



FCC TEST REPORT

for

47 CFR Part 15 Subpart C

Equipment : Smart Phone
Trade Name : BenQ
Model No. : E72
Marketing Name : P21B1A
FCC ID : JVPE72
Filing Type : Certification
Applicant : BenQ Corporation
157 Shan-Ying Road, Gueishan Taoyuan 333, Taiwan

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- The data shown in this test report were carried out on Jun. 25, 2007 at **Sporton International Inc. LAB.**
- Report No.: FR761417, Report Version: Rev. 01.

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Table of Contents

History of this test report.....	ii
1. General Description of Equipment under Test.....	1
1.1 Applicant	1
1.2 Manufacturer	1
1.3 Basic Description of Equipment under Test.....	1
1.4 Feature of Equipment under Test	2
2 Test Configuration of Equipment under Test.....	3
2.1 Test Manner	3
2.2 Test Mode	3
2.3 Ancillary Equipment List.....	3
2.4 Connection Diagram of Test System	4
3. RF Utility.....	6
4. General Information of Test.....	7
4.1 Test Voltage	7
4.2 Standard for Methods of Measurement.....	7
4.3 Test Compliance	7
4.4 Frequency Range.....	7
4.5 Test Distance	7
5. Test Data and Test Result.....	8
5.1 List of Measurements and Examinations	8
5.2 6dB Bandwidth Measurement	10
5.3 Power Spectral Density Measurement.....	17
5.4 Band Edges Measurement.....	25
5.5 Hopping Channel Separation.....	39
5.6 Number of Hopping Frequency.....	50
5.7 Hopping Channel Bandwidth.....	55
5.8 Dwell Time of Each Frequency	66
5.9 Peak Output Power Measurement.....	78
5.10 Conducted Emission	89
5.11 Radiated Emission Measurement	96
5.12 Antenna Requirements	142
6. List of Measuring Equipments Used	143
7. Uncertainty Evaluation.....	143
Appendix A. Photographs of EUT External	
Appendix B. Photographs of EUT Internal	
Appendix C. Photographs of Setup	



History of this test report

Report Issue Date: Jul. 10, 2007

Report No.	Description



1. General Description of Equipment under Test

1.1 Applicant

BenQ Corporation
157 Shan-Ying Road, Gueishan Taoyuan 333, Taiwan

1.2 Manufacturer

1. BenQ Corporation

157 Shan-Ying Road, Gueishan Taoyuan 333, Taiwan

2. BenQ (Shanghai Pudong) Co., Ltd.

777 Chuangjiao Road, Pudong, Shanghai 201206, P.R., China

1.3 Basic Description of Equipment under Test

Equipment		Smart Phone
Trade Name		BenQ
Model Name		E72
AC Adapter	Brand Name	BenQ
	Model Name	JSP050100UU
	Power Rating	I/P:100-240Vac,50-60Hz,0.3A; O/P:5Vdc,1A,5W
	AC Power Cord Type	1.2 meter non-shielded cable without ferrite core
Battery	Brand Name	BenQ
	Model Name	2C.2H200.101
	Rating	3.7Vdc, 900mAh
	Type	Li-ion
Earphone	Brand Name	BenQ
	Model Name	2C.43060.311
	Signal line Type	1.4 meter non-shielded cable without ferrite core
USB Cable	Brand Name	BenQ
	Model Name	5K.G4702.011
	Signal line Type	60 cm non-shielded cable without ferrite core

1.4 Feature of Equipment under Test

Product Feature & Specification				
1. Type of Modulation	WLAN: DSSS / OFDM Bluetooth 1Mbps: GFSK Bluetooth EDR 2Mbps: Pi/4-DQPSK Bluetooth EDR 3Mbps: 8-DPSK			
2. Number of Channels	WLAN: 11 Channels Bluetooth : 79 Channels			
3. Frequency Band	WLAN: 2400MHz~2483.5MHz Bluetooth: 2400MHz~2483.5MHz			
4. Carrier Frequency of each channel	WLAN: $2412+(n-1) * 5\text{MHz}$; $n=1-11$ Bluetooth: $2402+ n*1 \text{ MHz}$, $n= 0\sim78$			
5. Channel Spacing	WLAN: 5MHz Bluetooth: 1MHz			
6. Maximum Output Power to Antenna (Normal Condition)	GSM850(GSM) : 32.23 dBm PCS1900(GSM) : 29.49 dBm Bluetooth (1 Mbps) : 0.32 dBm Bluetooth EDR (2 Mbps) : 0.88 dBm Bluetooth EDR (3 Mbps) : 1.03 dBm 802.11b : 13.56 dBm 802.11g : 11.95 dBm			
7. HW Version	LPR4			
8. SW Version	V070530			
9. Type of Antenna Connector	N/A			
10. Antenna Type	Bluetooth : Chip Antenna WLAN : Chip Antenna			
11. Antenna Gain	Bluetooth : -9 dBi WLAN : -8 dBi			
12. Function Type	Transmitter		Transceiver	V



2 Test Configuration of Equipment under Test

2.1 Test Manner

- The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- The EUT is programmed to transmit signal continuously for all testings.
- Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000MHz.
- For radiated measurements, the results were the maximum of those obtained in 3 orthogonal axes and only showed the worst data in this report.

2.2 Test Mode

Application					
	802.11b	802.11g	Bluetooth 1Mbps	Bluetooth EDR 2Mbps	Bluetooth EDR 3Mbps
Radiated Emission	Mode 1: CH01_2412 MHz	Mode 4: CH01_2412 MHz	Mode 7: CH00_2402 MHz	Mode 10: CH00_2402 MHz	Mode 13: CH00_2402 MHz
	Mode 2: CH06_2437 MHz	Mode 5: CH06_2437 MHz	Mode 8: CH39_2441 MHz	Mode 11: CH39_2441 MHz	Mode 14: CH39_2441 MHz
	Mode 3: CH11_2462 MHz	Mode 6: CH11_2462 MHz	Mode 9: CH78_2480 MHz	Mode 12: CH78_2480 MHz	Mode 15: CH78_2480 MHz
Conducted Emission	Mode 1: GSM850 Idle Mode + BT Link + WLAN Link + MPEG4 + Camera + Adapter				
	Mode 2: GSM850 Idle Mode + BT Link + WLAN Link + MPEG4 + Camera + USB Cable				
	Mode 3: PCS1900 Idle Mode + BT Link + WLAN Link +MPEG4 + Camera + Adapter				

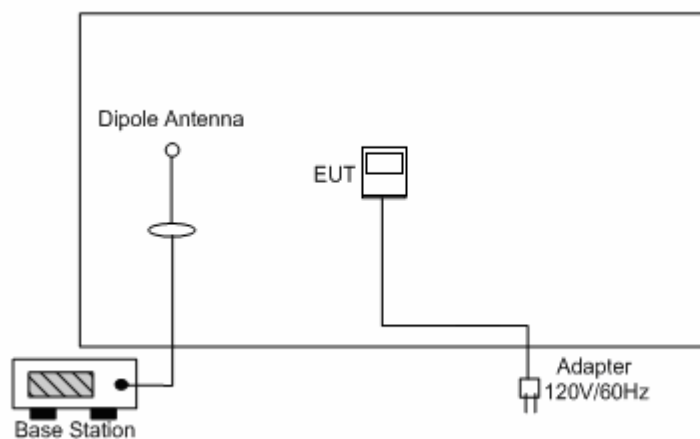
2.3 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Power Cord / Cable
1.	Smart Phone	BenQ	E72	JVPE72	1.2m
2.	WLAN AP	SMC	SMC-100	HEDWG4005ACC	1.8m
3.	BT Base Station	Anritus	8852A	N/A	N/A
4.	RS-232 Mouse	State	MS-303	DoC	1.2 meter

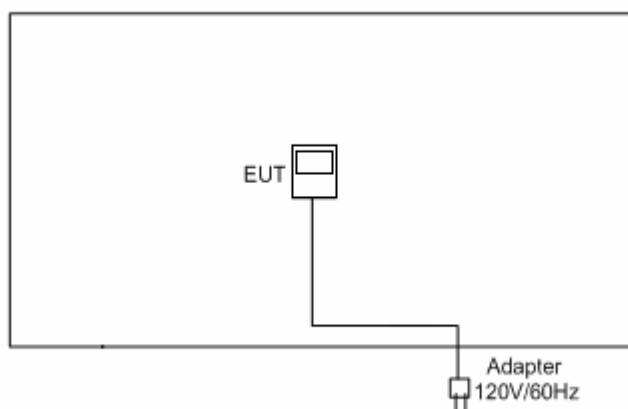
2.4 Connection Diagram of Test System

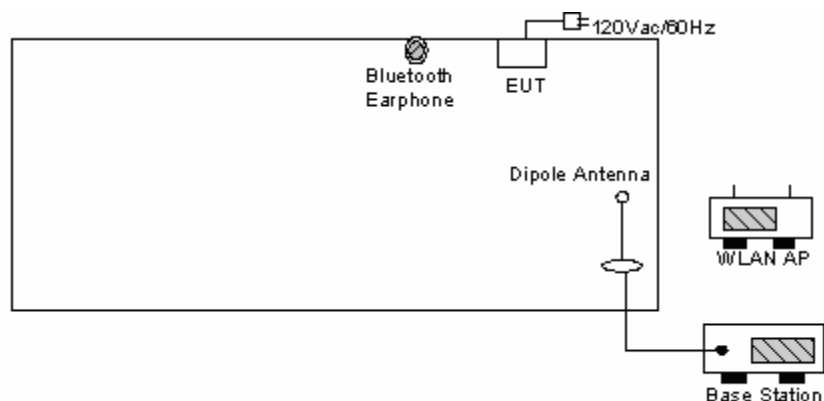
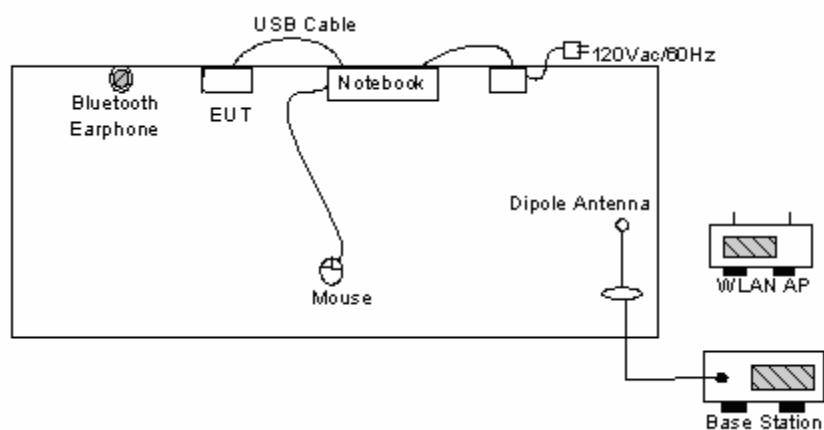
<Radiated Emission>

Bluetooth Mode



WLAN Mode



<Conducted Emission>
EUT with Adapter Mode

EUT with USB Link Mode




3. RF Utility

The programmed RF Utility is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testings.



4. General Information of Test

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
TEL : 886-3-327-3456
FAX : 886-3-318-0055
Test Site No : CO04-HY, 03CH06-HY

4.1 Test Voltage

AC 120V / 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2003

4.3 Test Compliance

47 CFR Part 15 Subpart C

4.4 Frequency Range

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 30 MHz to 25000 MHz

4.5 Test Distance

The test distance of radiated emission from antenna to EUT is 3 m.



5. Test Data and Test Result

5.1 List of Measurements and Examinations

The Emission Mode: Wireless LAN

FCC Rule	Description of Test	Result
15.207	Conducted Emission	Pass
15.247(a)(2)	6dB Bandwidth	Pass
15.247(b)	Maximum Peak Output Power	Pass
15.209(a)	Radiated Emission	Pass
15.247 (c)	100kHz Bandwidth of Frequency Band Edges	Pass
15.247(d)	Power Spectral Density	Pass
15.203 15.247(b)(4)	Antenna Requirement	Pass

**The Emission Mode: Bluetooth**

FCC Rule	Description of Test	Result
15.207	Conducted Emission	Pass
15.247(a) (1)	Hopping Channel Bandwidth	Pass
15.247(a)(1)	Hopping Channel Separation	Pass
15.247(a)(1)(iii)	Number of Hopping Frequency Used	Pass
15.247(a)(1)(iii)	Dwell Time of Each Frequency	Pass
15.247(b)	Output Power	Pass
15.247(c)	100kHz Bandwidth of Frequency Band Edges	Pass
15.209(a)	Radiated Emission	Pass
15.203 15.247(b)(4)	Antenna Requirement	Pass

5.2 6dB Bandwidth Measurement

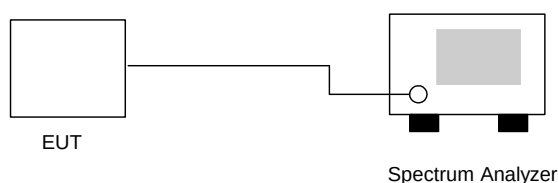
5.2.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.2.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 100kHz and VBW to 100kHz.
3. The 6 dB bandwidth is defined as the frequency range where the power is higher than the peak power minus 6dB.

5.2.3 Test Setup Layout :



5.2.4 Test Result :

- Application Type : WLAN 802.11b/g
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	9.74	> 0.5MHz	Mode 1
06	2437	9.62	> 0.5MHz	Mode 2
11	2462	9.65	> 0.5MHz	Mode 3

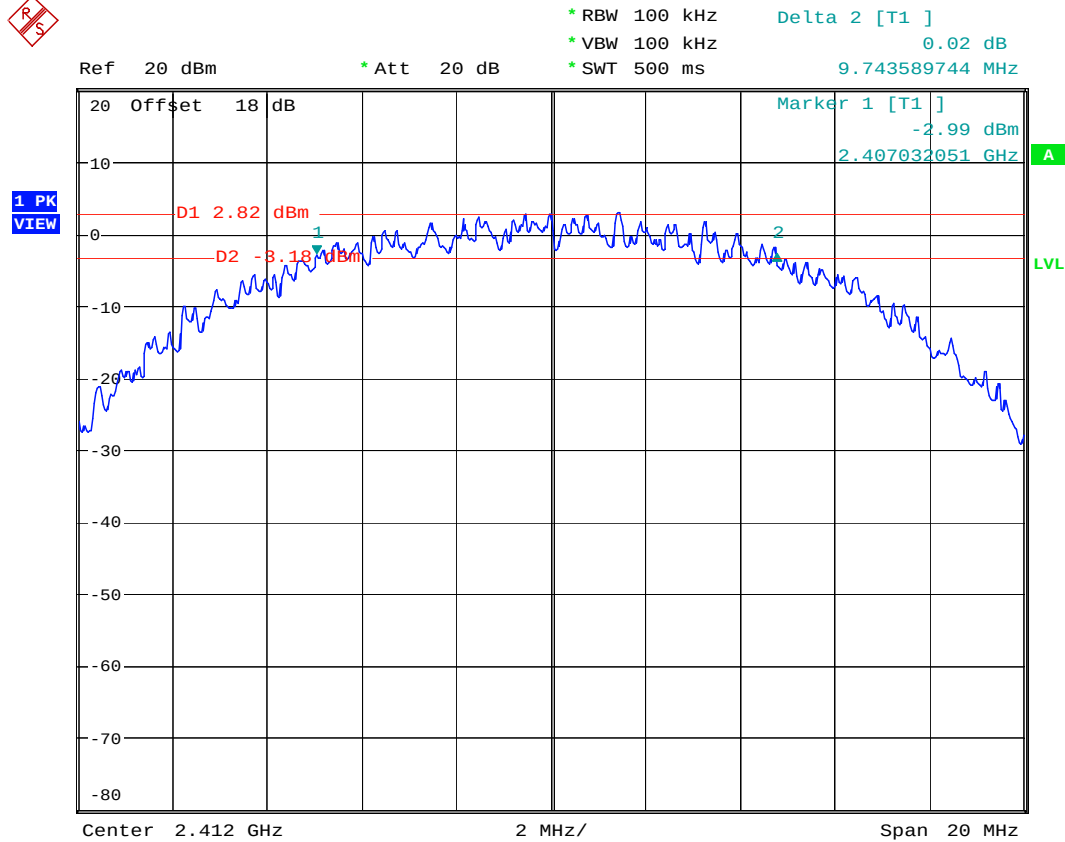
802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.41	> 0.5MHz	Mode 4
06	2437	16.41	> 0.5MHz	Mode 5
11	2462	16.41	> 0.5MHz	Mode 6



5.2.5 6dB Bandwidth

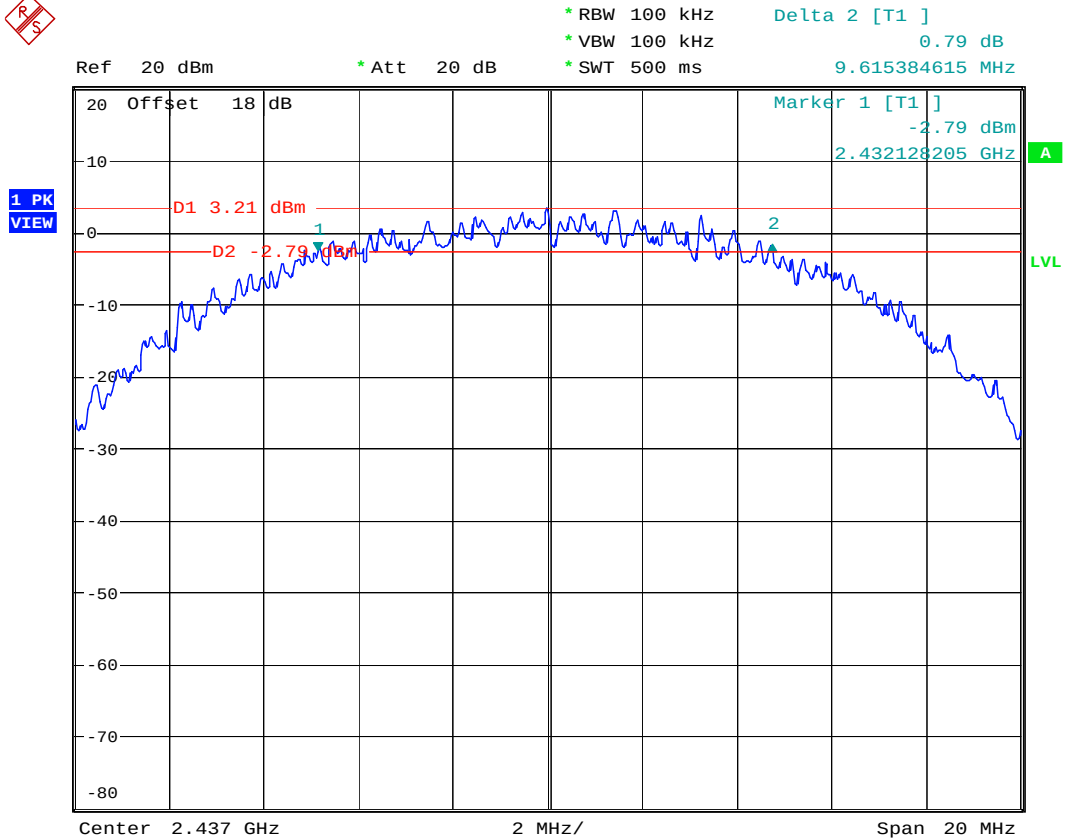
Mode 1



Date: 23.JUN.2007 11:20:14



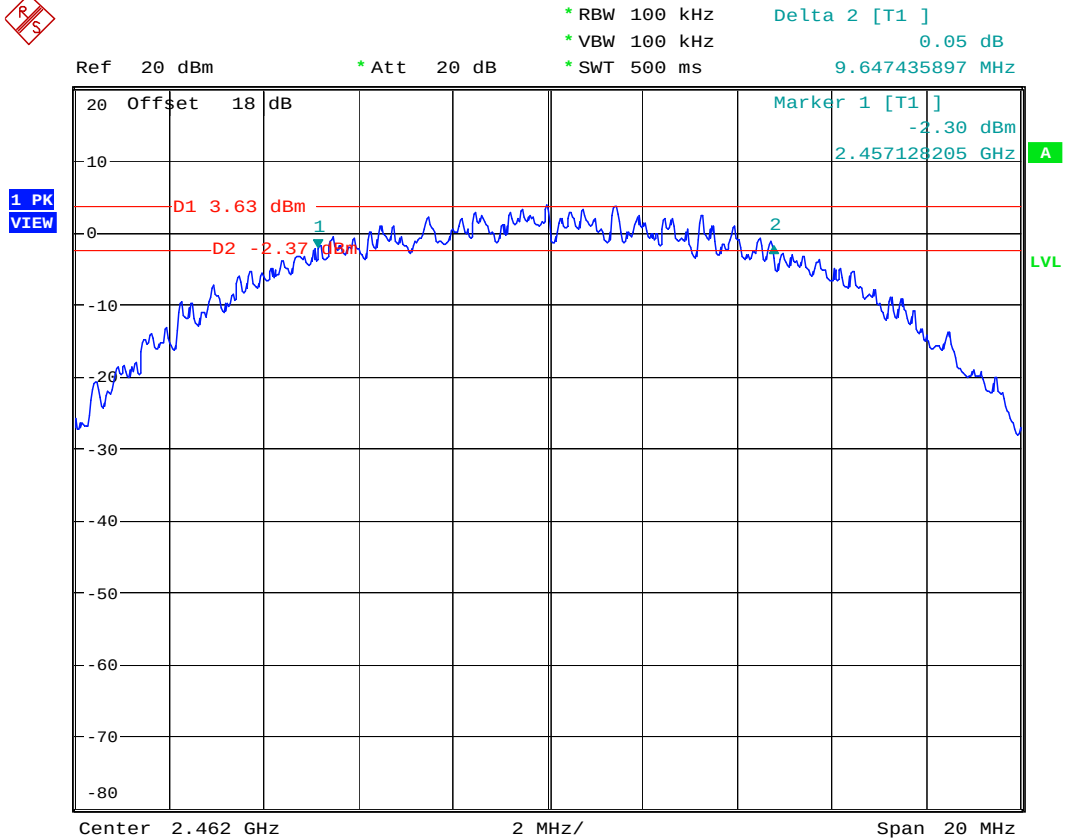
Mode 2



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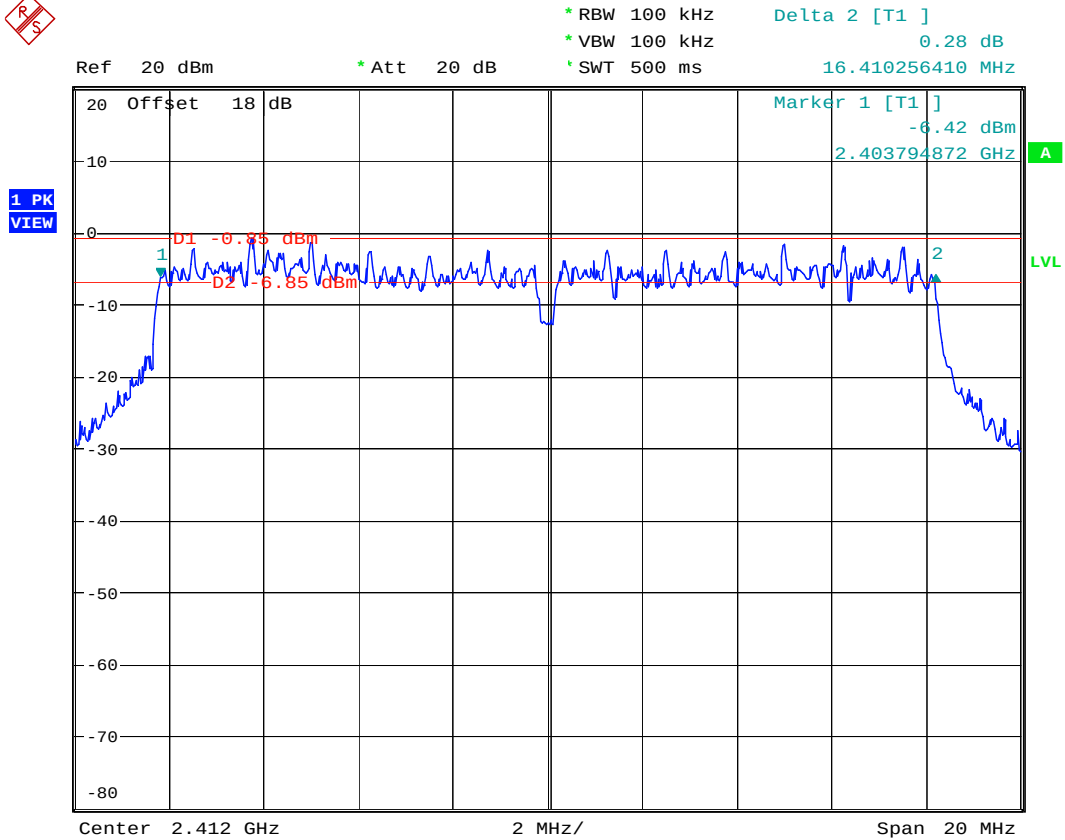
Mode 3



Date: 23.JUN.2007 11:29:50



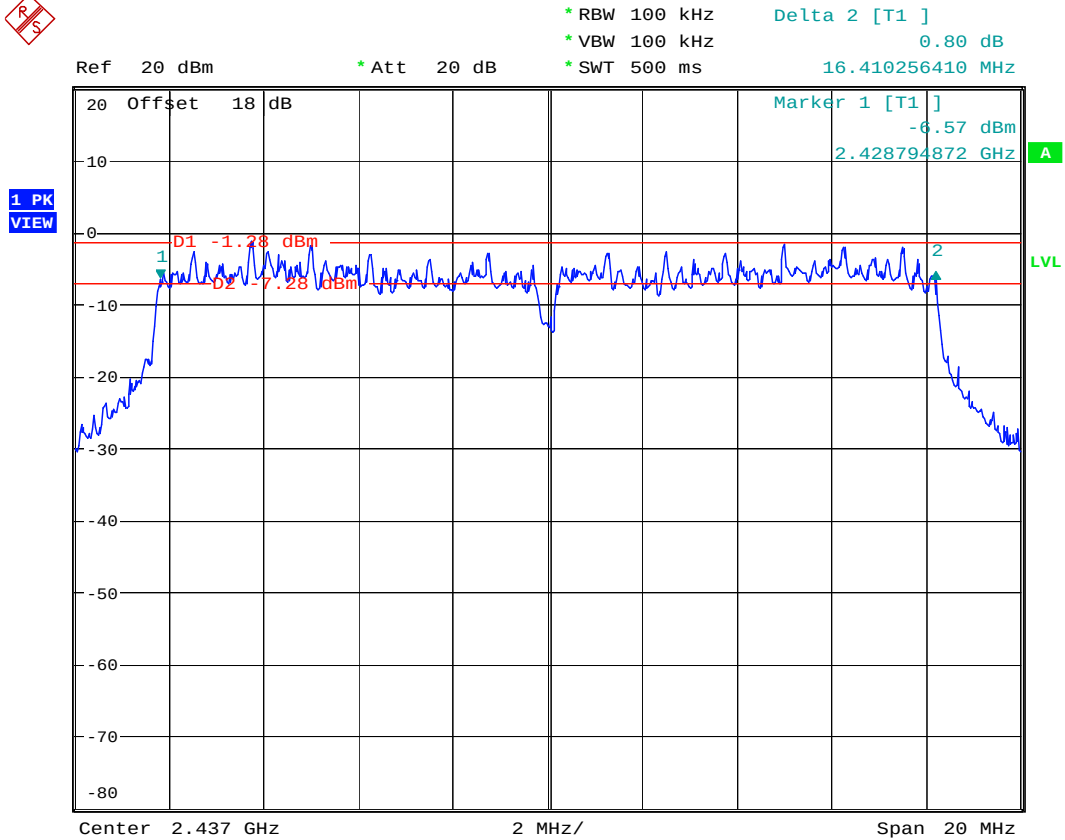
Mode 4



Date: 23.JUN.2007 05:01:12



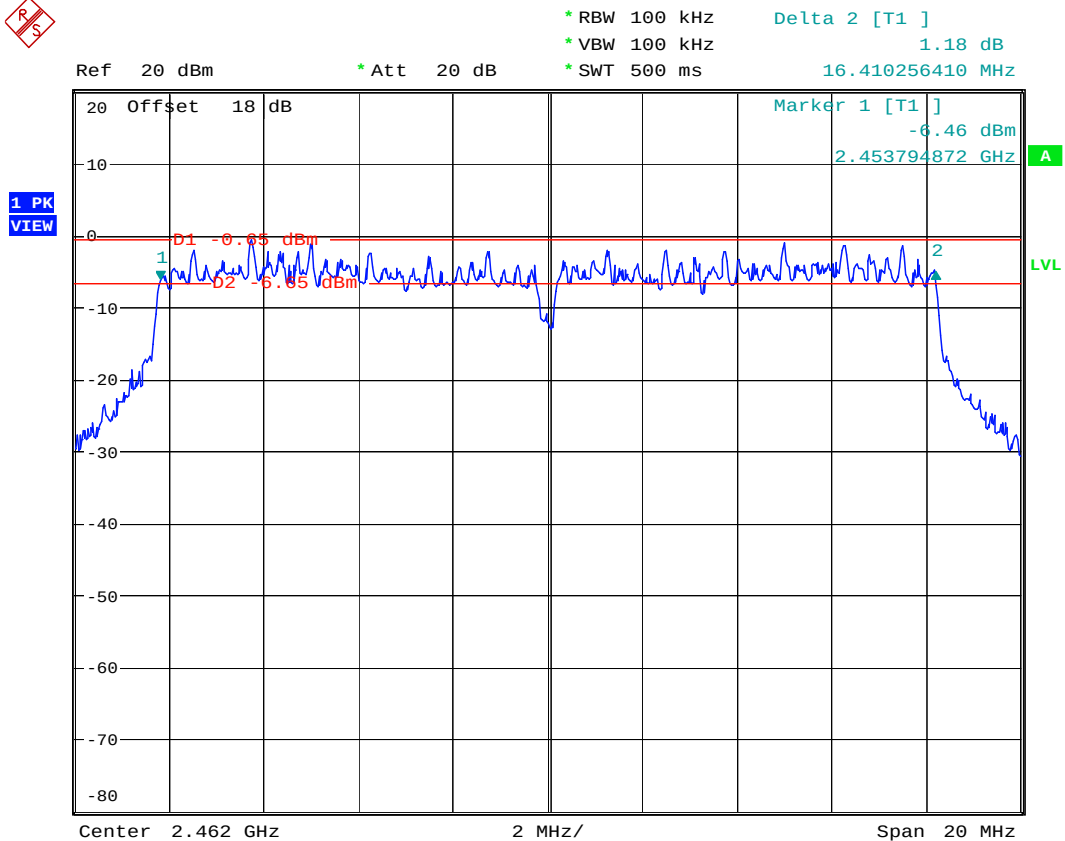
Mode 5



Date: 23.JUN.2007 05:02:26



Mode 6



Date: 23.JUN.2007 05:03:34

5.3 Power Spectral Density Measurement

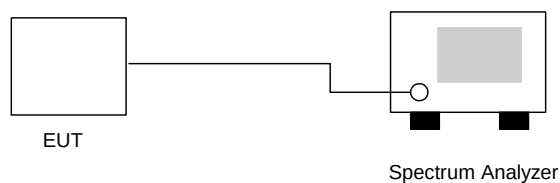
5.3.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.3.2 Test Procedure :

