

FCC 47 CFR PART 15 SUBPART C

Product Type : Smartphone
Applicant : HTC Corporation
Address : No. 23, Xinghua Rd., Taoyuan City, Taoyuan County
330, Taiwan
Trade Name : HTC
Model Number : PC70110
Test Specification : FCC 47 CFR PART 15 SUBPART C: Oct, 2009
ANSI C63.4-2003
Issue Date : Apr. 06, 2010

Issue by

A Test Lab Techno Corp.
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Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Apr. 06, 2010	Initial Issue	

Verification

Issued Date: 2010/04/06

Product Type : Smartphone
Applicant : HTC Corporation
Address : No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330,
Taiwan
Trade Name : HTC
Model Number : PC70110
FCC ID : NM8PC70110
EUT Rated Voltage : DC 5.0V, 1.0A
Test Voltage : 120 Vac / 60 Hz
Applicable : FCC 47 CFR PART 15 SUBPART C: Oct, 2009
Standard : ANSI C63.4-2003

Test Result : Complied

Performed Lab. : A Test Lab Techno Corp.

No. 140-1, Changan Street, Bade City,
Taoyuan Country 334, Taiwan R.O.C.


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Taiwan Accreditation Foundation accreditation number:
1330



<http://www.atl-lab.com.tw/e-index.htm>

The above equipment has been tested by A Test Lab Techno Corp., and found compliance with the requirements set forth in the Electromagnetic Compatibility Directive 2004/108/EC and technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved By : 
(Manager) (Miller Lee)

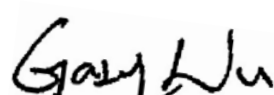
Reviewed By : 
(Testing Engineer) (Gary Wu)

TABLE OF CONTENTS

1	General Information	6
2	EUT Description	7
3	Test Methodology	8
	3.1. Mode of Operation	8
	3.2. EUT Exercise Software	9
	3.3. Configuration of Test System Details	9
	3.4. Test Site Environment	9
4	Conducted Emission Measurement	10
	4.1. Limit.....	10
	4.2. Test Instruments.....	10
	4.3. Test Setup	10
	4.4. Test Procedure	11
	4.5. Test Result	12
5	Radiated Interference Measurement	16
	5.1. Limit.....	16
	5.2. Test Instruments.....	16
	5.3. Setup.....	17
	5.4. Test Procedure	17
	5.5. Test Result	19
6	Maximum Conducted Output Power Measurement	29
	6.1. Limit.....	29
	6.2. Test Setup	29
	6.3. Test Instruments.....	29
	6.4. Test Procedure	29
	6.5. Test Result	30
	6.6. Test Graphs	32
7	Minimum 20dB RF Bandwidth Measurement	41
	7.1. Limit.....	41
	7.2. Test Setup	41
	7.3. Test Instruments.....	41
	7.4. Test Procedure	41
	7.5. Test Result	42
	7.6. Test Graphs	43

8	Carrier Frequency Separation Measurement	46
8.1.	Limit.....	46
8.2.	Test Setup	46
8.3.	Test Instruments.....	46
8.4.	Test Procedure	46
8.5.	Test Result	47
8.6.	Test Graphs.....	48
9	Number of Hopping Measurement	51
9.1.	Limit.....	51
9.2.	Test Setup	51
9.3.	Test Instruments.....	51
9.4.	Test Procedure	51
9.5.	Test Result	52
9.6.	Test Graphs.....	53
10	Time of Occupancy (Dwell Time) Measurement	56
10.1.	Limit.....	56
10.2.	Test Setup	56
10.3.	Test Instruments.....	56
10.4.	Test Procedure	56
10.5.	Test Result	57
10.6.	Test Graphs.....	59
11	Out of Band Conducted Emissions Measurement	63
11.1.	Limit.....	63
11.2.	Test Setup	63
11.3.	Test Instruments.....	63
11.4.	Test Procedure	63
11.5.	Test Result	64
11.6.	Test Graphs.....	65
12	Band Edges Measurement	71
12.1.	Limit.....	71
12.2.	Test Setup	71
12.3.	Test Instruments.....	71
12.4.	Test Procedure	72
12.5.	Test Graphs.....	73
13	Antenna Measurement	81
13.1.	Limit.....	81
13.2.	Antenna Connector Construction.....	81

1 General Information

1.1 Summary of Test Result

Standard		Item	Result	Remark
15.247	RSS-GEN			
15.207	7.2.2	AC Power Conducted Emission	PASS	----
----	6	Receiver Radiated Emissions	PASS	----
Standard		Item	Result	Remark
15.247	RSS-210			
15.247(c)	A8.5	Transmitter Radiated Emissions	PASS	----
15.247(b)(1)	A8.4 (2)	Max. Output Power	PASS	----
15.247(a)(1)	A8.1 (1)	20dB RF Bandwidth	PASS	----
15.247(a)(1)(iii)	A8.1 (2)	Carrier Frequency Separation	PASS	----
15.247(a)(1)(iii)	A8.1 (4)	Number of Hopping	PASS	----
15.247(a)(1)(iii)	A8.1 (4)	Time of Occupancy (Dwell Time)	PASS	----
15.247(c)	A8.5	Out of Band Conducted Spurious Emission	PASS	----
15.247(c)	A8.5	Band Edge Measurement	PASS	----
15.247(c)	A8.5	Occupied Bandwidth Measurement	PASS	----
15.203	-	Antenna Requirement	PASS	----

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2 Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.24 dB.

Radiated Emission

The measurement uncertainty of 30 MHz - 1GHz is evaluated as ± 3.072 dB.

2 EUT Description

Product	:	Smartphone
Trade Name	:	HTC
Model No.	:	PC70110
Applicant	:	HTC Corporation No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan
Manufacturer	:	HTC Corporation No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan
FCC ID	:	NM8PC70110
Frequency Range	:	2402 ~ 2480 MHz
Modulation Type	:	GFSK for 1Mbps
		$\pi/4$ -DQPSK for 2Mbps
		8DPSK for 3Mbps
Antenna Type	:	PIFA Type
Antenna Gain	:	0.8 dBi
Max. RF Output Power	:	GFSK: -3.720 dBm / 0.425 mW
		$\pi/4$ -DQPSK: -1.230 dBm / 0.753 mW
		8DPSK: -3.530 dBm / 0.444 mW

3 Test Methodology

3.1. Mode of Operation

Decision of Test ATL 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: IDLE Mode
Mode 2: Normal Operation Mode
Mode 3: GFSK Link Mode
Mode 4: 8DPSK Link Mode
Mode 5: $\pi/4$ -DQPSK Link Mode

Description of Test Modes

Preliminary tests were performed in different modulation to find the worst case. The modulation shown in the table below is the worst-case. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Modulation Type	Channel	Frequency (MHz)	Packet Type	Conducted Power (dBm)	Worst Case
GFSK	Low	2402	DH1	-5.130	<input type="checkbox"/>
	Middle	2441	DH3	-4.870	<input type="checkbox"/>
	High	2480	DH5	-4.840	<input type="checkbox"/>
	Low	2402	DH1	-3.900	<input type="checkbox"/>
	Middle	2441	DH3	-3.720	<input type="checkbox"/>
	High	2480	DH5	-3.740	<input type="checkbox"/>
	Low	2402	DH1	-4.100	<input type="checkbox"/>
	Middle	2441	DH3	-4.050	<input type="checkbox"/>
	High	2480	DH5	-4.000	<input type="checkbox"/>
$\pi/4$ -DQPSKe	Low	2402	2DH1	-2.640	<input type="checkbox"/>
	Middle	2441	2DH3	-2.570	<input type="checkbox"/>
	High	2480	2DH5	-2.440	<input type="checkbox"/>
	Low	2402	2DH1	-1.440	<input type="checkbox"/>
	Middle	2441	2DH3	-1.360	<input type="checkbox"/>
	High	2480	2DH5	-1.230	<input type="checkbox"/>
	Low	2402	2DH1	-1.500	<input type="checkbox"/>
	Middle	2441	2DH3	-1.490	<input type="checkbox"/>
	High	2480	2DH5	-1.430	<input checked="" type="checkbox"/>
8DPSK	Low	2402	3DH1	-5.180	<input type="checkbox"/>
	Middle	2441	3DH3	-4.960	<input type="checkbox"/>
	High	2480	3DH5	-4.930	<input type="checkbox"/>
	Low	2402	3DH1	-3.530	<input type="checkbox"/>
	Middle	2441	3DH3	-3.720	<input type="checkbox"/>
	High	2480	3DH5	-3.690	<input type="checkbox"/>
	Low	2402	3DH1	-4.230	<input type="checkbox"/>
	Middle	2441	3DH3	-4.000	<input type="checkbox"/>
High	2480	3DH5	-4.000	<input type="checkbox"/>	

Tested System Details

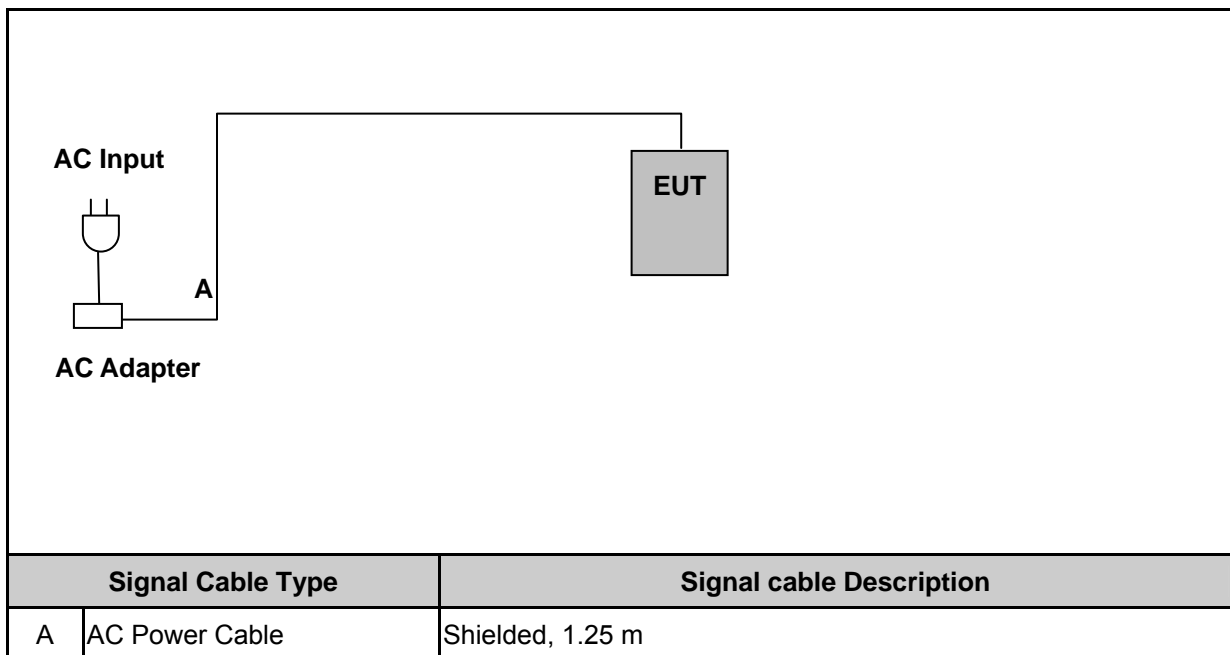
The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1.	Bluetooth Tester	R & S	CBT	100350	NA

3.2. EUT Exercise Software

1.	Setup the EUT and Bluetooth Tester (CBT) as shown on 1.4.
2.	Turn on the power of all equipment.
3.	Turn on Bluetooth function.
4.	EUT run test program.

3.3. Configuration of Test System Details



3.4. Test Site Environment

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

4 Conducted Emission Measurement

4.1. Limit

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

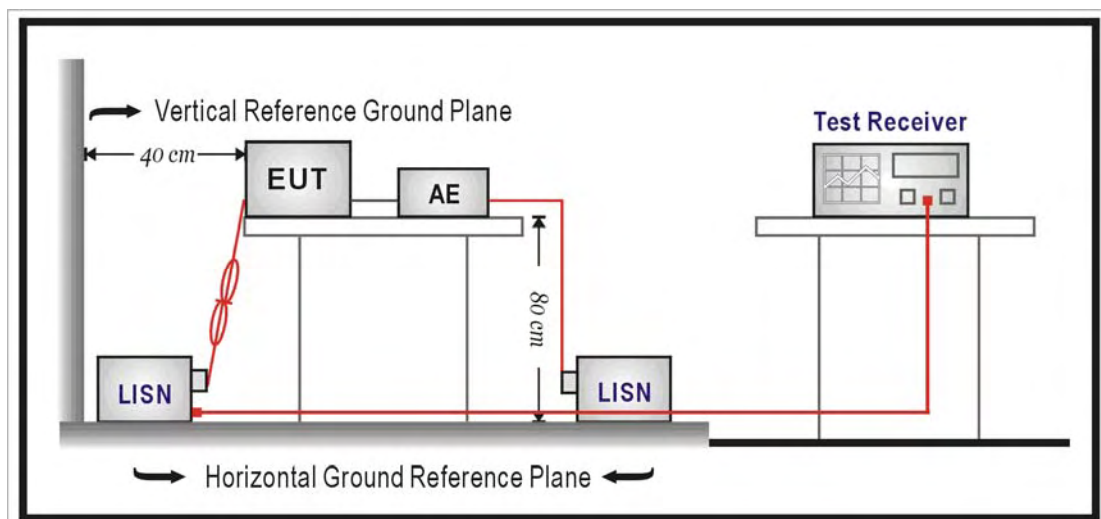
4.2. Test Instruments

Describe	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Test Receiver	R&S	ESCI	100722	10/08/2009	(1)
LISN	EMCO	3816/2 SH	00060110	06/05/2009	(1)
LISN	EMCO	3816/2 SH	00060111	06/29/2009	(1)
Transient Limiter	ELECTRO-METRICS	EM-7600	777	09/22/2009	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

4.3. Test Setup



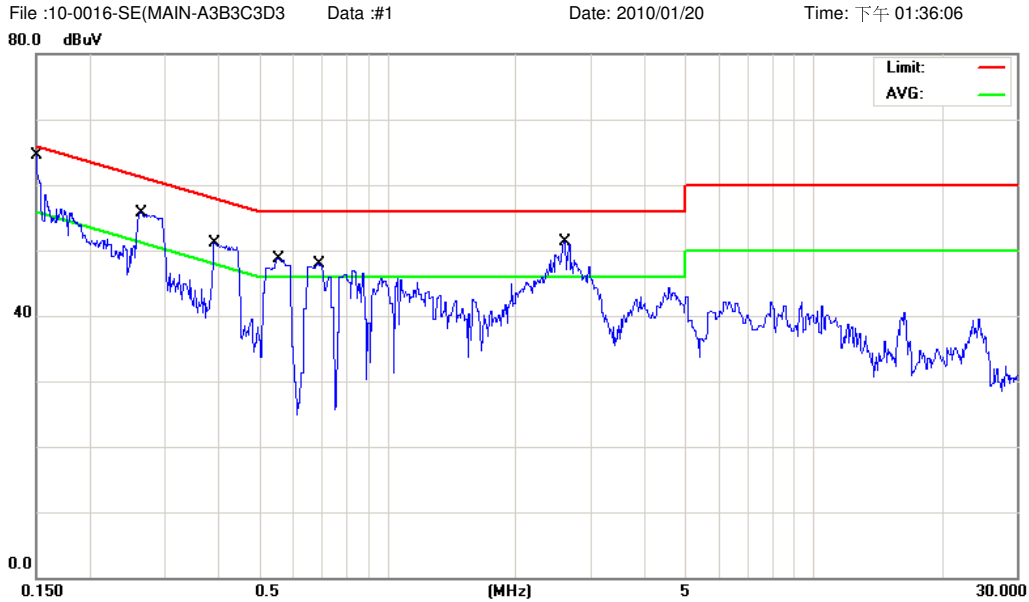
4.4. Test Procedure

The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and EMCO Model 3162/2 SH Line Impedance Stabilization Networks (LISN). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 4.1.

4.5. Test Result

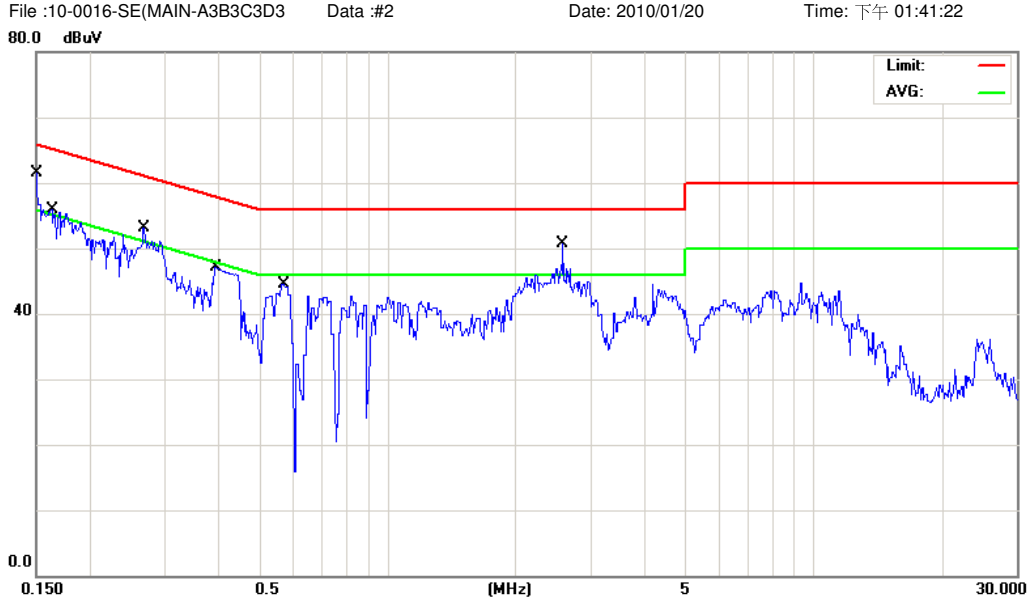


Site : Conducted Phase: **L1** Temperature: 26 °C
 Limit: CISPR22 Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %
 EUT: Smartphone
 M/N: PC70110
 Mode: #1
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1500	49.80	9.73	59.53	65.99	-6.46	QP	
2		0.1500	28.20	9.73	37.93	55.99	-18.06	AVG	
3		0.2634	40.80	9.75	50.55	61.32	-10.77	QP	
4		0.2634	22.20	9.75	31.95	51.32	-19.37	AVG	
5		0.3915	35.00	9.78	44.78	58.03	-13.25	QP	
6		0.3915	12.80	9.78	22.58	48.03	-25.45	AVG	
7		0.5540	34.40	9.79	44.19	56.00	-11.81	QP	
8		0.5540	14.60	9.79	24.39	46.00	-21.61	AVG	
9		0.6889	32.40	9.79	42.19	56.00	-13.81	QP	
10		0.6889	12.60	9.79	22.39	46.00	-23.61	AVG	
11		2.5970	37.20	9.93	47.13	56.00	-8.87	QP	
12		2.5970	24.80	9.93	34.73	46.00	-11.27	AVG	

*:Maximum data x:Over limit !:over margin

●Reference Only

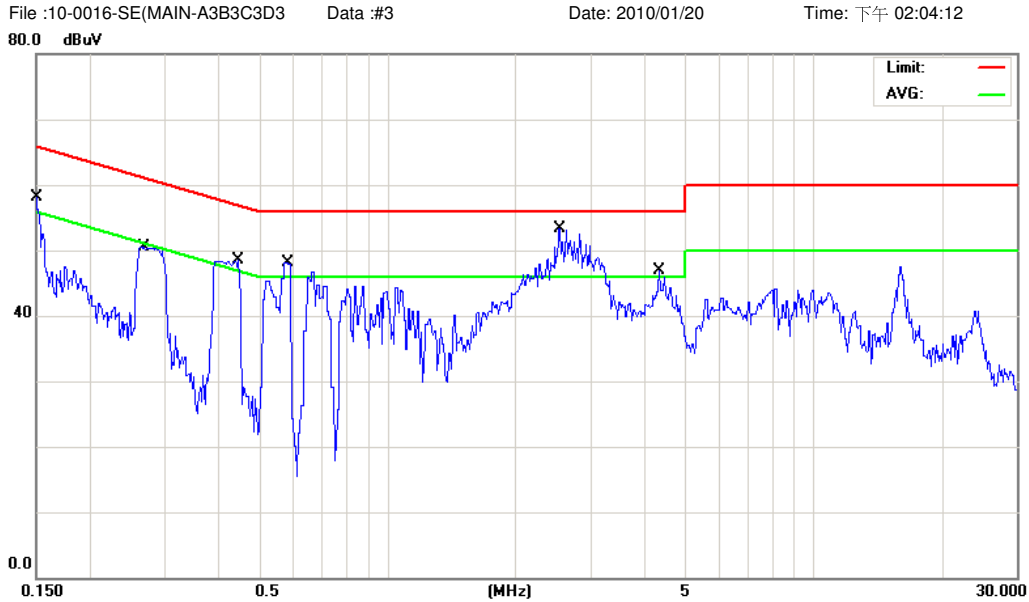


Site : Conducted Phase: **L2** Temperature: 26 °C
 Limit: CISPR22 Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %
 EUT: Smartphone
 M/N: PC70110
 Mode: #1
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1500	46.70	9.73	56.43	65.99	-9.56	QP	
2		0.1500	26.00	9.73	35.73	55.99	-20.26	AVG	
3		0.1626	38.70	9.73	48.43	65.32	-16.89	QP	
4		0.1626	12.20	9.73	21.93	55.32	-33.39	AVG	
5		0.2676	37.60	9.76	47.36	61.19	-13.83	QP	
6		0.2676	21.70	9.76	31.46	51.19	-19.73	AVG	
7		0.3942	32.70	9.78	42.48	57.97	-15.49	QP	
8		0.3942	12.80	9.78	22.58	47.97	-25.39	AVG	
9		0.5720	30.30	9.79	40.09	56.00	-15.91	QP	
10		0.5720	14.40	9.79	24.19	46.00	-21.81	AVG	
11		2.5789	35.90	9.93	45.83	56.00	-10.17	QP	
12		2.5789	22.30	9.93	32.23	46.00	-13.77	AVG	

