FCC Part15.247 Test Report

Product Name	:	GSM Mobile Phone
Model No.	:	HUAWEI G6620
FCC ID	:	QISG6620

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

Date of Receipt	：	Jun. 18, 2010
Test Date	：	Jun. 18, 2010 ~ Jul. 14, 2010
Issued Date	：	Jul. 14, 2010
Report No.	：	106S033R-RF-US-P06V01
Report Version	：	V2.0

Test Report Certification

Issued Date : Jul. 14, 2010
Report No. : 106S033R-RF-US-P06V01

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 G6620
FCC ID	:	QISG6620
EUT Voltage	:	DC 3.6~4.2V
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, IC Lab Code: 4075B

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(Engineering ADM: Alice Ni)

Reviewed By : Marlinchen
(Engineering Supervisor: Marlin Chen)

Approved By : Dream Cao
(Engineering Manager: Dream Cao)

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/emc/accreditations/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:

HsinChu Testing Laboratory :
No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

NVLAP Lab Code : 200347-0

Testing Laboratory 1313

LinKou Testing Laboratory :
No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

NVLAP Lab Code: 200533-0

Testing Laboratory 0914

Suzhou (China) Testing 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 E-Mail : service@quietek.com

NVLAP Lab Code : 200743-0

Testing Laboratory 1596

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1. General Information

1.1. EUT Description

Product Name	GSM Mobile Phone
Trade Name	HUAWEI
Model No.	HUAWEI G6620
Working Voltage	DC 3.6~4.2V
Frequency Range	2402 - 2480 MHz
Channel Number	79
Type of Modulation	FHSS
Data Rate	1Mbps(GFSK), 2Mbps(8DPSK), 3Mbps (Pi/4 DQPSK)
Channel Control	Auto
Antenna Type	Internal
Peak Antenna Gain	-2.0dBi
AC Adapter	Manufacturer: HUAWEI M/N: HS-050040U6 Input: 100-240V~50/60Hz 0.2A Output: 5Vdc, 400mA

Bluetooth Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2403 MHz	02	2404 MHz	03	2405 MHz
04	2406 MHz	05	2407 MHz	06	2408 MHz	07	2409 MHz
08	2410 MHz	09	2411 MHz	10	2412 MHz	11	2413 MHz
12	2414 MHz	13	2415 MHz	14	2416 MHz	15	2417 MHz
16	2418 MHz	17	2419 MHz	18	2420 MHz	19	2421 MHz
20	2422 MHz	21	2423 MHz	22	2424 MHz	23	2425 MHz
24	2426 MHz	25	2427 MHz	26	2428 MHz	27	2429 MHz
28	2430 MHz	29	2431 MHz	30	2432 MHz	31	2433 MHz
32	2434 MHz	33	2435 MHz	34	2436 MHz	35	2437 MHz
36	2438 MHz	37	2439 MHz	38	2440 MHz	39	2441 MHz
40	2442 MHz	41	2443 MHz	42	2444 MHz	43	2445 MHz
44	2446 MHz	45	2447 MHz	46	2448 MHz	47	2449 MHz
48	2450 MHz	49	2451 MHz	50	2452 MHz	51	2453 MHz
52	2454 MHz	53	2455 MHz	54	2456 MHz	55	2457 MHz
56	2458 MHz	57	2459 MHz	58	2460 MHz	59	2461 MHz
60	2462 MHz	61	2463 MHz	62	2464 MHz	63	2465 MHz
64	2466 MHz	65	2467 MHz	66	2468 MHz	67	2469 MHz
68	2470 MHz	69	2471 MHz	70	2472 MHz	71	2473 MHz
72	2474 MHz	73	2475 MHz	74	2476 MHz	75	2477 MHz
76	2478 MHz	77	2479 MHz	78	2480 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 (DH5)
Mode 2: Transmit (3DH5)

Note:

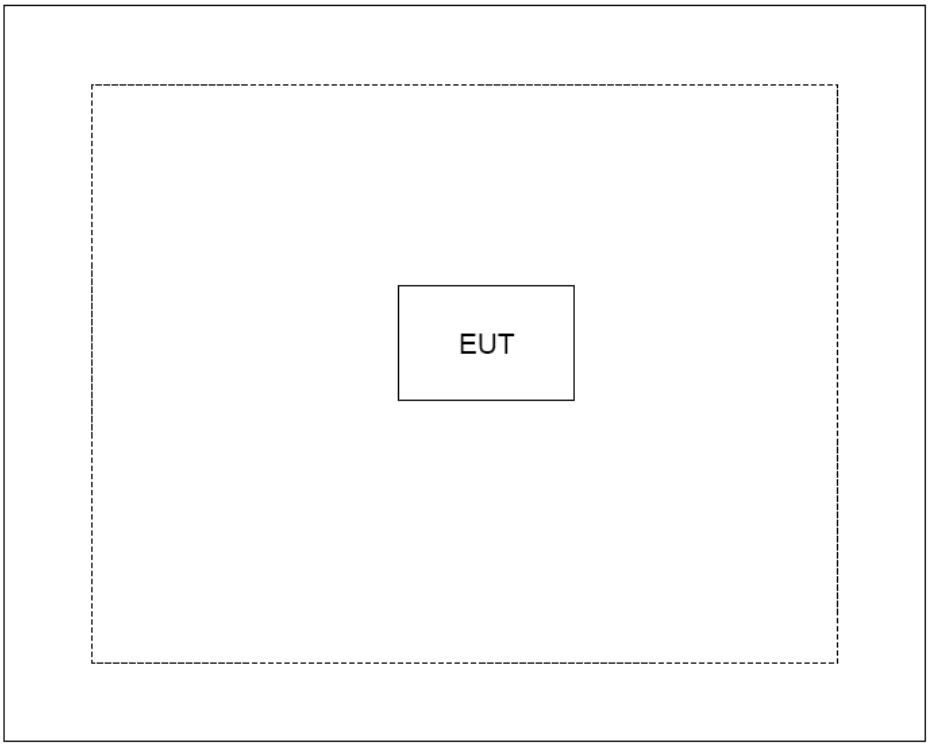
1. DH5 is for GFSK modulation, and 3DH5 is for Pi/4 DQPSK.
2. Regards to the frequency band operation: the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.
3. For portable device, radiated spurious emission was verified over X, Y, Z axis, and shown the worst case on this report.
4. This device is a composite device in accordance with Part 15 Subpart B regulations. The report number is 106S033R-HP-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
20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(1)	Yes	No
Carrier Frequency Separation	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(1)	Yes	No
Number of Hopping Frequencies	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(1)(iii)	Yes	No
Time of Occupancy (Dwell Time)	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(1)(iii)	Yes	No
Peak Output Power	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(b)(1)	Yes	No
Band-edge Compliance of RF Conducted Emissions	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.215(c), 15.247(d)	Yes	No
Spurious RF Conducted Emissions	FCC CFR Title 47 Part 15 Subpart C: 2008 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2008 15.247(d)	Yes	No

2.2. Test Environment

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

3. Conducted Emission

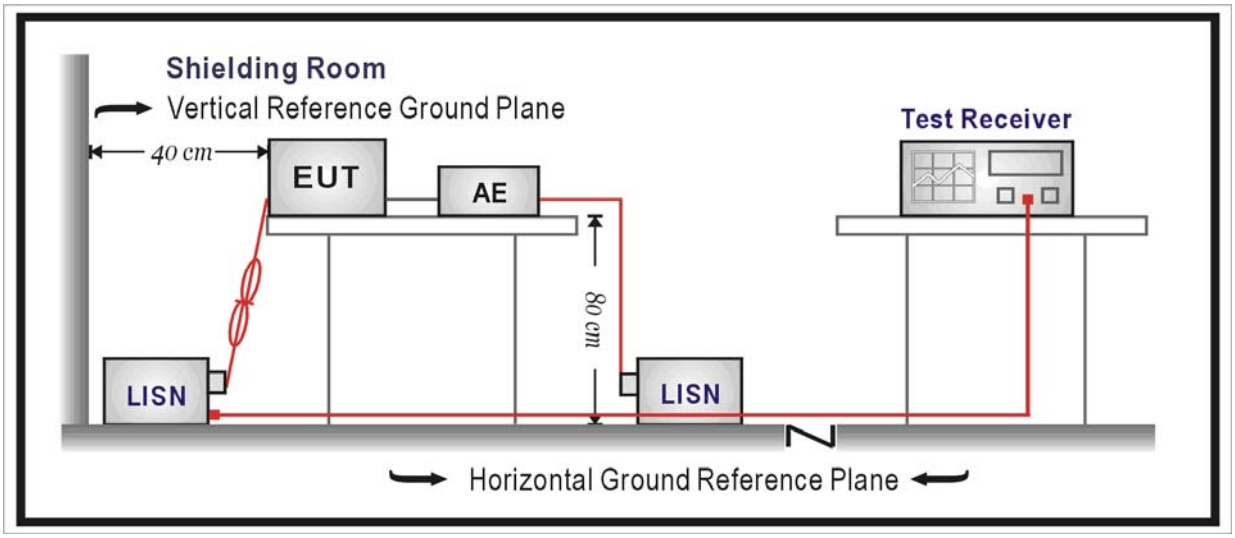
3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2010.04.23
Two-Line V-Network	R&S	ENV216	100043	2009.09.07
Two-Line V-Network	R&S	ENV216	100044	2009.09.07
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2010.05.25
50ohm Termination	SHX	TF2	07081401	2009.09.29
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2010.01.14

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

According to ANSI C63.10: 2009, 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.

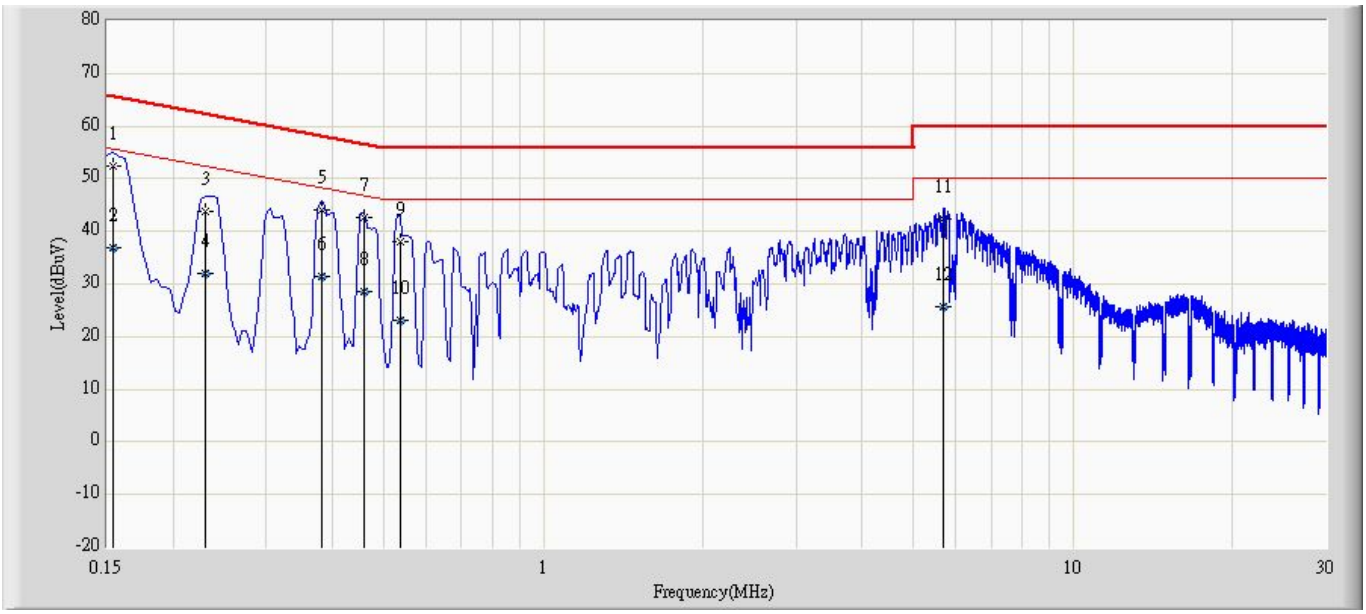
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

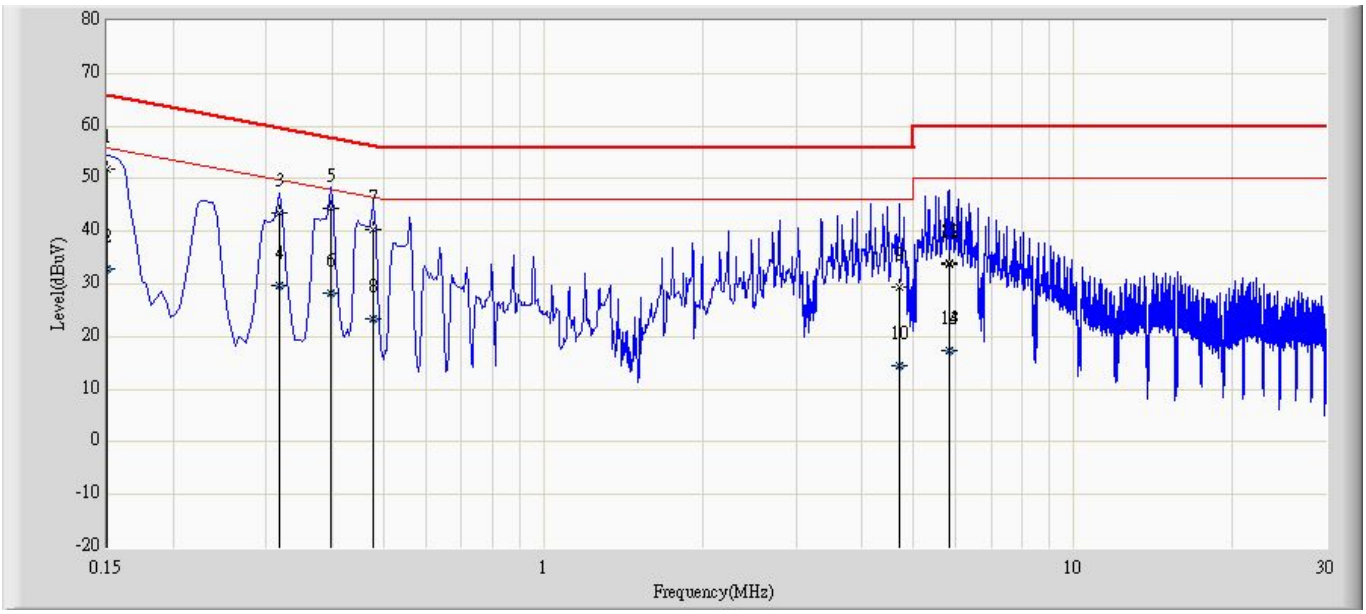
3.6. Test Result

Engineer: Jame	
Site: TR1	Time: 2010/06/23 - 10:29
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	*	0.154	52.487	42.902	-13.294	65.781	9.585	QP
2		0.154	36.790	27.205	-18.991	55.781	9.585	AV
3		0.230	43.921	34.241	-18.529	62.450	9.680	QP
4		0.230	32.089	22.409	-20.361	52.450	9.680	AV
5		0.382	44.032	34.352	-14.204	58.236	9.680	QP
6		0.382	31.336	21.656	-16.900	48.236	9.680	AV
7		0.458	42.506	32.816	-14.223	56.729	9.690	QP
8		0.458	28.498	18.808	-18.230	46.729	9.690	AV
9		0.538	38.142	28.452	-17.858	56.000	9.690	QP
10		0.538	22.970	13.280	-23.030	46.000	9.690	AV
11		5.702	42.407	32.560	-17.593	60.000	9.847	QP
12		5.702	25.754	15.907	-24.246	50.000	9.847	AV

Engineer: Jame	
Site: TR1	Time: 2010/06/23 - 10:36
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	51.900	42.159	-14.100	66.000	9.741	QP
2		0.150	32.933	23.192	-23.067	56.000	9.741	AV
3		0.318	43.607	33.953	-16.152	59.759	9.654	QP
4		0.318	29.735	20.081	-20.024	49.759	9.654	AV
5	*	0.398	44.454	34.794	-13.441	57.895	9.660	QP
6		0.398	28.216	18.556	-19.679	47.895	9.660	AV
7		0.478	40.243	30.573	-16.131	56.374	9.669	QP
8		0.478	23.391	13.722	-22.983	46.374	9.669	AV
9		4.702	29.546	19.739	-26.454	56.000	9.807	QP
10		4.702	14.530	4.723	-31.470	46.000	9.807	AV
11		5.822	34.059	24.198	-25.941	60.000	9.861	QP
12		5.822	17.370	7.509	-32.630	50.000	9.861	AV

4. Radiated Emission

4.1. Test Equipment

Radiated Emission / AC-2

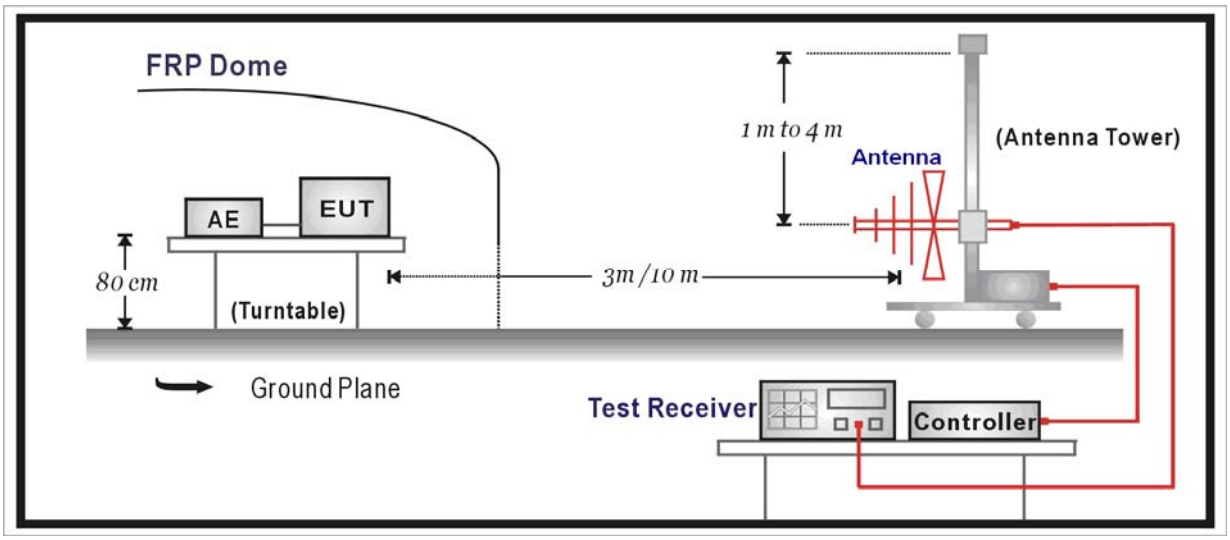
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2010/04/23
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2009/11/12
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2010/05/05
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2010/01/14

☒Radiated Emission / AC-5

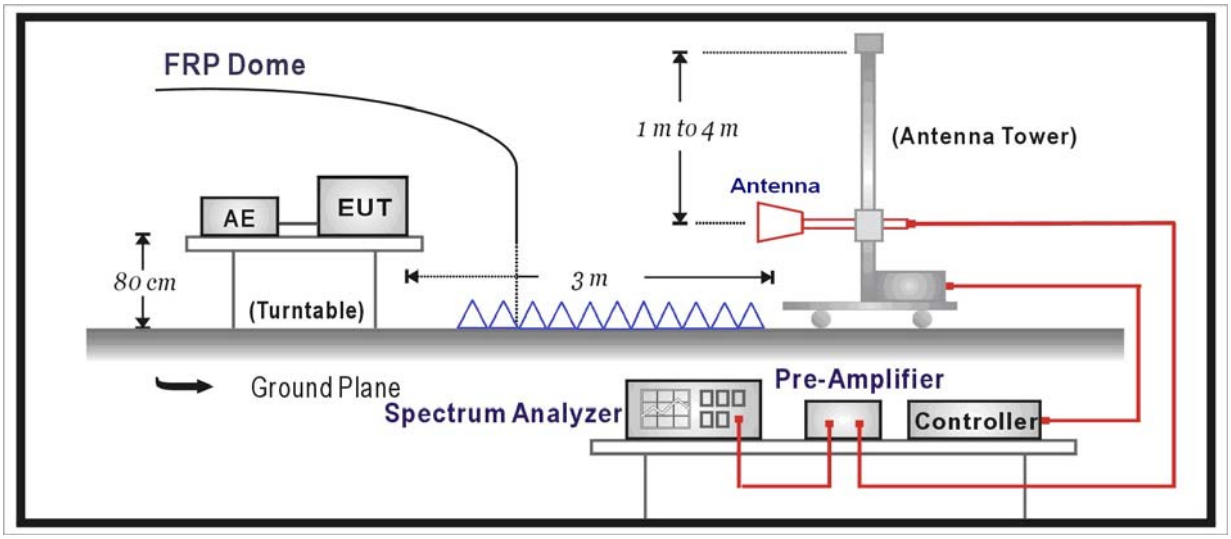
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2010.04.23
EMI Test Receiver	R&S	ESCI	100573	2010.04.23
Preamplifier	Quietek	AP-025C	CHM-0511006	2010.05.05
Preamplifier	Quietek	AP-180C	CHM-0602013	2010.05.05
Bilog Type Antenna	Schaffner	CBL6112B	2932	2009.11.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2010.06.11
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2010.03.03
Band Reject Filter	Wainwright	WRCG2400/2485-2375/2510-60/11SS	SN9	2010.03.03
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2010.03.03
Low-Pass Filter	Wainwright	WLKS4500-9SS	SN2	2010.03.03
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2010.05.05
Temperature/Humidity Meter	zhicheng	ZC1-2	AC5-TH	2010.01.14

4.2. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

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

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

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

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

4.4. Test Procedure

According to ANSI C63.10: 2009 & ANSI C63.4: 2009, 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 standards 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 60~10 degrees for H-plane and 90~10 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.

