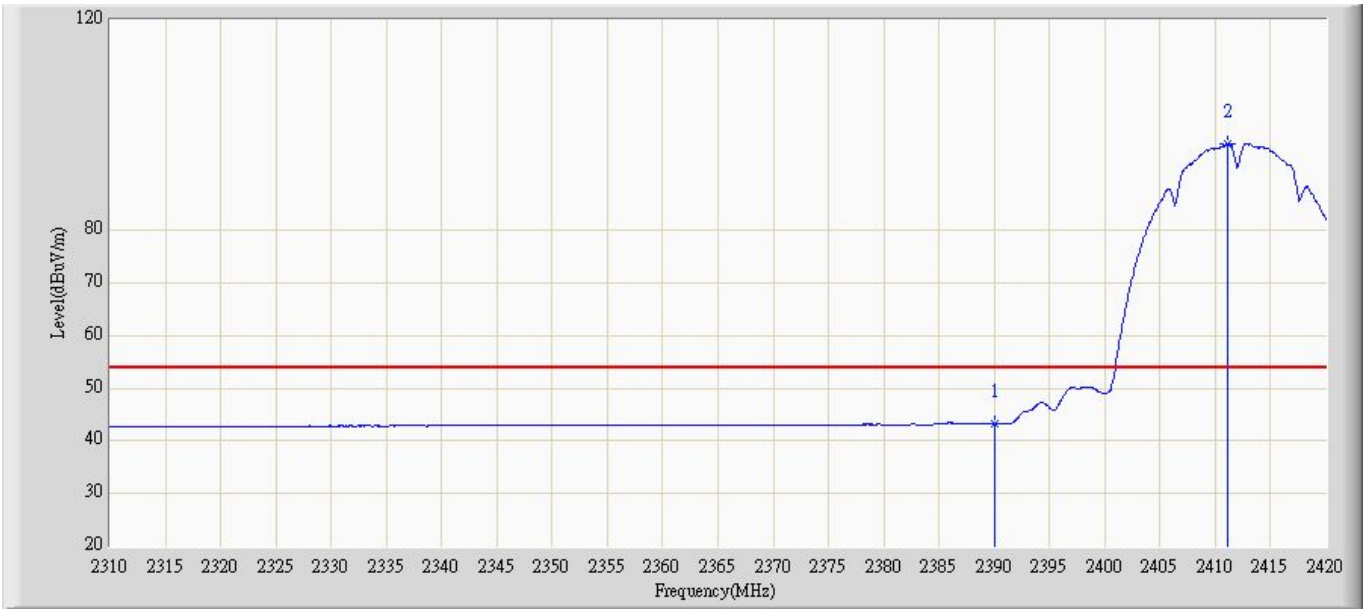
Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Profile: 113S016R	Page No.: 108
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 1: Transmit at channel 2412 by 802.11b	



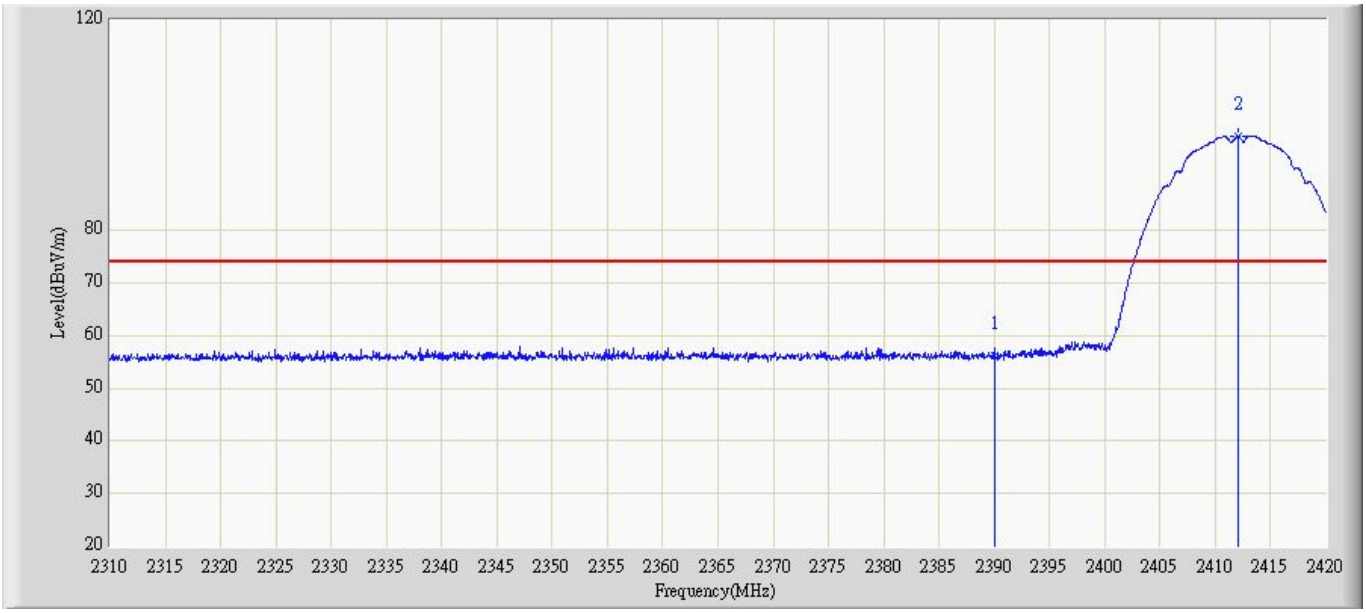
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	56.503	24.506	-17.497	74.000	31.997	PK
2	*	2411.860	99.710	67.697	N/A	N/A	32.013	PK

Profile: 113S016R	Page No.: 109
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 1: Transmit at channel 2412 by 802.11b	



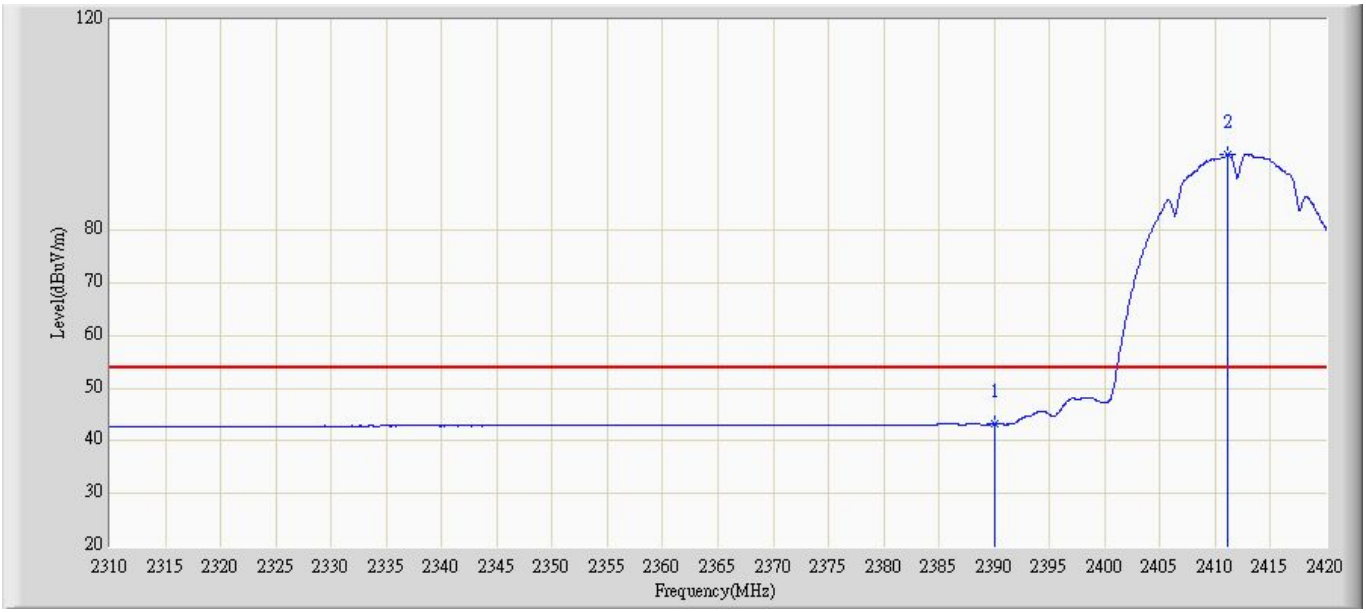
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	43.336	11.339	-10.664	54.000	31.997	AV
2	*	2411.145	96.554	64.542	N/A	N/A	32.012	AV

Profile: 113S016R	Page No.: 110
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 1: Transmit at channel 2412 by 802.11b	



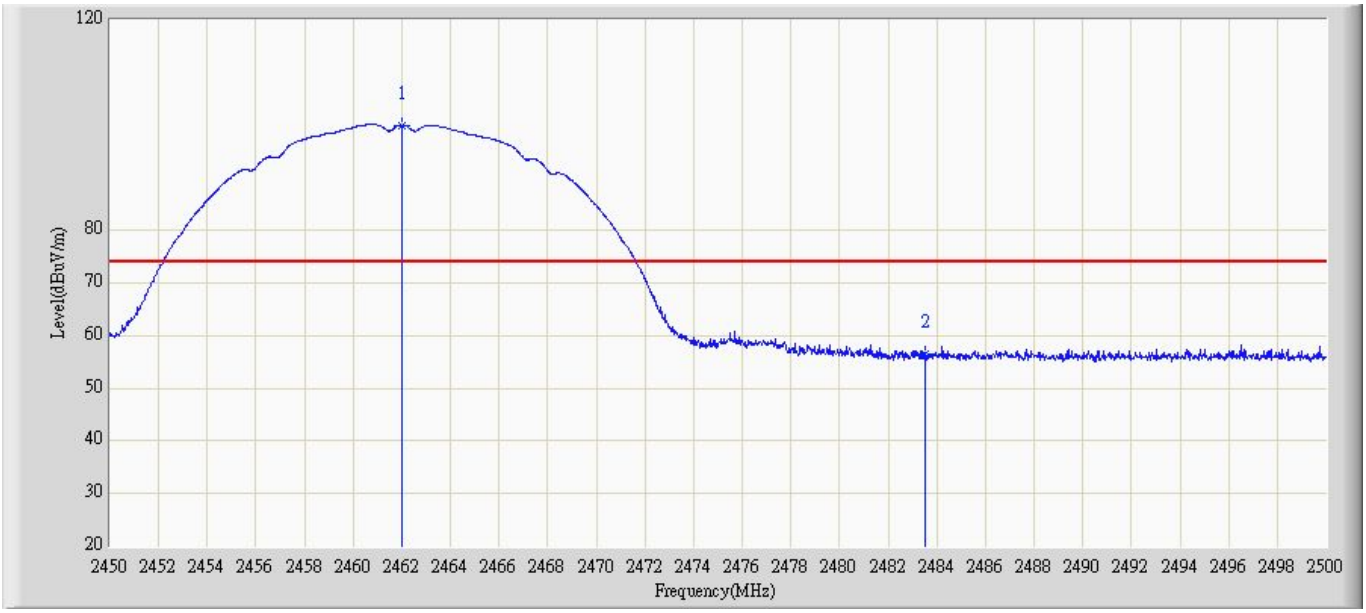
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	56.077	24.080	-17.923	74.000	31.997	PK
2	*	2412.025	97.833	65.820	N/A	N/A	32.013	PK

