Testing Laboratory
1190

FCC Test Report

for

47 CFR Part 15 Subpart C

Equipment	:	**WLAN/BT Handheld PDA**
Trade Name	:	**HP**
Model No.	:	**HSTNH-F16C**
FCC ID	:	**UCVHSTNH-F16C**
Filing Type	:	**Certification**
Applicant	:	**Hon Hai Precision Industry Co., Ltd.** No.66, Zhongshan Rd., Tucheng City, Taipei County 236, Taiwan (R.O.C.)

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
- **Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.**
- The data shown in this test report were carried out on Aug. 07, 2007 at **Sporton International Inc. LAB.**
- Report No.: FR771809, Report Version: Rev. 01.

Jones Tsai
Manager

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

Table of Contents

History of this test report

Report Issue Date: Aug. 09, 2007

Report No.	Description

1. General Description of Equipment under Test

1.1 Applicant

Hon Hai Precision Industry Co., Ltd.
No.66, Zhongshan Rd., Tucheng City, Taipei County 236, Taiwan (R.O.C.)

1.2 Manufacturer

Hon Hai Precision Industry Co., Ltd.
2 Zihyou Street, Tucheng City, Taipei County, 236, Taiwan

1.3 Basic Description of Equipment under Test

Equipment		WLAN/BT Handheld PDA
Trade Name		HP
Model Name		HSTNH-F16C
AC Adapter	**Brand Name**	PhiHong
	Model Name	PSB05R-050Q
	Power Rating	I/P: 100-240V, 50-60Hz, 200mA, 12-17VA; O/P: +5V, 1A
	AC Power Cord Type	1.4m shielded cable without ferrite core
Battery	**Brand Name**	HP
	Model Name	HSTNH-S11B
	Rating	3.7V, 1200mAh
	Type	Li-ion
USB Cable	**Brand Name**	Foxconn
	Model Name	CUHD006B-S19-EF
	Signal line Type	1.4m 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) * 5MHz; n=1-11 Bluetooth: 2402+ n*1MHz, n= 0~78			
5. Channel Spacing	WLAN: 5MHz Bluetooth: 1MHz			
6. Maximum Output Power to Antenna (Normal Condition)	802.11b : 15.23 dBm / 802.11g: 18.81 dBm Bluetooth(1Mbps): 1.86dBm Bluetooth EDR (2Mbps): 1.67dBm Bluetooth EDR (3Mbps): 1.86 dBm			
7. Type of Antenna Connector	N/A			
8. Antenna Type	WLAN: PIFA Antenna Bluetooth: PIFA Antenna			
9. Antenna Gain	802.11b/g : -3 dBi BT : -3 dBi			
10. Function Type	Transmitter		Transceiver	V

2 Test Configuration of Equipment under Test

2.1 Test Manner

a. 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.
b. The EUT is programmed to transmit signal continuously for all testings.
c. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000MHz.
d. 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			
Radiated Emission/ RF Conducted	**802.11b**	**802.11g**	
	Mode1:CH01_2412MHz	Mode4:CH01_2412MHz	
	Mode2:CH06_2437MHz	Mode5:CH06_2437MHz	
	Mode3:CH11_2462MHz	Mode6:CH11_2462MHz	
	BT(1Mbps)	**BT-EDR(2Mbps)**	**BT-EDR(3Mbps)**
	Mode7:CH00_2402MHz	Mode10:CH00_2402MHz	Mode13:CH00_2402MHz
	Mode8:CH39_2441MHz	Mode11:CH39_2441MHz	Mode14:CH39_2441MHz
	Mode9:CH78_2480MHz	Mode12:CH78_2480MHz	Mode15:CH78_2480MHz
Conducted Emission	Mode 1: WLAN Link Mode + BT Link + MPEG4 + Adapter		
	Mode 2: WLAN Link Mode + BT Link + MPEG4 + USB Link		

Note: For BT we tested Radiated emissions full modes in 3Mbps and retesting the worst channel ,CH78, in 1Mbps and 2Mbps respectively.

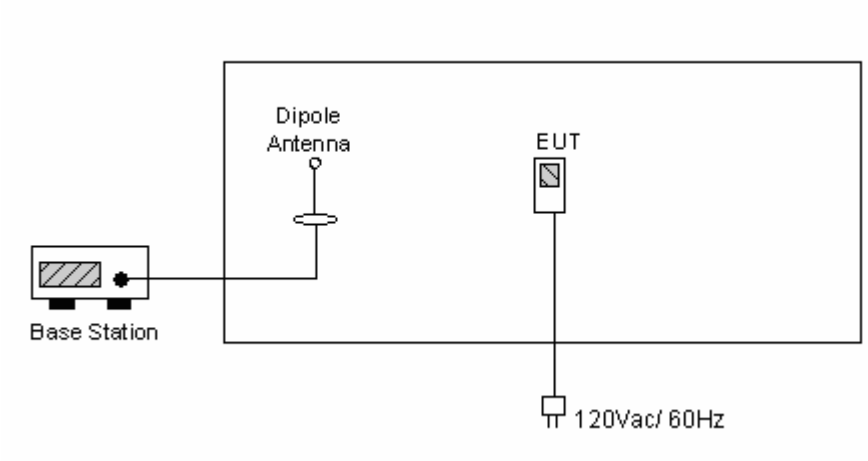
2.3 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Power Cord / Cable
1.	Notebook	DELL	D400	R33002	N/A
2.	WLAN AP	SMC	SMC-100	HEDWG4005ACC	1.8 m
3.	BT Base Station	Anritus	MT-8852B	N/A	N/A
4.	Bluetooth Earphone	Engotech	ET-BH111	PQY471087	N/A

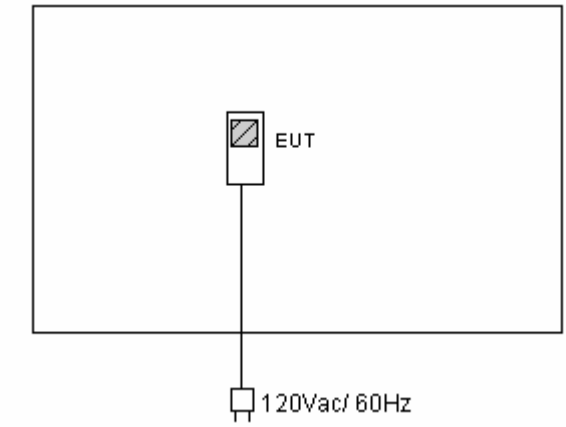
2.4 Connection Diagram of Test System

<Radiated Emission >

Bluetooth Tx Mode

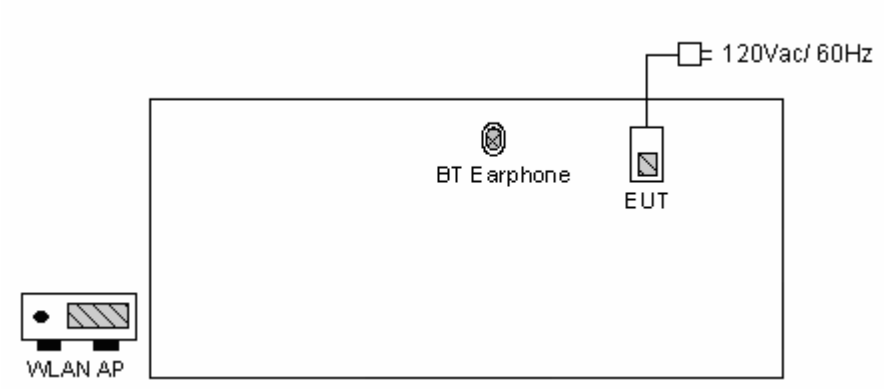


WLAN Tx Mode

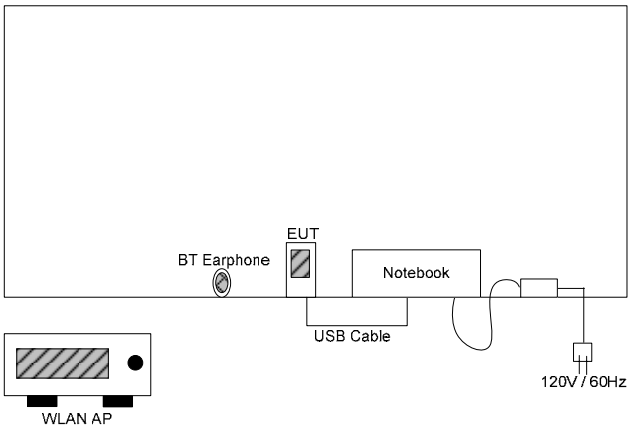


<Conducted Emission>

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	:	CO01-HY, 03CH04-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

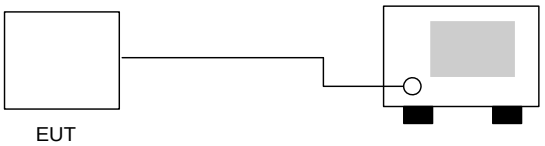
5.2.1 Measuring Instruments：

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℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

802.11b

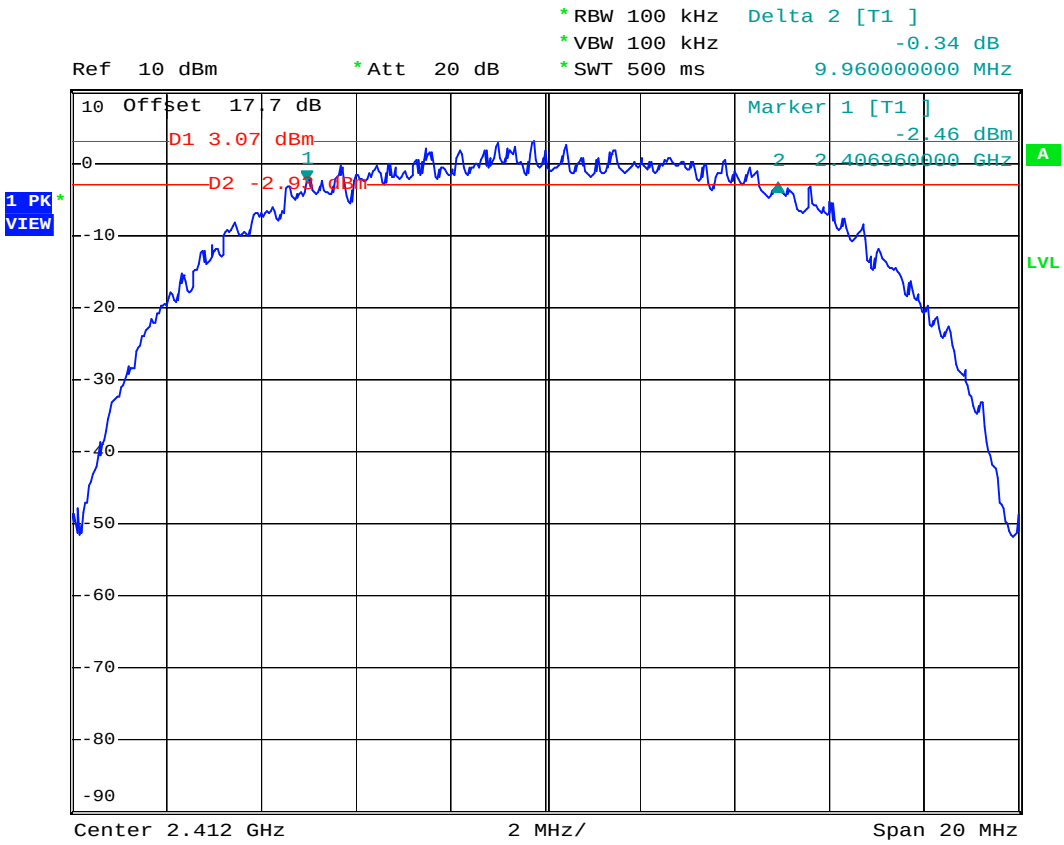
Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	9.96	> 0.5MHz	Mode 1
06	2437	9.96	> 0.5MHz	Mode 2
11	2462	9.96	> 0.5MHz	Mode 3

802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.52	> 0.5MHz	Mode 4
06	2437	16.48	> 0.5MHz	Mode 5
11	2462	16.52	> 0.5MHz	Mode 6