*:Maximum data x:Over limit !:over margin

●Reference Only

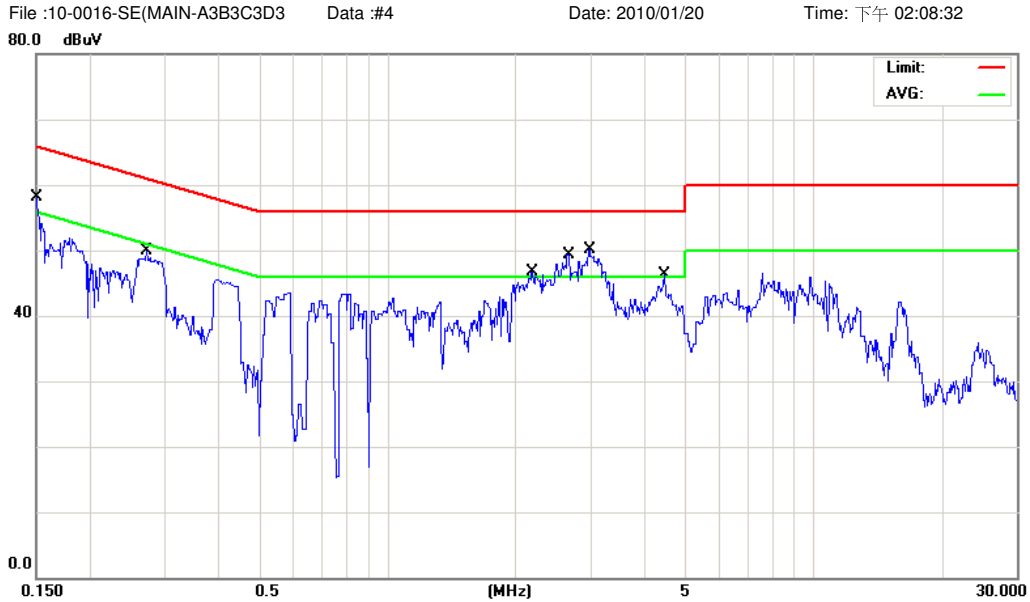


Site : Conducted Phase: **L1** Temperature: 26 °C
 Limit: CISPR22 Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %
 EUT: Smartphone
 M/N: PC70110
 Mode: #2
 Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1500	45.40	9.73	55.13	65.99	-10.86	QP	
2	0.1500	24.80	9.73	34.53	55.99	-21.46	AVG	
3	0.2676	38.20	9.76	47.96	61.19	-13.23	QP	
4	0.2676	21.60	9.76	31.36	51.19	-19.83	AVG	
5	0.4454	33.00	9.78	42.78	56.96	-14.18	QP	
6	0.4454	9.90	9.78	19.68	46.96	-27.28	AVG	
7	0.5810	33.60	9.79	43.39	56.00	-12.61	QP	
8	0.5810	12.80	9.79	22.59	46.00	-23.41	AVG	
9 *	2.5340	40.80	9.92	50.72	56.00	-5.28	QP	
10	2.5340	27.70	9.92	37.62	46.00	-8.38	AVG	
11	4.3250	30.00	10.01	40.01	56.00	-15.99	QP	
12	4.3250	16.90	10.01	26.91	46.00	-19.09	AVG	

*:Maximum data x:Over limit !:over margin

●Reference Only



Site : Conducted Phase: **L2** Temperature: 26 °C
 Limit: CISPR22 Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 55 %
 EUT: Smartphone
 M/N: PC70110
 Mode: #2
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	44.80	9.73	54.53	65.99	-11.46	QP	
2		0.1500	24.50	9.73	34.23	55.99	-21.76	AVG	
3		0.2717	36.50	9.76	46.26	61.06	-14.80	QP	
4		0.2717	21.20	9.76	30.96	51.06	-20.10	AVG	
5		2.1829	30.70	9.88	40.58	56.00	-15.42	QP	
6		2.1829	18.40	9.88	28.28	46.00	-17.72	AVG	
7	*	2.6510	40.60	9.93	50.53	56.00	-5.47	QP	
8		2.6510	26.90	9.93	36.83	46.00	-9.17	AVG	
9		2.9660	36.40	9.89	46.29	56.00	-9.71	QP	
10		2.9660	26.60	9.89	36.49	46.00	-9.51	AVG	
11		4.4600	29.10	10.02	39.12	56.00	-16.88	QP	
12		4.4600	16.10	10.02	26.12	46.00	-19.88	AVG	

*:Maximum data x:Over limit !:over margin

●Reference Only

5 Radiated Interference Measurement

5.1. Limit

Frequency Range (MHz)	Peak (dBuV)
30 to 88	39
88 to 216	43.5
216 to 960	46.4
Above 960	49.5

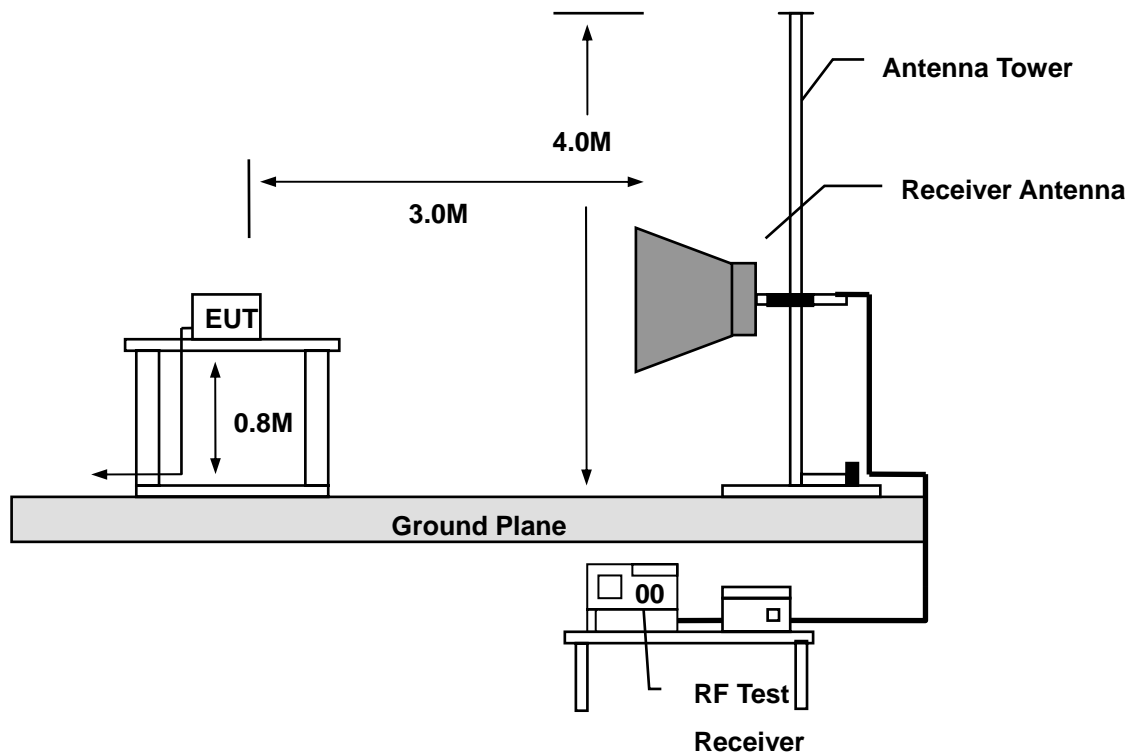
5.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/27/2009	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/20/2009	(2)
Pre Amplifier	Agilent	8449B	3008A02237	07/01/2009	(1)
Pre Amplifier	Agilent	8447D	2944A10961	06/30/2009	(1)
Bi-log Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	06/23/2009	(2)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	07/01/2009	(2)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/30/2009	(2)
Test Site	ATL	TE01	888001	08/06/2009	(1)

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

5.3. Setup



5.4. Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 30 MHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna (mode VULB9163) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in decibels referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

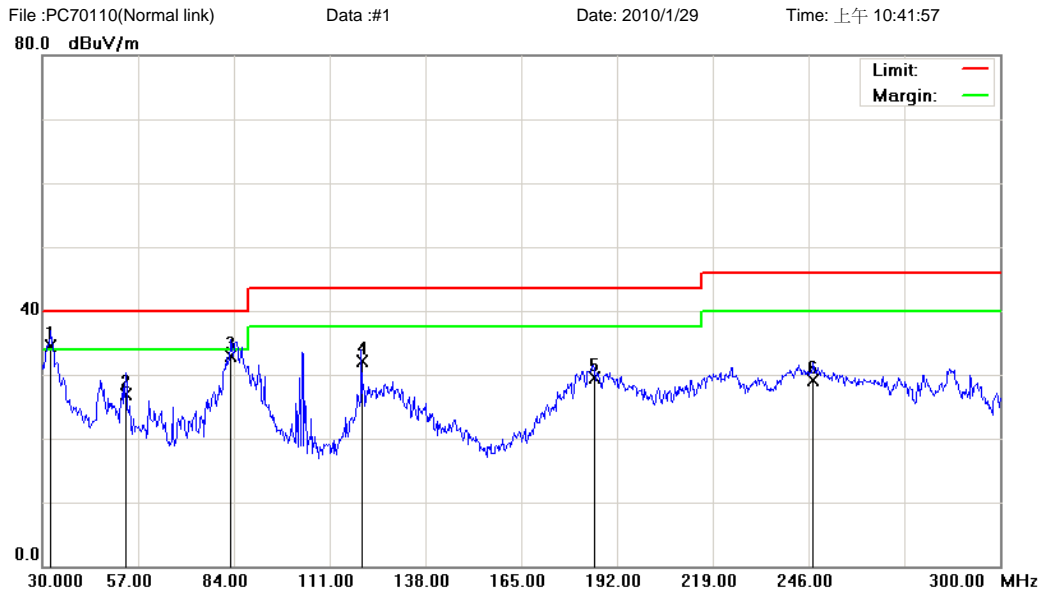
$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV)-Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

5.5. Test Result



Site: : RF Conducted Polarization: **Vertical** Temperature: 22 °C
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %
 EUT: Smartphone Distance: 3m RBW: 120 KHz VBW: 300 KHz
 M/N: PC70110
 Mode: #2
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	32.4300	47.78	-13.25	34.53	40.00	-5.47	QP		
2		53.4900	39.03	-12.19	26.84	40.00	-13.16	QP		
3		83.1900	48.21	-15.39	32.82	40.00	-7.18	QP		
4		120.0450	46.35	-14.21	32.14	43.50	-11.36	QP		
5		185.3850	43.25	-13.78	29.47	43.50	-14.03	QP		
6		247.3500	40.12	-11.05	29.07	46.00	-16.93	QP		

*:Maximum data x:Over limit !:over margin

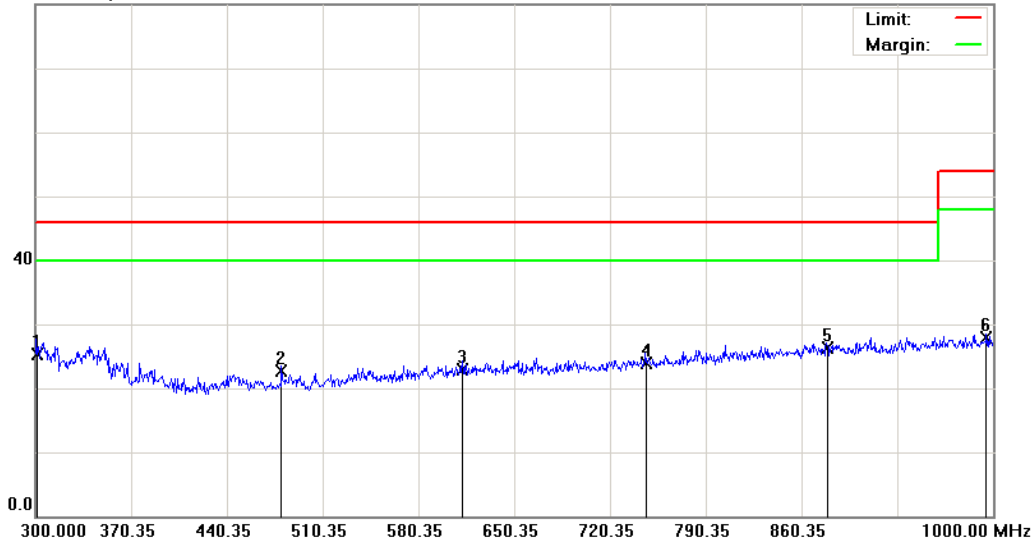
File :PC70110(Normal link)

Data :#2

Date: 2010/1/29

Time: 上午 10:45:40

80.0 dBuV/m



Site : RF Conducted

 Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT: Smartphone

Distance: 3m

RBW: 120 KHz VBW: 300 KHz

M/N: PC70110

Mode: #2

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		301.0500	35.31	-10.02	25.29	46.00	-20.71	QP		
2		479.9000	30.15	-7.53	22.62	46.00	-23.38	QP		
3		612.2000	27.33	-4.52	22.81	46.00	-23.19	QP		
4		746.2500	27.07	-3.11	23.96	46.00	-22.04	QP		
5	*	878.5500	27.10	-0.73	26.37	46.00	-19.63	QP		
6		995.1000	27.05	0.78	27.83	54.00	-26.17	QP		

*:Maximum data x:Over limit !:over margin

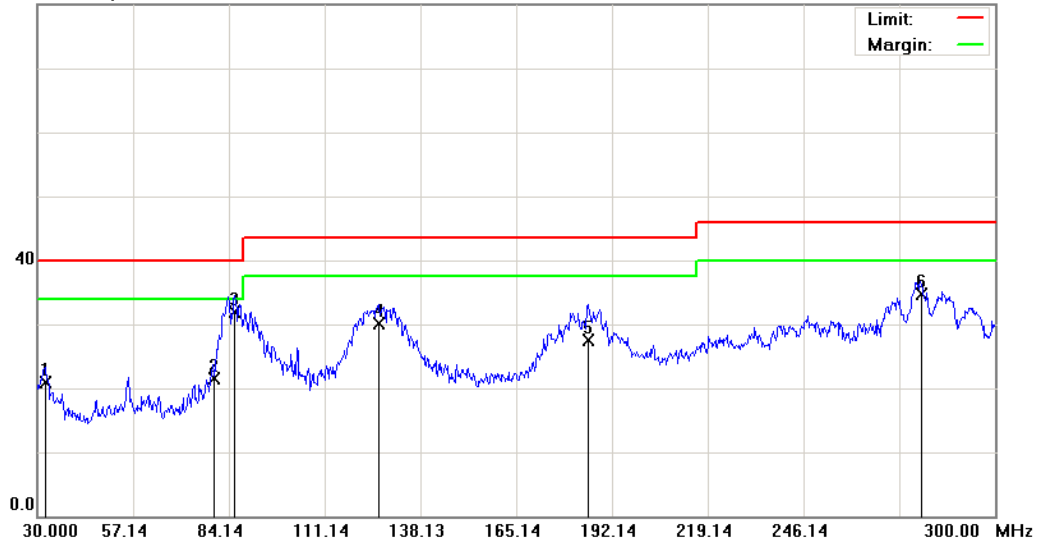
File :PC70110(Normal link)

Data :#3

Date: 2010/1/29

Time: 上午 10:49:24

80.0 dBuV/m



Site : RF Conducted

 Polarization: *Horizontal*

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT: Smartphone

Distance: 3m

RBW: 120 KHz VBW: 300 KHz

M/N: PC70110

Mode: #2

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		32.2950	34.25	-13.26	20.99	40.00	-19.01	QP			
2		79.5450	38.14	-16.61	21.53	40.00	-18.47	QP			
3	*	85.6200	46.38	-14.53	31.85	40.00	-8.15	QP			
4		126.1200	45.35	-15.17	30.18	43.50	-13.32	QP			
5		185.2500	41.33	-13.79	27.54	43.50	-15.96	QP			
6		279.0750	45.11	-10.48	34.63	46.00	-11.37	QP			

*:Maximum data x:Over limit !:over margin

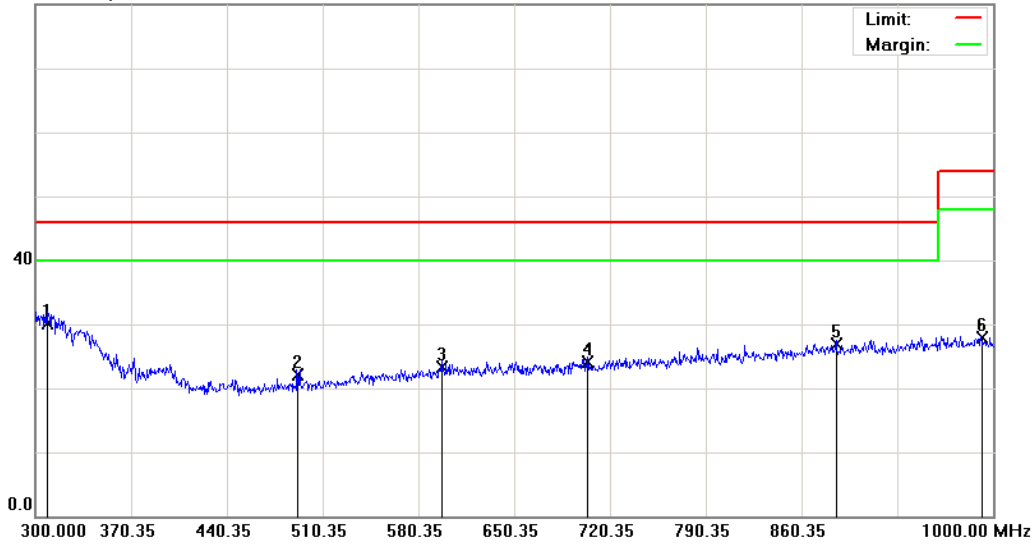
File :PC70110(Normal link)

Data :#4

Date: 2010/1/29

Time: 上午 10:53:08

80.0 dBuV/m



Site : RF Conducted

 Polarization: *Horizontal*

Temperature: 22 °C

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT: Smartphone

Distance: 3m

RBW: 120 KHz VBW: 300 KHz

M/N: PC70110

Mode: #2

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	308.7500	40.11	-9.91	30.20	46.00	-15.80	QP		
2		491.4500	29.38	-7.21	22.17	46.00	-23.83	QP		
3		597.1500	28.15	-4.88	23.27	46.00	-22.73	QP		
4		703.9000	28.03	-3.98	24.05	46.00	-21.95	QP		
5		885.2000	27.12	-0.14	26.98	46.00	-19.02	QP		
6		991.2500	27.05	0.89	27.94	54.00	-26.06	QP		

*:Maximum data x:Over limit !:over margin

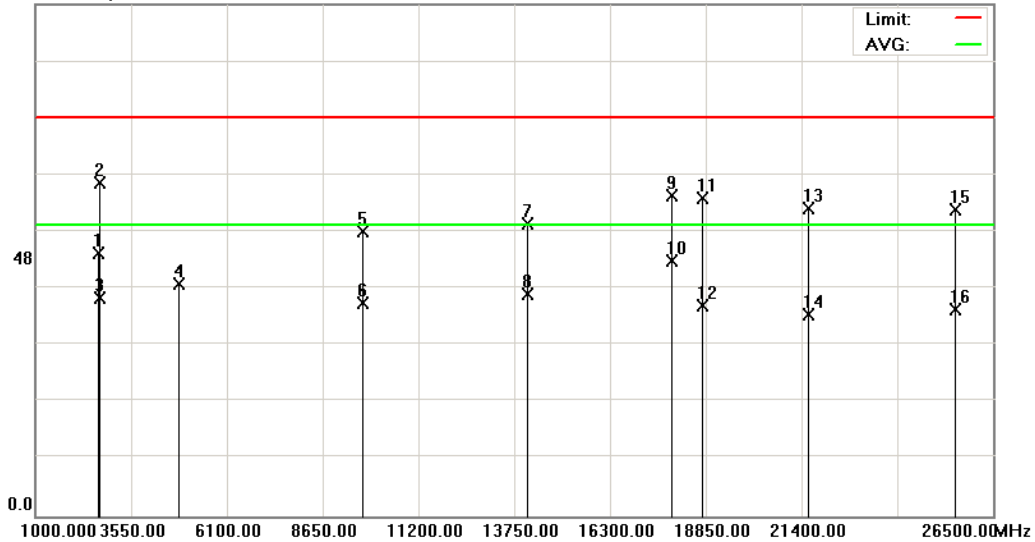
File :PC70110(2402MHz)

Data :#17

Date: 2010/1/28

Time: 下午 03:04:57

95.0 dBuV/m



Site: : 966 Chamber

 Polarization: **Vertical**

Temperature: 22 ℃

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: Smartphone

Distance: 3m

RBW: 1000 KHz VBW: 1000 KHz

M/N: PC70110

Mode: #5

Note: 2402MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2672.800	47.74	1.02	48.76	74.00	-25.24	peak		
2		2700.000	39.25	22.58	61.83	74.00	-12.17	peak		
3		2700.000	17.99	22.58	40.57	54.00	-13.43	AVG		
4		4804.000	35.71	7.32	43.03	74.00	-30.97	peak		
5		9718.950	35.37	17.55	52.92	74.00	-21.08	peak		
6		9718.950	22.01	17.55	39.56	54.00	-14.44	AVG		
7		14104.000	35.36	18.90	54.26	74.00	-19.74	peak		
8		14104.000	22.37	18.90	41.27	54.00	-12.73	AVG		
9		17924.000	34.68	24.81	59.49	74.00	-14.51	peak		
10	*	17924.000	22.52	24.81	47.33	54.00	-6.67	AVG		
11		18731.000	35.80	23.12	58.92	74.00	-15.08	peak		
12		18731.000	15.96	23.12	39.08	54.00	-14.92	AVG		
13		21565.750	35.78	21.31	57.09	74.00	-16.91	peak		
14		21565.750	16.11	21.31	37.42	54.00	-16.58	AVG		
15		25467.250	37.90	19.00	56.90	74.00	-17.10	peak		
16		25467.250	19.25	19.00	38.25	54.00	-15.75	AVG		

*:Maximum data x:Over limit !:over margin

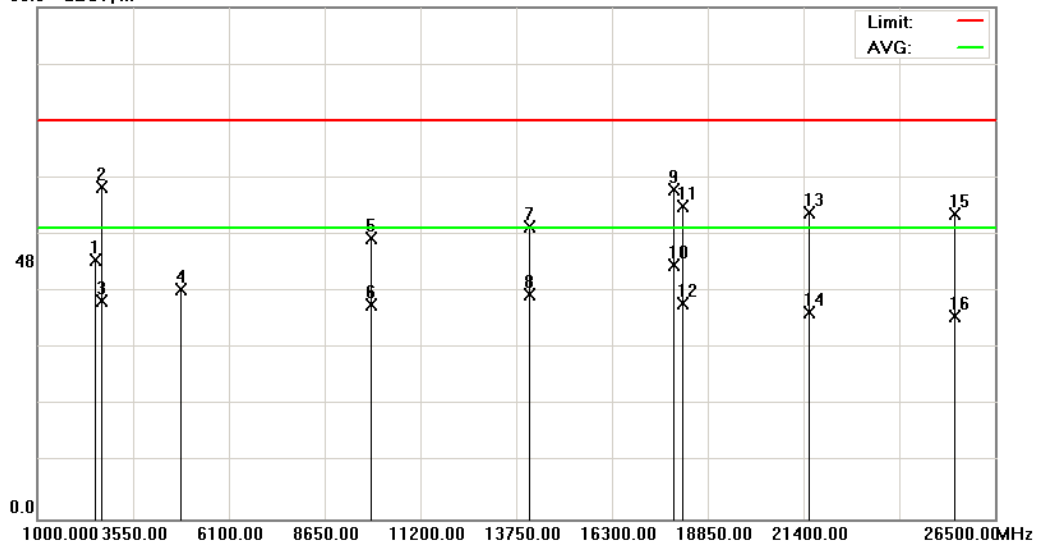
File :PC70110(2402MHz)

Data :#18

Date: 2010/1/28

Time: 下午 03:06:55

95.0 dBuV/m



Site: : 966 Chamber	Polarization: Horizontal	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #5		
Note: 2402MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2523.200	47.74	0.42	48.16	74.00	-25.84	peak		
2		2700.000	38.99	22.58	61.57	74.00	-12.43	peak		
3		2700.000	17.98	22.58	40.56	54.00	-13.44	AVG		
4		4804.000	35.37	7.32	42.69	74.00	-31.31	peak		
5		9897.800	34.40	17.78	52.18	74.00	-21.82	peak		
6		9897.800	21.93	17.78	39.71	54.00	-14.29	AVG		
7		14100.000	35.48	18.90	54.38	74.00	-19.62	peak		
8		14100.000	22.84	18.90	41.74	54.00	-12.26	AVG		
9		17952.000	36.44	24.68	61.12	74.00	-12.88	peak		
10	*	17952.000	22.42	24.68	47.10	54.00	-6.90	AVG		
11		18178.500	34.93	23.22	58.15	74.00	-15.85	peak		
12		18178.500	16.70	23.22	39.92	54.00	-14.08	AVG		
13		21536.000	35.47	21.34	56.81	74.00	-17.19	peak		
14		21536.000	17.05	21.34	38.39	54.00	-15.61	AVG		
15		25407.750	37.72	19.03	56.75	74.00	-17.25	peak		
16		25407.750	18.65	19.03	37.68	54.00	-16.32	AVG		