Profile: 113S016R	Page No.: 111
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 1: Transmit at channel 2412 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	43.175	11.178	-10.825	54.000	31.997	AV
2	*	2411.145	94.540	62.528	N/A	N/A	32.012	AV

Profile: 113S016R	Page No.: 112
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 1: Transmit at channel 2462 by 802.11b	

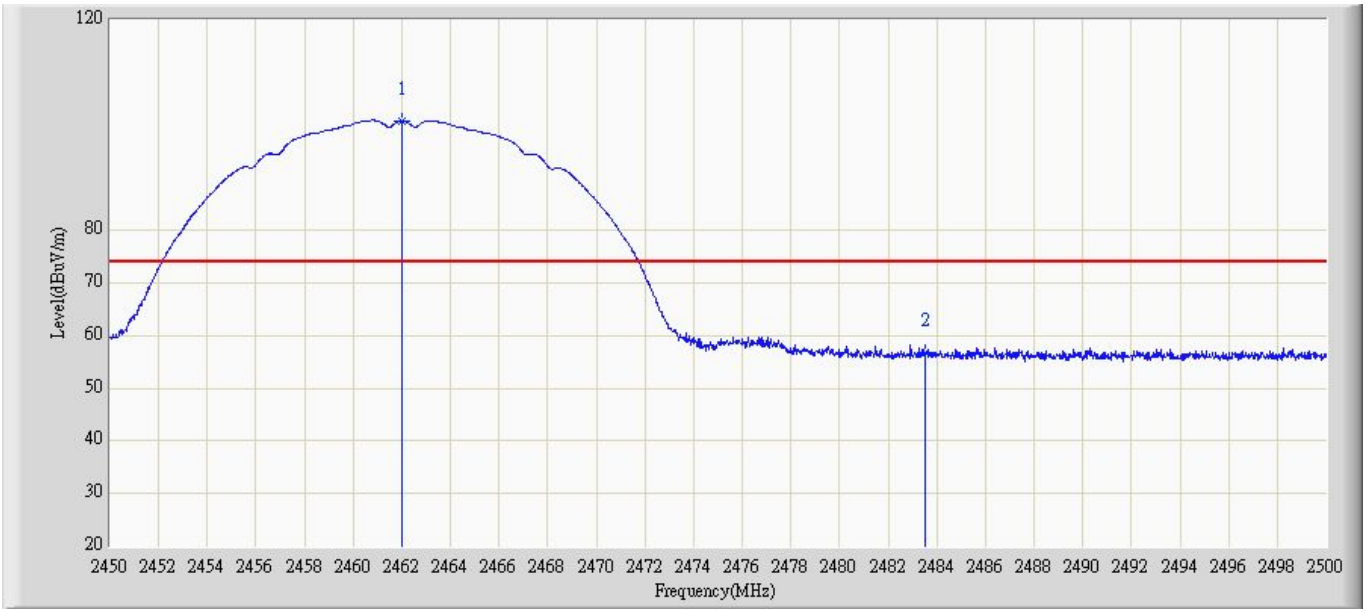


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.025	100.023	68.056	N/A	N/A	31.967	PK
2		2483.500	56.393	24.514	-17.607	74.000	31.878	PK

Profile: 113S016R	Page No.: 113
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 1: Transmit at channel 2462 by 802.11b	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.325	96.897	64.927	N/A	N/A	31.970	AV
2		2483.500	43.750	11.871	-10.250	54.000	31.878	AV

Profile: 113S016R	Page No.: 114
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 1: Transmit at channel 2462 by 802.11b	

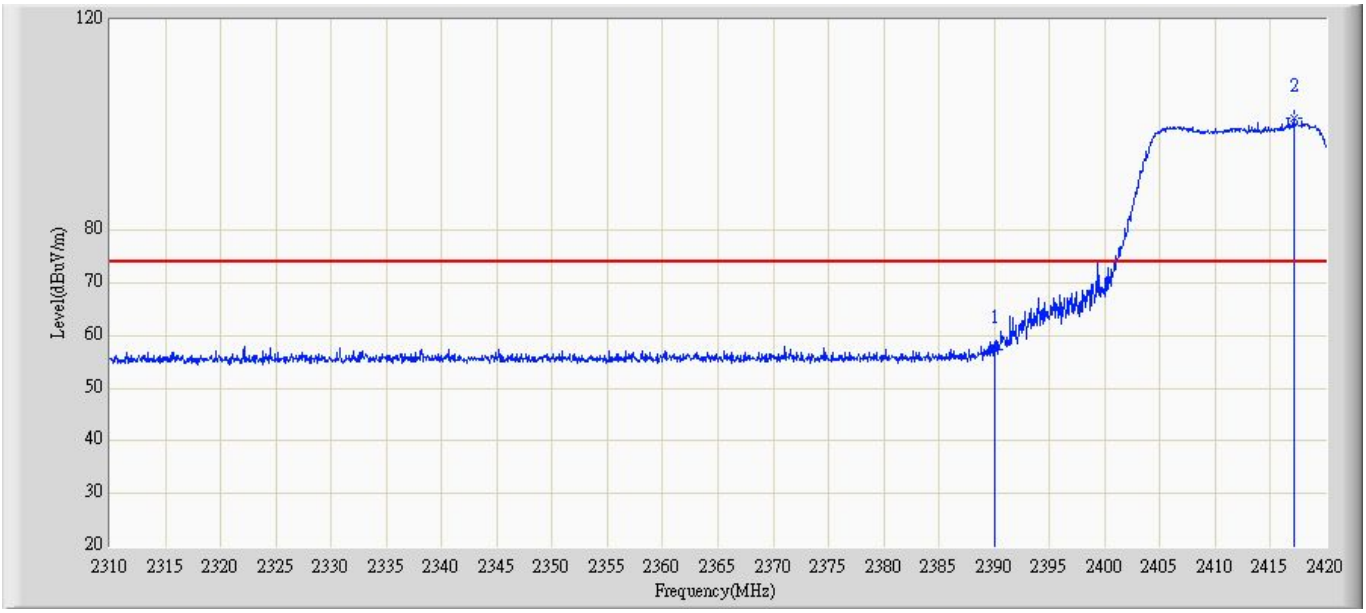


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.025	100.814	68.847	N/A	N/A	31.967	PK
2		2483.500	56.914	25.035	-17.086	74.000	31.878	PK

Profile: 113S016R	Page No.: 115
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 1: Transmit at channel 2462 by 802.11b	

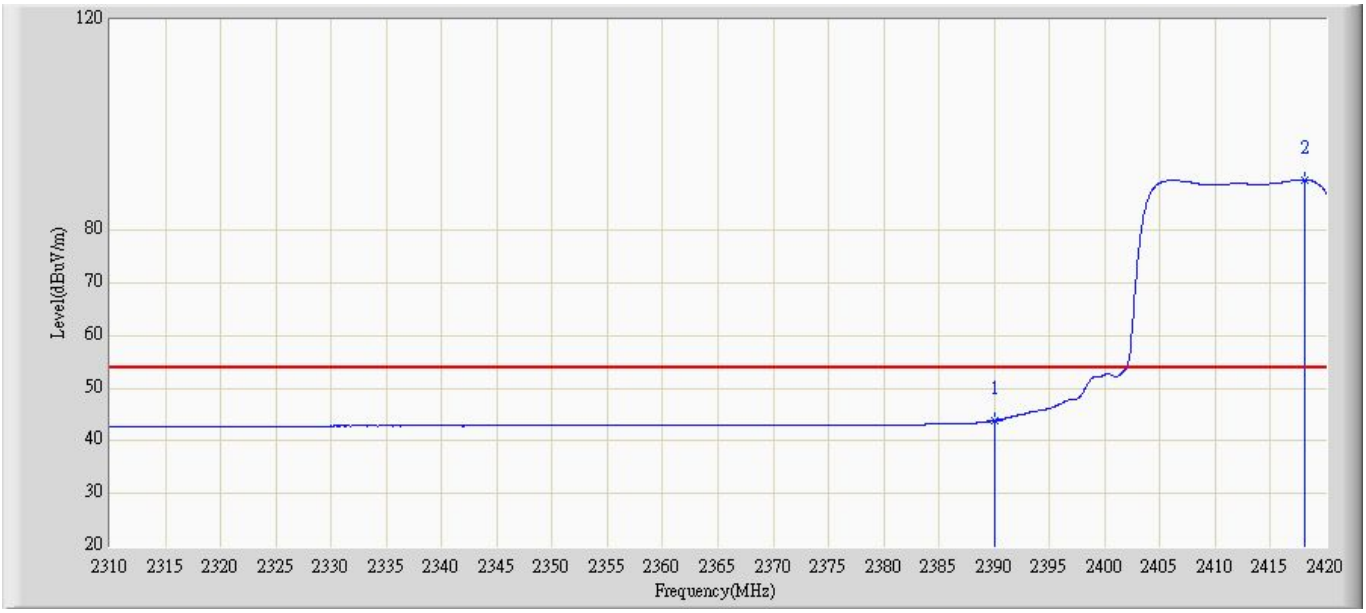
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.650	97.333	65.369	N/A	N/A	31.964	AV
2		2483.500	43.989	12.110	-10.011	54.000	31.878	AV

Profile: 113S016R	Page No.: 116
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 2: Transmit at channel 2412 by 802.11g	