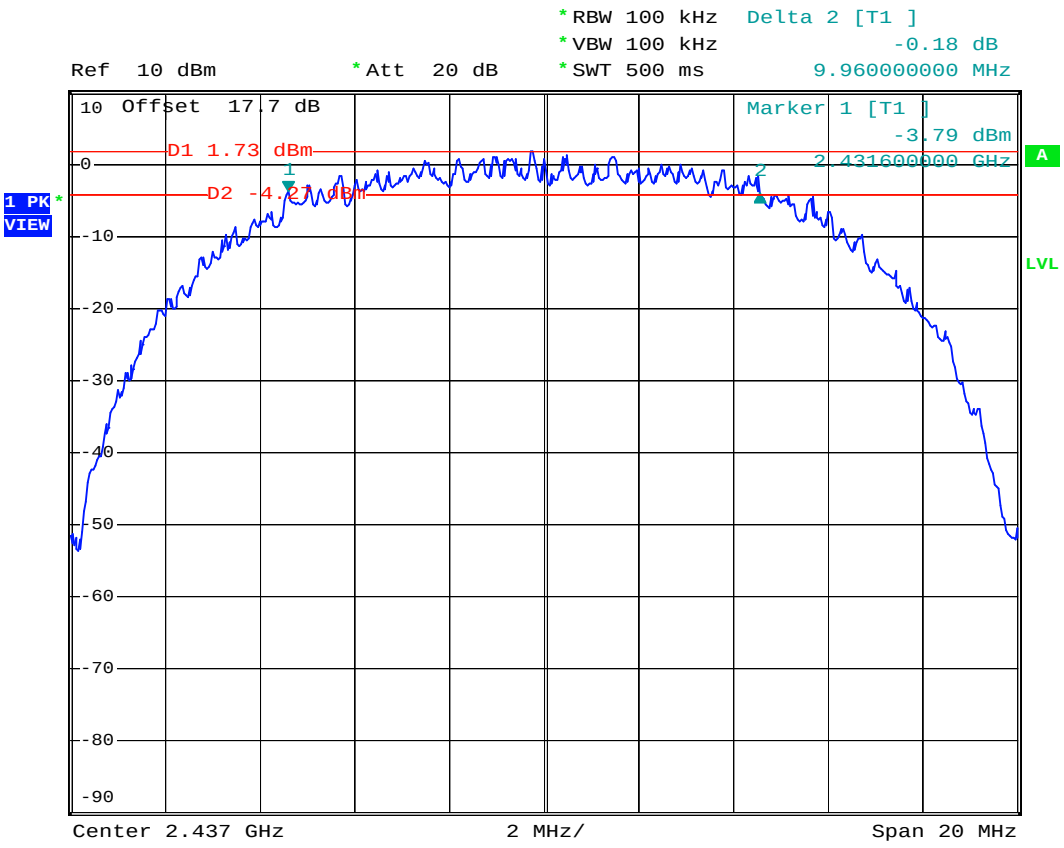
5.2.5 6dB Bandwidth

Mode 1



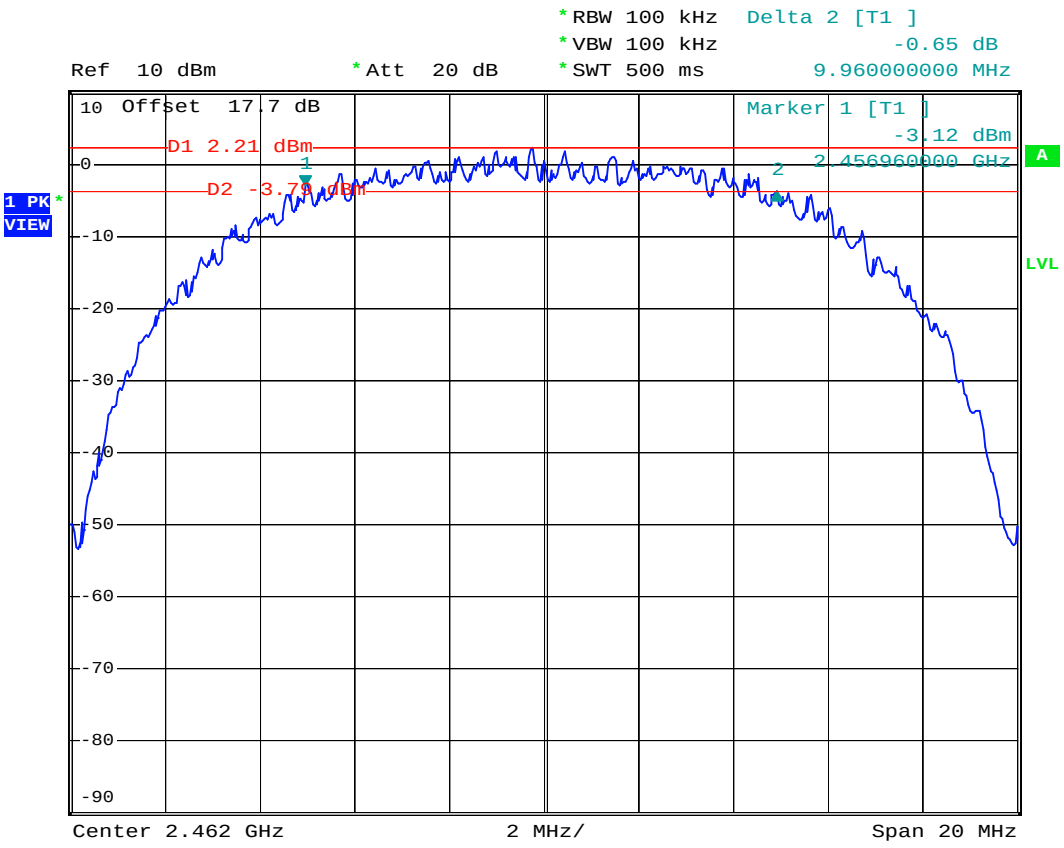
Date: 19.JUL.2007 11:34:51

Mode 2



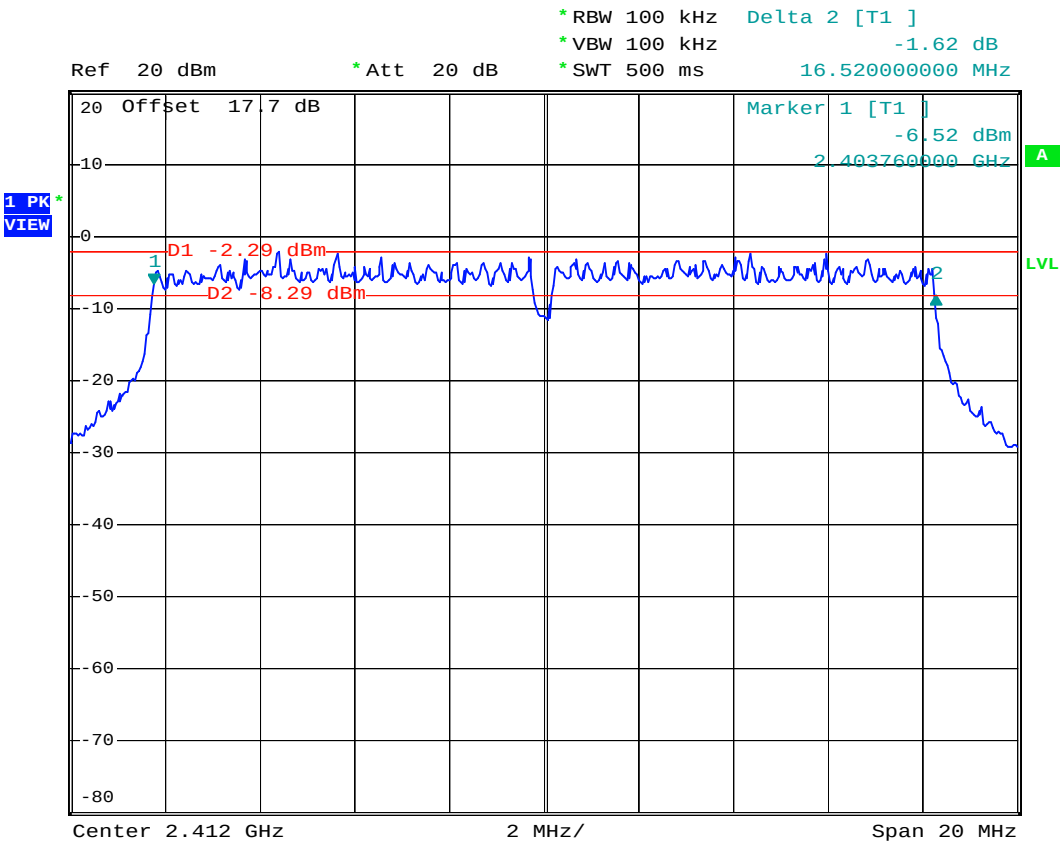
Date: 19.JUL.2007 14:00:42

Mode 3



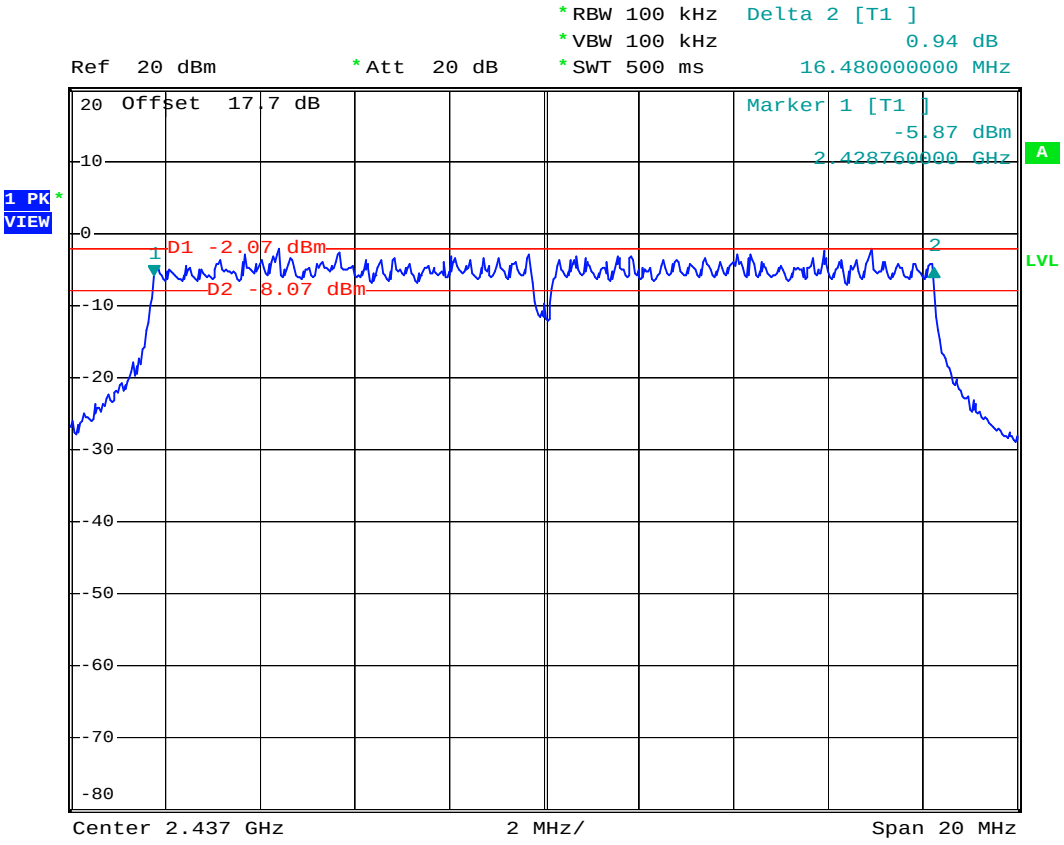
Date: 19.JUL.2007 14:01:50

Mode 4



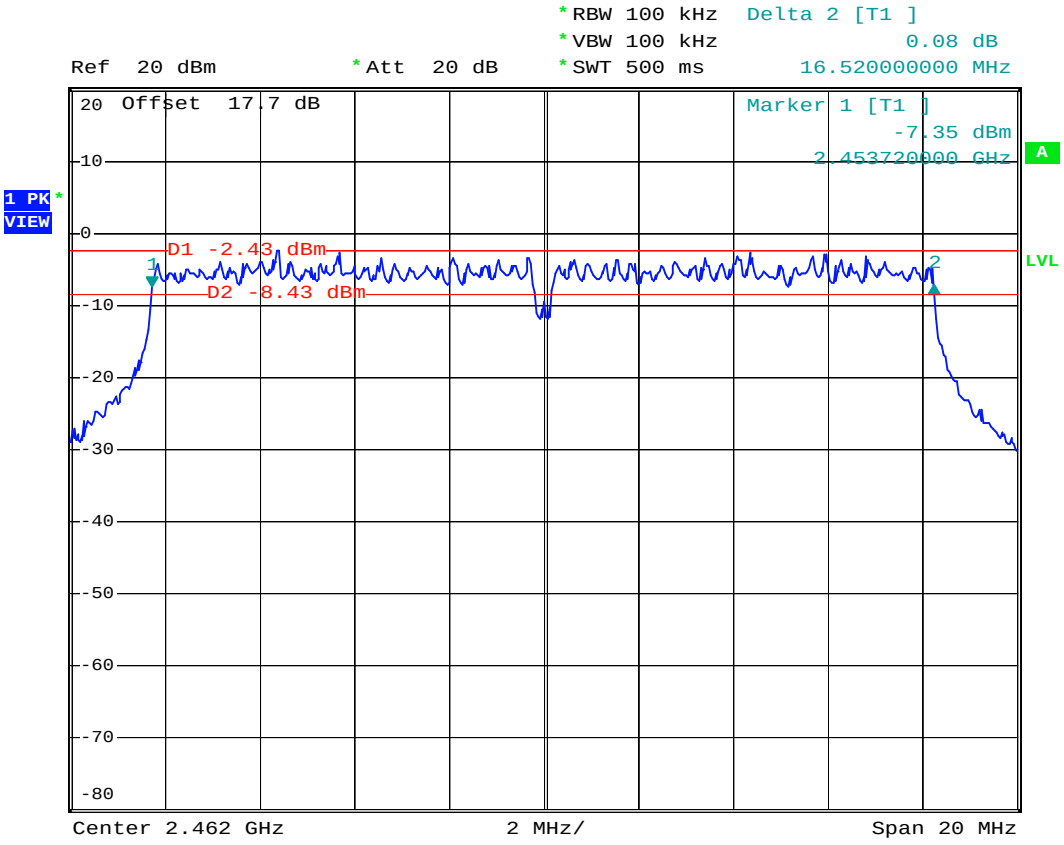
Date: 23.JUL.2007 17:13:56

Mode 5



Date: 23.JUL.2007 17:14:37

Mode 6



Date: 23.JUL.2007 17:15:09

5.3 Power Spectral Density Measurement

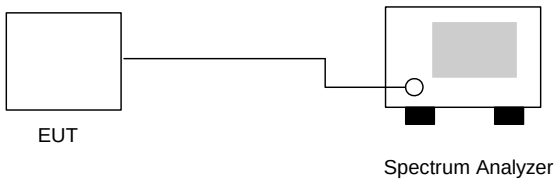
5.3.1 Measuring Instruments：

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℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

802.11b

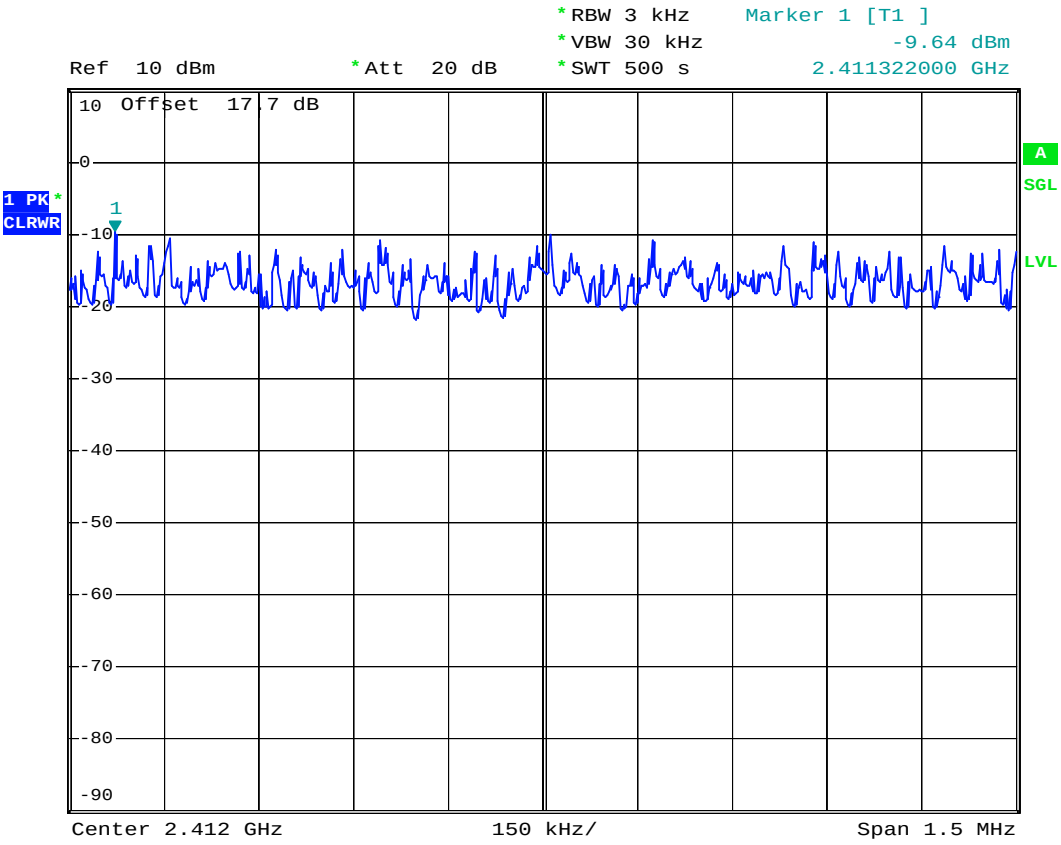
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-9.64	8	Mode 1
06	2437	-10.12	8	Mode 2
11	2462	-10.10	8	Mode 3

802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-11.99	8	Mode 4
06	2437	-14.18	8	Mode 5
11	2462	-15.60	8	Mode 6