*:Maximum data x:Over limit !:over margin

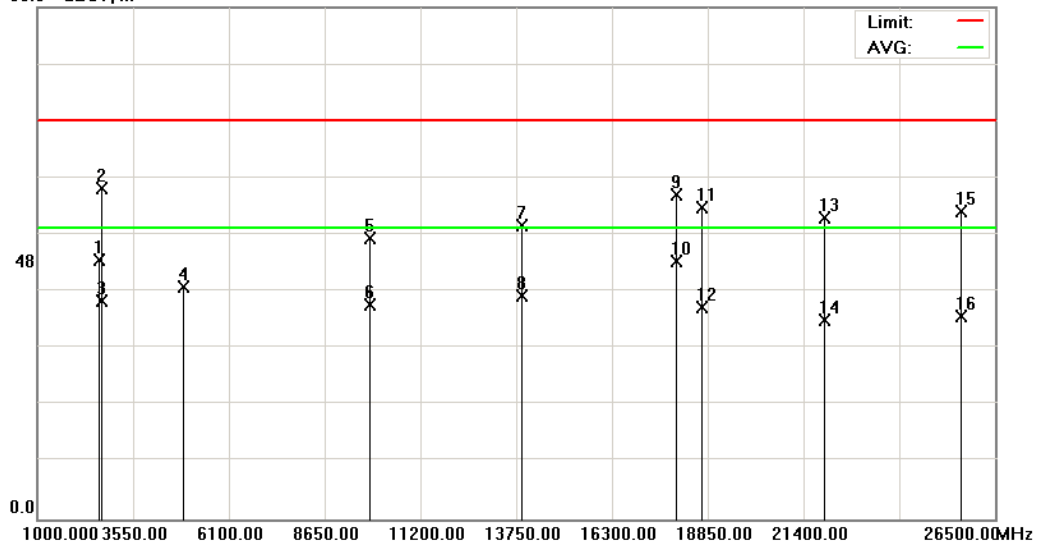
File :PC70110(2441MHz)

Data :#17

Date: 2010/1/28

Time: 下午 03:09:10

95.0 dBuV/m



Site: : 966 Chamber

 Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: Smartphone

Distance: 3m

RBW: 1000 KHz VBW: 1000 KHz

M/N: PC70110

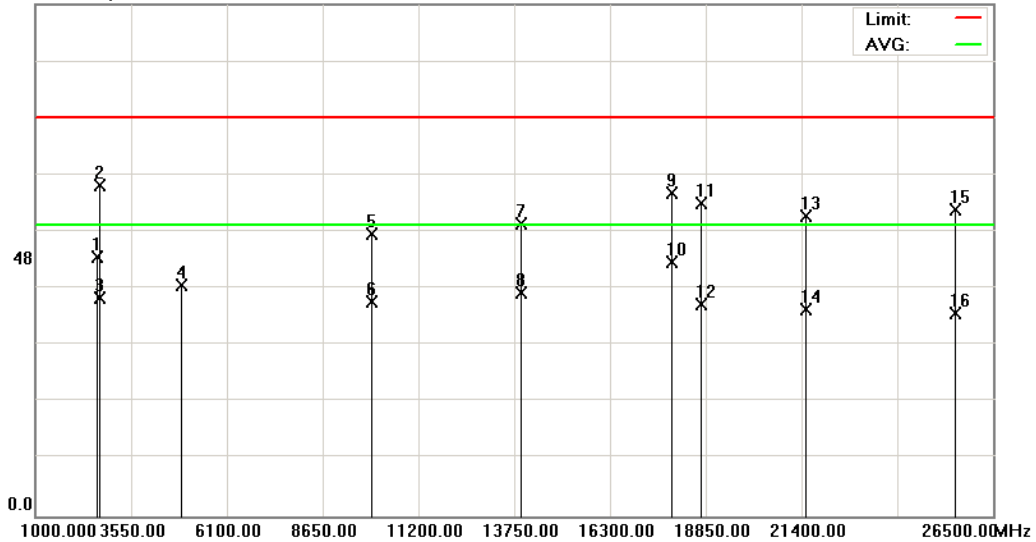
Mode: #5

Note: 2441MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2638.800	47.23	0.97	48.20	74.00	-25.80	peak		
2		2700.000	38.75	22.58	61.33	74.00	-12.67	peak		
3		2700.000	17.98	22.58	40.56	54.00	-13.44	AVG		
4		4882.000	35.31	7.74	43.05	74.00	-30.95	peak		
5		9832.100	34.32	17.81	52.13	74.00	-21.87	peak		
6		9832.100	22.05	17.81	39.86	54.00	-14.14	AVG		
7		13900.000	36.04	18.53	54.57	74.00	-19.43	peak		
8		13900.000	23.01	18.53	41.54	54.00	-12.46	AVG		
9		18000.000	34.62	25.57	60.19	74.00	-13.81	peak		
10	*	18000.000	22.33	25.57	47.90	54.00	-6.10	AVG		
11		18692.750	34.85	23.10	57.95	74.00	-16.05	peak		
12		18692.750	16.18	23.10	39.28	54.00	-14.72	AVG		
13		21952.500	34.69	21.15	55.84	74.00	-18.16	peak		
14		21952.500	15.70	21.15	36.85	54.00	-17.15	AVG		
15		25560.750	38.08	18.94	57.02	74.00	-16.98	peak		
16		25560.750	18.59	18.94	37.53	54.00	-16.47	AVG		

*:Maximum data x:Over limit !:over margin

File :PC70110(2441MHz) Data :#18 Date: 2010/1/28 Time: 下午 03:10:40



Site: : 966 Chamber	Polarization: Horizontal	Temperature: 22 ℃
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #5		
Note: 2441MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2627.750	47.25	0.88	48.13	74.00	-25.87	peak		
2		2700.000	38.76	22.58	61.34	74.00	-12.66	peak		
3		2700.000	18.02	22.58	40.60	54.00	-13.40	AVG		
4		4882.000	35.13	7.74	42.87	74.00	-31.13	peak		
5		9934.300	34.53	17.78	52.31	74.00	-21.69	peak		
6		9934.300	22.03	17.78	39.81	54.00	-14.19	AVG		
7		13912.000	35.67	18.53	54.20	74.00	-19.80	peak		
8		13912.000	22.83	18.53	41.36	54.00	-12.64	AVG		
9		17940.000	35.25	24.71	59.96	74.00	-14.04	peak		
10	*	17940.000	22.38	24.71	47.09	54.00	-6.91	AVG		
11		18722.500	34.85	23.12	57.97	74.00	-16.03	peak		
12		18722.500	16.09	23.12	39.21	54.00	-14.79	AVG		
13		21506.250	34.30	21.35	55.65	74.00	-18.35	peak		
14		21506.250	17.12	21.35	38.47	54.00	-15.53	AVG		
15		25463.000	37.85	19.01	56.86	74.00	-17.14	peak		
16		25463.000	18.74	19.01	37.75	54.00	-16.25	AVG		

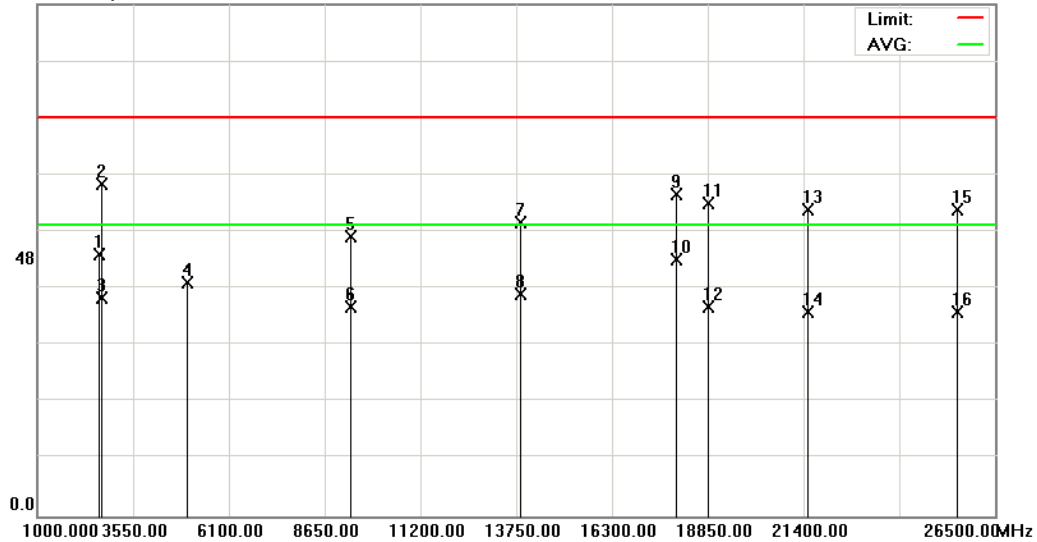
*:Maximum data x:Over limit !:over margin

File :PC70110(2480MHz)

Data :#17

Date: 2010/1/28

Time: 下午 03:12:37

95.0 dBuV/m


Site: : 966 Chamber

 Polarization: **Vertical**

Temperature: 22 ℃

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: Smartphone

Distance: 3m

RBW: 1000 KHz VBW: 1000 KHz

M/N: PC70110

Mode: #5

Note: 2480MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2637.950	47.53	0.96	48.49	74.00	-25.51	peak		
2		2700.000	39.01	22.58	61.59	74.00	-12.41	peak		
3		2700.000	18.02	22.58	40.60	54.00	-13.40	AVG		
4		4960.000	35.45	7.80	43.25	74.00	-30.75	peak		
5		9317.450	34.96	16.90	51.86	74.00	-22.14	peak		
6		9317.450	22.01	16.90	38.91	54.00	-15.09	AVG		
7		13856.000	36.31	18.20	54.51	74.00	-19.49	peak		
8		13856.000	23.02	18.20	41.22	54.00	-12.78	AVG		
9		18000.000	34.14	25.57	59.71	74.00	-14.29	peak		
10	*	18000.000	22.03	25.57	47.60	54.00	-6.40	AVG		
11		18833.000	34.96	23.16	58.12	74.00	-15.88	peak		
12		18833.000	15.68	23.16	38.84	54.00	-15.16	AVG		
13		21506.250	35.44	21.35	56.79	74.00	-17.21	peak		
14		21506.250	16.46	21.35	37.81	54.00	-16.19	AVG		
15		25484.250	38.00	19.00	57.00	74.00	-17.00	peak		
16		25484.250	18.92	19.00	37.92	54.00	-16.08	AVG		

*:Maximum data x:Over limit !:over margin

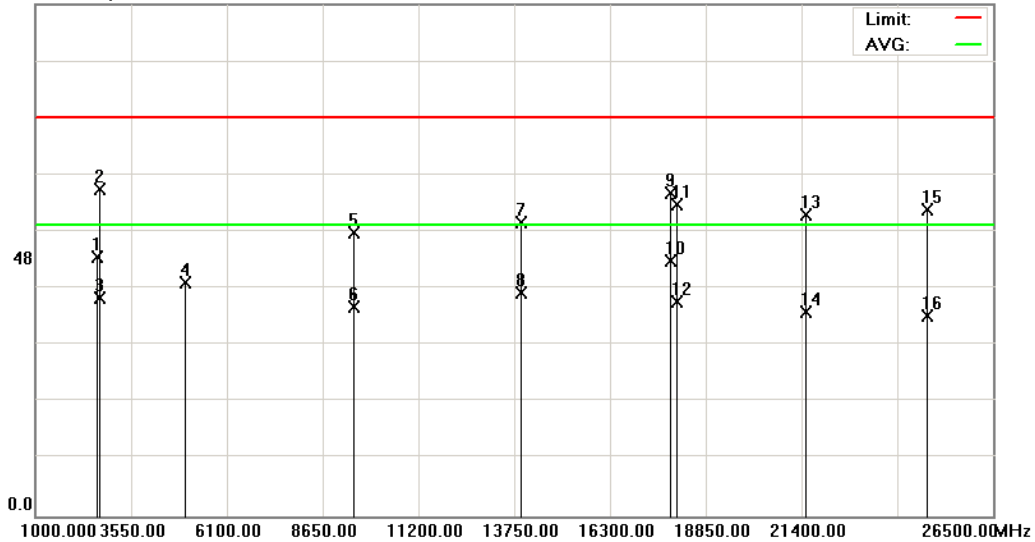
File :PC70110(2480MHz)

Data :#18

Date: 2010/1/28

Time: 下午 03:14:07

95.0 dBuV/m



Site: : 966 Chamber

 Polarization: **Horizontal**

Temperature: 22 ℃

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: Smartphone

Distance: 3m

RBW: 1000 KHz VBW: 1000 KHz

M/N: PC70110

Mode: #5

Note: 2480MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2641.350	47.05	0.98	48.03	74.00	-25.97	peak		
2		2700.000	37.99	22.58	60.57	74.00	-13.43	peak		
3		2700.000	18.03	22.58	40.61	54.00	-13.39	AVG		
4		4960.000	35.46	7.80	43.26	74.00	-30.74	peak		
5		9474.400	35.81	16.90	52.71	74.00	-21.29	peak		
6		9474.400	21.98	16.90	38.88	54.00	-15.12	AVG		
7		13912.000	35.87	18.53	54.40	74.00	-19.60	peak		
8		13912.000	22.89	18.53	41.42	54.00	-12.58	AVG		
9		17904.000	35.01	24.94	59.95	74.00	-14.05	peak		
10	*	17904.000	22.39	24.94	47.33	54.00	-6.67	AVG		
11		18063.750	34.66	23.26	57.92	74.00	-16.08	peak		
12		18063.750	16.59	23.26	39.85	54.00	-14.15	AVG		
13		21502.000	34.62	21.36	55.98	74.00	-18.02	peak		
14		21502.000	16.49	21.36	37.85	54.00	-16.15	AVG		
15		24740.500	37.44	19.56	57.00	74.00	-17.00	peak		
16		24740.500	17.53	19.56	37.09	54.00	-16.91	AVG		

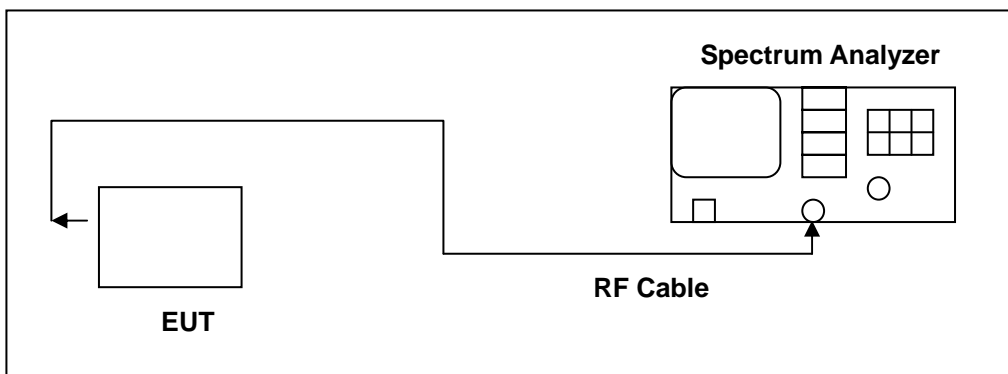
*:Maximum data x:Over limit !:over margin

6 Maximum Conducted Output Power Measurement

6.1. Limit

For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels < 1 watt.

6.2. Test Setup



6.3. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

6.4. Test Procedure

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to spectrum analyzer. The maximum peak output power shall not exceed 1 watt.

Use a direct connection between the antenna port of transmitter and the spectrum Analyzer, for prevent the spectrum analyzer input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to $(\text{GAIN} - 6)/3$ dBm.

The antenna port of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

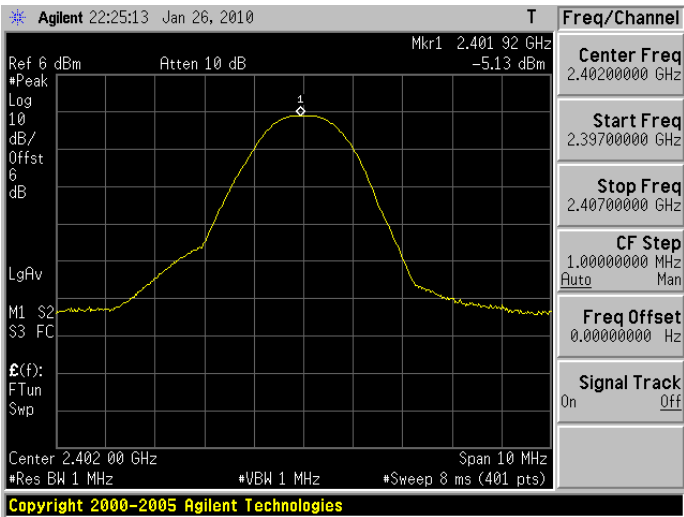
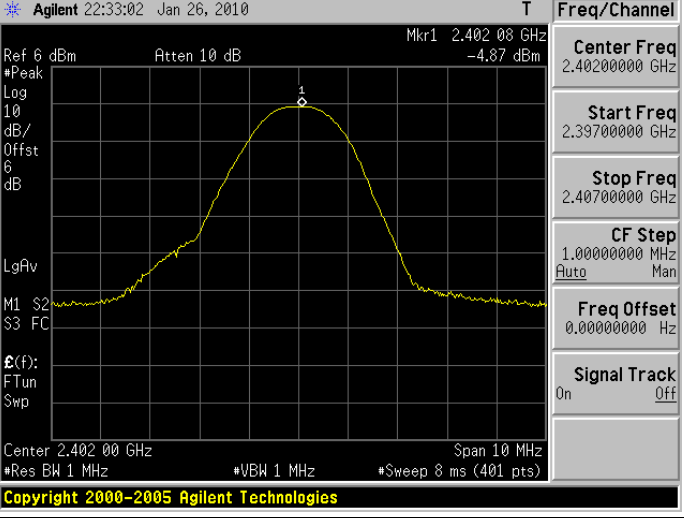
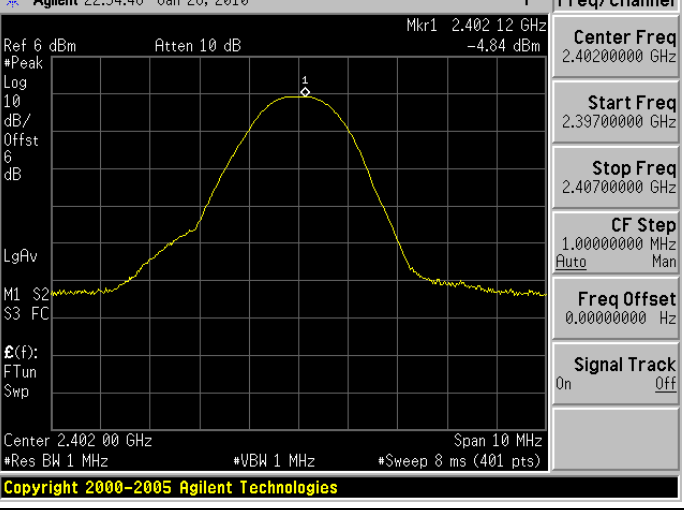
6.5. Test Result

Product	Smartphone			
Test Item	Maximum Conducted Output Power			
Test Mode	Mode 3: GFSK Link Mode			
Date of Test	01/26/2010	Test Site		TE06
Frequency (MHz)	Packet Type	Measurement		Limit (W)
		(dBm)	(mW)	
2402	DH1	-5.130	0.307	< 1
	DH3	-4.870	0.326	< 1
	DH5	-4.840	0.328	< 1
2441	DH1	-3.900	0.407	< 1
	DH3	-3.720	0.425	< 1
	DH5	-3.740	0.423	< 1
2480	DH1	-4.100	0.389	< 1
	DH3	-4.050	0.394	< 1
	DH5	-4.000	0.398	< 1

Product	Smartphone			
Test Item	Maximum Conducted Output Power			
Test Mode	Mode 5: $\pi/4$ -DQPSK Link Mode			
Date of Test	01/26/2010	Test Site		TE06
Frequency (MHz)	Packet Type	Measurement		Limit (W)
		(dBm)	(mW)	
2402	2DH1	-2.640	0.545	< 1
	2DH3	-2.570	0.553	< 1
	2DH5	-2.440	0.570	< 1
2441	2DH1	-1.440	0.718	< 1
	2DH3	-1.360	0.731	< 1
	2DH5	-1.230	0.753	< 1
2480	2DH1	-1.500	0.708	< 1
	2DH3	-1.490	0.710	< 1
	2DH5	-1.430	0.719	< 1

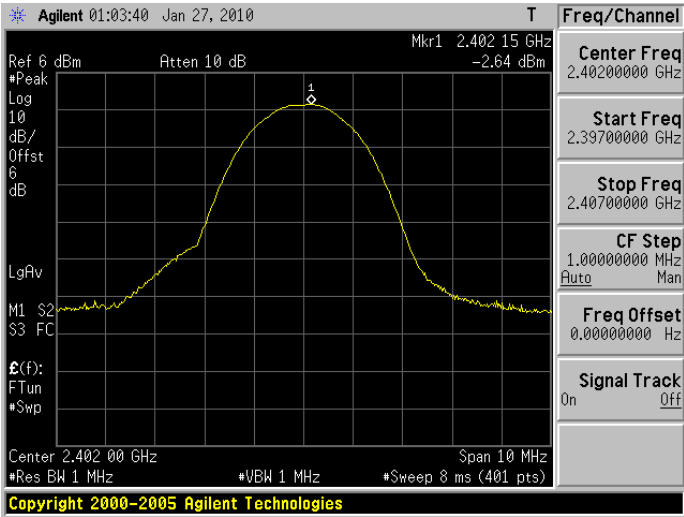
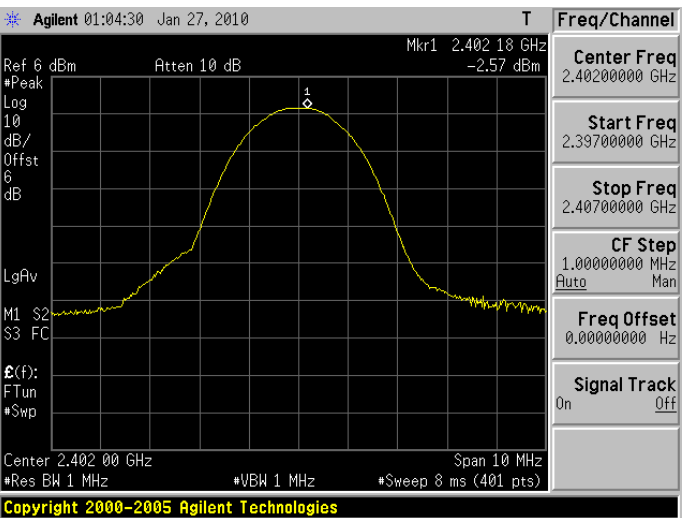
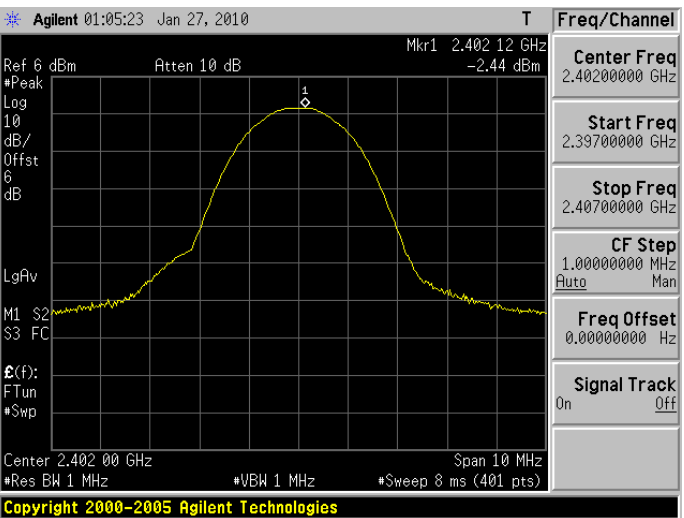
Product	Smartphone			
Test Item	Maximum Conducted Output Power			
Test Mode	Mode 4: 8DPSK Link Mode			
Date of Test	01/26/2010	Test Site		TE06
Frequency (MHz)	Packet Type	Measurement		Limit (W)
		(dBm)	(mW)	
2402	3DH1	-5.180	0.303	< 1
	3DH3	-4.960	0.319	< 1
	3DH5	-4.930	0.321	< 1
2441	3DH1	-3.530	0.444	< 1
	3DH3	-3.720	0.425	< 1
	3DH5	-3.690	0.428	< 1
2480	3DH1	-4.230	0.378	< 1
	3DH3	-4.000	0.398	< 1
	3DH5	-4.000	0.398	< 1