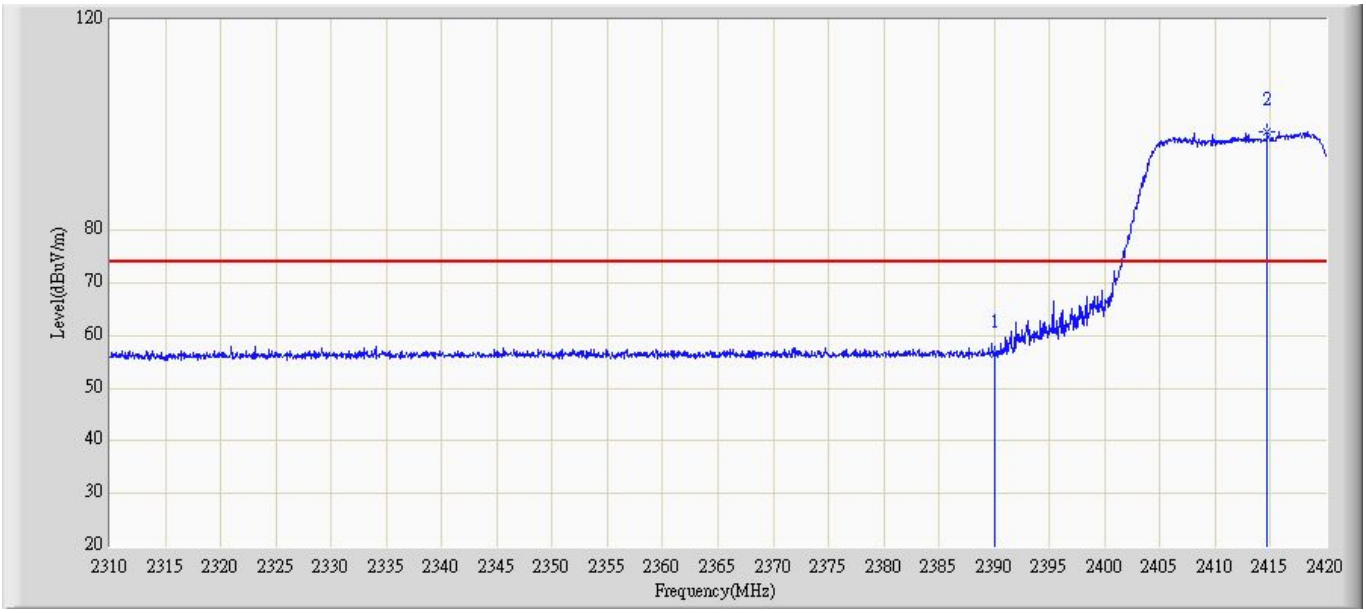
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	57.459	25.462	-16.541	74.000	31.997	PK
2	*	2417.085	101.330	69.309	N/A	N/A	32.020	PK

Profile: 113S016R	Page No.: 117
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 2: Transmit at channel 2412 by 802.11g	



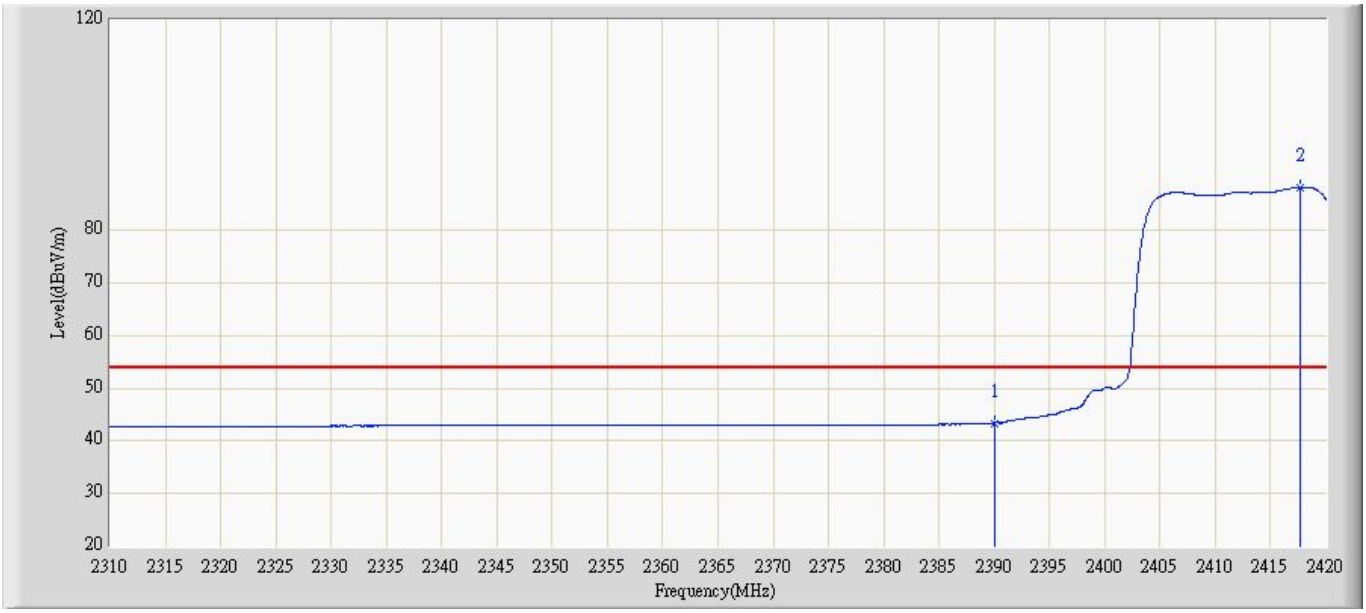
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	43.871	11.874	-10.129	54.000	31.997	AV
2	*	2418.075	89.659	57.637	N/A	N/A	32.022	AV

Profile: 113S016R	Page No.: 118
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 2: Transmit at channel 2412 by 802.11g	



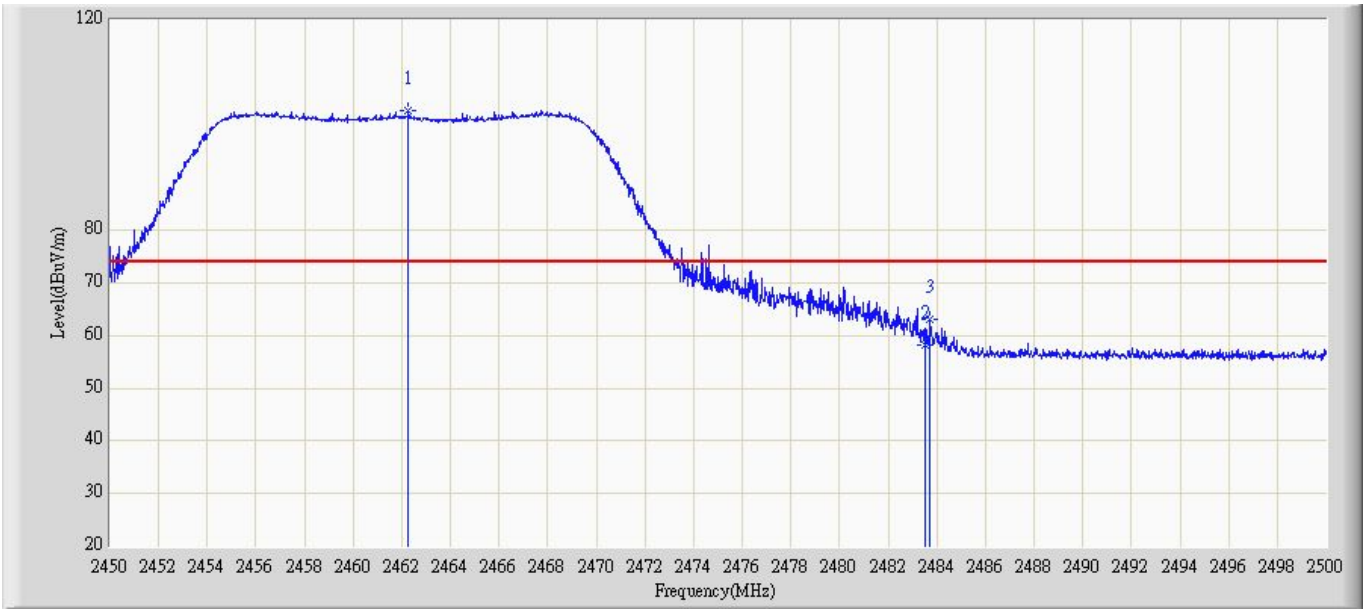
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	56.634	24.637	-17.366	74.000	31.997	PK
2	*	2414.720	98.788	66.771	N/A	N/A	32.017	PK

Profile: 113S016R	Page No.: 119
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 2: Transmit at channel 2412 by 802.11g	



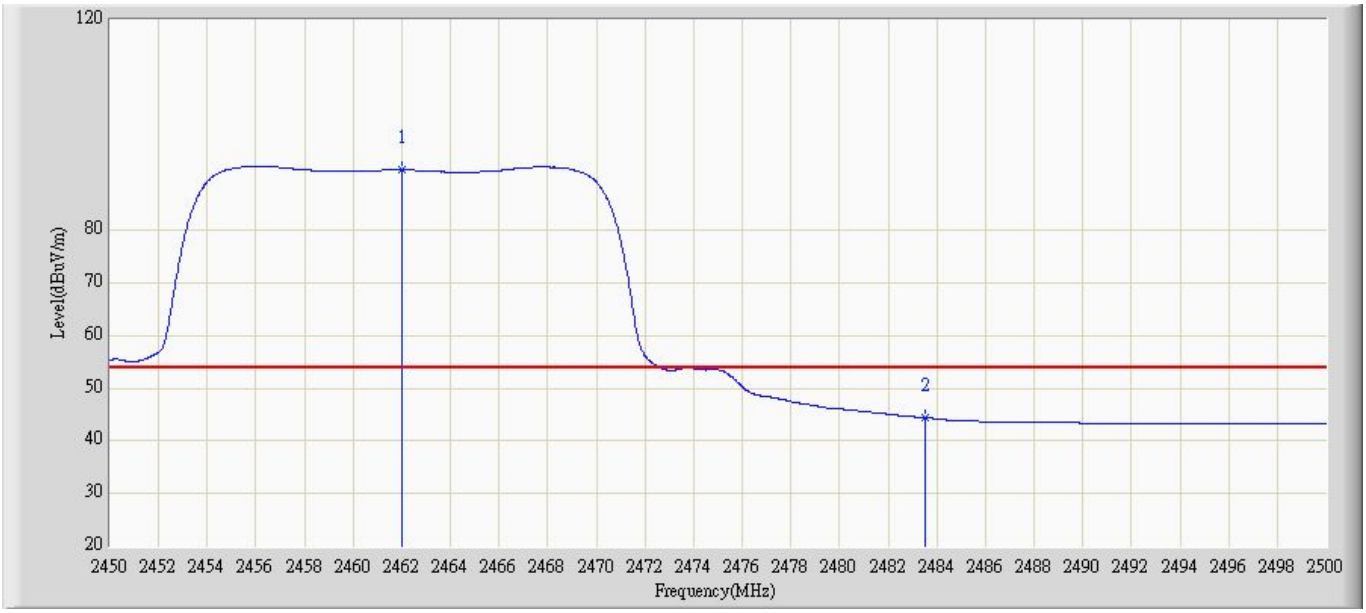
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	43.402	11.405	-10.598	54.000	31.997	AV
2	*	2417.690	88.221	56.200	N/A	N/A	32.021	AV