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

DH5

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
0	H	2402.2	69.5	30.5	99.5	Fundamental	/	PK
	V	143.3	38.9	-11.3	27.6	43.5	-15.9	QP
	V	432.5	30.9	-4.4	26.5	46	-19.5	QP
	H	3252.5	58.7	-17.2	41.5	54 (Note 1)	-12.5	PK
	H	4804.0	60.1	-14.3	45.8	54 (Note 1)	-8.2	PK
	H	7206.0	52.2	-6.1	46.1	54 (Note 1)	-7.9	PK
	H	24000.0	59.1	-8.9	50.2	54 (Note 1)	-3.8	PK
39	H	2441.0	66.1	31.2	97.3	Fundamental	/	PK
	V	143.3	38.9	-11.3	27.6	43.5	-15.9	QP
	V	432.5	30.9	-4.4	26.5	46	-19.5	QP
	H	3252.5	58.7	-17.2	41.5	54 (Note 1)	-12.5	PK
	H	4882.0	58.6	-13.9	44.7	54 (Note 1)	-9.3	PK
	H	7323.0	52.2	-6.0	46.2	54 (Note 1)	-7.8	PK
	H	24000.0	59.1	-8.9	50.2	54 (Note 1)	-3.8	PK
78	H	2479.9	66.6	30.3	96.9	Fundamental	/	PK
	V	143.3	38.9	-11.3	27.6	43.5	-15.9	QP
	V	432.5	30.9	-4.4	26.5	46	-19.5	QP
	H	3252.5	58.7	-17.2	41.5	54 (Note 1)	-12.5	PK
	H	4961.0	60.3	-13.8	46.5	54 (Note 1)	-7.5	PK
	H	7440.0	53.1	-5.2	47.9	54 (Note 1)	-6.1	PK
	H	24000.0	59.1	-8.9	50.2	54 (Note 1)	-3.8	PK

3DH5

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
0	H	2401.9	66.8	30.5	97.3	Fundamental	/	PK
	V	143.3	38.9	-11.3	27.6	43.5	-15.9	QP
	V	432.5	30.9	-4.4	26.5	46	-19.5	QP
	H	3252.5	58.7	-17.2	41.5	54 (Note 1)	-12.5	PK
	H	4804.0	58.4	-14.3	44.1	54 (Note 1)	-9.9	PK
	H	7206.0	52.3	-6.1	46.2	54 (Note 1)	-7.8	PK
	H	24000.0	59.1	-8.9	50.2	54 (Note 1)	-3.8	PK
39	H	2441.0	65.3	31.2	96.5	Fundamental	/	PK
	V	143.3	38.9	-11.3	27.6	43.5	-15.9	QP
	V	432.5	30.9	-4.4	26.5	46	-19.5	QP
	H	3252.5	58.7	-17.2	41.5	54 (Note 1)	-12.5	PK
	H	4884.5	59.3	-13.9	45.4	54 (Note 1)	-8.6	PK
	H	7323.0	52.7	-6.0	46.7	54 (Note 1)	-7.3	PK
	H	24000.0	59.1	-8.9	50.2	54 (Note 1)	-3.8	PK
78	H	2480.2	63.9	30.3	94.2	Fundamental	/	PK
	V	143.3	38.9	-11.3	27.6	43.5	-15.9	QP
	V	432.5	30.9	-4.4	26.5	46	-19.5	QP
	H	3252.5	58.7	-17.2	41.5	54 (Note 1)	-12.5	PK
	H	4961.0	60.6	-13.8	46.8	54 (Note 1)	-7.2	PK
	H	7440.0	53.8	-5.2	48.5	54 (Note 1)	-5.5	PK
	H	24000.0	59.1	-8.9	50.2	54 (Note 1)	-3.8	PK

Note 1: 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. 20dB Bandwidth

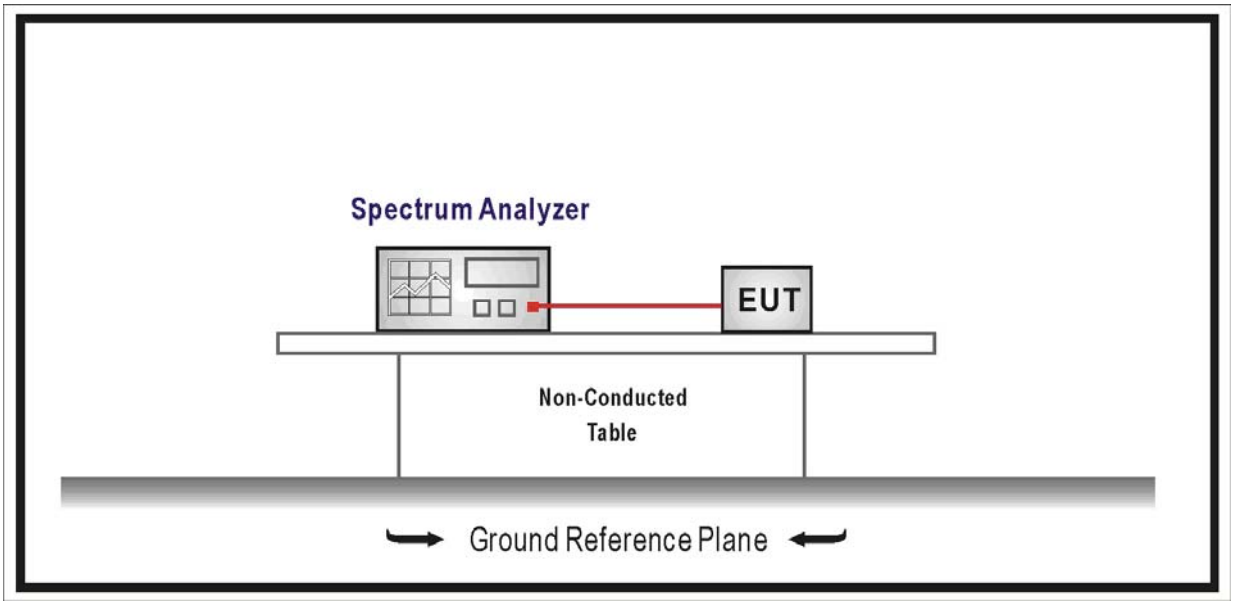
5.1. Test Equipment

20dB Bandwidth / TR8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2010.05.04

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

- For frequency hopping systems operating in 2400-2483.5 MHz band, no limitation.
- For frequency hopping systems operating in 902-928 MHz band, the maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
- For frequency hopping systems operating in 5725-5850 MHz band, the maximum 20 dB bandwidth of the hopping channel is 1 MHz.

5.4. Test Procedure

According to ANSI C63.10: 2009, use the following spectrum analyzer settings:
Span = approximately 2 to 3 times the 20dB bandwidth, centered on a hopping channel
RBW ≧ 1% of the 20dB bandwidth
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize.
Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation.

5.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

5.6. Test Result

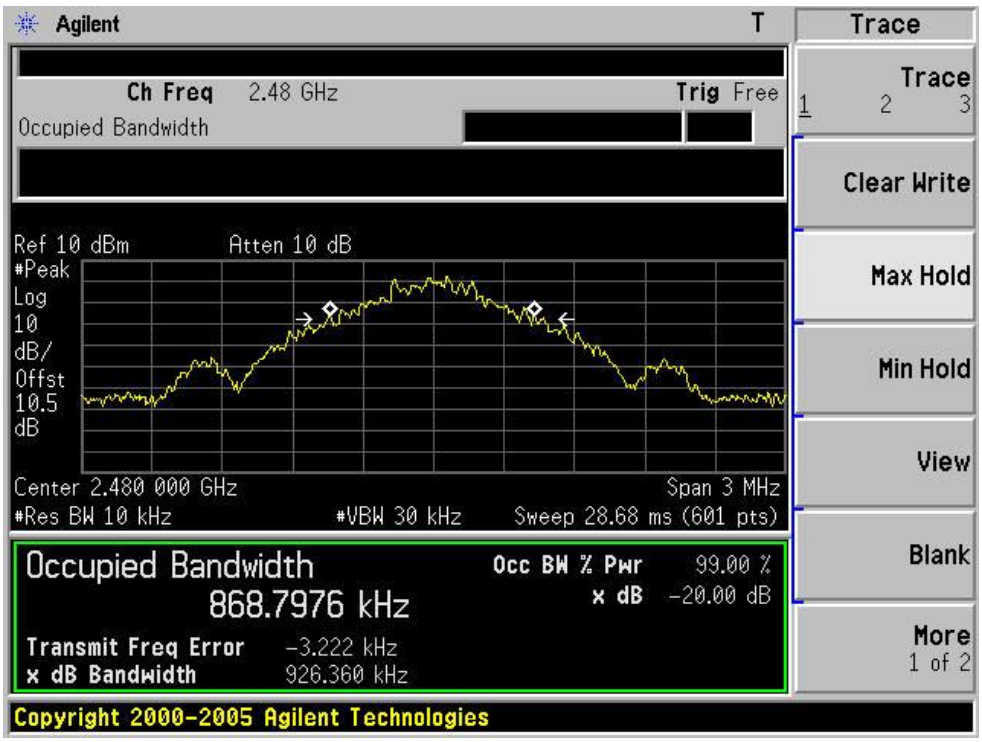
Product	:	GSM Mobile Phone
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit (DH5)

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
00	2402	926.86	871.49
39	2441	926.82	867.79
78	2480	926.36	868.80

Channel 00 (2402MHz)

Channel 39 (2441MHz)

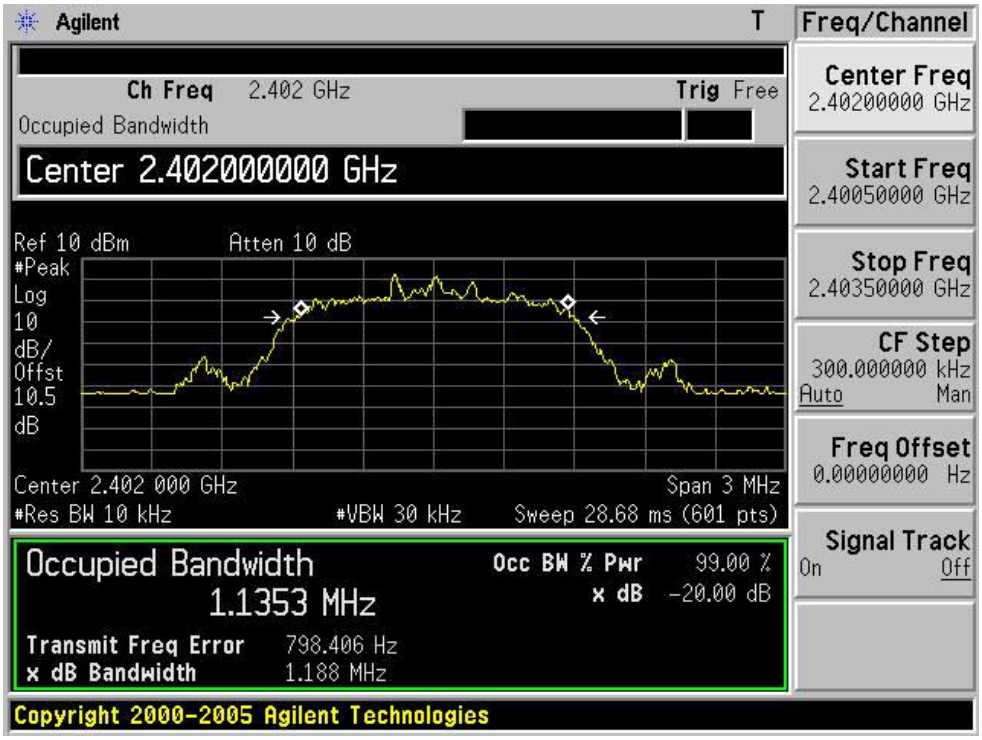
Channel 78 (2480MHz)



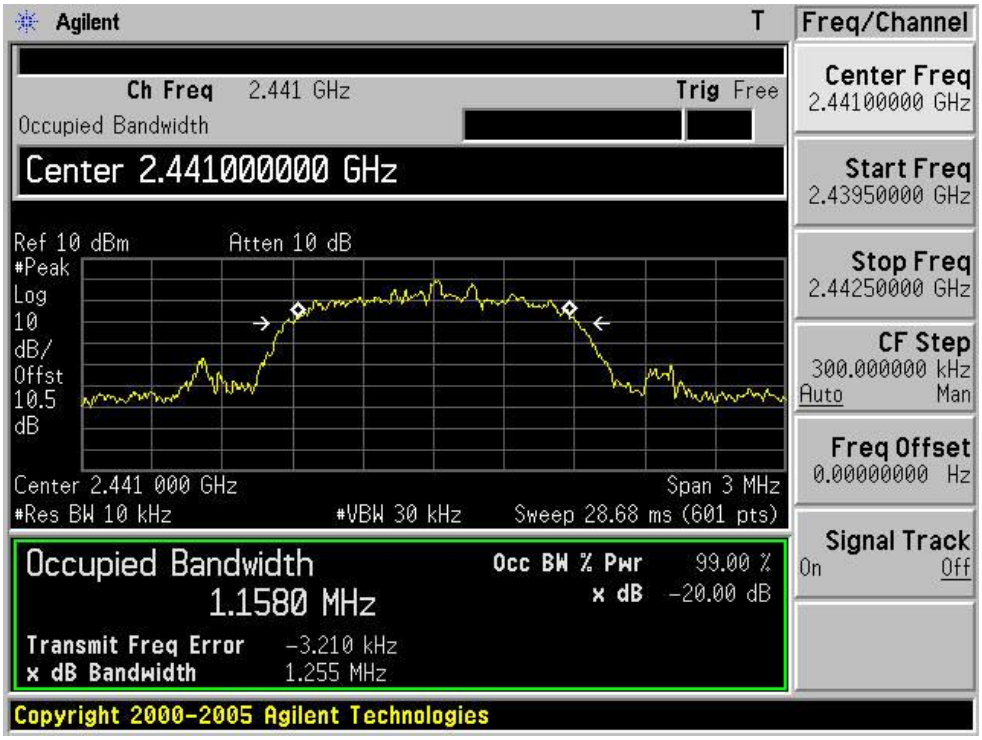
Product	:	GSM Mobile Phone
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit (3DH5)

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
00	2402	1135.3	1188.0
39	2441	1158.0	1255.0
78	2480	1130.1	1187.0

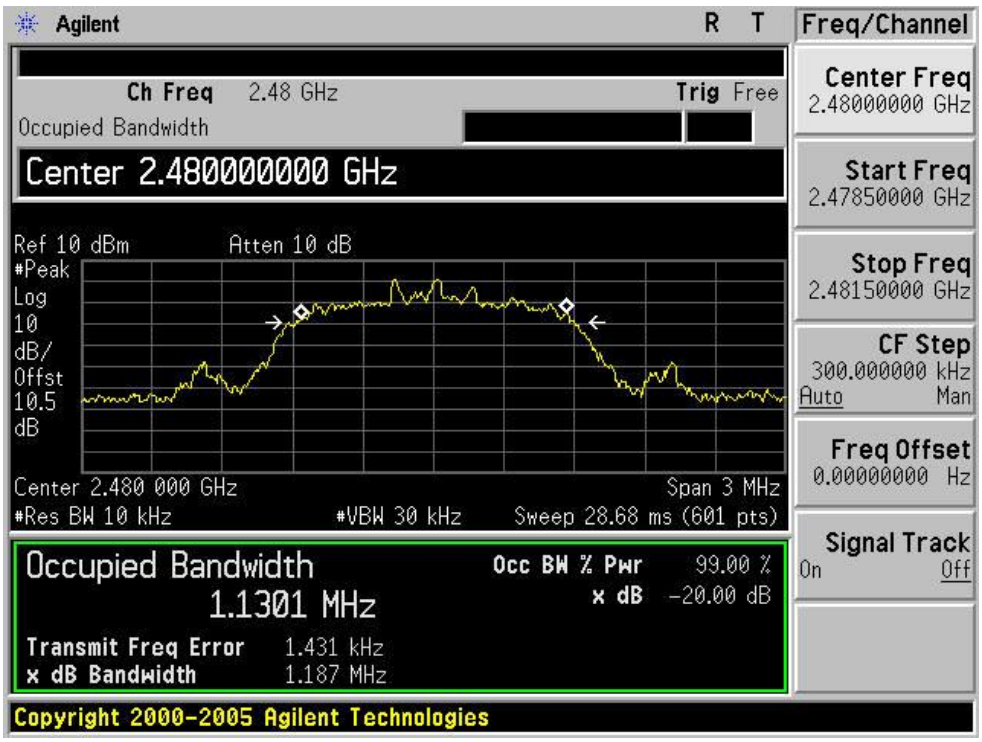
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



6. Carrier Frequency Separation

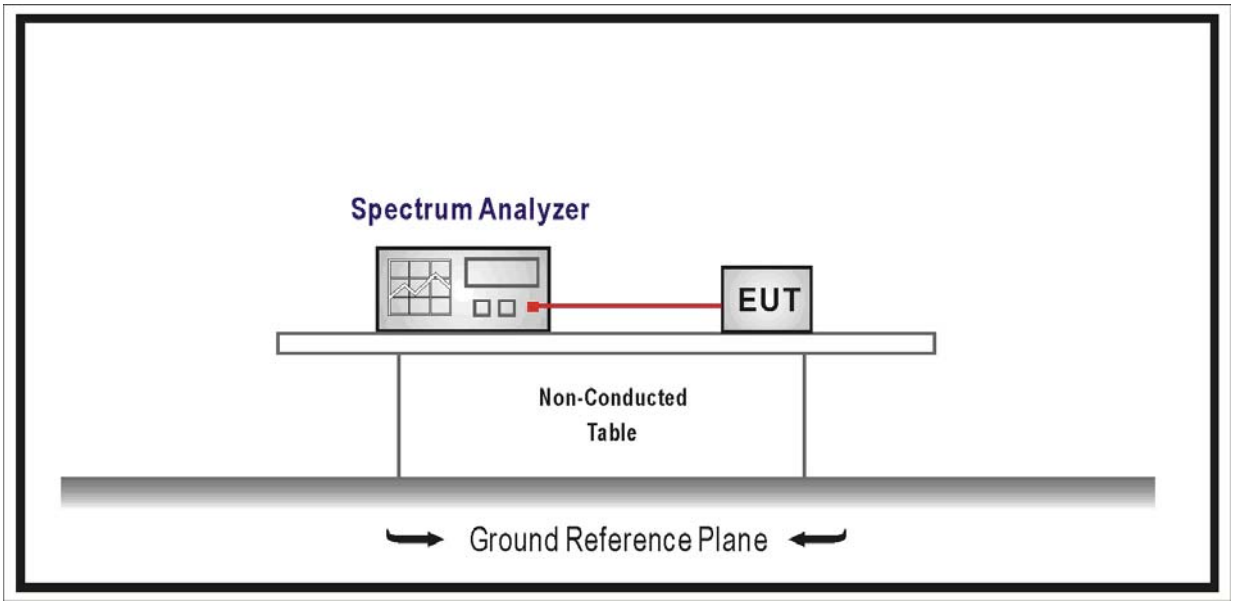
6.1. Test Equipment

Carrier Frequency Separation / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2010.05.04

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

6.2. Test Setup



6.3. Limit

- Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping

channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

- For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less then 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; If the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
- Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

6.4. Test Procedure

According to ANSI C63.10: 2009, the EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = wide enough to capture the peaks of two adjacent channels
Resolution (or IF) Bandwidth (RBW) ≧ 1% of the span
Video (or Average) Bandwidth VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

6.5. Uncertainty

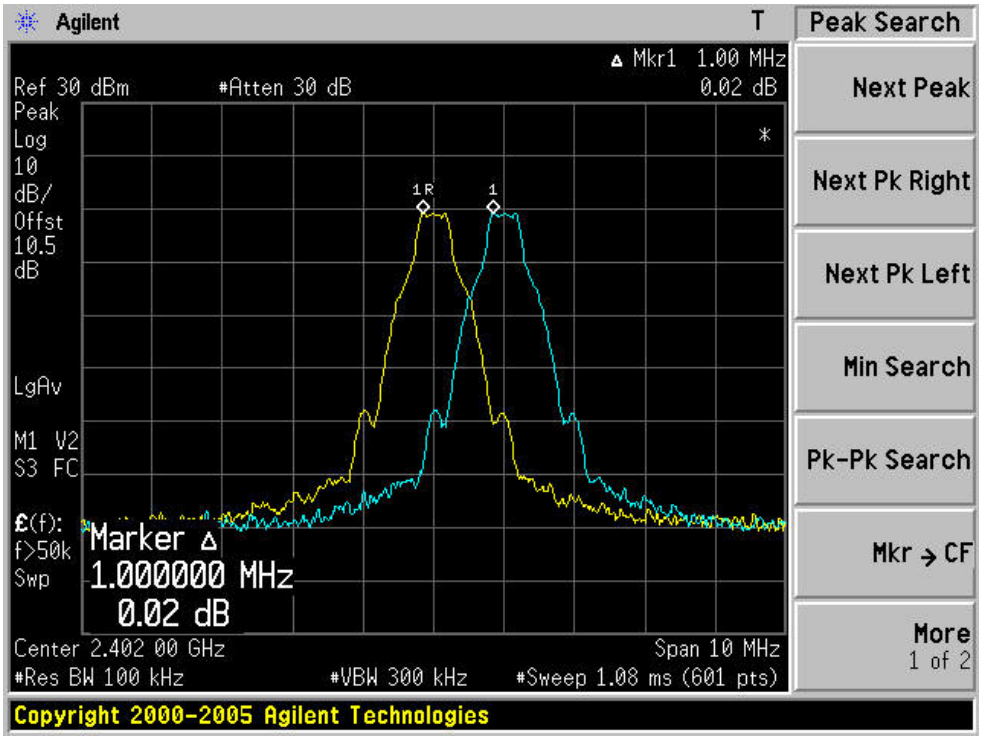
The measurement uncertainty is defined as ± 1 kHz

6.6. Test Result

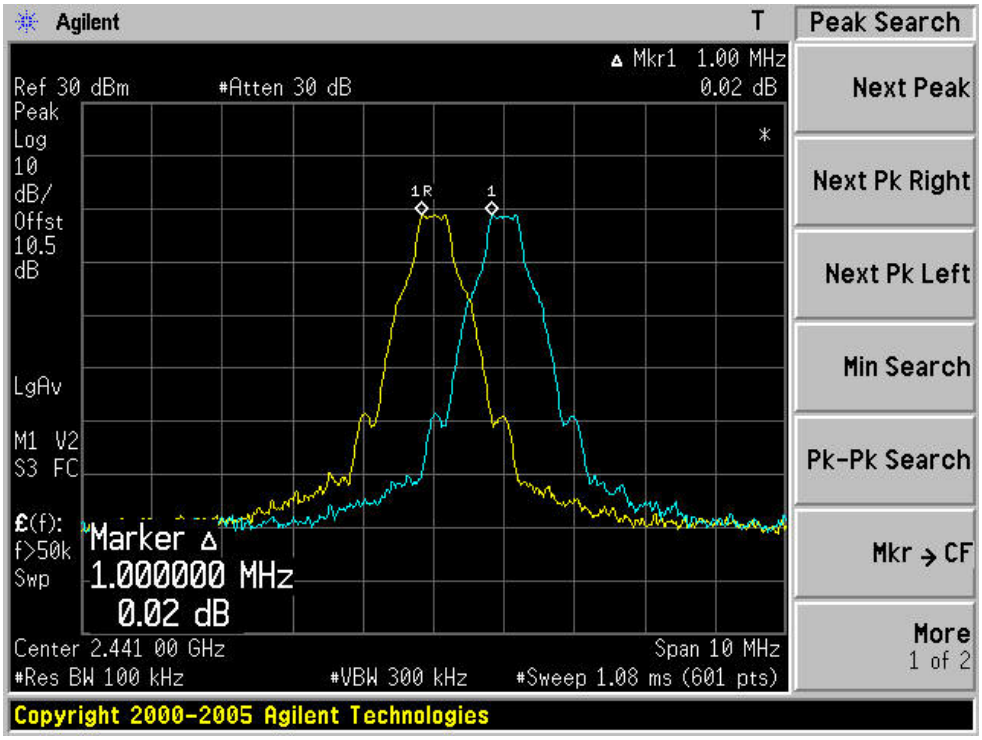
Product	:	GSM Mobile Phone
Test Item	:	Carrier Frequency Separation
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit (DH5)

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	>25 kHz or 2/3 of 20 dB BW	Pass
39	2441	1000	>25 kHz or 2/3 of 20 dB BW	Pass
78	2480	1020	>25 kHz or 2/3 of 20 dB BW	Pass