1. The transmitter output was connected to spectrum analyzer directly.
2. The spectrum analyzer's resolution bandwidth was set at 3kHz RBW and 30kHz VBW as that of the fundamental frequency. Set the sweep time=span/3kHz.
3. The power spectral density was measured and recorded.
4. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

5.3.3 Test Setup Layout :



**5.3.4 Test Result :**

- Application Type : 802.11b/g
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-9.64	8	Mode 1
06	2437	-9.44	8	Mode 2
11	2462	-14.82	8	Mode 3

802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-17.91	8	Mode 4
06	2437	-18.59	8	Mode 5
11	2462	-17.38	8	Mode 6

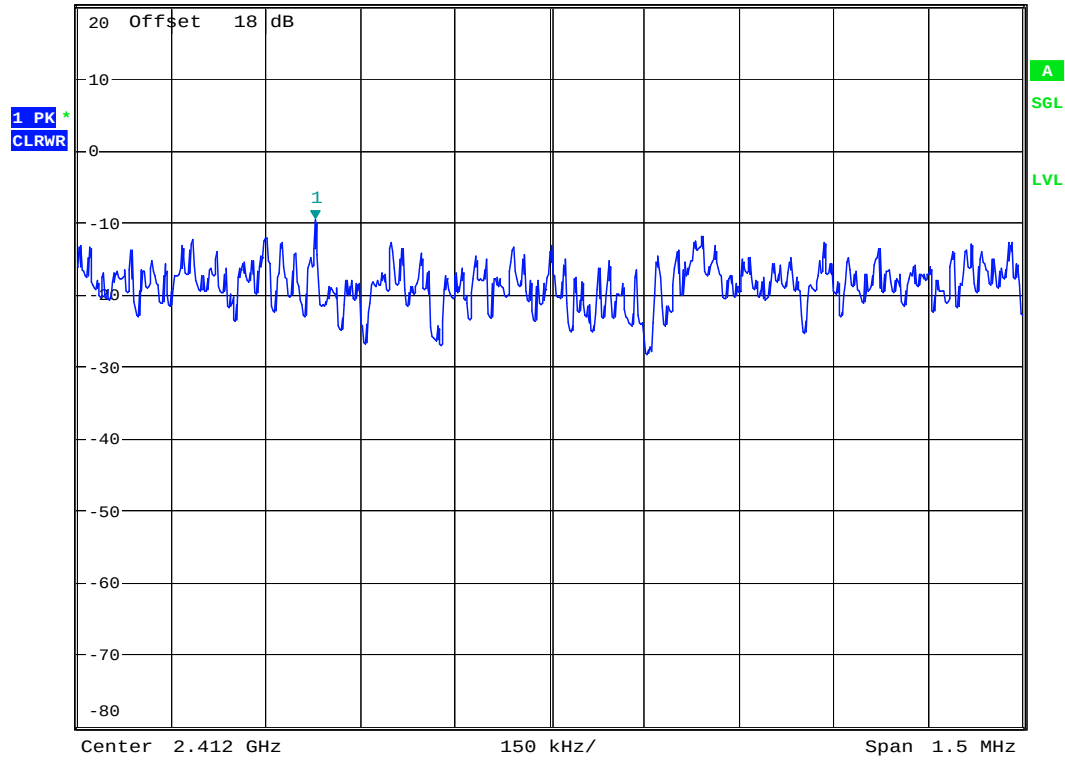


5.3.5 Power Spectral Density

Mode 1



Ref 20 dBm * Att 20 dB * RBW 3 kHz * VBW 30 kHz * SWT 500 s Marker 1 [T1] -9.64 dBm 2.411627404 GHz



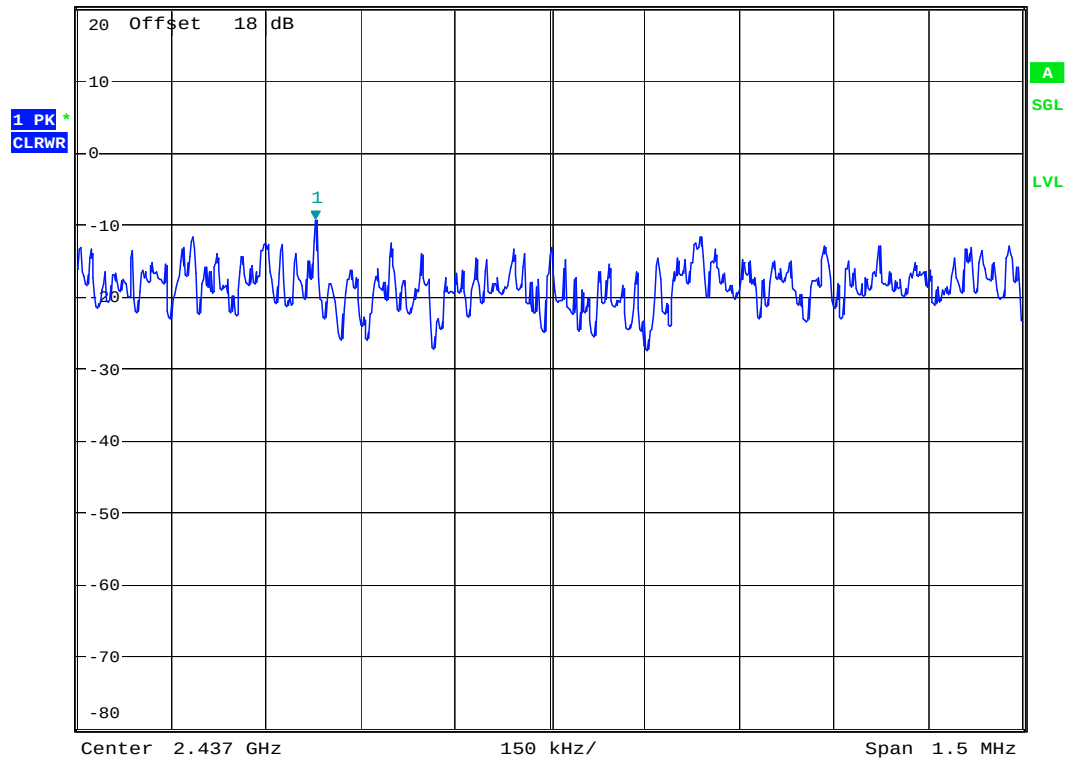
Date: 23.JUN.2007 04:11:31



Mode 2



Ref 20 dBm * Att 20 dB * RBW 3 kHz * VBW 30 kHz * SWT 500 s Marker 1 [T1] -9.44 dBm 2.436627404 GHz



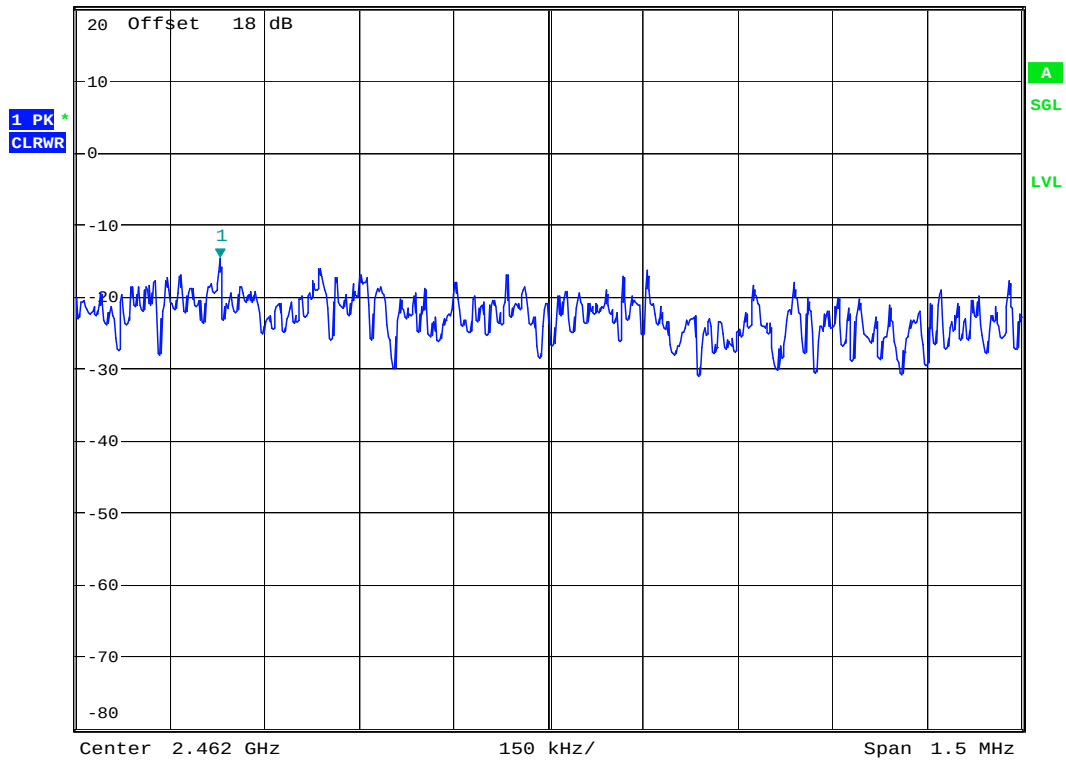
Date: 23.JUN.2007 04:24:32



Mode 3



Ref 20 dBm * Att 20 dB * RBW 3 kHz Marker 1 [T1] -14.82 dBm
* VBW 30 kHz 2.461478365 GHz
* SWT 500 s



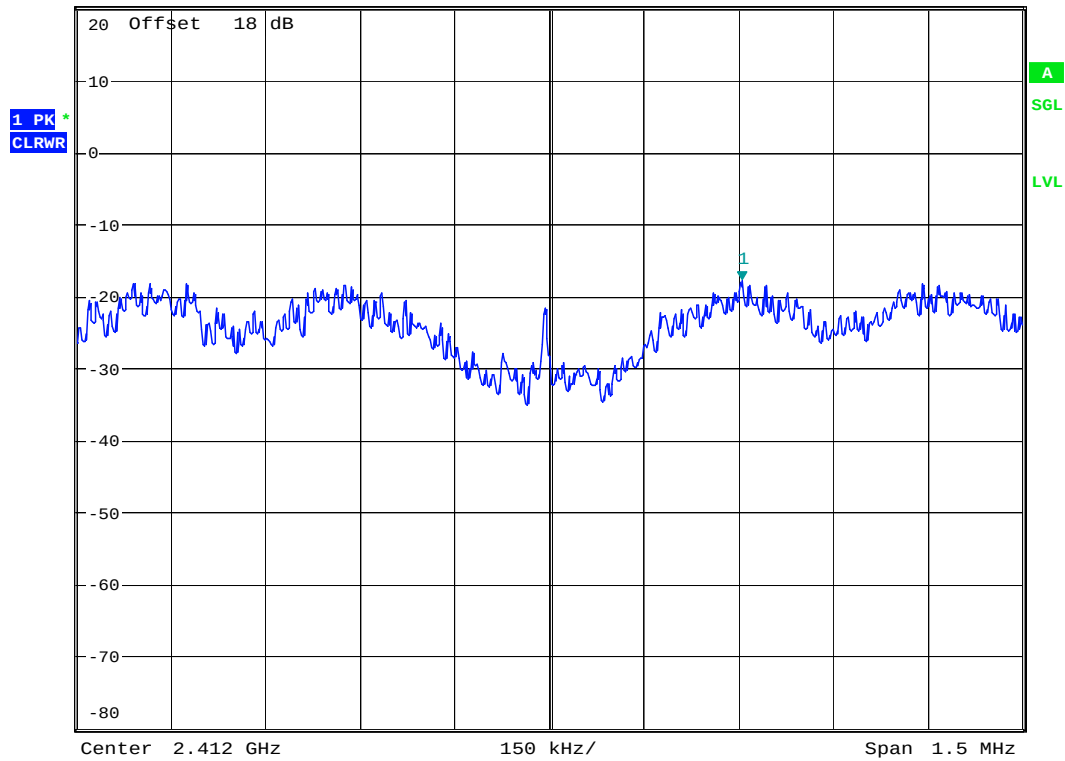
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Mode 4



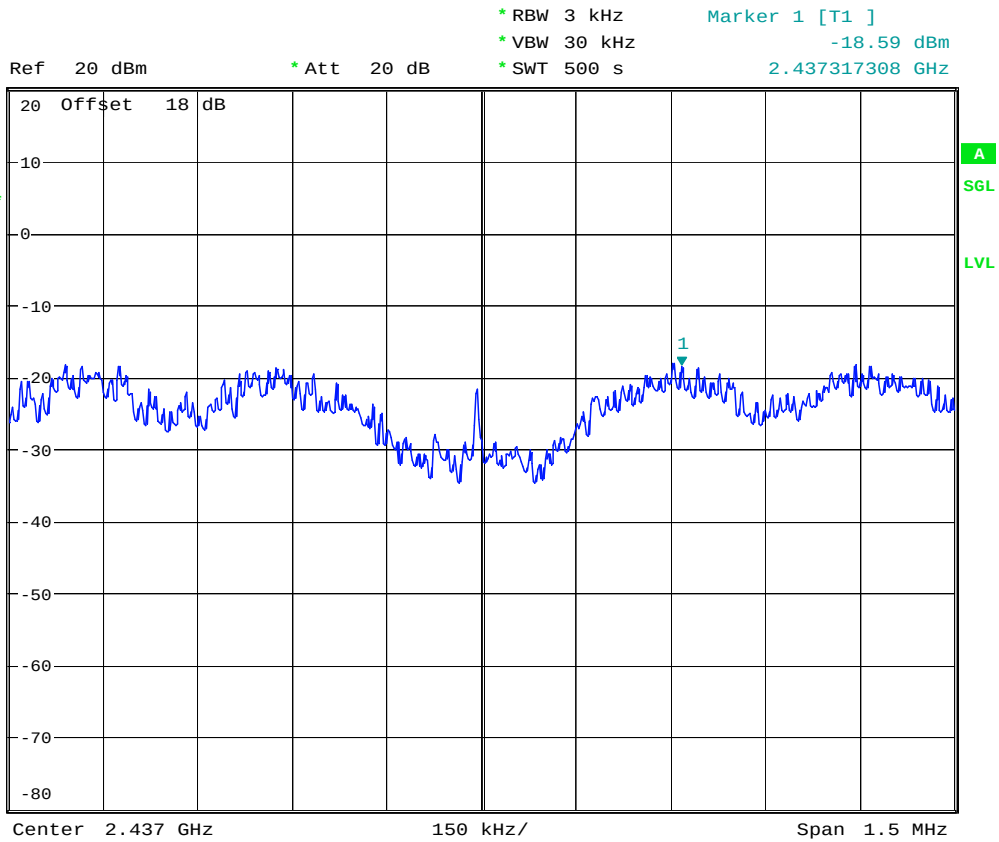
Ref 20 dBm * Att 20 dB * RBW 3 kHz Marker 1 [T1] -17.91 dBm
* VBW 30 kHz 2.412305288 GHz
* SWT 500 s



Date: 23.JUN.2007 05:20:40



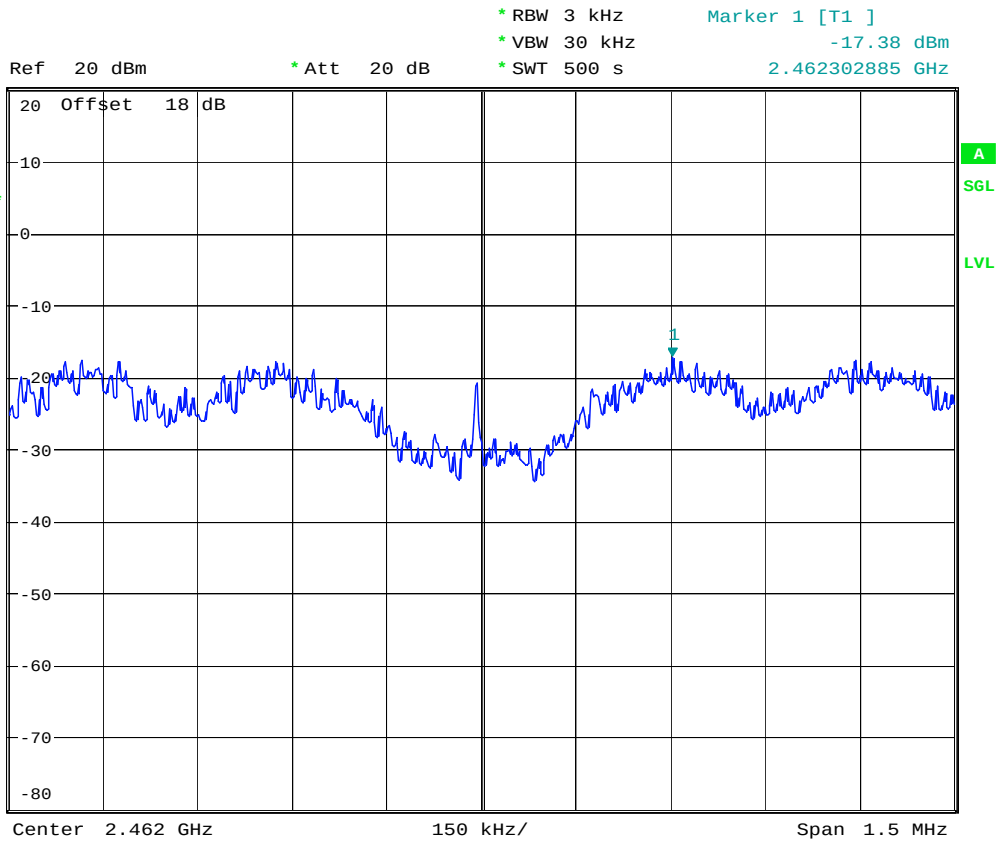
Mode 5



Date: 23.JUN.2007 05:33:56



Mode 6



Date: 23.JUN.2007 06:02:43

5.4 Band Edges Measurement

5.4.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.4.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100 kHz bandwidth from band edge.
3. The band edges was measured and recorded.

5.4.3 Test Result :

- Application Type : WLAN 802.11b/g and BT
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony
- Test Result in WLAN lower band (802.11b/g) : PASS
- Test Result in WLAN higher band (802.11b/g) : PASS
- Test Result in BT lower band : PASS
- Test Result in BT higher band : PASS

5.4.4 Note on Band Edge Emission :

➤WLAN 802.11b

CH01 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2371.92	49.38	-24.62	74.00	50.83	30.26	3.75	35.46	100	0	Peak
2371.92	38.22	-15.78	54.00	39.68	30.25	3.73	35.44	100	332	Average

CH01 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2367.52	49.11	-24.89	74.00	50.56	30.26	3.75	35.46	100	0	Peak
2367.52	37.98	-16.02	54.00	39.44	30.24	3.73	35.44	100	100	Average

**CH11 (Horizontal)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2499.46	36.21	-17.79	54.00	37.57	30.29	3.86	35.51	100	207	Average
2499.46	47.89	-26.11	74.00	49.24	30.30	3.88	35.53	100	0	Peak

CH11 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2490.22	47.75	-26.25	74.00	49.10	30.30	3.86	35.51	100	0	Peak
2490.22	37.61	-16.39	54.00	38.96	30.30	3.86	35.51	104	101	Average

➤WLAN 802.11g**CH01 (Horizontal)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2389.76	65.80	-8.20	74.00	67.25	30.26	3.75	35.46	100	0	Peak
2389.76	39.80	-14.20	54.00	41.25	30.26	3.75	35.46	100	32	Average

CH01 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2389.92	65.28	-8.72	74.00	66.73	30.26	3.75	35.46	100	0	Peak
2389.92	39.41	-14.59	54.00	40.86	30.26	3.75	35.46	100	143	Average

CH11 (Horizontal)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.81	59.17	-14.83	74.00	60.53	30.29	3.86	35.51	100	0	Peak
2483.81	38.54	-15.46	54.00	39.90	30.29	3.86	35.51	100	30	Average

**CH11 (Vertical)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	61.99	-12.01	74.00	63.35	30.29	3.86	35.51	100	0	Peak
2483.50	38.65	-15.35	54.00	40.01	30.29	3.86	35.51	100	145	Average

➤BT(1Mbps)**CH00 (Horizontal)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2367.76	48.67	-25.33	74.00	50.14	30.24	3.71	35.42	100	0	Peak
2367.76	38.94	-15.06	54.00	40.40	30.24	3.73	35.44	100	331	Average

CH00 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2365.76	48.26	-25.74	74.00	49.72	30.24	3.73	35.44	100	0	Peak
2365.76	38.58	-15.42	54.00	40.04	30.24	3.73	35.44	100	278	Average

CH78 (Horizontal)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	45.74	-8.26	54.00	47.10	30.29	3.86	35.51	100	332	Average
2483.50	61.89	-12.11	74.00	63.25	30.29	3.86	35.51	100	0	Peak

CH78 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	42.38	-11.62	54.00	43.74	30.29	3.86	35.51	100	360	Average
2483.50	54.36	-19.64	74.00	55.72	30.29	3.86	35.51	100	0	Peak

**➤BT EDR (2Mbps)****CH00 (Horizontal)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2386.32	38.54	-15.46	54.00	39.97	30.26	3.75	35.44	100	150	Average
2386.32	48.80	-25.20	74.00	50.23	30.26	3.75	35.44	100	0	Peak

CH00 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2345.36	48.79	-25.21	74.00	50.27	30.24	3.71	35.42	100	0	Peak
2345.36	37.87	-16.13	54.00	39.35	30.24	3.71	35.42	100	107	Average

➤BT EDR (3Mbps)**CH00 (Horizontal)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2375.92	48.55	-25.45	74.00	50.01	30.25	3.73	35.44	100	0	Peak
2375.92	38.31	-15.69	54.00	39.77	30.25	3.73	35.44	100	150	Average

CH00 (Vertical)

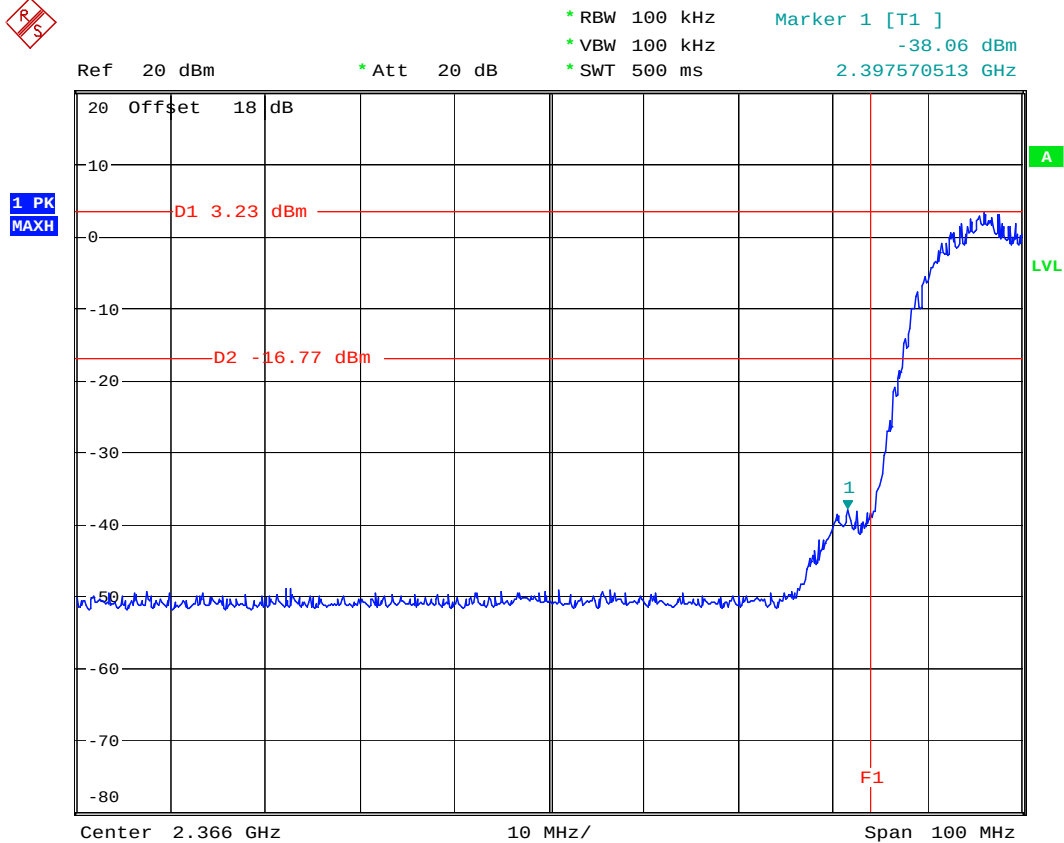
Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2328.56	48.23	-25.77	74.00	49.72	30.23	3.69	35.40	100	0	Peak
2328.56	37.84	-16.16	54.00	39.33	30.23	3.69	35.40	100	107	Average