Profile: 113S016R	Page No.: 120
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 2: Transmit at channel 2462 by 802.11g	



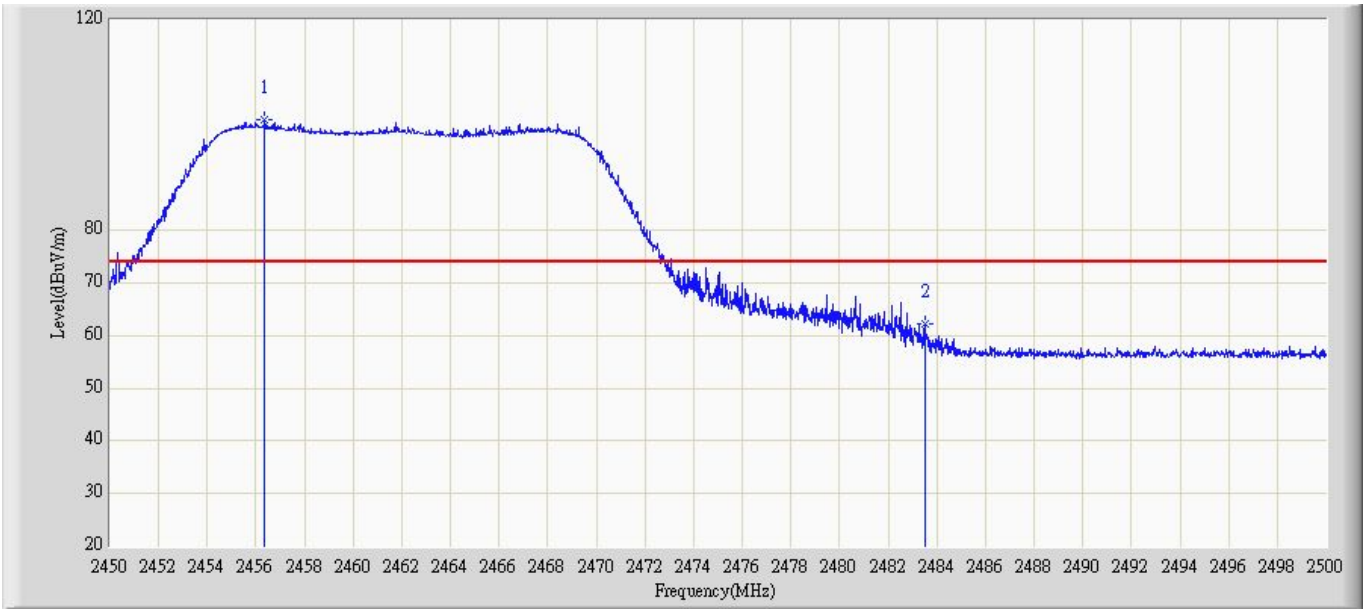
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.275	102.744	70.778	N/A	N/A	31.965	PK
2		2483.500	58.297	26.418	-15.703	74.000	31.878	PK
3		2483.725	63.107	31.229	-10.893	74.000	31.878	PK

Profile: 113S016R	Page No.: 121
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 2: Transmit at channel 2462 by 802.11g	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.025	91.631	59.664	N/A	N/A	31.967	AV
2		2483.500	44.382	12.503	-9.618	54.000	31.878	AV

Profile: 113S016R	Page No.: 123
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 16:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 2: Transmit at channel 2462 by 802.11g	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2456.350	101.169	69.178	N/A	N/A	31.991	PK
2		2483.500	62.153	30.274	-11.847	74.000	31.878	PK

Profile: 113S016R	Page No.: 124
Engineer: Jack	
Site: AC5	Time: 2011/03/24 - 17:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: Mobile Phone	Power: DC 3.7V
Note: Mode 2: Transmit at channel 2462 by 802.11g	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2456.225	89.450	57.458	N/A	N/A	31.992	AV
2		2483.500	44.017	12.138	-9.983	54.000	31.878	AV

7. Operation Frequency Range of 20dB Bandwidth

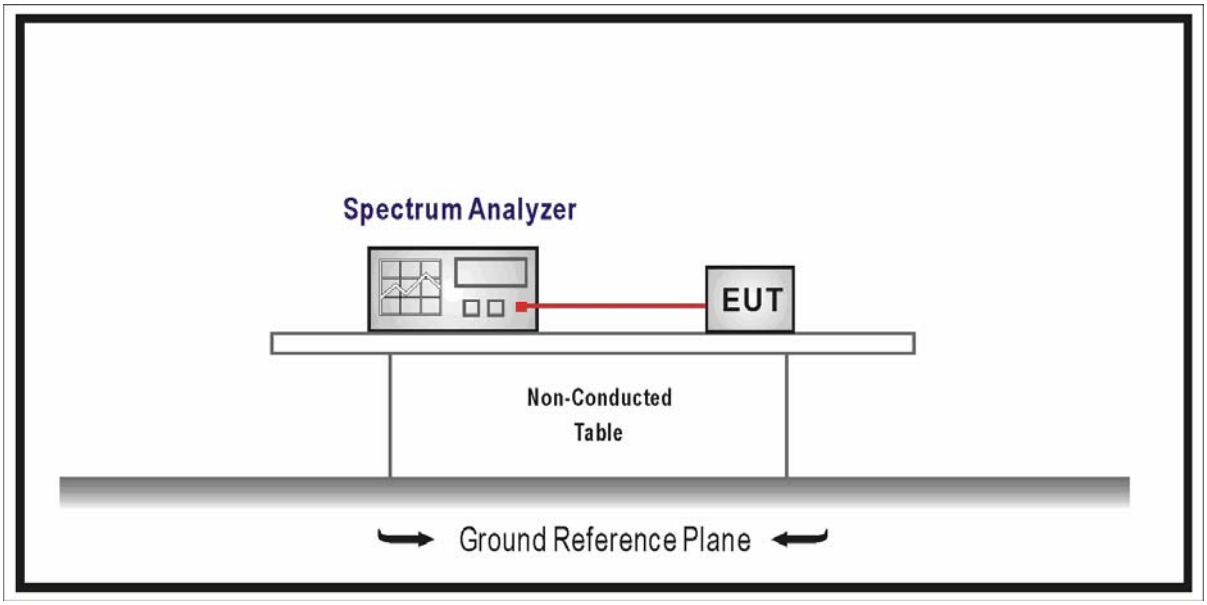
7.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2011.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.01.14

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 ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

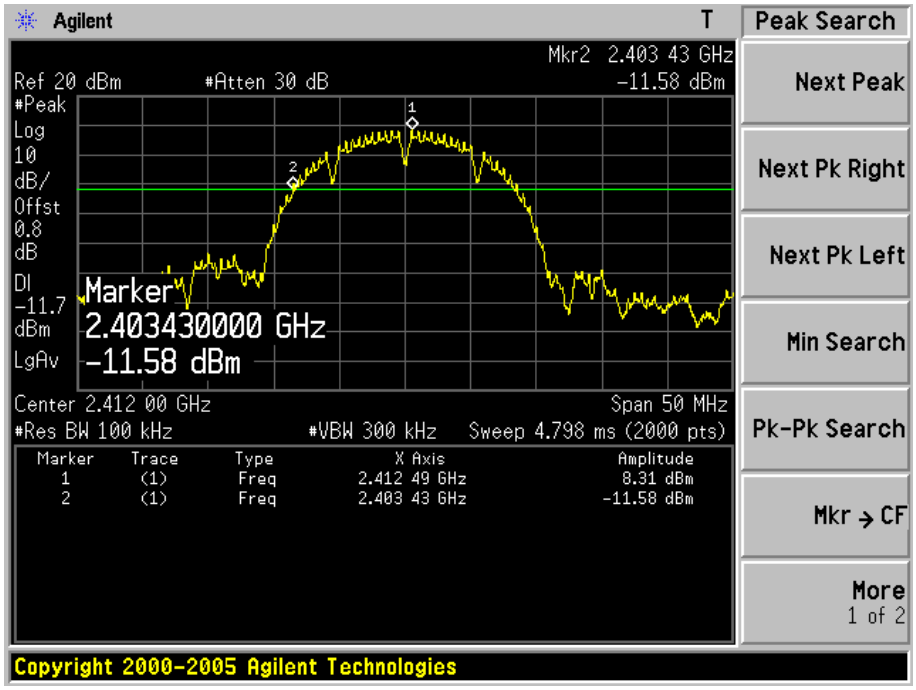
7.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