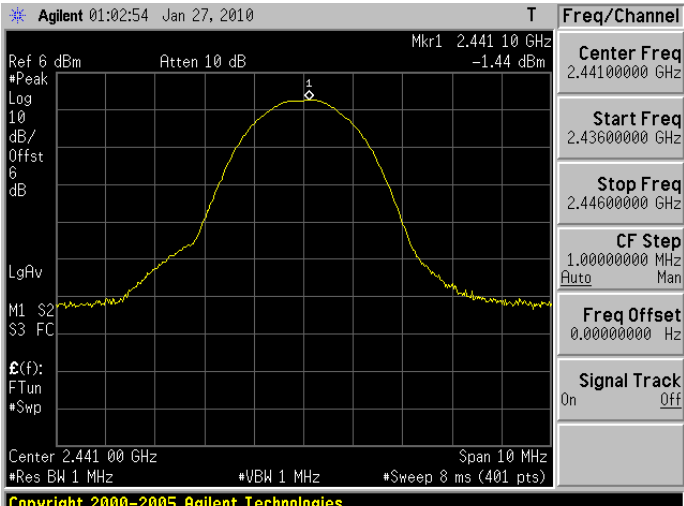
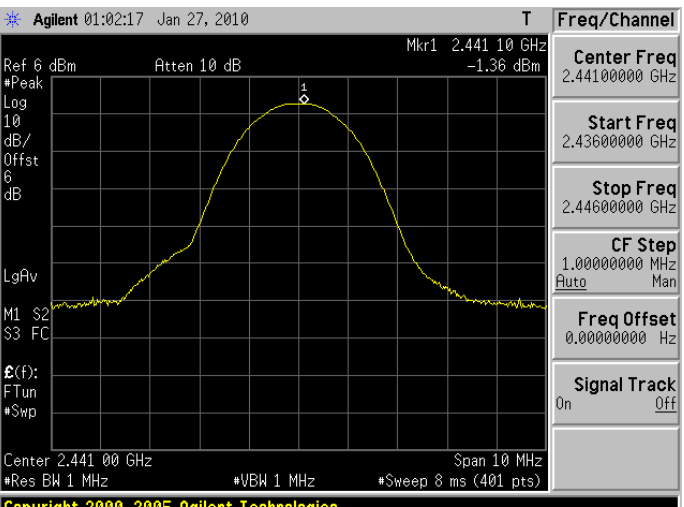
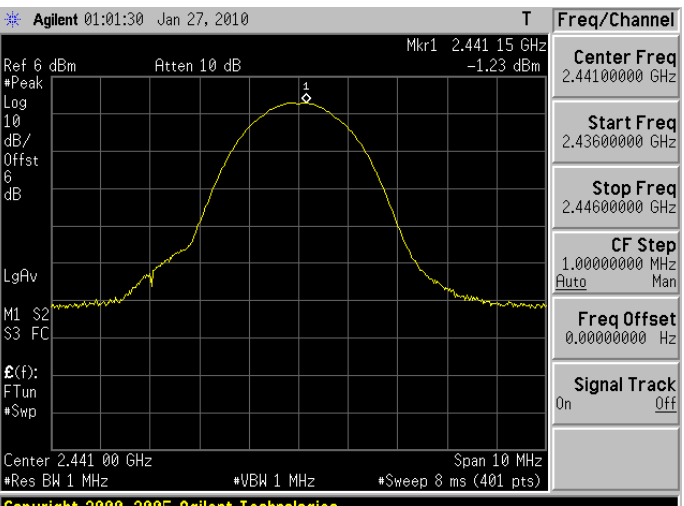
6.6. Test Graphs

Mode 3: GFSK Link Mode_2402 MHz															
DH1	 <p>Agilent 22:25:13 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.401 92 GHz -5.13 dBm</p> <p>#Peak Log 10 dB/ Offst 6 dB</p> <p>LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.402 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.39700000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40700000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.39700000 GHz	Stop Freq	2.40700000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel															
Center Freq	2.40200000 GHz														
Start Freq	2.39700000 GHz														
Stop Freq	2.40700000 GHz														
CF Step	1.00000000 MHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
DH3	 <p>Agilent 22:33:02 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.402 08 GHz -4.87 dBm</p> <p>#Peak Log 10 dB/ Offst 6 dB</p> <p>LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.402 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.39700000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40700000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.39700000 GHz	Stop Freq	2.40700000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.39700000 GHz														
Stop Freq	2.40700000 GHz														
CF Step	1.00000000 MHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
DH5	 <p>Agilent 22:34:48 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.402 12 GHz -4.84 dBm</p> <p>#Peak Log 10 dB/ Offst 6 dB</p> <p>LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.402 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.39700000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40700000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.39700000 GHz	Stop Freq	2.40700000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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CF Step	1.00000000 MHz Auto Man														
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Signal Track	On Off														

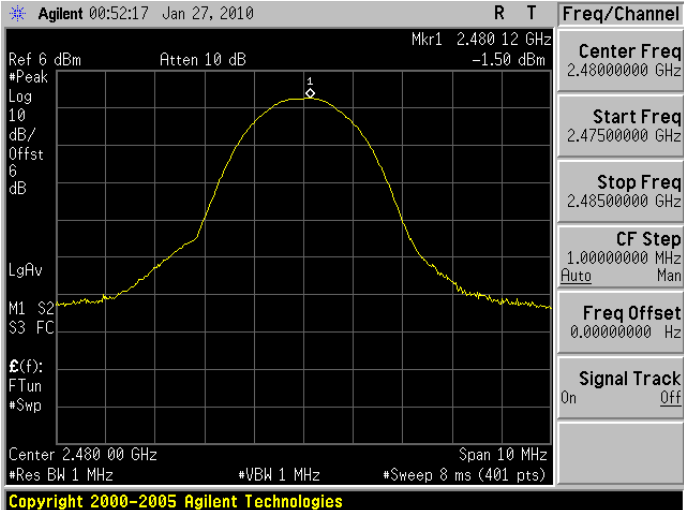
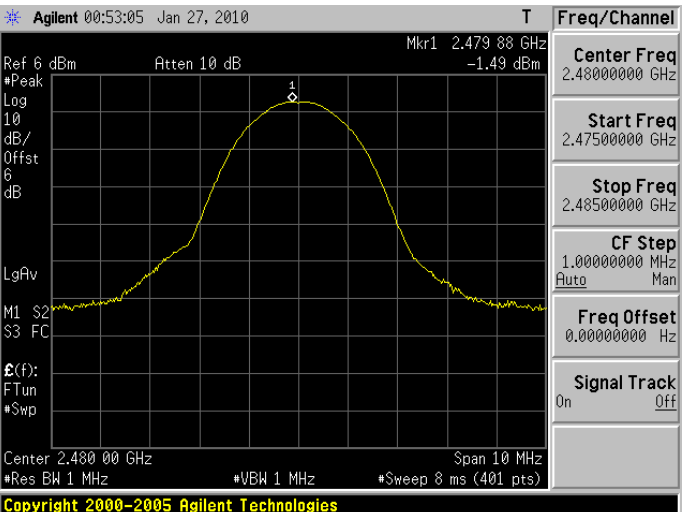
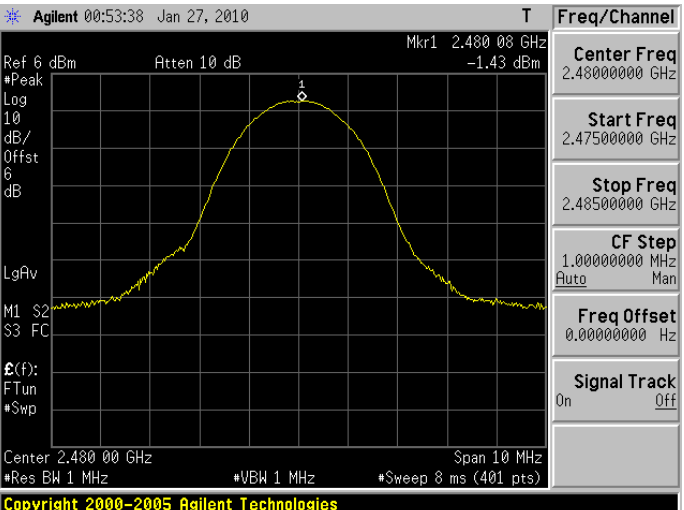
Mode 3: GFSK Link Mode_2441 MHz															
DH1	<p>Agilent 22:27:09 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.440 90 GHz -3.90 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.441 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.44100000 GHz</td></tr> <tr><td>Start Freq</td><td>2.43600000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.44600000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.44100000 GHz	Start Freq	2.43600000 GHz	Stop Freq	2.44600000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.43600000 GHz														
Stop Freq	2.44600000 GHz														
CF Step	1.00000000 MHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
DH3	<p>Agilent 22:31:51 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.440 95 GHz -3.72 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Start 2.436 00 GHz Stop 2.446 00 GHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.44100000 GHz</td></tr> <tr><td>Start Freq</td><td>2.43600000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.44600000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.44100000 GHz	Start Freq	2.43600000 GHz	Stop Freq	2.44600000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Stop Freq	2.44600000 GHz														
CF Step	1.00000000 MHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
DH5	<p>Agilent 22:30:56 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.441 02 GHz -3.74 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Start 2.436 00 GHz Stop 2.446 00 GHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.44100000 GHz</td></tr> <tr><td>Start Freq</td><td>2.43600000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.44600000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.44100000 GHz	Start Freq	2.43600000 GHz	Stop Freq	2.44600000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.43600000 GHz														
Stop Freq	2.44600000 GHz														
CF Step	1.00000000 MHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														

Mode 3: GFSK Link Mode_2480 MHz	
DH1	<p>Agilent 22:27:53 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.479 92 GHz -4.10 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel Center Freq 2.48000000 GHz Start Freq 2.47500000 GHz Stop Freq 2.48500000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
DH3	<p>Agilent 22:28:45 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.479 90 GHz -4.05 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel Center Freq 2.48000000 GHz Start Freq 2.47500000 GHz Stop Freq 2.48500000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
DH5	<p>Agilent 22:29:59 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.480 02 GHz -4.00 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel Center Freq 2.48000000 GHz Start Freq 2.47500000 GHz Stop Freq 2.48500000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>

Mode2: $\pi/4$ -DPSK Link Mode_2402 MHz																	
DH1	 <p>Agilent 01:03:40 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.40215 GHz -2.64 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: FTun #Swp</p> <p>Center 2.40200 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.39700000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40700000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.39700000 GHz	Stop Freq	2.40700000 GHz	CF Step	1.00000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Stop Freq	2.40700000 GHz																
CF Step	1.00000000 MHz																
Auto	Man																
Freq Offset	0.00000000 Hz																
Signal Track	On Off																
DH3	 <p>Agilent 01:04:30 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.40218 GHz -2.57 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: FTun #Swp</p> <p>Center 2.40200 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.39700000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40700000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.39700000 GHz	Stop Freq	2.40700000 GHz	CF Step	1.00000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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DH5	 <p>Agilent 01:05:23 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.40212 GHz -2.44 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: FTun #Swp</p> <p>Center 2.40200 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.39700000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40700000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.39700000 GHz	Stop Freq	2.40700000 GHz	CF Step	1.00000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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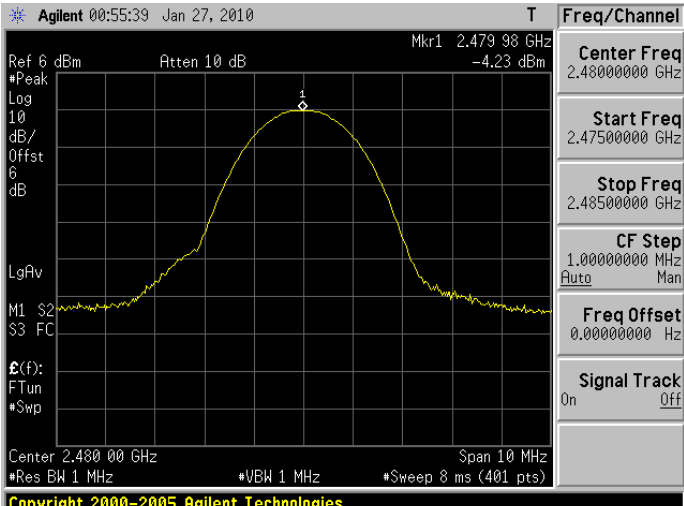
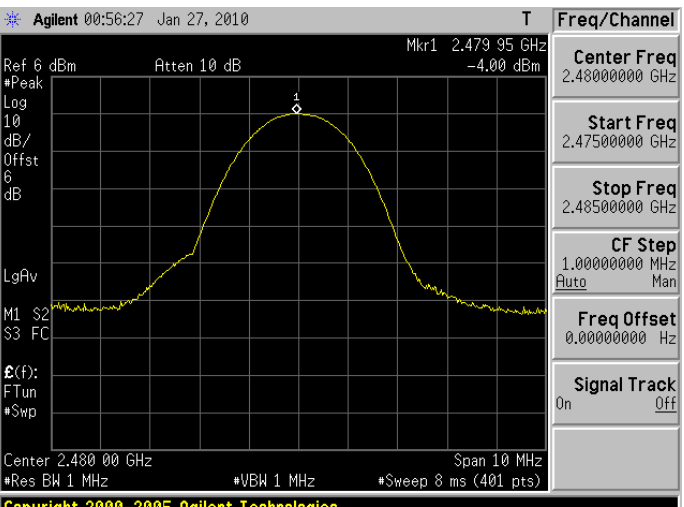
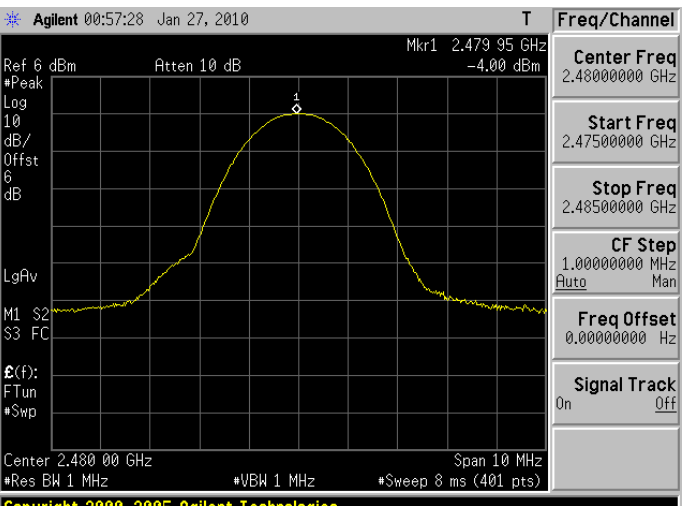
Mode2: $\pi/4$ -DPSK Link Mode_2441 MHz	
DH1	 <p>Agilent 01:02:54 Jan 27, 2010</p> <p>Center 2.441 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p>
DH3	 <p>Agilent 01:02:17 Jan 27, 2010</p> <p>Center 2.441 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p>
DH5	 <p>Agilent 01:01:30 Jan 27, 2010</p> <p>Center 2.441 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p>

Mode2: $\pi/4$ -DPSK Link Mode_2480 MHz

<p style="text-align: center;">DH1</p>	 <p>Agilent 00:52:17 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.480 12 GHz -1.50 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: FTun #Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1" data-bbox="1189 338 1316 846"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.48000000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.47500000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.48500000 GHz</td> </tr> <tr> <td>CF Step</td> <td>1.00000000 MHz</td> </tr> <tr> <td></td> <td>Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47500000 GHz	Stop Freq	2.48500000 GHz	CF Step	1.00000000 MHz		Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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CF Step	1.00000000 MHz																
	Auto Man																
Freq Offset	0.00000000 Hz																
Signal Track	On Off																
<p style="text-align: center;">DH3</p>	 <p>Agilent 00:53:05 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.479 88 GHz -1.49 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: FTun #Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1" data-bbox="1189 864 1316 1373"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.48000000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.47500000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.48500000 GHz</td> </tr> <tr> <td>CF Step</td> <td>1.00000000 MHz</td> </tr> <tr> <td></td> <td>Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47500000 GHz	Stop Freq	2.48500000 GHz	CF Step	1.00000000 MHz		Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Freq Offset	0.00000000 Hz																
Signal Track	On Off																
<p style="text-align: center;">DH5</p>	 <p>Agilent 00:53:38 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.480 08 GHz -1.43 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: FTun #Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1" data-bbox="1189 1391 1316 1899"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.48000000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.47500000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.48500000 GHz</td> </tr> <tr> <td>CF Step</td> <td>1.00000000 MHz</td> </tr> <tr> <td></td> <td>Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47500000 GHz	Stop Freq	2.48500000 GHz	CF Step	1.00000000 MHz		Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Mode 4: 8DPSK Link Mode _2402 MHz	
DH1	<p>Agilent 01:05:56 Jan 27, 2010</p> <p>Center 2.402 00 GHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p>
DH3	<p>Agilent 01:06:43 Jan 27, 2010</p> <p>Center 2.402 00 GHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p>
DH5	<p>Agilent 01:07:29 Jan 27, 2010</p> <p>Center 2.402 00 GHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p>

Mode 4: 8DPSK Link Mode _2441 MHz	
DH1	<p>Agilent 01:00:42 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.441 00 GHz -3.53 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓕ(f): FTun #Swp</p> <p>Center 2.441 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel Center Freq 2.44100000 GHz Start Freq 2.43600000 GHz Stop Freq 2.44600000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
DH3	<p>Agilent 00:59:48 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.441 00 GHz -3.72 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓕ(f): FTun #Swp</p> <p>Center 2.441 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel Center Freq 2.44100000 GHz Start Freq 2.43600000 GHz Stop Freq 2.44600000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
DH5	<p>Agilent 00:59:02 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.440 95 GHz -3.69 dBm</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓕ(f): FTun #Swp</p> <p>Center 2.441 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <p>Freq/Channel Center Freq 2.44100000 GHz Start Freq 2.43600000 GHz Stop Freq 2.44600000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>

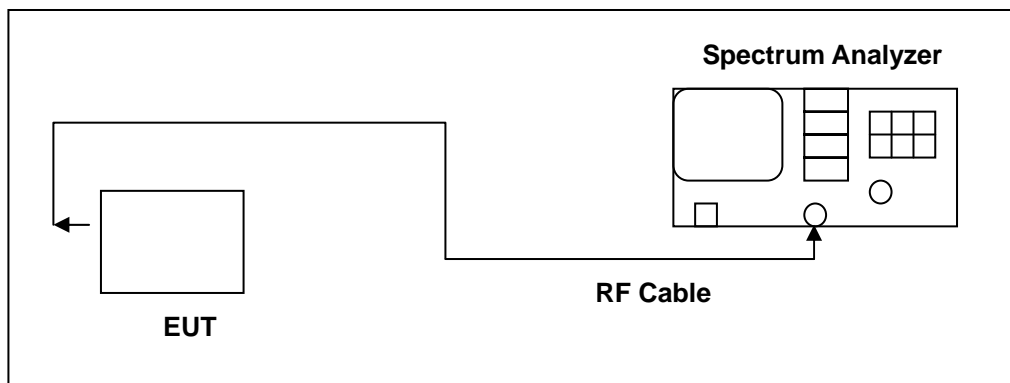
Mode 4: 8DPSK Link Mode _2480 MHz																	
DH1	 <p>Agilent 00:55:39 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.479 98 GHz -4.23 dBm</p> <p>#Peak Log 10 dB/ Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): FTun #Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1" style="float: right; width: 150px;"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.48000000 GHz</td></tr> <tr><td>Start Freq</td><td>2.47500000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.48500000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47500000 GHz	Stop Freq	2.48500000 GHz	CF Step	1.00000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Freq Offset	0.00000000 Hz																
Signal Track	On Off																
DH3	 <p>Agilent 00:56:27 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.479 95 GHz -4.00 dBm</p> <p>#Peak Log 10 dB/ Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): FTun #Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1" style="float: right; width: 150px;"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.48000000 GHz</td></tr> <tr><td>Start Freq</td><td>2.47500000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.48500000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47500000 GHz	Stop Freq	2.48500000 GHz	CF Step	1.00000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Stop Freq	2.48500000 GHz																
CF Step	1.00000000 MHz																
Auto	Man																
Freq Offset	0.00000000 Hz																
Signal Track	On Off																
DH5	 <p>Agilent 00:57:28 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 2.479 95 GHz -4.00 dBm</p> <p>#Peak Log 10 dB/ Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): FTun #Swp</p> <p>Center 2.480 00 GHz Span 10 MHz #Res BW 1 MHz #VBW 1 MHz #Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1" style="float: right; width: 150px;"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.48000000 GHz</td></tr> <tr><td>Start Freq</td><td>2.47500000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.48500000 GHz</td></tr> <tr><td>CF Step</td><td>1.00000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47500000 GHz	Stop Freq	2.48500000 GHz	CF Step	1.00000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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CF Step	1.00000000 MHz																
Auto	Man																
Freq Offset	0.00000000 Hz																
Signal Track	On Off																

7 Minimum 20dB RF Bandwidth Measurement

7.1. Limit

For frequency hopping systems operating in the 2400–2483.5 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hop-ping channel is < 1 MHz.

7.2. Test Setup



7.3. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

7.4. Test Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = approx. 2 to 3 times the 20dB bandwidth, centered on a hopping frequency
2. RBW \geq 1% of the 20dB span
3. VBW \geq RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize. The EUT was transmitting at its maximum data rate. The marker-to-peak function was used to set the marker to the peak of the emission. The marker-delta function was used to measure 20dB down one side of the emission. The marker-delta function and marker was moved to the other side of the emission until it was even with the reference marker. The marker-delta reading at this point was the 20dB bandwidth of the emission.