5.4.5 Band Edge

WLAN 802.11b

CH01

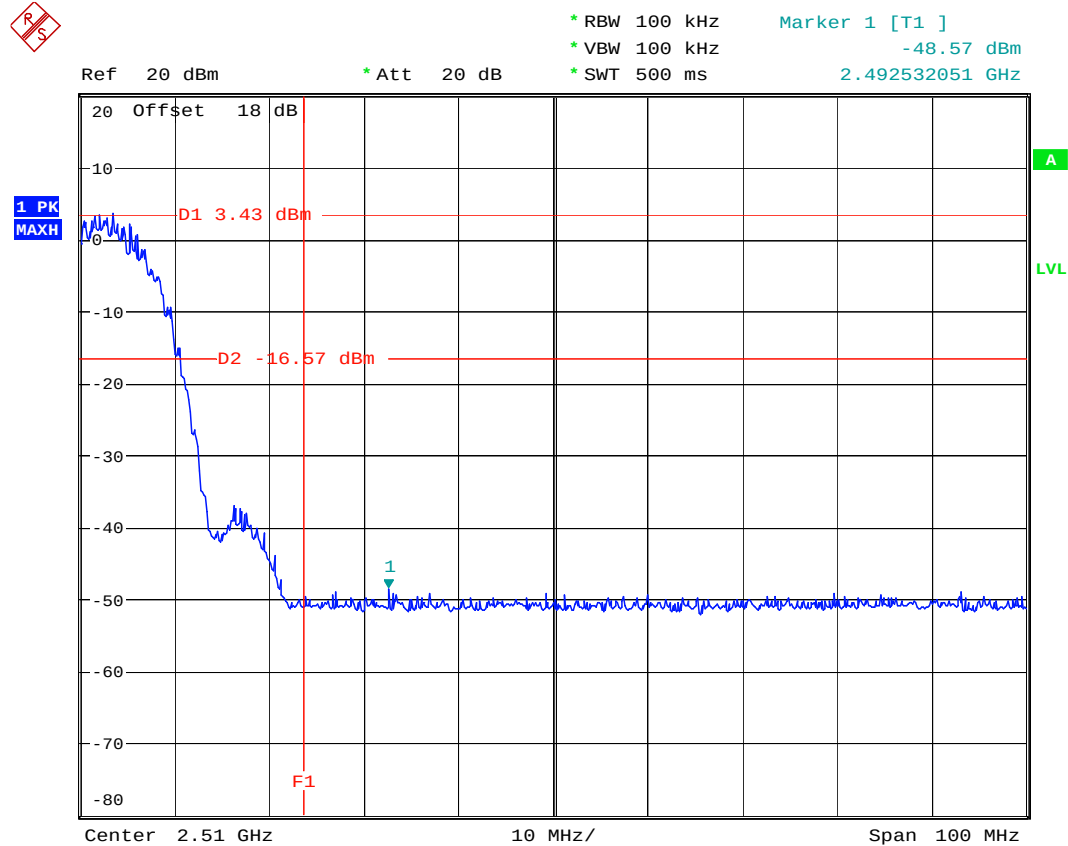


Date: 23.JUN.2007 03:47:21



WLAN 802.11b

CH11

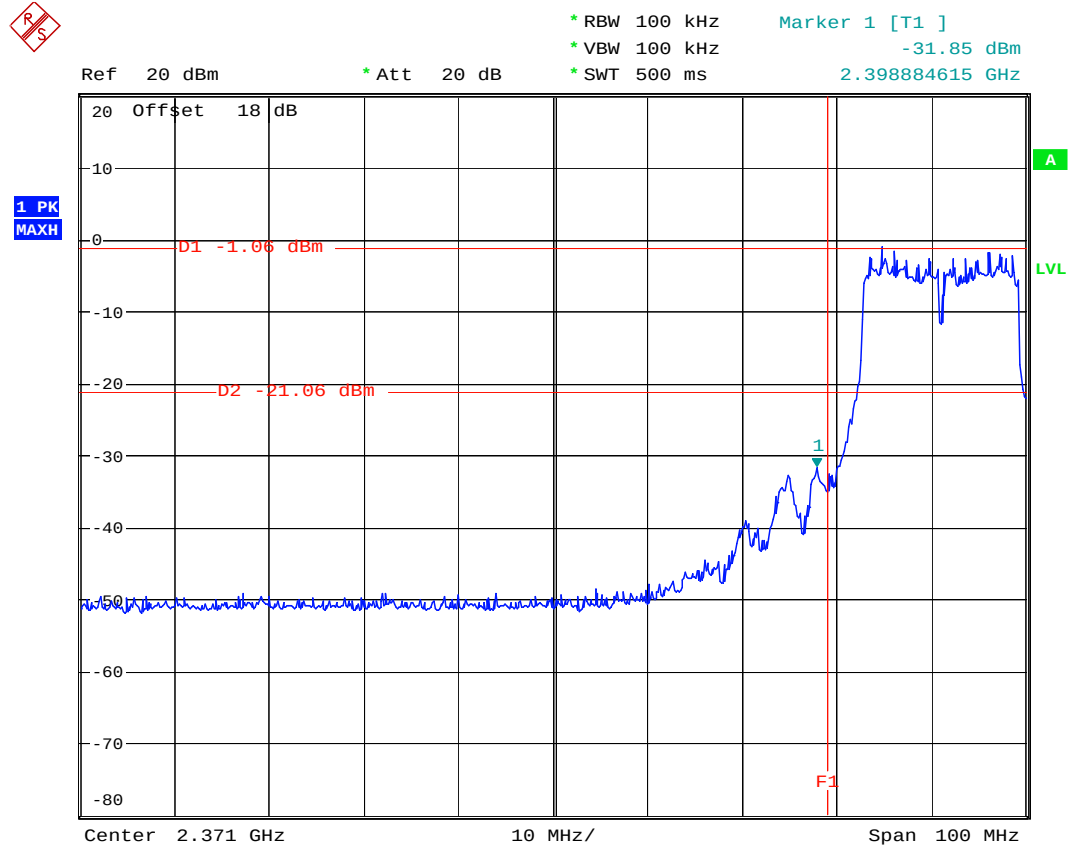


Date: 23.JUN.2007 03:51:57



WLAN 802.11g

CH01

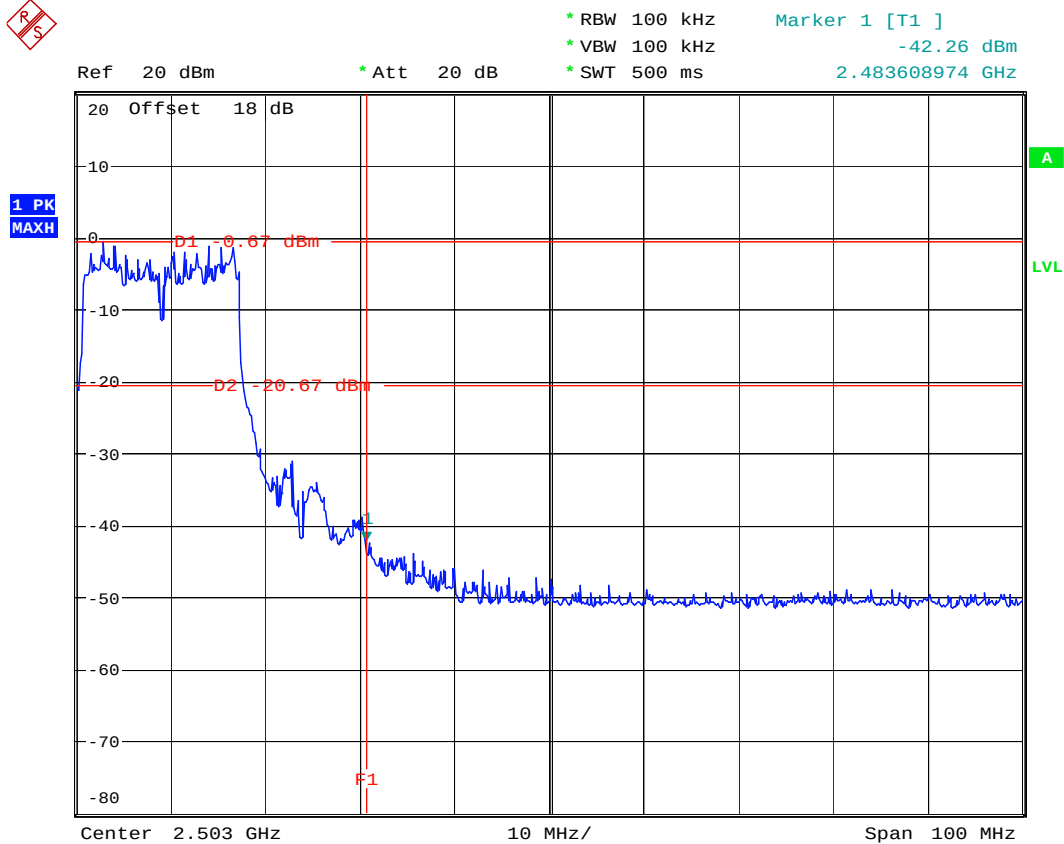


Date: 23.JUN.2007 05:07:28



WLAN 802.11g

CH11

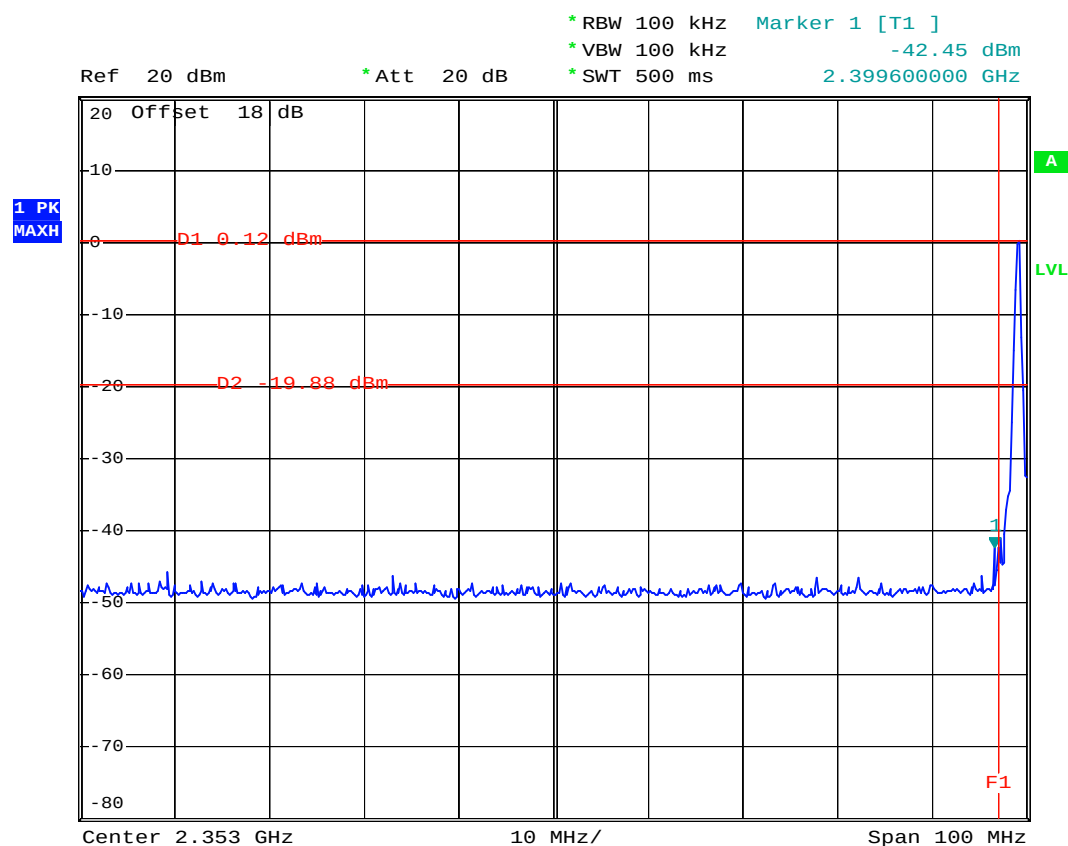


Date: 23.JUN.2007 05:09:01



Bluetooth (1Mbps)

CH00

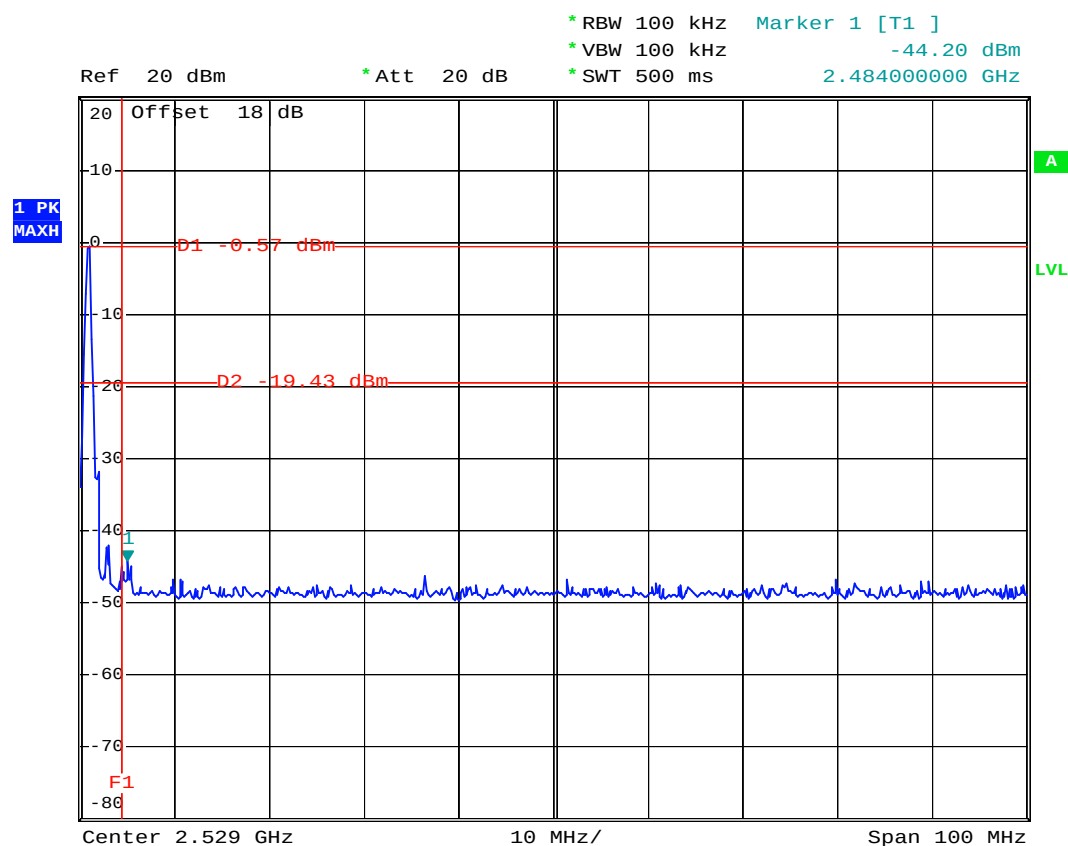


Date: 18.JUN.2007 17:34:50



Bluetooth (1Mbps)

CH78

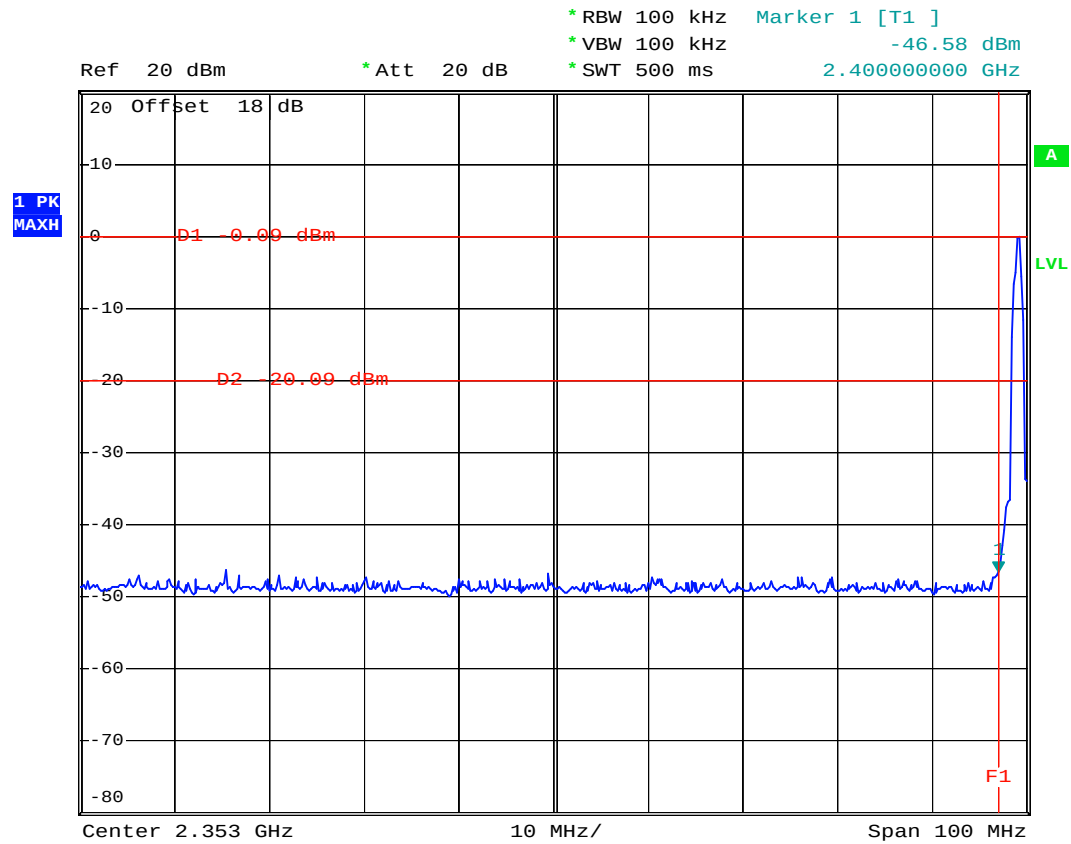


Date: 18.JUN.2007 17:37:35



Bluetooth EDR (2Mbps)

CH00

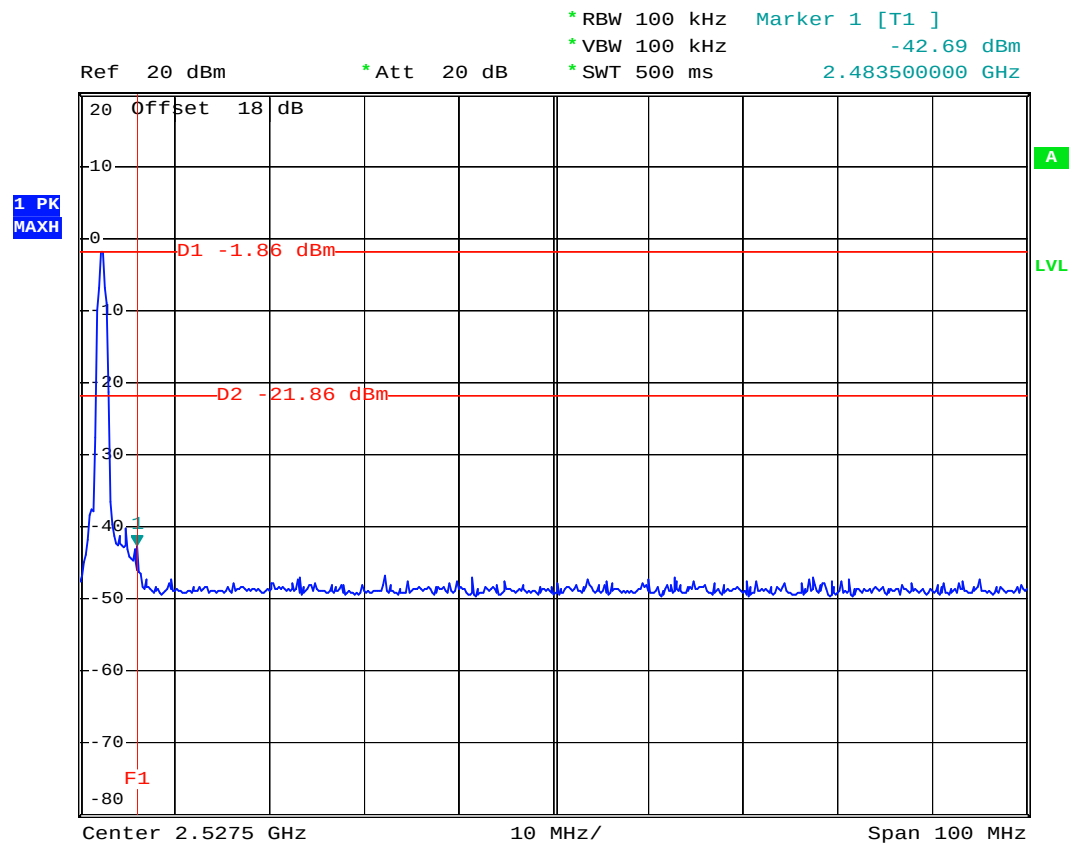


Date: 26.JUN.2007 22:49:18



Bluetooth EDR (2Mbps)

CH78

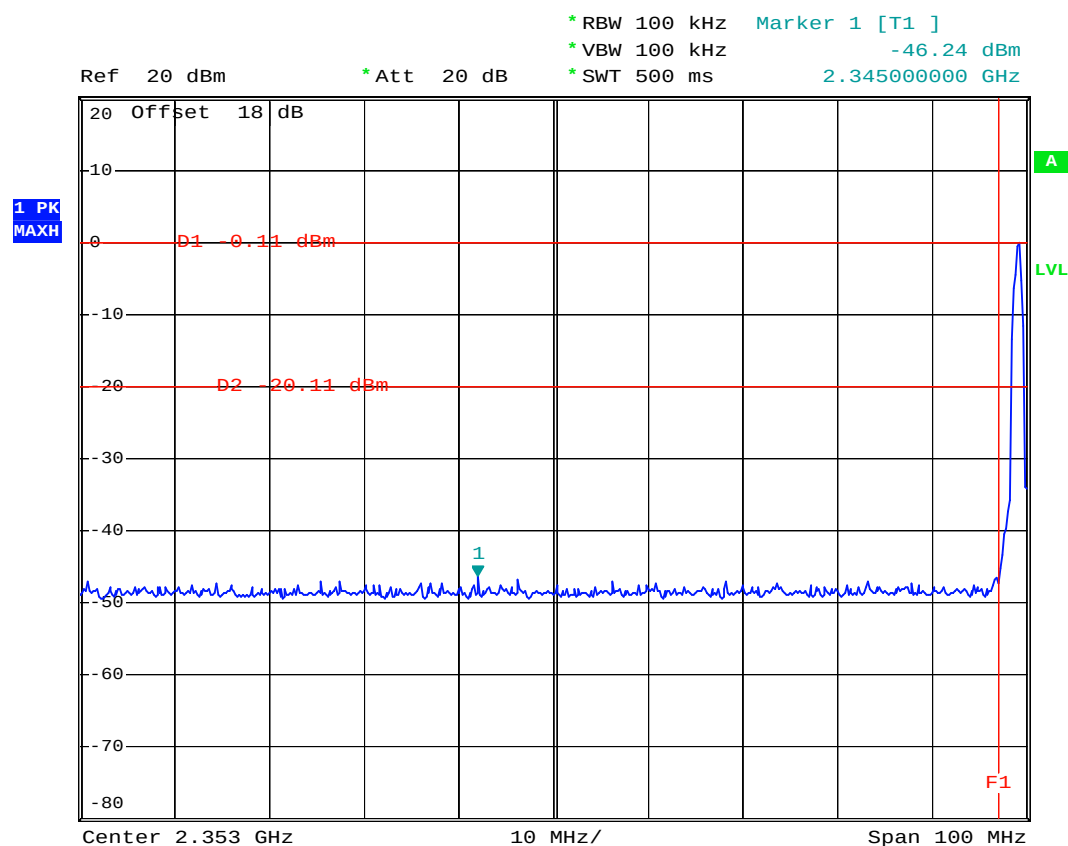


Date: 26.JUN.2007 22:50:10



Bluetooth EDR (3Mbps)

CH00

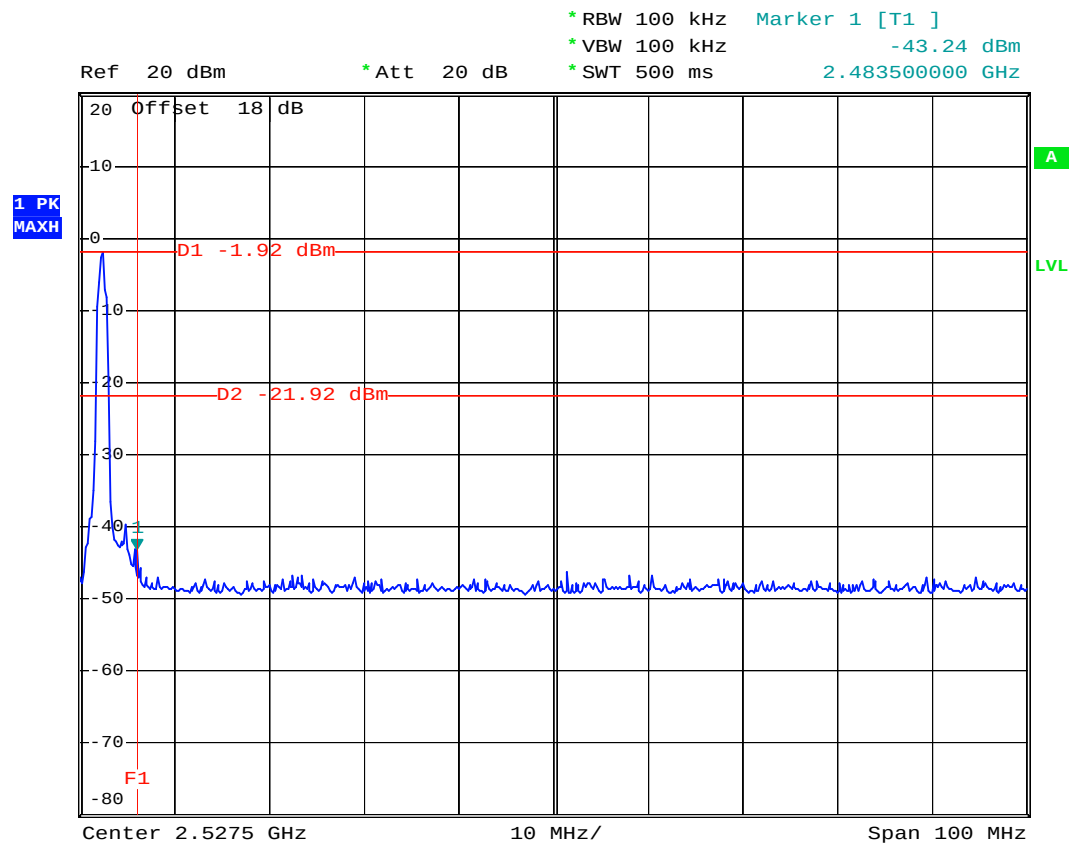


Date: 26.JUN.2007 23:09:24



Bluetooth EDR (3Mbps)

CH78



Date: 26.JUN.2007 23:10:58

5.5 Hopping Channel Separation

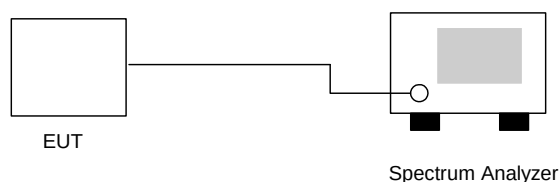
5.5.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.5.2 Test Procedure :

1. The output of EUT was connected to the spectrum analyzer by a low loss cable..
2. Set RBW of spectrum analyzer to $\geq 1\%$ of the span and VBW $\geq$ RBW.
3. The Hopping Channel Separation is defined as the channel is separated with the next channel.

5.5.3 Test Setup Layout :



5.5.4 Test Result : The spectrum analyzer plots are attached as below

- Application Type : Bluetooth
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Engineer : Tony

Channel	Carrier Frequency		Limits	Plot
	Frequency (MHz)	Separation (MHz)		
00	2402	1.004	0.597	Mode 7
39	2441	1.004	0.596	Mode 8
78	2480	1.000	0.597	Mode 9

Note: Hopping Channel Separation shall be greater 2/3 of 20dB bandwidth. Refer the result of 20dB bandwidth to section 5.7.



- Application Type : Bluetooth EDR 2Mbps
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

Channel	Carrier Frequency		Limits	Plot
	Frequency (MHz)	Separation (MHz)		
00	2402	1.000	0.821	Mode 10
39	2441	1.000	0.827	Mode 11
78	2480	0.992	0.819	Mode 12

Note: Hopping Channel Separation shall be greater 2/3 of 20dB bandwidth. Refer the result of 20dB bandwidth to section 5.7.

- Application Type : Bluetooth EDR 3 Mbps
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

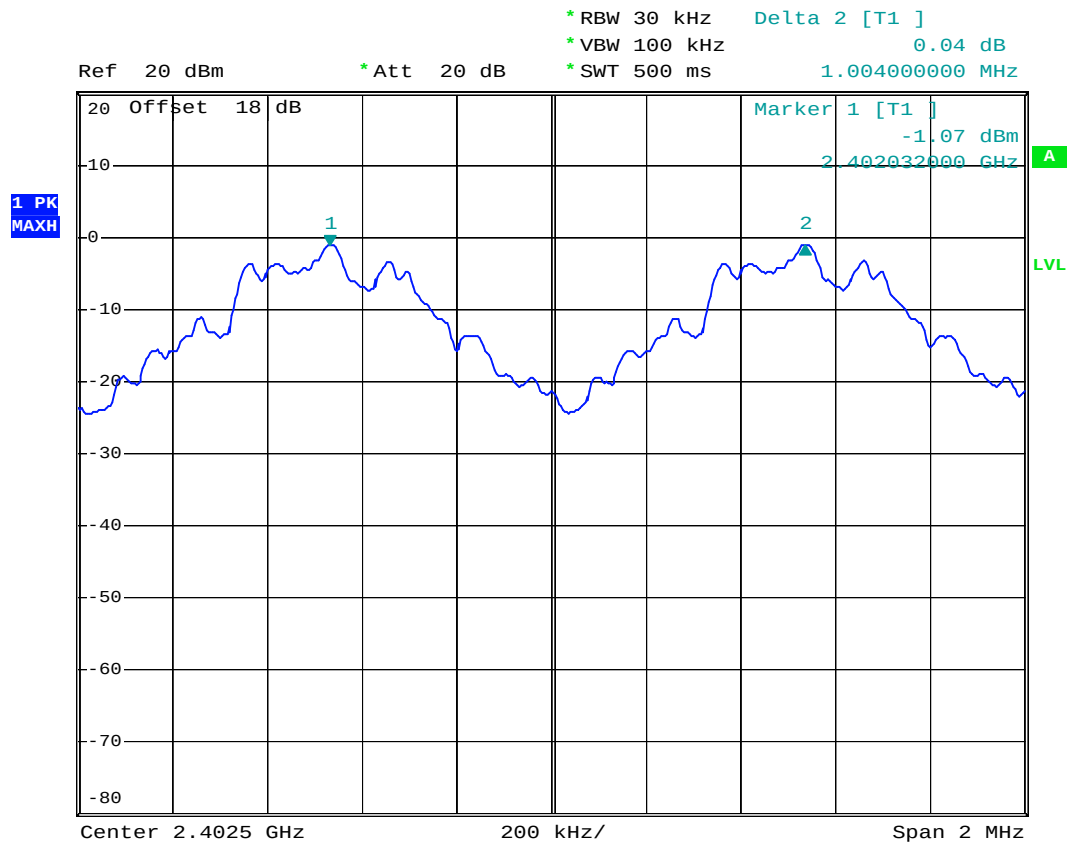
Channel	Carrier Frequency		Limits	Plot
	Frequency (MHz)	Separation (MHz)		
00	2402	1.008	0.843	Mode 13
39	2441	1.008	0.845	Mode 14
78	2480	0.992	0.837	Mode 15

Note: Hopping Channel Separation shall be greater 2/3 of 20dB bandwidth. Refer the result of 20dB bandwidth to section 5.7.