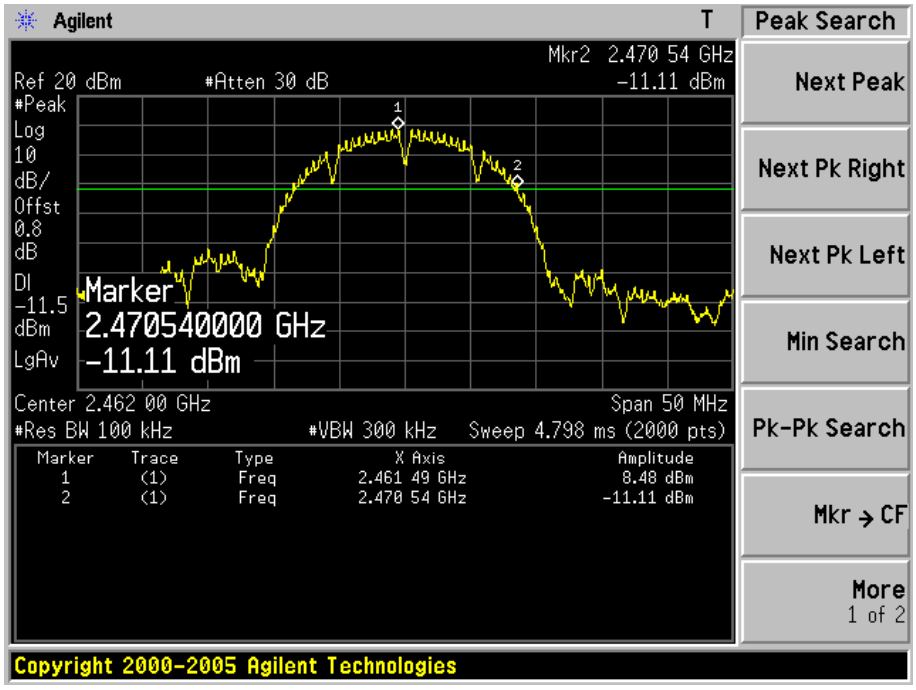
7.6. Test Result

Product	:	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)

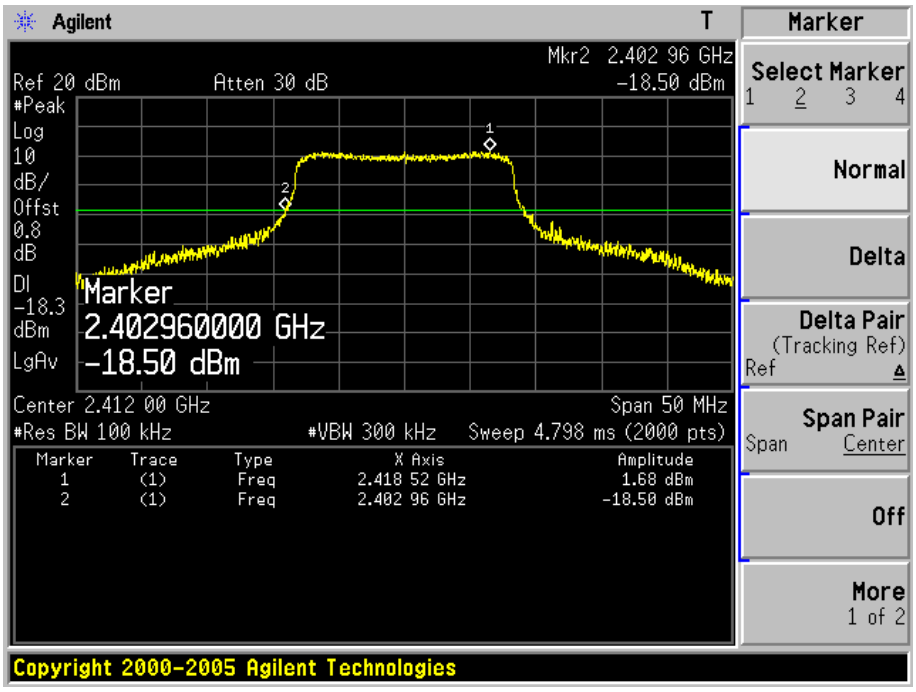


Channel 11 (2462MHz)

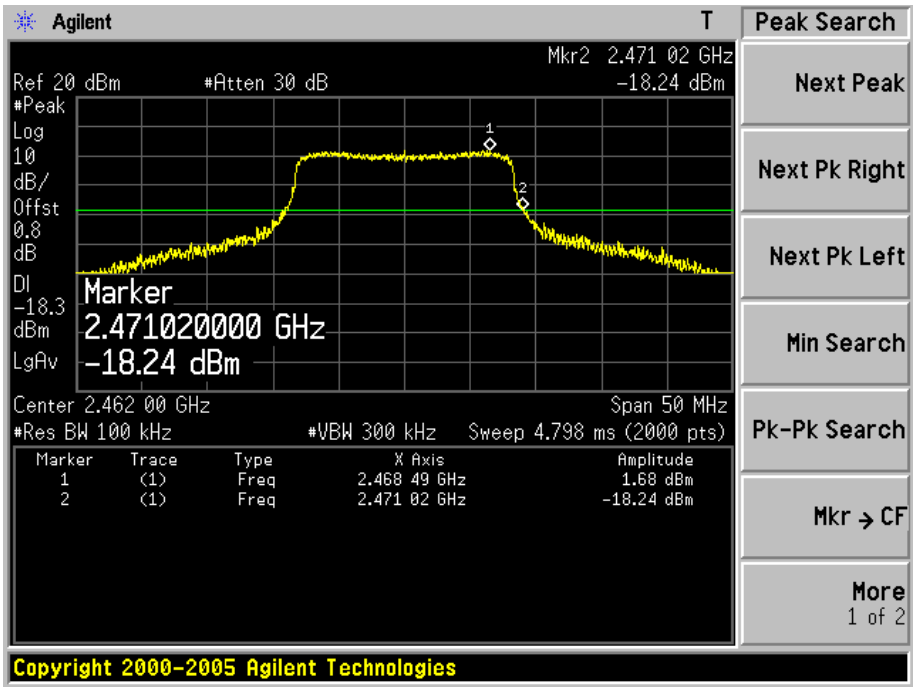


Product	:	GSM Mobile Phone
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

Channel 01 (2412MHz)



Channel 11 (2462MHz)



8. Occupied Bandwidth

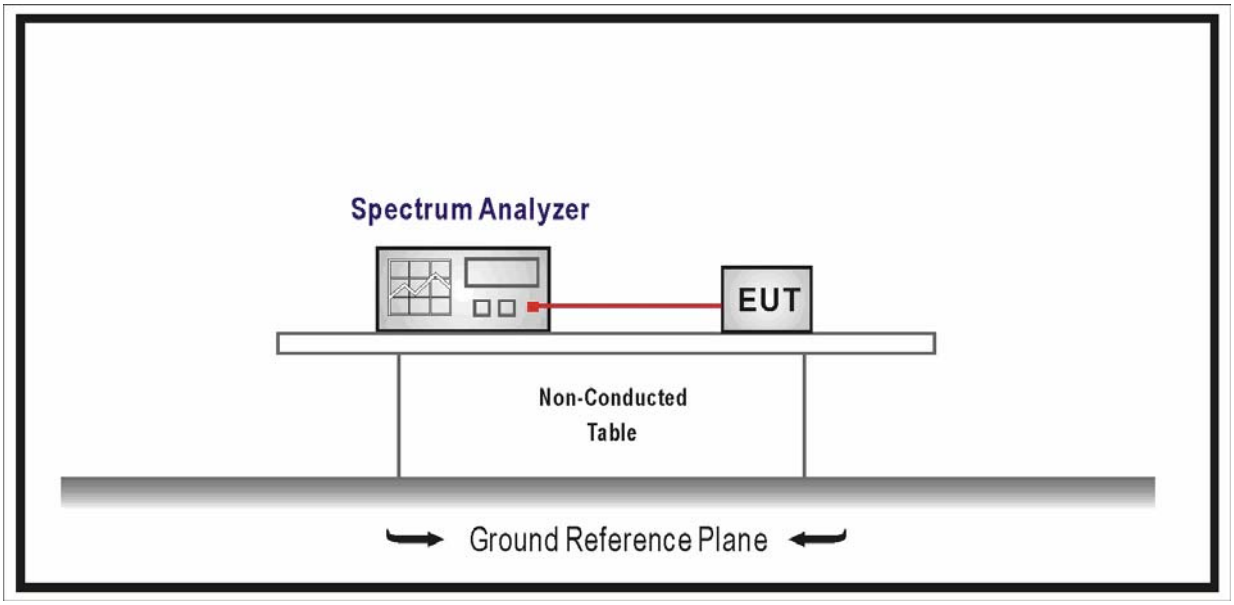
8.1. Test Equipment

Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2011.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.01.14

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 ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

8.5. Uncertainty

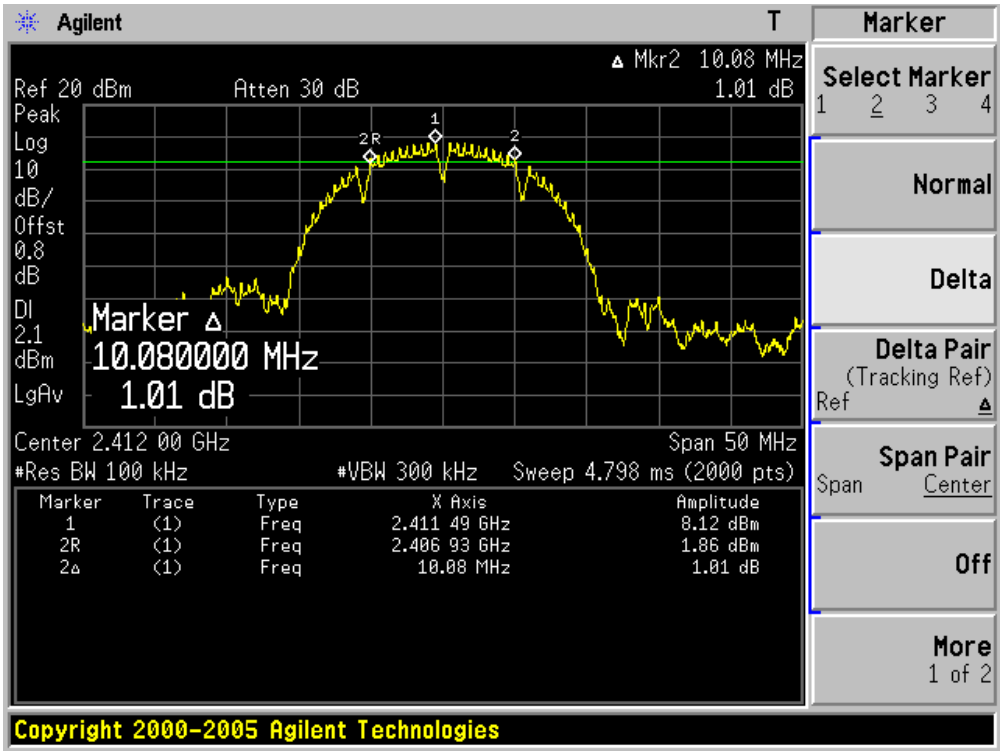
The measurement uncertainty is defined as ± 1 kHz