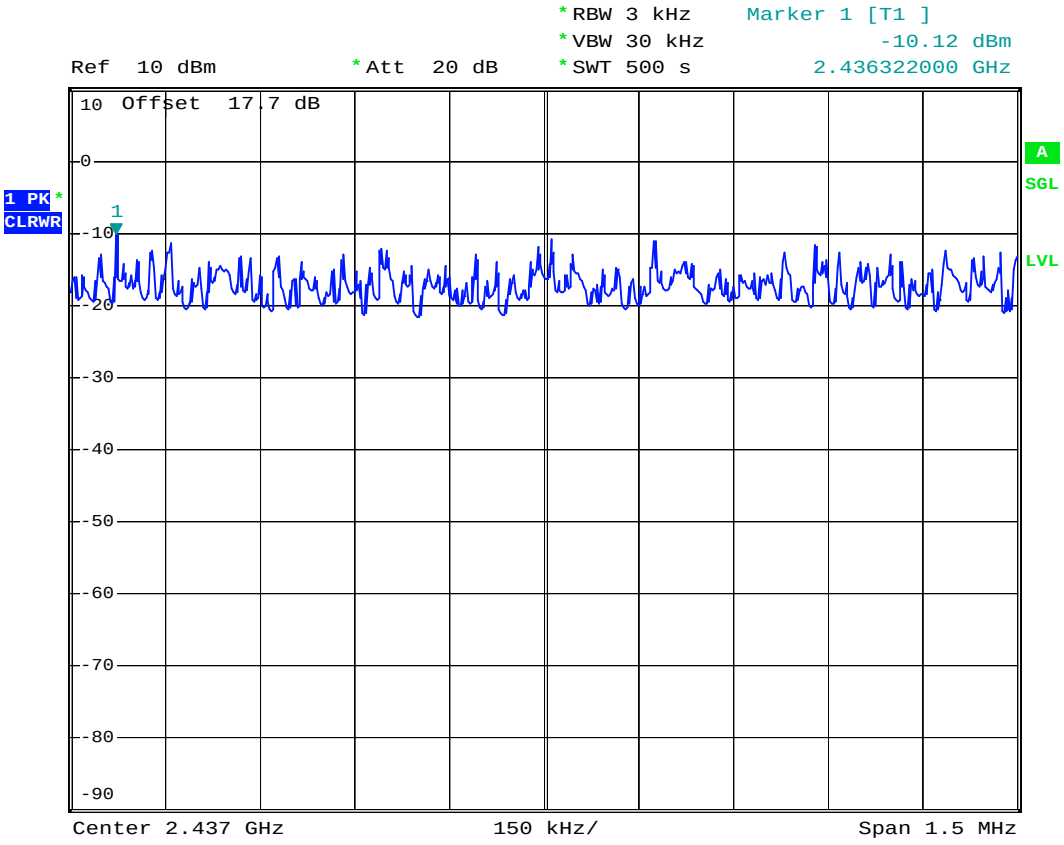
5.3.5 Power Spectral Density

Mode 1



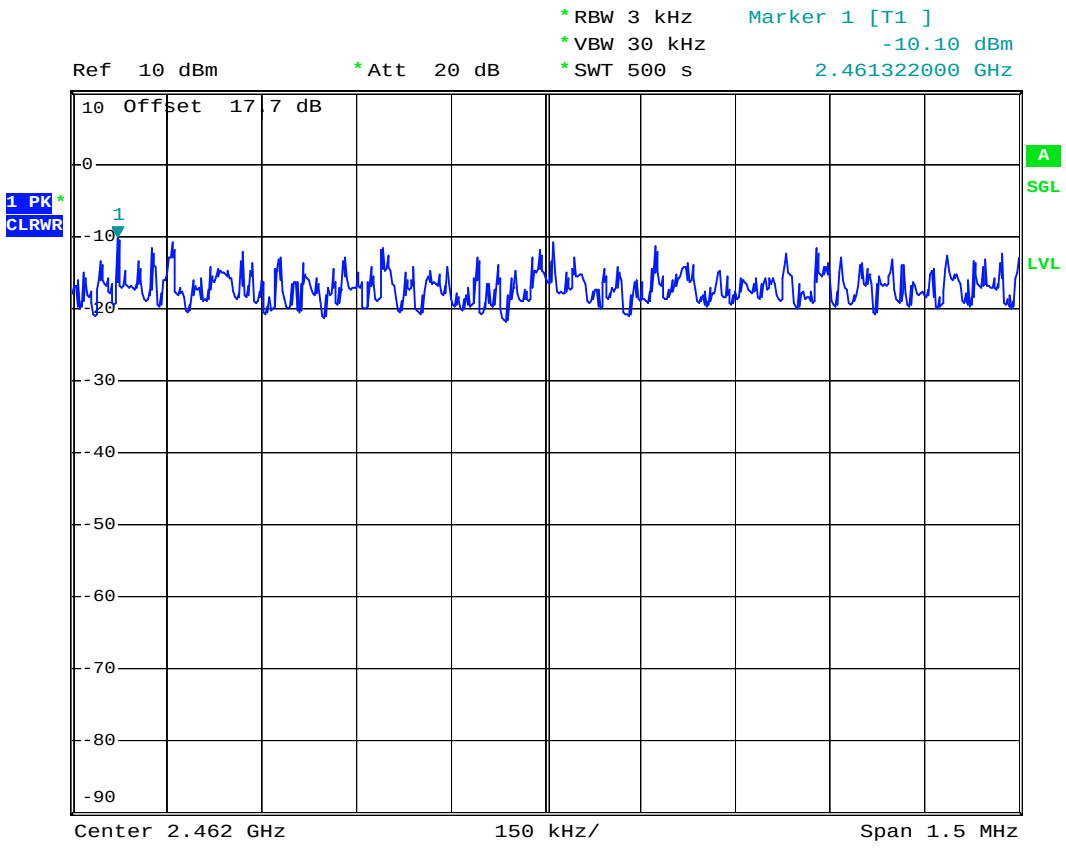
Date: 19.JUL.2007 12:11:54

Mode 2



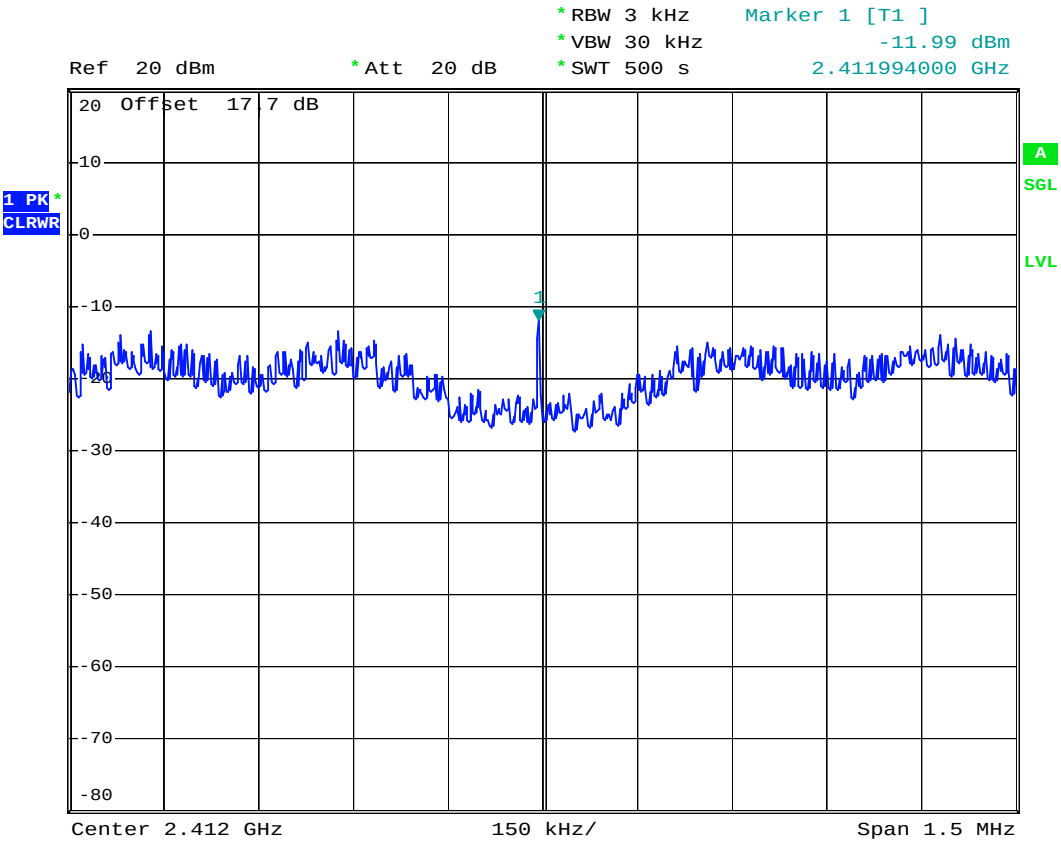
Date: 19.JUL.2007 12:21:26

Mode 3



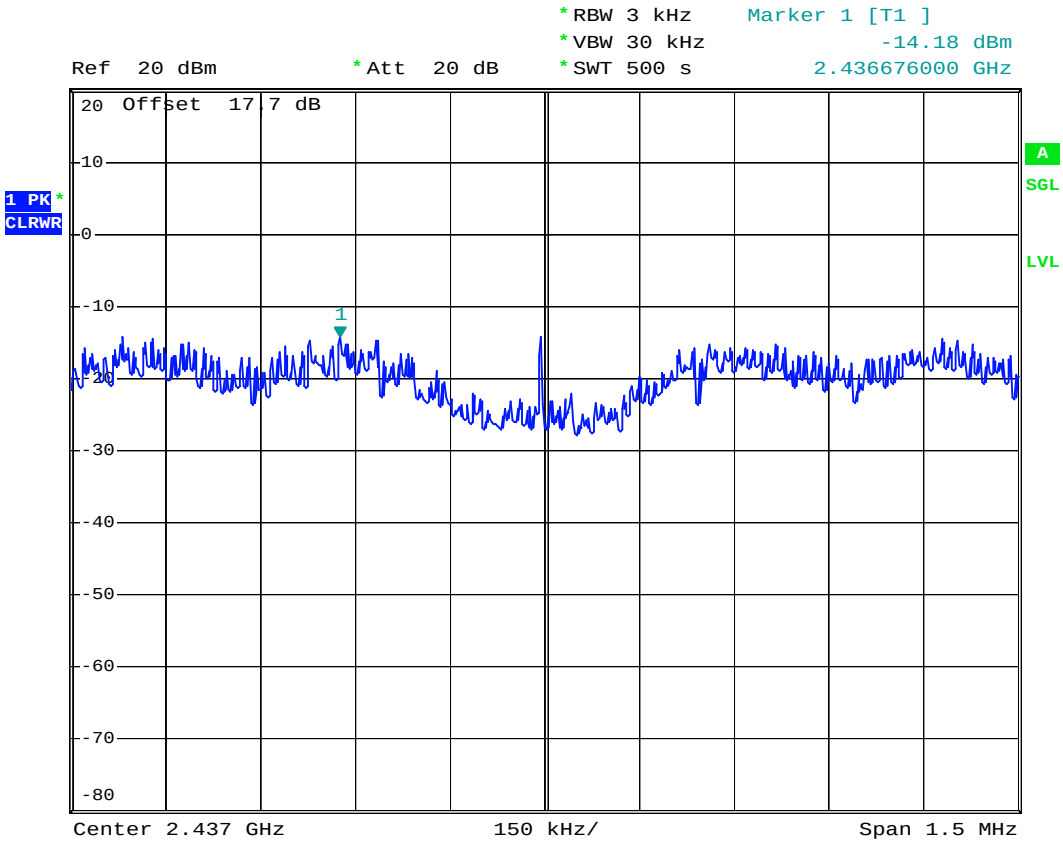
Date: 19.JUL.2007 12:31:30

Mode 4



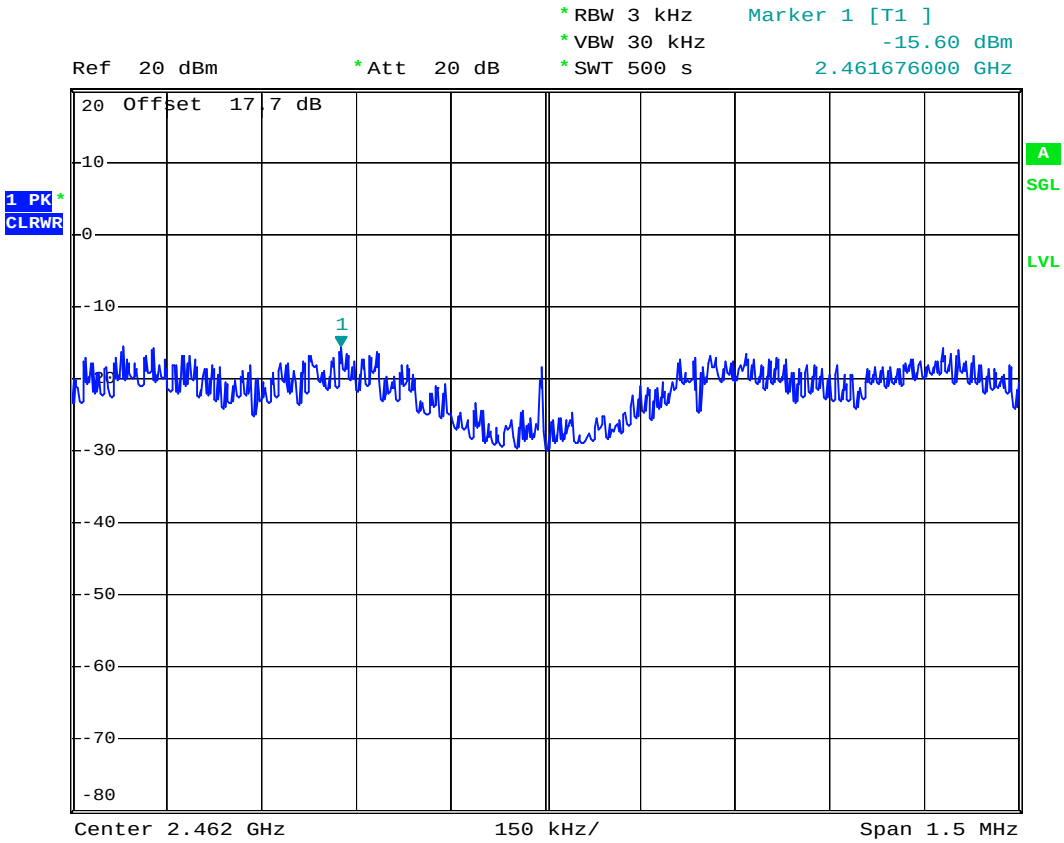
Date: 23.JUL.2007 17:27:58

Mode 5



Date: 23.JUL.2007 17:37:10

Mode 6



Date: 23.JUL.2007 17:49:05

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℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

- 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
2388.850	40.69	-13.31	54.00	42.65	28.07	3.74	33.78	100	45	Average
2388.850	53.67	-20.33	74.00	55.63	28.07	3.74	33.78	100	0	Peak

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
2388.090	38.99	-15.01	54.00	40.95	28.07	3.74	33.78	100	333	Average
2388.090	51.57	-22.43	74.00	53.53	28.07	3.74	33.78	100	0	Peak

CH11 (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
2483.500	51.27	-22.73	74.00	52.97	28.26	3.84	33.80	100	0	Peak
2483.500	39.32	-14.68	54.00	41.02	28.26	3.84	33.80	100	271	Average

CH11 (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
2483.500	47.54	-26.46	74.00	49.24	28.26	3.84	33.80	100	0	Peak
2483.500	35.99	-18.01	54.00	37.69	28.26	3.84	33.80	104	178	Average

➢WLAN 802.11g

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
2390.000	48.25	-5.75	54.00	50.22	28.07	3.74	33.78	100	54	Average
2390.000	58.77	-15.23	74.00	60.74	28.07	3.74	33.78	100	0	Peak

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
2390.000	55.99	-18.01	74.00	57.96	28.07	3.74	33.78	100	0	Peak
2390.000	46.26	-7.74	54.00	48.23	28.07	3.74	33.78	100	333	Average

CH11 (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
2483.500	60.20	-13.80	74.00	61.90	28.26	3.84	33.80	100	0	Peak
2483.500	52.79	-1.21	54.00	54.49	28.26	3.84	33.80	103	308	Average

CH11 (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
2483.500	58.75	-15.25	74.00	60.45	28.26	3.84	33.80	100	0	Peak
2483.500	51.15	-2.85	54.00	52.85	28.26	3.84	33.80	104	93	Average

➢ BT(1Mbps)

CH78 (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
2483.500	63.20	-10.80	74.00	64.90	28.26	3.84	33.80	100	0	Peak
2483.500	52.82	-1.18	54.00	54.52	28.26	3.84	33.80	100	20	Average

CH78 (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
2483.500	61.86	-12.14	74.00	63.56	28.26	3.84	33.80	100	0	Peak
2483.500	51.84	-2.16	54.00	53.54	28.26	3.84	33.80	105	226	Average

➢ BT-EDR(2Mbps)

CH78 (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
2483.500	67.26	-6.74	74.00	68.96	28.26	3.84	33.80	100	0	Peak
2483.500	53.37	-0.63	54.00	55.07	28.26	3.84	33.80	100	19	Average

CH78 (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
2483.500	64.58	-9.42	74.00	66.28	28.26	3.84	33.80	100	0	Peak
2483.500	51.40	-2.60	54.00	53.10	28.26	3.84	33.80	100	219	Average

➢ BT-EDR(3Mbps)

CH00 (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
2384.860	46.55	-27.45	74.00	48.52	28.07	3.74	33.78	100	0	Peak
2384.860	33.02	-20.98	54.00	35.02	28.03	3.74	33.78	108	190	Average

CH00 (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
2384.860	44.68	-29.32	74.00	46.64	28.07	3.74	33.78	100	0	Peak
2384.860	30.69	-23.31	54.00	32.69	28.03	3.74	33.78	112	336	Average

CH78 (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
2483.500	66.51	-7.49	74.00	68.21	28.26	3.84	33.80	100	0	Peak
2483.500	53.05	-0.95	54.00	28.26	28.26	3.84	33.80	101	319	Average

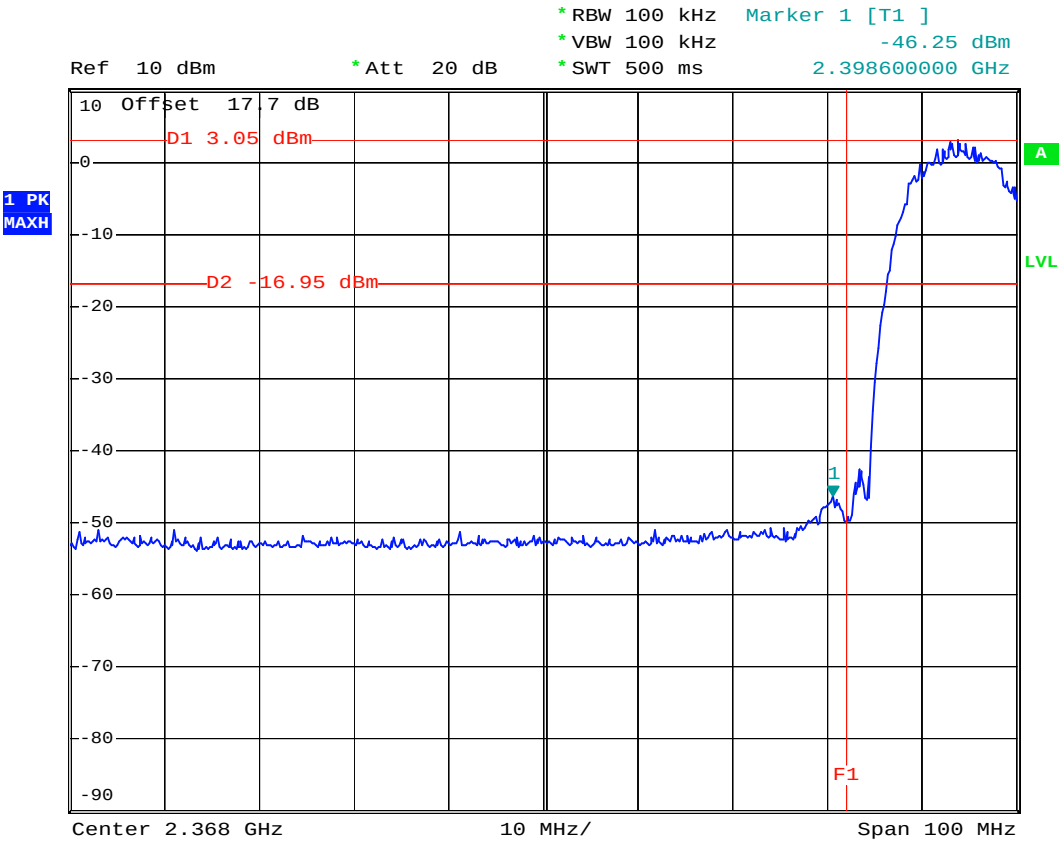
CH78 (Vertical)

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
2483.500	65.04	-8.96	74.00	66.74	28.26	3.84	33.80	100	0	Peak
2483.500	51.98	-2.02	54.00	53.68	28.26	3.84	33.80	114	227	Average