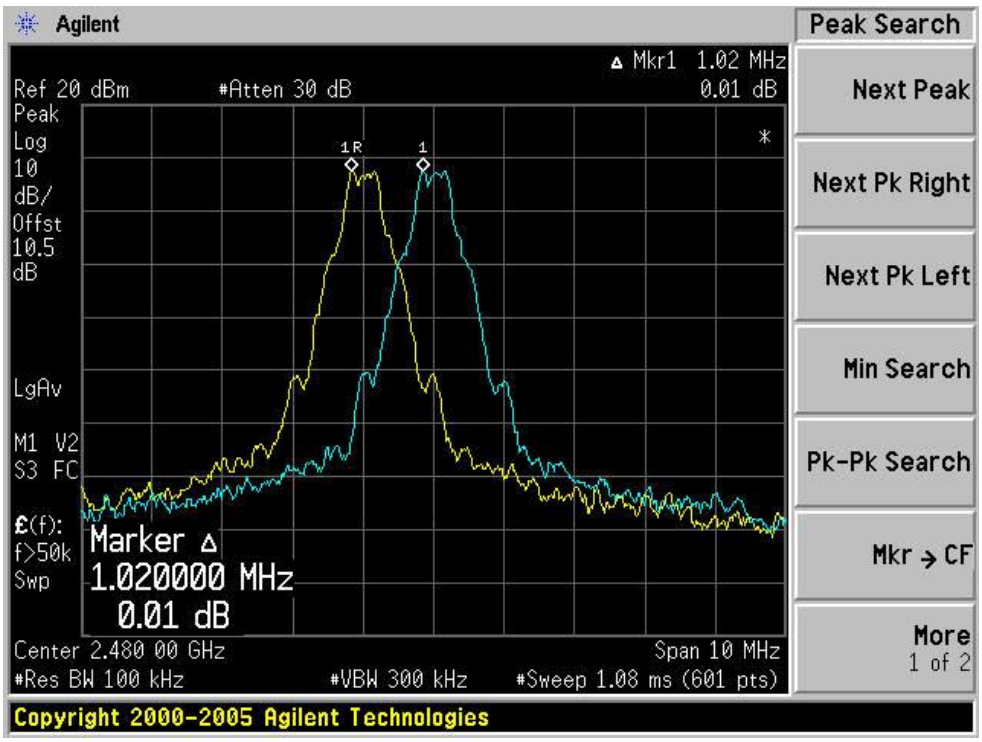
Channel 00 (2402MHz)



Channel 39 (2441MHz)



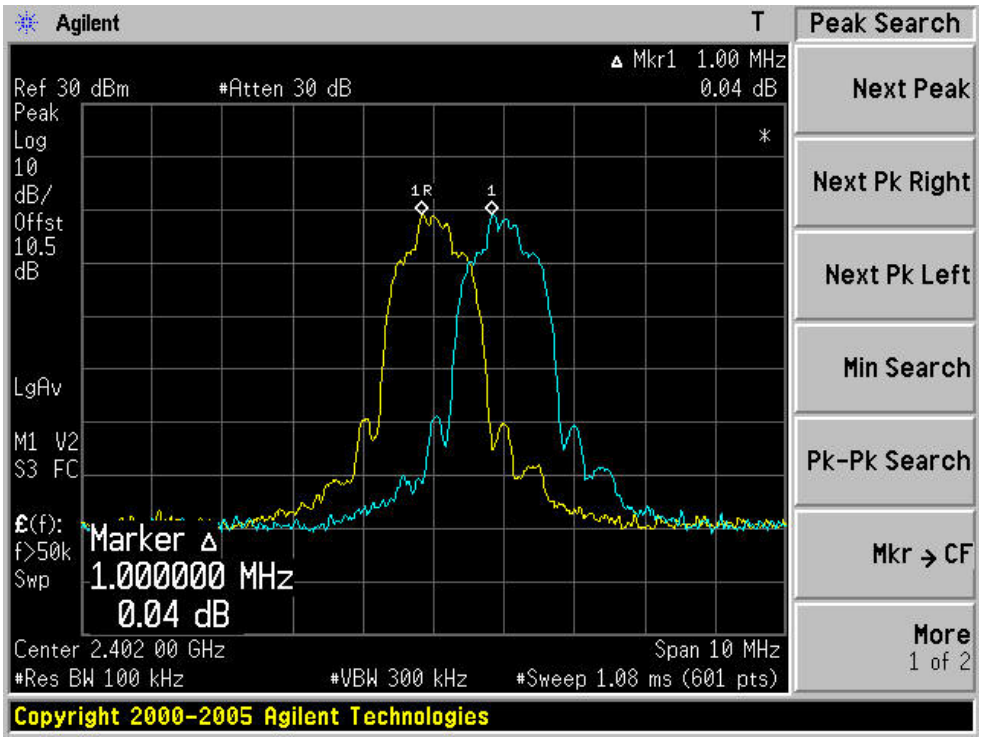
Channel 78 (2480MHz)



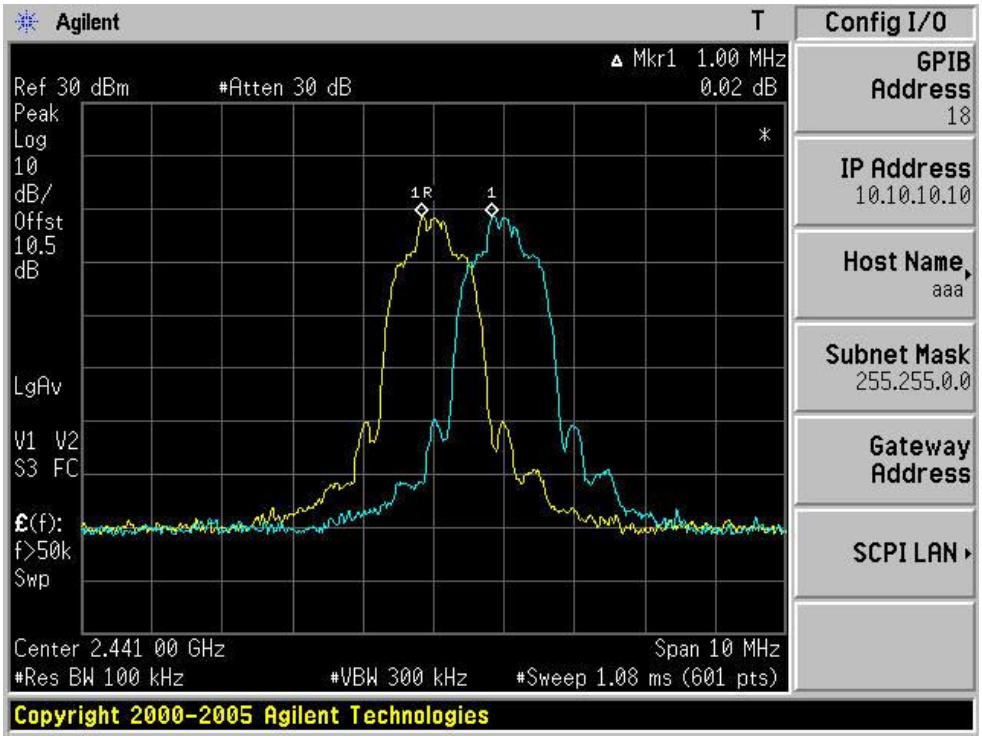
Product	:	GSM Mobile Phone
Test Item	:	Carrier Frequency Separation
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit (3DH5)

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	>25 kHz or 2/3 of 20 dB BW	Pass
39	2441	1000	>25 kHz or 2/3 of 20 dB BW	Pass
78	2480	1000	>25 kHz or 2/3 of 20 dB BW	Pass

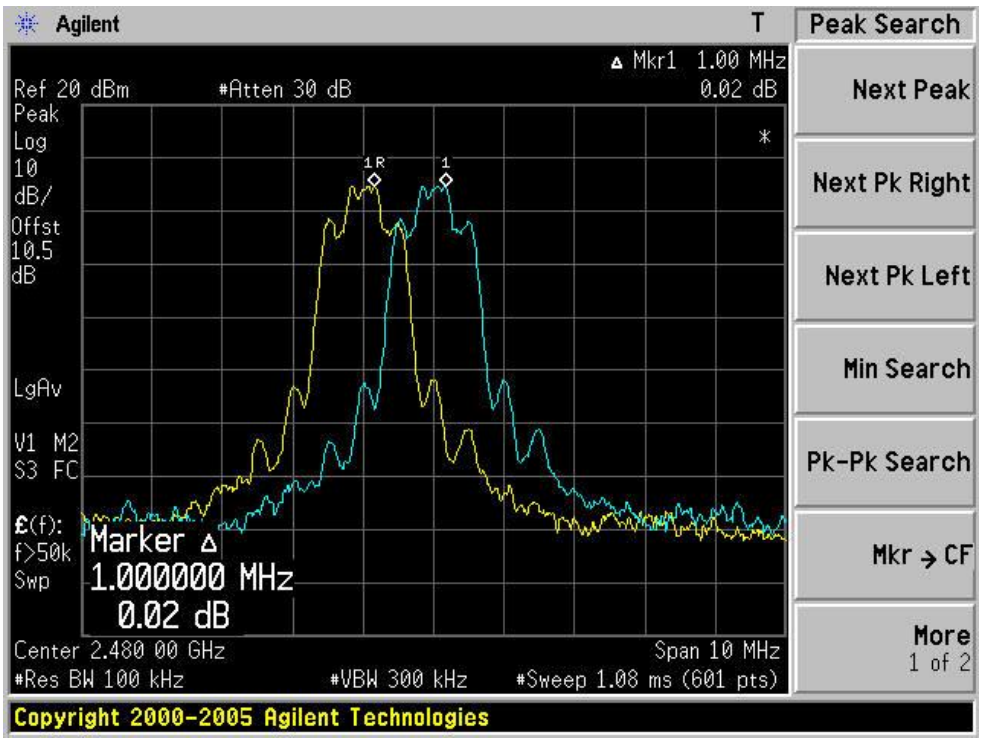
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



7. Number of Hopping Frequencies

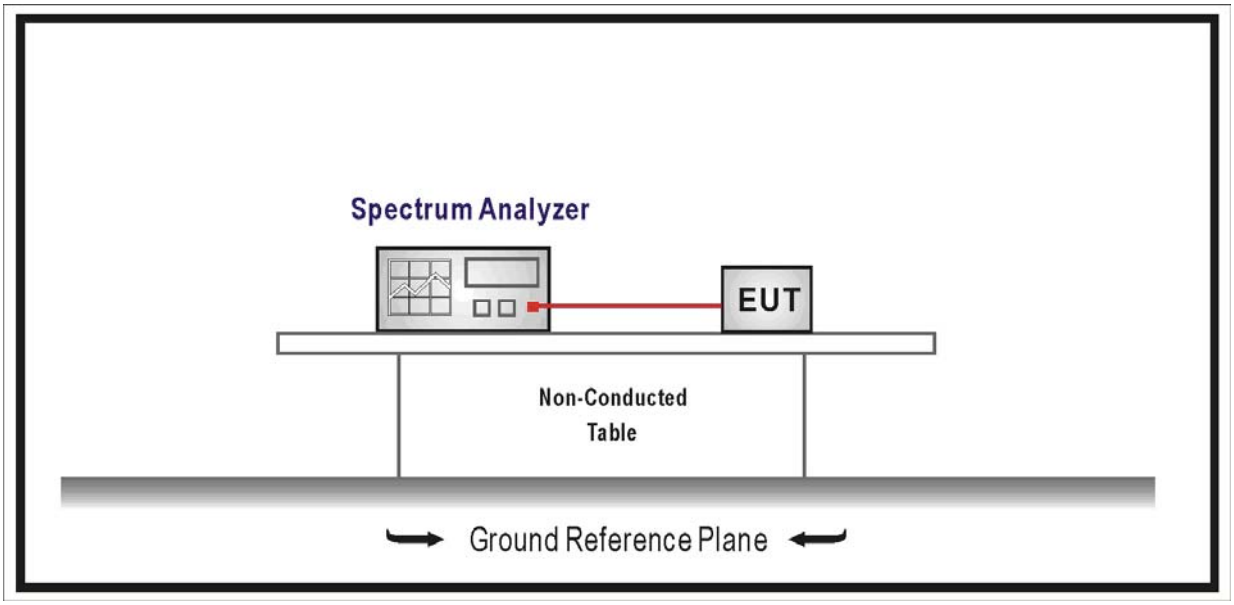
7.1. Test Equipment

Number of Hopping Frequencies / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2010.05.04

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

- For frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies.
- For frequency hopping systems operating in 902-928 MHz band shall use at least 50 hopping frequencies.
- For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

7.4. Test Procedure

According to ANSI C63.10: 2009, the EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = the frequency band of operation
RBW ≧ 1% of the span
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. It may prove necessary to bread the span up to sections, in order to clearly show all of the hopping frequencies.

7.5. Uncertainty

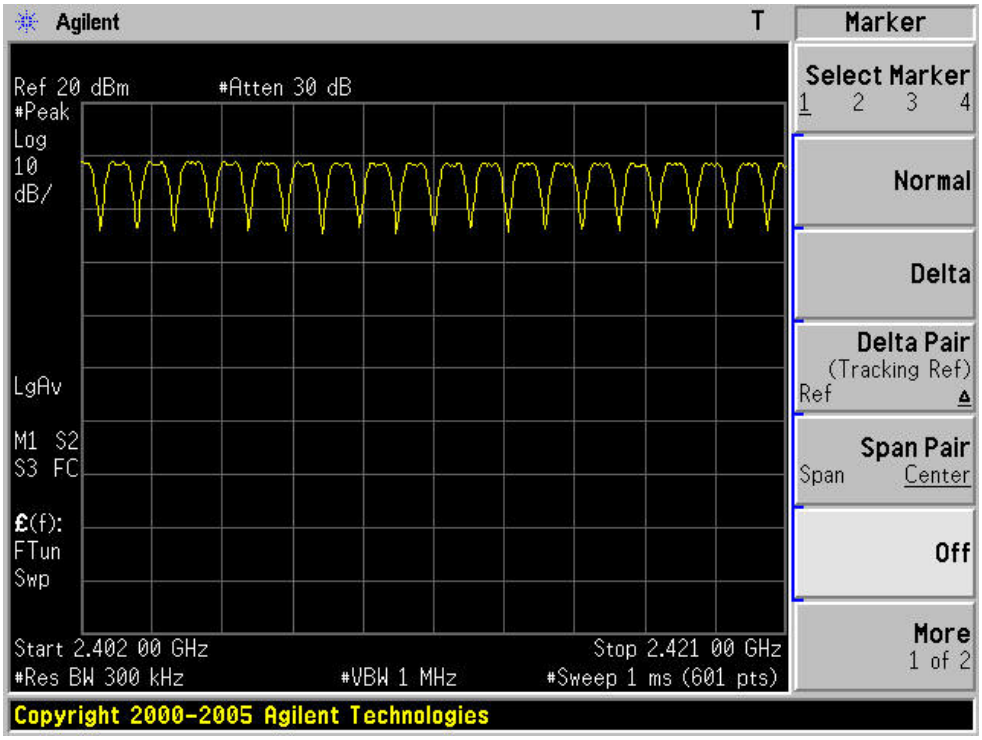
The measurement uncertainty is defined as ± 1 kHz

7.6. Test Result

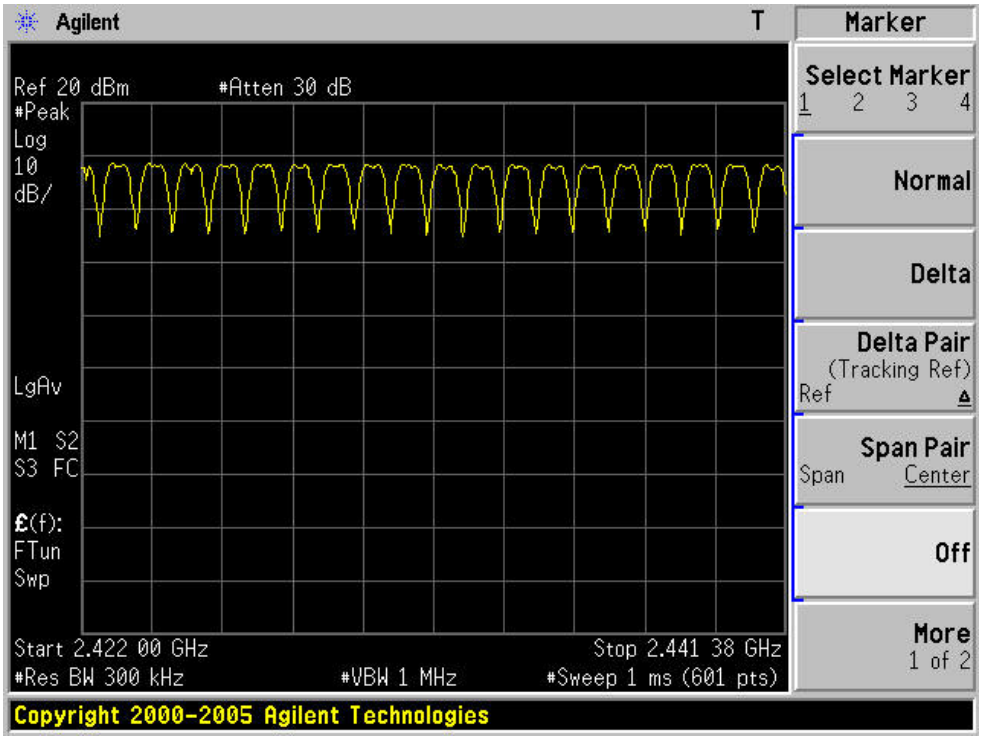
Product	:	GSM Mobile Phone
Test Item	:	Number of Hopping Frequencies
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit (DH5)