8.6. Test Result

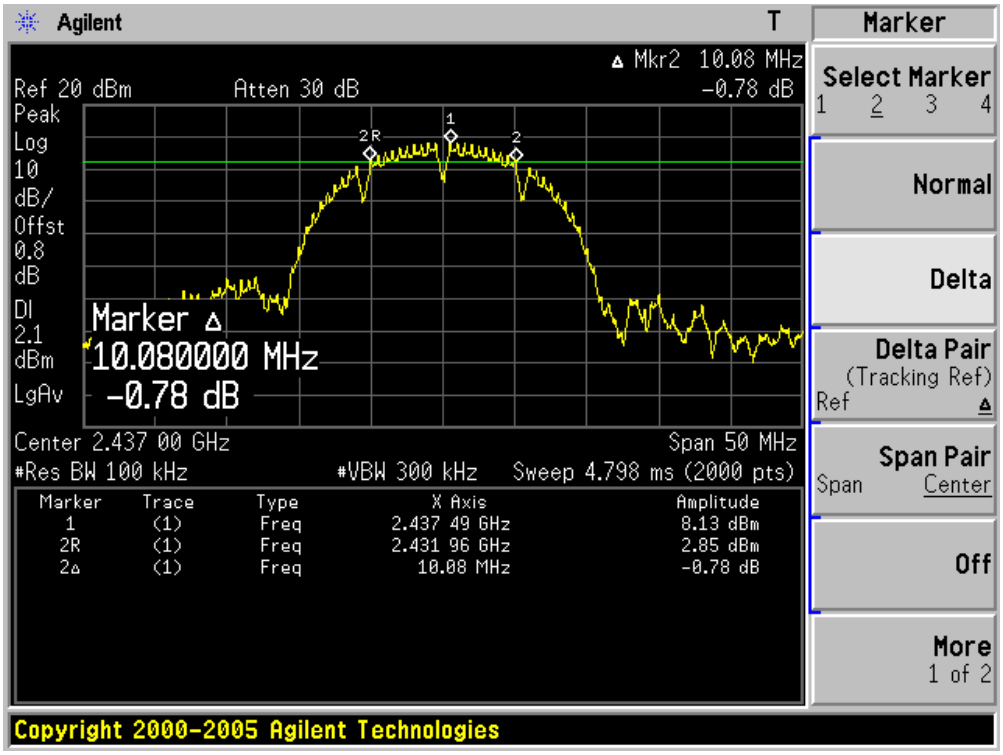
Product	:	GSM Mobile Phone
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	10080	500	Pass
06	2437	10080	500	Pass
11	2462	10110	500	Pass

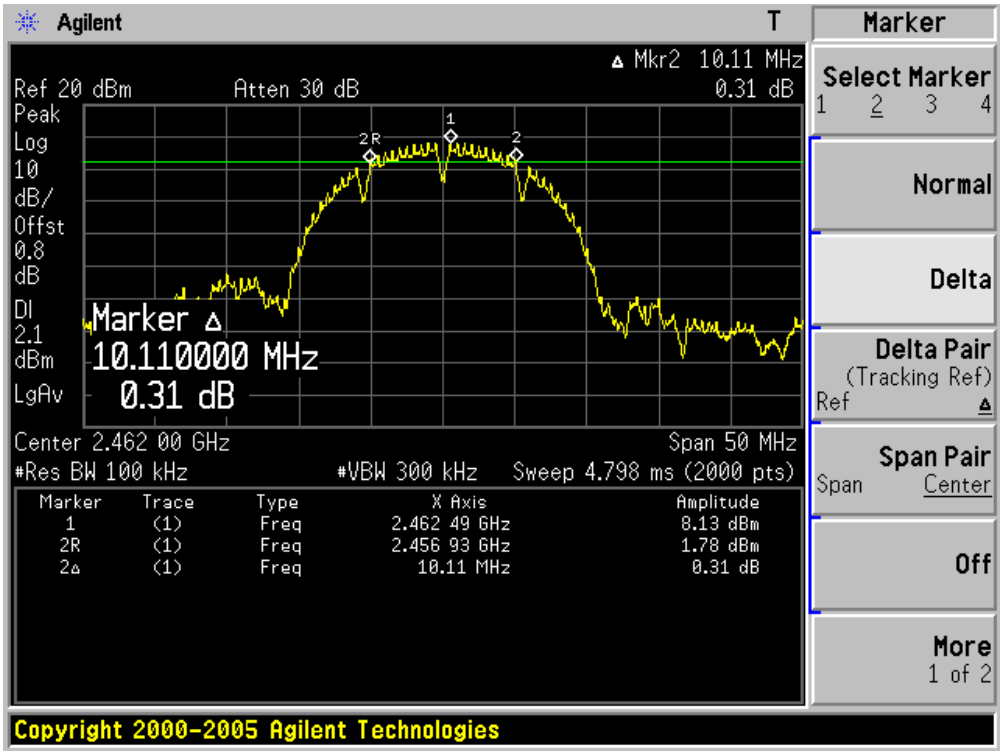
Channel 01 (2412MHz)



Channel 06 (2437MHz)



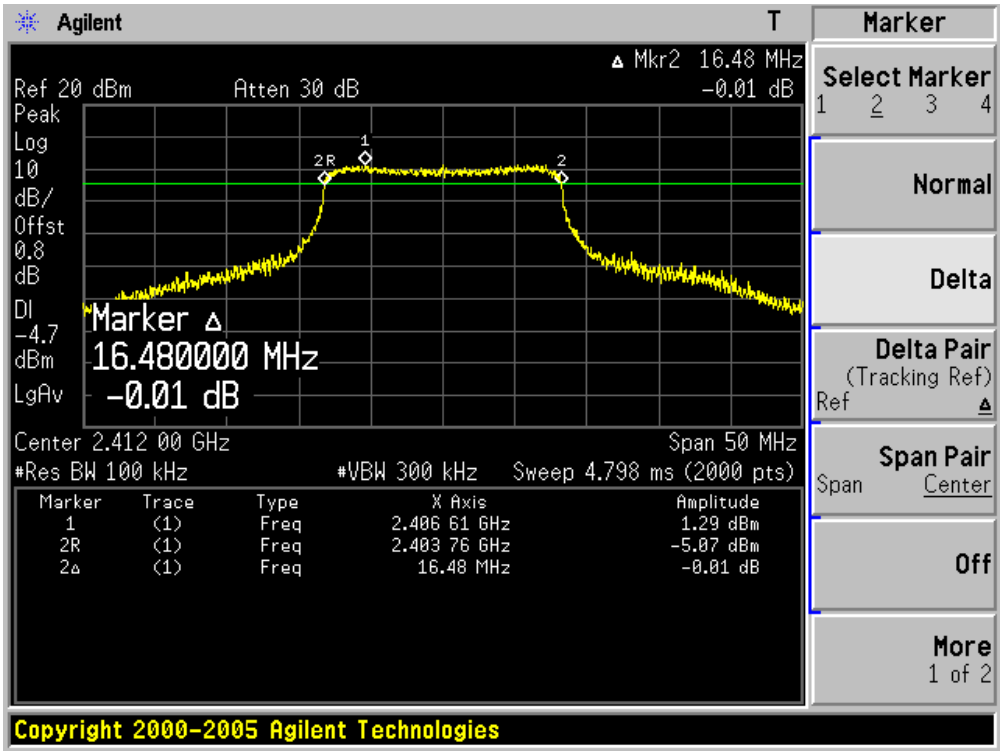
Channel 11 (2462MHz)



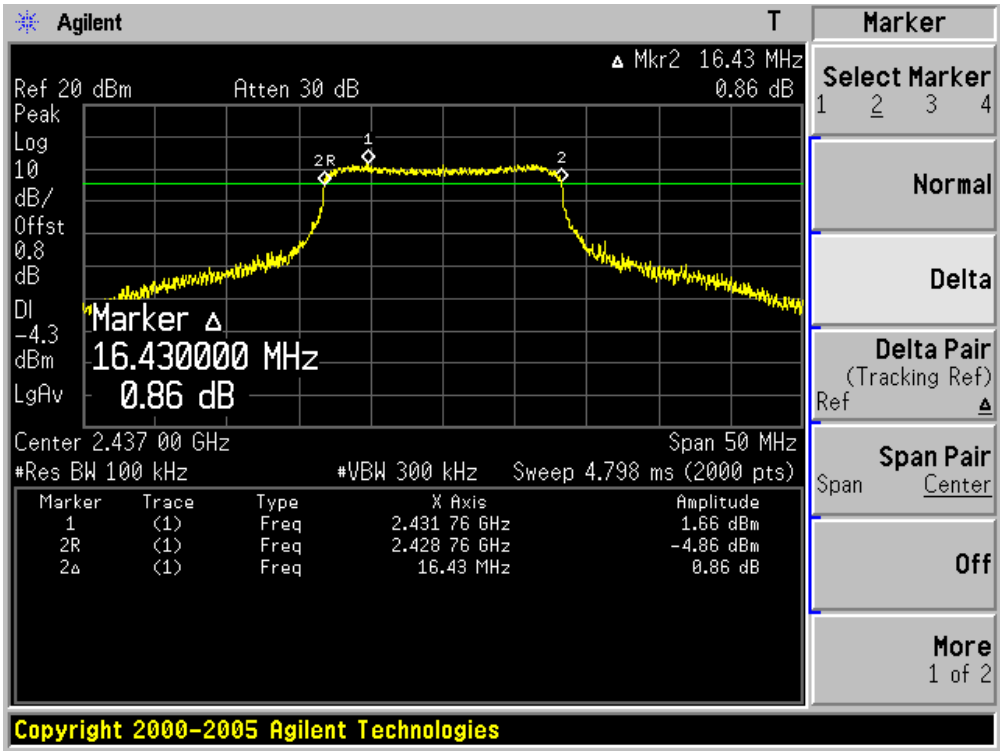
Product	:	GSM Mobile Phone
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	16480	500	Pass
06	2437	16430	500	Pass
11	2462	16460	500	Pass