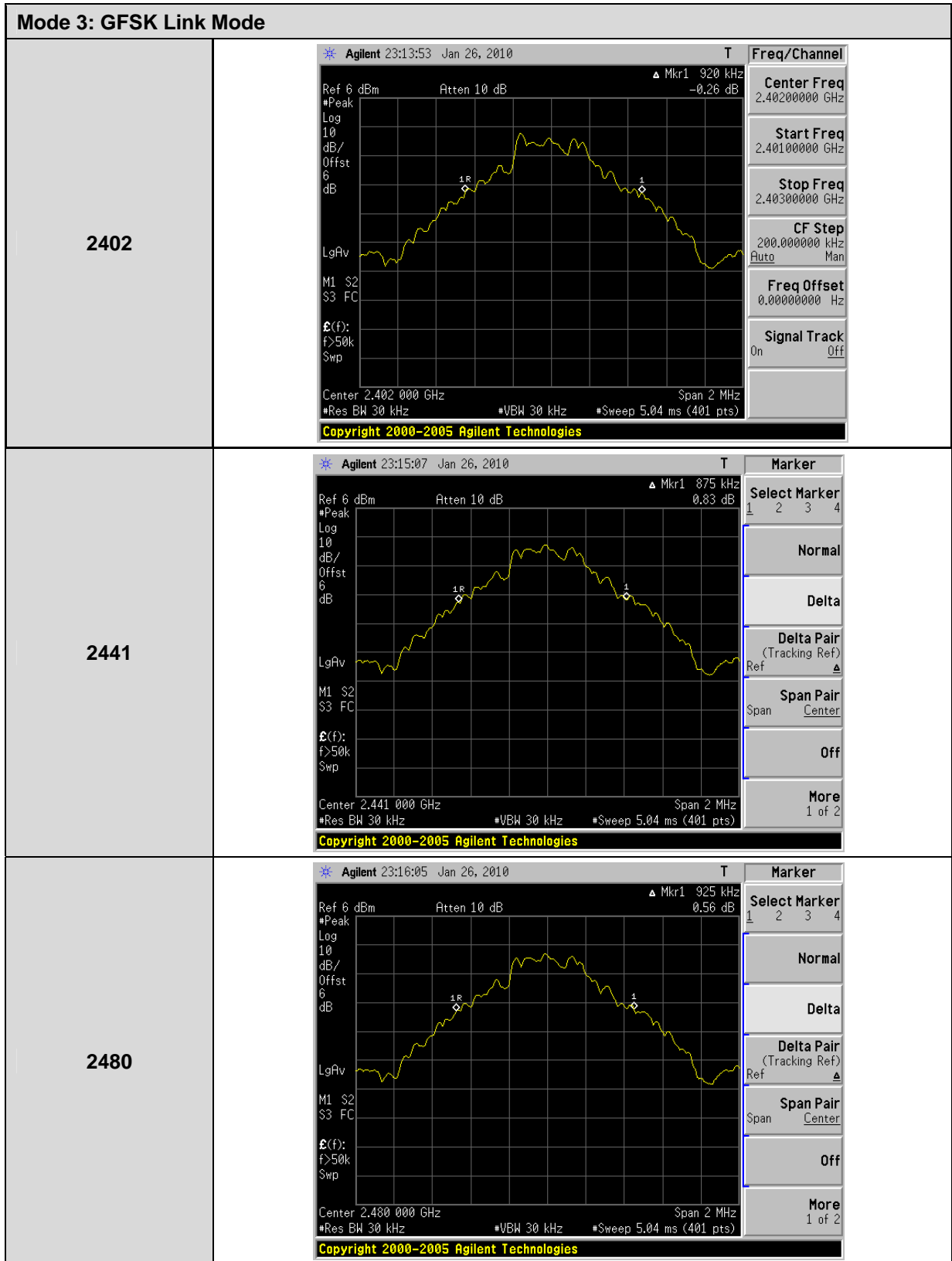
7.5. Test Result

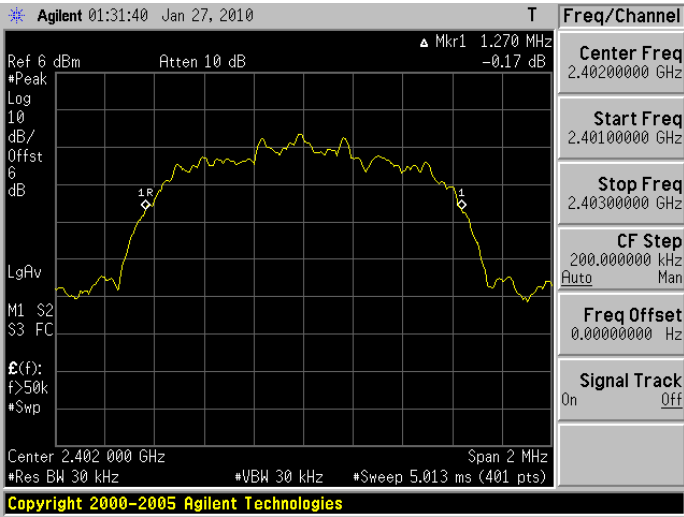
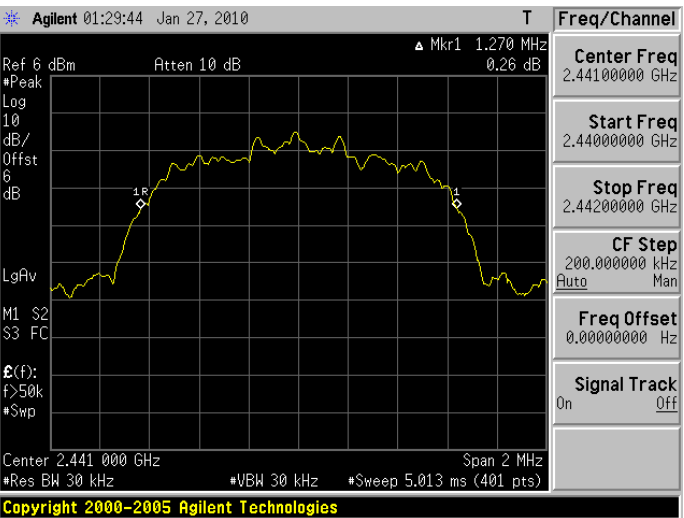
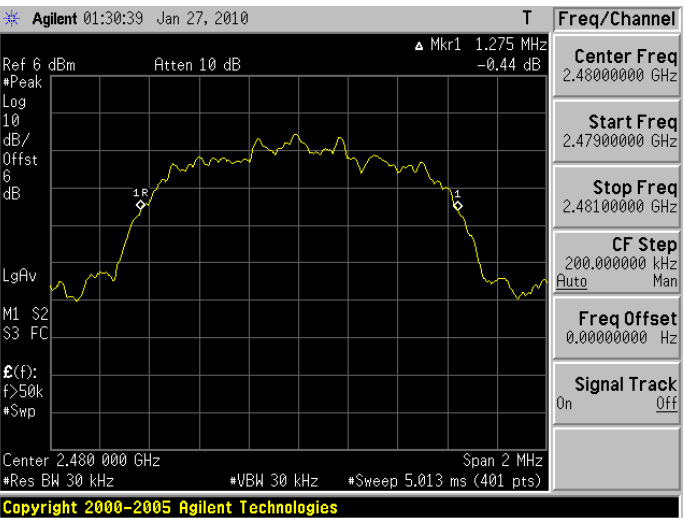
Product	Smartphone		
Test Item	Minimum 20dB RF Bandwidth		
Test Mode	Mode 3: GFSK Link Mode		
Date of Test	01/26/2010	Test Site	TE06
Frequency (MHz)	Measurement (MHz)		Limit (MHz)
2402	0.920		< 1
2441	0.875		< 1
2480	0.925		< 1

Product	Smartphone		
Test Item	Minimum 20dB RF Bandwidth		
Test Mode	Mode 4: 8DPSK Link Mode		
Date of Test	01/26/2010	Test Site	TE06
Frequency (MHz)	Measurement (MHz)	2/3 Measurement (MHz)	Limit (MHz)
2402	1.270	0.847	< 1
2441	1.270	0.847	< 1
2480	1.275	0.850	< 1

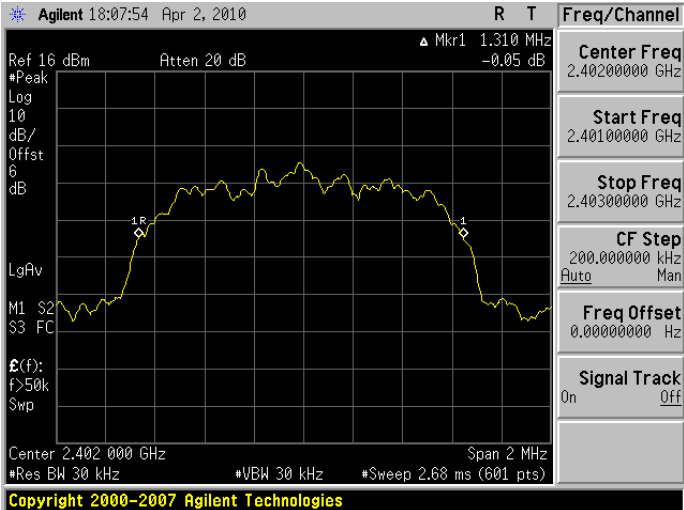
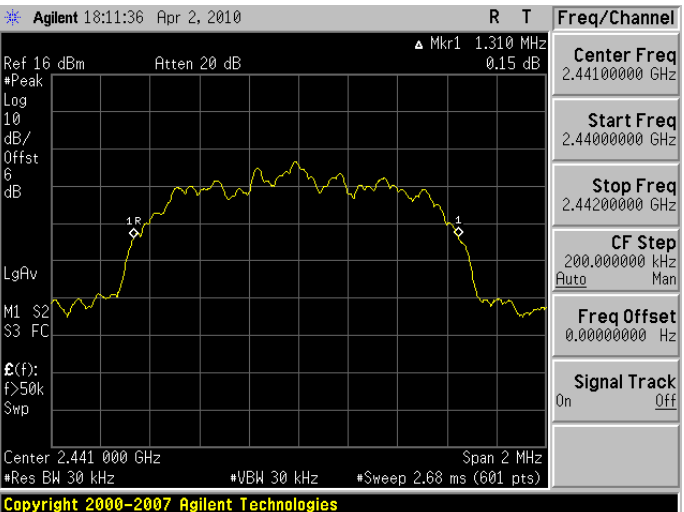
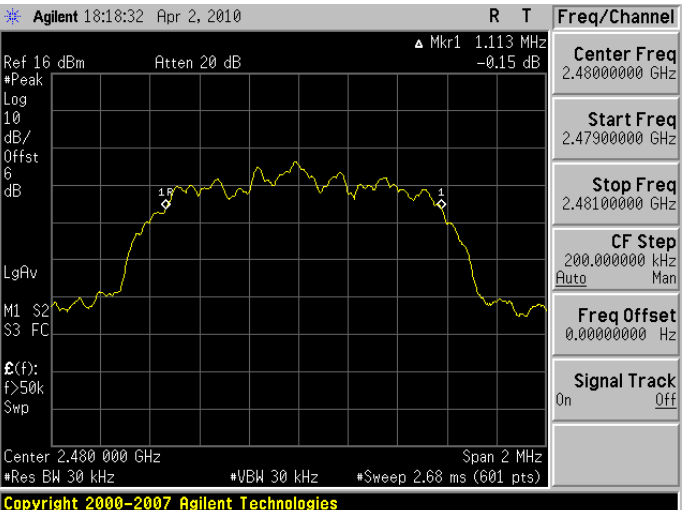
Product	Smartphone		
Test Item	Minimum 20dB RF Bandwidth		
Test Mode	Mode 5: $\pi/4$ -DQPSK Link Mode		
Date of Test	04/02/2010	Test Site	TE06
Frequency (MHz)	Measurement (MHz)	2/3 Measurement (MHz)	Limit (MHz)
2402	1.310	0.874	< 1
2441	1.310	0.874	< 1
2480	1.113	0.742	< 1

7.6. Test Graphs



Mode 4: 8DPSK Link Mode															
2402	 <p>Agilent 01:31:40 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.270 MHz -0.17 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): f>50k #Swp</p> <p>Center 2.402 000 GHz Span 2 MHz #Res BW 30 kHz #VBW 30 kHz #Sweep 5.013 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.40100000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40300000 GHz</td></tr> <tr><td>CF Step</td><td>200.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.40100000 GHz	Stop Freq	2.40300000 GHz	CF Step	200.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.40100000 GHz														
Stop Freq	2.40300000 GHz														
CF Step	200.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
2441	 <p>Agilent 01:29:44 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.270 MHz 0.26 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): f>50k #Swp</p> <p>Center 2.441 000 GHz Span 2 MHz #Res BW 30 kHz #VBW 30 kHz #Sweep 5.013 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.44100000 GHz</td></tr> <tr><td>Start Freq</td><td>2.44000000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.44200000 GHz</td></tr> <tr><td>CF Step</td><td>200.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.44100000 GHz	Start Freq	2.44000000 GHz	Stop Freq	2.44200000 GHz	CF Step	200.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.44000000 GHz														
Stop Freq	2.44200000 GHz														
CF Step	200.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
2480	 <p>Agilent 01:30:39 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.275 MHz -0.44 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv M1 S2 S3 FC</p> <p>Ⓔ(f): f>50k #Swp</p> <p>Center 2.480 000 GHz Span 2 MHz #Res BW 30 kHz #VBW 30 kHz #Sweep 5.013 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.48000000 GHz</td></tr> <tr><td>Start Freq</td><td>2.47900000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.48100000 GHz</td></tr> <tr><td>CF Step</td><td>200.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47900000 GHz	Stop Freq	2.48100000 GHz	CF Step	200.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel															
Center Freq	2.48000000 GHz														
Start Freq	2.47900000 GHz														
Stop Freq	2.48100000 GHz														
CF Step	200.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														

Mode 5: $\pi/4$ -DQPSK Link Mode

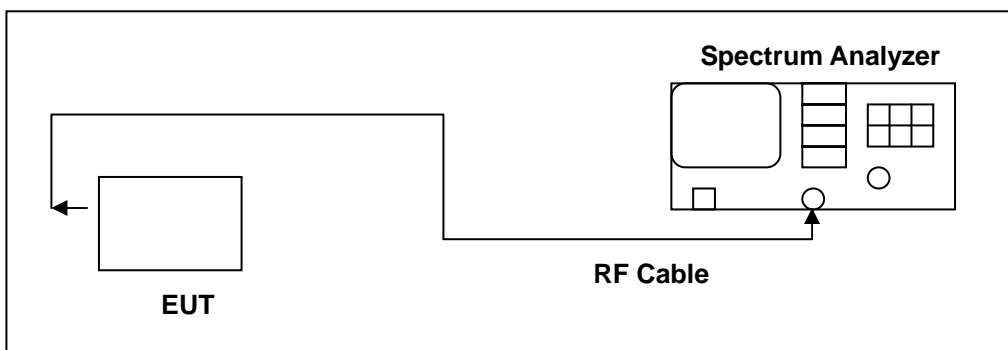
<p style="text-align: center; font-weight: bold;">2402</p>	 <p>Agilent 18:07:54 Apr 2, 2010</p> <p>Ref 16 dBm Atten 20 dB Mkr1 1.310 MHz -0.05 dB</p> <p>#Peak Log 10 dB/ Offst 6 dB</p> <p>LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: f>50k Swp</p> <p>Center 2.402 000 GHz Span 2 MHz #Res BW 30 kHz #VBW 30 kHz #Sweep 2.68 ms (601 pts)</p> <p>Copyright 2000-2007 Agilent Technologies</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.40100000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.40300000 GHz</td> </tr> <tr> <td>CF Step</td> <td>200.000000 kHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.40100000 GHz	Stop Freq	2.40300000 GHz	CF Step	200.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.40100000 GHz														
Stop Freq	2.40300000 GHz														
CF Step	200.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
<p style="text-align: center; font-weight: bold;">2441</p>	 <p>Agilent 18:11:36 Apr 2, 2010</p> <p>Ref 16 dBm Atten 20 dB Mkr1 1.310 MHz 0.15 dB</p> <p>#Peak Log 10 dB/ Offst 6 dB</p> <p>LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: f>50k Swp</p> <p>Center 2.441 000 GHz Span 2 MHz #Res BW 30 kHz #VBW 30 kHz #Sweep 2.68 ms (601 pts)</p> <p>Copyright 2000-2007 Agilent Technologies</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.44100000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.44000000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.44200000 GHz</td> </tr> <tr> <td>CF Step</td> <td>200.000000 kHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.44100000 GHz	Start Freq	2.44000000 GHz	Stop Freq	2.44200000 GHz	CF Step	200.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Stop Freq	2.44200000 GHz														
CF Step	200.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
<p style="text-align: center; font-weight: bold;">2480</p>	 <p>Agilent 18:18:32 Apr 2, 2010</p> <p>Ref 16 dBm Atten 20 dB Mkr1 1.113 MHz -0.15 dB</p> <p>#Peak Log 10 dB/ Offst 6 dB</p> <p>LgAv</p> <p>M1 S2 S3 FC</p> <p>$\mathcal{E}(f)$: f>50k Swp</p> <p>Center 2.480 000 GHz Span 2 MHz #Res BW 30 kHz #VBW 30 kHz #Sweep 2.68 ms (601 pts)</p> <p>Copyright 2000-2007 Agilent Technologies</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.48000000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.47900000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.48100000 GHz</td> </tr> <tr> <td>CF Step</td> <td>200.000000 kHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47900000 GHz	Stop Freq	2.48100000 GHz	CF Step	200.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.47900000 GHz														
Stop Freq	2.48100000 GHz														
CF Step	200.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														

8 Carrier Frequency Separation Measurement

8.1. Limit

For frequency hopping systems operating in the 2400–2483.5 MHz band shall use at least 75 hopping frequencies. The Carrier Frequency Separation is 1 MHz.

8.2. Test Setup



8.3. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	⁽²⁾
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

8.4. Test Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth transmitter of the V6 had its hopping function enabled. The following spectrum analyzer settings were used:

1. Span = wide enough to capture the peaks of two adjacent channels
2. Resolution (or IF) Bandwidth (RBW) \geq 1% of the span
3. Video (or Average) Bandwidth (VBW) \geq RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize. The marker-delta function was used to determine the separation between the peaks of the adjacent channels.

8.5. Test Result

Product	Smartphone		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 3: GFSK Link Mode		
Date of Test	01/27/2010	Test Site	TE06
Frequency (MHz)	Measurement (MHz)		Limit (MHz)
2402	1		1
2441	1		1
2480	1		1

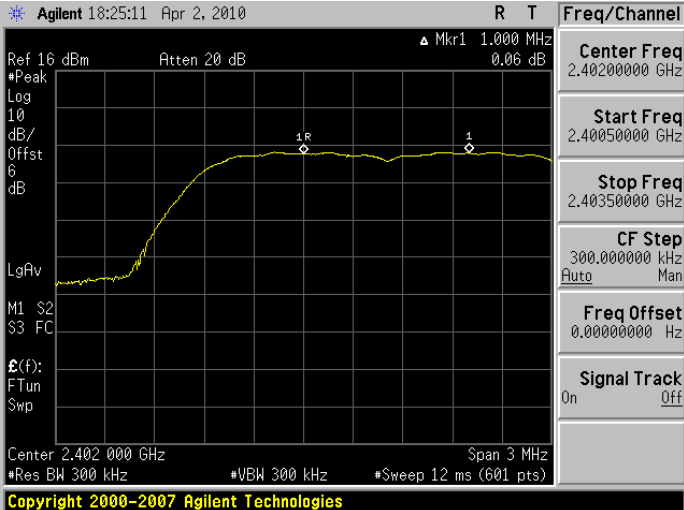
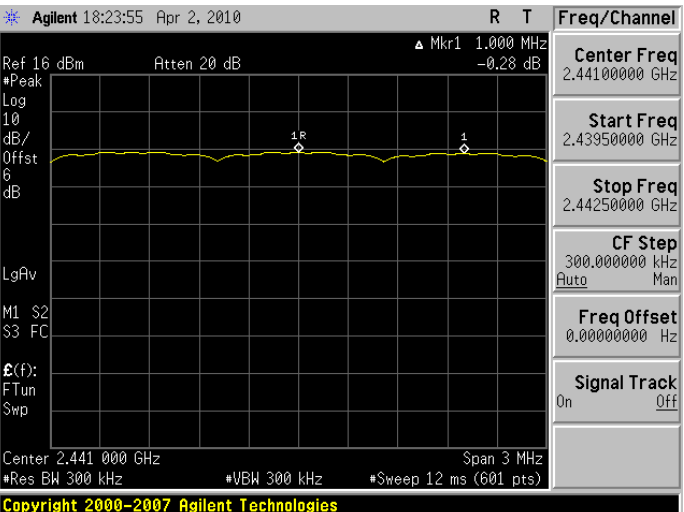
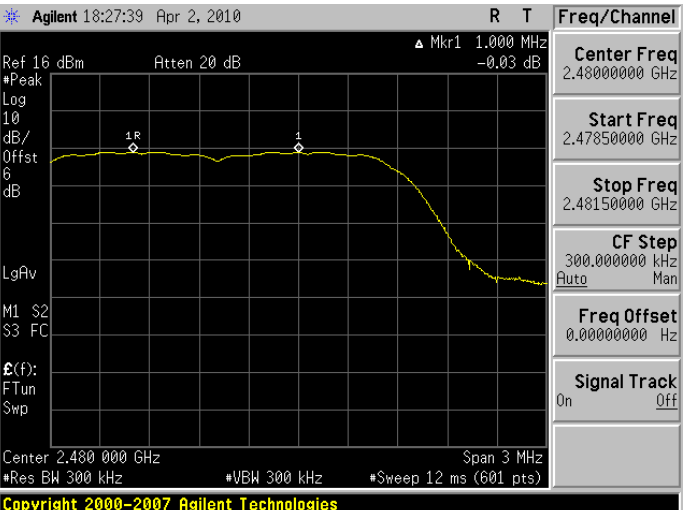
Product	Smartphone		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 4: 8DPSK Link Mode		
Date of Test	01/27/2010	Test Site	TE06
Frequency (MHz)	Measurement (MHz)		Limit (MHz)
2402	1		1
2441	1		1
2480	1		1

Product	Smartphone		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 5: $\pi/4$ -DQPSK Link Mode		
Date of Test	04/02/2010	Test Site	TE06
Frequency (MHz)	Measurement (MHz)		Limit (MHz)
2402	1		1
2441	1		1
2480	1		1

8.6. Test Graphs

Mode 3: GFSK Link Mode															
<p style="text-align: center;">2402</p>	<p>Agilent 23:24:20 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.000 MHz 0.01 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.402 000 GHz Span 3 MHz #Res BW 300 kHz #VBW 300 kHz #Sweep 12 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.40050000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40350000 GHz</td></tr> <tr><td>CF Step</td><td>300.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.40050000 GHz	Stop Freq	2.40350000 GHz	CF Step	300.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel															
Center Freq	2.40200000 GHz														
Start Freq	2.40050000 GHz														
Stop Freq	2.40350000 GHz														
CF Step	300.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
<p style="text-align: center;">2441</p>	<p>Agilent 23:25:02 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.000 MHz -0.07 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.441 000 GHz Span 3 MHz #Res BW 300 kHz #VBW 300 kHz #Sweep 12 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.44100000 GHz</td></tr> <tr><td>Start Freq</td><td>2.43950000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.44250000 GHz</td></tr> <tr><td>CF Step</td><td>300.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.44100000 GHz	Start Freq	2.43950000 GHz	Stop Freq	2.44250000 GHz	CF Step	300.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.43950000 GHz														
Stop Freq	2.44250000 GHz														
CF Step	300.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
<p style="text-align: center;">2480</p>	<p>Agilent 23:25:45 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.000 MHz 0.21 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun Swp</p> <p>Center 2.480 000 GHz Span 3 MHz #Res BW 300 kHz #VBW 300 kHz #Sweep 12 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.48000000 GHz</td></tr> <tr><td>Start Freq</td><td>2.47850000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.48150000 GHz</td></tr> <tr><td>CF Step</td><td>300.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47850000 GHz	Stop Freq	2.48150000 GHz	CF Step	300.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Start Freq	2.47850000 GHz														
Stop Freq	2.48150000 GHz														
CF Step	300.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														