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

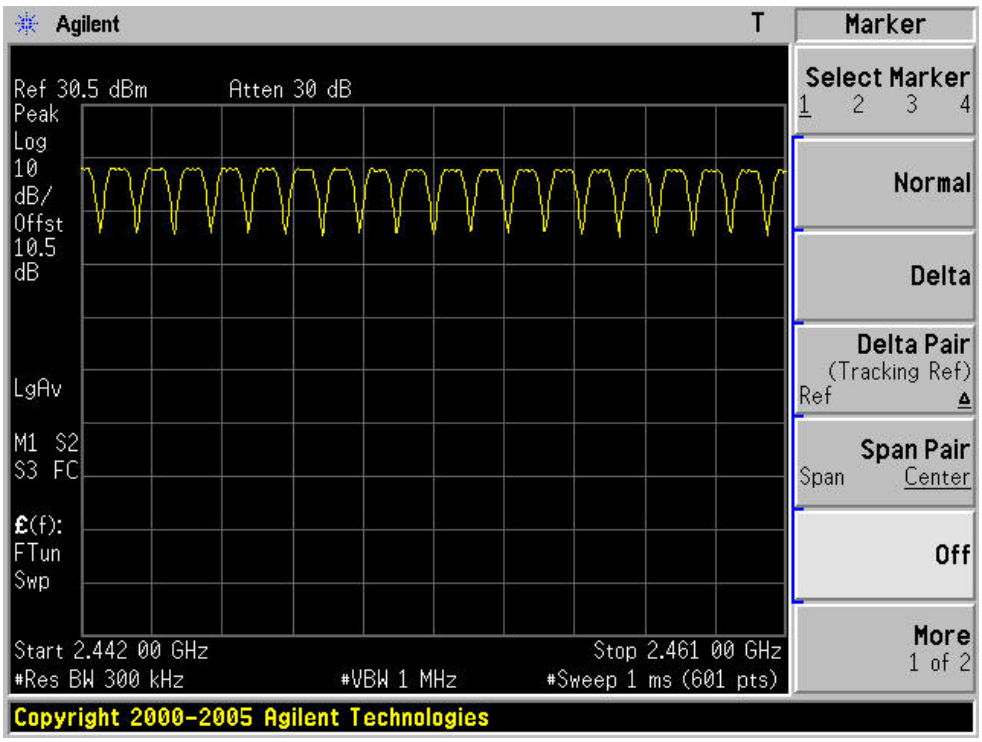
2402 - 2421 MHz



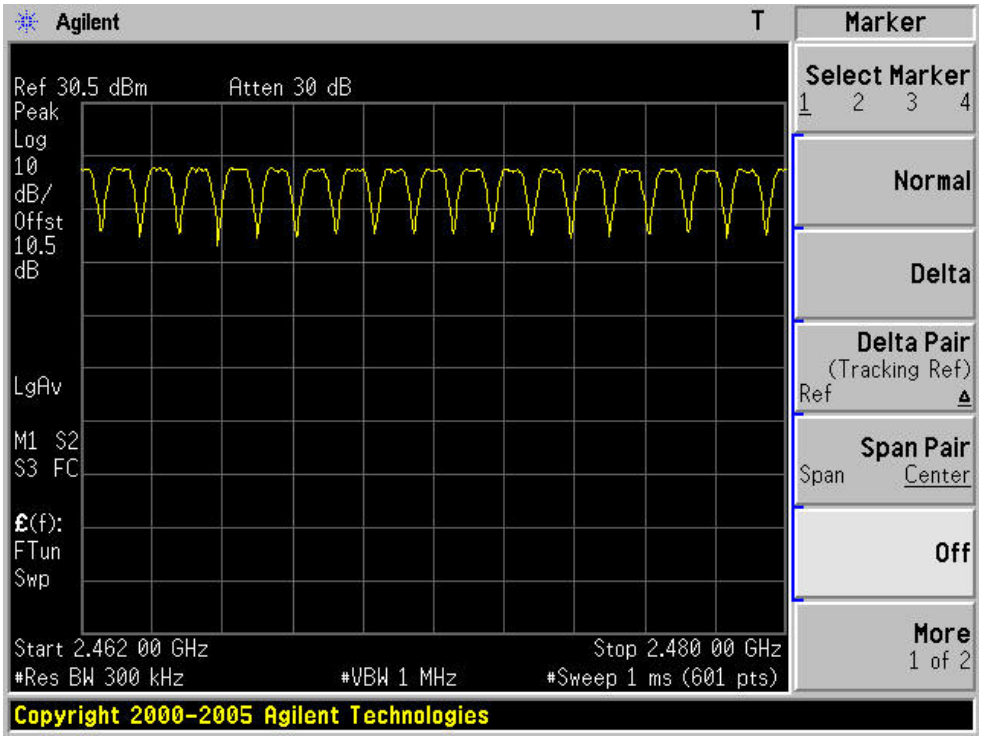
2422 - 2441 MHz



2442 - 2461 MHz



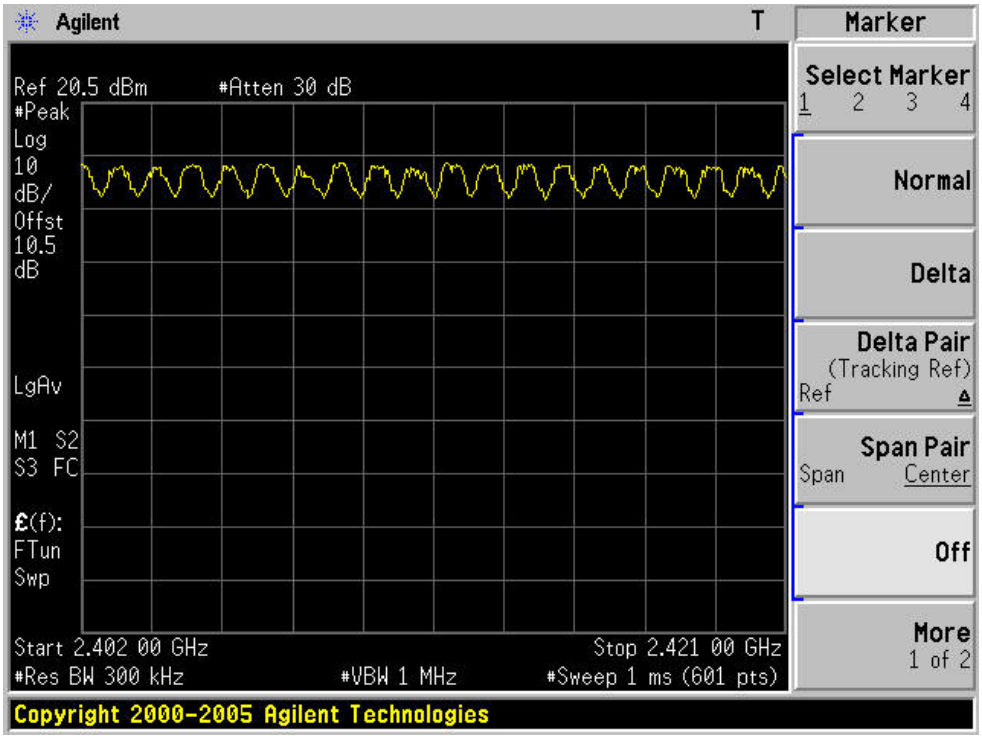
2462 - 2480 MHz



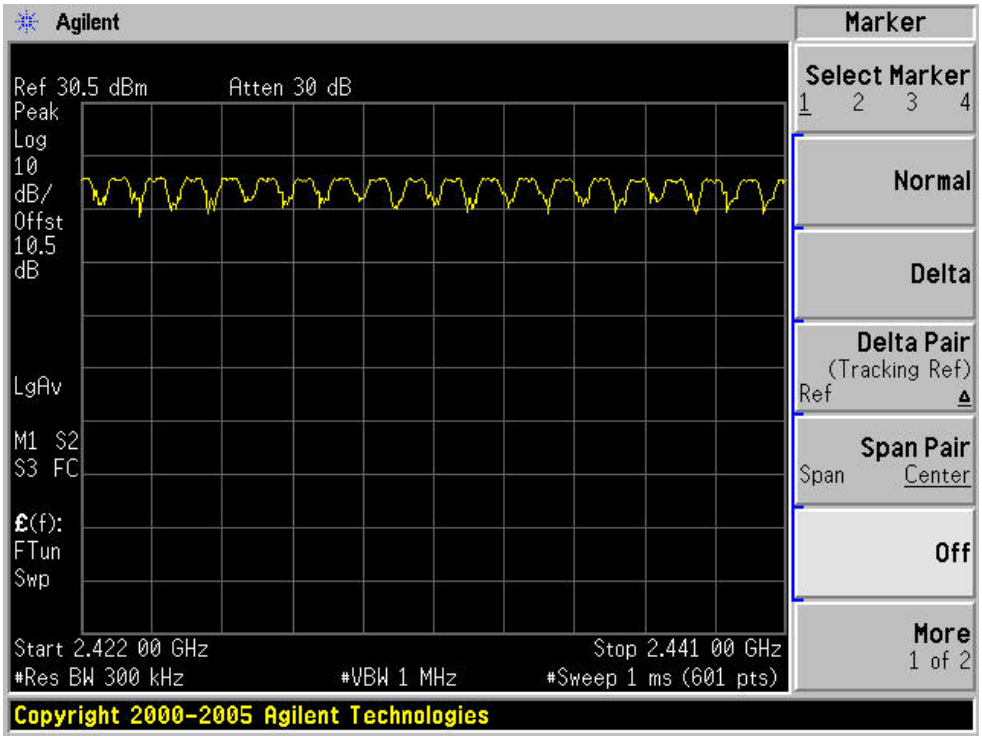
Product	:	GSM Mobile Phone
Test Item	:	Number of Hopping Frequencies
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit (3DH5)

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

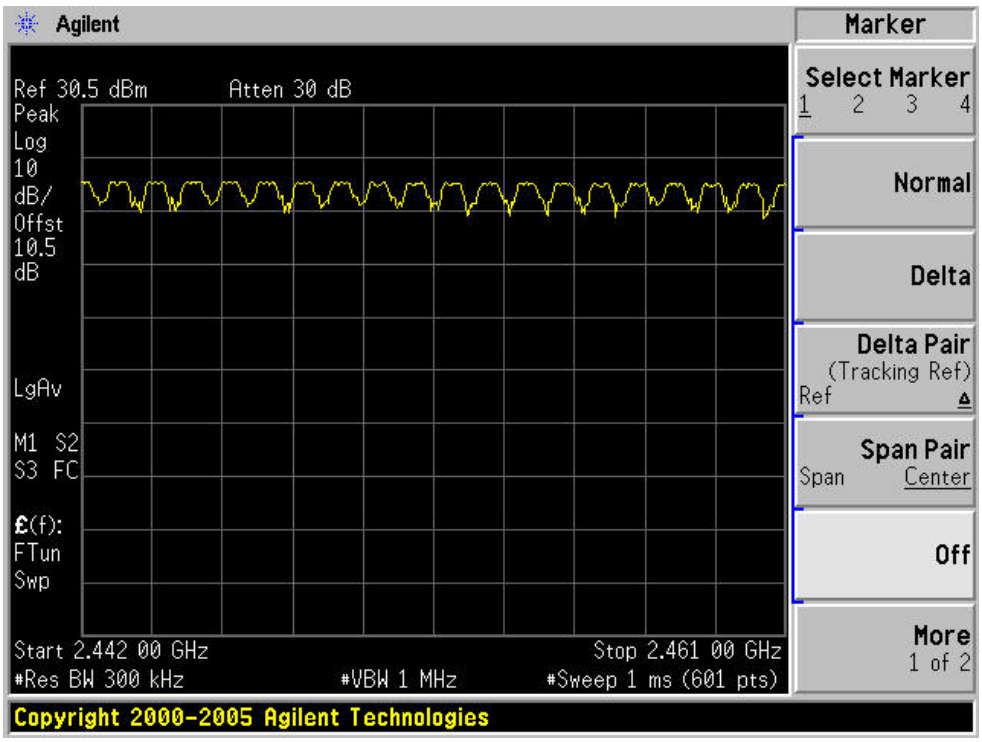
2402 - 2421 MHz



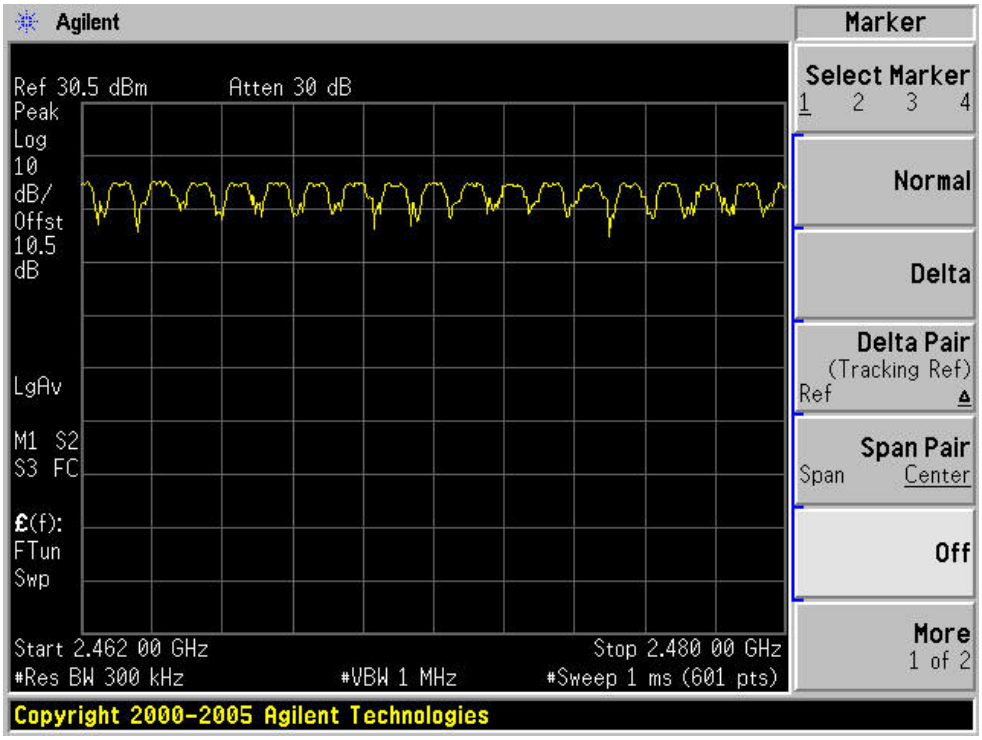
2422 - 2441 MHz



2442 - 2461 MHz



2462 - 2480 MHz



8. Time of Occupancy (Dwell Time)

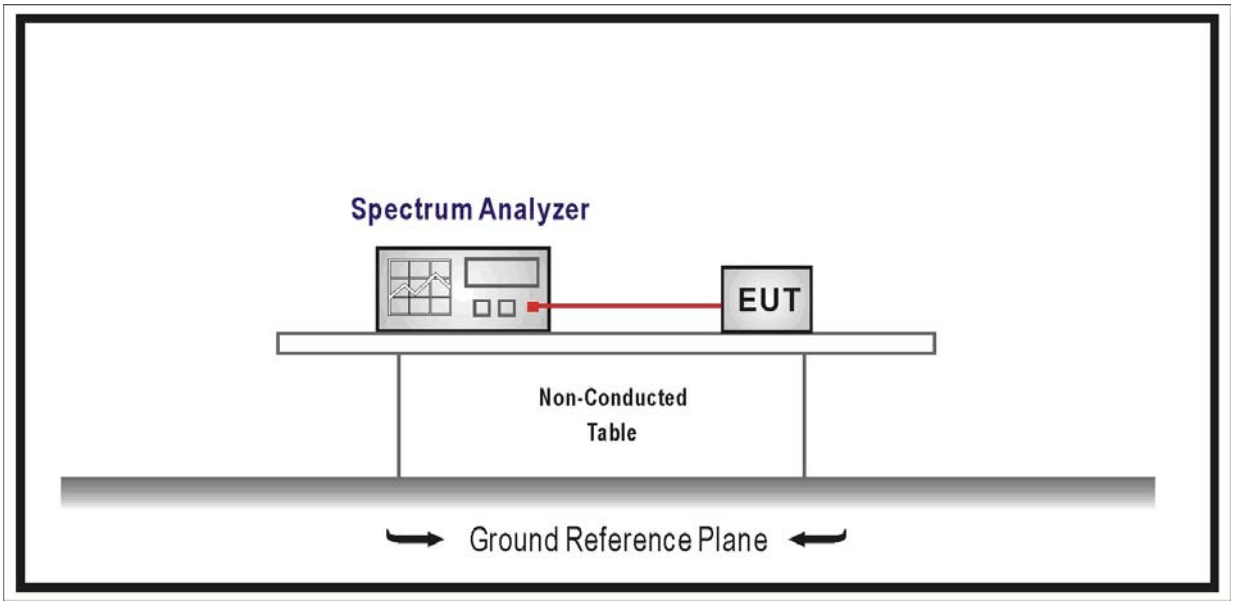
8.1. Test Equipment

Time of Occupancy (Dwell Time) / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2010.05.04

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

- For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less then 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; If the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
- Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75

hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

- Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater then 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

8.4. Test Procedure

According to ANSI C63.10: 2009, the EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = zero span, centered on a hopping channel
RBW = 1MHz
VBW ≧ RBW
Sweep = as necessary to capture the entire dwell time per hopping channel
Detector function = peak
Trace = max hold
If possible, use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation.

8.5. Uncertainty

The measurement uncertainty is defined as ± 0.1 us

8.6. Test Result

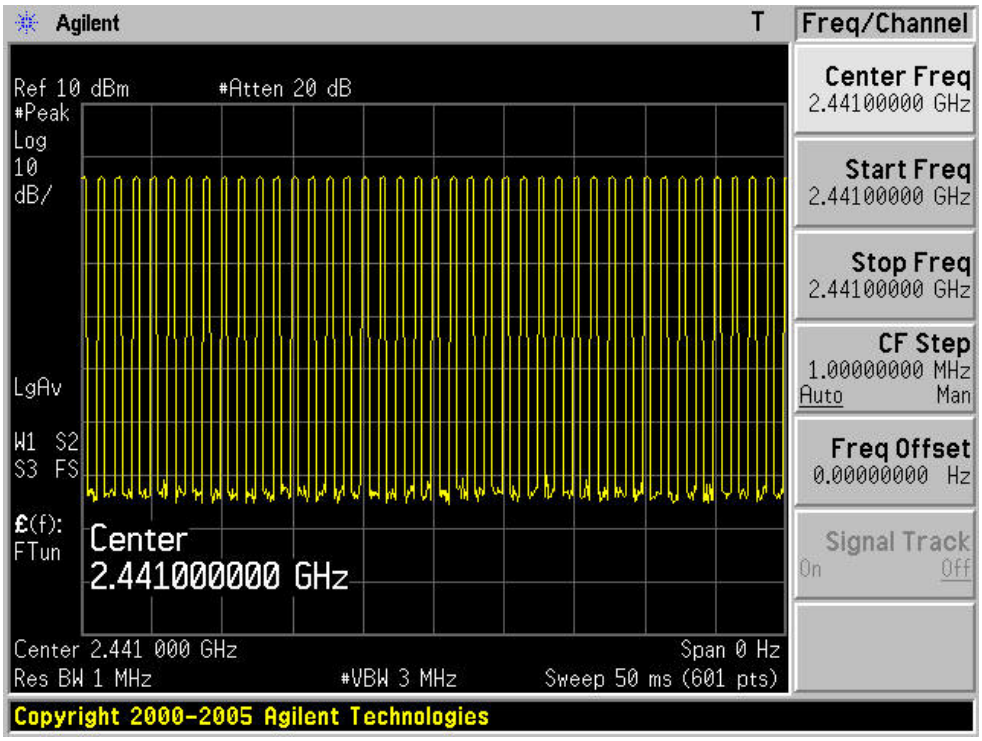
Product	:	GSM Mobile Phone
Test Item	:	Time of Occupancy (Dwell Time)
Test Site	:	TR-8
Test Mode	:	Transmit (3DH1)

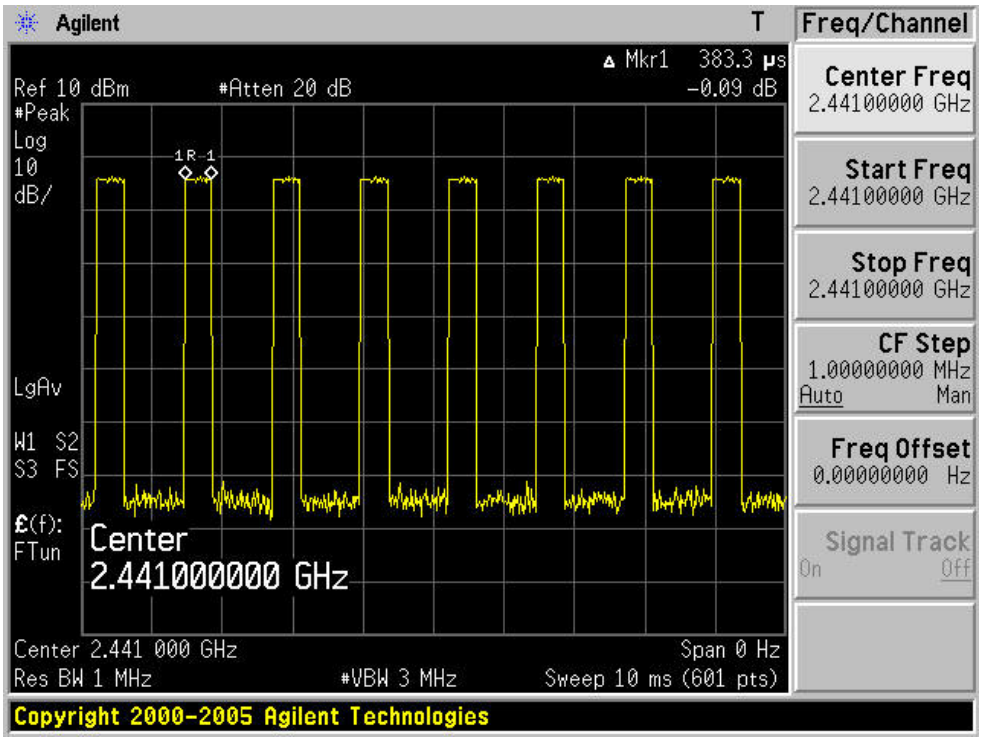
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	122.7	< 400	Pass

Test Time Period: 0.4*79=31.6sec, Hopping Times Within 1sec: 40/50msec=800 hops/sec.

- 2441MHz, The Maximum Occupancy Time Within 31.6sec: [(383.3 μs*800)/79]*31.6 = 122.7msec

Channel 39 (2441MHz)-(3DH1)




Agilent
T
Freq/Channel
Mkr1 383.3 µs
Ref 10 dBm
#Atten 20 dB
-0.09 dB
#Peak
Log
10
dB/
1R 1
LgAv
W1 S2
S3 FS
£(f):
FTun
Center
2.441000000 GHz
Center Freq
2.44100000 GHz
Start Freq
2.44100000 GHz
Stop Freq
2.44100000 GHz
CF Step
1.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Center 2.441 000 GHz
Span 0 Hz
Res BW 1 MHz
#VBW 3 MHz
Sweep 10 ms (601 pts)
Copyright 2000-2005 Agilent Technologies

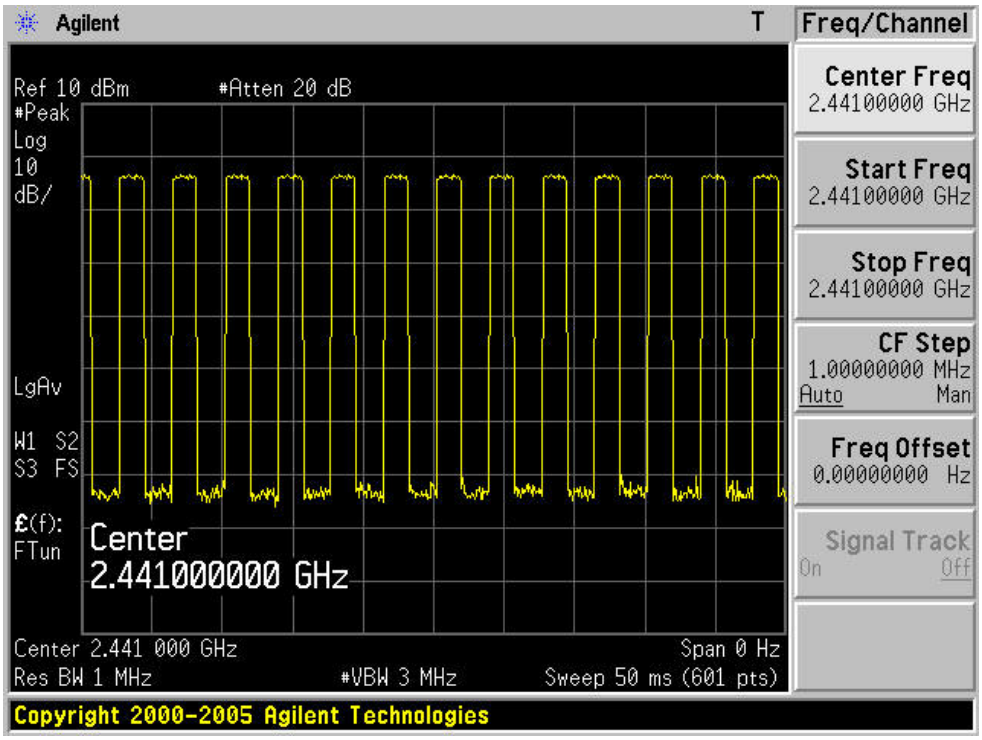
Product	:	GSM Mobile Phone
Test Item	:	Time of Occupancy (Dwell Time)
Test Site	:	TR-8
Test Mode	:	Transmit (3DH3)

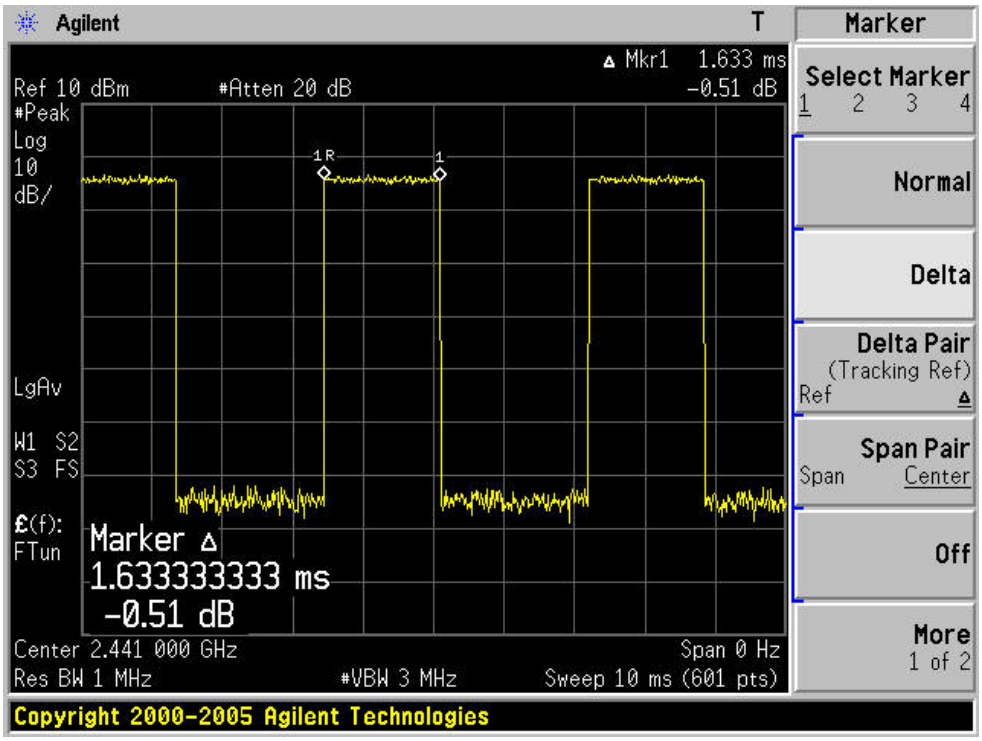
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	182.9	< 400	Pass

Test Time Period: 0.4*79=31.6sec, Hopping Times Within 1sec: 14/50msec=280hops/sec.