5.5.5 Hopping Channel Separation

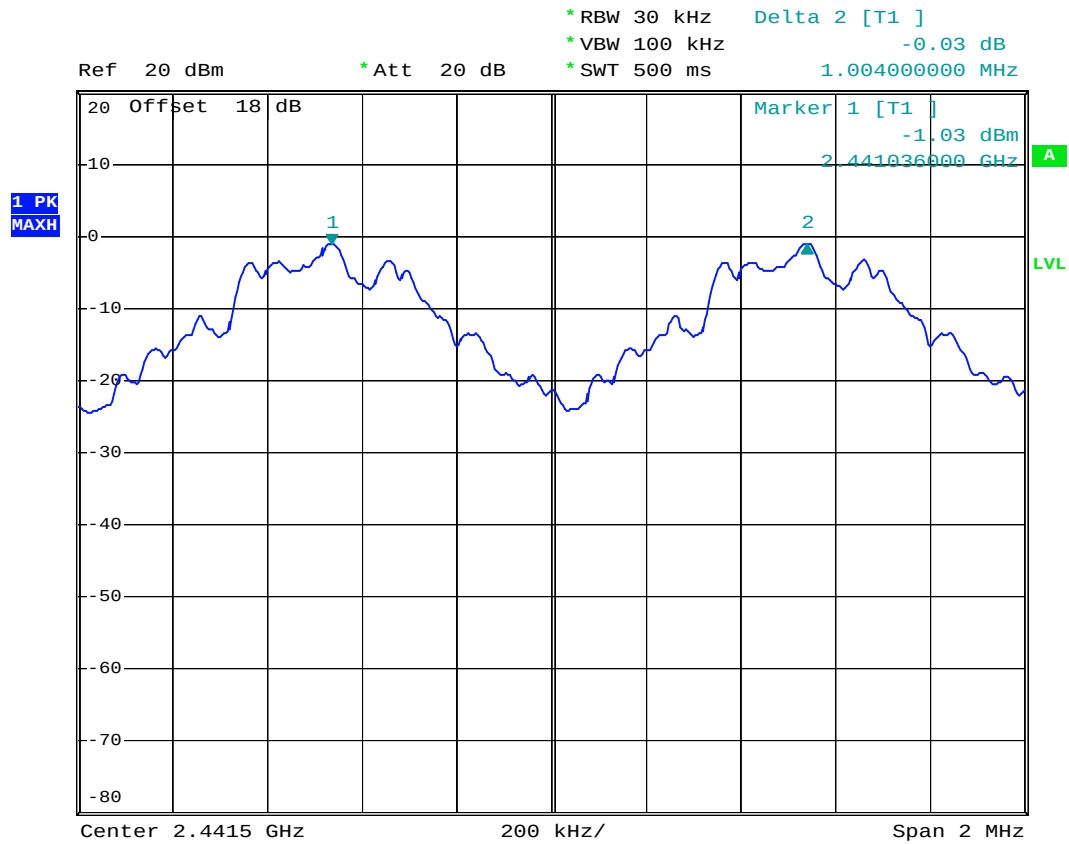
Mode 7



Date: 18.JUN.2007 17:46:26



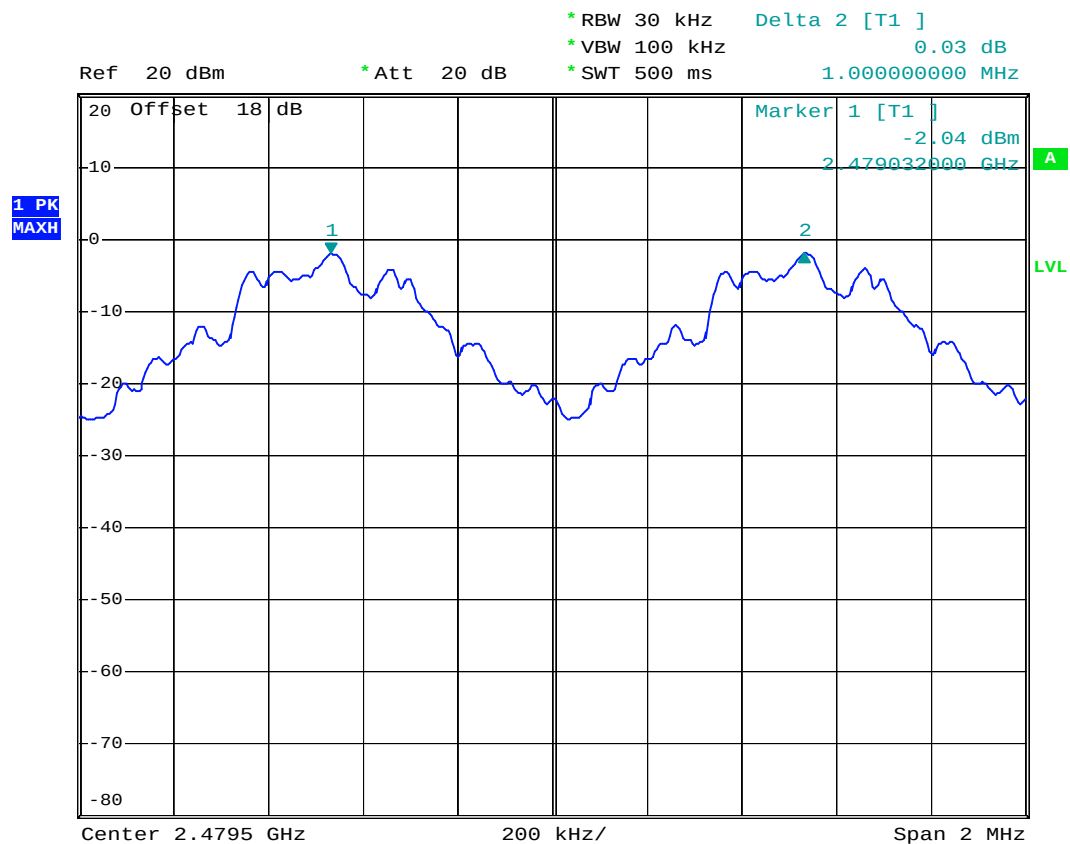
Mode 8



Date: 18.JUN.2007 17:47:47



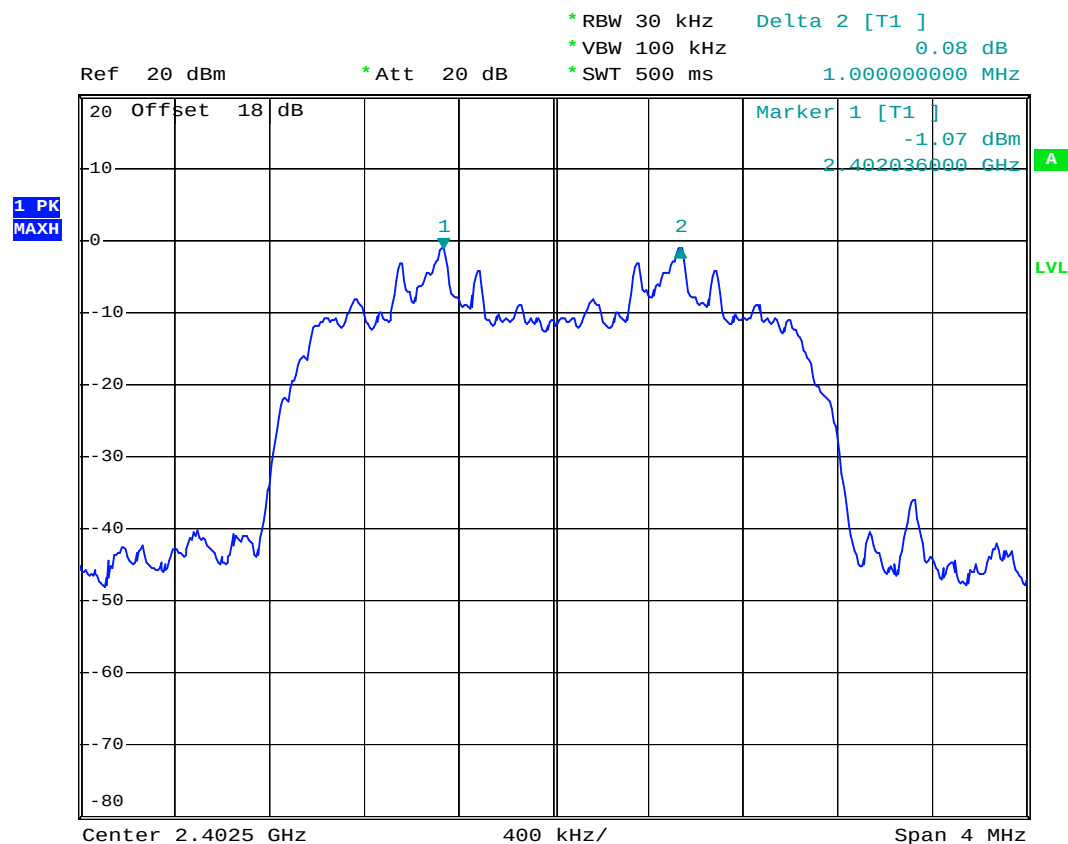
Mode 9



Date: 18.JUN.2007 17:48:44



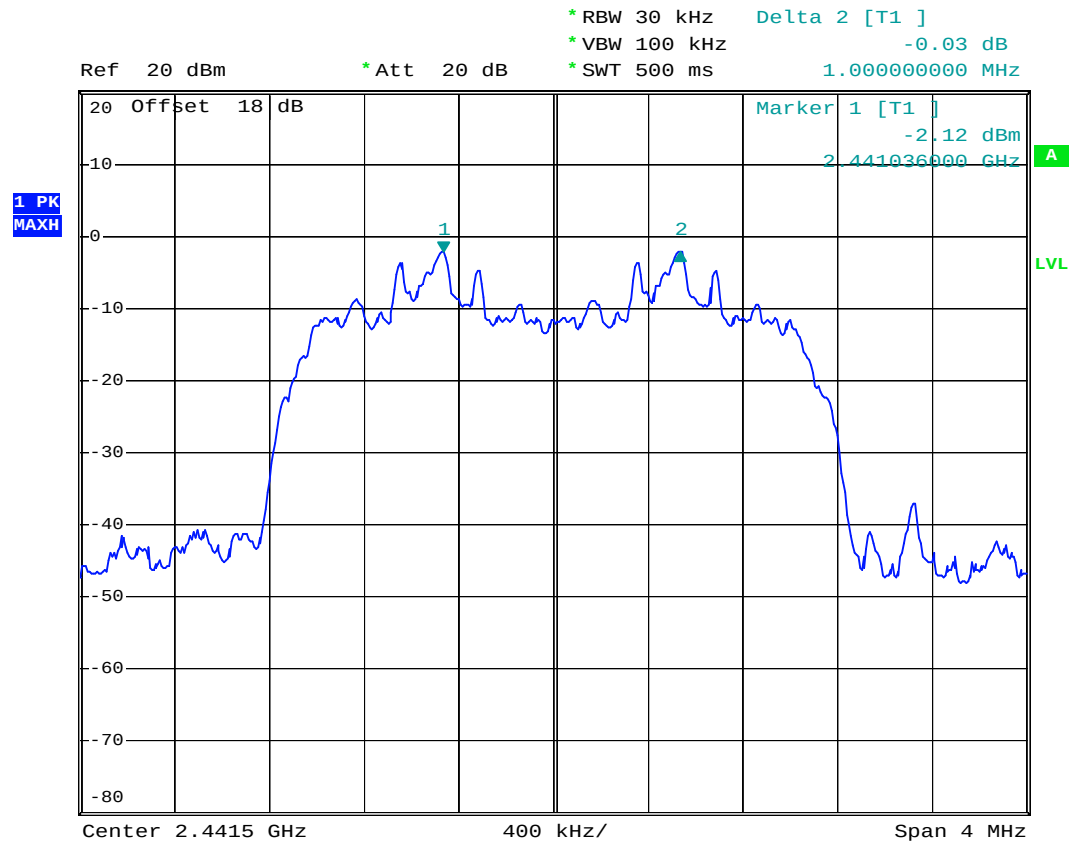
Mode 10



Date: 26.JUN.2007 22:51:28



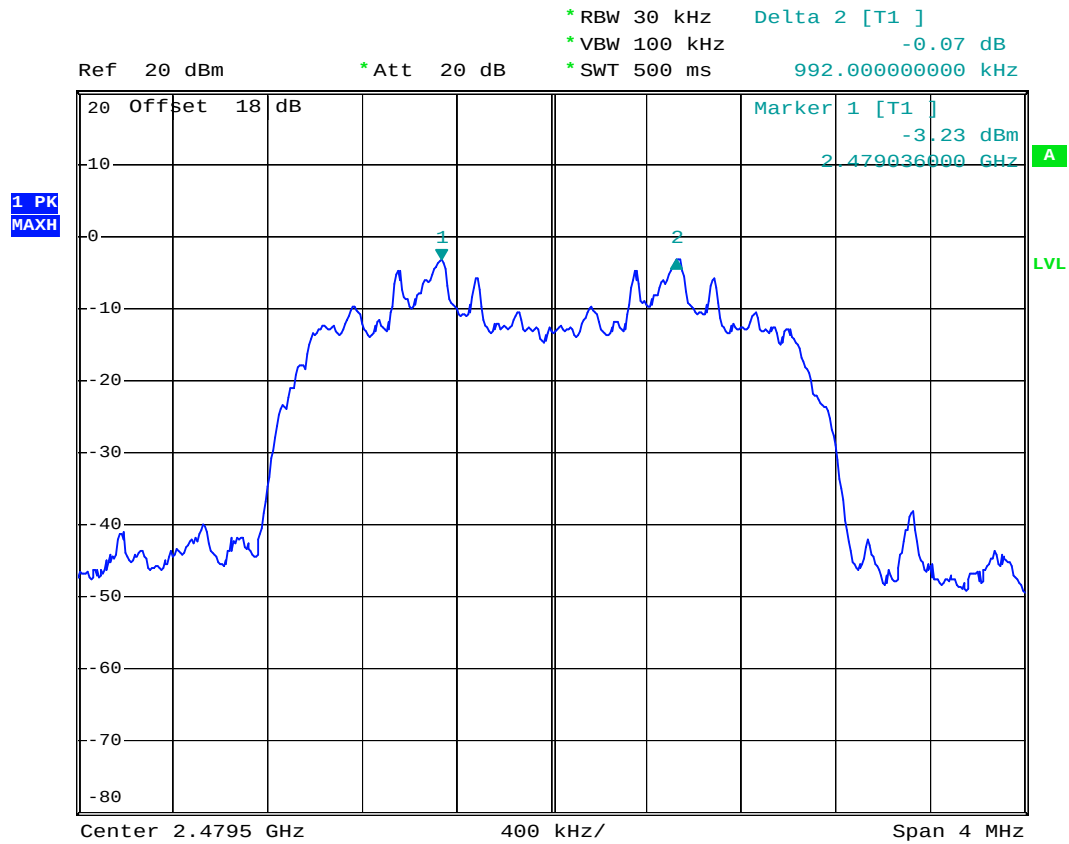
Mode 11



Date: 26.JUN.2007 22:52:12



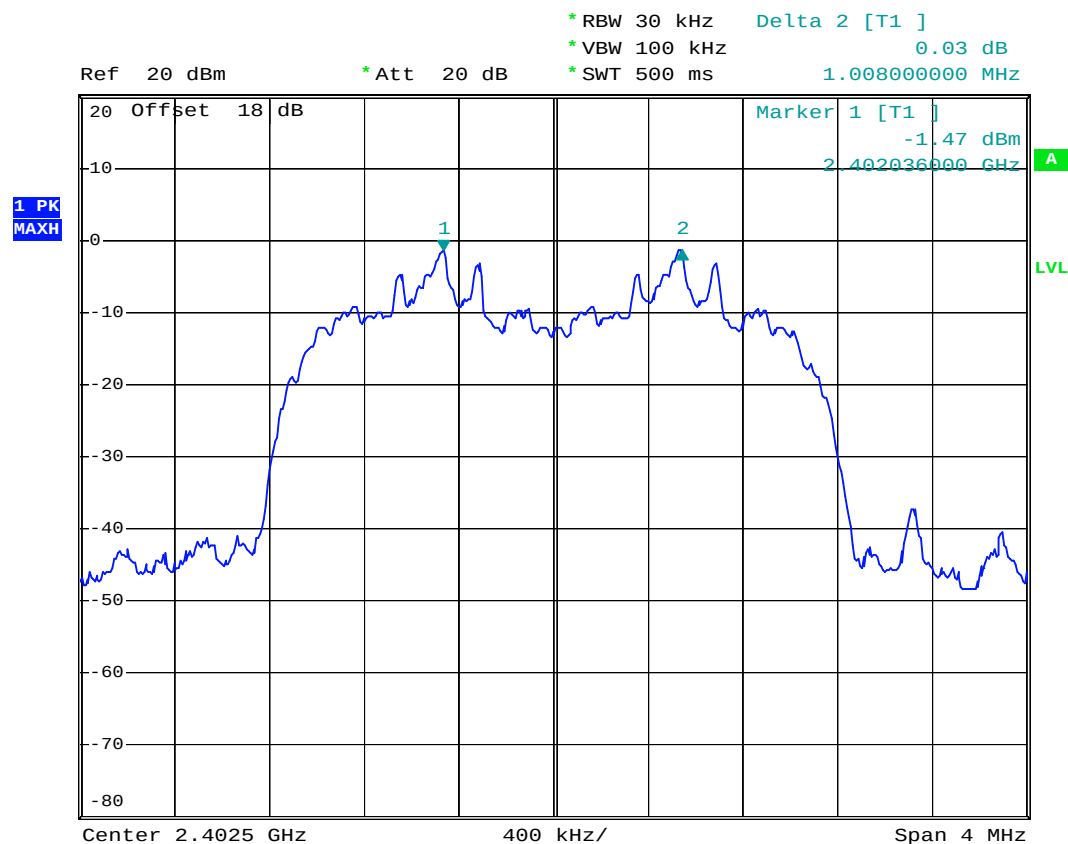
Mode 12



Date: 26.JUN.2007 22:52:59



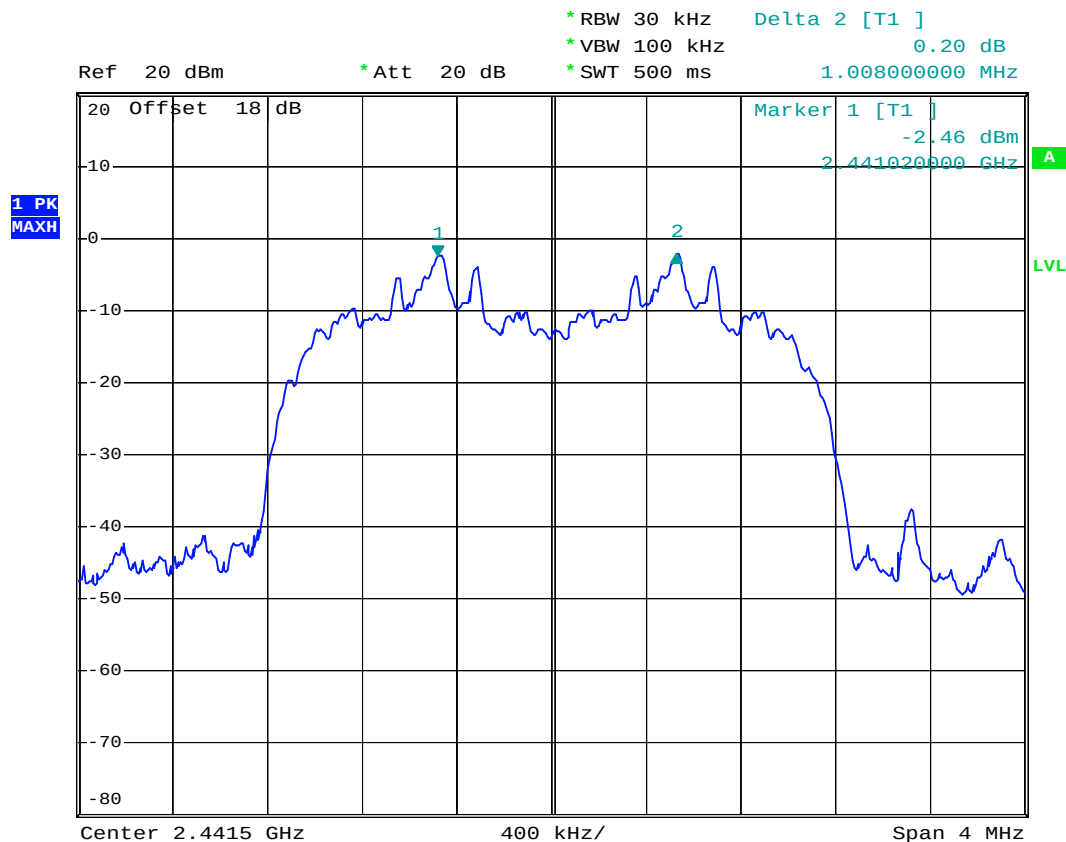
Mode 13



Date: 26.JUN.2007 23:15:02



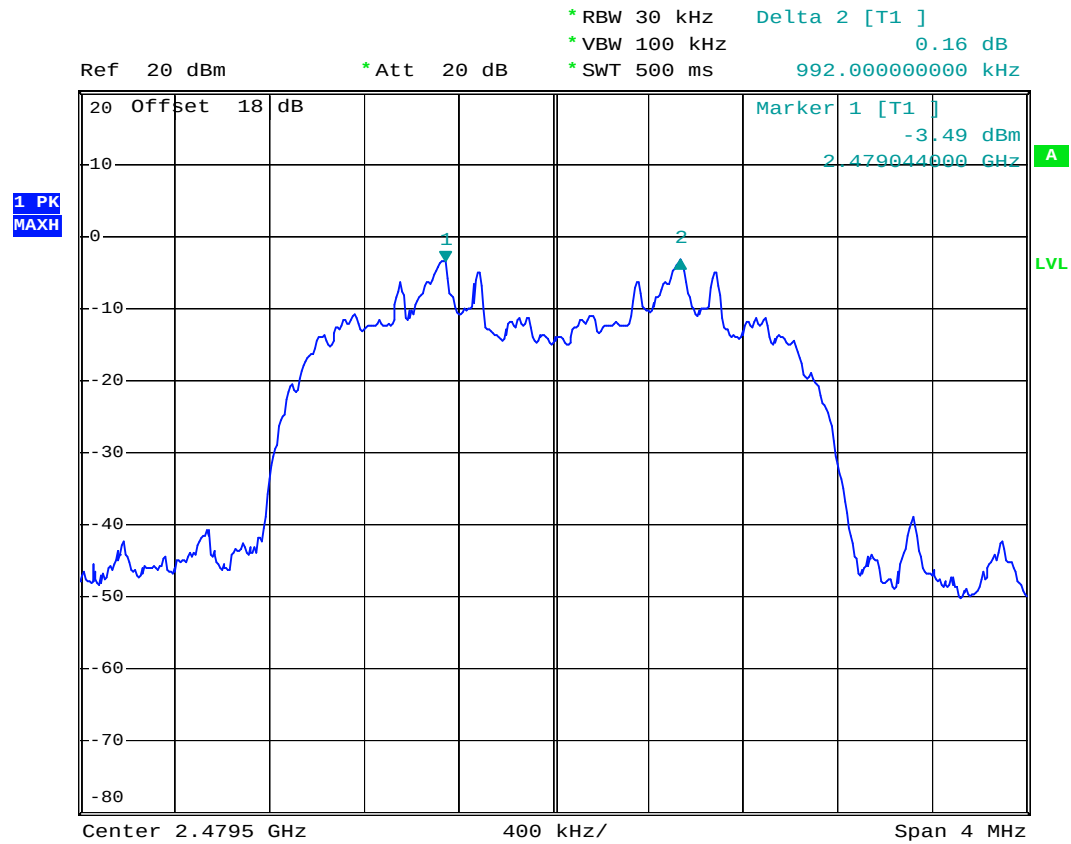
Mode14



Date: 26.JUN.2007 23:15:29



Mode 15



Date: 26.JUN.2007 23:15:58

5.6 Number of Hopping Frequency

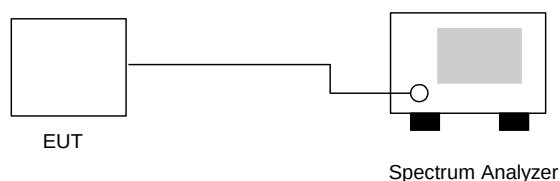
5.6.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.6.2 Test Procedure :

1. The output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Set RBW of spectrum analyzer to 100kHz and VBW to 100kHz.
3. The number of hopping frequency used is defined as the device has the numbers of total channel.

5.6.3 Test Setup Layout :



5.6.4 Test Result : See spectrum analyzer plots below

- Application Type : Bluetooth (1Mbps)
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

Number of Hopping Frequency (Channel)	Limits (Channel)
79	15

- Application Type : Bluetooth EDR (2Mbps)
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

Number of Hopping Frequency (Channel)	Limits (Channel)
79	15

**FCC TEST REPORT****Report No. : FR761417**

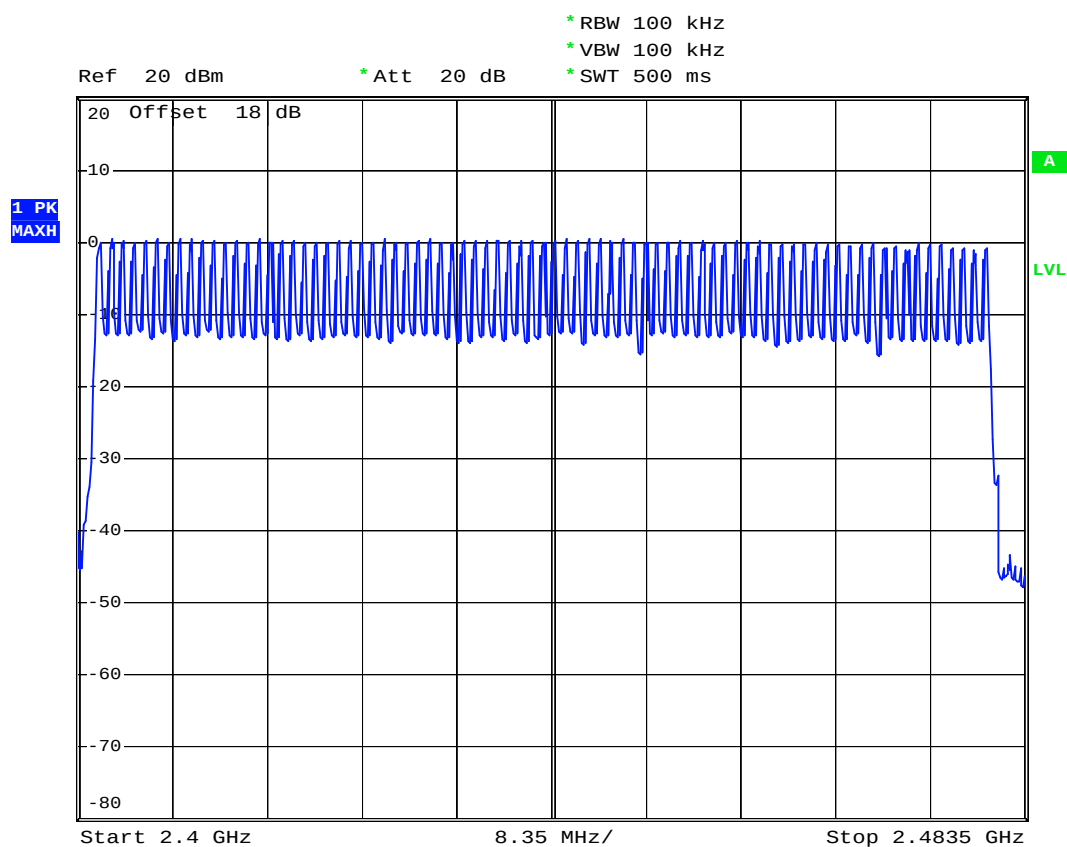
- Application Type : Bluetooth EDR (3Mbps)
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

Number of Hopping Frequency (Channel)	Limits (Channel)
79	15



5.6.5 Number of Hopping Frequency

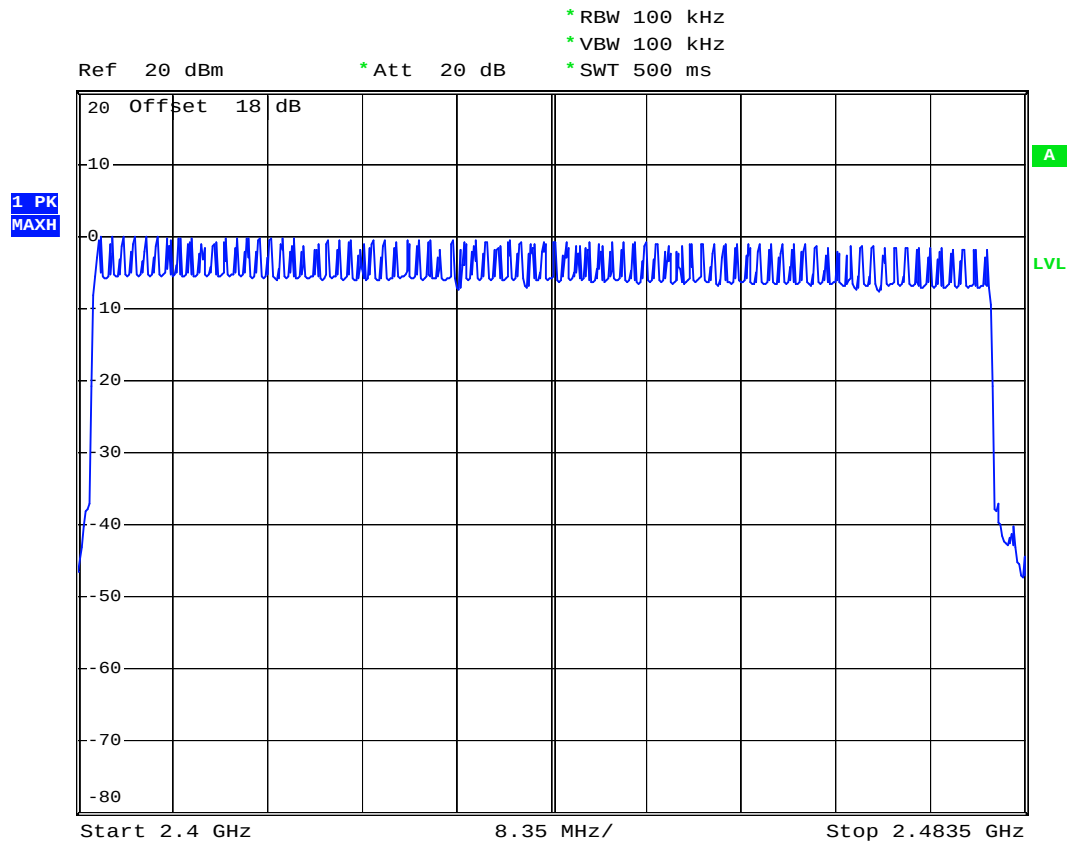
Bluetooth



Date: 18.JUN.2007 18:11:58



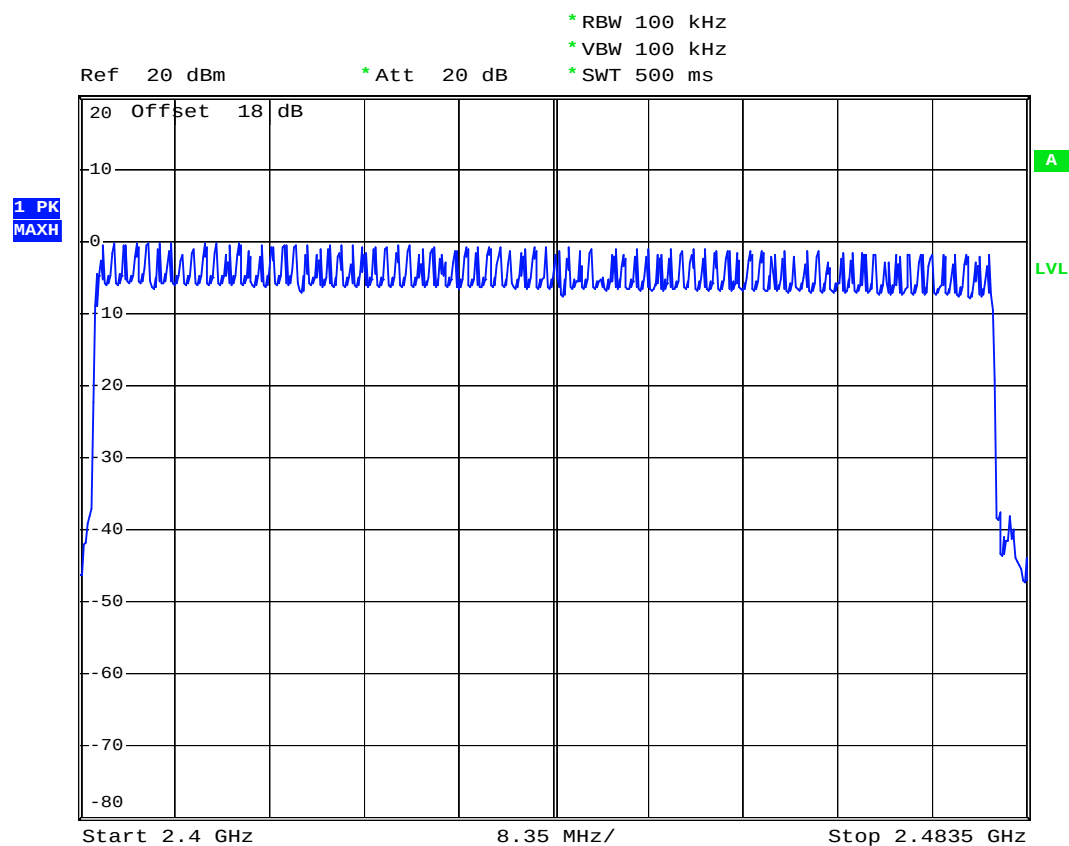
Bluetooth EDR (2Mbps)



Date: 26.JUN.2007 23:02:10



Bluetooth EDR (3Mbps)



Date: 26.JUN.2007 23:23:46

5.7 Hopping Channel Bandwidth

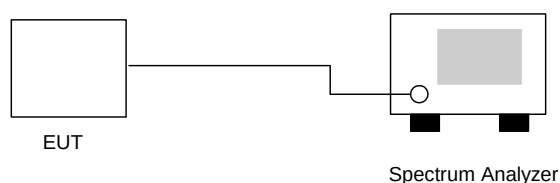
5.7.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.7.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer by a low loss cable.
2. Set RBW of spectrum analyzer to 30kHz and VBW to 300kHz.
3. The Hopping Channel bandwidth is defined as the total spectrum that the power of which is higher than peak power minus 20 dB.