Mode 4: 8DPSK Link Mode															
2402	<p>Agilent 01:41:31 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.000 MHz 0.01 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun #Swp</p> <p>Center 2.402 000 GHz Span 3 MHz #Res BW 300 kHz #VBW 300 kHz #Sweep 12 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.40200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.40050000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.40350000 GHz</td></tr> <tr><td>CF Step</td><td>300.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.40050000 GHz	Stop Freq	2.40350000 GHz	CF Step	300.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Stop Freq	2.40350000 GHz														
CF Step	300.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
2441	<p>Agilent 01:42:28 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.000 MHz 0.07 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun #Swp</p> <p>Center 2.441 000 GHz Span 3 MHz #Res BW 300 kHz #VBW 300 kHz #Sweep 12 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.44100000 GHz</td></tr> <tr><td>Start Freq</td><td>2.43950000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.44250000 GHz</td></tr> <tr><td>CF Step</td><td>300.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.44100000 GHz	Start Freq	2.43950000 GHz	Stop Freq	2.44250000 GHz	CF Step	300.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Freq Offset	0.00000000 Hz														
Signal Track	On Off														
2480	<p>Agilent 01:43:54 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Mkr1 1.000 MHz 0.05 dB</p> <p>#Peak Log 10 dB/Offst 6 dB LgAv</p> <p>M1 S2 S3 FC</p> <p>Ⓔ(f): FTun #Swp</p> <p>Center 2.480 000 GHz Span 3 MHz #Res BW 300 kHz #VBW 300 kHz #Sweep 12 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.48000000 GHz</td></tr> <tr><td>Start Freq</td><td>2.47850000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.48150000 GHz</td></tr> <tr><td>CF Step</td><td>300.000000 kHz Auto Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.48000000 GHz	Start Freq	2.47850000 GHz	Stop Freq	2.48150000 GHz	CF Step	300.000000 kHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
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Stop Freq	2.48150000 GHz														
CF Step	300.000000 kHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														

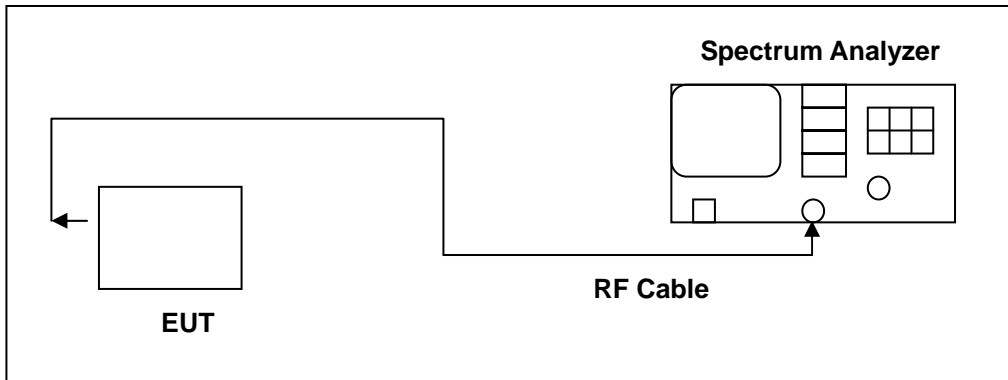
Mode 5: $\pi/4$ -DQPSK Link Mode	
<p style="text-align: center; font-weight: bold;">2402</p>	
<p style="text-align: center; font-weight: bold;">2441</p>	
<p style="text-align: center; font-weight: bold;">2480</p>	

9 Number of Hopping Measurement

9.1. Limit

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels.

9.2. Test Setup



9.3. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	⁽²⁾
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

9.4. Test Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = the frequency band of operation
2. RBW \geq 1% of the span
3. VBW \geq RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize.

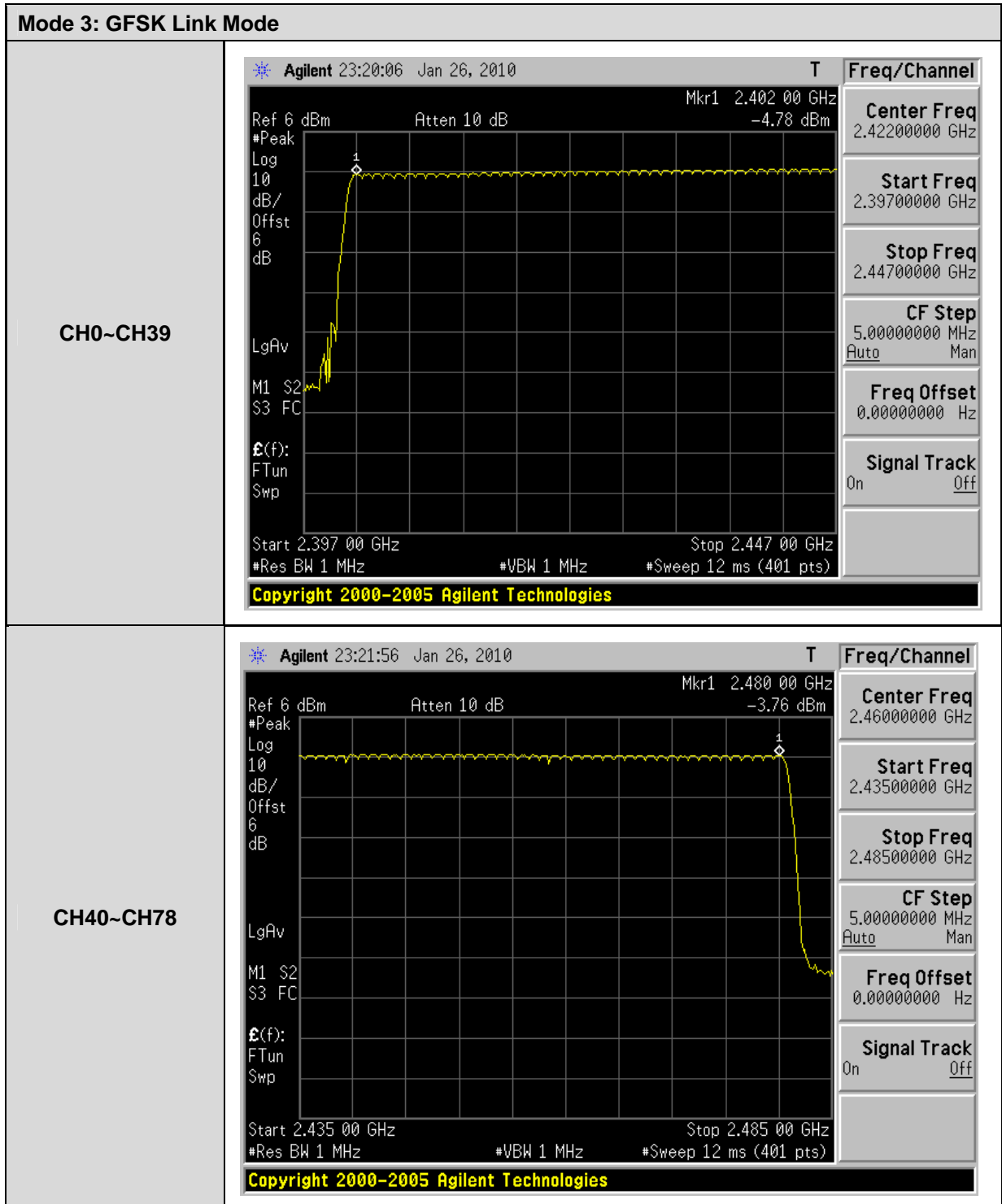
9.5. Test Result

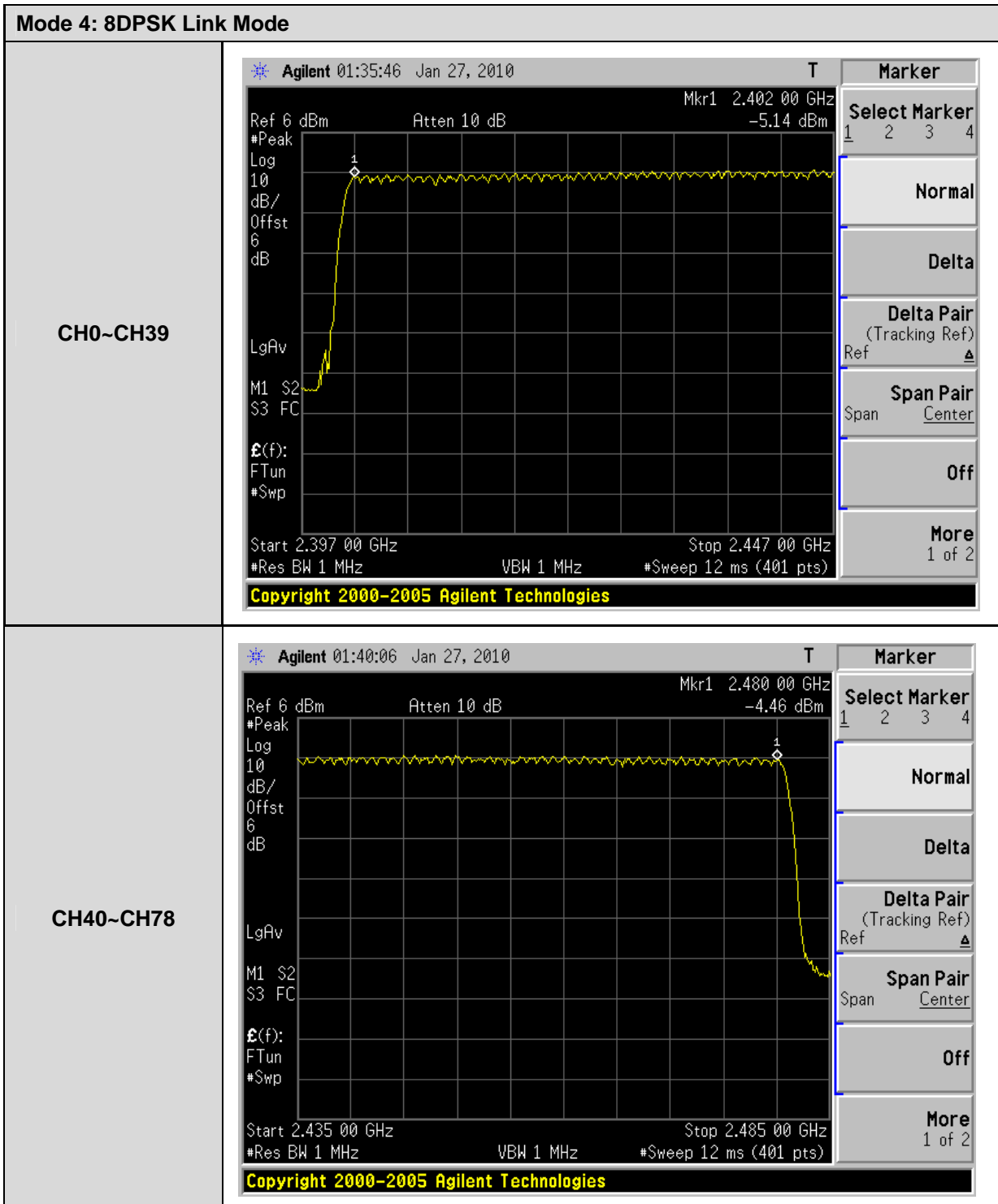
Product	Smartphone		
Test Item	Number of Hopping		
Test Mode	Mode 3: GFSK Link Mode		
Date of Test	01/27/2010	Test Site	TE06
Frequency Rangy (MHz)	Measurement (ch)		Limit (ch)
2402 - 2480	79		> 15

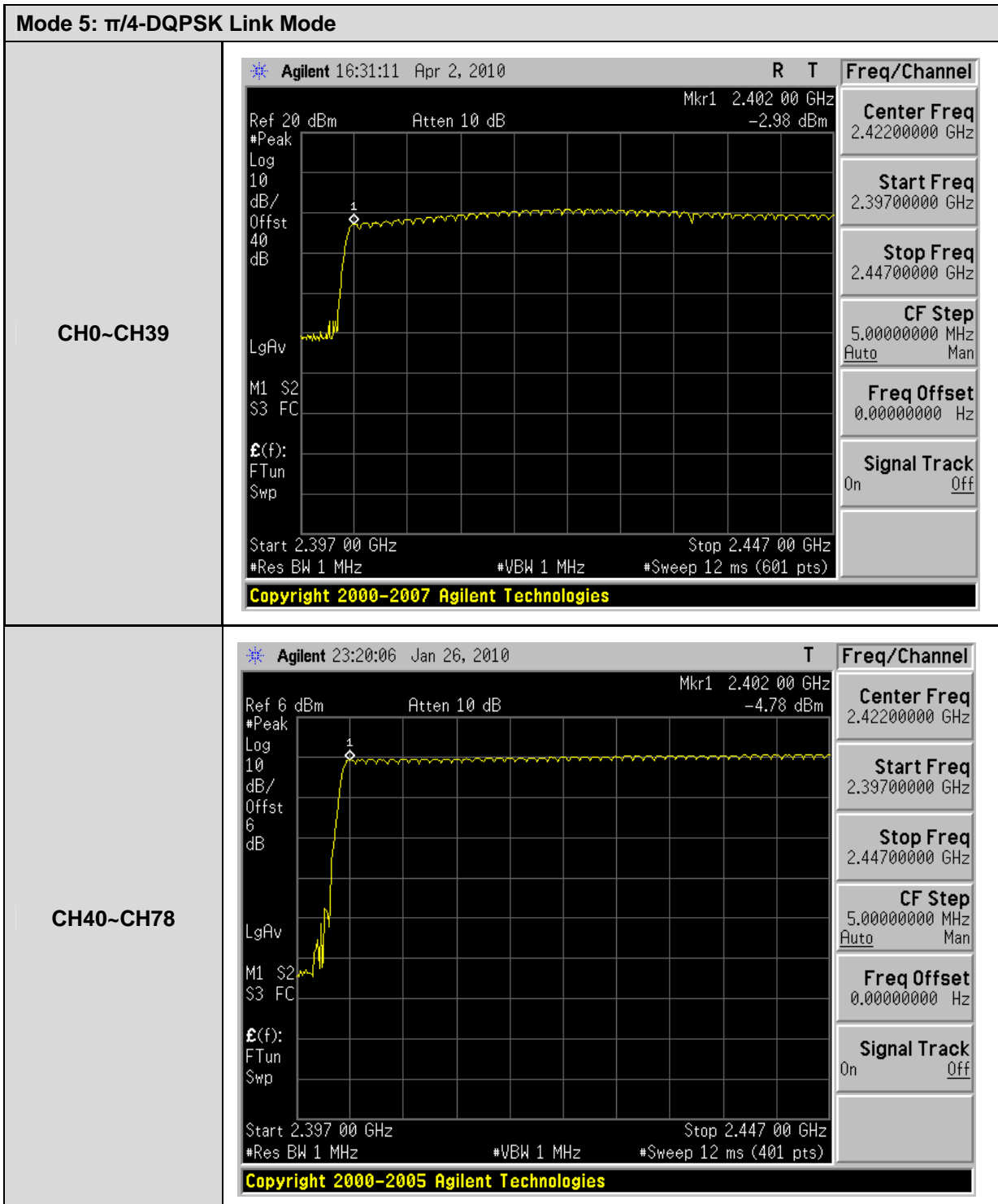
Product	Smartphone		
Test Item	Number of Hopping		
Test Mode	Mode 4: 8DPSK Link Mode		
Date of Test	01/27/2010	Test Site	TE06
Frequency Rangy (MHz)	Measurement (ch)		Limit (ch)
2402 - 2480	79		> 15

Product	Smartphone		
Test Item	Number of Hopping		
Test Mode	Mode 5: $\pi/4$ -DQPSK Link Mode		
Date of Test	04/02/2010	Test Site	TE06
Frequency Rangy (MHz)	Measurement (ch)		Limit (ch)
2402 - 2480	79		> 15

9.6. Test Graphs





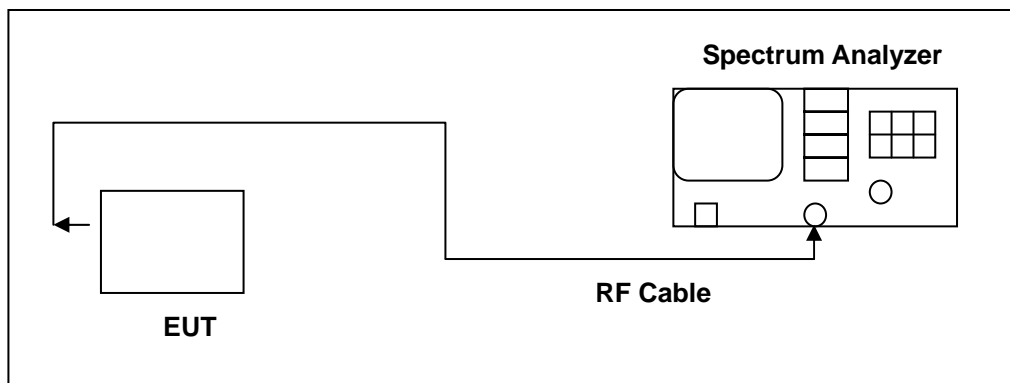


10 Time of Occupancy (Dwell Time) Measurement

10.1. Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

10.2. Test Setup



10.3. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	⁽²⁾
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

10.4. Test Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth hopping function of the EUT was enabled. The following spectrum analyzer settings were used:

1. Span = zero span, centered on a hopping channel
2. RBW = 1 MHz
3. VBW \geq RBW
4. Sweep = as necessary to capture the entire dwell time per hopping channel
5. Detector function = peak
6. Trace = max hold

The marker-delta function was used to determine the dwell time.

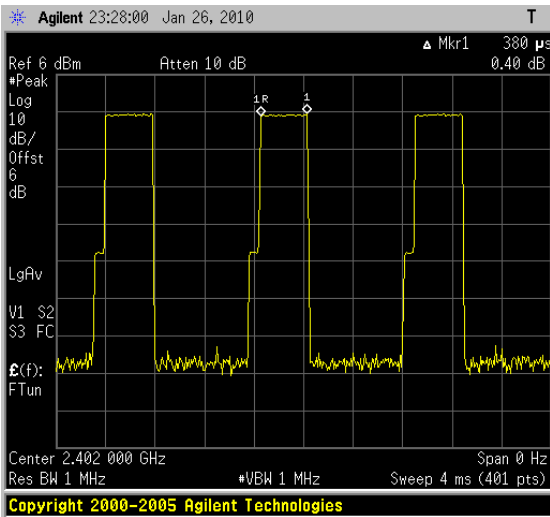
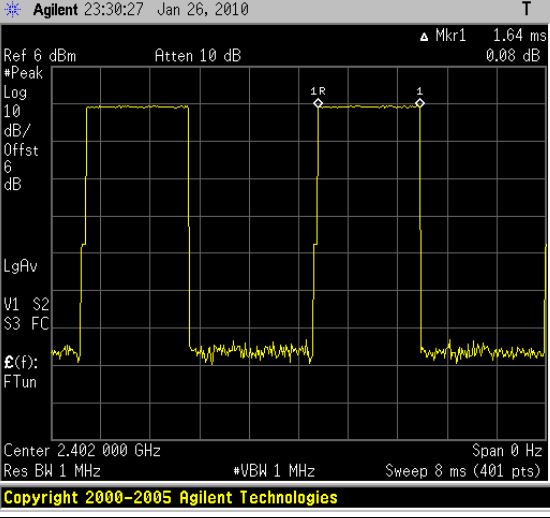
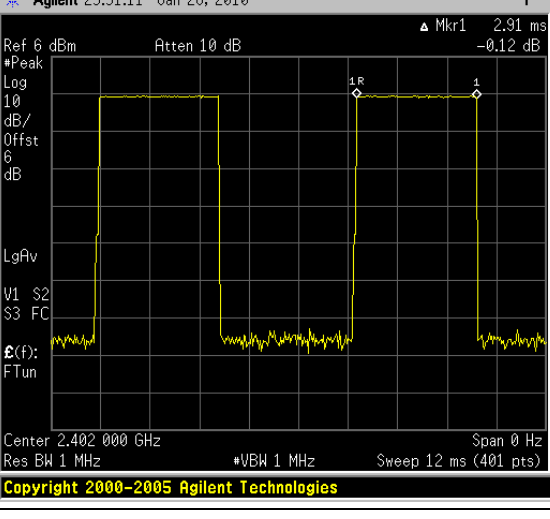
10.5. Test Result

Product	Smartphone		
Test Item	Time of Occupancy (Dwell Time)		
Test Mode	Mode 3: GFSK Link Mode		
Date of Test	01/26/2010	Test Site	TE06
DH1			
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	800/79CH = 10.13(times/sec)		
Each Channel Dwell Times (1)	0.380	ms (sec)	
Each Channel Dwell Times on Cycle(2)	31.6 * 10.13 = 320.108(times)		
Dwell Times on Cycle (1) * (2)	121.64104 ms (sec)		
LIMIT(msec)	< = 400		
DH3			
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	400/79CH = 5.1(times/sec)		
Each Channel Dwell Times (1)	1.640	ms (sec)	
Each Channel Dwell Times on Cycle(2)	31.6 * 5.1 = 161.16(times)		
Dwell Times on Cycle (1) * (2)	264.3024 ms (sec)		
LIMIT(msec)	< = 400		
DH5			
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	266.7/79CH = 3.37(times/sec)		
Each Channel Dwell Times (1)	2.910	ms (sec)	
Each Channel Dwell Times on Cycle(2)	31.6 * 3.37 = 106.492(times)		
Dwell Times on Cycle (1) * (2)	309.89172 ms (sec)		
LIMIT(msec)	< = 400		