- 2441MHz, The Maximum Occupancy Time Within 31.6sec: [(1.633 ms*280)/79]*31.6= 182.9msec

Channel 39 (2441MHz) - (3DH3)




Agilent
T
Marker
Ref 10 dBm
#Atten 20 dB
Mkr1 1.633 ms
-0.51 dB
#Peak
Log
10
dB/
1R
1
LgAv
W1 S2
S3 FS
£(f):
FTun
Marker Δ
1.633333333 ms
-0.51 dB
Center 2.441 000 GHz
Res BW 1 MHz
#VBW 3 MHz
Span 0 Hz
Sweep 10 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Copyright 2000-2005 Agilent Technologies

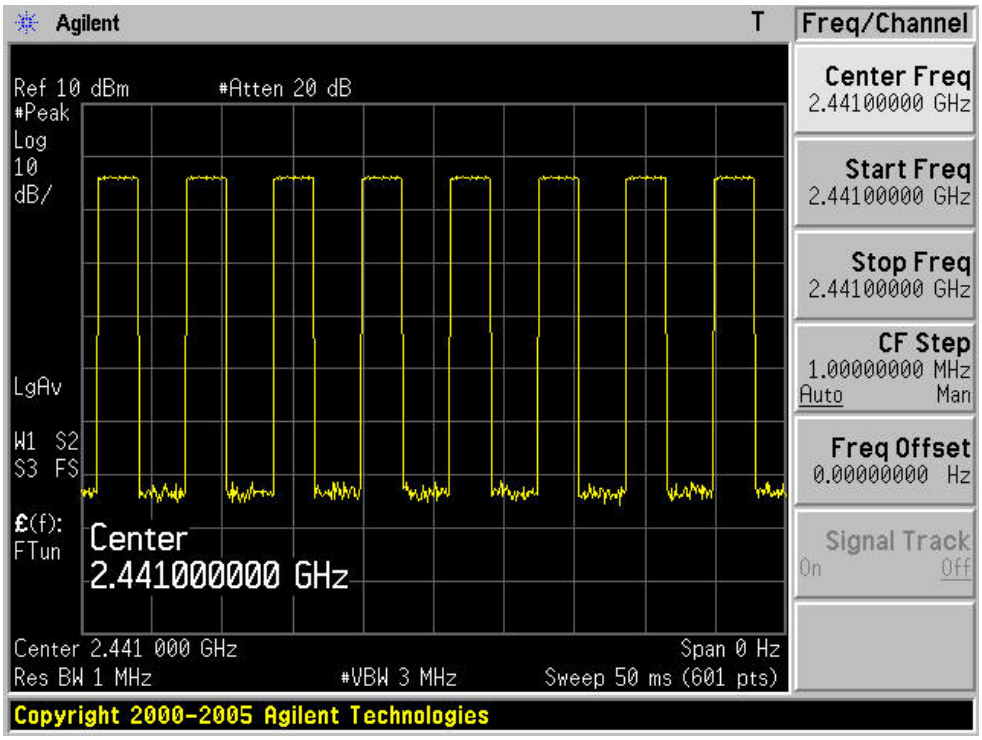
Product	:	GSM Mobile Phone
Test Item	:	Time of Occupancy (Dwell Time)
Test Site	:	TR-8
Test Mode	:	Transmit (3DH5)

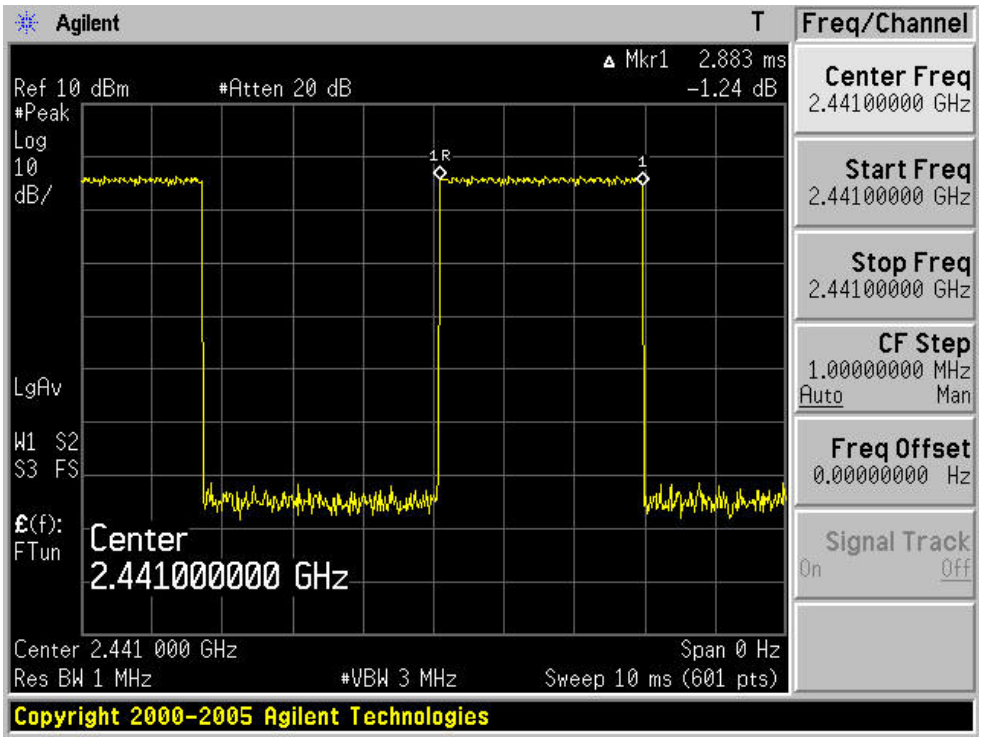
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	184.5	< 400	Pass

Test Time Period: 0.4*79=31.6sec, Hopping Times Within 1sec: 8/50msec=160 hops/sec.

- 2441MHz, The Maximum Occupancy Time Within 31.6sec: [(2.883 ms*160)/79]*31.6= 184.5msec

Channel 39 (2441MHz) - (3DH5)




Agilent
T
Freq/Channel
Mkr1 2.883 ms
Ref 10 dBm
#Atten 20 dB
-1.24 dB
#Peak
Log
10
dB/
1R
1
LgAv
W1 S2
S3 FS
£(f):
FTun
Center
2.441000000 GHz
Center Freq
2.44100000 GHz
Start Freq
2.44100000 GHz
Stop Freq
2.44100000 GHz
CF Step
1.00000000 MHz
Auto
Man
Freq Offset
0.00000000 Hz
Signal Track
On
Off
Center 2.441 000 GHz
Span 0 Hz
Res BW 1 MHz
#VBW 3 MHz
Sweep 10 ms (601 pts)
Copyright 2000-2005 Agilent Technologies

9. Peak Output Power

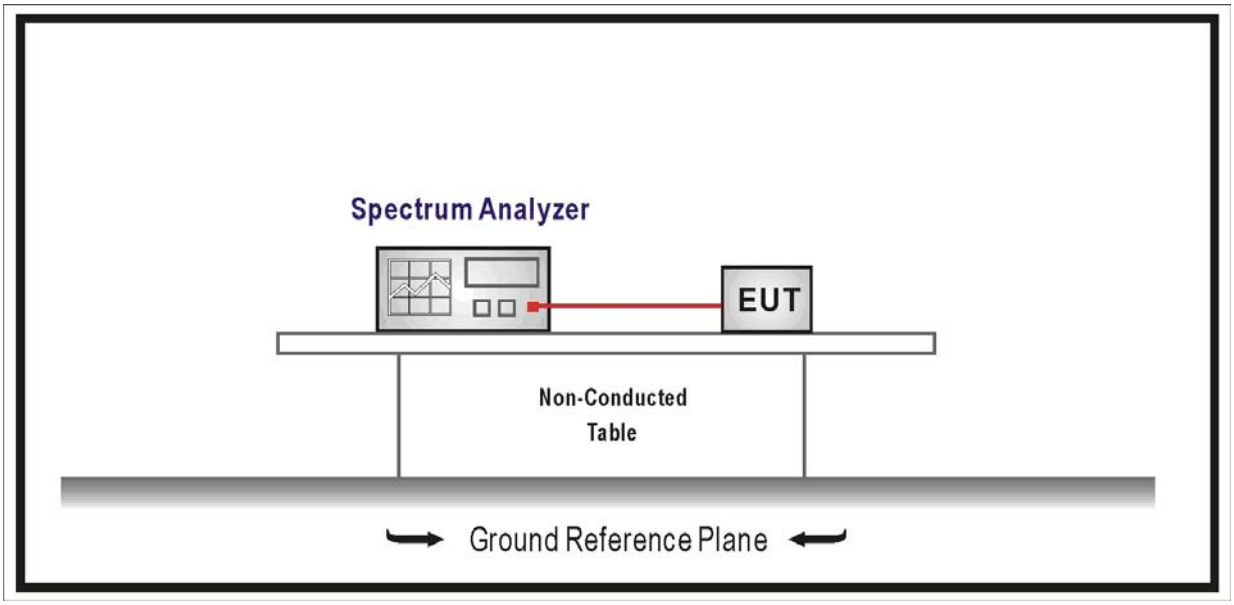
9.1. Test Equipment

Peak Output Power / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2010.05.04

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

- For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
- For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

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

According to ANSI C63.10: 2009, use the following spectrum analyzer settings:
Span = approximately 5 times the 20dB bandwidth, centered on a hopping channel
RBW ＞ the 20 dB bandwidth of the emission being measured.
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power (don't forget added the external attenuation and cable loss).

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

9.6. Test Result

Product	:	GSM Mobile Phone
Test Item	:	Power Output
Test Mode	:	Mode 1: Transmit by DH5

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
0	2402	9.03	30.00	Pass
39	2441	8.36	30.00	Pass
78	2480	7.37	30.00	Pass

Product	:	GSM Mobile Phone
Test Item	:	Power Output
Test Mode	:	Mode 2: Transmit by 3DH5

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
0	2402	7.33	30.00	Pass
39	2441	6.71	30.00	Pass
78	2480	5.72	30.00	Pass

10. Band-edge Compliance of RF Conducted Emissions

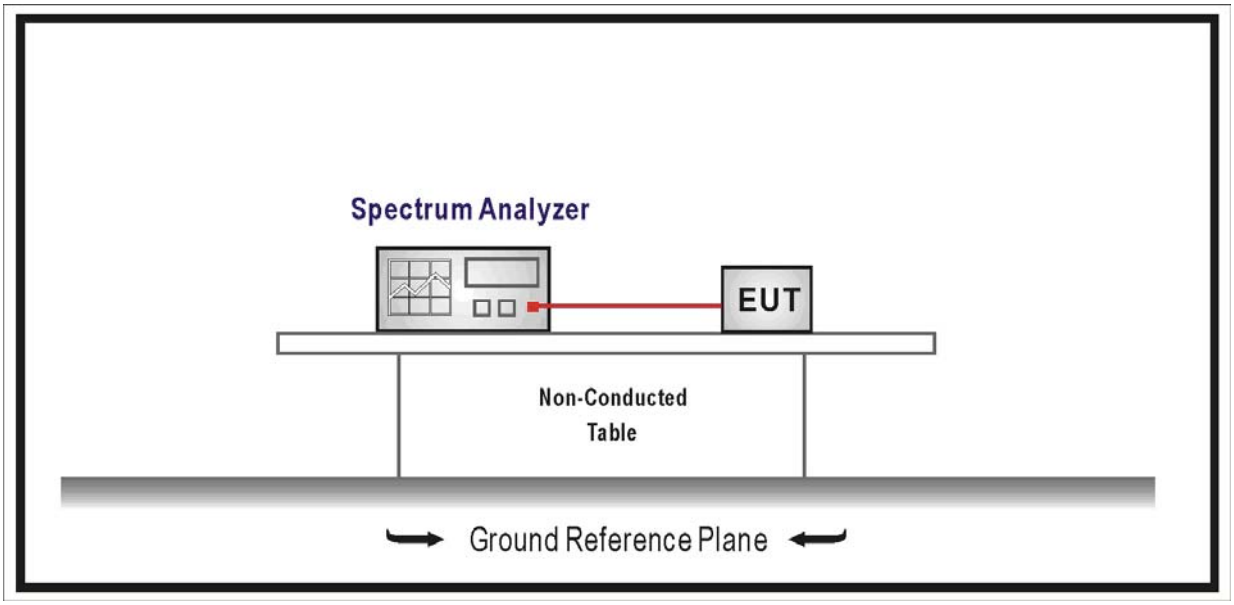
10.1. Test Equipment

Band-edge Compliance of RF Conducted Emissions / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2010.05.04

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

- Intentional radiators operating under the alternative provisions to the general emission limits as contained in 15.217 through 15.257 and in Subpart E of FCC part 15, must be designed to ensure that 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
- In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) of FCC part 15 is not required.

10.4. Test Procedure

According to ANSI C63.10: 2009, use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation.
RBW ≧ 1% of the span
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge.
Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. The marker-delta value now displayed must comply with the limit specified in this Section.
Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit.

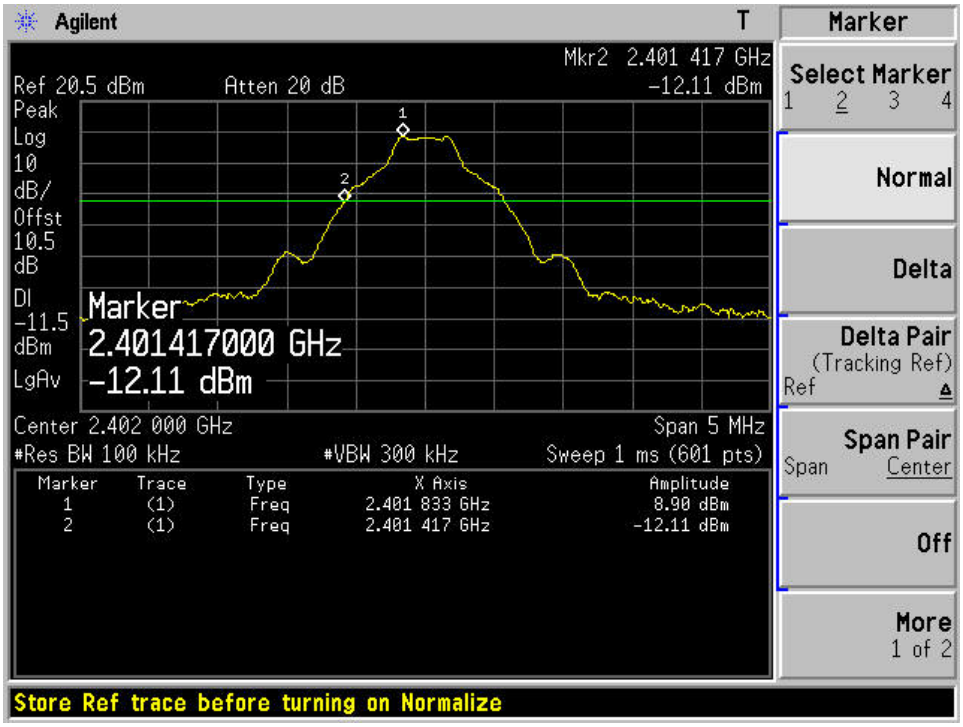
10.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

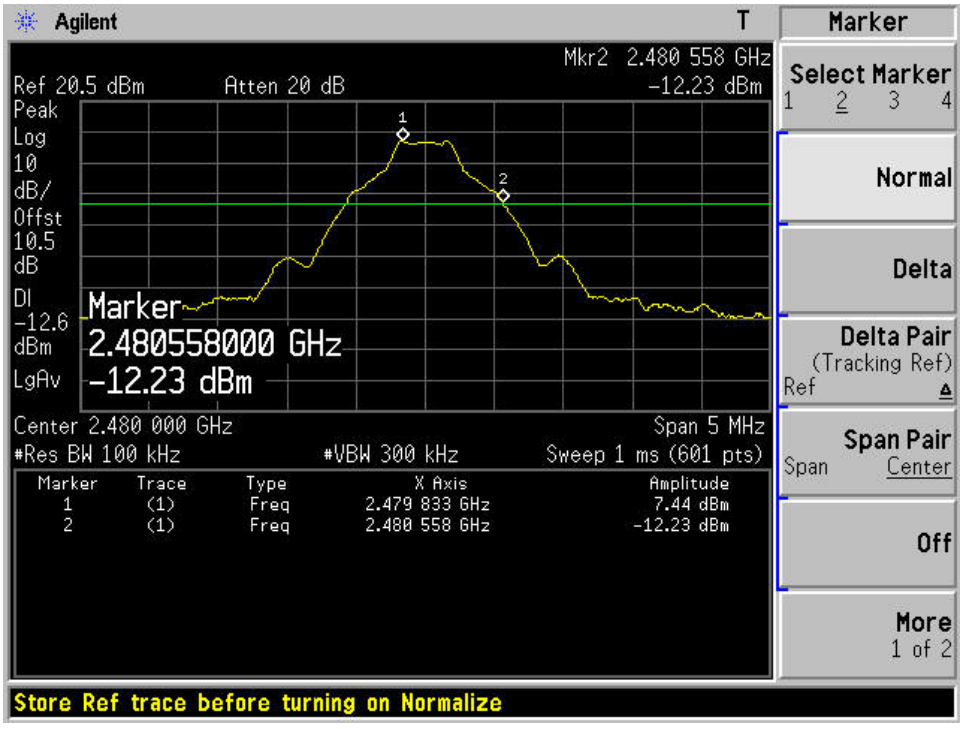
10.6. Test Result

Product	:	GSM Mobile Phone
Test Item	:	Band-edge Compliance of RF Conducted Emissions
Test Mode	:	Mode 1: Transmit (DH5)

Channel 00 (2402MHz)

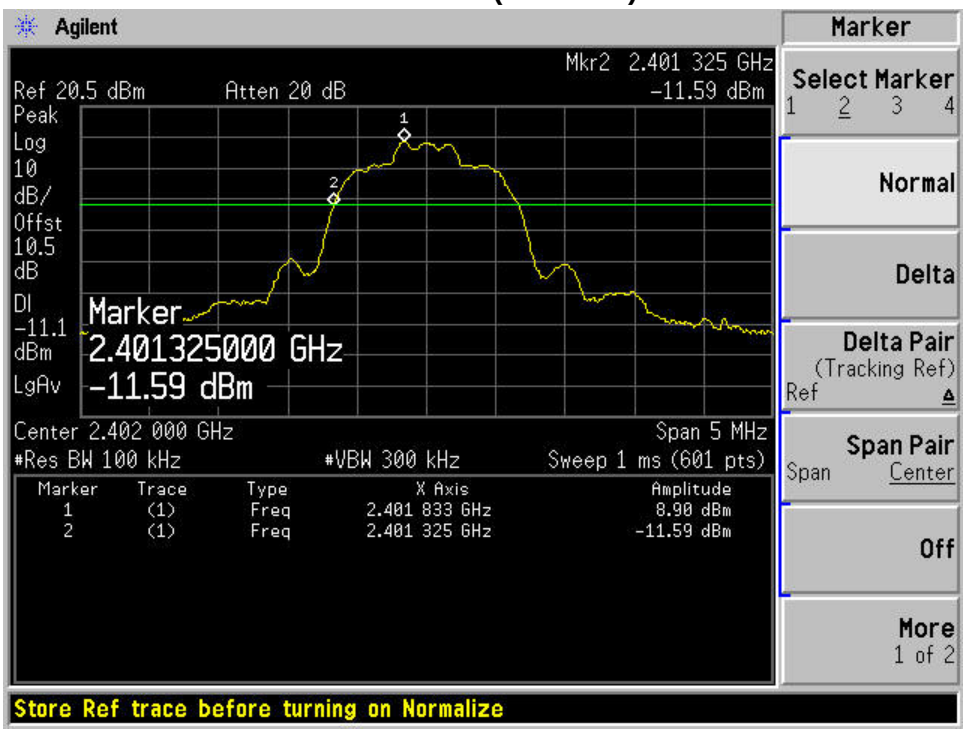


Channel 78 (2480MHz)

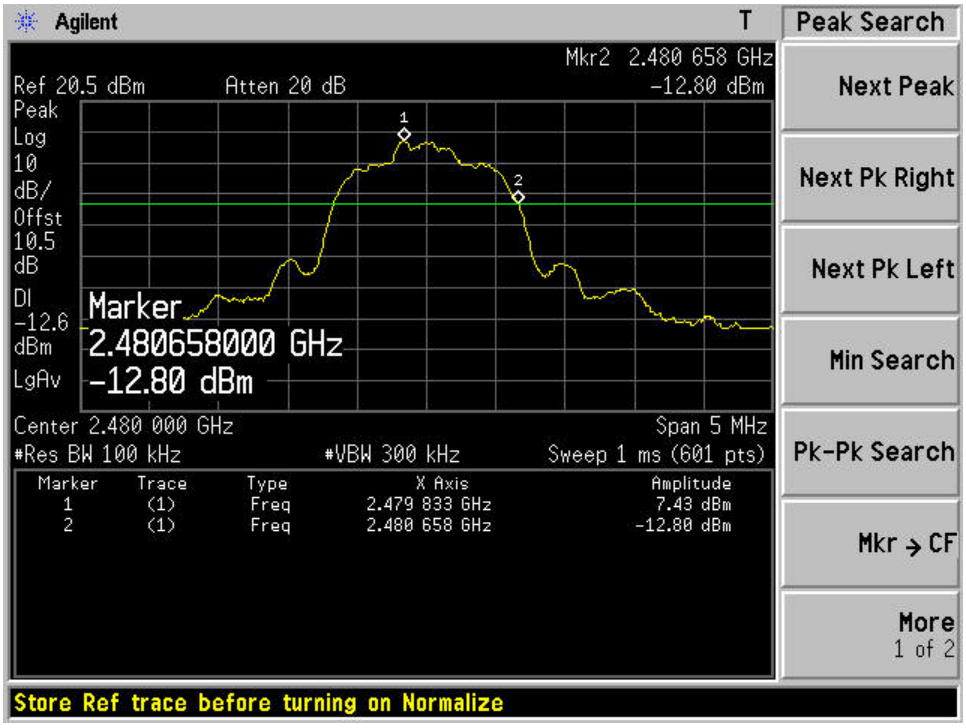


Product	:	GSM Mobile Phone
Test Item	:	Band-edge Compliance of RF Conducted Emissions
Test Mode	:	Mode 2: Transmit (3DH5)

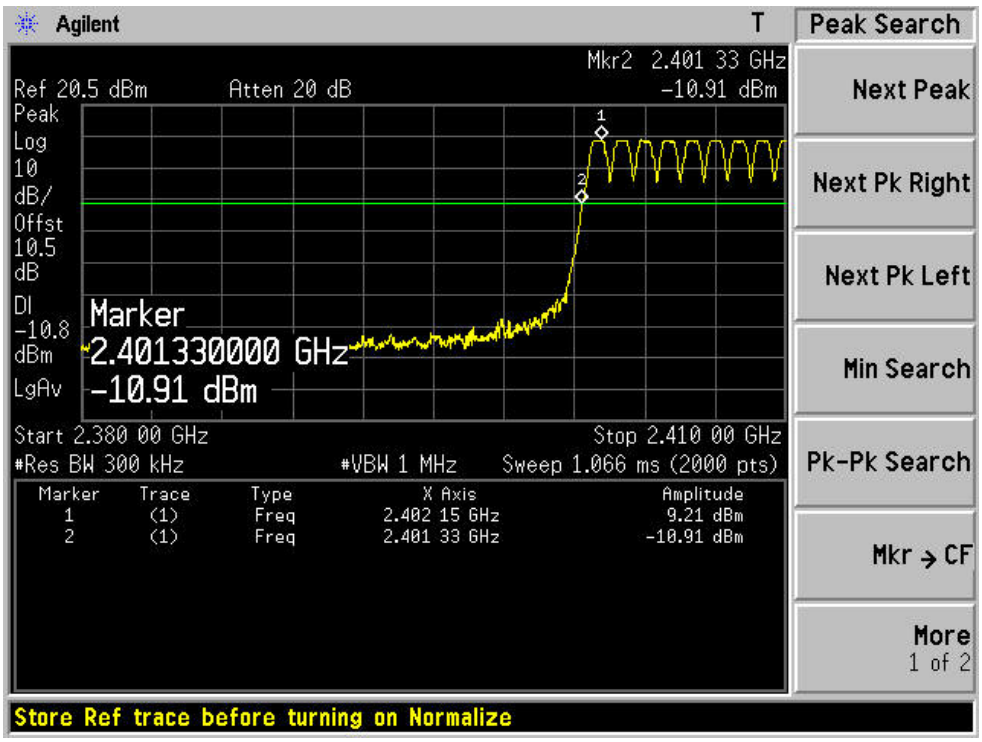
Channel 00 (2402MHz)