5.4.5 Band Edge

WLAN 802.11b

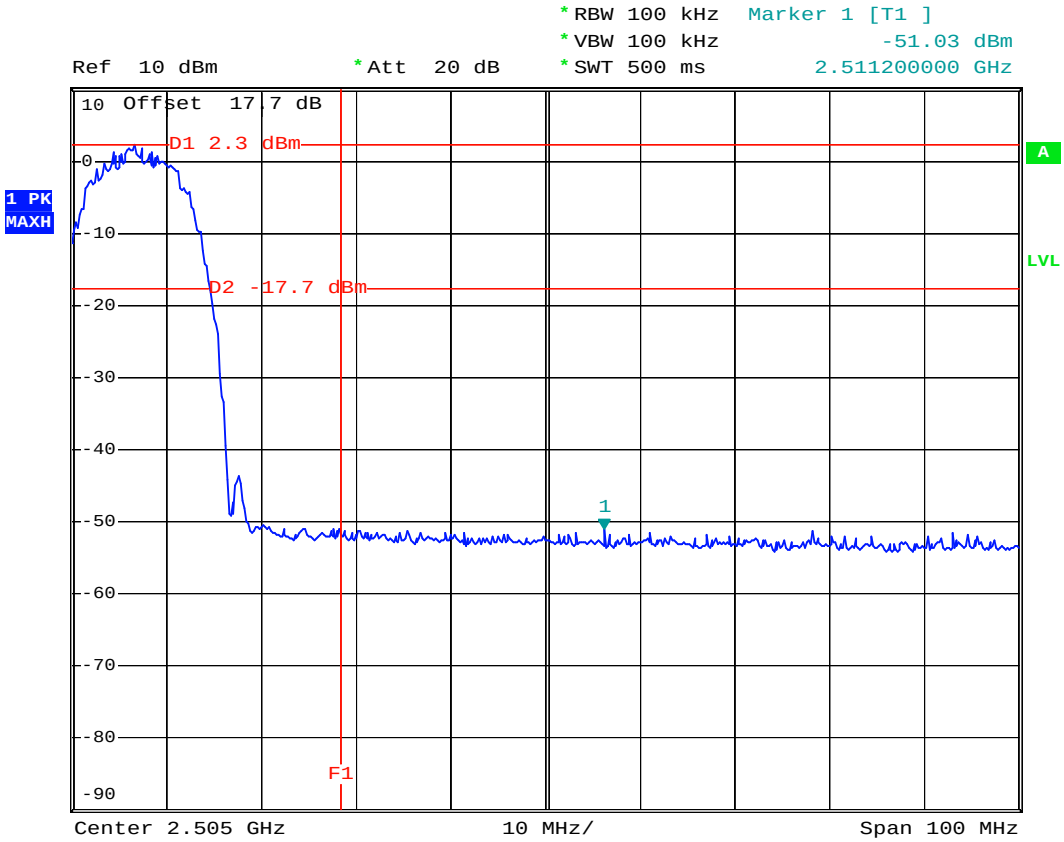
CH01



Date: 19.JUL.2007 11:35:53

WLAN 802.11b

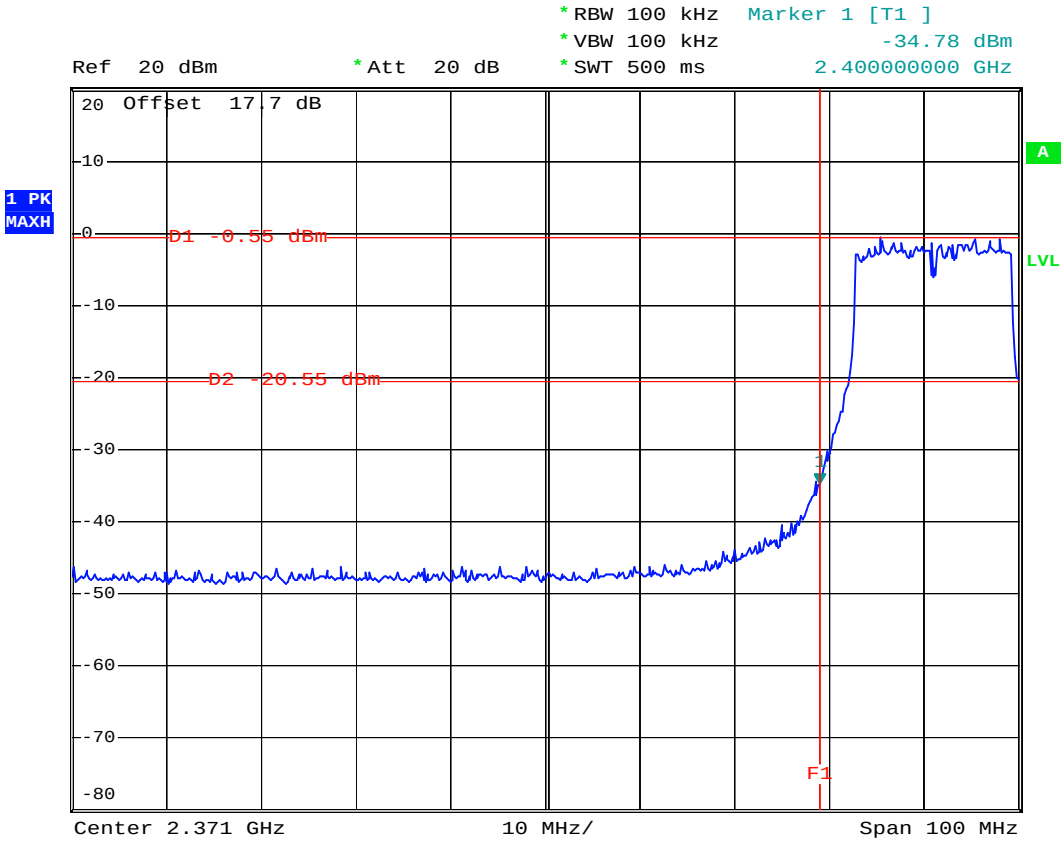
CH11



Date: 19.JUL.2007 14:03:07

WLAN 802.11g

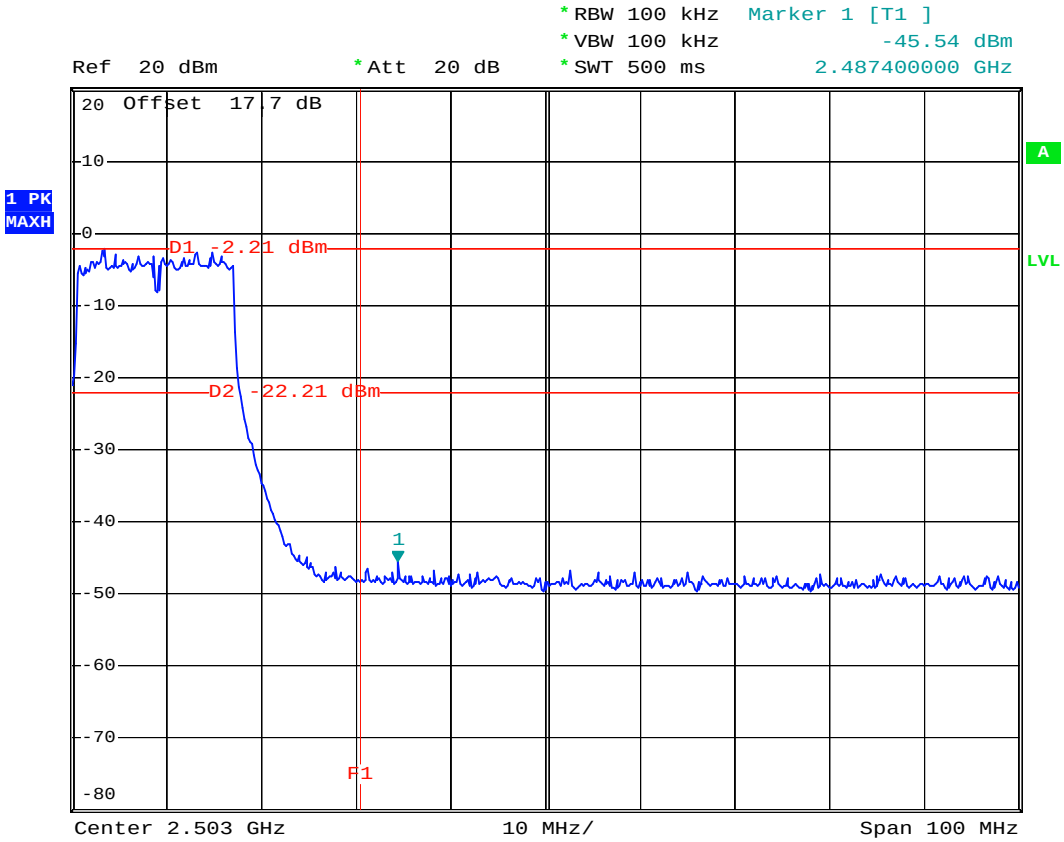
CH01



Date: 23.JUL.2007 17:17:05

WLAN 802.11g

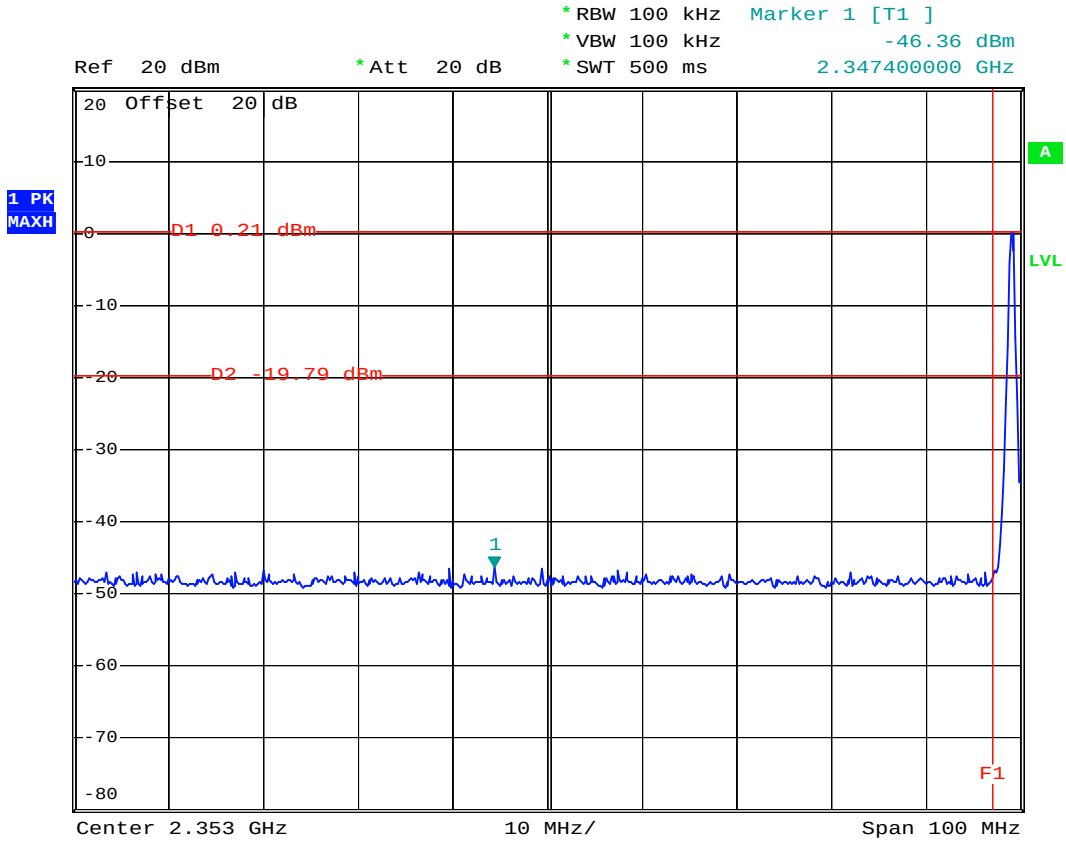
CH11



Date: 23.JUL.2007 17:15:45

BT(1Mbps)

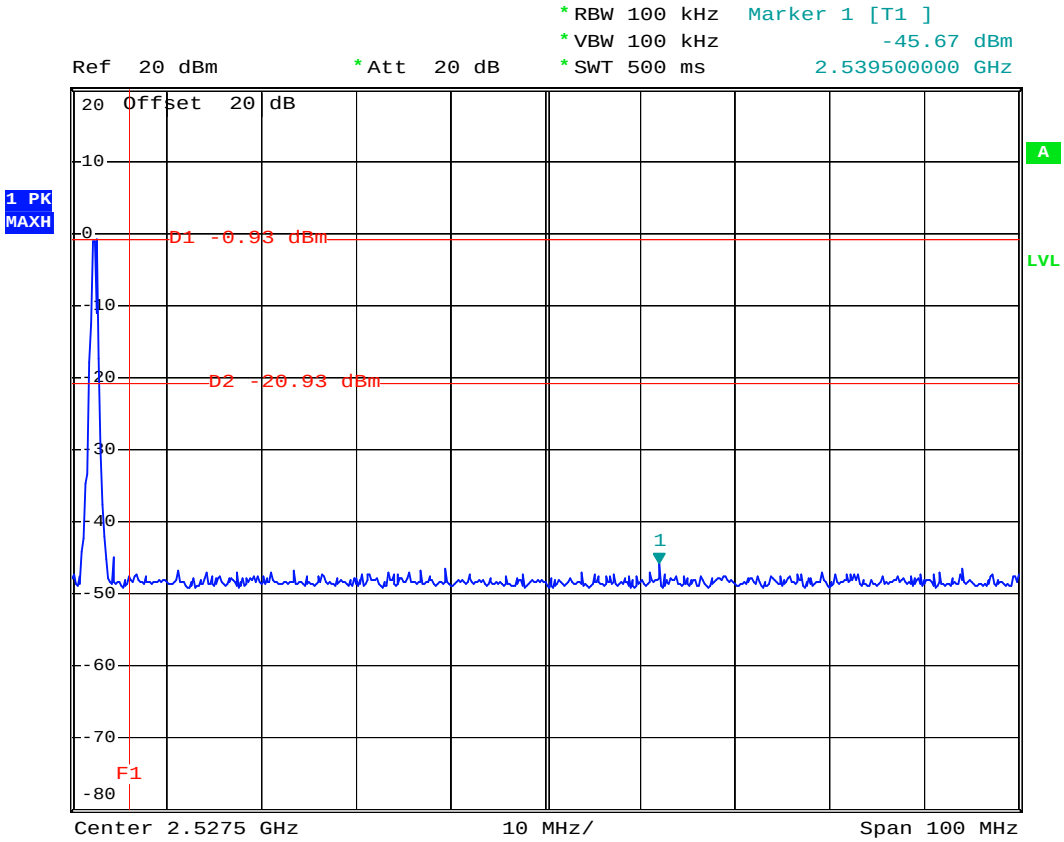
CH00



Date: 7.AUG.2007 11:06:41

BT(1Mbps)

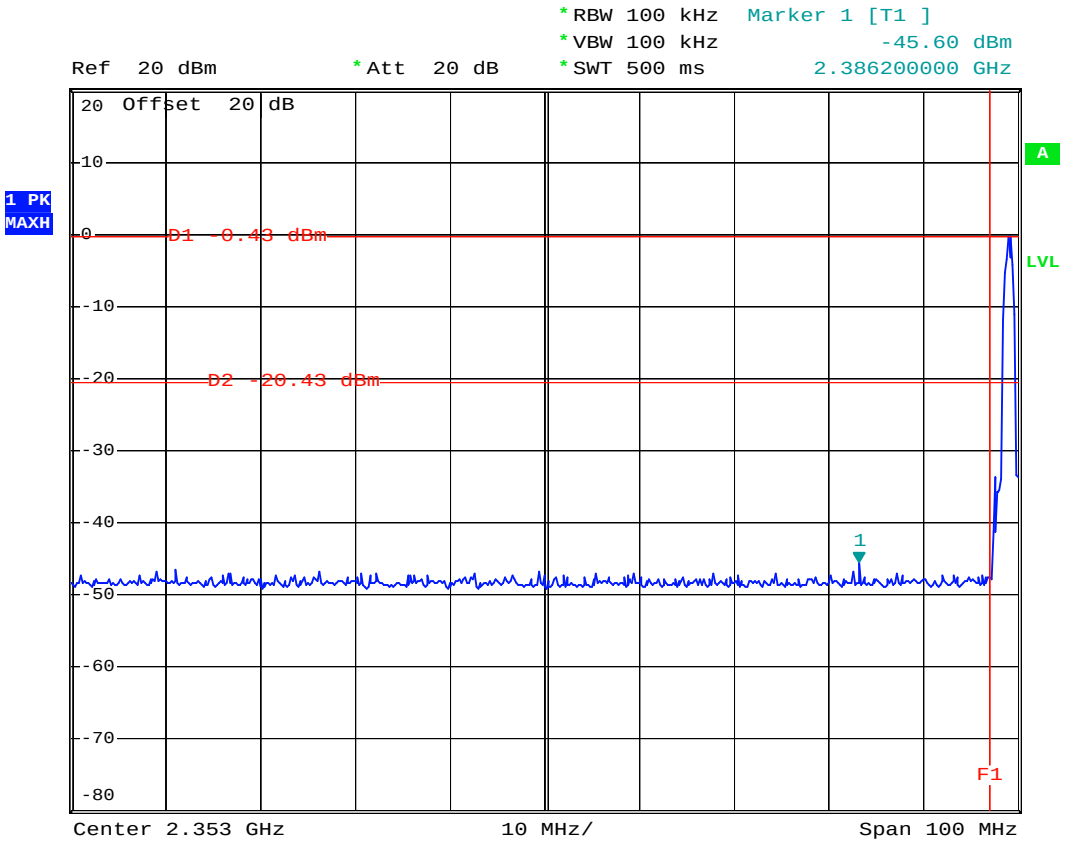
CH78



Date: 7.AUG.2007 11:07:58

BT-EDR(2Mbps)