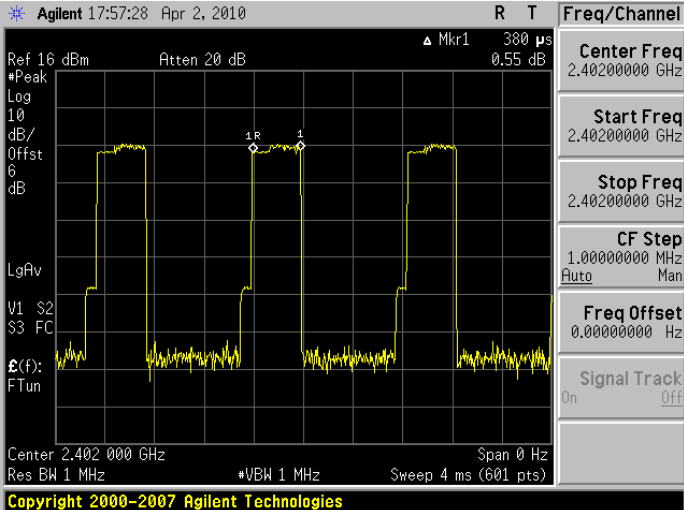
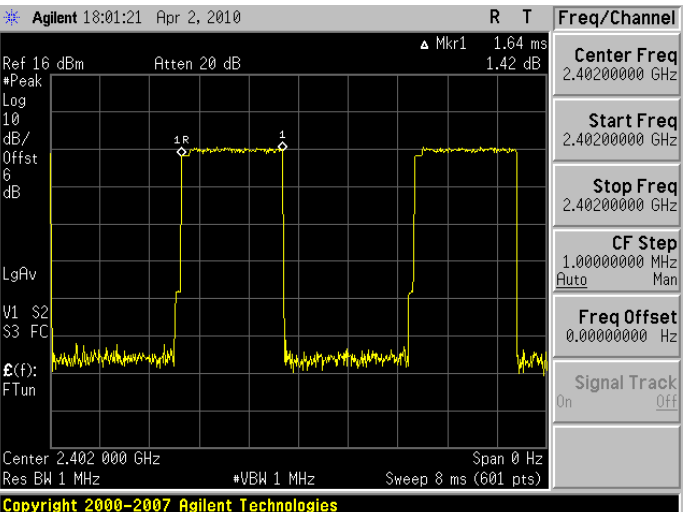
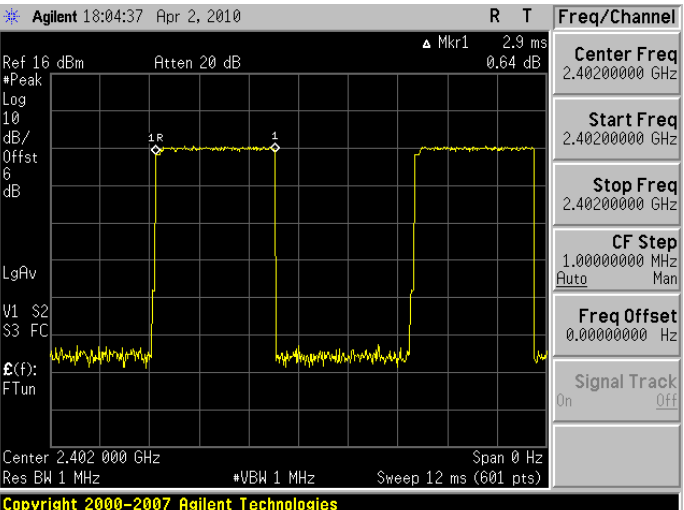
Product	Smartphone		
Test Item	Time of Occupancy (Dwell Time)		
Test Mode	Mode 4: 8DPSK Link Mode		
Date of Test	01/26/2010	Test Site	TE06
3DH1			
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	800/79CH = 10.13(times/sec)		
Each Channel Dwell Times (1)	0.380	ms (sec)	
Each Channel Dwell Times on Cycle(2)	31.6 * 10.13 = 320.108(times)		
Dwell Times on Cycle (1) * (2)	121.64104 ms (sec)		
LIMIT(msec)	< = 400		
3DH3			
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	400/79CH = 5.1(times/sec)		
Each Channel Dwell Times (1)	1.640	ms (sec)	
Each Channel Dwell Times on Cycle(2)	31.6 * 5.1 = 161.16(times)		
Dwell Times on Cycle (1) * (2)	264.3024 ms (sec)		
LIMIT(msec)	< = 400		
3DH5			
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	266.7/79CH = 3.37(times/sec)		
Each Channel Dwell Times (1)	2.910	ms (sec)	
Each Channel Dwell Times on Cycle(2)	31.6 * 3.37 = 106.492(times)		
Dwell Times on Cycle (1) * (2)	309.89172 ms (sec)		
LIMIT(msec)	< = 400		

Product	Smartphone		
Test Item	Time of Occupancy (Dwell Time)		
Test Mode	Mode 5: $\pi/4$ -DQPSK Link Mode		
Date of Test	04/02/2010	Test Site	TE06
2DH1			
Cycle Calculate	$79\text{CH} * 0.4 = 31.6 \text{ (sec)}$		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	$800/79\text{CH} = 10.13(\text{times/sec})$		
Each Channel Dwell Times (1)	0.380	ms (sec)	
Each Channel Dwell Times on Cycle(2)	$31.6 * 10.13 = 320.108(\text{times})$		
Dwell Times on Cycle (1) * (2)	121.64104 ms (sec)		
LIMIT(msec)	< = 400		
2DH3			
Cycle Calculate	$79\text{CH} * 0.4 = 31.6 \text{ (sec)}$		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	$400/79\text{CH} = 5.1(\text{times/sec})$		
Each Channel Dwell Times (1)	1.640	ms (sec)	
Each Channel Dwell Times on Cycle(2)	$31.6 * 5.1 = 161.16(\text{times})$		
Dwell Times on Cycle (1) * (2)	264.3024 ms (sec)		
LIMIT(msec)	< = 400		
2DH5			
Cycle Calculate	$79\text{CH} * 0.4 = 31.6 \text{ (sec)}$		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	$266.7/79\text{CH} = 3.37(\text{times/sec})$		
Each Channel Dwell Times (1)	2.900	ms (sec)	
Each Channel Dwell Times on Cycle(2)	$31.6 * 3.37 = 106.492(\text{times})$		
Dwell Times on Cycle (1) * (2)	308.8268 ms (sec)		
LIMIT(msec)	< = 400		

10.6. Test Graphs

Mode 3: GFSK Link Mode																	
DH1	 <table border="1" style="float: right; width: 150px;"> <thead> <tr> <th colspan="2">Marker</th> </tr> </thead> <tbody> <tr> <td>Select Marker</td> <td>1 2 3 4</td> </tr> <tr> <td>Normal</td> <td></td> </tr> <tr> <td>Delta</td> <td></td> </tr> <tr> <td>Delta Pair (Tracking Ref)</td> <td>Ref Δ</td> </tr> <tr> <td>Span Pair</td> <td>Span Center</td> </tr> <tr> <td>Off</td> <td></td> </tr> <tr> <td>More</td> <td>1 of 2</td> </tr> </tbody> </table> <p><small>Copyright 2000-2005 Agilent Technologies</small></p>	Marker		Select Marker	1 2 3 4	Normal		Delta		Delta Pair (Tracking Ref)	Ref Δ	Span Pair	Span Center	Off		More	1 of 2
Marker																	
Select Marker	1 2 3 4																
Normal																	
Delta																	
Delta Pair (Tracking Ref)	Ref Δ																
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DH3	 <table border="1" style="float: right; width: 150px;"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>CF Step</td> <td>1.00000000 MHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table> <p><small>Copyright 2000-2005 Agilent Technologies</small></p>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.40200000 GHz	Stop Freq	2.40200000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off		
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CF Step	1.00000000 MHz Auto Man																
Freq Offset	0.00000000 Hz																
Signal Track	On Off																

Mode 4: 8DPSK Link Mode																	
<p>3DH1</p>	<p>Agilent 01:45:55 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Δ Mkr1 380 μs 1.63 dB</p> <p>#Peak Log 10 dB/Offst 6 dB</p> <p>LgAv V1 S2 S3 FC</p> <p>Δ(f): FTun</p> <p>Center 2.402 000 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>CF Step</td> <td>1.00000000 MHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.40200000 GHz	Stop Freq	2.40200000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off		
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Freq Offset	0.00000000 Hz																
Signal Track	On Off																
<p>3DH3</p>	<p>Agilent 01:47:08 Jan 27, 2010</p> <p>Ref 6 dBm Atten 10 dB Δ Mkr1 1.64 ms 1.26 dB</p> <p>#Peak Log 10 dB/Offst 6 dB</p> <p>LgAv V1 S2 S3 FC</p> <p>Δ(f): FTun</p> <p>Center 2.402 000 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.40200000 GHz</td> </tr> <tr> <td>CF Step</td> <td>1.00000000 MHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.40200000 GHz	Start Freq	2.40200000 GHz	Stop Freq	2.40200000 GHz	CF Step	1.00000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off		
Freq/Channel																	
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Signal Track	On Off																
<p>3DH5</p>	<p>Agilent 23:28:00 Jan 26, 2010</p> <p>Ref 6 dBm Atten 10 dB Δ Mkr1 380 μs 0.40 dB</p> <p>#Peak Log 10 dB/Offst 6 dB</p> <p>LgAv V1 S2 S3 FC</p> <p>Δ(f): FTun</p> <p>Center 2.402 000 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Copyright 2000-2005 Agilent Technologies</p> <table border="1"> <thead> <tr> <th colspan="2">Marker</th> </tr> </thead> <tbody> <tr> <td>Select Marker</td> <td>1 2 3 4</td> </tr> <tr> <td>Normal</td> <td></td> </tr> <tr> <td>Delta</td> <td></td> </tr> <tr> <td>Delta Pair (Tracking Ref)</td> <td>Ref Δ</td> </tr> <tr> <td>Span Pair</td> <td>Span Center</td> </tr> <tr> <td>Off</td> <td></td> </tr> <tr> <td>More</td> <td>1 of 2</td> </tr> </tbody> </table>	Marker		Select Marker	1 2 3 4	Normal		Delta		Delta Pair (Tracking Ref)	Ref Δ	Span Pair	Span Center	Off		More	1 of 2
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Select Marker	1 2 3 4																
Normal																	
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Delta Pair (Tracking Ref)	Ref Δ																
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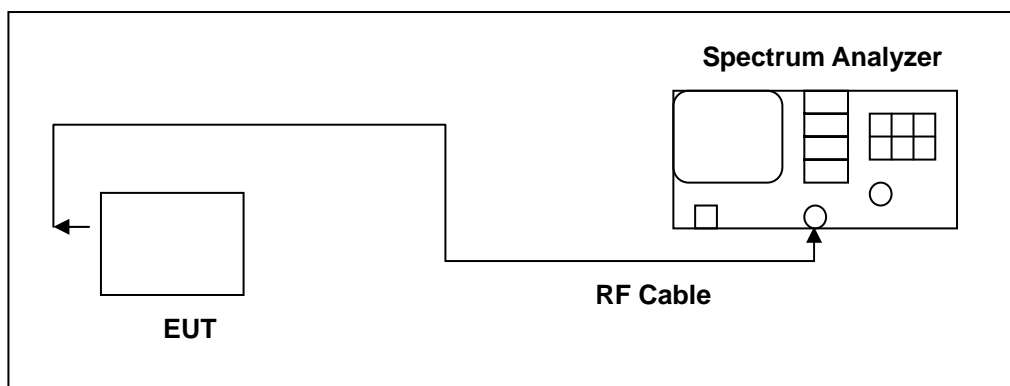
Mode 5: $\pi/4$ -DQPSK Link Mode	
<p style="text-align: center;">2DH1</p>	 <p>Agilent 17:57:28 Apr 2, 2010</p> <p>Ref 16 dBm Atten 20 dB Δ Mkr1 380 μs 0.55 dB</p> <p>Center 2.402 000 GHz Res BW 1 MHz #VBW 1 MHz Sweep 4 ms (601 pts)</p> <p>Copyright 2000-2007 Agilent Technologies</p>
<p style="text-align: center;">2DH3</p>	 <p>Agilent 18:01:21 Apr 2, 2010</p> <p>Ref 16 dBm Atten 20 dB Δ Mkr1 1.64 ms 1.42 dB</p> <p>Center 2.402 000 GHz Res BW 1 MHz #VBW 1 MHz Sweep 8 ms (601 pts)</p> <p>Copyright 2000-2007 Agilent Technologies</p>
<p style="text-align: center;">2DH5</p>	 <p>Agilent 18:04:37 Apr 2, 2010</p> <p>Ref 16 dBm Atten 20 dB Δ Mkr1 2.9 ms 0.64 dB</p> <p>Center 2.402 000 GHz Res BW 1 MHz #VBW 1 MHz Sweep 12 ms (601 pts)</p> <p>Copyright 2000-2007 Agilent Technologies</p>

11 Out of Band Conducted Emissions Measurement

11.1. 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

11.2. Test Setup



11.3. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

11.4. Test Procedure

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

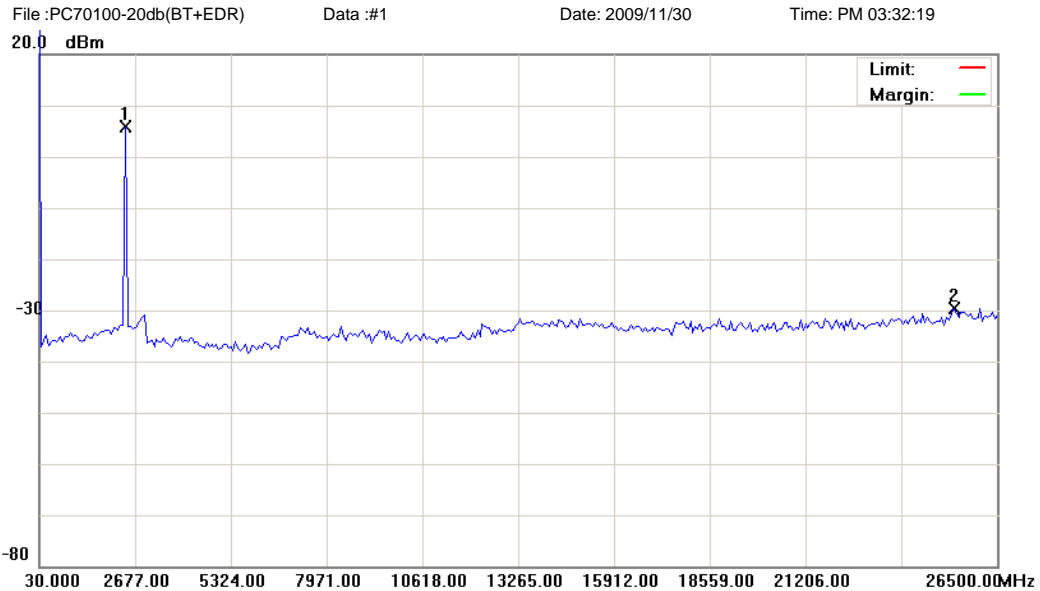
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels (Channel 0, 39, 78)

11.5. Test Result

Product	Smartphone		
Test Item	Out of Band Conducted		
Test Mode	Mode 4: 8DPSK Link Mode		
Date of Test	01/27/2010	Test Site	TE06
Frequency (MHz)	Fundamental (dB μ V)	Limit (dB μ V)	Measurement (dB μ V)
2402	5.78	-14.22	-29.54
2441	7.82	-12.18	-29.47
2480	1.90	-18.10	-29.70

Product	Smartphone		
Test Item	Out of Band Conducted		
Test Mode	Mode 5: $\pi/4$ -DQPSK Link Mode		
Date of Test	01/27/2010	Test Site	TE06
Frequency (MHz)	Fundamental (dB μ V)	Limit (dB μ V)	Measurement (dB μ V)
2402	8.17	-11.83	-30.52
2441	7.55	-12.45	-29.70
2480	3.13	-16.87	-28.27

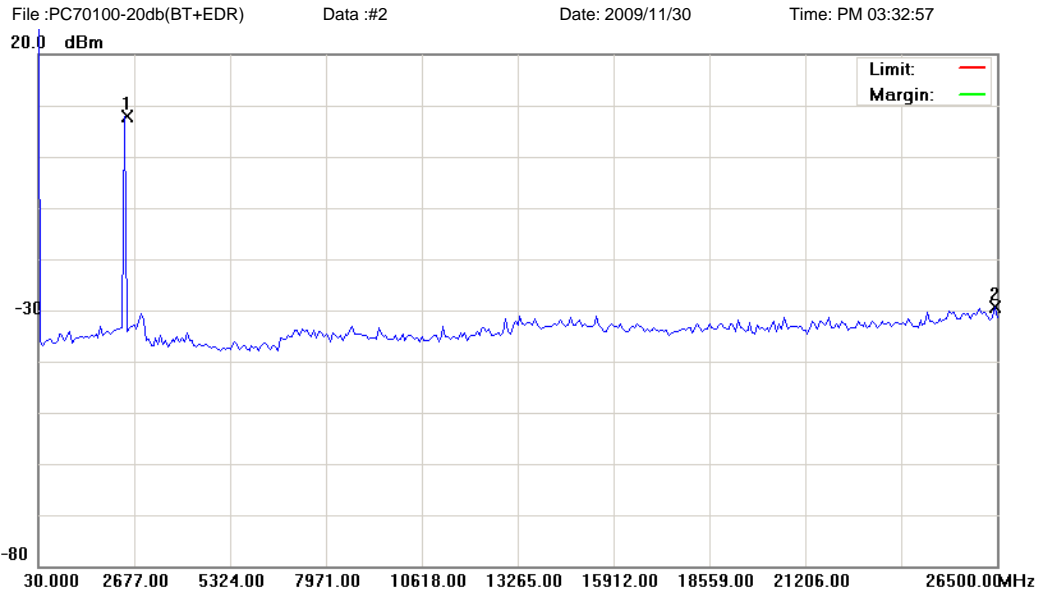
11.6. Test Graphs



Site : RF Conducted Phase: Temperature: 26 °C
 Limit: Power: AC 110V/60Hz Humidity: 55 %
 EUT:
 M/N: PC70100
 Mode: #4
 Note: 2402MHz, AC Adapter: #

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	2402.000	-0.31	6.09	5.78			peak	TX
2		25308.85	-36.50	6.96	-29.54			peak	

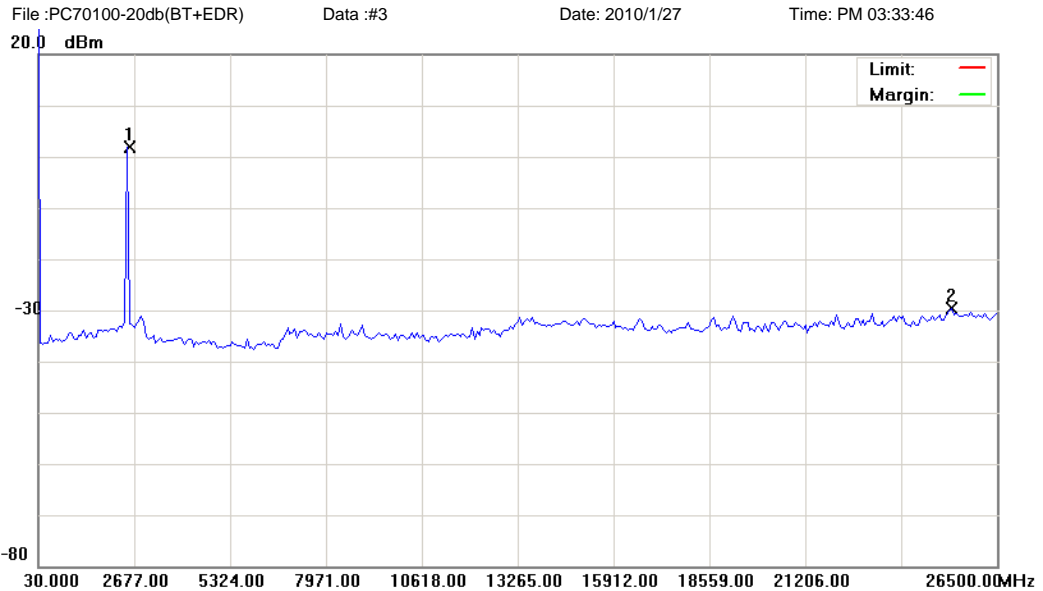
*:Maximum data x:Over limit !:over margin



Site : RF Conducted Phase: Temperature: 26 °C
 Limit: Power: AC 110V/60Hz Humidity: 55 %
 EUT:
 M/N: PC70100
 Mode: #4
 Note: 2441MHz, AC Adapter: #

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	2441.000	1.73	6.09	7.82			peak	TX
2		26433.82	-36.47	7.00	-29.47			peak	

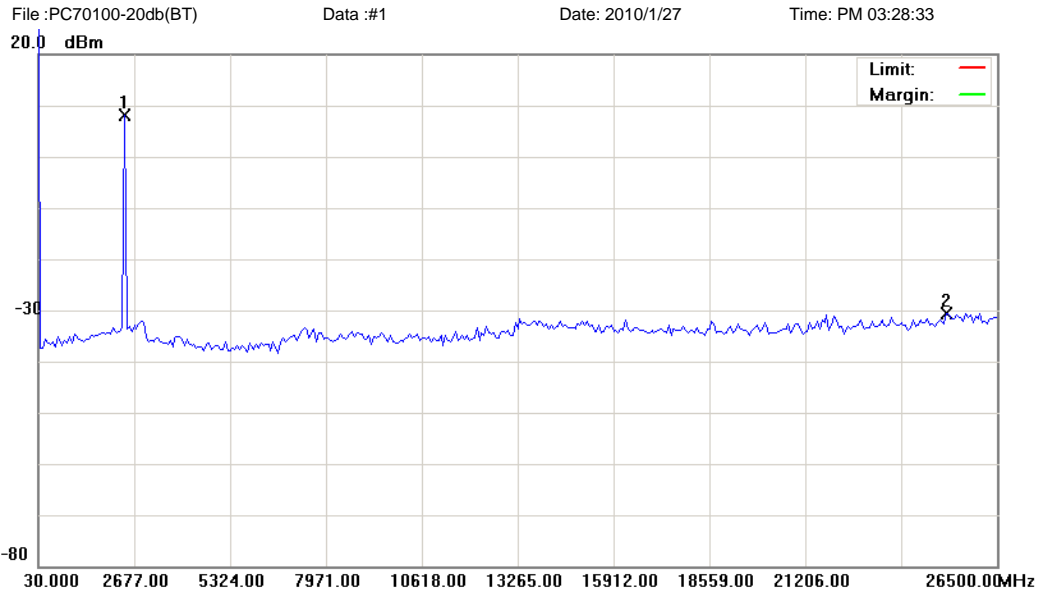
*:Maximum data x:Over limit !:over margin



Site : RF Conducted Phase: Temperature: 26 °C
 Limit: Power: AC 110V/60Hz Humidity: 55 %
 EUT:
 M/N: PC70100
 Mode: #4
 Note: 2480MHz, AC Adapter: #

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	2480.000	-4.19	6.09	1.90			peak	TX
2		25242.67	-36.65	6.95	-29.70			peak	

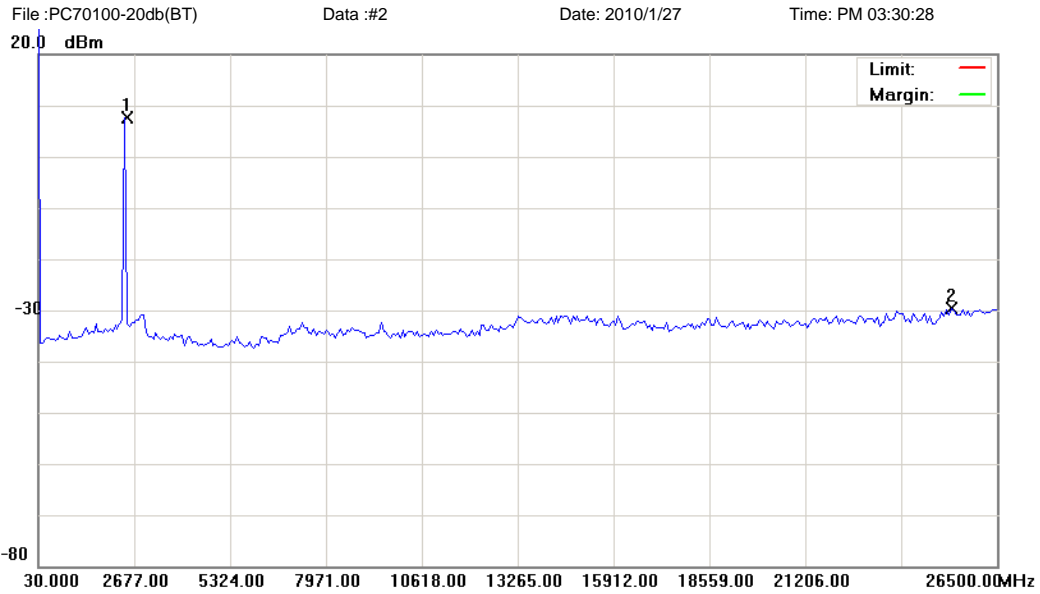
*:Maximum data x:Over limit !:over margin