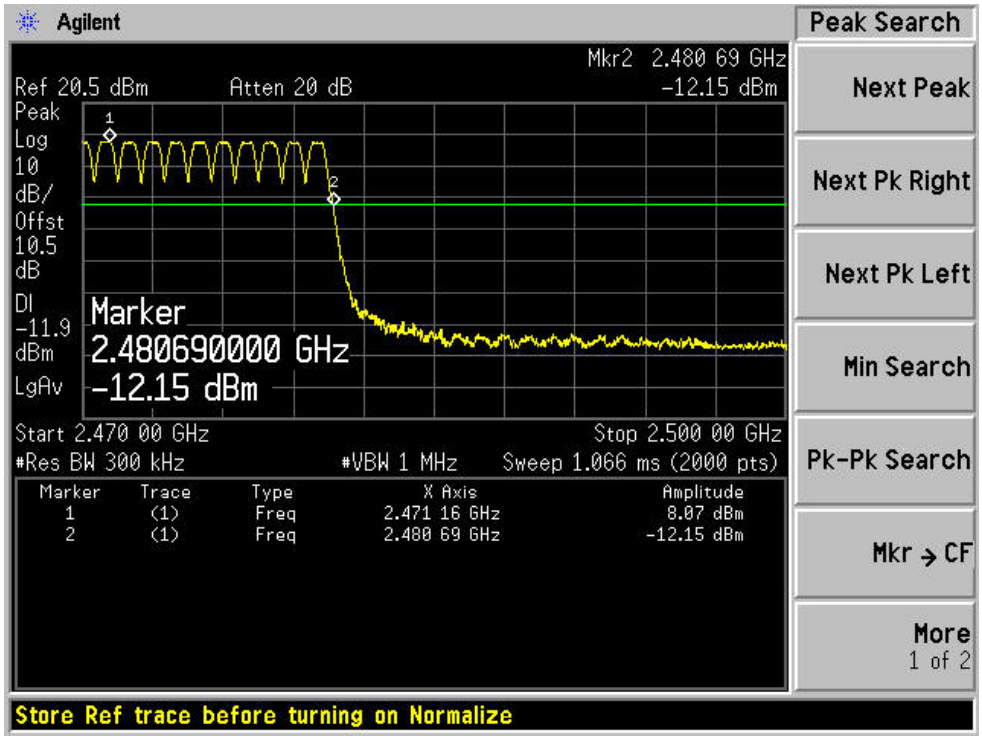


Channel 78 (2480MHz)



Hopping Mode





11. Spurious RF Conducted Emissions

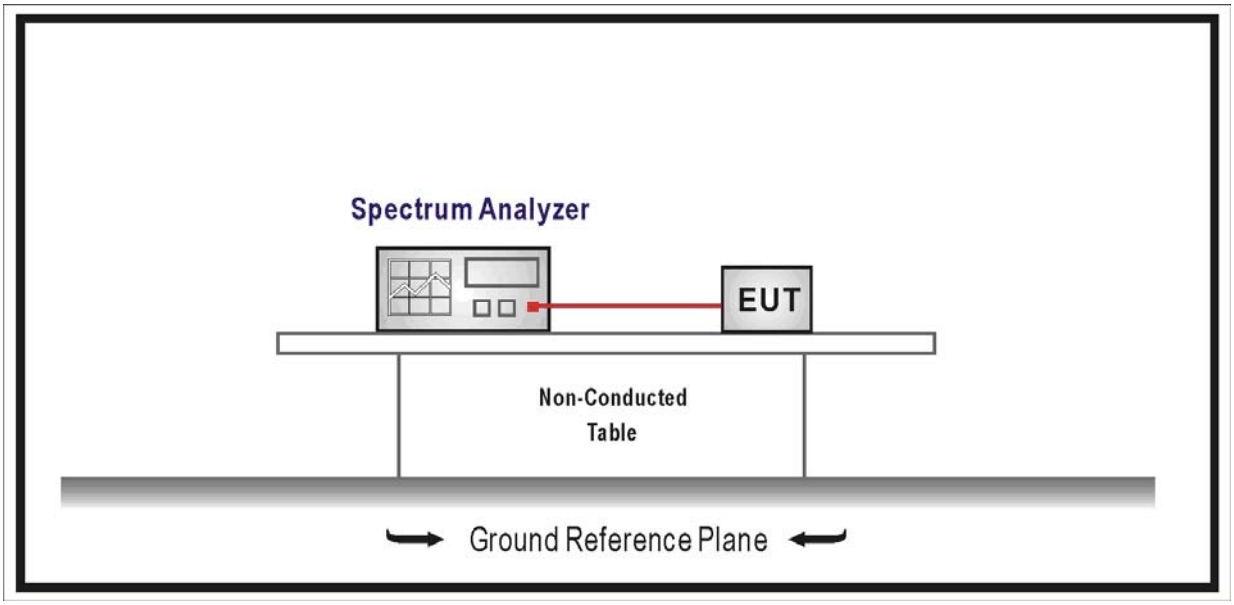
11.1. Test Equipment

Spurious RF Conducted Emissions / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2010.05.04

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

11.2. Test Setup



11.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in

Section 15.209(a) of FCC part 15 is not required.

11.4. Test Procedure

According to ANSI C63.10: 2009, use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10^{th} harmonic. Typically, several plots are required to cover this entire span.
RBW = 100 kHz
VBW ≧ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this section.

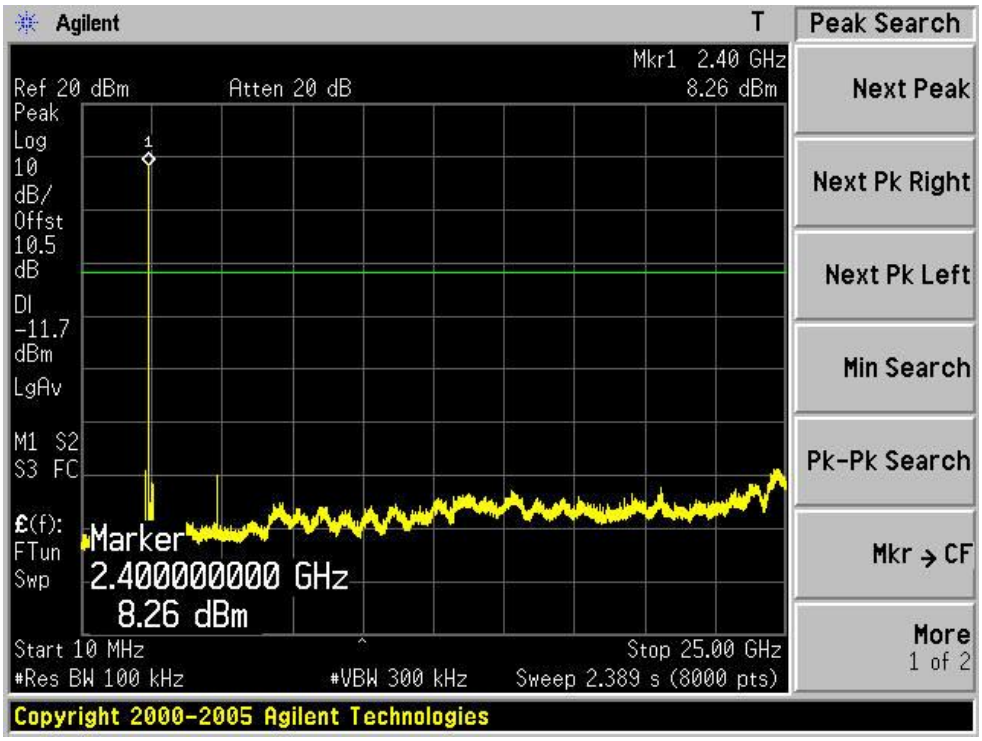
11.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

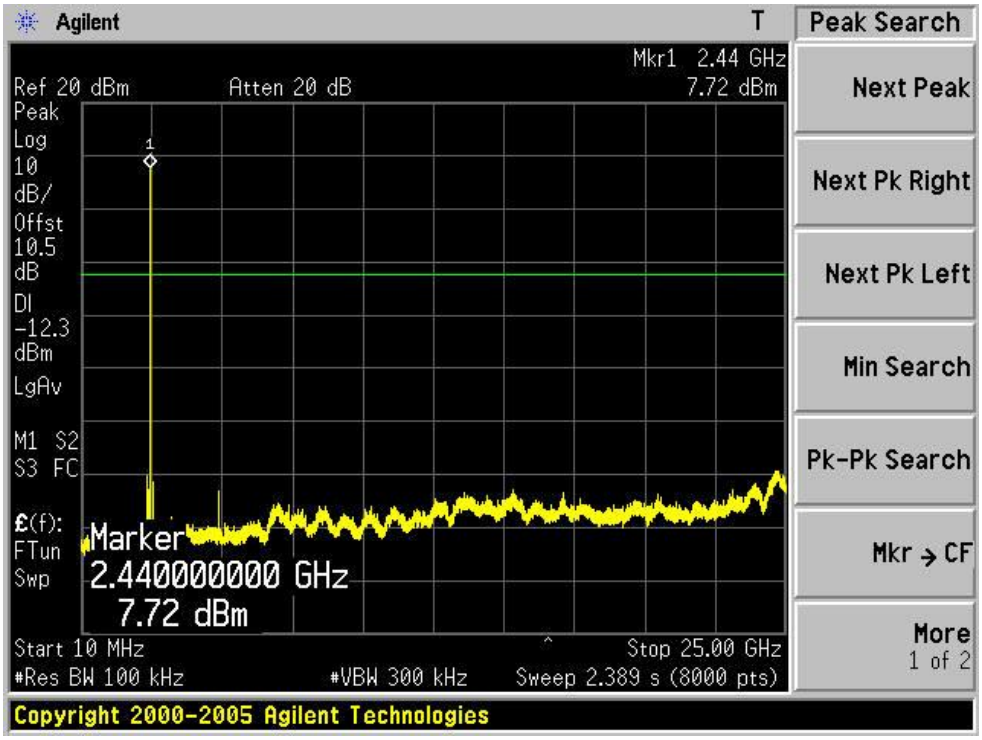
11.6. Test Result

Product	:	GSM Mobile Phone
Test Item	:	Spurious RF Conducted Emissions
Test Mode	:	Mode 1: Transmit (DH5)

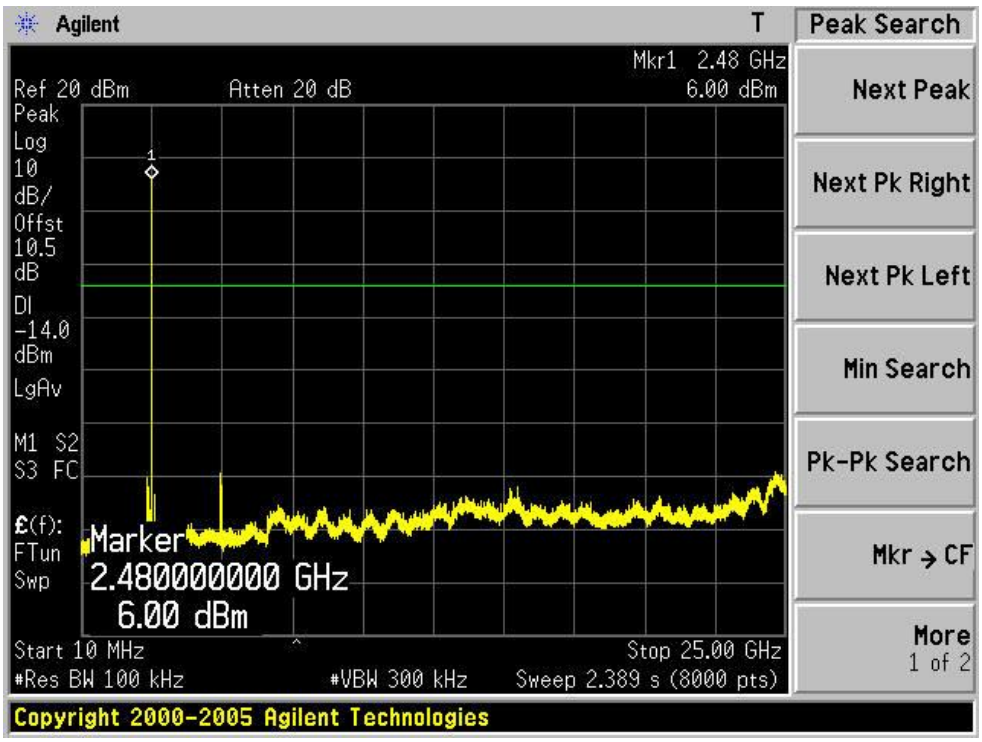
Channel 00 (2402MHz)



Channel 39 (2441MHz)

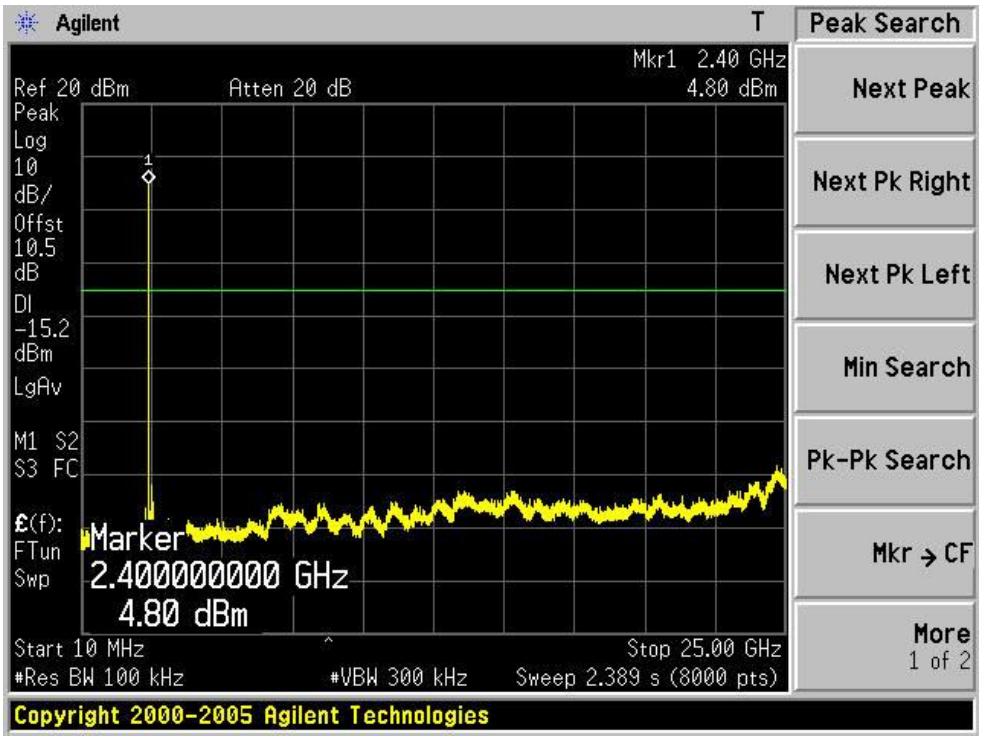


Channel 78 (2480MHz)

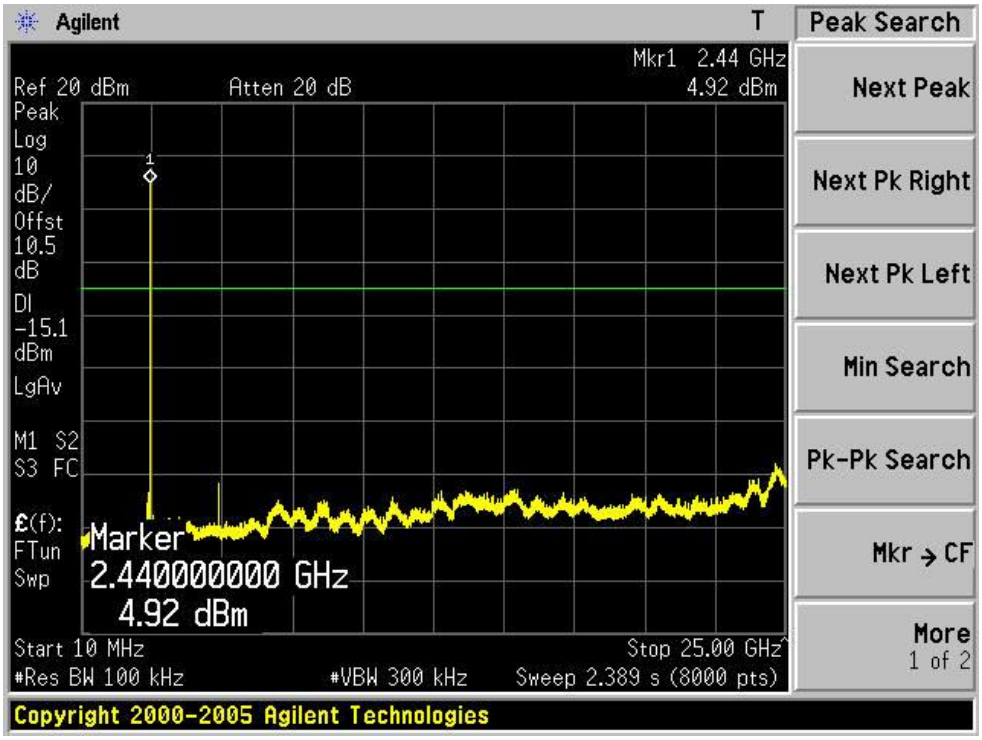


Product	:	GSM Mobile Phone
Test Item	:	Spurious RF Conducted Emissions
Test Site	:	AC-6
Test Mode	:	Mode 2: Transmit (3DH5)

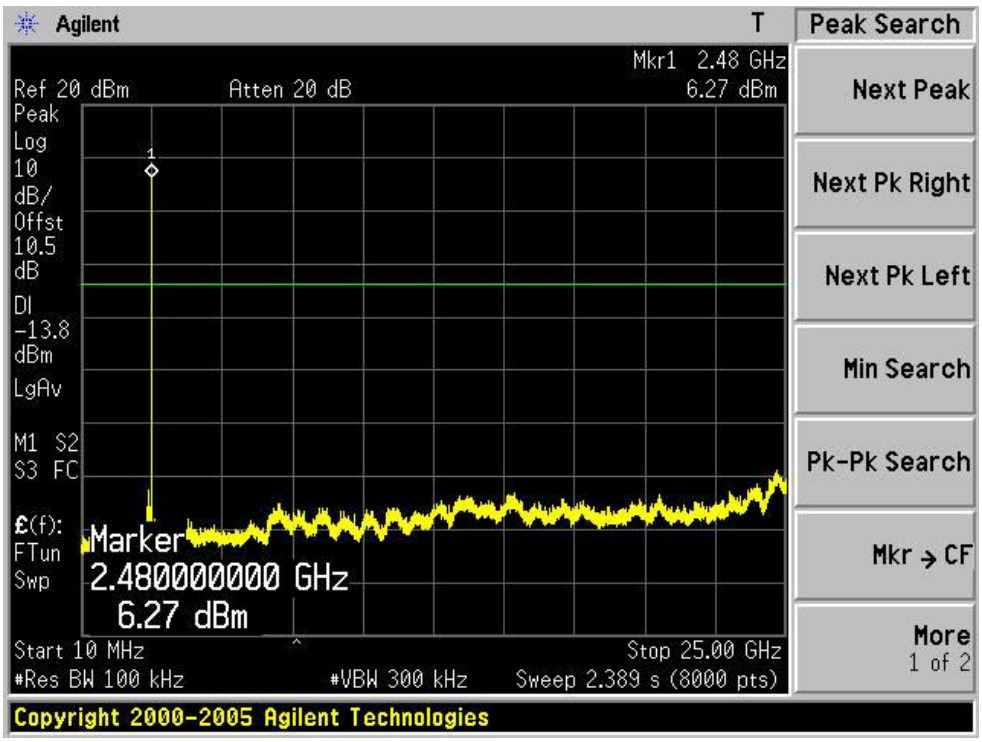
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



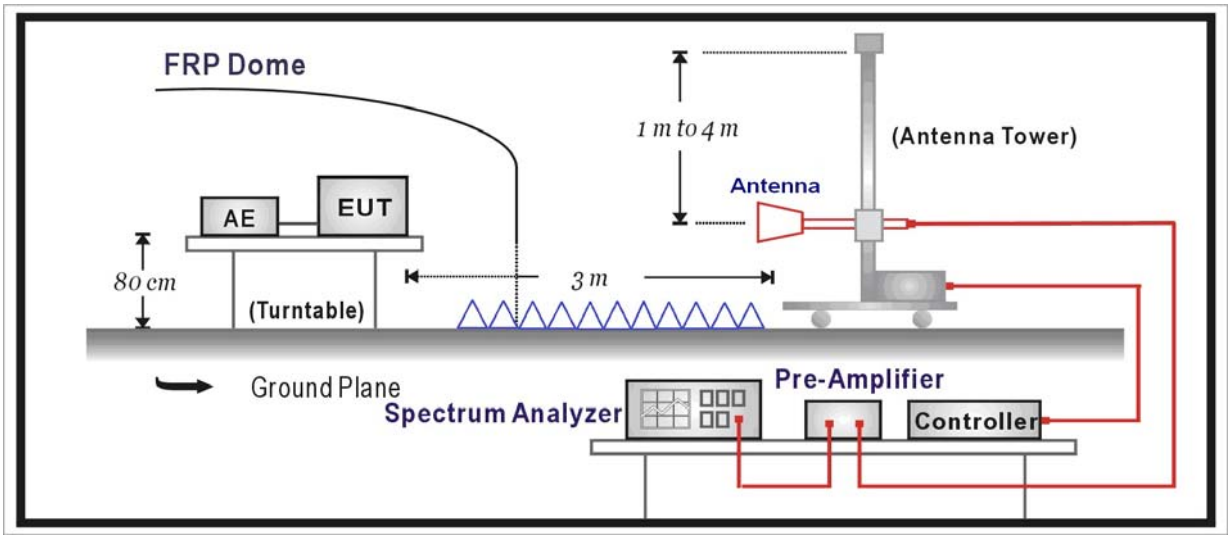
12. Radiated Emission Band Edge

12.1. Test Equipment

☒Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2010.04.23
EMI Test Receiver	R&S	ESCI	100573	2010.04.23
Preamplifier	Quietek	AP-025C	CHM-0511006	2010.05.05
Preamplifier	Quietek	AP-180C	CHM-0602013	2010.05.05
Bilog Type Antenna	Schaffner	CBL6112B	2932	2009.11.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2010.06.11
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2010.05.05
Temperature/Humidity Meter	zhicheng	ZC1-2	AC5-TH	2010.01.14

12.2. Test Setup



12.3. 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) of FCC part 15.