5.7.3 Test Setup Layout :



5.7.4 Test Result : See spectrum analyzer plots below

- Application Type : Bluetooth (1Mbps)
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	0.896	Mode 7
39	2441	0.894	Mode 8
78	2480	0.896	Mode 9

**FCC TEST REPORT****Report No. : FR761417**

- Application Type : Bluetooth EDR (2Mbps)
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.232	Mode 10
39	2441	1.240	Mode 11
78	2480	1.228	Mode 12

- Application Type : Bluetooth EDR (3Mbps)
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.264	Mode 13
39	2441	1.268	Mode 14
78	2480	1.256	Mode 15



5.7.5 Hopping Channel Bandwidth

Mode 7



Date: 18.JUN.2007 17:41:39



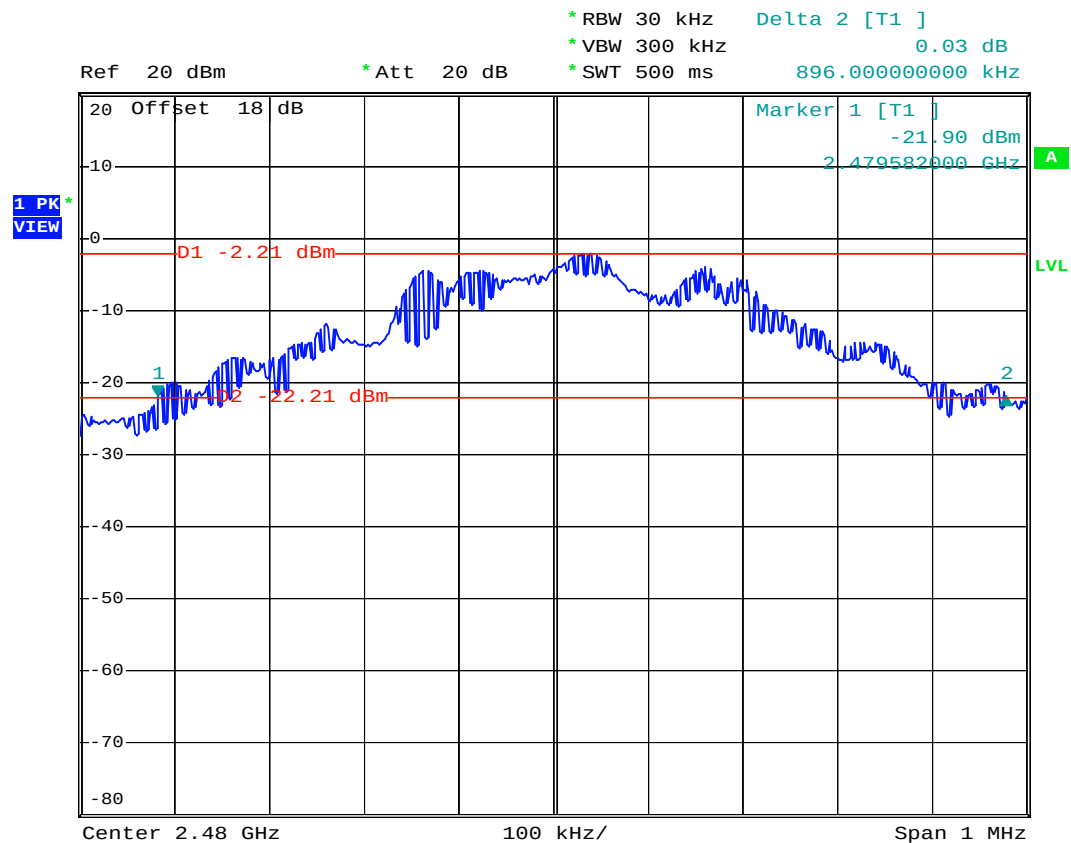
Mode 8



Date: 18.JUN.2007 18:14:32



Mode 9



Date: 18.JUN.2007 17:43:57



Mode 10



Date: 26.JUN.2007 22:45:55



Mode 11



Date: 26.JUN.2007 22:47:13



Mode 12



Date: 26.JUN.2007 22:48:20



Mode 13



Date: 26.JUN.2007 23:06:13



Mode 14



Date: 26.JUN.2007 23:06:54



Mode 15



Date: 26.JUN.2007 23:08:01

5.8 Dwell Time of Each Frequency

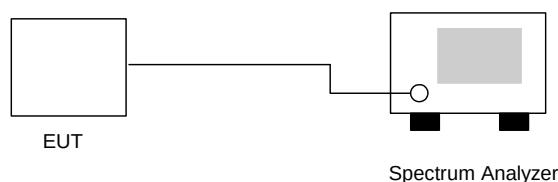
5.8.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.8.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer by a low loss cable.
2. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
3. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
4. The calculate equals $79 * 0.4 * (1600/79) * t$ (t = the time duration of one single pulse)

5.8.3 Test Setup Layout :



5.8.4 Test Result : See spectrum analyzer plots below

- Application Type : Bluetooth (1Mbps)
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.5	140.00	0.038	0.4
DH3	4.4	560.00	0.078	0.4
DH5	3.5	880.00	0.097	0.4



- Application Type : Bluetooth EDR 2Mbps
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

CH00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	3.4	2980.00	0.320	0.4

- Application Type : Bluetooth EDR 3Mbps
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

CH00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	3.2	2980.00	0.301	0.4

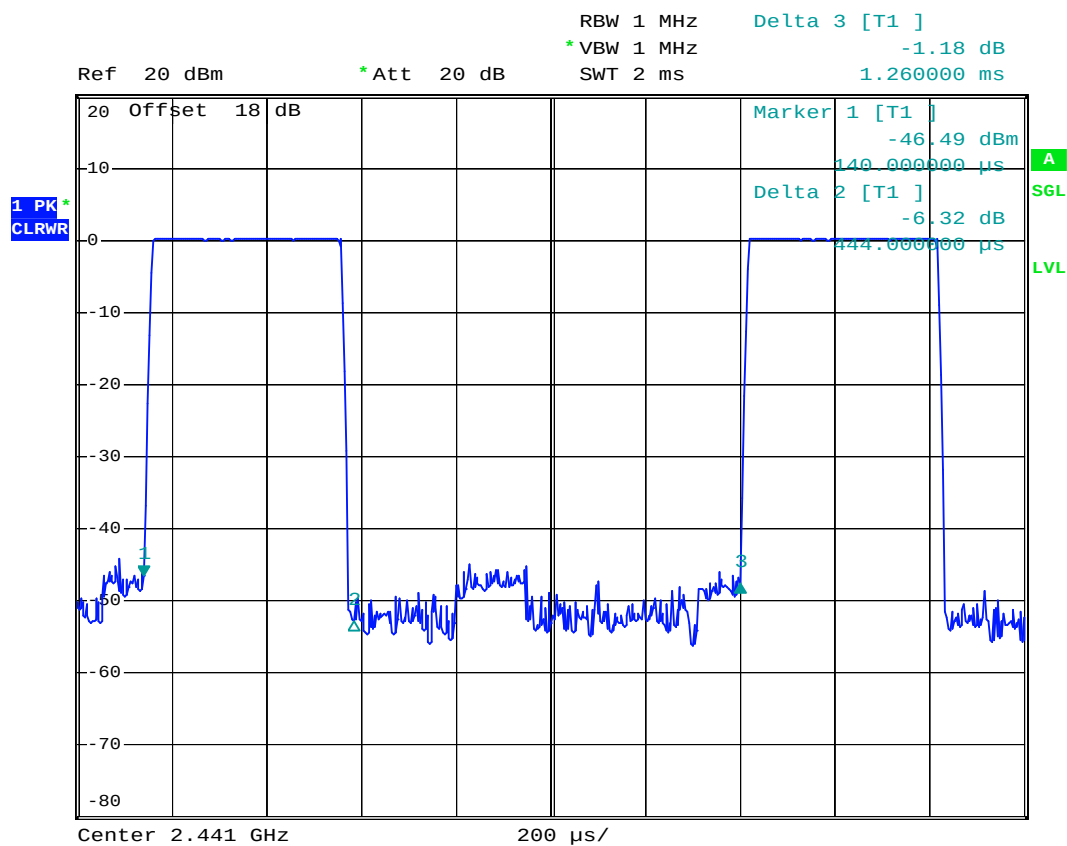
※ Remark:

1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79 channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

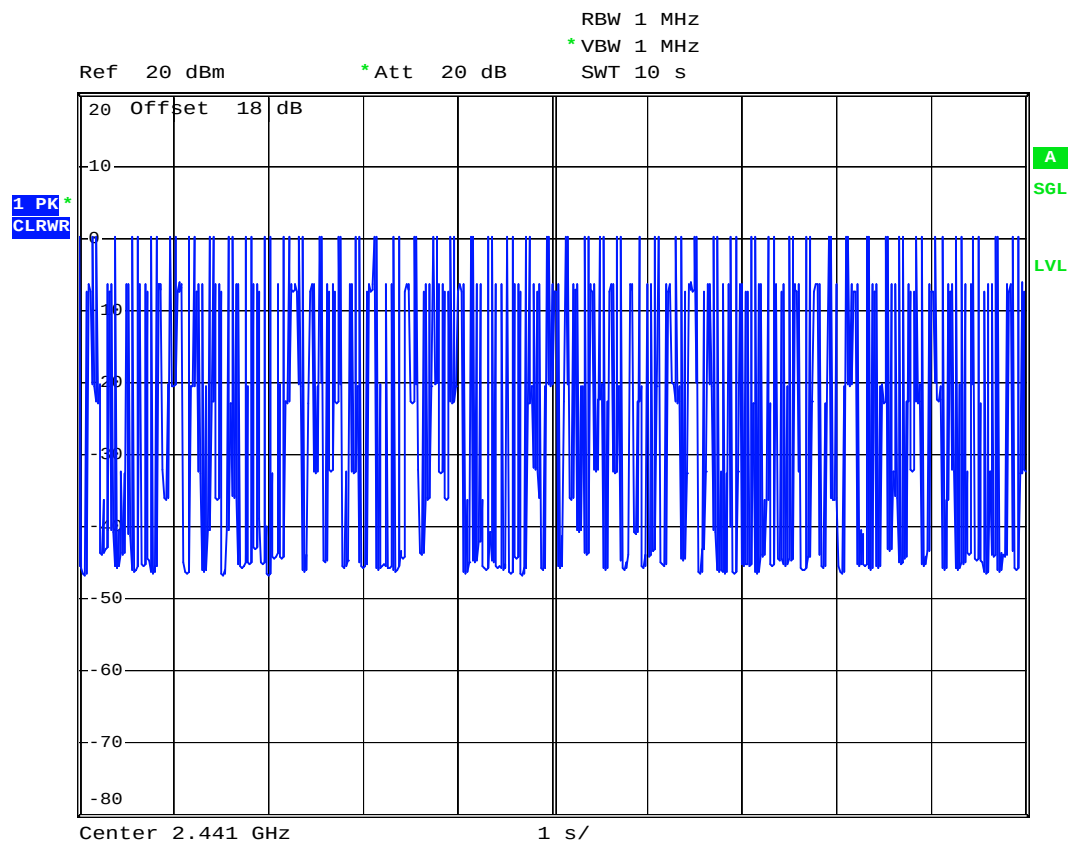


5.8.5 Dwell Time

Bluetooth DH1 (CH39)



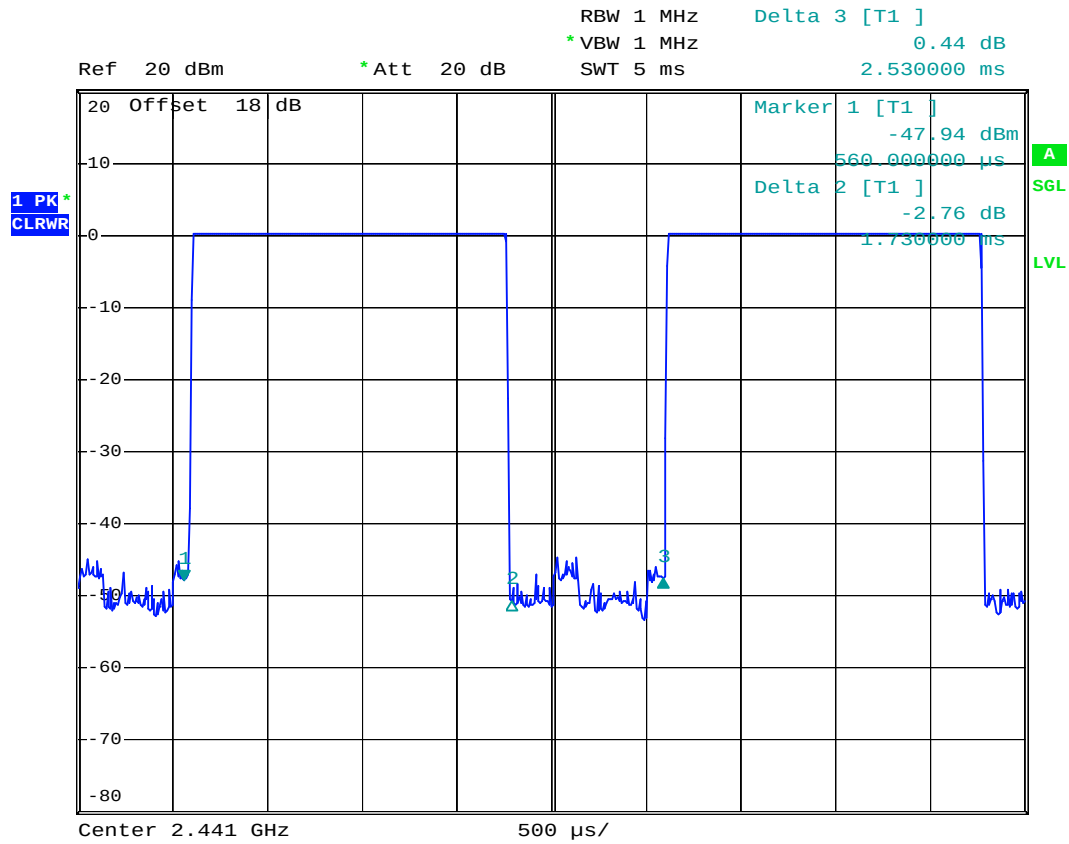
Date: 18.JUN.2007 17:53:06



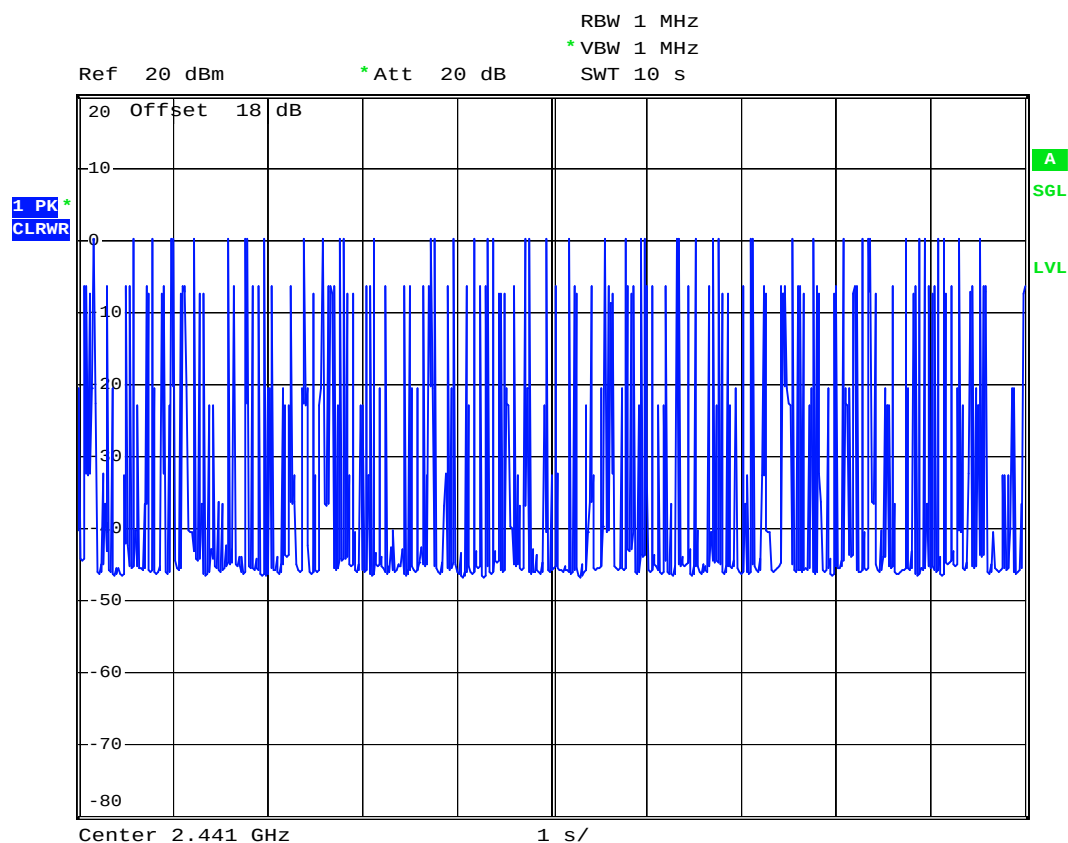
Date: 18.JUN.2007 17:58:15



Bluetooth DH3 (CH39)



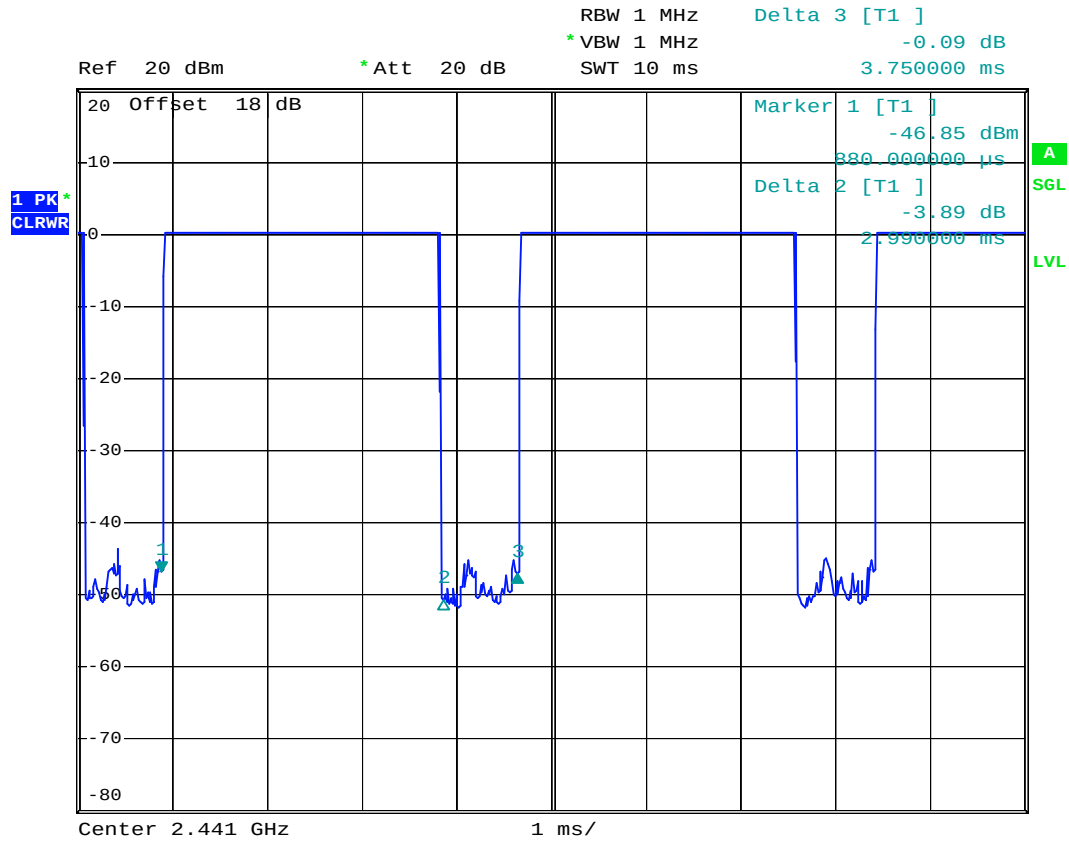
Date: 18.JUN.2007 17:54:39



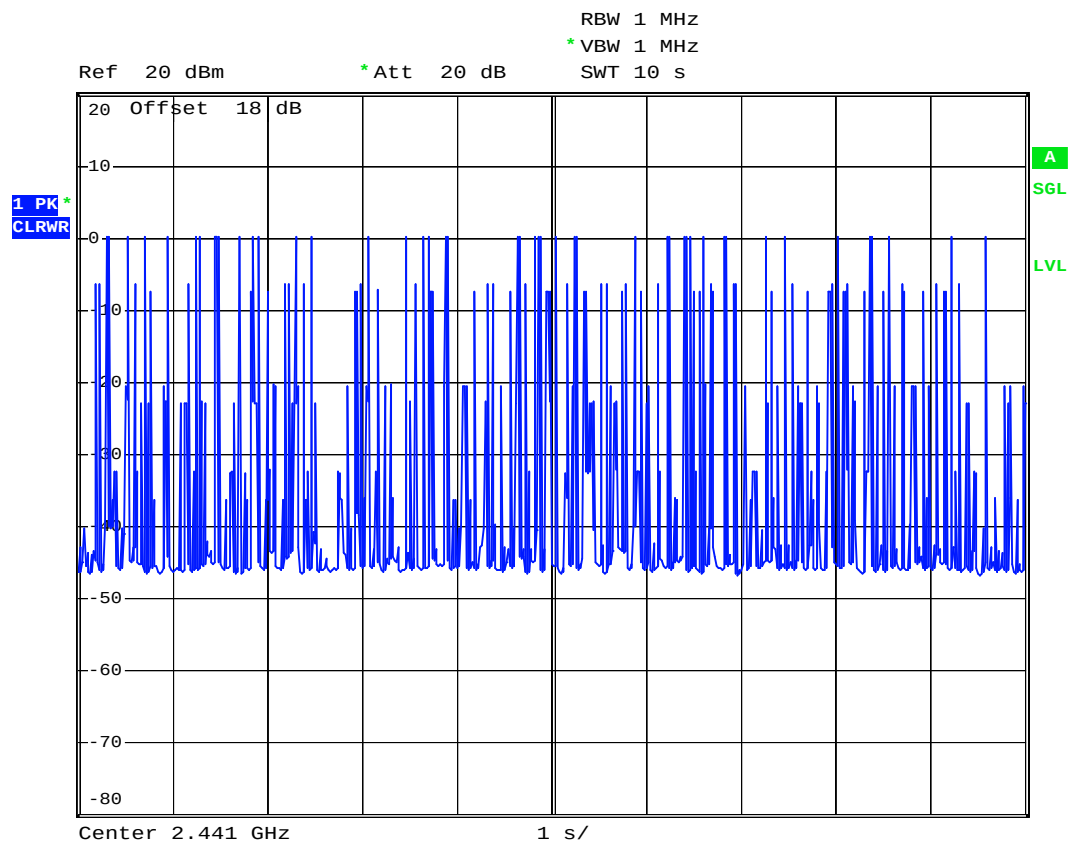
Date: 18.JUN.2007 17:59:01



Bluetooth DH5 (CH39)



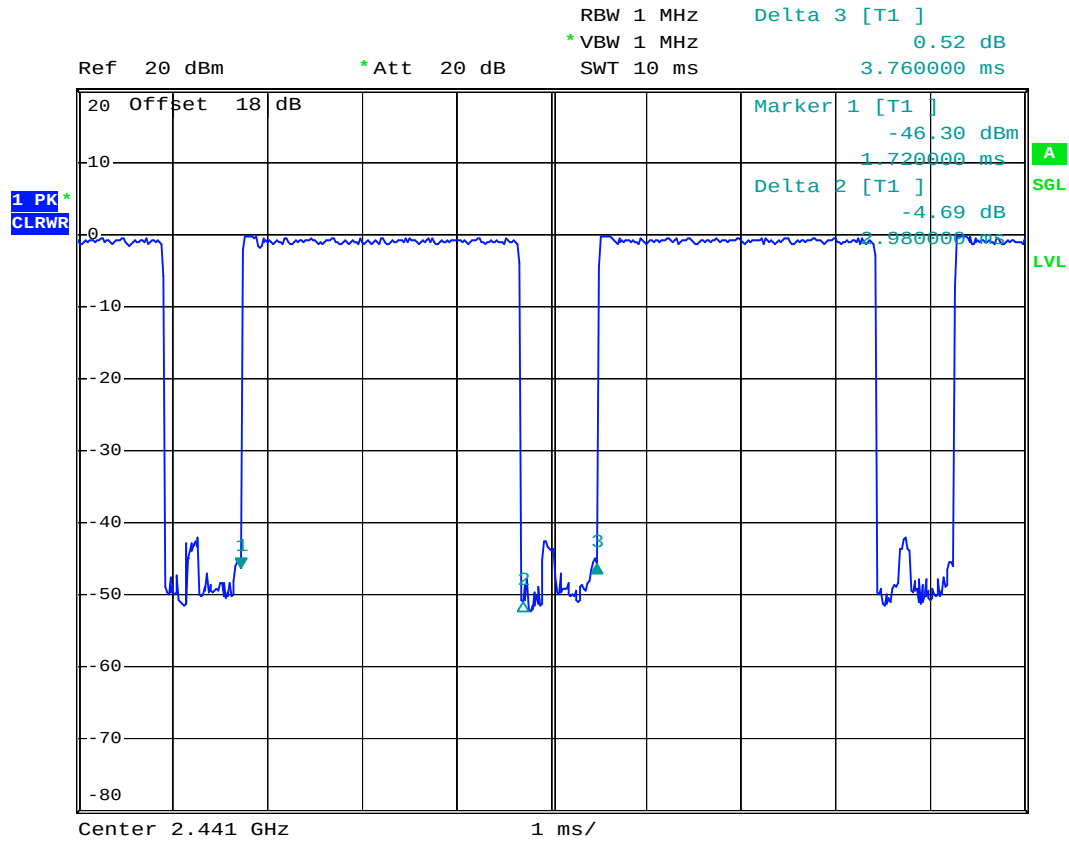
Date: 18.JUN.2007 17:55:55



Date: 18.JUN.2007 17:59:45



Bluetooth EDR 2Mbps DH1 (CH00)