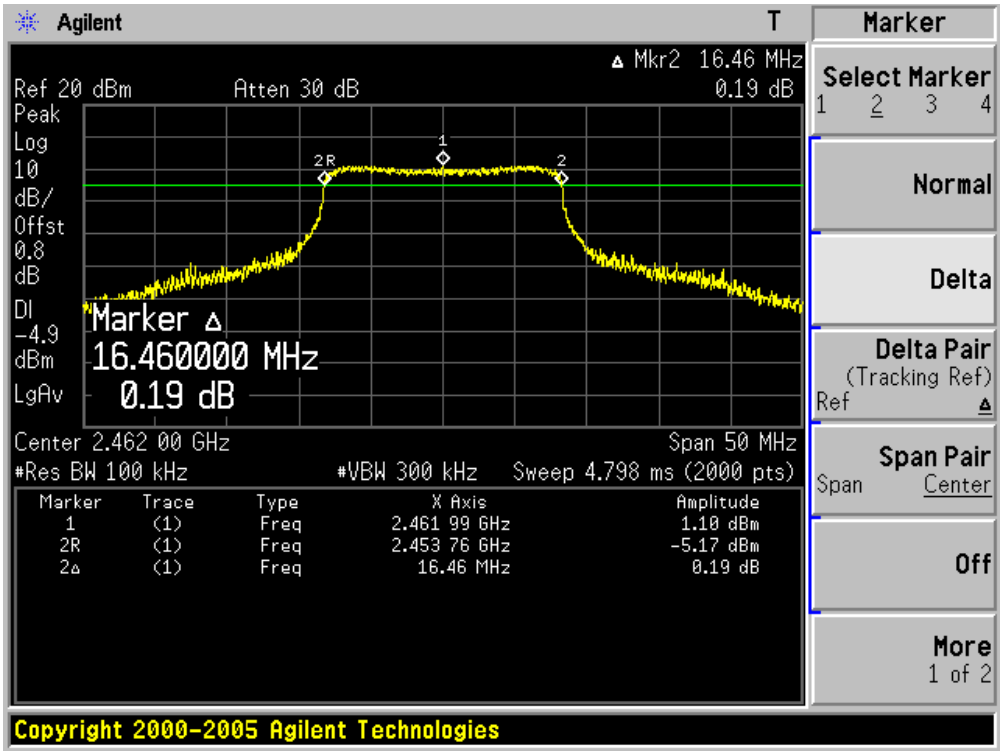
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



9. Power Output

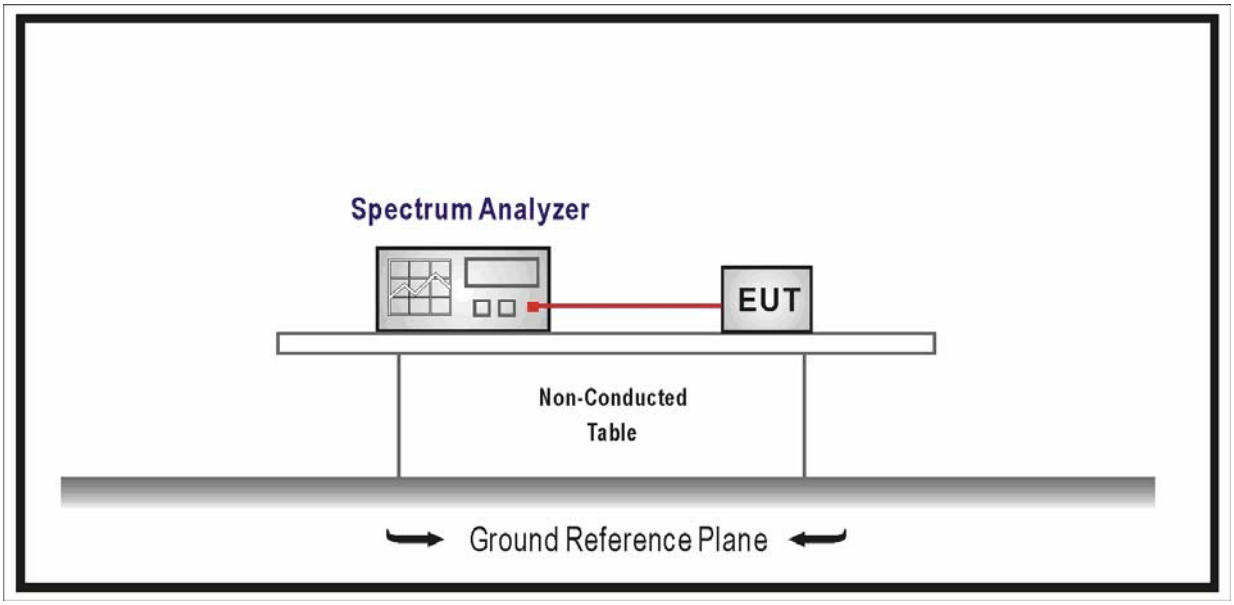
9.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2012.01.12
Power Sensor	Anritsu	MA2411B	0846014	2012.01.12
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.01.14

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 ANSI C63.10: 2009 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	20.11
				5.5	21.70
				11	23.08
802.11g	20	2437	6	6	21.90
				24	22.06
				54	22.14

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	23.04	30.00	Pass
06	2437	23.08	30.00	Pass
11	2462	23.05	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	22.11	30.00	Pass
06	2437	22.14	30.00	Pass
11	2462	22.15	30.00	Pass

10. Power Spectral Density

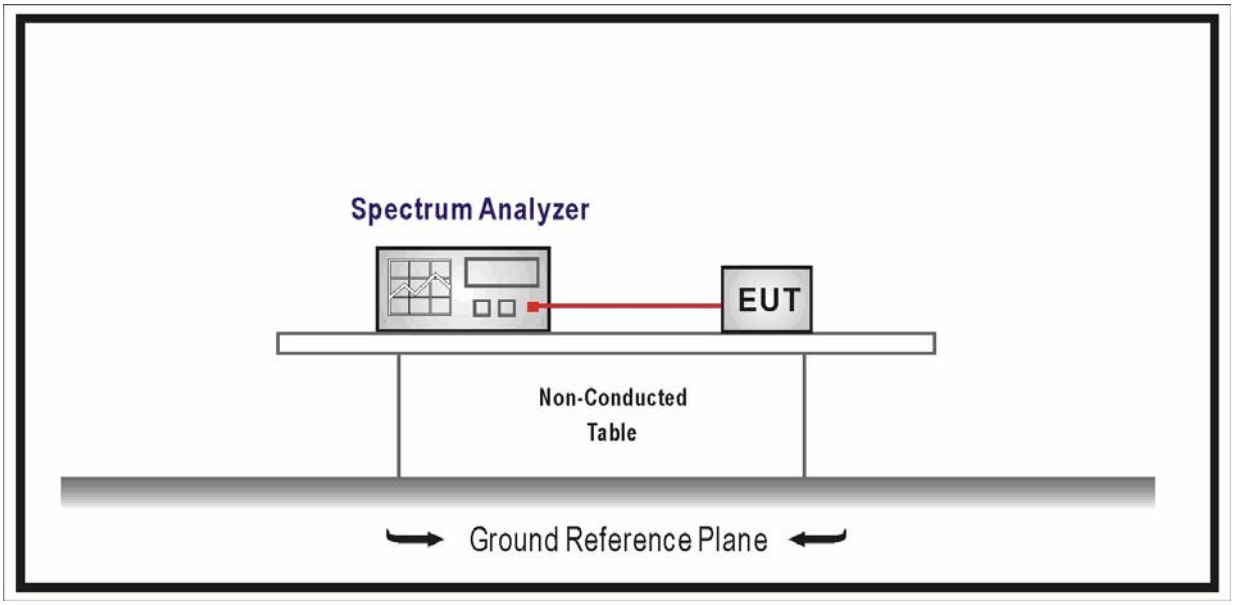
10.1. Test Equipment

Power Spectral Density / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2011.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.01.14

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 ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.
Set RBW= 3 kHz, Set VBW≧ 10 kHz, Sweep time=100s, Set detector=Peak detector.

10.5. Uncertainty

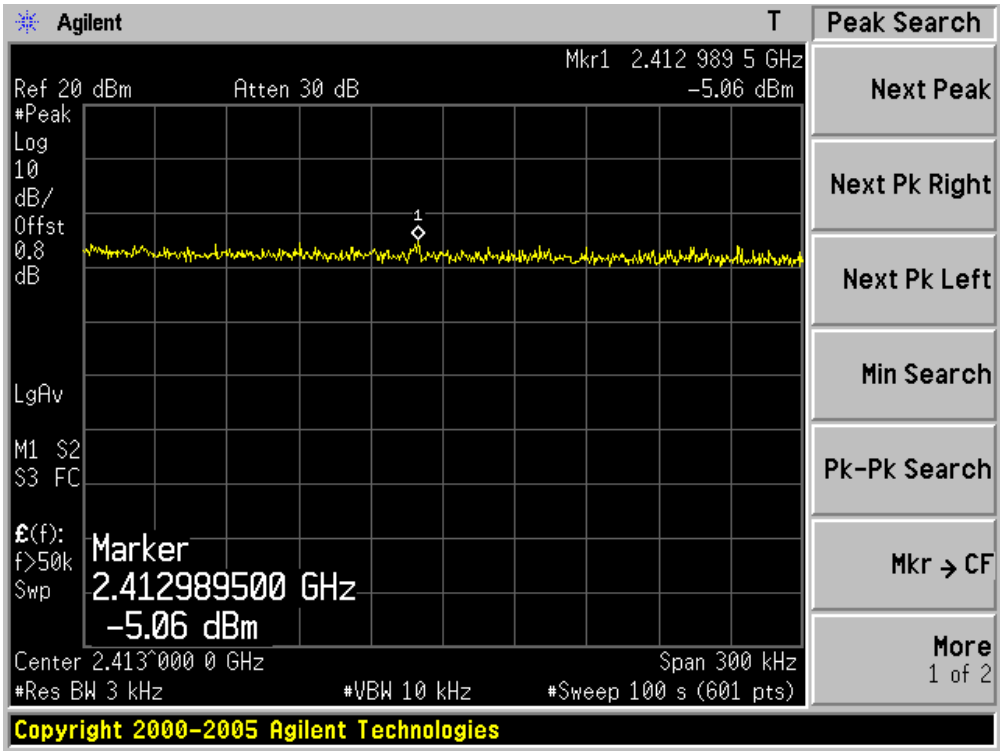
The measurement uncertainty is defined as ± 1.27 dB