Site : RF Conducted Phase: Temperature: 26 °C
 Limit: Power: AC 110V/60Hz Humidity: 55 %
 EUT:
 M/N: PC70100
 Mode: #5
 Note: 2402MHz

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	2402.000	2.08	6.09	8.17			peak	TX
2		25110.32	-37.47	6.95	-30.52			peak	

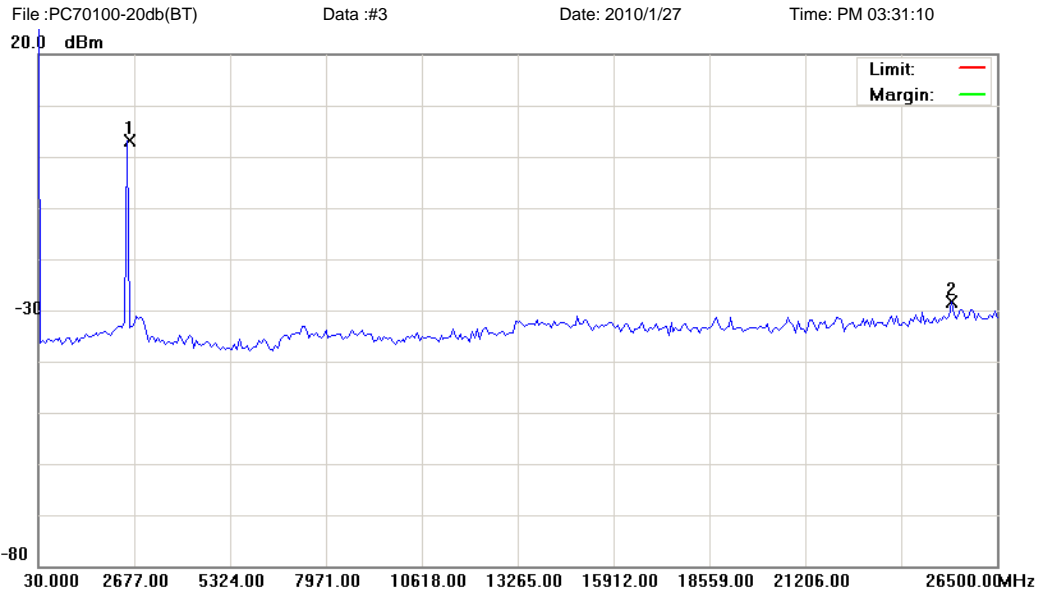
*:Maximum data x:Over limit !:over margin



Site : RF Conducted Phase: Temperature: 26 °C
 Limit: Power: AC 110V/60Hz Humidity: 55 %
 EUT:
 M/N: PC70100
 Mode: #5
 Note: 2441MHz

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	2441.000	1.46	6.09	7.55			peak	TX
2		25242.67	-36.65	6.95	-29.70			peak	

*:Maximum data x:Over limit !:over margin



Site : RF Conducted Phase: Temperature: 26 °C
 Limit: Power: AC 110V/60Hz Humidity: 55 %
 EUT:
 M/N: PC70100
 Mode: #5
 Note: 2480MHz

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	2480.000	-2.96	6.09	3.13			peak	TX
2		25242.67	-35.22	6.95	-28.27			peak	

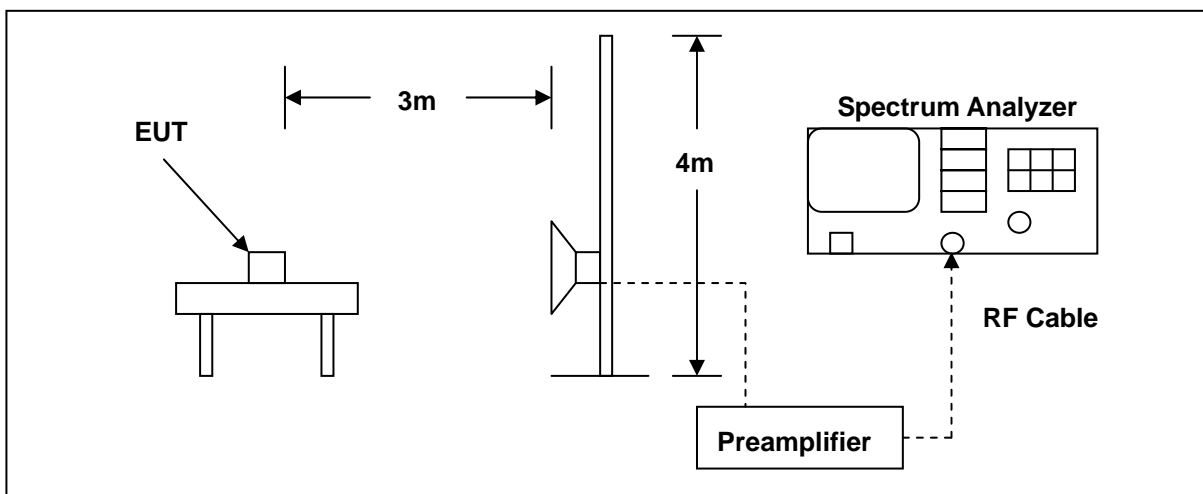
*:Maximum data x:Over limit !:over margin

12 Band Edges Measurement

12.1. 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

12.2. Test Setup



12.3. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	06/23/2009	(2)
Pre Amplifier	Agilent	8449B	3008A02237	07/01/2009	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	9120D	9120D-550	07/01/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

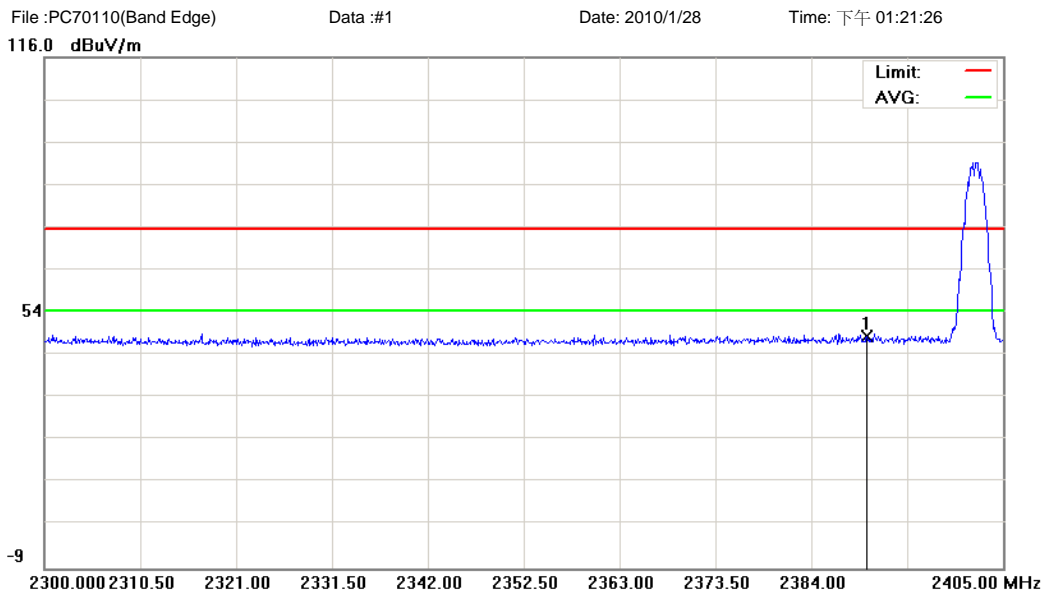
12.4. Test Procedure

The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.

The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.

The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.

12.5. Test Graphs



Site: : 966 Chamber	Polarization: Vertical	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #3		
Note: 2402MHz, AC Adapter: #		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2390.000	47.64	0.19	47.83	74.00	-26.17	peak		

*:Maximum data x:Over limit !:over margin

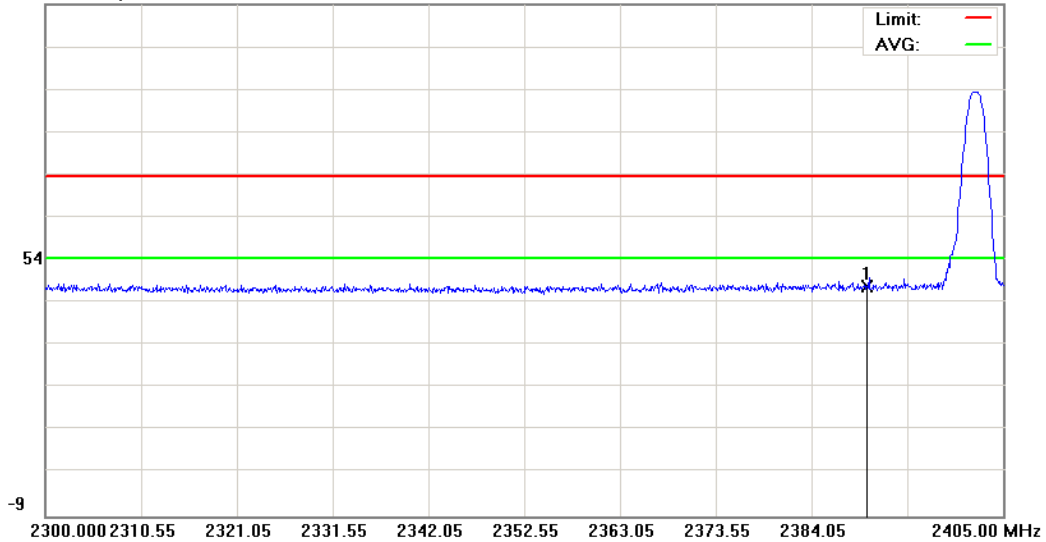
File :PC70110(Band Edge)

Data :#5

Date: 2010/1/28

Time: 下午 01:25:30

116.0 dBuV/m



Site : 966 Chamber	Polarization: Horizontal	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #3		
Note: 2402MHz, AC Adapter: #		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2390.000	47.03	0.19	47.22	74.00	-26.78	peak		

*:Maximum data x:Over limit !:over margin

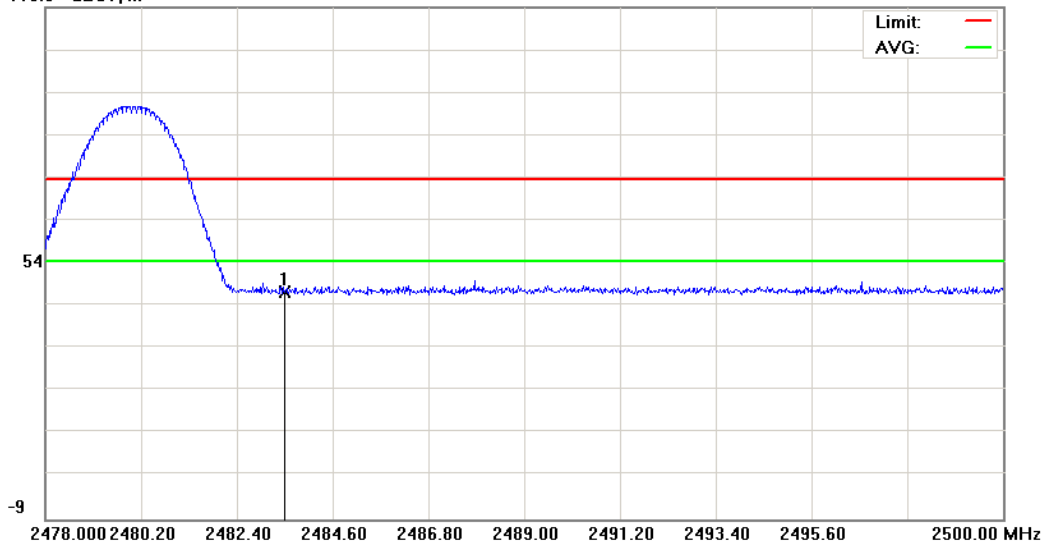
File :PC70110(Band Edge)

Data :#3

Date: 2010/1/28

Time: 下午 01:23:31

116.0 dBuV/m



Site: : 966 Chamber	Polarization: Vertical	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #3		
Note: 2480MHz, AC Adapter: #		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2483.500	46.34	0.25	46.59	74.00	-27.41	peak		

*:Maximum data x:Over limit !:over margin

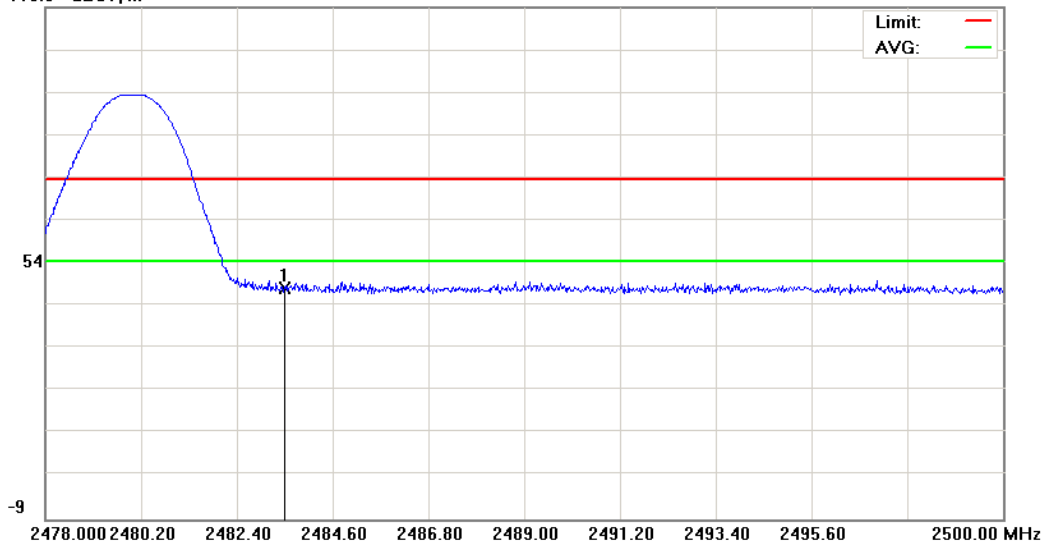
File :PC70110(Band Edge)

Data :#7

Date: 2010/1/28

Time: 下午 01:27:29

116.0 dBuV/m

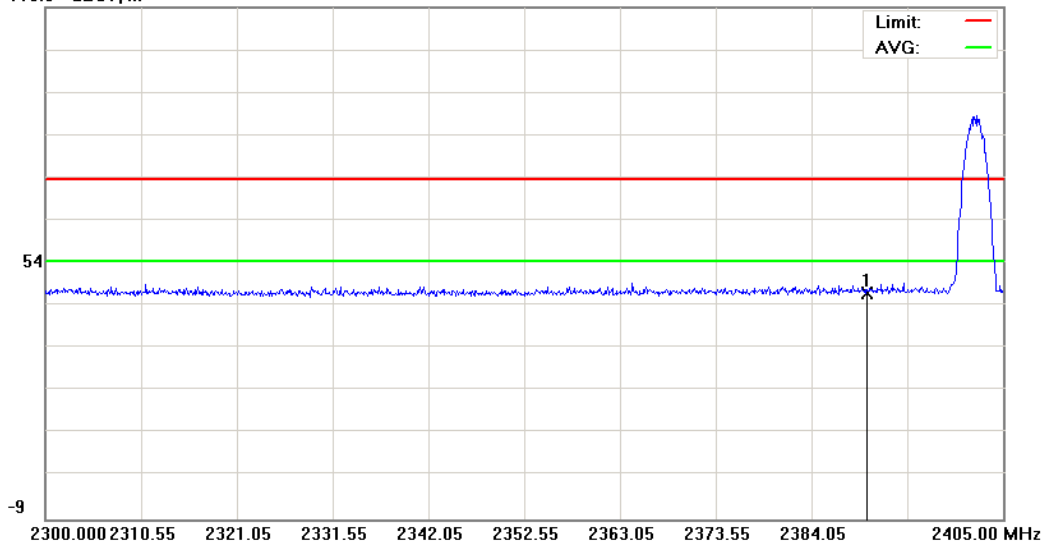


Site: : 966 Chamber	Polarization: Horizontal	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #3		
Note: 2480MHz, AC Adapter: #		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2483.500	47.26	0.25	47.51	74.00	-26.49	peak		

*:Maximum data x:Over limit !:over margin

File :PC70110(Band Edge)EDR Data :#1 Date: 2010/1/28 Time: 下午 01:31:07

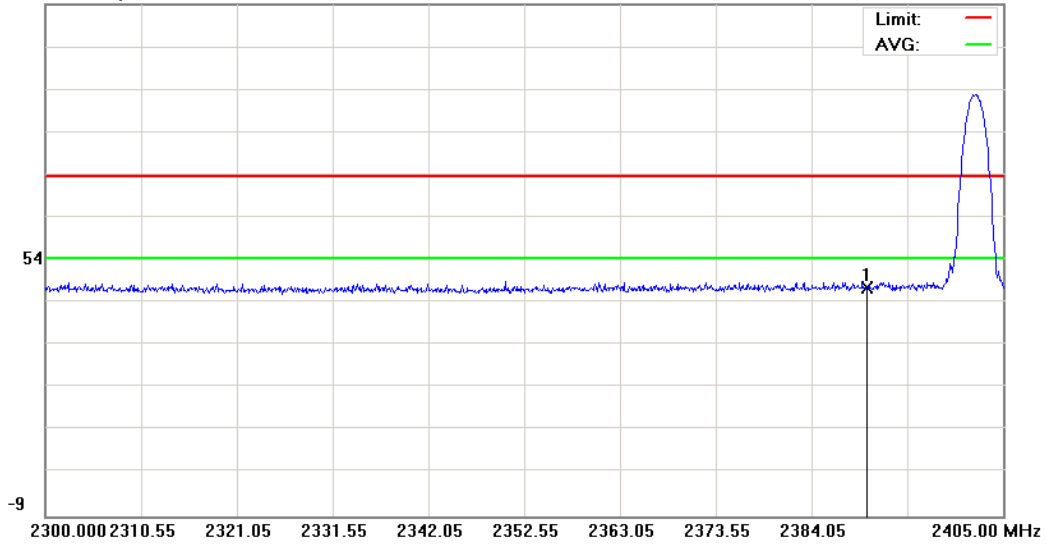


Site : 966 Chamber	Polarization: Vertical	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #4		
Note: 2402MHz, AC Adapter: #		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2390.000	46.08	0.19	46.27	74.00	-27.73	peak		

*:Maximum data x:Over limit !:over margin

File :PC70110(Band Edge)EDR Data :#5 Date: 2010/1/28 Time: 下午 01:37:27

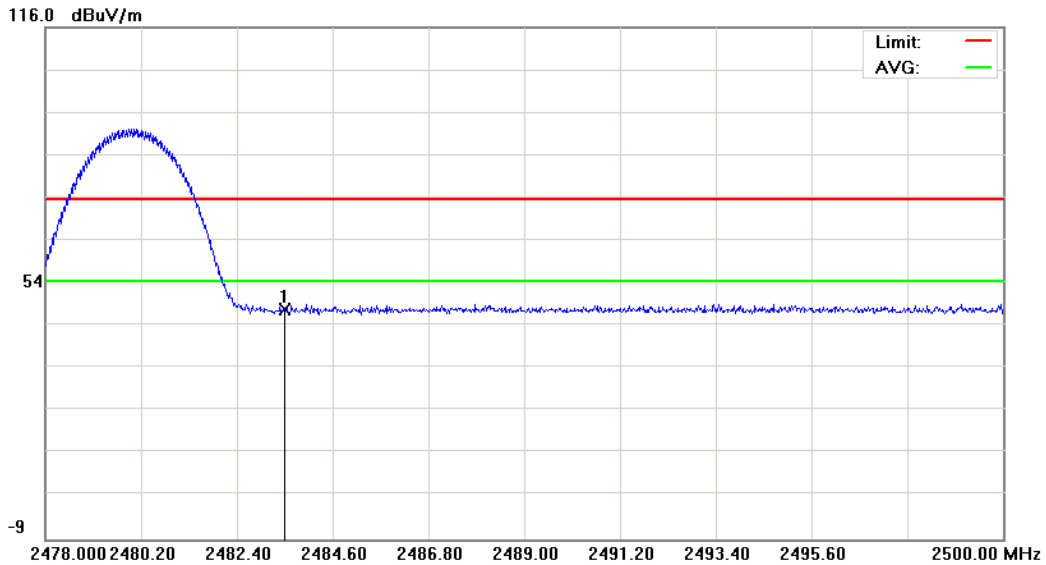


Site : 966 Chamber	Polarization: Horizontal	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #4		
Note: 2402MHz, AC Adapter: #		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2390.000	46.64	0.19	46.83	74.00	-27.17	peak		

*:Maximum data x:Over limit !:over margin

File :PC70110(Band Edge)EDR Data :#3 Date: 2010/1/28 Time: 下午 01:33:51



Site: : 966 Chamber	Polarization: Vertical	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT: Smartphone	Distance: 3m	RBW: 1000 KHz VBW: 1000 KHz
M/N: PC70110		
Mode: #4		
Note: 2480MHz, AC Adapter: #		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1	*	2483.500	46.77	0.25	47.02	74.00	-26.98	peak			

*:Maximum data x:Over limit !:over margin

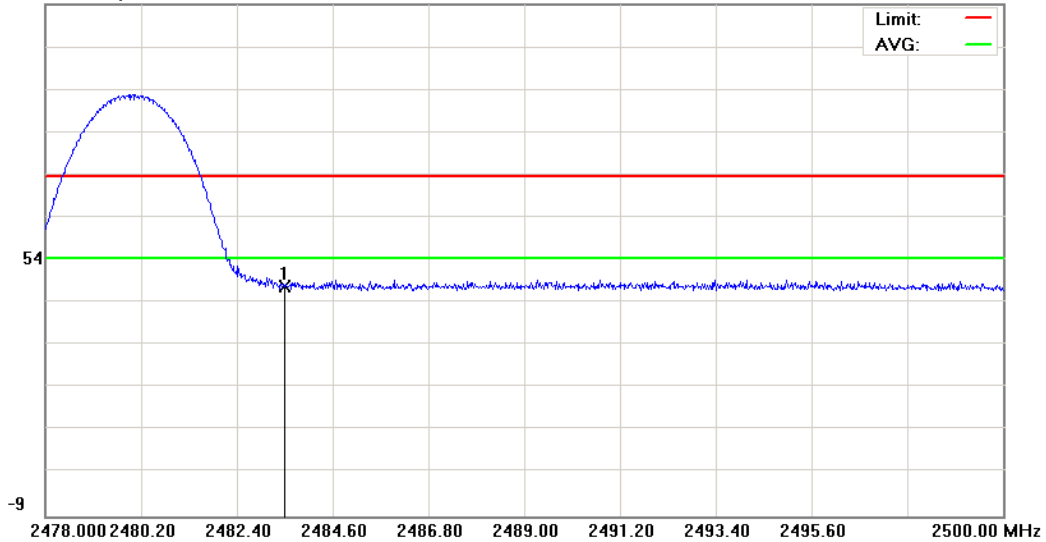
File :PC70110(Band Edge)EDR

Data :#7

Date: 2010/1/28

Time: 下午 01:35:40

116.0 dBuV/m



Site : 966 Chamber

 Polarization: *Horizontal*

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: Smartphone

Distance: 3m

RBW: 1000 KHz VBW: 1000 KHz

M/N: PC70110

Mode: #4

Note: 2480MHz, AC Adapter: #

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2483.500	46.94	0.25	47.19	74.00	-26.81	peak		

*:Maximum data x:Over limit !:over margin

13 Antenna Measurement

13.1. Limit

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

13.2. Antenna Connector Construction

The antenna used in this product is **PIFA antenna**. And the maximum Gain of this antenna is only **0.8 dBi**.