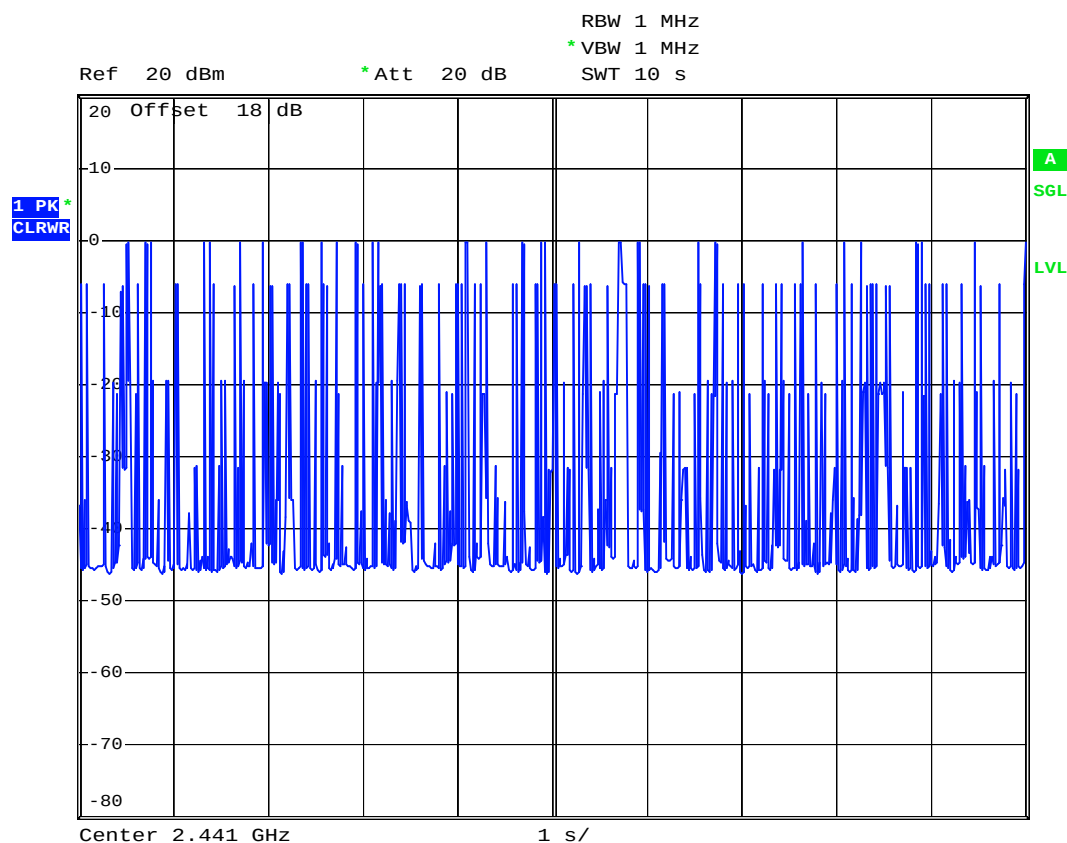


Date: 26.JUN.2007 22:53:59



FCC TEST REPORT

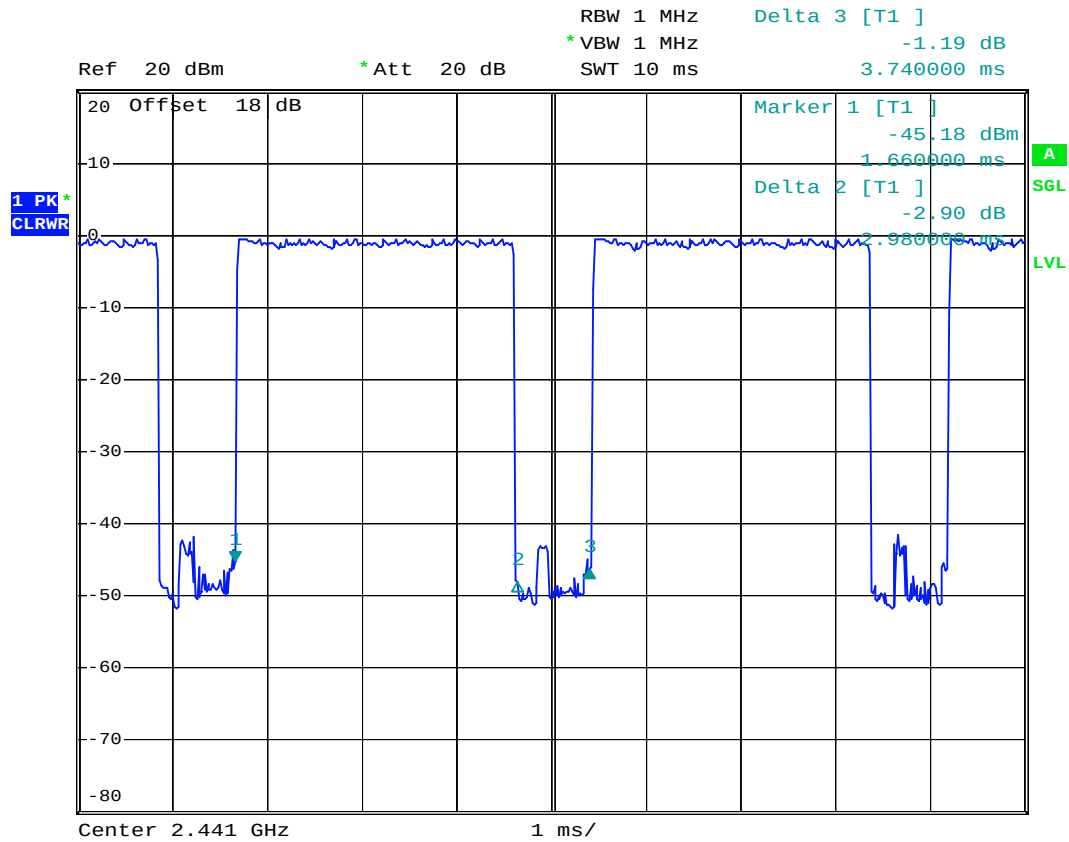
Report No. : FR761417



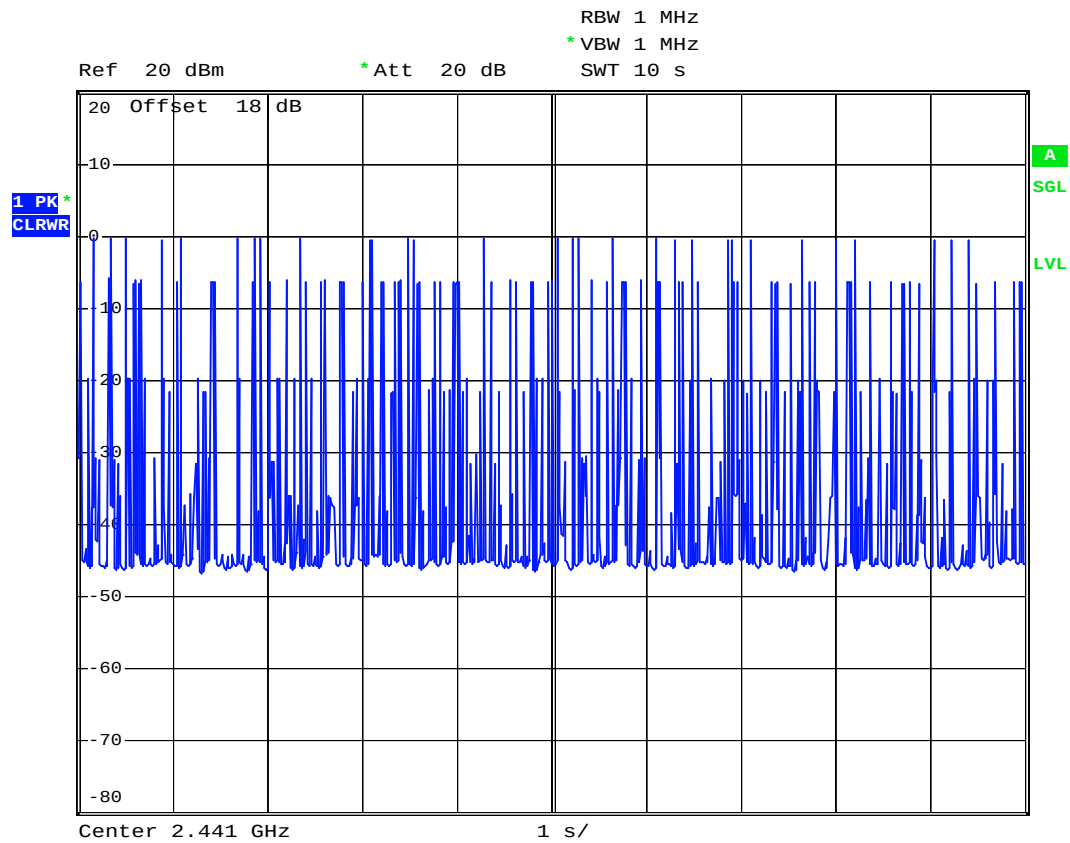
Date: 26.JUN.2007 22:54:48



Bluetooth EDR 3 DH1 (CH00)



Date: 26.JUN.2007 23:16:55



Date: 26.JUN.2007 23:17:34

5.9 Peak Output Power Measurement

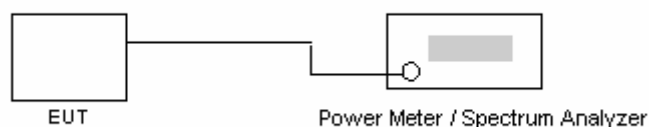
5.9.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.9.2 Test Procedure :

1. The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter for WLAN measurement. The power is equal to the reading level on power meter plus cable loss at the EUT antenna terminal.
2. The antenna port(RF output) of the EUT was connected to the input (RF input) of a spectrum analyzer for BT measurement. The cable loss has been offset before testing.

5.9.3 Test Setup Layout :



5.9.4 Test Result :

- Application Type : WLAN 802.11b/g and BT
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	13.54	1W/30 dBm
06	2437	13.51	1W/30 dBm
11	2462	13.56	1W/30 dBm

WLAN 802.11g

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	11.48	1W/30 dBm
06	2437	11.95	1W/30 dBm
11	2462	11.58	1W/30 dBm

**Bluetooth (1Mbps)**

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	0.25	1W/30 dBm
39	2441	0.32	1W/30 dBm
78	2480	-0.49	1W/30 dBm

Bluetooth EDR (2Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	0.88	1W/30 dBm
39	2441	0.35	1W/30 dBm
78	2480	-0.73	1W/30 dBm

Bluetooth EDR (3Mbps)

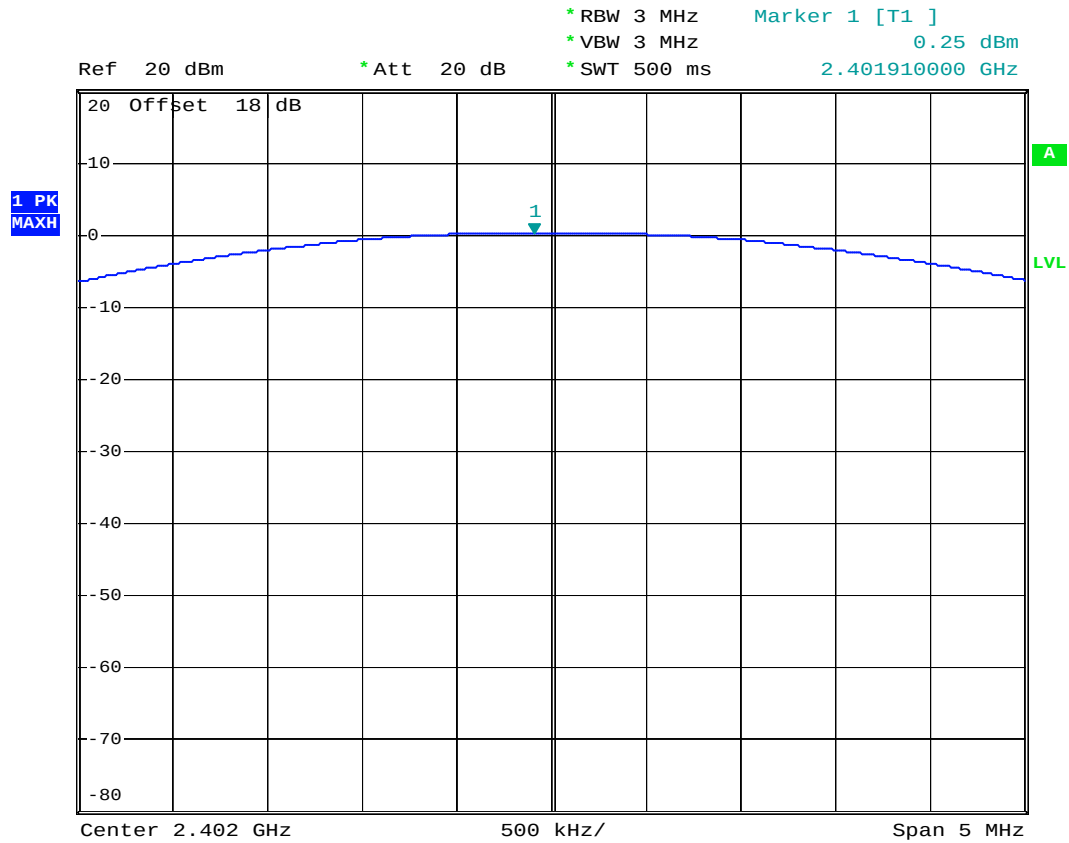
Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	1.03	1W/30 dBm
39	2441	0.42	1W/30 dBm
78	2480	-0.71	1W/30 dBm



5.9.5 Output Power

BT(1Mbps)

Mode : CH00 (2402MHz)

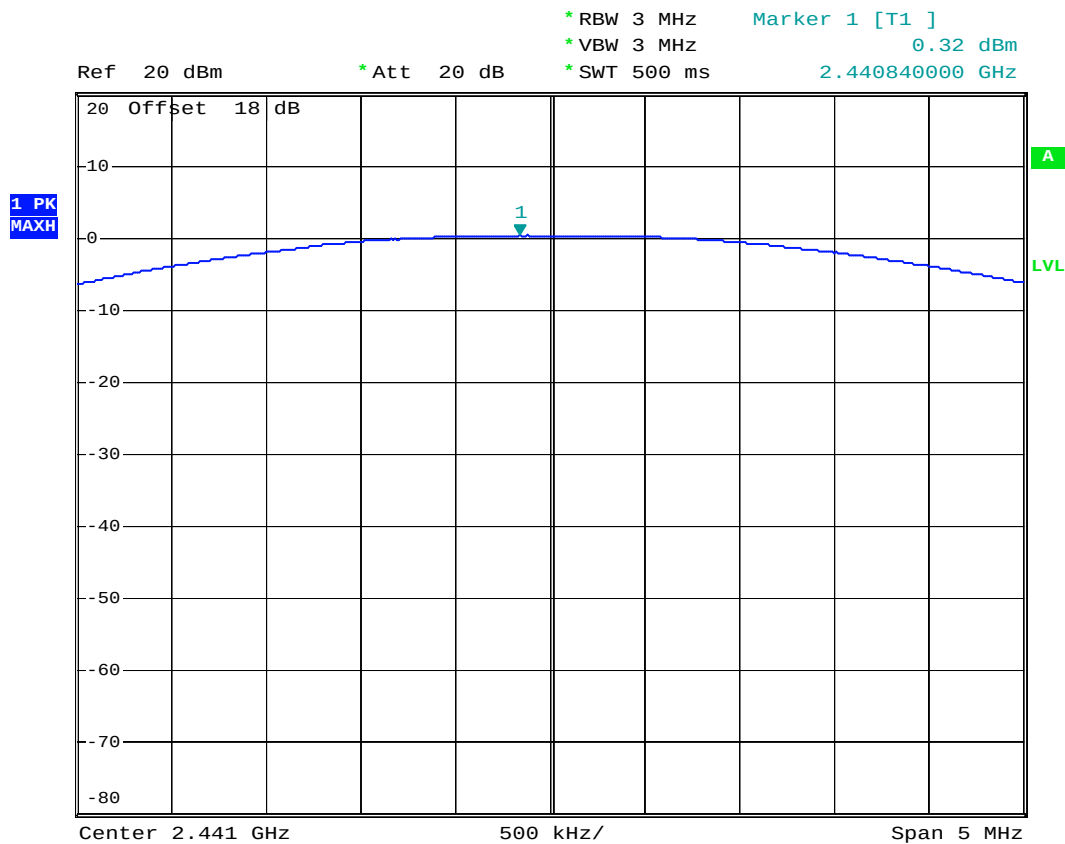


Date: 18.JUN.2007 17:30:08



BT(1Mbps)

Mode : CH39 (2441MHz)

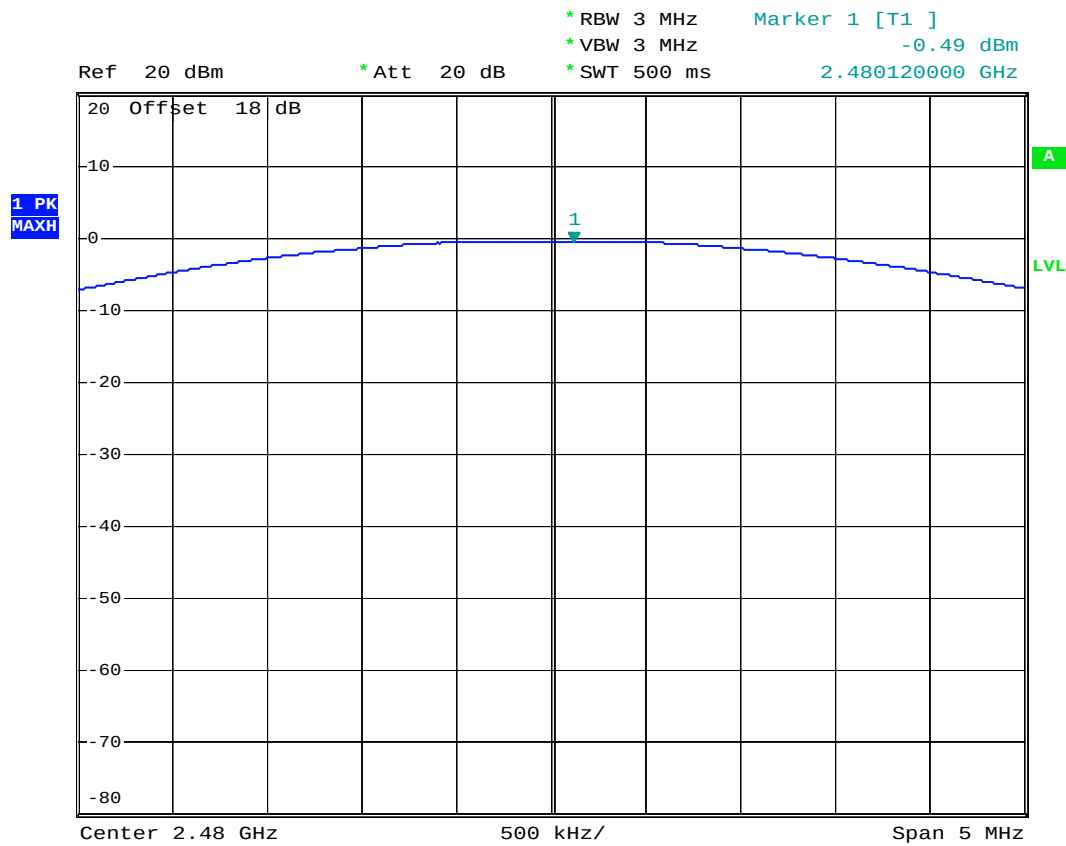


Date: 18.JUN.2007 17:30:42



BT(1Mbps)

Mode : CH78 (2480MHz)

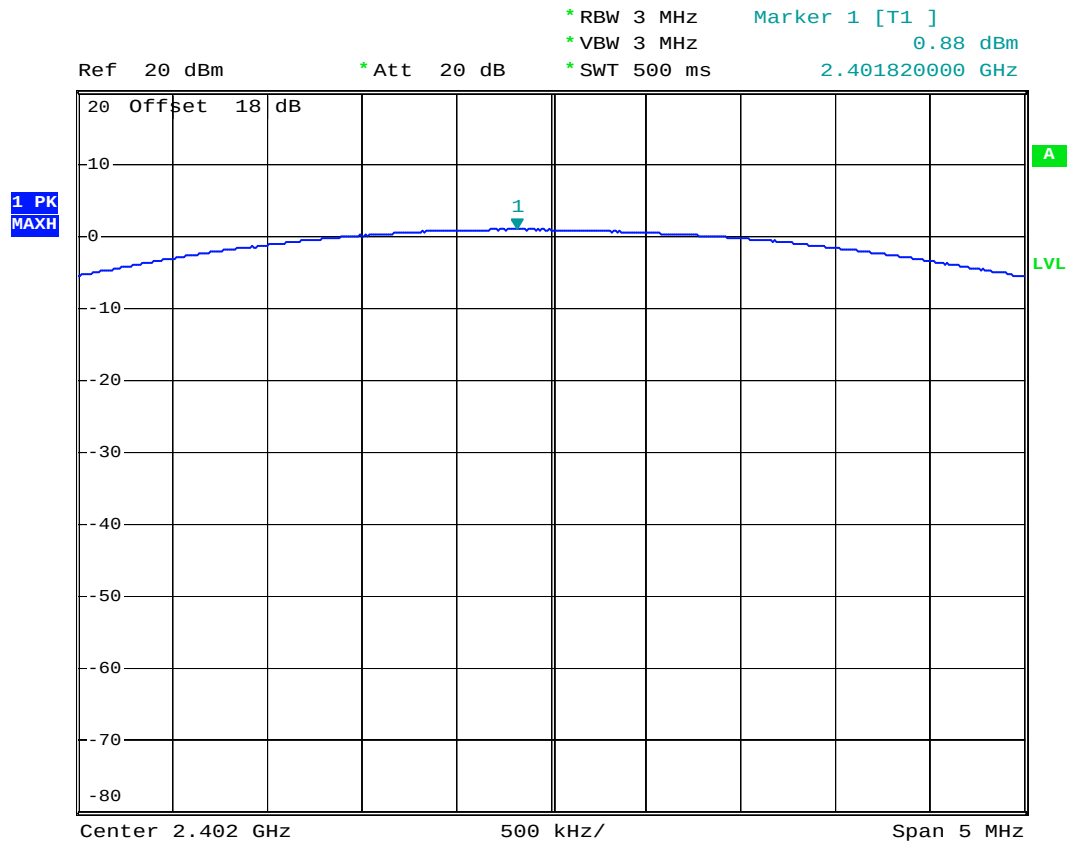


Date: 18.JUN.2007 17:31:20



BT-EDR(2Mbps)

Mode : CH00 (2402MHz)

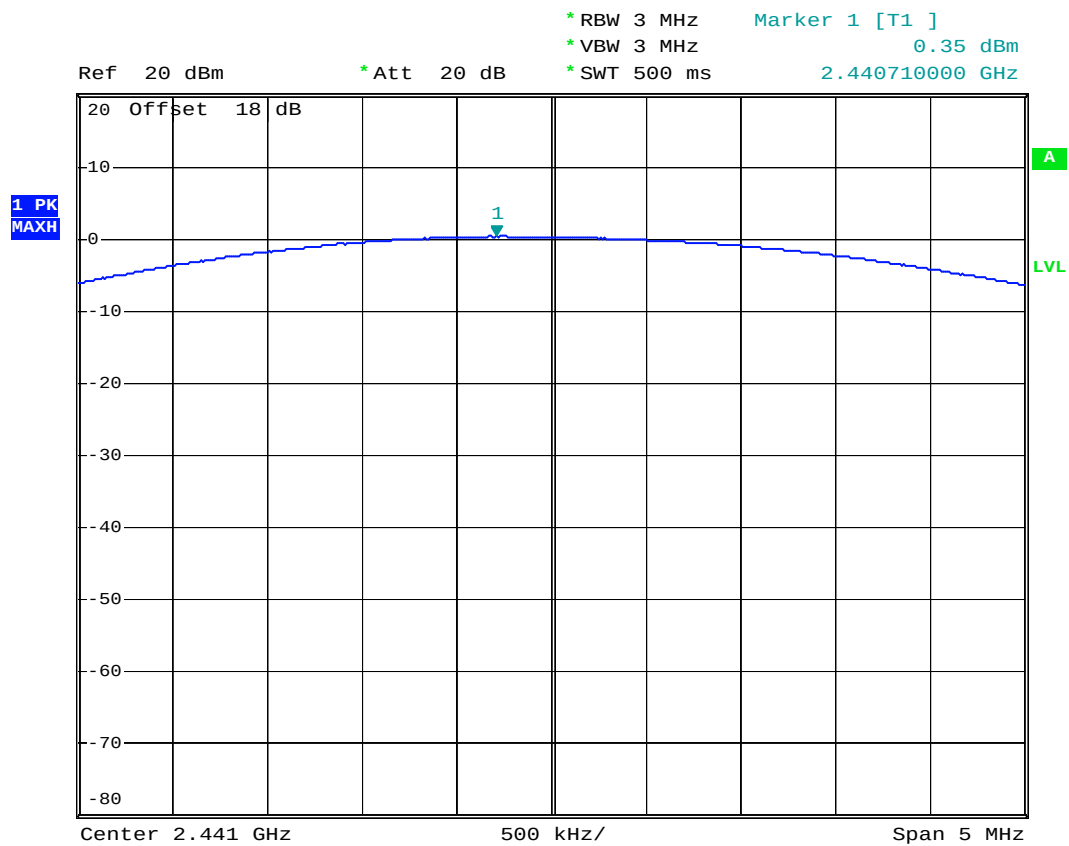


Date: 26.JUN.2007 22:44:15



BT-EDR(2Mbps)

Mode : CH39 (2441MHz)

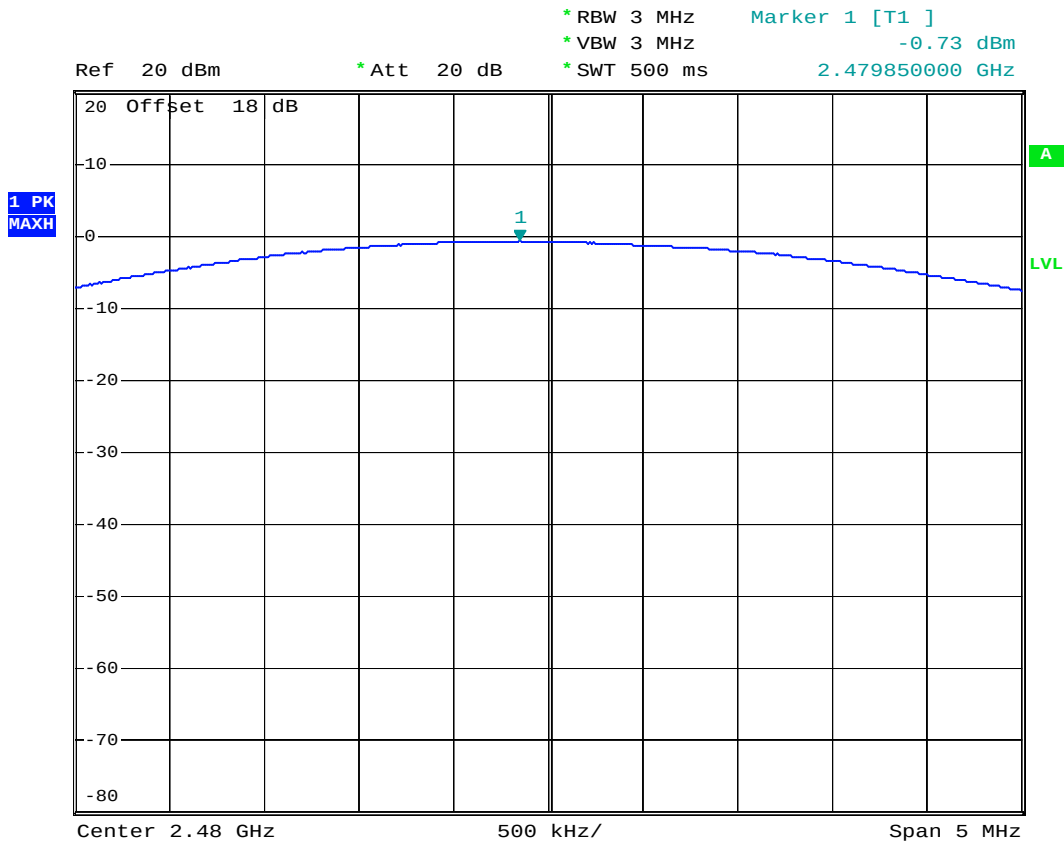


Date: 26.JUN.2007 22:44:34



BT-EDR(2Mbps)

Mode : CH78 (2480MHz)



Date: 26.JUN.2007 22:44:49

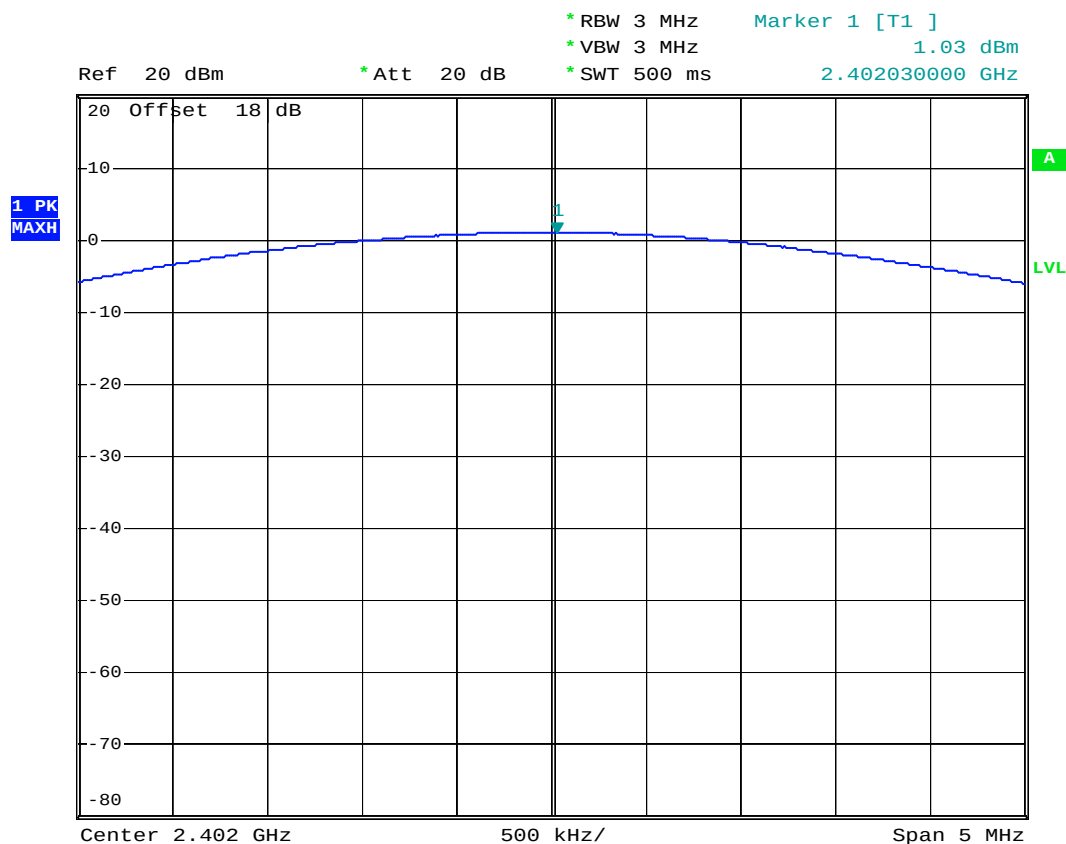


FCC TEST REPORT

Report No. : FR761417

BT-EDR(3Mbps)