10.6. Test Result

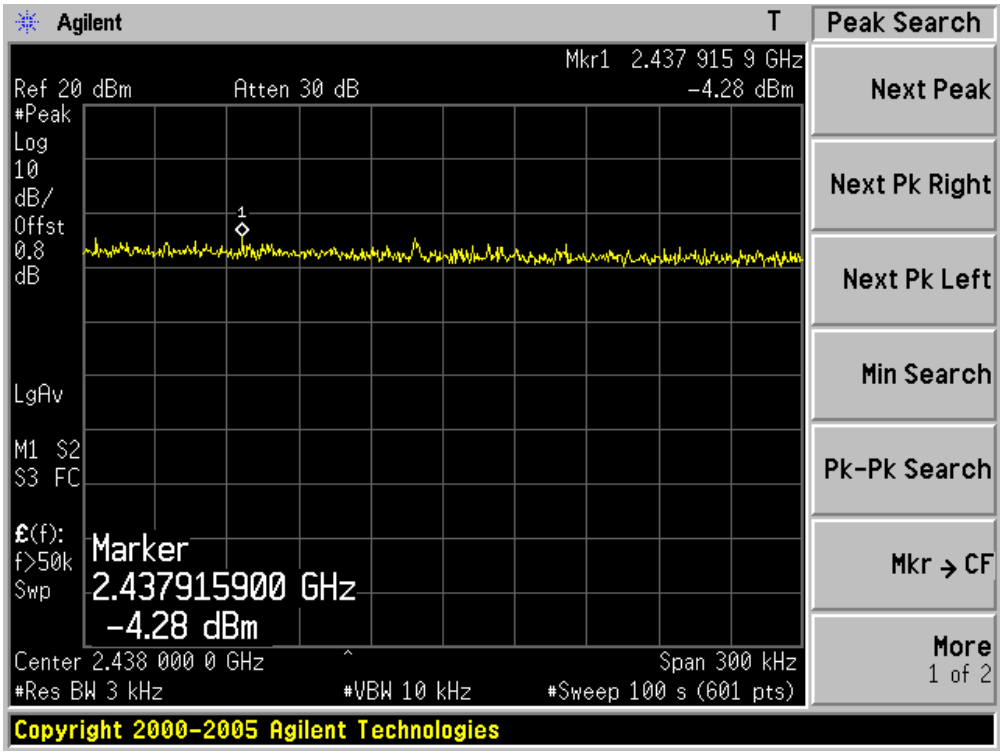
Product	:	GSM Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Measurement PPSD (dBm)	Limit (dBm)	Result
01	2412	-5.06	8	Pass
06	2437	-4.28	8	Pass
11	2462	-5.14	8	Pass

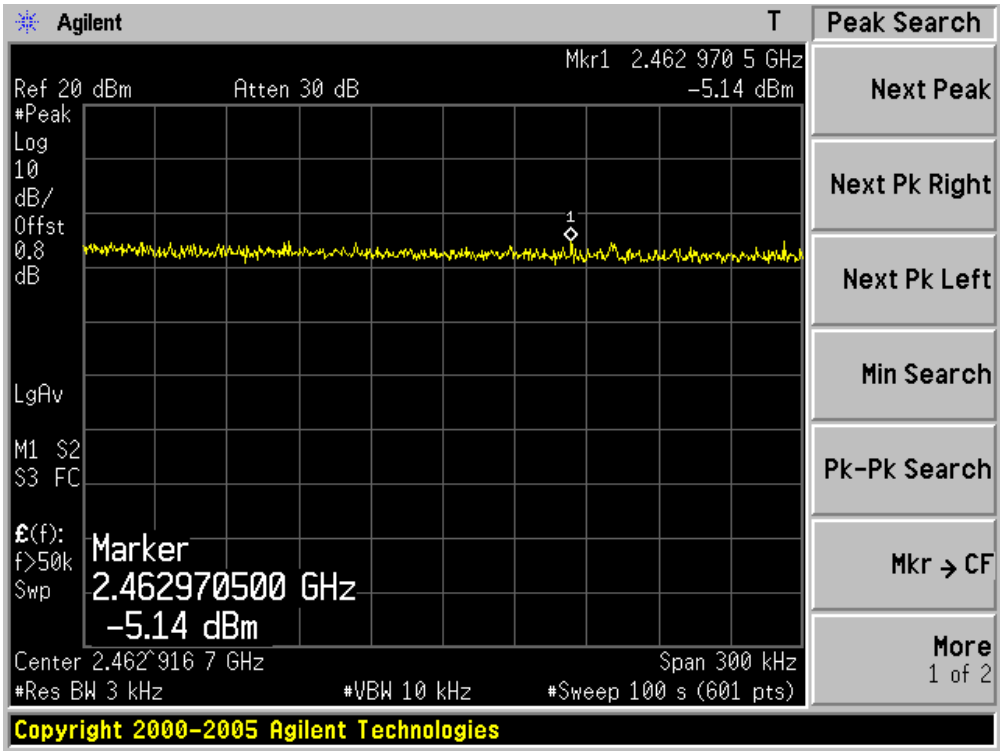
Channel 01 (2412MHz)



Channel 06 (2437MHz)



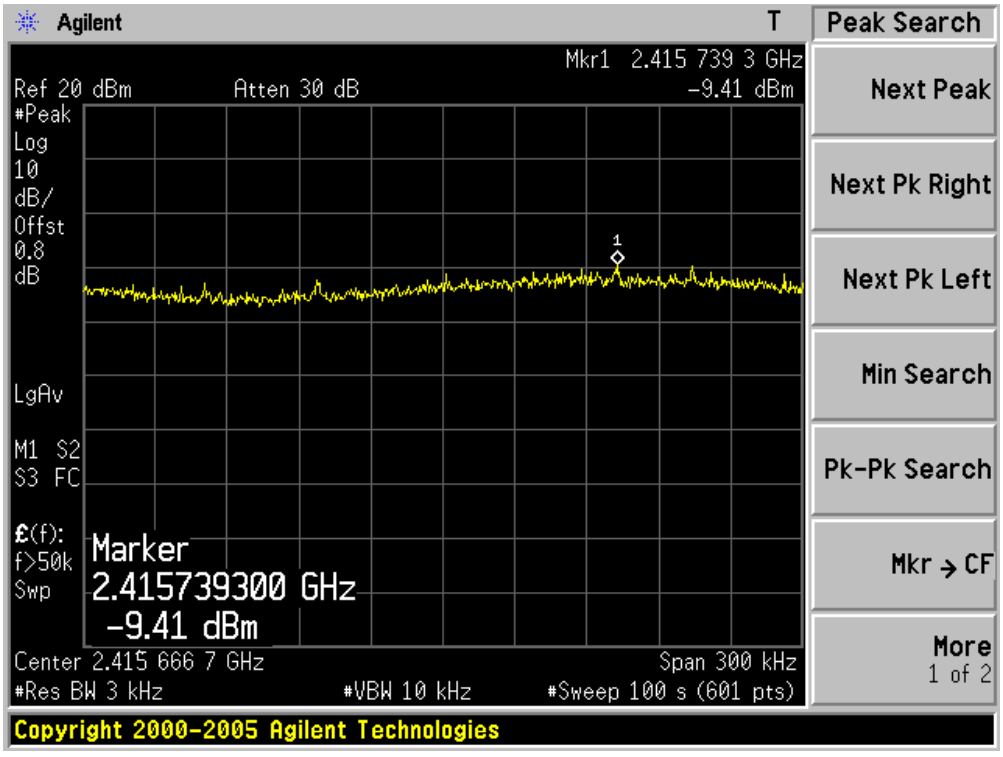
Channel 11 (2462MHz)



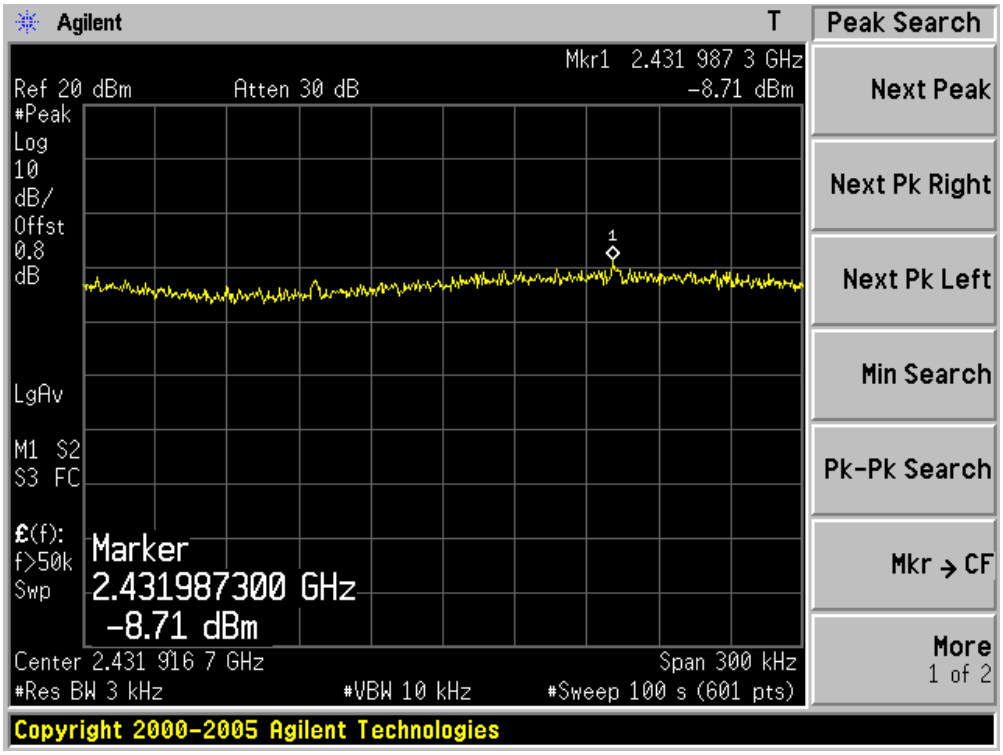
Product	:	GSM Mobile Phone
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Measurement PPSD (dBm)	Limit (dBm)	Result
01	2412	-9.41	8	Pass
06	2437	-8.71	8	Pass
11	2462	-8.06	8	Pass

Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)