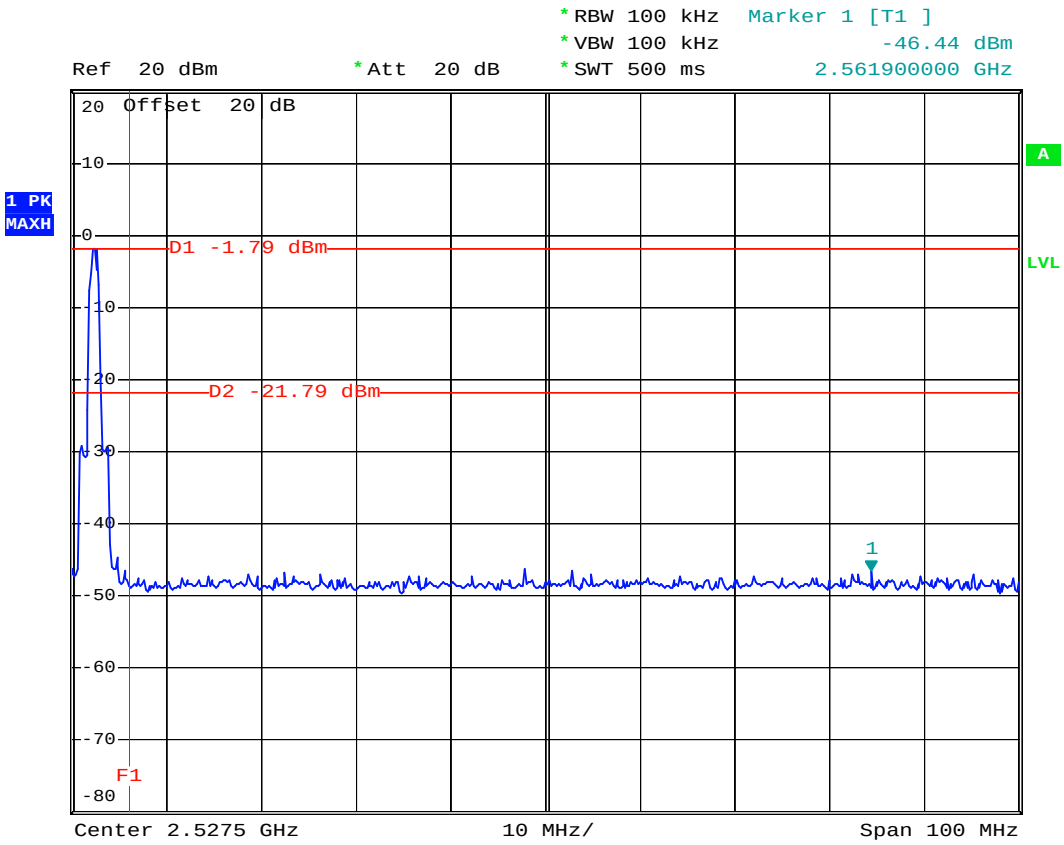
CH00



Date: 7.AUG.2007 11:31:02

BT-EDR(2Mbps)

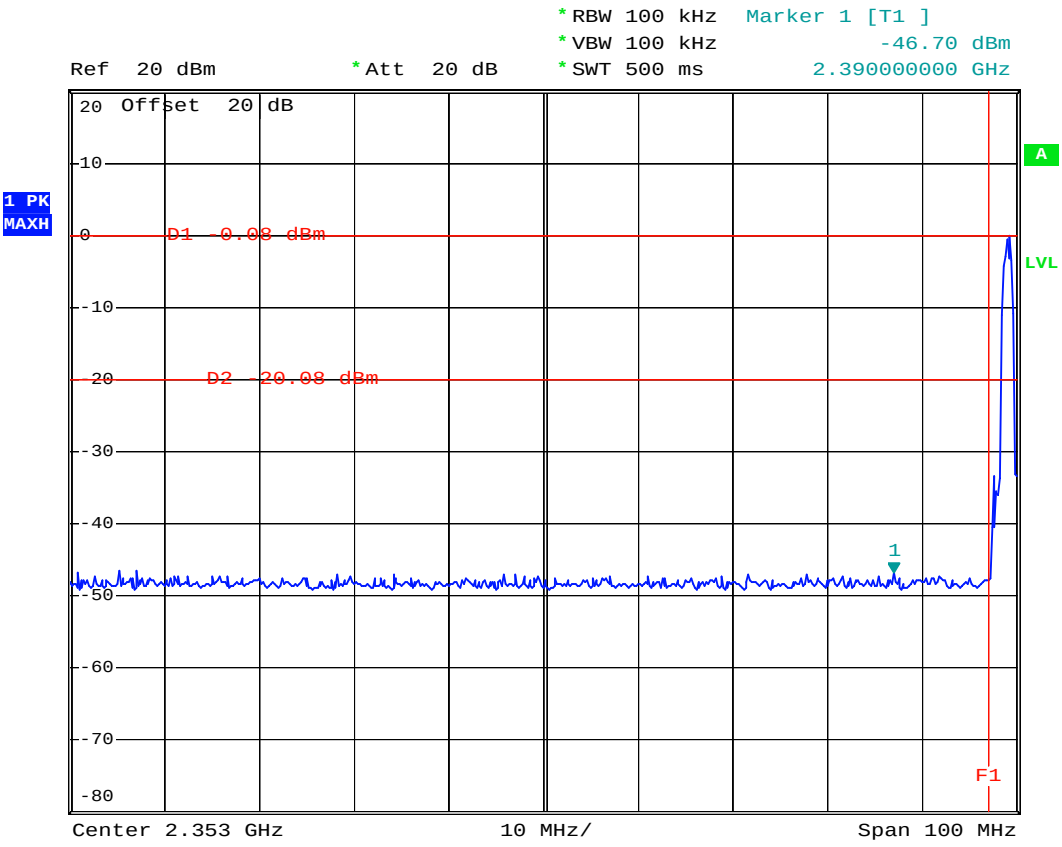
CH78



Date: 7.AUG.2007 11:29:53

BT-EDR(3Mbps)

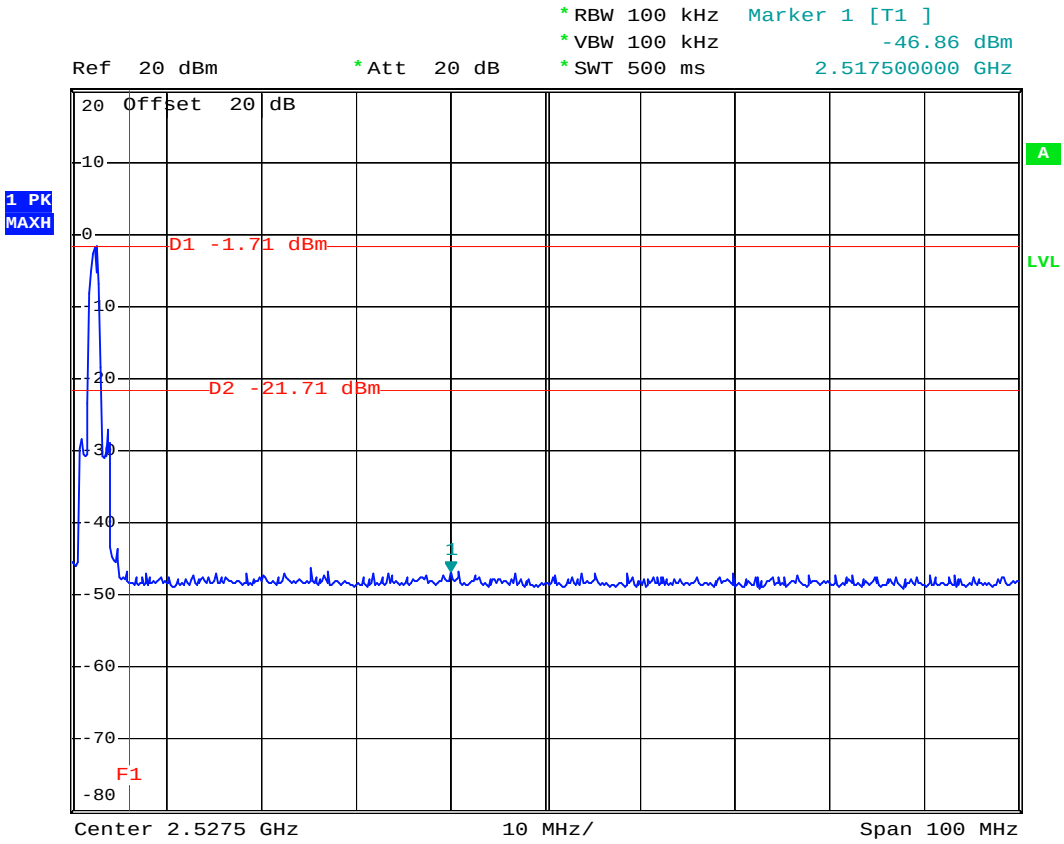
CH00



Date: 7.AUG.2007 11:55:19

BT-EDR(3Mbps)

CH78



Date: 7.AUG.2007 11:54:06

5.5 Hopping Channel Separation

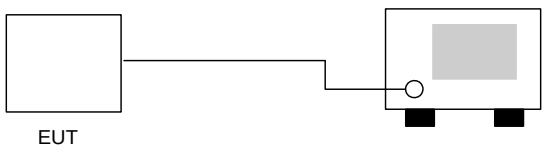
5.5.1 Measuring Instruments：

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 ≧1% of the span and VBW ≧ 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 : BT(1Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.628	Mode 7
39	2441	1.004	0.632	Mode 8
78	2480	1.000	0.624	Mode 9

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

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

- Application Type : BT-EDR(2Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.859	Mode 10
39	2441	1.008	0.861	Mode 11
78	2480	1.000	0.864	Mode 12

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

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

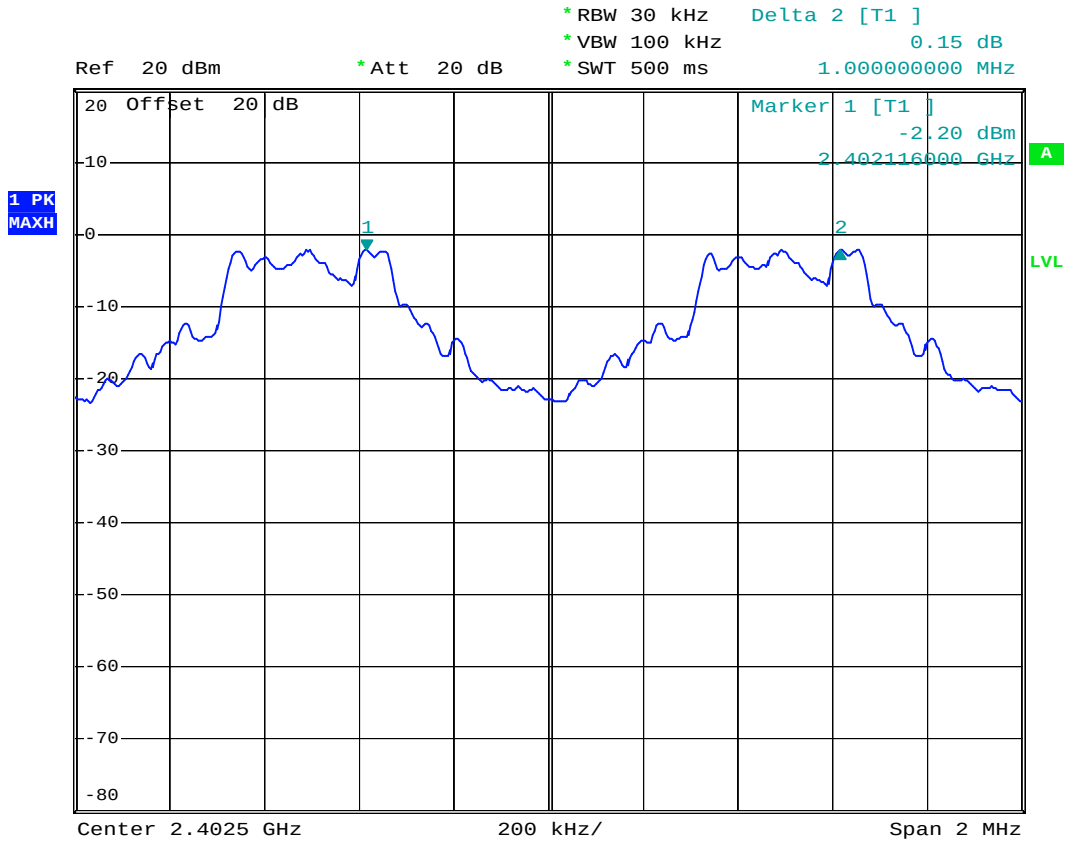
- Application Type : BT-EDR(3Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.864	Mode 13
39	2441	1.000.	0.861	Mode 14
78	2480	1.008.	0.861	Mode 15