Mode : CH00 (2402MHz)

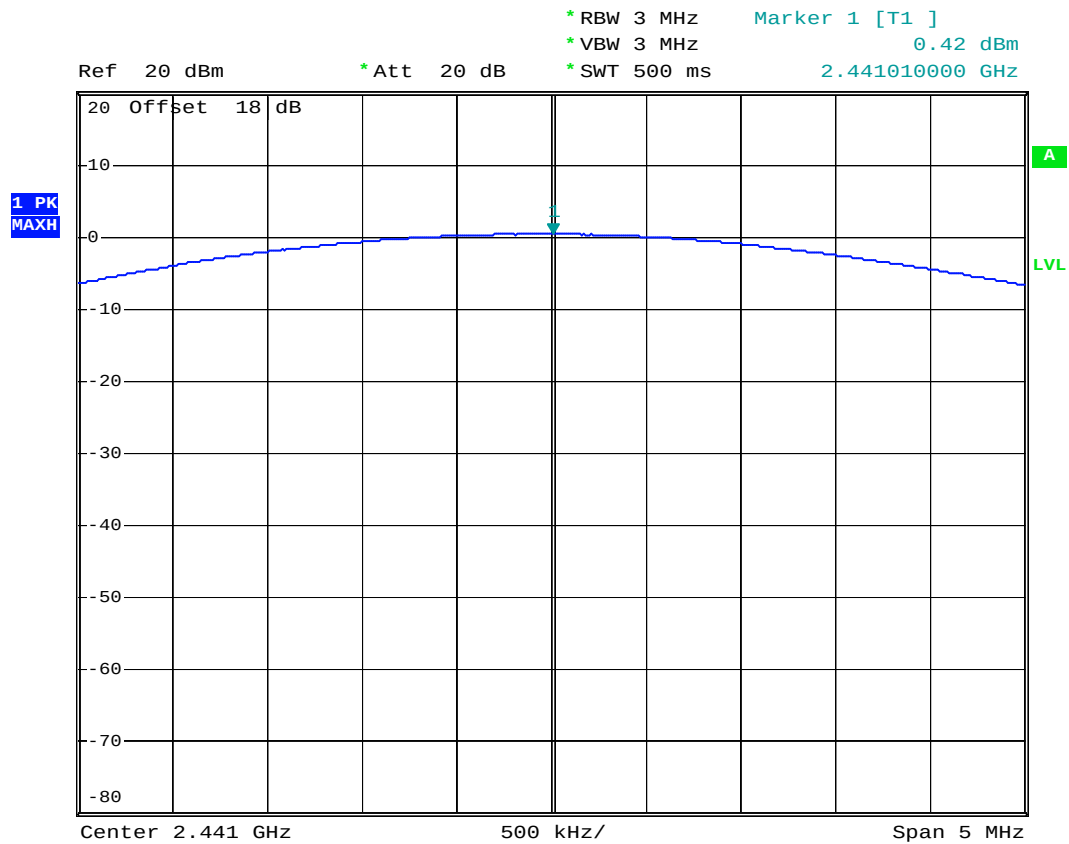


Date: 26.JUN.2007 23:04:54



BT-EDR(3Mbps)

Mode : CH39 (2441MHz)

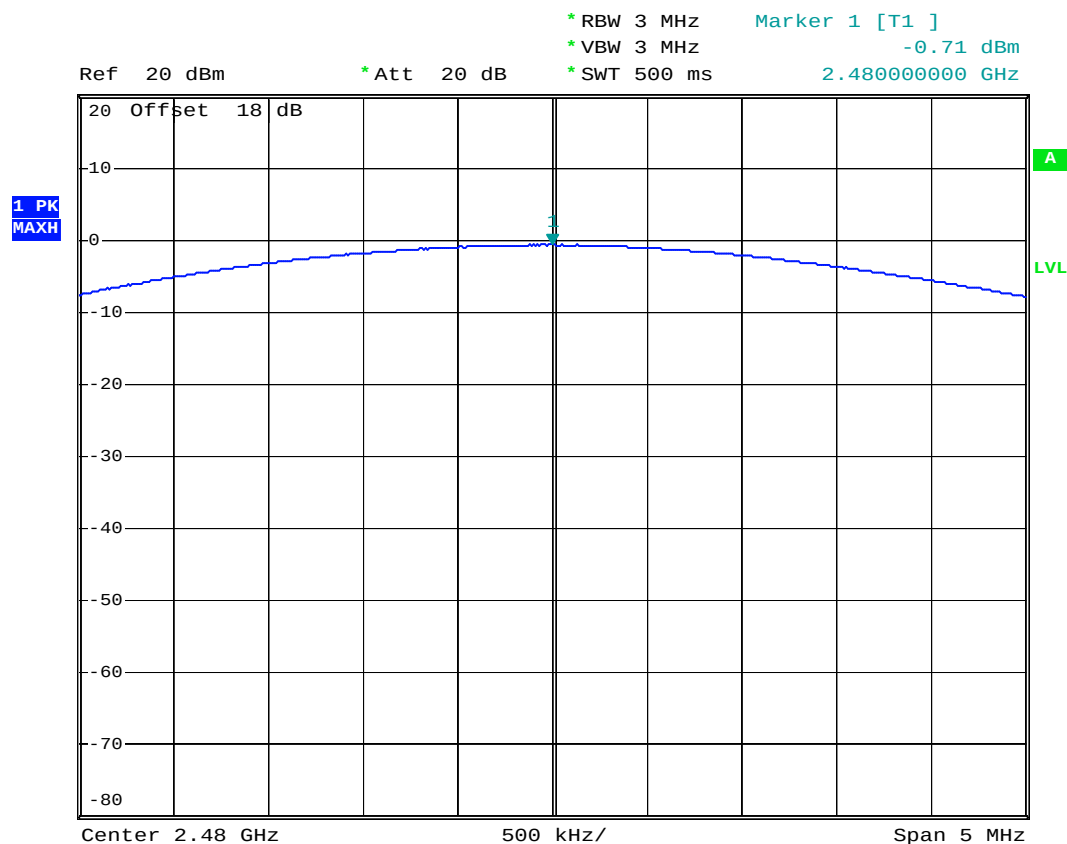


Date: 26.JUN.2007 23:05:08



BT-EDR(3Mbps)

Mode : CH78 (2480MHz)



Date: 26.JUN.2007 23:05:24



5.10 Conducted Emission

5.10.1 Measuring Instruments

As described in chapter 6 of this test Report.

The receiver setting :

150 KHz ~ 30 MHz	Detector : Quasi – Peak and Average Bandwidth : 9 KHz
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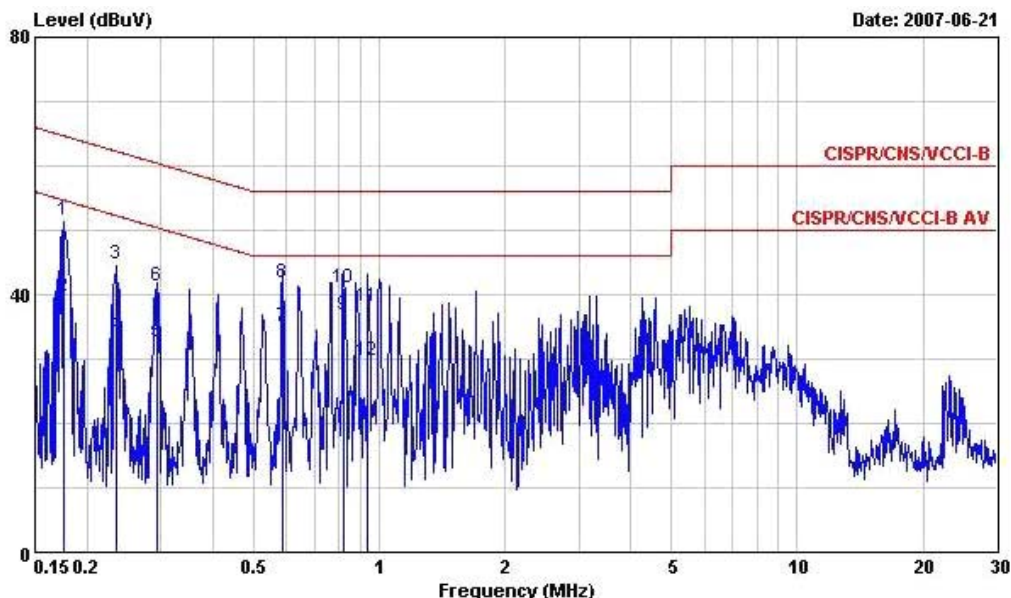
5.10.2 Test Procedures :

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power port of a line impedance stabilization network (LISN).
- All the support units are connected to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

5.10.3 Test Data

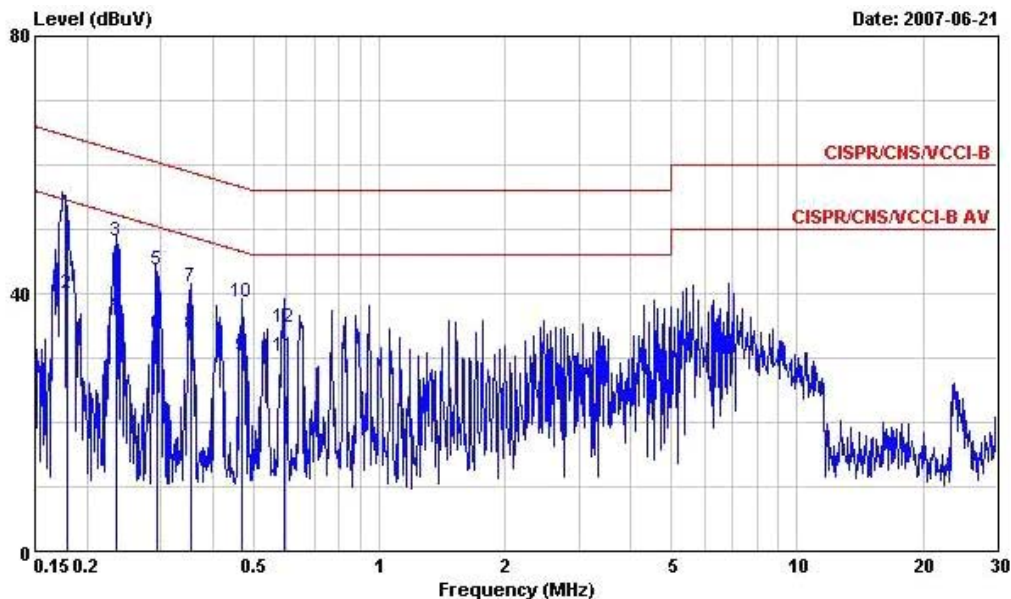
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony
- Test Mode : Mode 1

■ The test that passed at minimum margin was marked by the frame in the following table.



Site : CO04-HY
Condition : CISPR/CNS/VCCI-B LISN 200704 99041 LINE
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
POWER: AC 120V/60Hz
Model : FD761417
Memo : GSM 850 Idle + BT Link + WLAN Link +
: MPEG 4 + Camera + Adaptor

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1758420	51.66	-13.02	64.68	51.42	0.10	0.14	QP
2	0.1758420	39.84	-14.84	54.68	39.60	0.10	0.14	Average
3	0.2353310	44.63	-17.63	62.26	44.25	0.10	0.28	QP
4	0.2353310	33.58	-18.68	52.26	33.20	0.10	0.28	Average
5	0.2939830	32.54	-17.87	50.41	31.97	0.10	0.47	Average
6	0.2939830	41.25	-19.16	60.41	40.68	0.10	0.47	QP
7	@0.5854040	35.01	-10.99	46.00	34.30	0.10	0.61	Average
8	0.5854040	41.90	-14.10	56.00	41.19	0.10	0.61	QP
9	@0.8217160	36.91	-9.09	46.00	36.31	0.10	0.50	Average
10	0.8217160	41.12	-14.88	56.00	40.52	0.10	0.50	QP
11	0.9380970	38.11	-17.89	56.00	37.55	0.10	0.46	QP
12	0.9380970	29.65	-16.35	46.00	29.09	0.10	0.46	Average



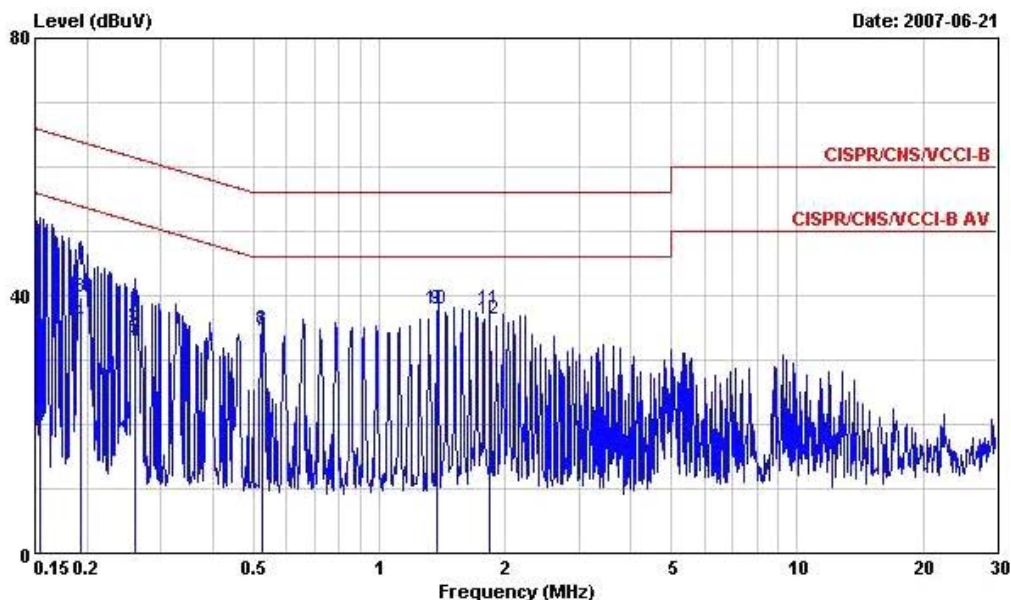
Site : CO04-HY
Condition : CISPR/CNS/VCCI-B LISN 200704 99041 NEUTRAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
POWER: AC 120V/60Hz
Model : FD761417
Memo : GSM 850 Idle + BT Link + WLAN Link +
: MPEG 4 + Camera + Adaptor

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1787330	52.35	-12.19	64.54	52.11	0.10	0.14	QP
2	0.1787330	40.10	-14.44	54.54	39.86	0.10	0.14	Average
3	0.2353310	48.03	-14.23	62.26	47.65	0.10	0.28	QP
4	0.2353310	36.73	-15.53	52.26	36.35	0.10	0.28	Average
5	0.2951690	43.76	-16.62	60.38	43.19	0.10	0.47	QP
6	0.2951690	33.66	-16.72	50.38	33.09	0.10	0.47	Average
7	0.3532120	41.00	-17.89	58.89	40.28	0.10	0.62	QP
8	0.3532120	33.69	-15.20	48.89	32.97	0.10	0.62	Average
9	0.4686110	30.19	-16.35	46.54	29.41	0.10	0.68	Average
10	0.4686110	38.62	-17.92	56.54	37.84	0.10	0.68	QP
11	0.5902010	30.27	-15.73	46.00	29.56	0.10	0.61	Average
12	0.5902010	34.83	-21.17	56.00	34.12	0.10	0.61	QP



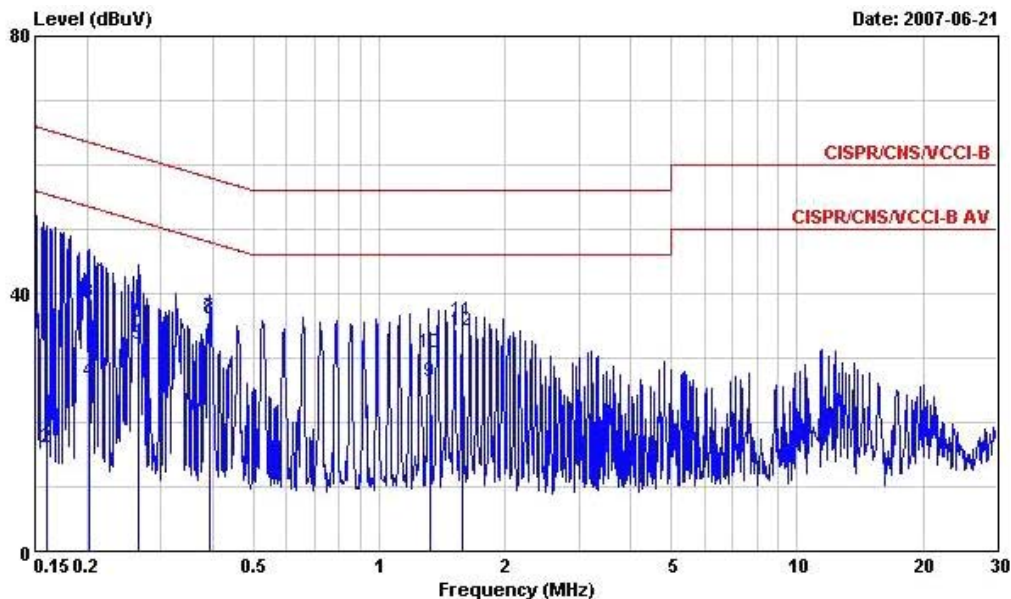
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony
- Test Mode : Mode 2

■ The test that passed at minimum margin was marked by the frame in the following table.



Site : CO04-HY
 Condition : CISPR/CNS/VCCI-B LISN 200704 99041 LINE
 EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
 POWER: AC 120V/60Hz
 Model : FD761417
 Memo : GSM 850 Idle + BT Link + WLAN Link +
 : MPEG 4 + Camera + USB Link

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1548450	43.85	-21.89	65.74	43.61	0.10	0.14	QP
2	0.1548450	20.13	-35.61	55.74	19.89	0.10	0.14	Average
3	0.1934380	39.66	-24.23	63.89	39.42	0.10	0.14	QP
4	0.1934380	35.76	-18.13	53.89	35.52	0.10	0.14	Average
5	0.2602550	35.59	-25.83	61.42	35.12	0.10	0.37	QP
6	0.2602550	33.35	-18.07	51.42	32.88	0.10	0.37	Average
7	0.5265450	34.49	-21.51	56.00	33.75	0.10	0.64	QP
8	0.5265450	34.82	-11.18	46.00	34.08	0.10	0.64	Average
9	1.380	37.86	-18.14	56.00	37.32	0.10	0.44	QP
10	1.380	37.83	-8.17	46.00	37.29	0.10	0.44	Average
11	1.840	37.92	-18.08	56.00	37.39	0.10	0.43	QP
12	1.840	36.32	-9.68	46.00	35.79	0.10	0.43	Average

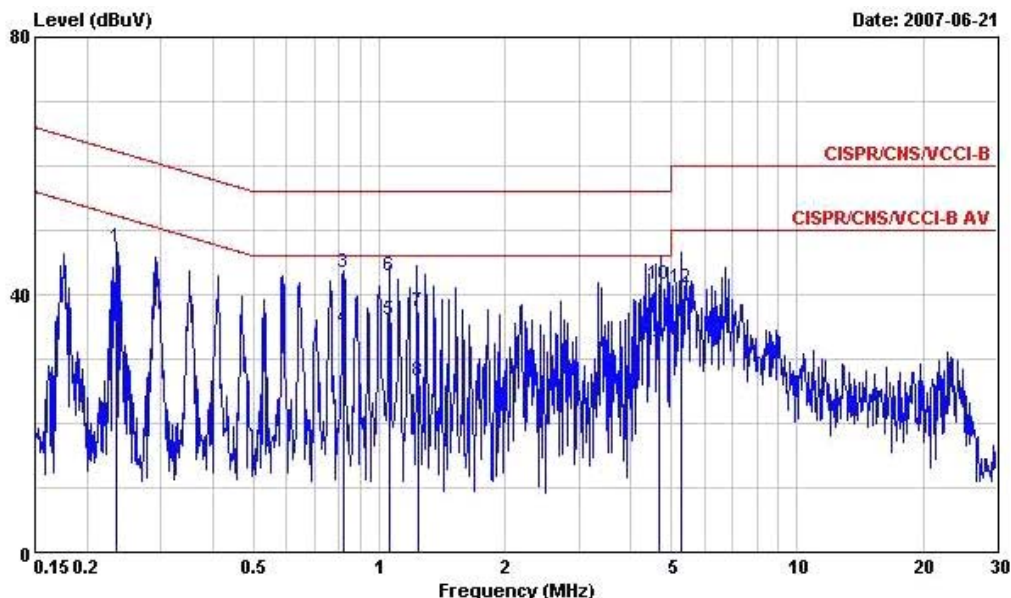


Site : CO04-HY
Condition : CISPR/CNS/VCCI-B LISN 200704 99041 NEUTRAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
POWER: AC 120V/60Hz
Model : FD761417
Memo : GSM 850 Idle + BT Link + WLAN Link +
: MPEG 4 + Camera + USB Link

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1598470	43.88	-21.59	65.47	43.64	0.10	0.14	QP
2	0.1598470	16.16	-39.31	55.47	15.92	0.10	0.14	Average
3	0.2028850	38.59	-24.90	63.49	38.34	0.10	0.15	QP
4	0.2028850	26.44	-27.05	53.49	26.19	0.10	0.15	Average
5	0.2658290	32.04	-19.21	51.25	31.56	0.10	0.38	Average
6	0.2658290	35.40	-25.85	61.25	34.92	0.10	0.38	QP
7	0.3934400	36.41	-21.58	57.99	35.59	0.10	0.72	QP
8	0.3934400	36.16	-11.83	47.99	35.34	0.10	0.72	Average
9	1.320	26.32	-19.68	46.00	25.78	0.10	0.44	Average
10	1.320	30.73	-25.27	56.00	30.19	0.10	0.44	QP
11	1.580	35.73	-20.27	56.00	35.20	0.10	0.43	QP
12	1.580	34.28	-11.72	46.00	33.75	0.10	0.43	Average

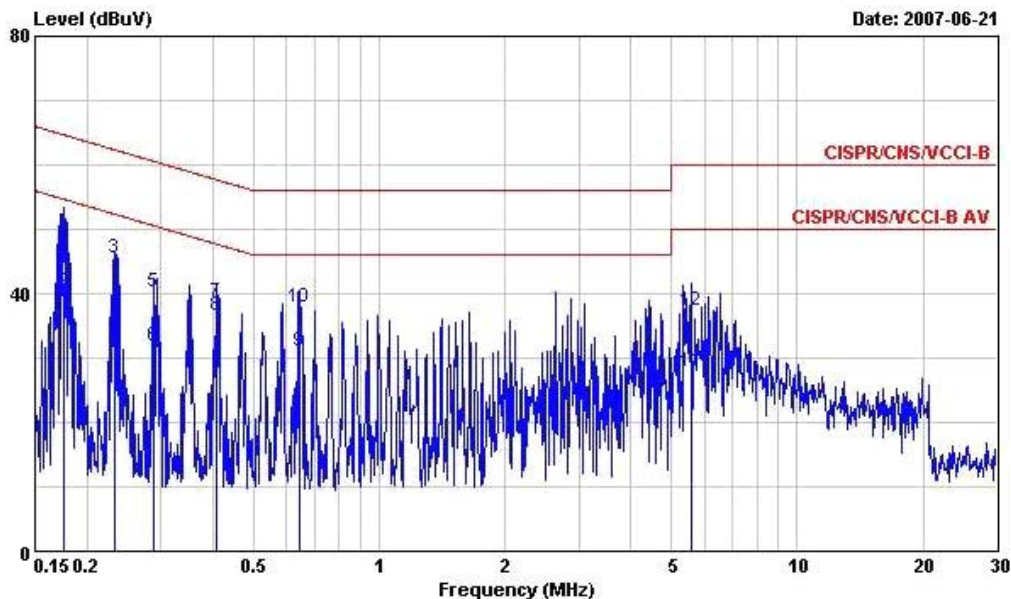
- Temperature : 26~27°C
- Relative Humidity : 51~52%
- Test Enginner : Tony
- Test Mode : Mode 3

■ The test that passed at minimum margin was marked by the frame in the following table.



Site : CO04-HY
 Condition : CISPR/CNS/VCCI-B LISN 200704 99041 LINE
 EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
 POWER: AC 120V/60Hz
 Model : FD761417
 Memo : GSM 1900 Idle + BT Link + WLAN Link +
 : MPEG 4 + Camera + Adaptor

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.2340870	47.33	-14.97	62.30	46.95	0.10	0.28	QP
2	0.2340870	35.94	-16.36	52.30	35.56	0.10	0.28	Average
3	0.8217160	43.31	-12.69	56.00	42.71	0.10	0.50	QP
4	0.8217160	34.73	-11.27	46.00	34.13	0.10	0.50	Average
5	1.054	36.14	-9.86	46.00	35.60	0.10	0.44	Average
6	1.054	42.82	-13.18	56.00	42.28	0.10	0.44	QP
7	1.235	37.44	-18.56	56.00	36.90	0.10	0.44	QP
8	1.235	26.66	-19.34	46.00	26.12	0.10	0.44	Average
9	4.684	32.29	-13.71	46.00	31.87	0.12	0.30	Average
10	4.684	41.67	-14.33	56.00	41.25	0.12	0.30	QP
11	5.275	33.01	-16.99	50.00	32.59	0.13	0.29	Average
12	5.275	40.97	-19.03	60.00	40.55	0.13	0.29	QP



Site : C004-HY
Condition : CISPR/CNS/VCCI-B LISN 200704 99041 NEUTRAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
POWER: AC 120V/60Hz
Model : FD761417
Memo : GSM 1900 Idle + BT Link + WLAN Link +
: MPEG 4 + Camera + Adaptor

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1758420	41.90	-22.78	64.68	41.66	0.10	0.14	QP
2	0.1758420	40.14	-14.54	54.68	39.90	0.10	0.14	Average
3	0.2328500	45.51	-16.84	62.35	45.14	0.10	0.27	QP
4	0.2328500	34.27	-18.08	52.35	33.90	0.10	0.27	Average
5	0.2893470	40.14	-20.40	60.54	39.58	0.10	0.46	QP
6	0.2893470	31.77	-18.77	50.54	31.21	0.10	0.46	Average
7	0.4083060	38.66	-19.02	57.68	37.84	0.10	0.72	QP
8	0.4083060	36.53	-11.15	47.68	35.71	0.10	0.72	Average
9	0.6418600	30.98	-15.02	46.00	30.30	0.10	0.58	Average
10	0.6418600	37.87	-18.13	56.00	37.19	0.10	0.58	QP
11	5.554	27.81	-22.19	50.00	27.29	0.24	0.28	Average
12	5.554	37.43	-22.57	60.00	36.91	0.24	0.28	QP

5.11 Radiated Emission Measurement

5.11.1 Measuring Instruments

As described in chapter 6 of this Report.

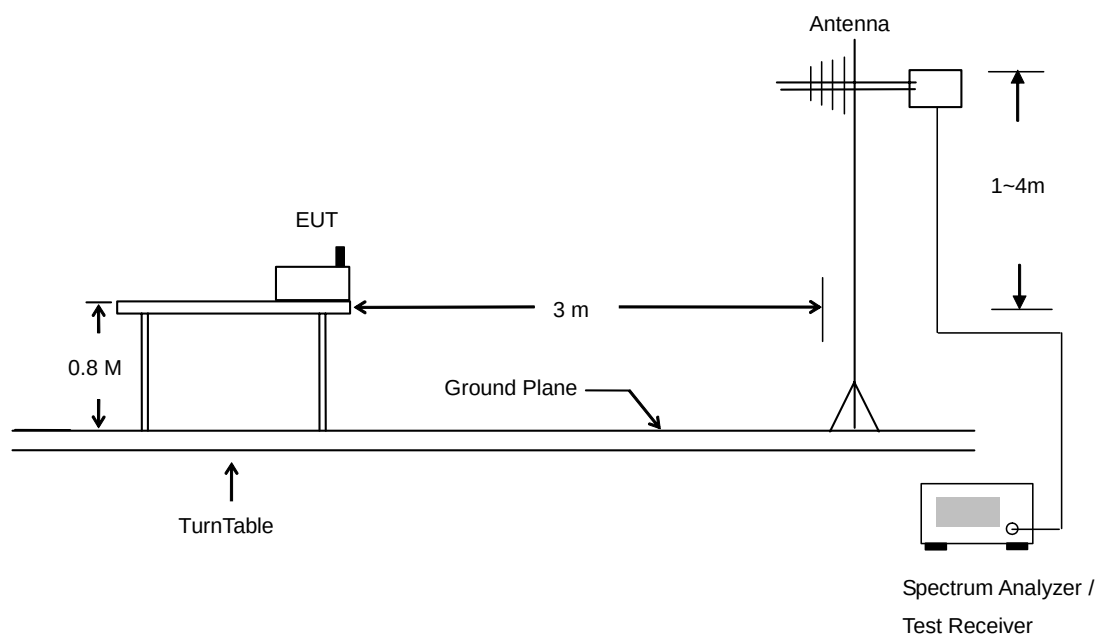
The spectrum analyzer setting :

30 ~ 1000 MHz	Detector : Quasi – Peak Bandwidth : 120 KHz
1 ~ 25 GHz	Detector : Peak and Average Bandwidth : 1 MHz

5.11.2 Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter above ground.
- The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- For testing below 1GHz, If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
- 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 average 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.