12.4. Test Procedure

According to ANSI C63.10: 2009, this test is required for any spurious emission or modulation product that falls in a Restricted Band, as defined in Section 15.205 of FCC part 15. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for f ≧ 1 GHz, 100 kHz for f < 1GHz

VBW ≧ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Follow the guidelines in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which

must comply with the limit specified in Section 15.35(b) of FCC part 15.
Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209 of FCC Part 15. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from 20log (dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit of FCC part 15.
If the emission on which a radiated measurement must be made is located at the edge of the authorized band of operation, then the alternative “marker-delta” method may be employed.

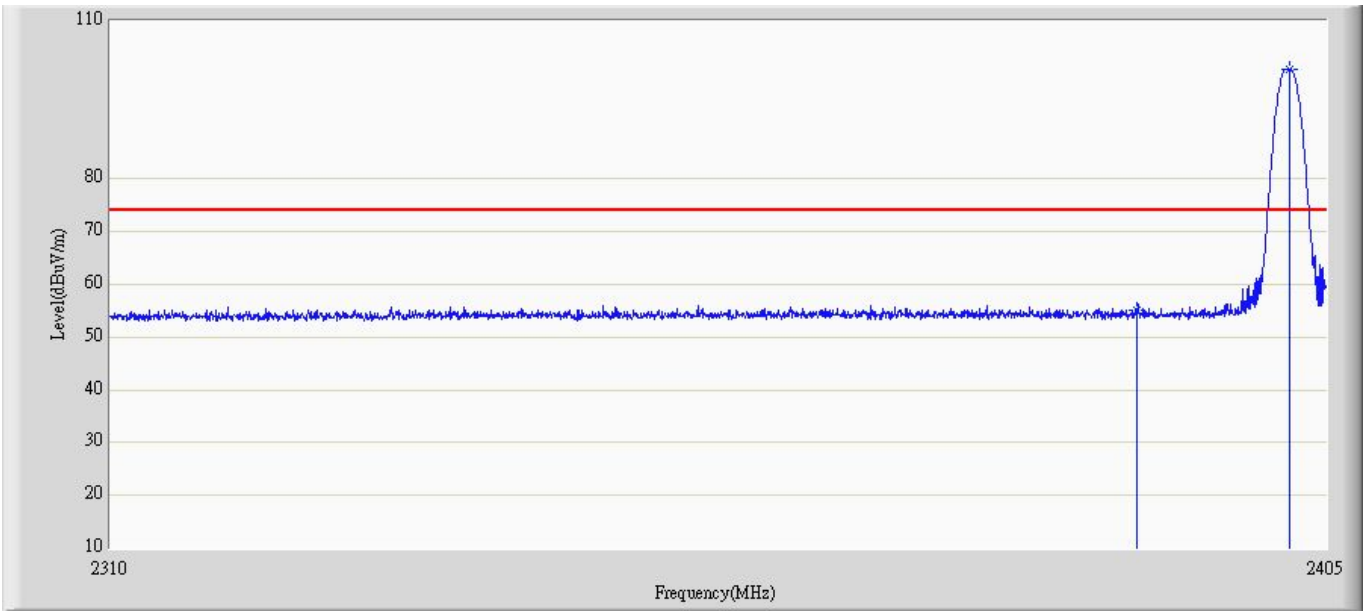
12.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB
below 1G is defined as ± 3.8 dB

12.6. Test Result

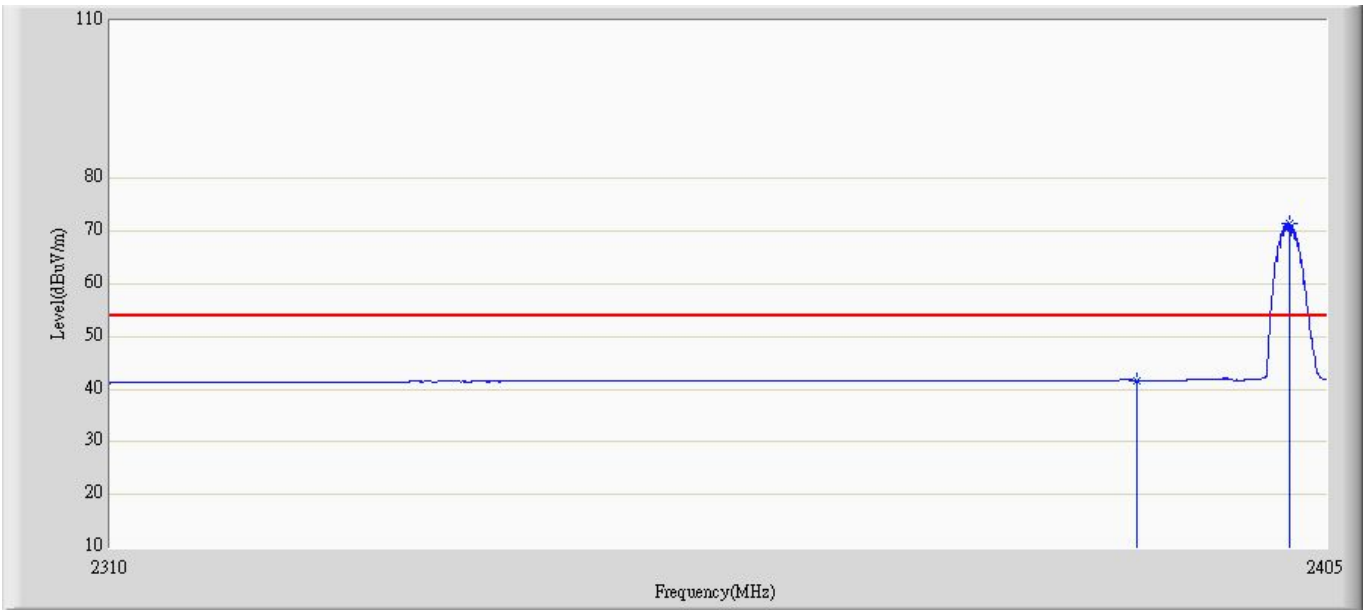
All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:
Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1:Transmit by DH5 at channel 2402MHz	



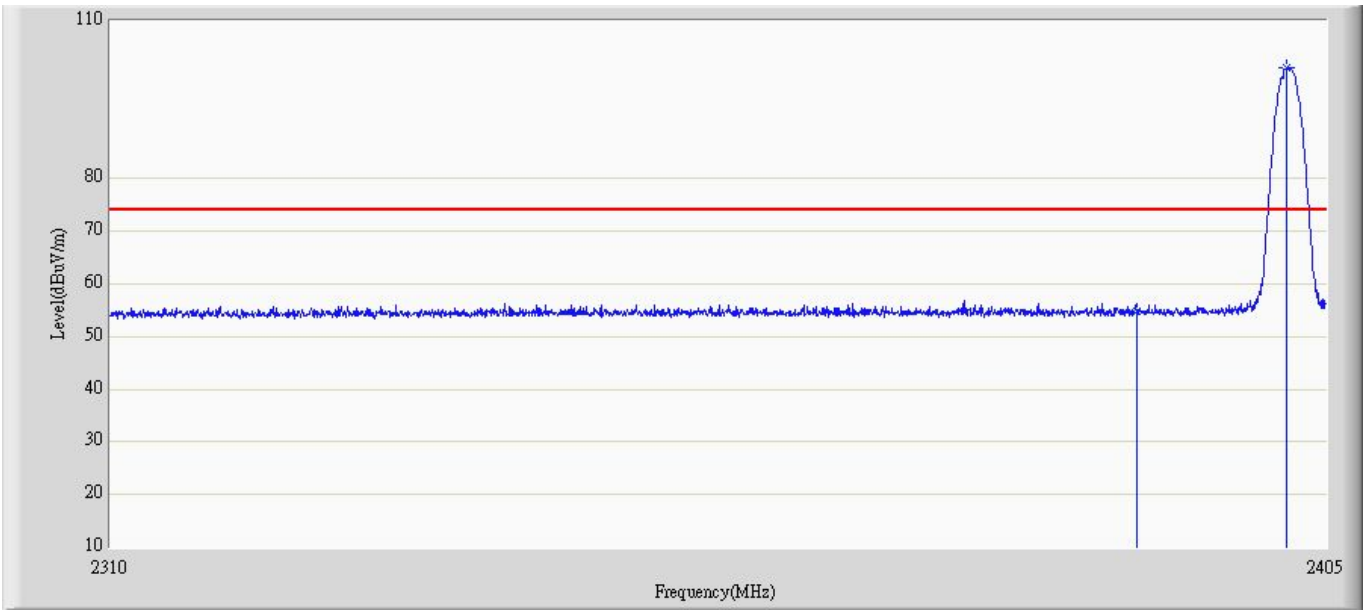
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	55.045	24.490	-18.955	74.000	30.555	PK
2	*	2402.103	100.842	70.282	N/A	N/A	30.560	PK

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1:Transmit by DH5 at channel 2402MHz	



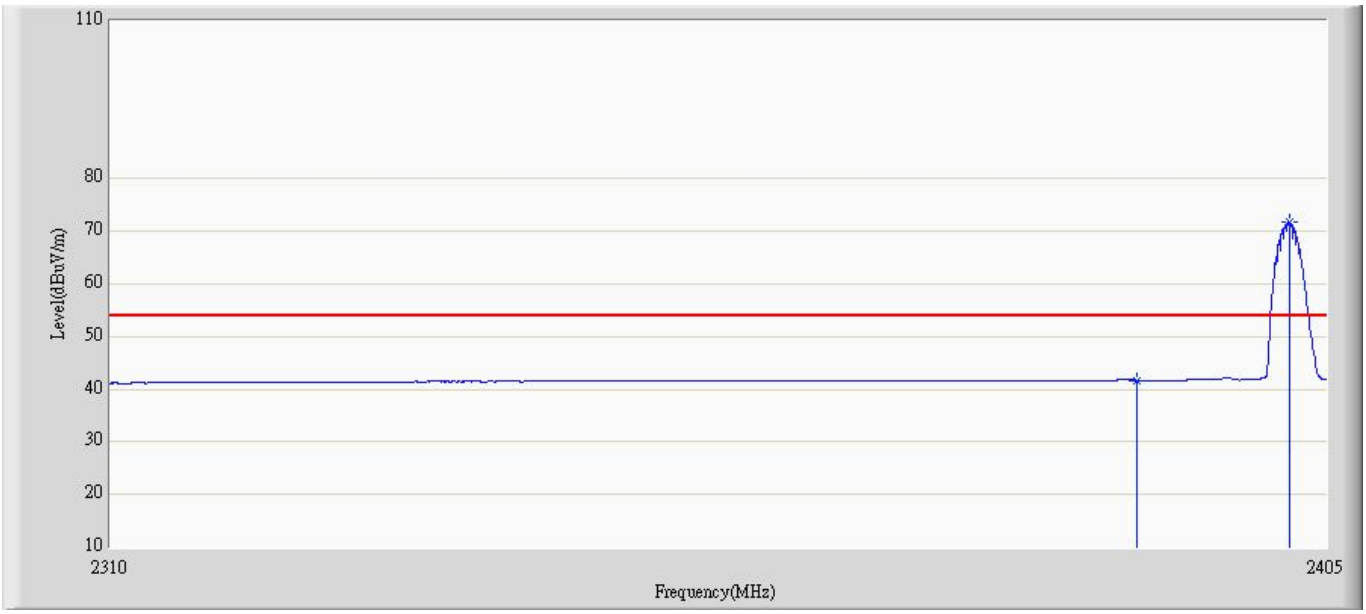
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.720	11.165	-12.280	54.000	30.555	AV
2	*	2402.055	71.602	41.042	N/A	N/A	30.561	AV

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1:Transmit by DH5 at channel 2402MHz	



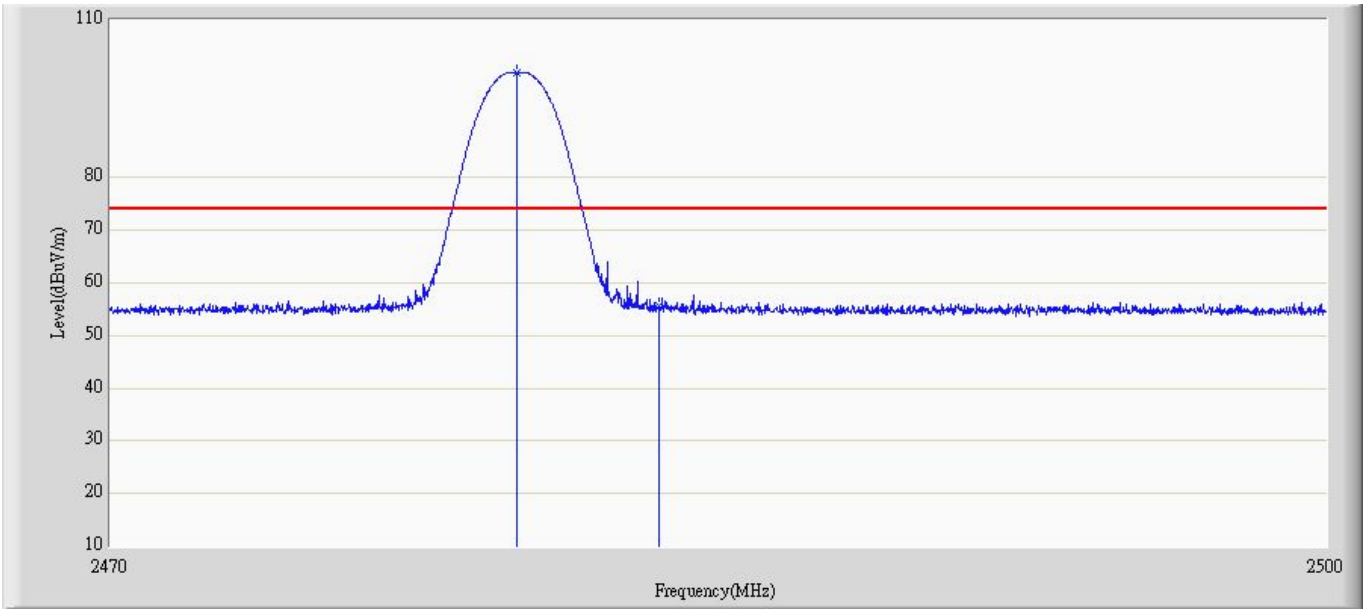
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	54.767	24.212	-19.233	74.000	30.555	PK
2	*	2401.913	100.984	70.424	N/A	N/A	30.561	PK

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1:Transmit by DH5 at channel 2402MHz	



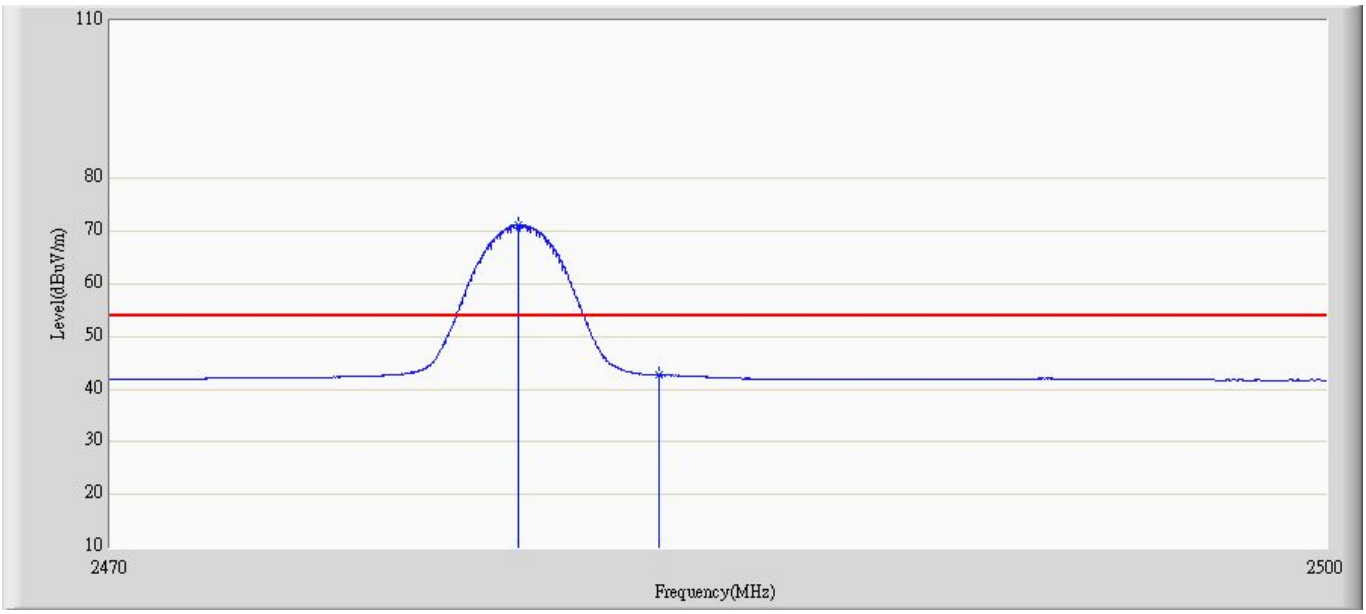
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.702	11.147	-12.298	54.000	30.555	AV
2	*	2402.103	71.670	41.110	N/A	N/A	30.560	AV

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1:Transmit by DH5 at channel 2480MHz	



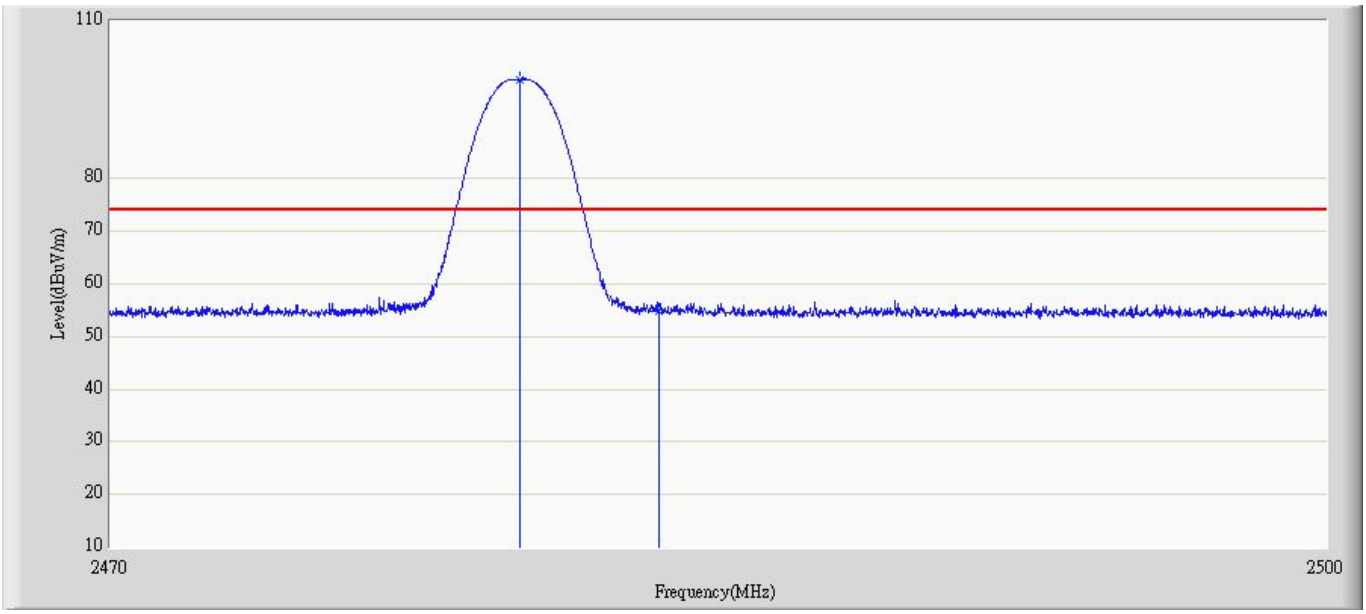
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.990	99.986	69.650	N/A	N/A	30.336	PK
2		2483.500	55.649	25.327	-18.351	74.000	30.321	PK

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1:Transmit by DH5 at channel 2480MHz	



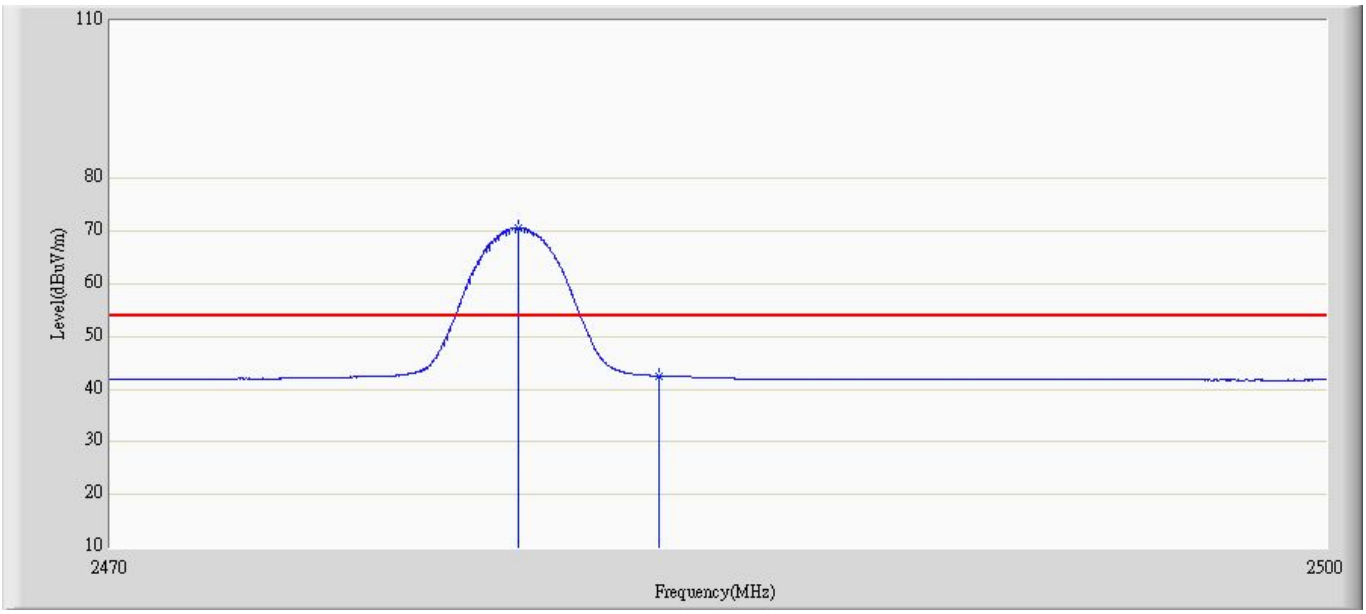
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.035	71.130	40.794	N/A	N/A	30.336	AV
2		2483.500	42.707	12.385	-11.293	54.000	30.321	AV