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

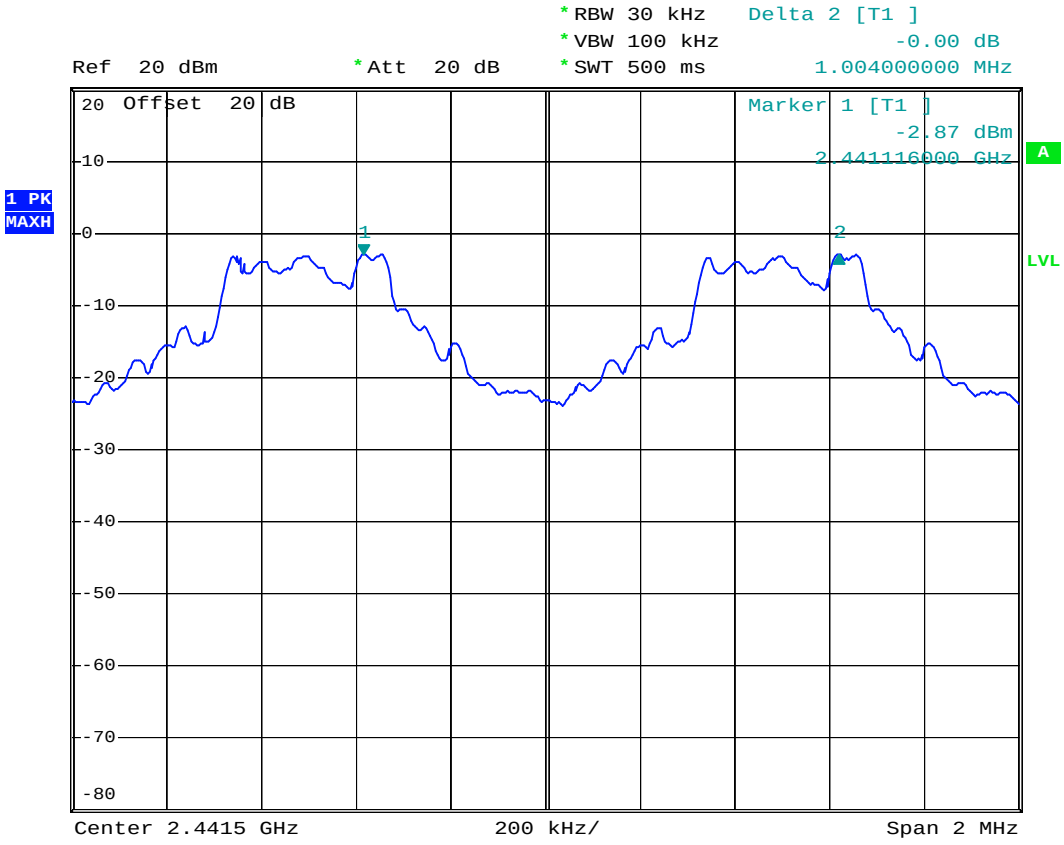
5.5.5 Hopping Channel Seperation

Mode 7



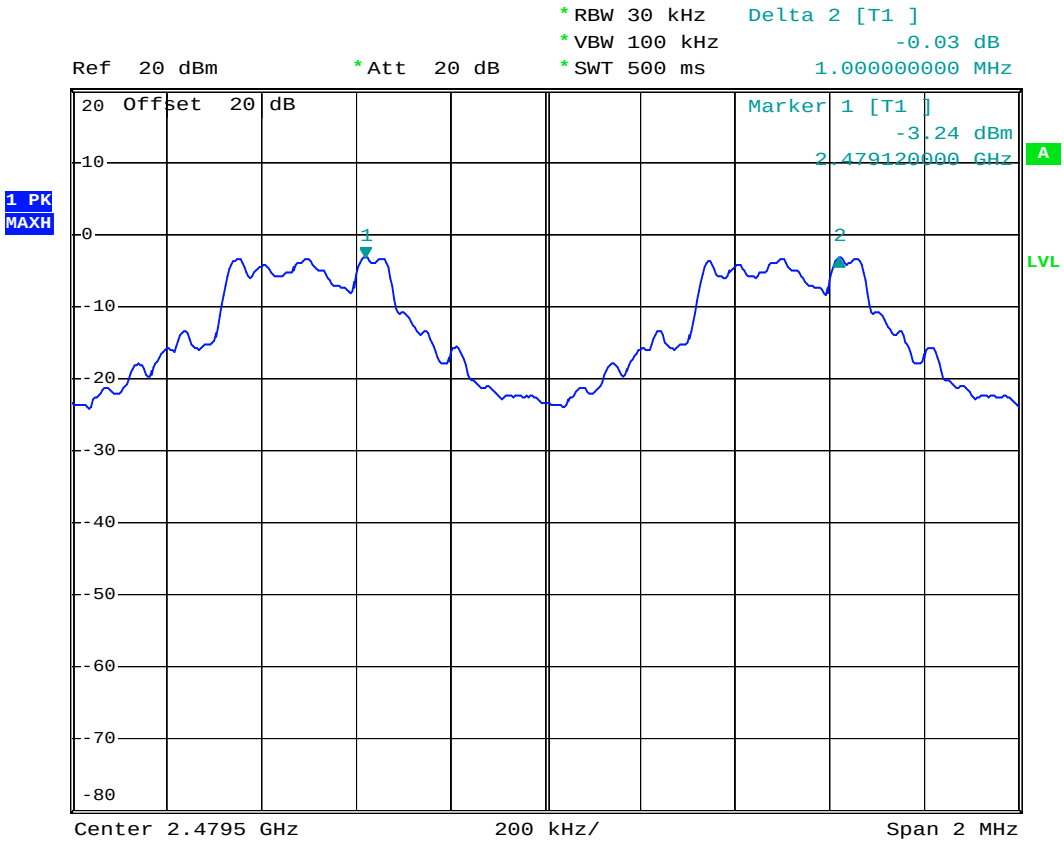
Date: 7.AUG.2007 11:08:40

Mode 8



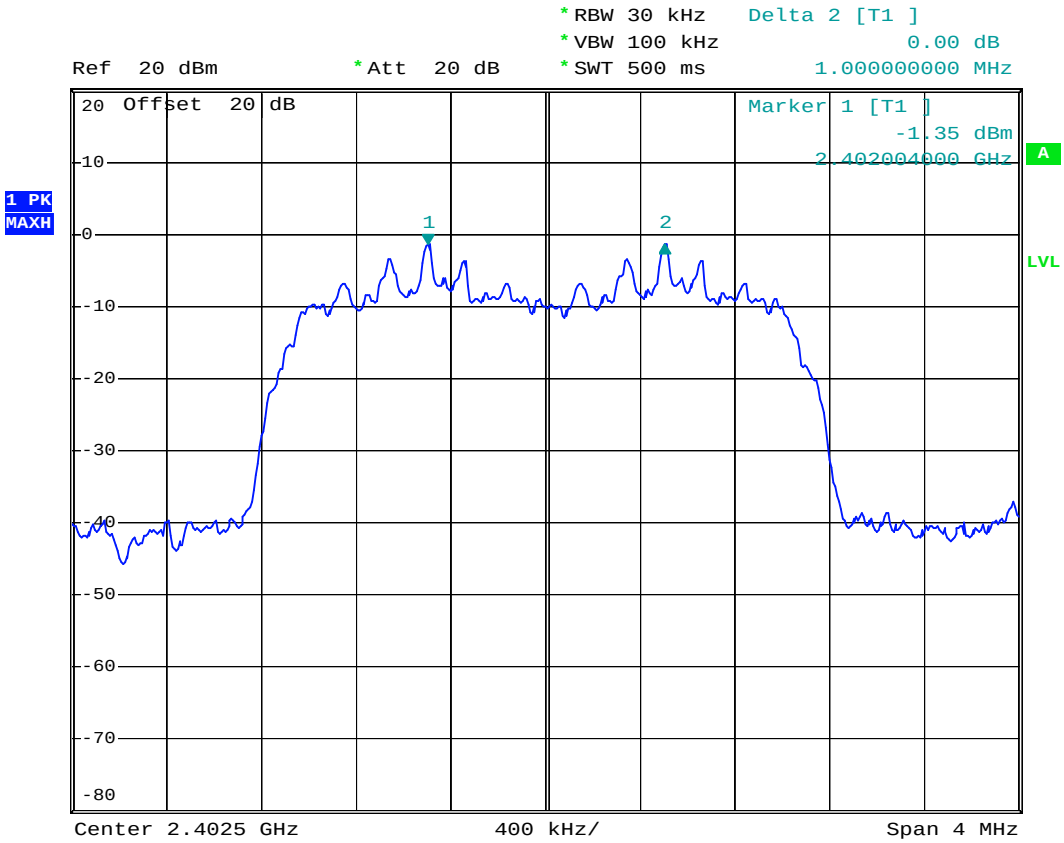
Date: 7.AUG.2007 11:09:20

Mode 9



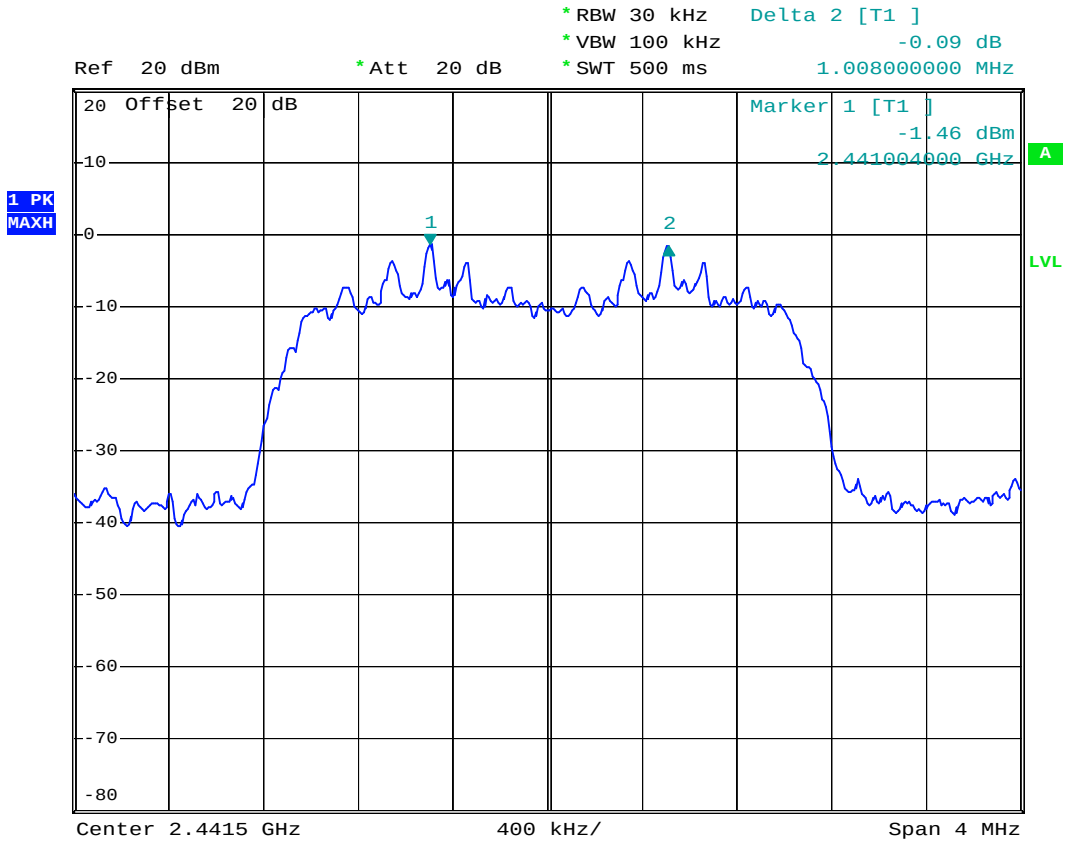
Date: 7.AUG.2007 11:10:11

Mode 10



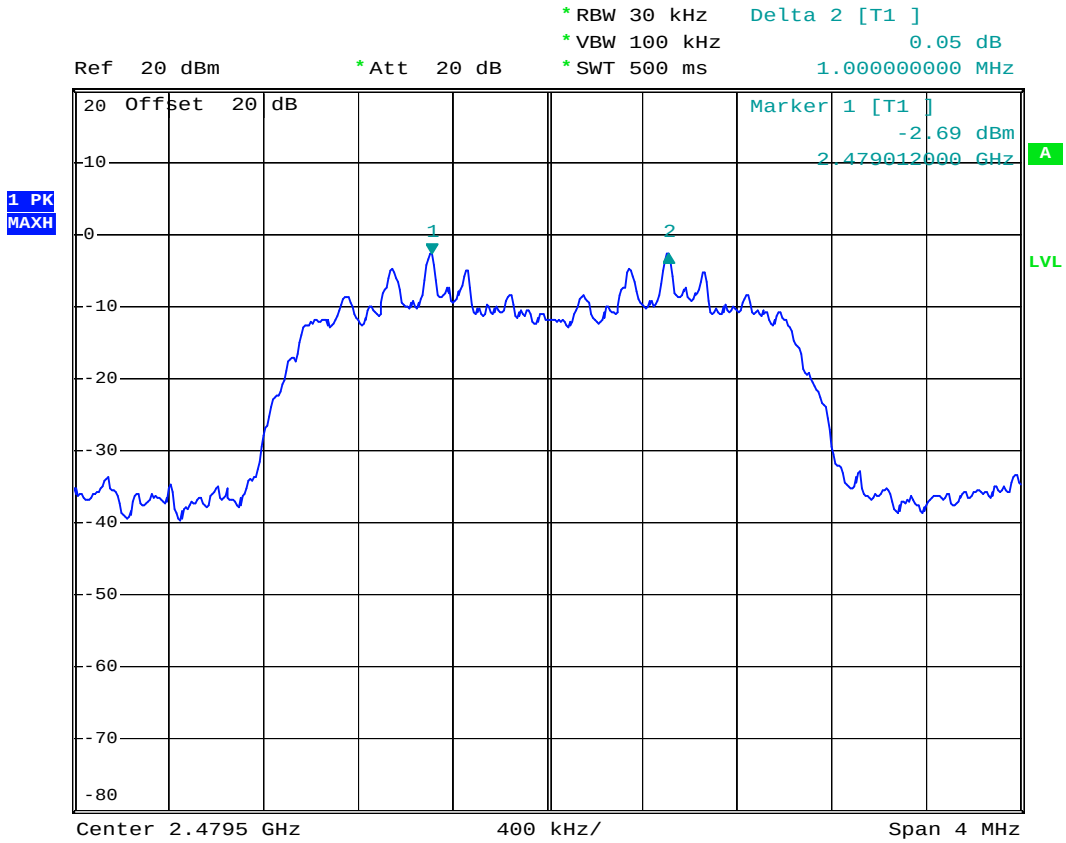
Date: 7.AUG.2007 11:32:09

Mode 11



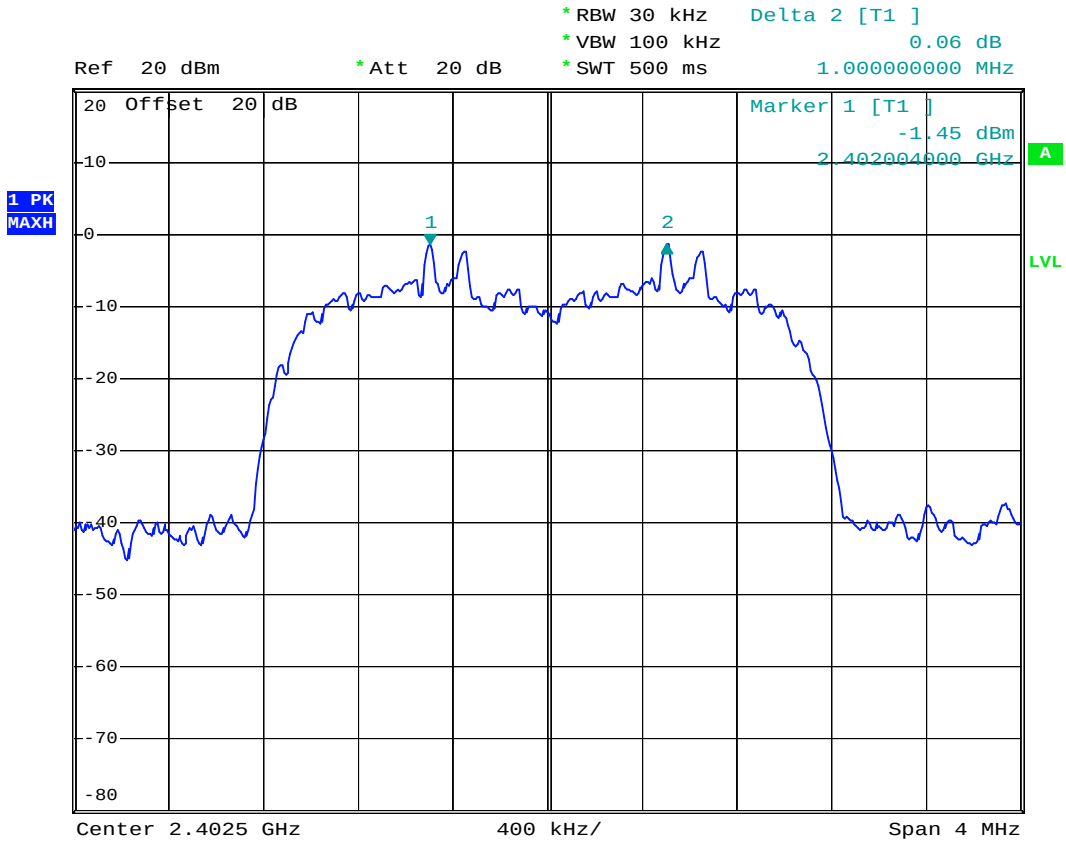
Date: 7.AUG.2007 11:33:15

Mode 12



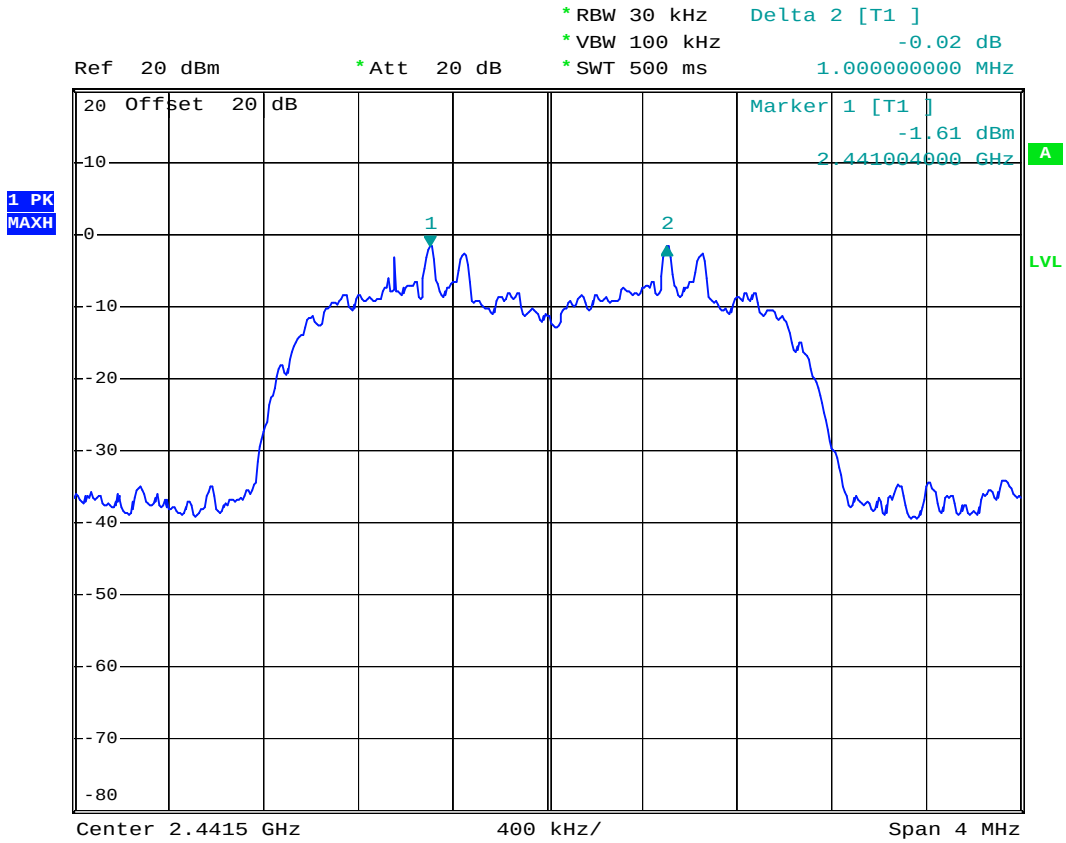
Date: 7.AUG.2007 11:34:21

Mode 13



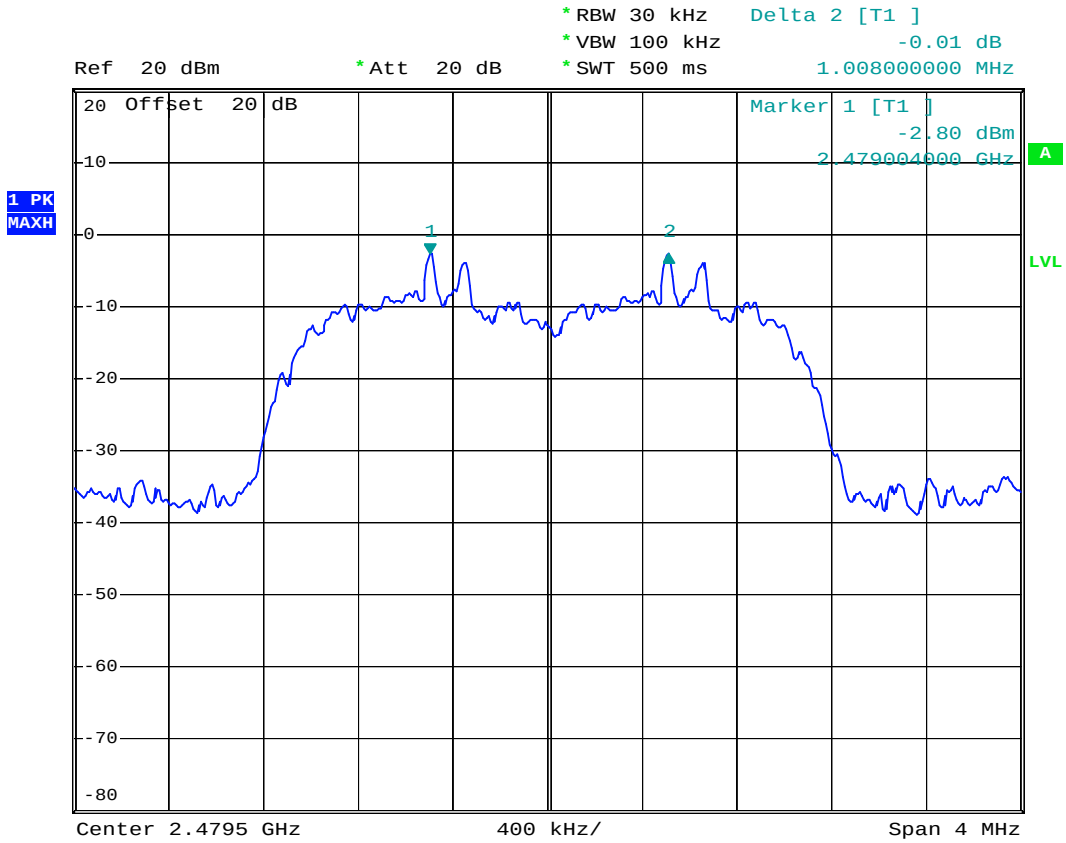
Date: 7.AUG.2007 11:56:25

Mode 14



Date: 7.AUG.2007 11:57:20

Mode 15



Date: 7.AUG.2007 11:58:41

5.6 Number of Hopping Frequency

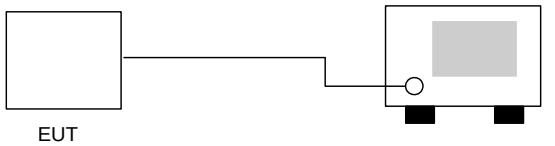
5.6.1 Measuring Instruments：

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 : BT(1Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