5.11.3 Typical Test Setup Layout of Radiated Emission

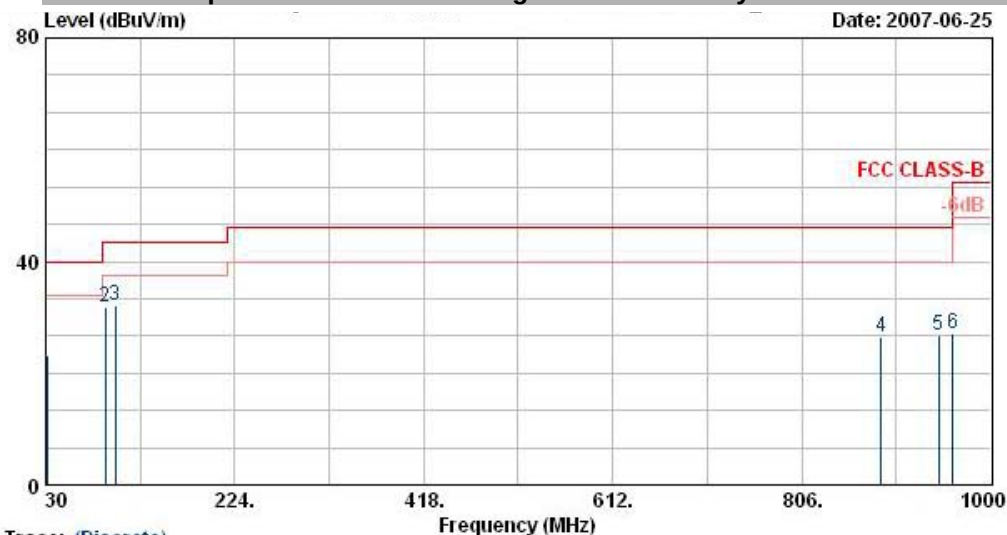




5.11.4 Test Data

- Temperature : 26~27°C
- Relating Humidity : 51~52%
- Test Enginner : Anderson
- Test Mode : Mode 1
- Polarization : Horizontal

■ The test that passed at minimum margin was marked by the frame in the following table.



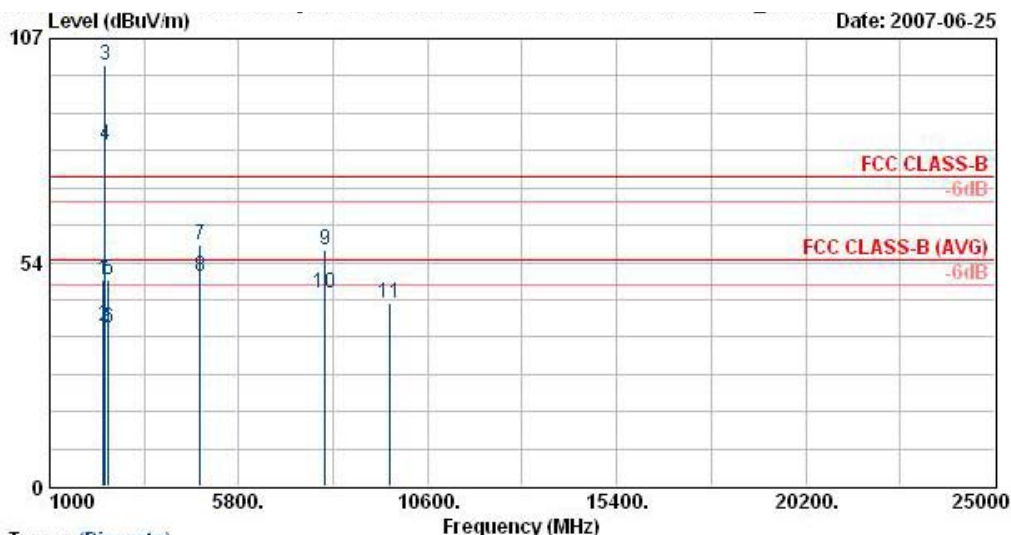
Site : 03CH06-HY
Condition : LF-ANT(951121) HORIZONTAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
: (802.11b/g and Bluetooth)
Power : 120Vac/60Hz
Model : FR 761417
Memo : WLAN 11b Tx_Ch01;2412MHz
Plane : E1
Data Rate : 11

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.62	23.20	-16.80	40.00	35.69	18.25	0.65	31.39	---	---	Peak
2	91.29	31.75	-11.75	43.50	52.60	9.23	1.04	31.12	---	---	Peak
3 @	101.28	32.17	-11.33	43.50	51.19	11.07	1.07	31.15	100	335	Peak
4	887.30	26.41	-19.59	46.00	32.59	20.44	3.77	30.39	---	---	Peak
5	946.80	26.82	-19.18	46.00	32.33	20.86	3.91	30.29	---	---	Peak
6	960.80	27.06	-26.94	54.00	32.43	20.96	3.94	30.28	---	---	Peak



FCC TEST REPORT

Report No. : FR761417



Trace: (Discrete)

Site : 03CH06-HY
Condition : SHF-EHF HORN HORIZONTAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
(802.11b/g and Bluetooth)
Power : 120Vac/60Hz
Model : FR 761417
Memo : WLAN 11b Tx_Ch01;2412MHz
Plane : E1
Data Rate : 11

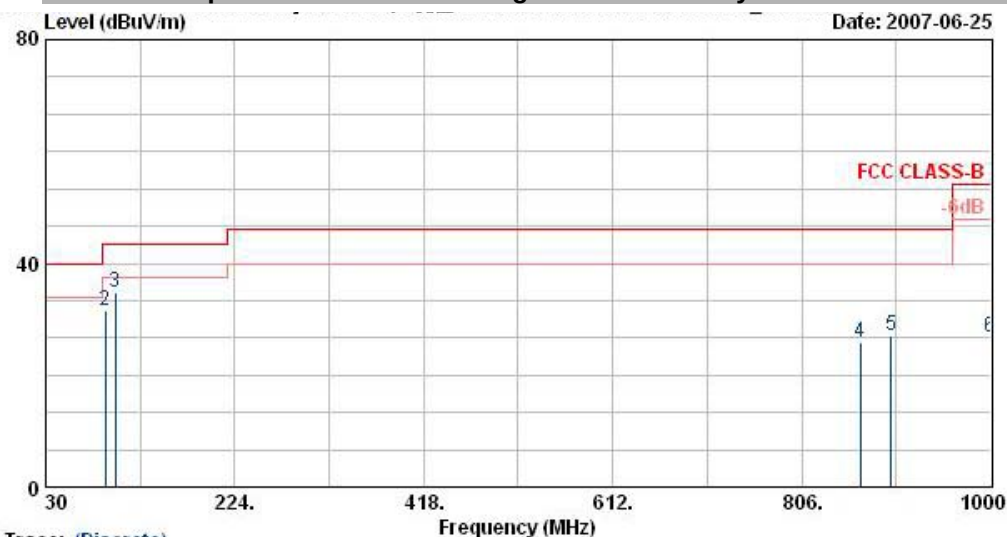
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2371.92	49.38	-24.62	74.00	50.83	30.26	3.75	35.46	100	0	Peak
2	2371.92	38.22	-15.78	54.00	39.68	30.25	3.73	35.44	100	332	Average
3 @	2412.00	100.74			102.16	30.27	3.77	35.46	100	0	Peak
4 @	2412.00	81.37			82.79	30.27	3.77	35.46	100	332	Average
5	2494.00	49.37	-24.63	74.00	50.71	30.30	3.88	35.53	100	0	Peak
6	2494.00	37.77	-16.23	54.00	39.12	30.30	3.88	35.53	100	332	Average
7	4824.00	57.81	-16.19	74.00	55.14	32.94	5.84	36.12	100	0	Peak
8 @	4824.00	49.94	-4.06	54.00	47.27	32.94	5.84	36.12	147	204	Average
9	7992.00	56.56	-17.44	74.00	45.04	39.58	7.79	35.85	---	---	Peak
10 @	7992.00	46.02	-7.98	54.00	34.50	39.58	7.79	35.85	100	260	Average
11	9642.00	43.67	-30.33	74.00	81.33	-10.09	9.12	36.68	---	---	Peak

Remark: #3 and #4 Fundamental Signal



- Polarization : Vertical

■ The test that passed at minimum margin was marked by the frame in the following table.



Trace: (Discrete)

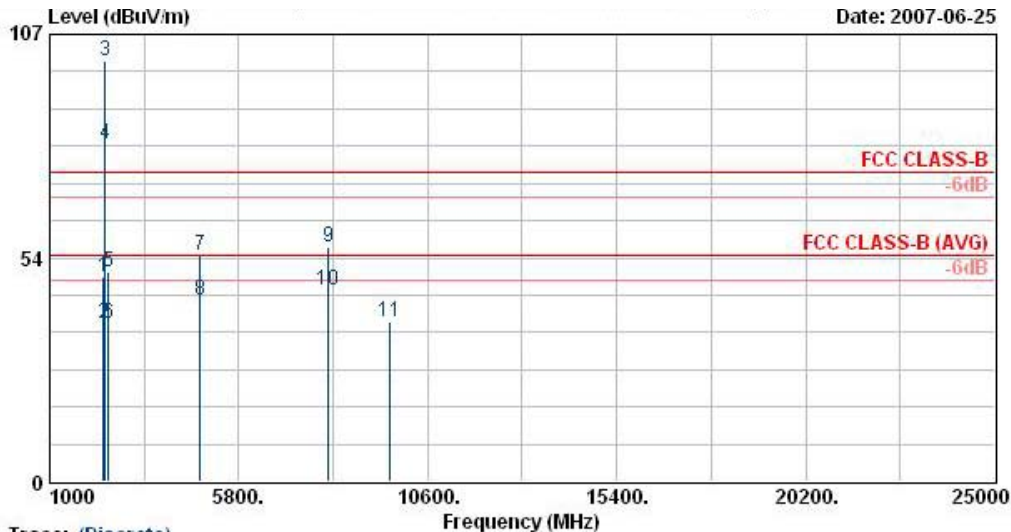
Site : 03CH06-HY
 Condition : LF-AVT(951121) VERTICAL
 EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
 : (802.11b/g and Bluetooth)
 Power : 120Vac/60Hz
 Model : FR 761417
 Memo : WLAN 11b Tx_Ch01;2412MHz
 Plane : E1
 Data Rate : 11

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.54	27.67	-12.33	40.00	39.50	18.95	0.64	31.43	---	---	Peak
2	91.29	31.58	-11.92	43.50	52.44	9.23	1.04	31.12	---	---	Peak
3 @	101.28	34.81	-8.69	43.50	53.82	11.07	1.07	31.15	100	206	Peak
4	866.30	26.01	-19.99	46.00	32.45	20.29	3.68	30.41	---	---	Peak
5	897.80	27.18	-18.82	46.00	33.22	20.52	3.81	30.37	---	---	Peak
6	1000.00	26.90	-27.10	54.00	31.91	21.24	4.02	30.27	---	---	Peak



FCC TEST REPORT

Report No. : FR761417



Site : 03CH06-HY
Condition : SHF-EHF HORN VERTICAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
(802.11b/g and Bluetooth)
Power : 120Vac/60Hz
Model : FR 761417
Memo : WLAN 11b Tx_Ch01;2412MHz
Plane : E1
Data Rate : 11

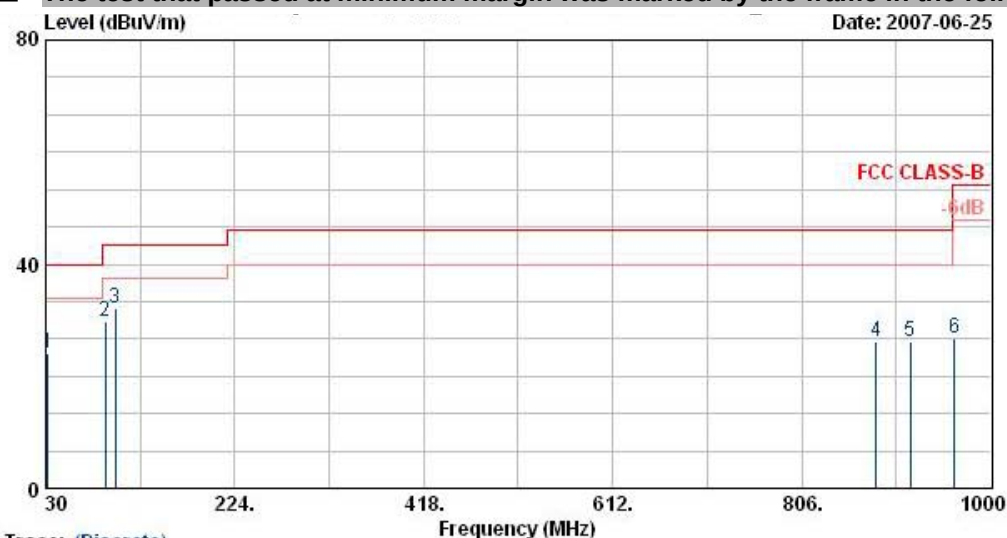
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	Pos	Pos	
					dBuV	dB/m	dB	dB	cm	deg	
1	2367.52	49.11	-24.89	74.00	50.56	30.26	3.75	35.46	100	0	Peak
2	2367.52	37.98	-16.02	54.00	39.44	30.24	3.73	35.44	100	100	Average
3 @	2412.00	100.79			102.21	30.27	3.77	35.46	100	0	Peak
4 @	2412.00	80.85			82.27	30.27	3.77	35.46	100	100	Average
5	2484.00	50.12	-23.88	74.00	51.48	30.29	3.86	35.51	100	0	Peak
6	2484.00	37.92	-16.08	54.00	39.28	30.29	3.86	35.51	100	100	Average
7	4824.00	54.13	-19.87	74.00	51.46	32.94	5.84	36.12	100	0	Peak
8 @	4824.00	43.47	-10.53	54.00	40.80	32.94	5.84	36.12	100	75	Average
9	8082.00	56.01	-17.99	74.00	44.49	39.53	7.89	35.90	---	---	Peak
10 @	8082.00	45.72	-8.28	54.00	34.20	39.53	7.89	35.90	100	335	Average
11	9642.00	38.25	-35.75	74.00	75.91	-10.09	9.12	36.68	---	---	Peak

Remark: #3 and #4 Fundamental Signal



- Test Mode : Mode 2
- Polarization : Horizontal

■ The test that passed at minimum margin was marked by the frame in the following table.



Trace: (Discrete)

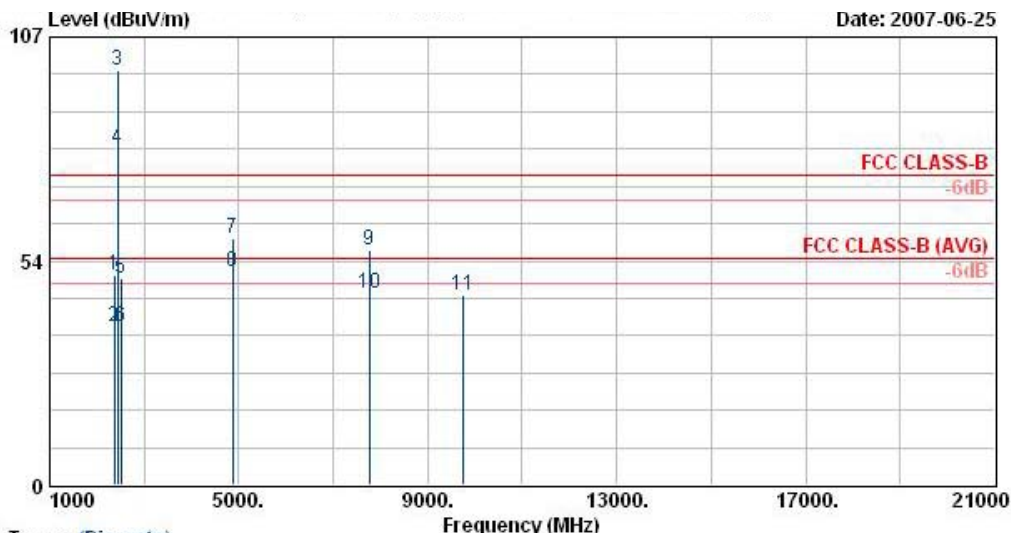
Site : 03CH06-HY
 Condition : LF-ANT(951121) HORIZONTAL
 EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
 (802.11b/g and Bluetooth)
 Power : 120Vac/60Hz
 Model : FR 761417
 Memo : WLAN 11b Tx_Ch06;2437MHz
 Plane : E1
 Data Rate : 11

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.89	24.15	-15.85	40.00	36.64	18.25	0.65	31.39	---	---	Peak
2	91.29	29.69	-13.81	43.50	50.54	9.23	1.04	31.12	---	---	Peak
3 @	101.28	32.09	-11.41	43.50	51.11	11.07	1.07	31.15	100	102	Peak
4	882.40	26.31	-19.69	46.00	32.54	20.41	3.75	30.39	---	---	Peak
5	917.40	26.04	-19.96	46.00	31.87	20.65	3.85	30.34	---	---	Peak
6	962.90	26.85	-27.15	54.00	32.20	20.98	3.95	30.28	---	---	Peak



FCC TEST REPORT

Report No. : FR761417



Site : 03CH06-HY
Condition : SHF-EHF HORN HORIZONTAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
(802.11b/g and Bluetooth)
Power : 120Vac/60Hz
Model : FR 761417
Memo : WLAN 11b Tx_Ch06:2437MHz
Plane : E1
Data Rate : 11

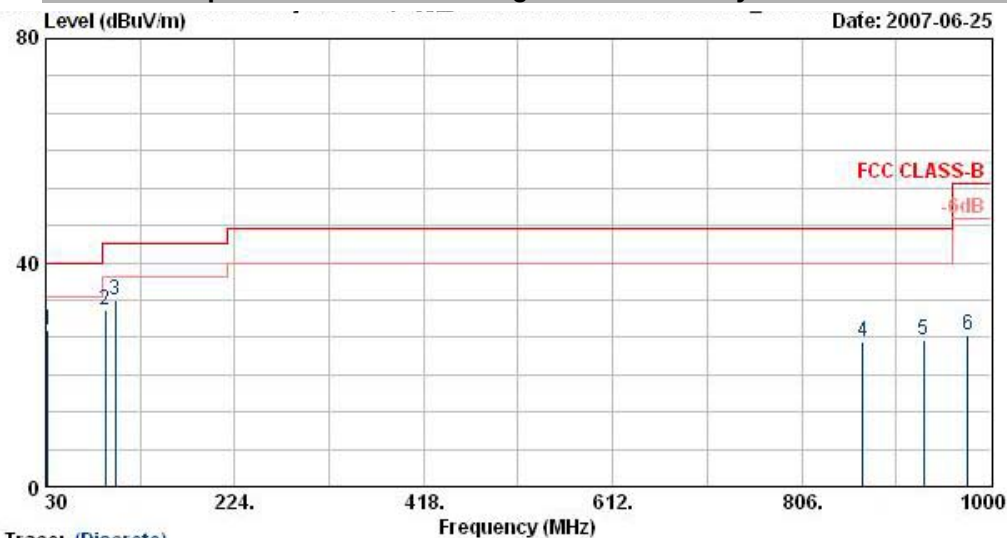
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2374.00	50.21	-23.79	74.00	51.67	30.25	3.73	35.44	100	0	Peak
2	2374.00	37.73	-16.27	54.00	39.19	30.25	3.73	35.44	100	32	Average
3 @	2437.00	98.88			100.26	30.28	3.82	35.47	100	0	Peak
4 @	2437.00	80.36			81.74	30.28	3.82	35.47	100	32	Average
5	2500.00	49.19	-24.81	74.00	50.53	30.30	3.88	35.53	100	0	Peak
6	2500.00	37.70	-16.30	54.00	39.05	30.30	3.88	35.53	100	32	Average
7	4874.00	58.85	-15.15	74.00	55.99	33.14	5.88	36.16	100	0	Peak
8 @	4874.00	50.95	-3.05	54.00	48.09	33.14	5.88	36.16	149	153	Average
9	7761.00	56.22	-17.78	74.00	45.19	39.27	7.71	35.95	---	---	Peak
10 @	7761.00	45.63	-8.37	54.00	34.60	39.27	7.71	35.95	100	118	Average
11	9747.00	45.31	-28.69	74.00	82.62	-9.85	9.15	36.61	---	---	Peak

Remark: #3 and #4 Fundamental Signal



- Polarization : Vertical

■ The test that passed at minimum margin was marked by the frame in the following table.



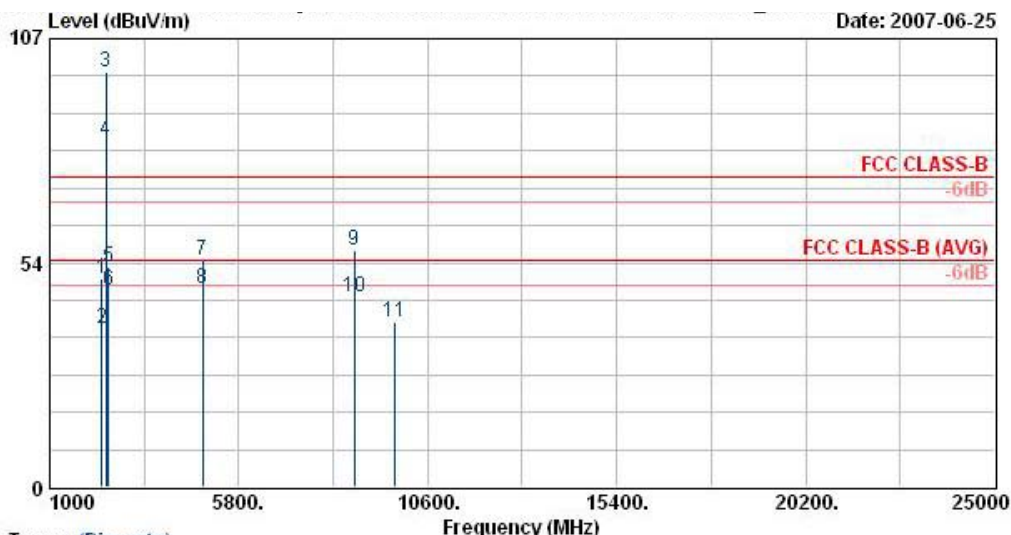
Site : 03CH06-HY
Condition : LF-ANT(951121) VERTICAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
(802.11b/g and Bluetooth)
Power : 120Vac/60Hz
Model : FR 761417
Memo : WLAN 11b Tx_Ch06;2437MHz
Plane : E1
Data Rate : 11

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.89	28.04	-11.96	40.00	40.53	18.25	0.65	31.39	---	---	Peak
2	91.29	31.65	-11.85	43.50	52.50	9.23	1.04	31.12	---	---	Peak
3 @	101.28	33.41	-10.09	43.50	52.43	11.07	1.07	31.15	100	98	Peak
4	868.40	25.97	-20.03	46.00	32.39	20.30	3.69	30.41	---	---	Peak
5	931.40	26.22	-19.78	46.00	31.90	20.75	3.88	30.31	---	---	Peak
6	976.90	27.17	-26.83	54.00	32.40	21.07	3.97	30.27	---	---	Peak



FCC TEST REPORT

Report No. : FR761417



Trace: (Discrete)

Site : 03CH06-HY
Condition : SHF-EHF HORN VERTICAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
(802.11b/g and Bluetooth)
Power : 120Vac/60Hz
Model : FR 761417
Memo : WLAN 11b Tx_Ch06;2437MHz
Plane : E1
Data Rate : 11

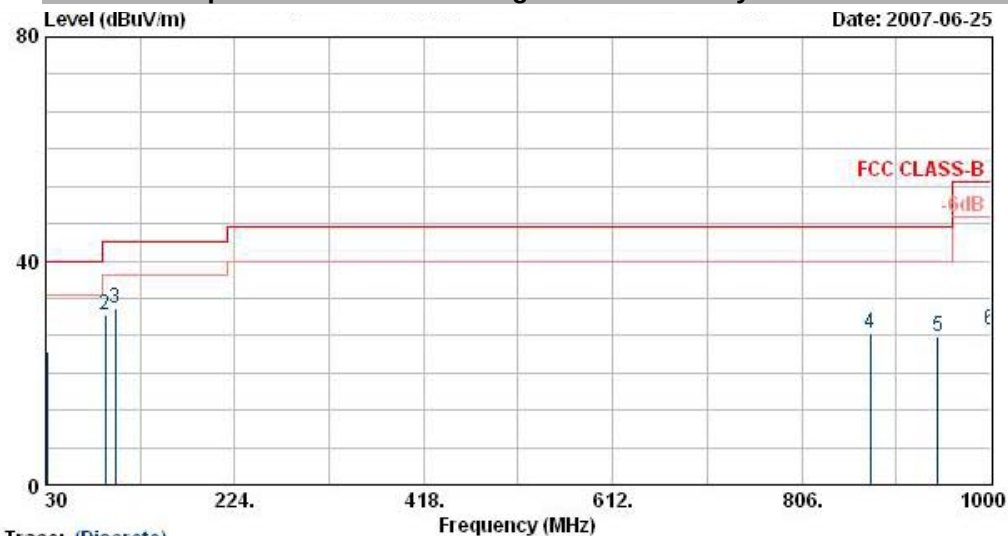
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2324.00	49.77	-24.23	74.00	51.26	30.23	3.69	35.40	100	0	Peak
2	2324.00	37.65	-16.35	54.00	39.14	30.23	3.69	35.40	107	99	Average
3 @	2437.00	98.95			100.36	30.27	3.79	35.47	100	0	Peak
4 @	2437.00	82.78			84.16	30.28	3.82	35.47	107	99	Average
5	2484.00	52.50	-21.51	74.00	53.85	30.29	3.86	35.51	100	0	Peak
6 @	2484.00	46.94	-7.06	54.00	48.30	30.29	3.86	35.51	107	99	Average
7	4874.00	53.96	-20.04	74.00	51.11	33.14	5.88	36.16	100	0	Peak
8 @	4874.00	47.14	-6.86	54.00	44.28	33.14	5.88	36.16	104	269	Average
9	8727.00	56.33	-17.67	74.00	45.01	38.87	8.72	36.27	---	---	Peak
10 @	8727.00	45.52	-8.48	54.00	34.20	38.87	8.72	36.27	100	241	Average
11	9747.00	39.50	-34.50	74.00	76.81	-9.85	9.15	36.61	---	---	Peak

Remark: #3 and #4 Fundamental Signal



- Test Mode : Mode 3
- Polarization : Horizontal

■ The test that passed at minimum margin was marked by the frame in the following table.



Trace: (Discrete)

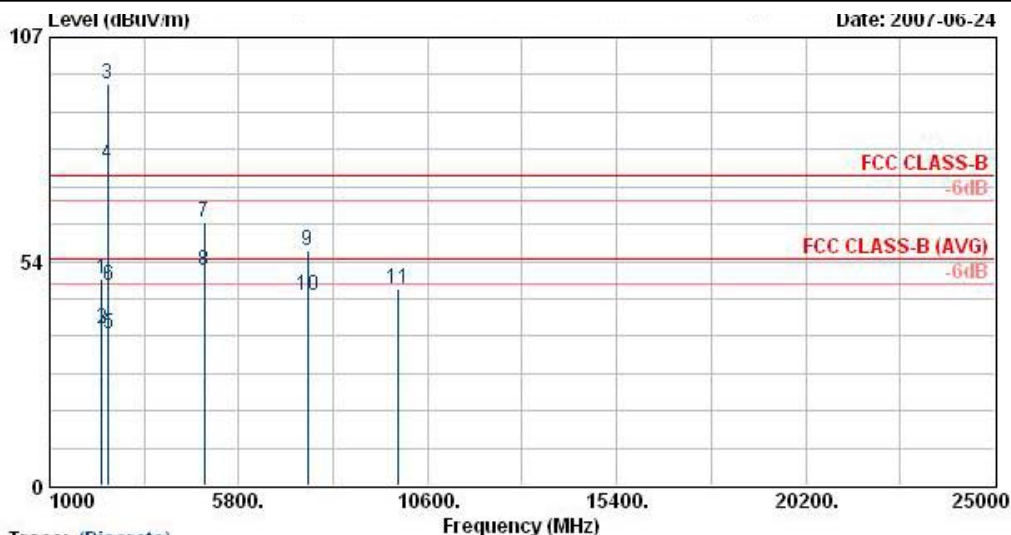
Site : 03CH06-HY
 Condition : LF-ANT(951121) HORIZONTAL
 EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
 : (802.11b/g and Bluetooth)
 Power : 120Vac/60Hz
 Model : FR 761417
 Memo : WLAN 11b Tx_Ch11;2462MHz
 Plane : E1
 Data Rate : 11

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.08	23.77	-16.23	40.00	35.60	18.95	0.64	31.43	---	---	Peak
2	91.29	30.32	-13.18	43.50	51.17	9.23	1.04	31.12	---	---	Peak
3 @	101.28	31.65	-11.85	43.50	50.67	11.07	1.07	31.15	100	299	Peak
4	876.80	26.94	-19.06	46.00	33.24	20.36	3.72	30.40	---	---	Peak
5	945.40	26.59	-19.41	46.00	32.11	20.85	3.91	30.29	---	---	Peak
6	1000.00	27.65	-26.35	54.00	32.66	21.24	4.02	30.27	---	---	Peak



FCC TEST REPORT

Report No. : FR761417



Site : 03CH06-HV
Condition : SHF-EHF HORN HORIZONTAL
EUT : GSM/EDGE 850/900/1800/1900 Mobile Phone
(802.11b/g and Bluetooth)
Power : 120Vac/60Hz
Model : FR 761417
Memo : WLAN 11b Tx_Ch11;2462MHz
Plane : E1
Data Rate : 11

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2328.00	49.50	-24.50	74.00	50.99	30.23	3.69	35.40	100	0	Peak
2	2328.00	37.51	-16.49	54.00	39.00	30.23	3.69	35.40	100	207	Average
3 @	2462.00	95.98			97.35	30.29	3.84	35.49	100	0	Peak
4 @	2462.00	76.79			78.16	30.29	3.84	35.49	100	207	Average
5	2499.46	36.21	-17.79	54.00	37.57	30.29	3.86	35.51	100	207	Average
6	2499.46	47.89	-26.11	74.00	49.24	30.30	3.88	35.53	100	0	Peak
7 @	4924.00	62.67	-11.33	74.00	59.63	33.34	5.92	36.21	100	0	Peak
8 @	4924.00	51.48	-2.52	54.00	48.43	33.34	5.92	36.21	148	199	Average
9	7557.00	56.13	-17.87	74.00	45.54	38.99	7.63	36.04	---	---	Peak
10 @	7557.00	45.19	-8.81	54.00	34.60	38.99	7.63	36.04	100	206	Average
11	9846.00	47.07	-26.93	74.00	84.06	-9.63	9.18	36.54	---	---	Peak

Remark: #3 and #4 Fundamental Signal