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1:Transmit by DH5 at channel 2480MHz	



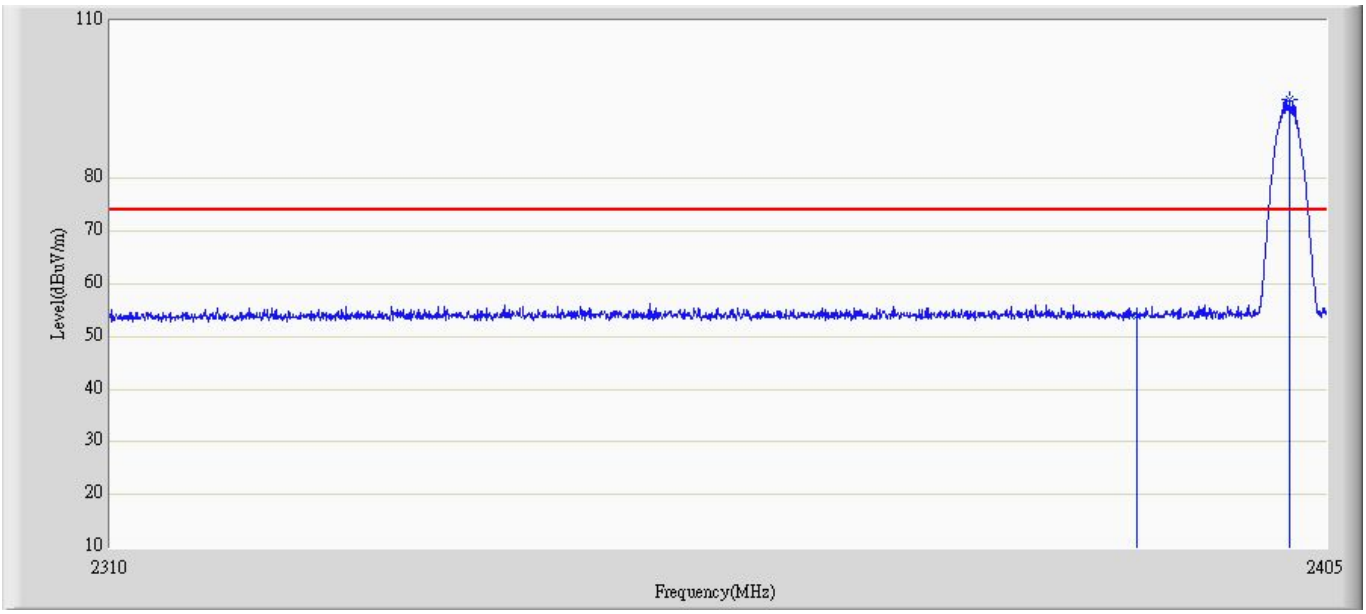
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.080	98.908	68.572	N/A	N/A	30.336	PK
2		2483.500	54.911	24.589	-19.089	74.000	30.321	PK

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1:Transmit by DH5 at channel 2480MHz	



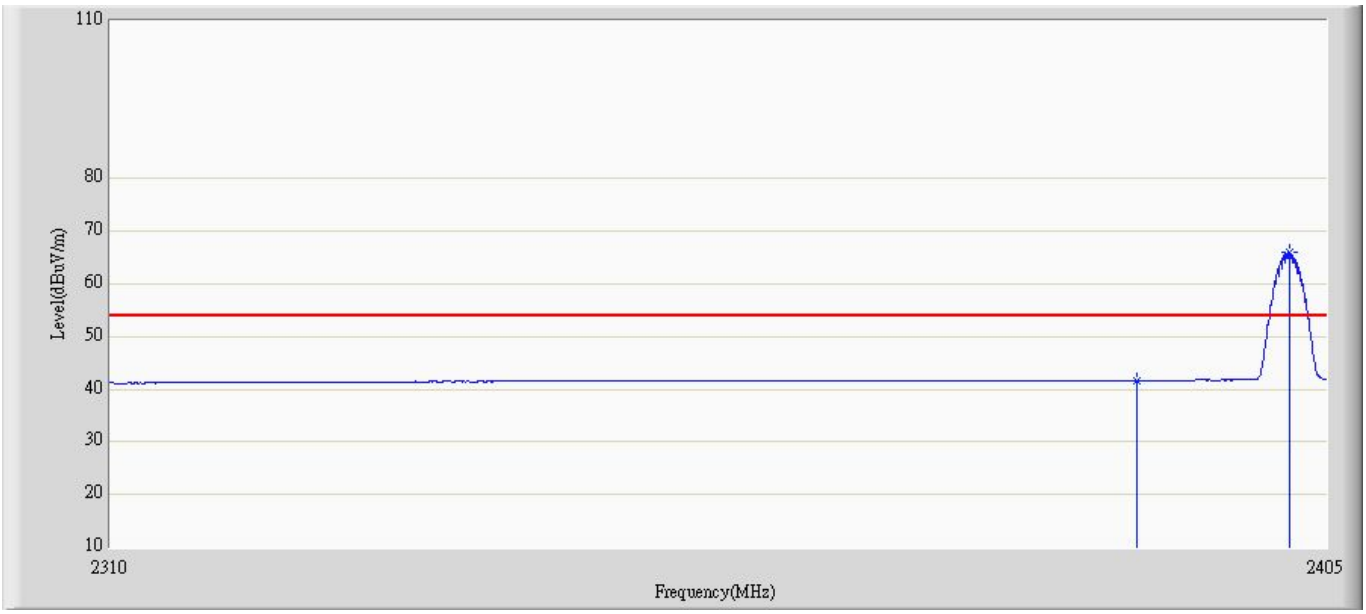
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.050	70.679	40.343	N/A	N/A	30.336	AV
2		2483.500	42.513	12.191	-11.487	54.000	30.321	AV

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 2:Transmit by 3DH5 at channel 2402MHz	



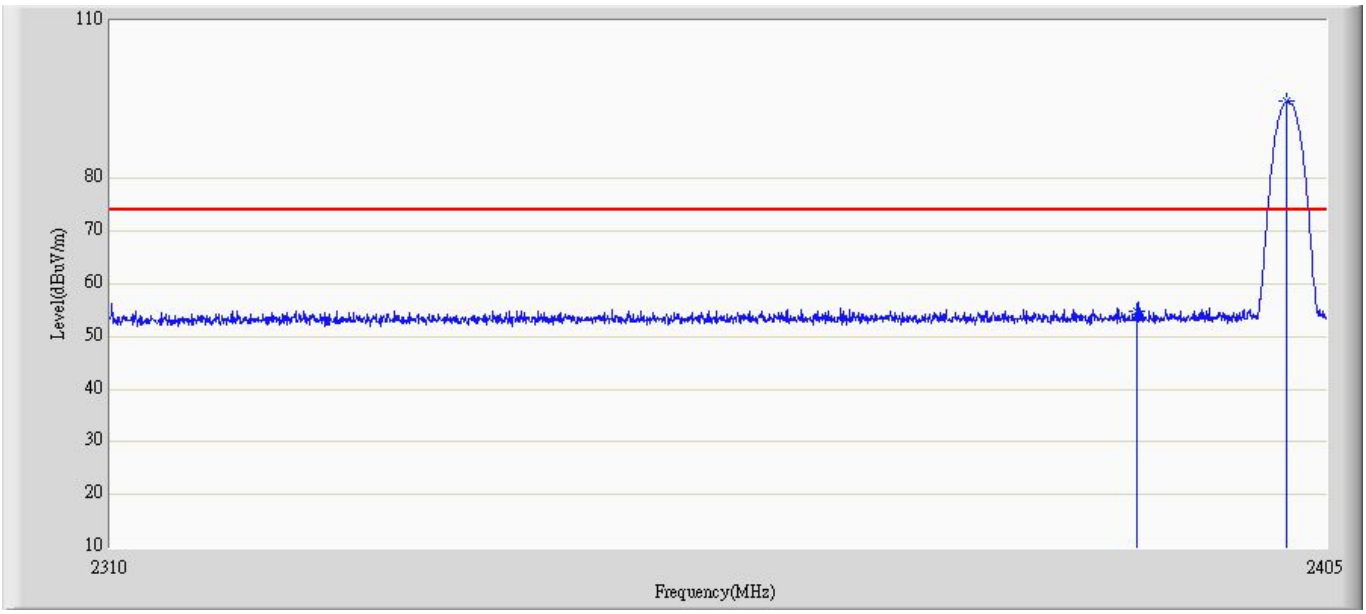
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	54.033	23.478	-19.967	74.000	30.555	PK
2	*	2402.055	95.067	64.507	N/A	N/A	30.561	PK

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 2:Transmit by 3DH5 at channel 2402MHz	



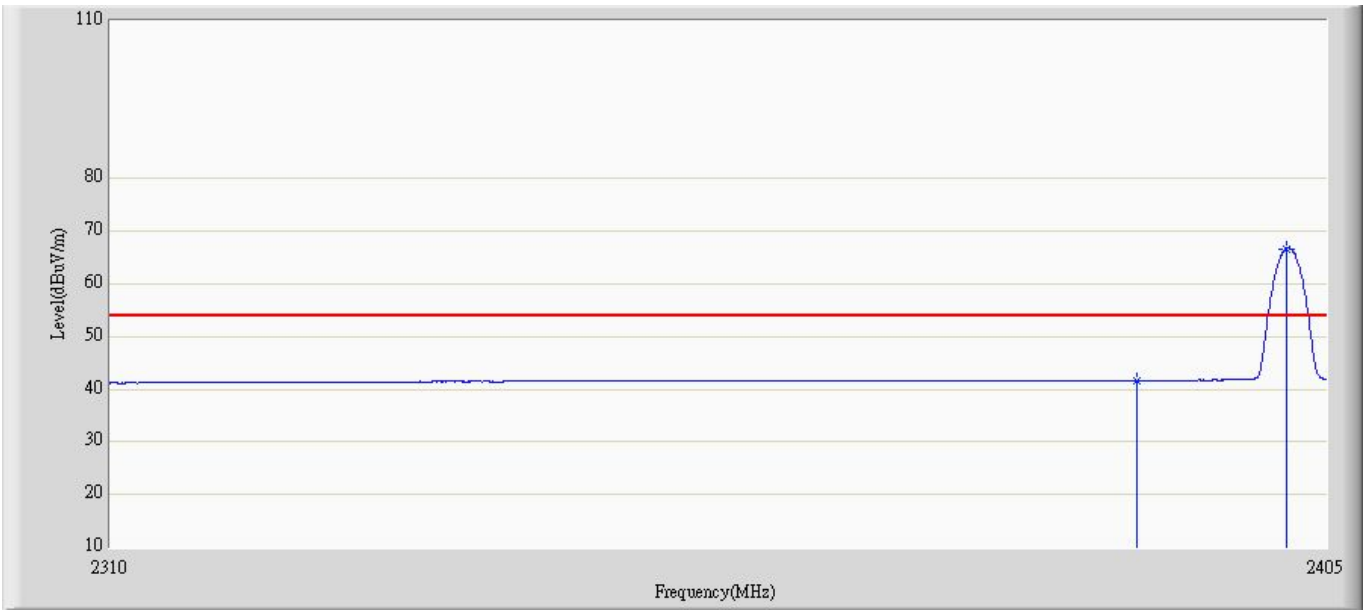
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.668	11.113	-12.332	54.000	30.555	AV
2	*	2402.103	65.893	35.333	N/A	N/A	30.560	AV

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 17:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 2:Transmit by 3DH5 at channel 2402MHz	



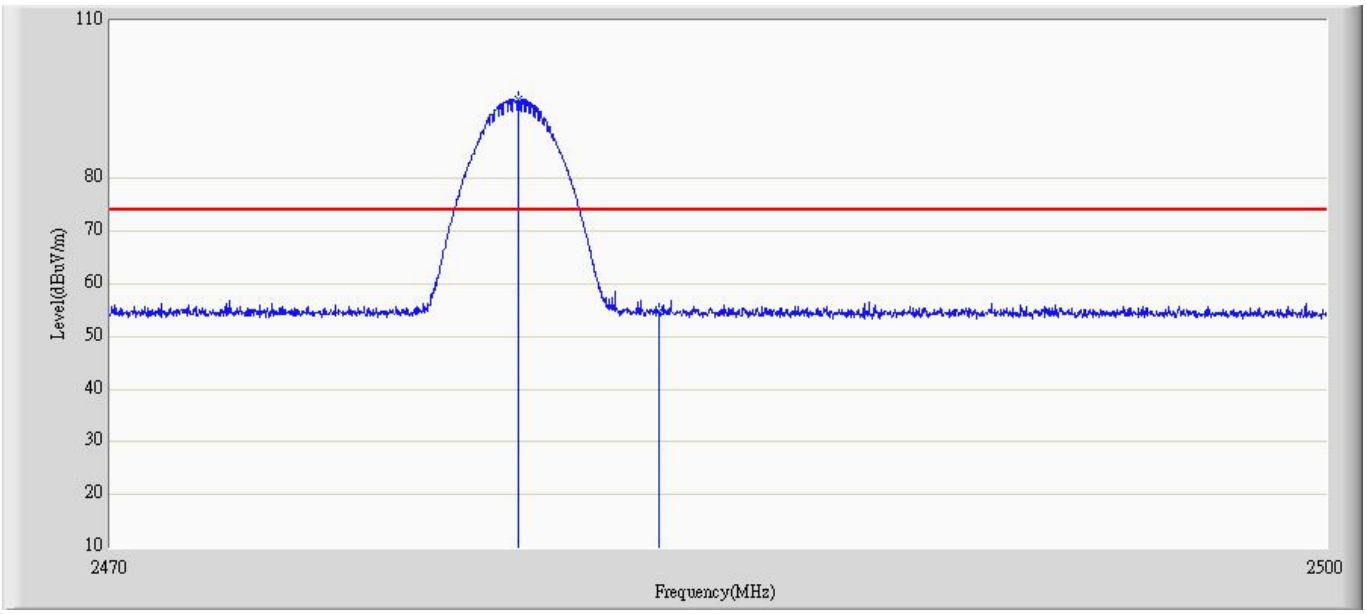
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	54.684	24.129	-19.316	74.000	30.555	PK
2	*	2401.913	94.774	64.214	N/A	N/A	30.561	PK

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 17:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 2:Transmit by 3DH5 at channel 2402MHz	



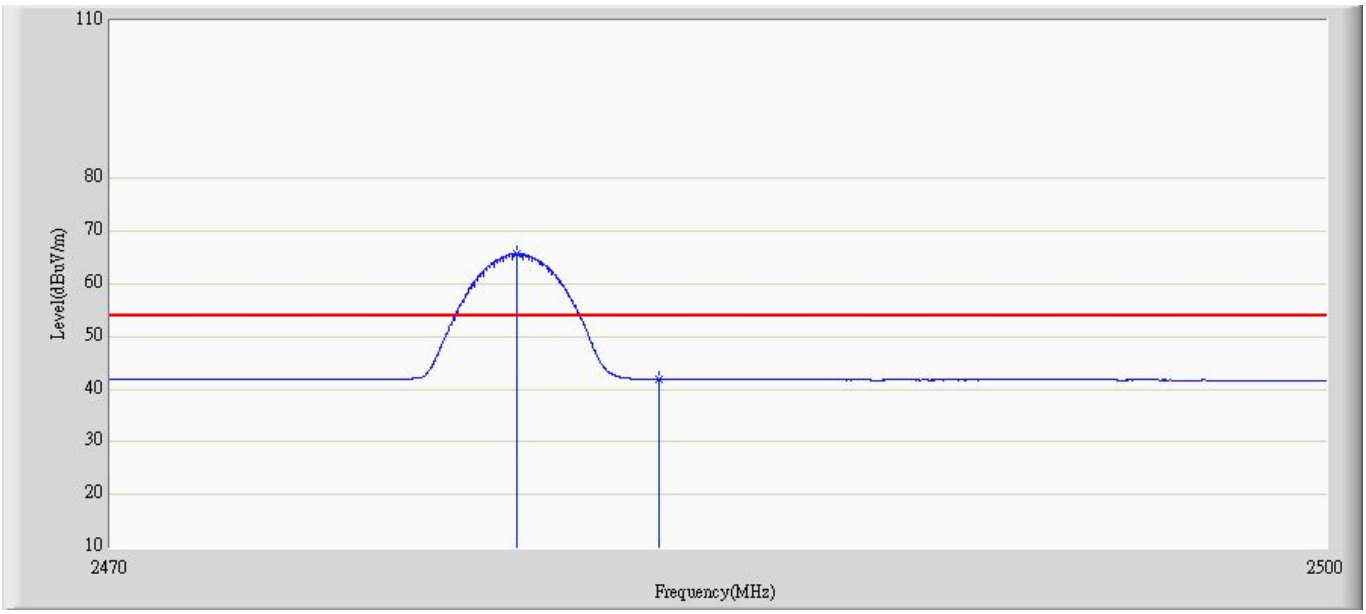
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.676	11.121	-12.324	54.000	30.555	AV
2	*	2401.865	66.738	36.178	N/A	N/A	30.561	AV

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 2:Transmit by 3DH5 at channel 2480MHz	



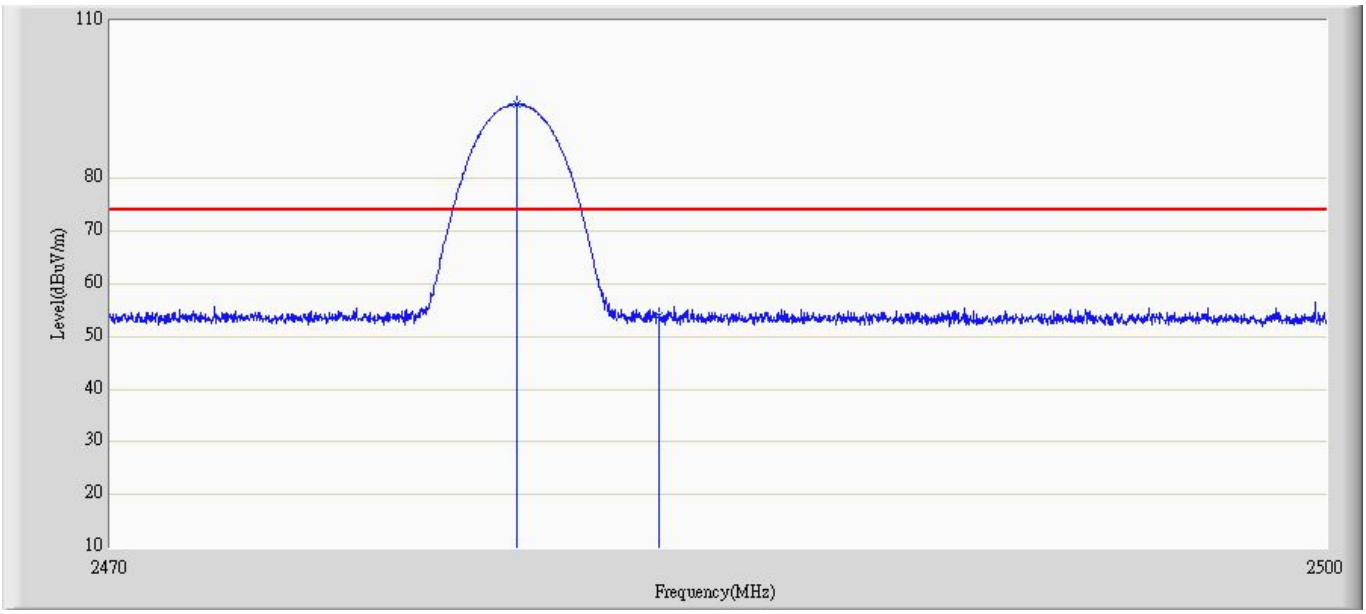
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.035	95.007	64.671	N/A	N/A	30.336	PK
2		2483.500	54.864	24.542	-19.136	74.000	30.321	PK

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Horizontal
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 2:Transmit by 3DH5 at channel 2480MHz	



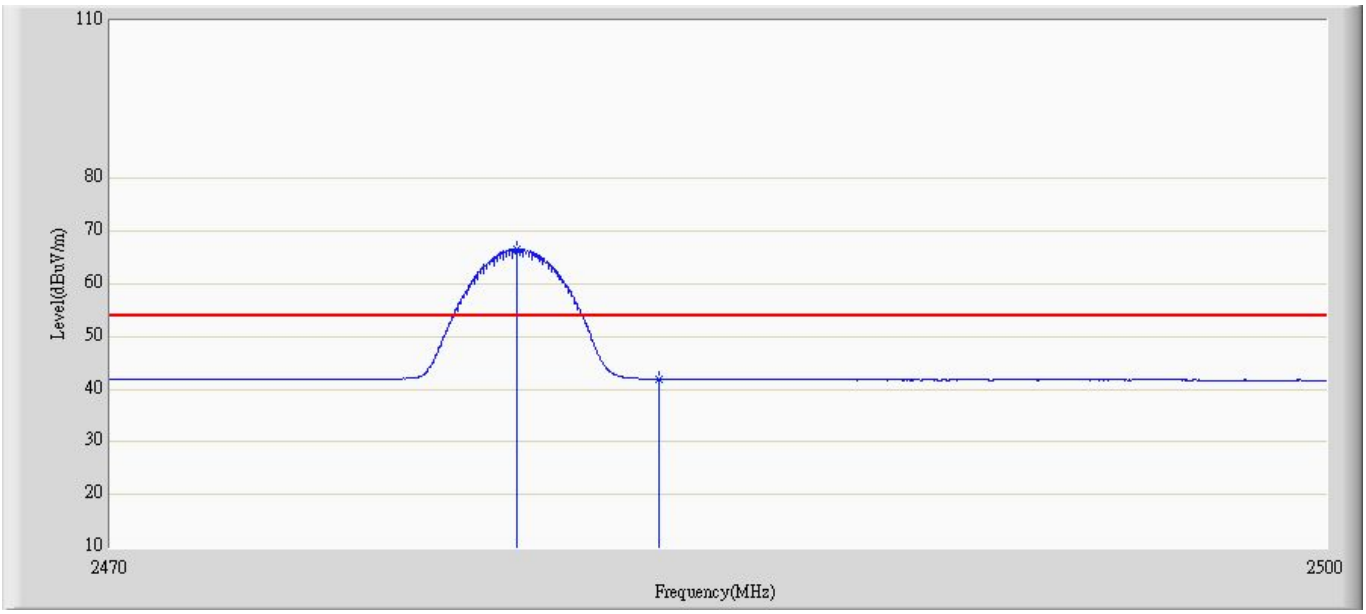
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.990	65.637	35.301	N/A	N/A	30.336	AV
2		2483.500	41.928	11.606	-12.072	54.000	30.321	AV

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 2:Transmit by 3DH5 at channel 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.990	94.236	63.900	N/A	N/A	30.336	PK
2		2483.500	53.948	23.626	-20.052	74.000	30.321	PK

Engineer: Sunny	
Site: AC5	Time: 2010/07/14 - 16:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D-499(1-18GHz)	Polarity: Vertical
EUT: GSM Mobile Phone	Power: AC 120V/60Hz
Note: Mode 2:Transmit by 3DH5 at channel 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.005	66.634	36.298	N/A	N/A	30.336	AV
2		2483.500	41.917	11.595	-12.083	54.000	30.321	AV