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

5.6.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(2Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

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

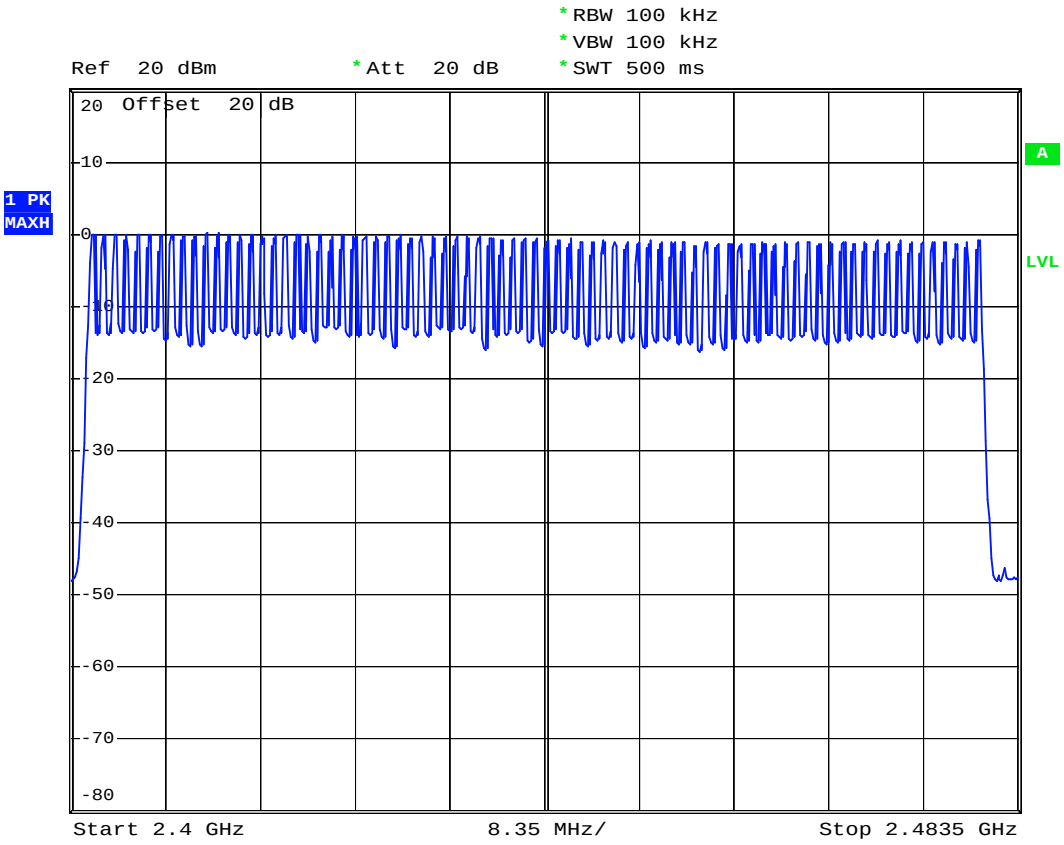
5.6.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(3Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

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

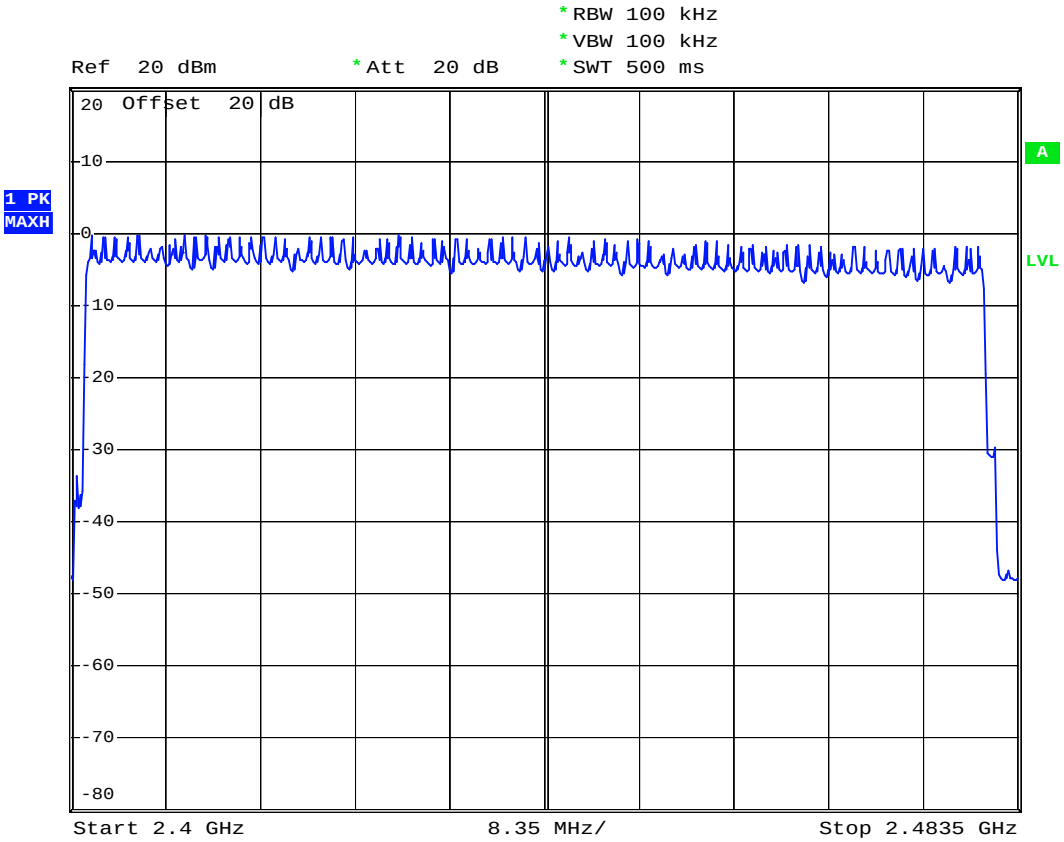
5.6.5 Number of Hopping Frequency

BT(1Mbps)



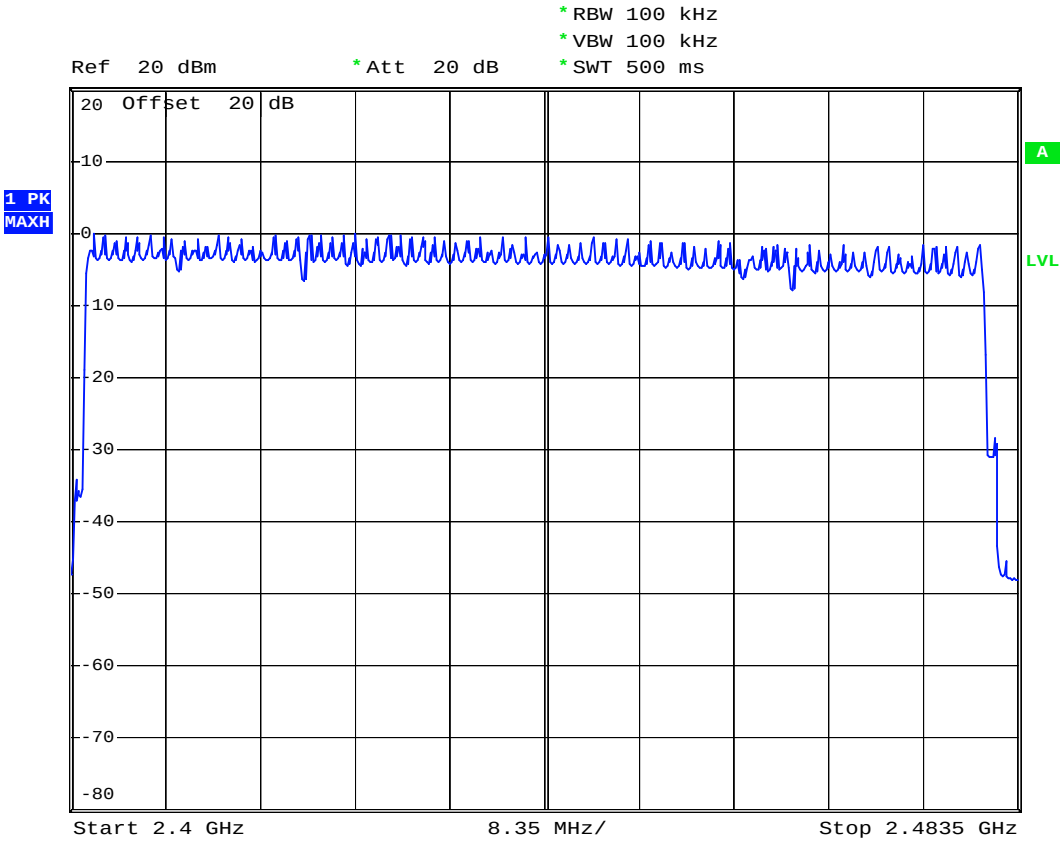
Date: 7.AUG.2007 11:20:56

BT-EDR(2Mbps)



Date: 7.AUG.2007 11:46:35

BT-EDR(3Mbps)



Date: 7.AUG.2007 12:08:55

5.7 Hopping Channel Bandwidth

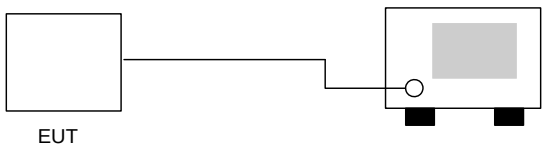
5.7.1 Measuring Instruments：

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 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 : BT(1Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	0.942	Mode 7
39	2441	0.948	Mode 8
78	2480	0.936	Mode 9

5.7.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(2Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.288	Mode 10
39	2441	1.292	Mode 11
78	2480	1.296	Mode 12

5.7.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(3Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.296	Mode 13
39	2441	1.292	Mode 14
78	2480	1.292	Mode 15

5.7.5 Hopping Channel Bandwidth

Mode 7

Date: 7.AUG.2007 11:04:17

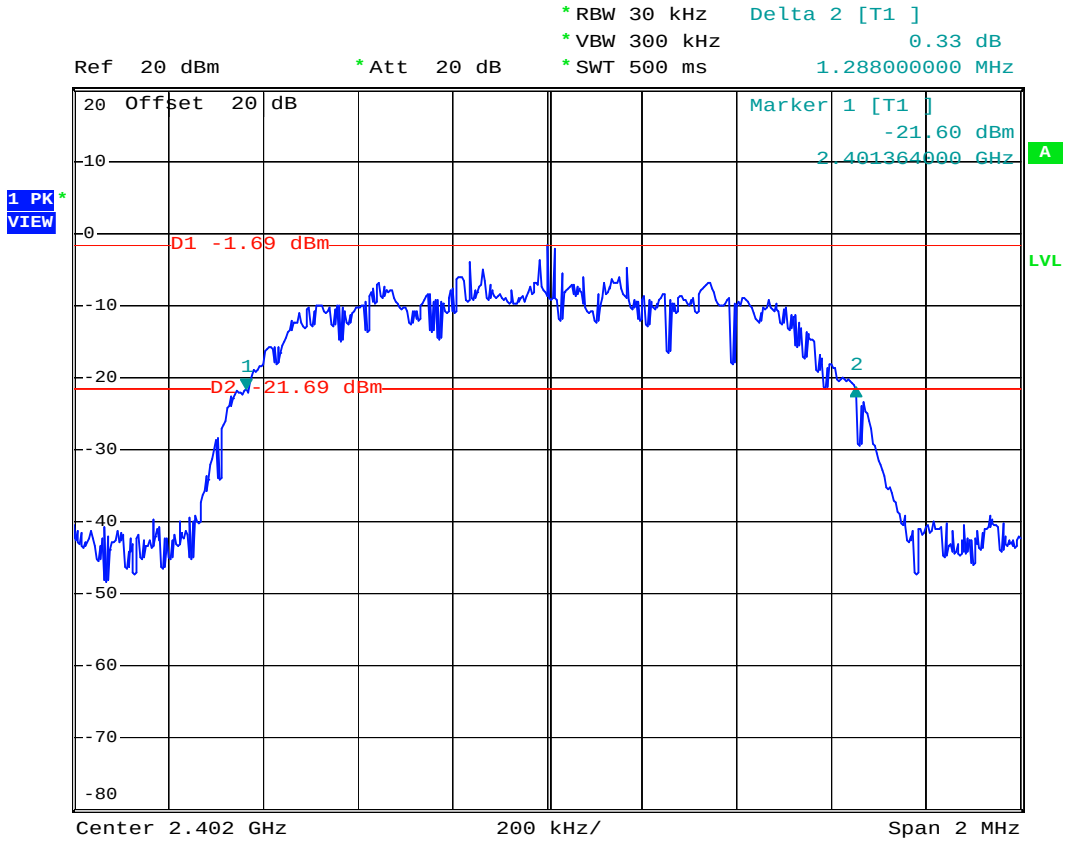
Mode 8

Date: 7.AUG.2007 11:03:27

Mode 9

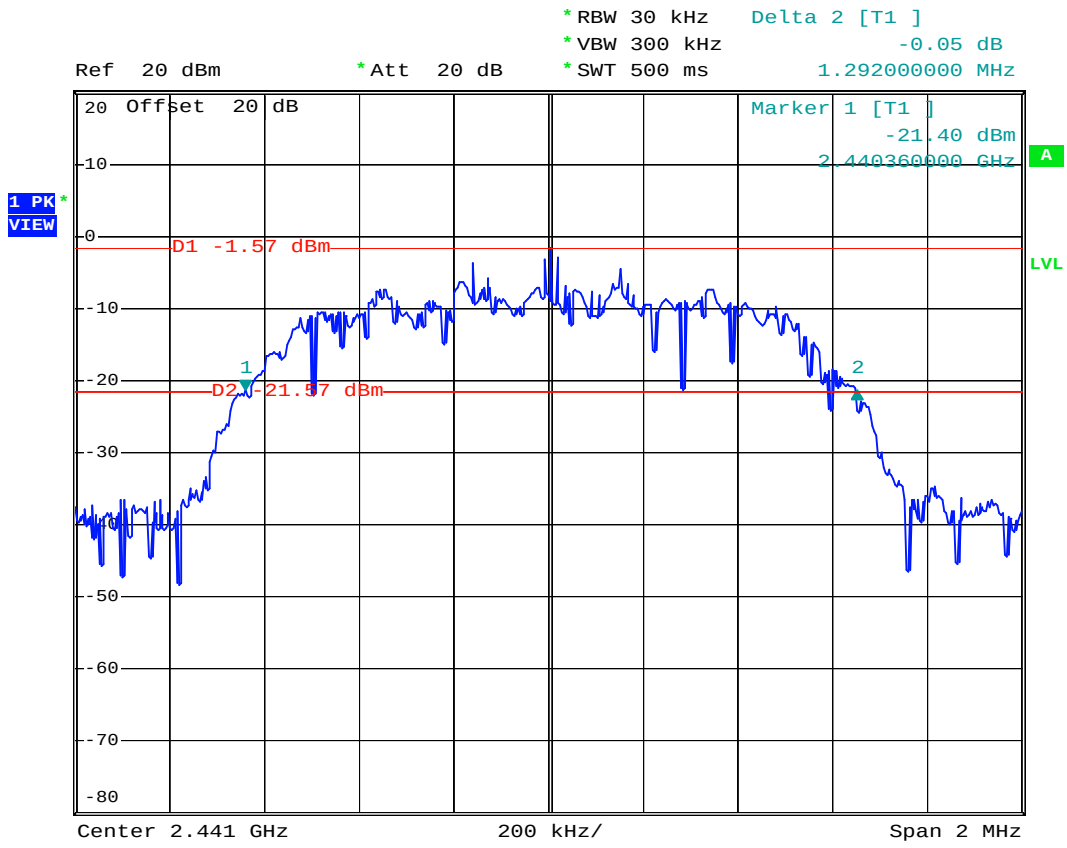
Date: 7.AUG.2007 11:04:56

Mode 10



Date: 7.AUG.2007 11:26:51

Mode 11

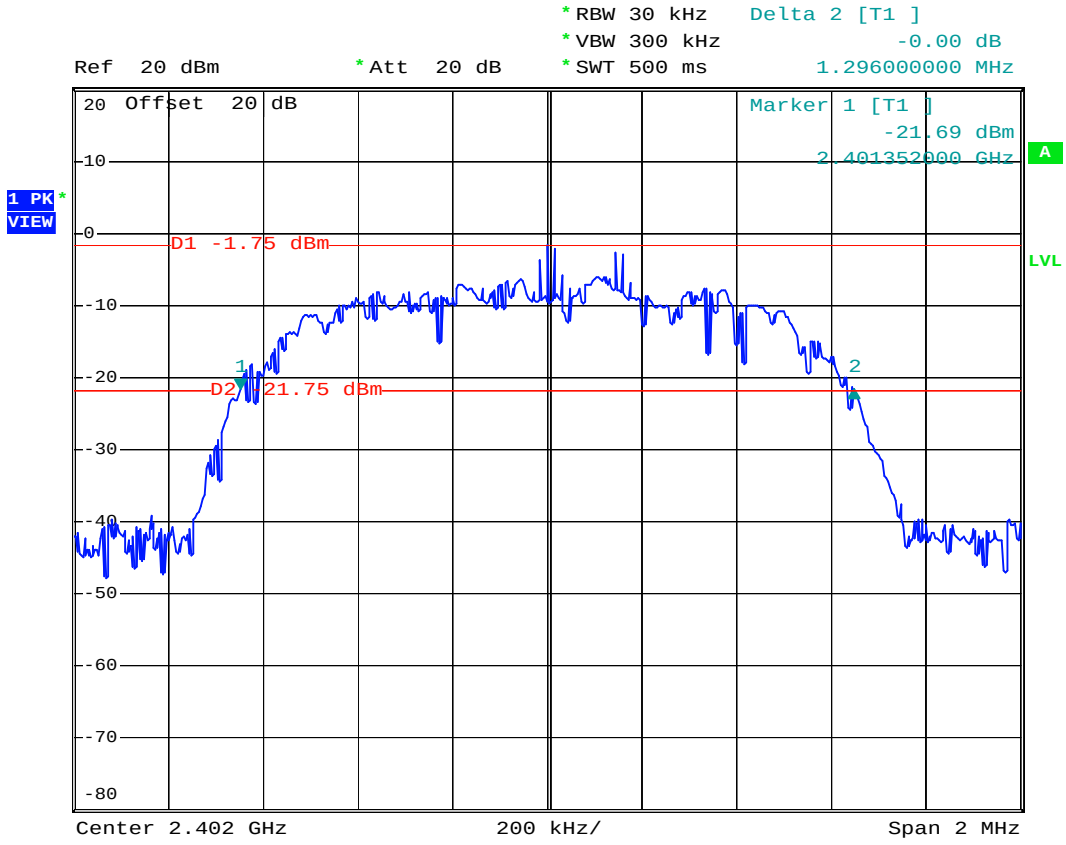


Date: 7.AUG.2007 11:28:09

Mode 12

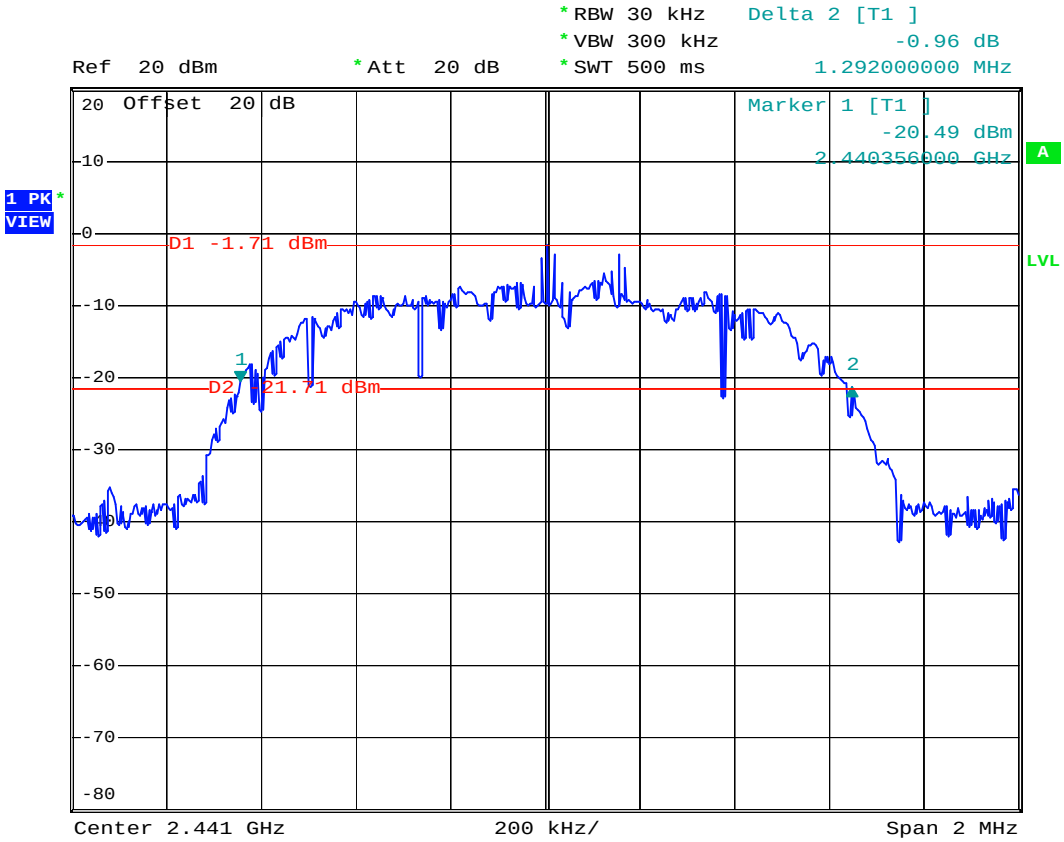
Date: 7.AUG.2007 11:28:47

Mode 13



Date: 7.AUG.2007 11:50:58

Mode 14



Date: 7.AUG.2007 11:51:36

Mode 15

Date: 7.AUG.2007 11:52:15

5.8 Dwell Time of Each Frequency

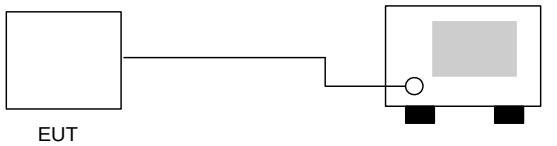
5.8.1 Measuring Instruments：

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 : BT(1Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.8	420	0.130	0.4
DH3	5.6	1680	0.297	0.4
DH5	3.5	2980	0.330	0.4

5.8.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(2Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.7	420	0.129	0.4
DH3	5.7	1690	0.304	0.4
DH5	3.6	3040	0.346	0.4

5.8.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(3Mbps)
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

Ch39

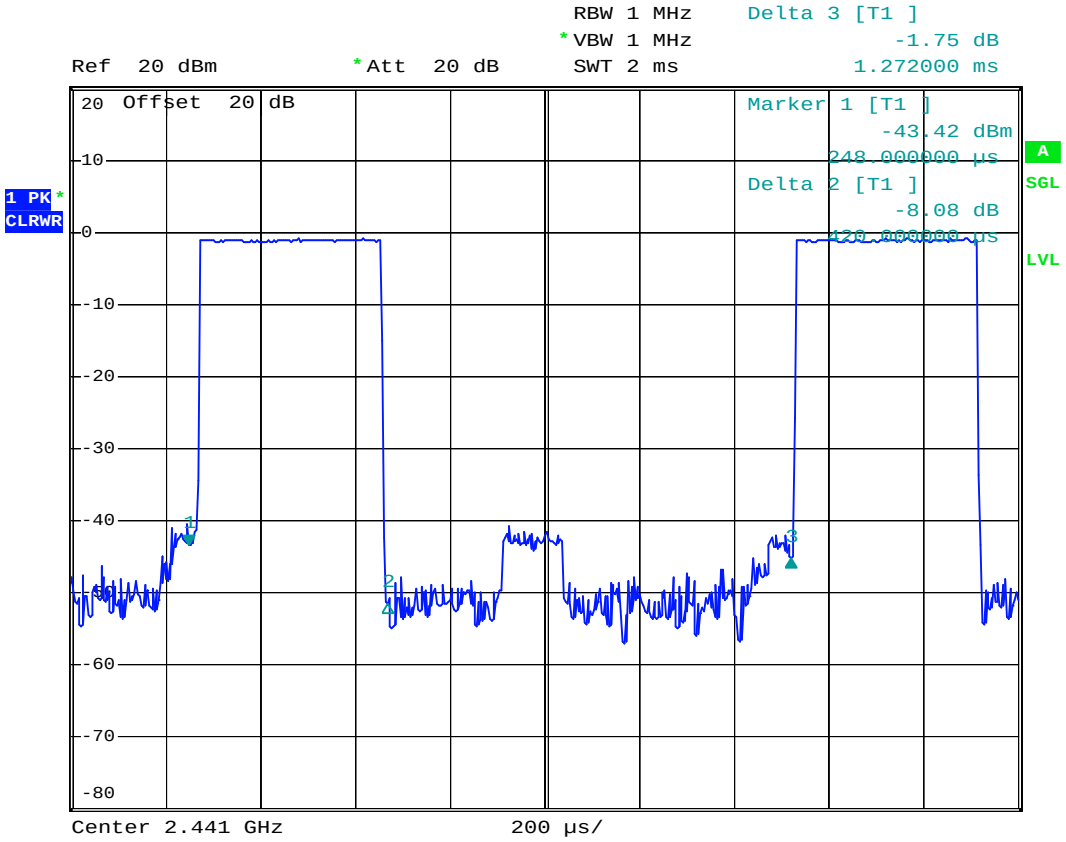
Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	3.5	412	0.046	0.4
DH3	5.4	1670	0.285	0.4
DH5	3.7	2960	0.346	0.4

※ Remark:

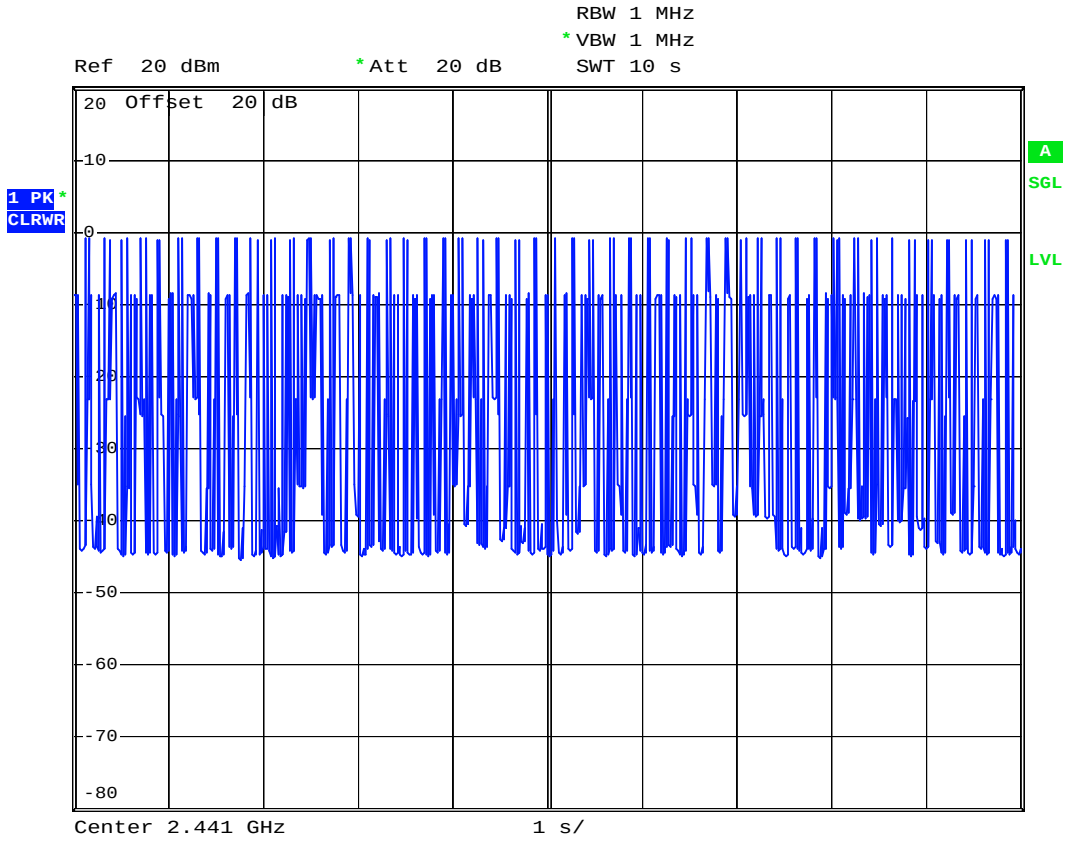
1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79 channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

5.8.5 Dwell Time

BT(1Mbps)_DH1 (CH39)

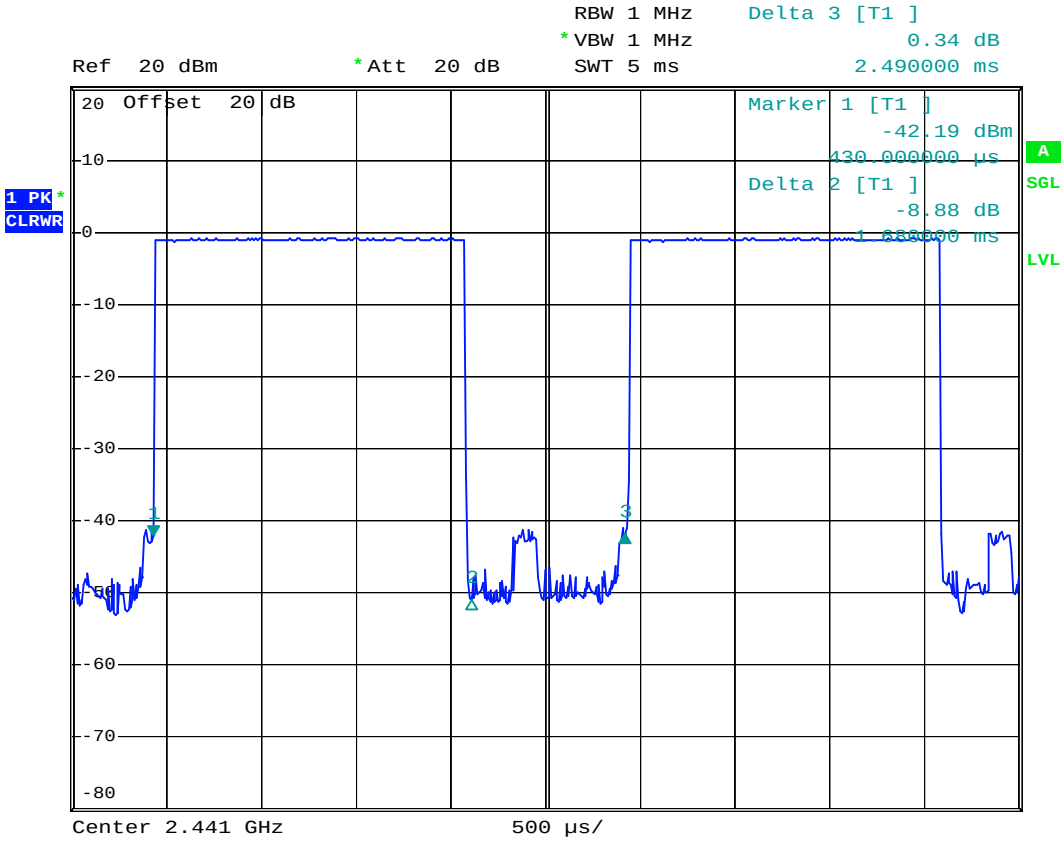


Date: 7.AUG.2007 11:11:20

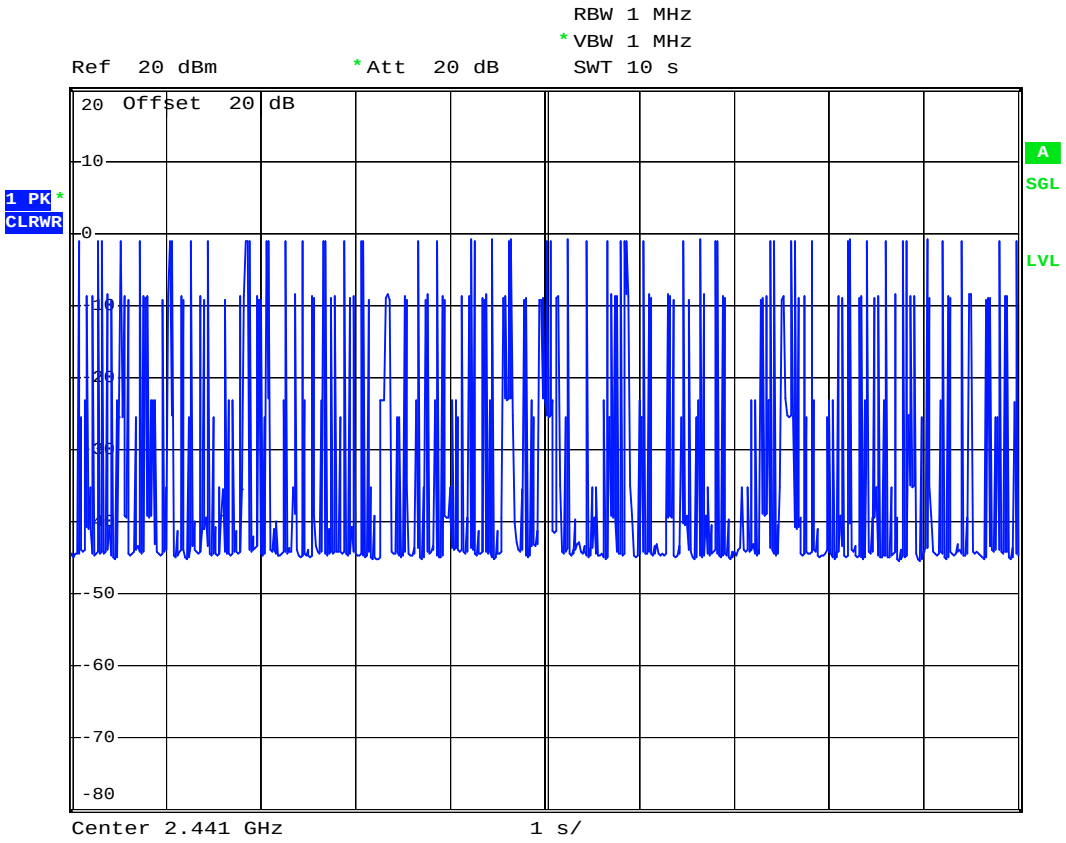


Date: 7.AUG.2007 11:13:15

BT(1Mbps)_DH3 (CH39)

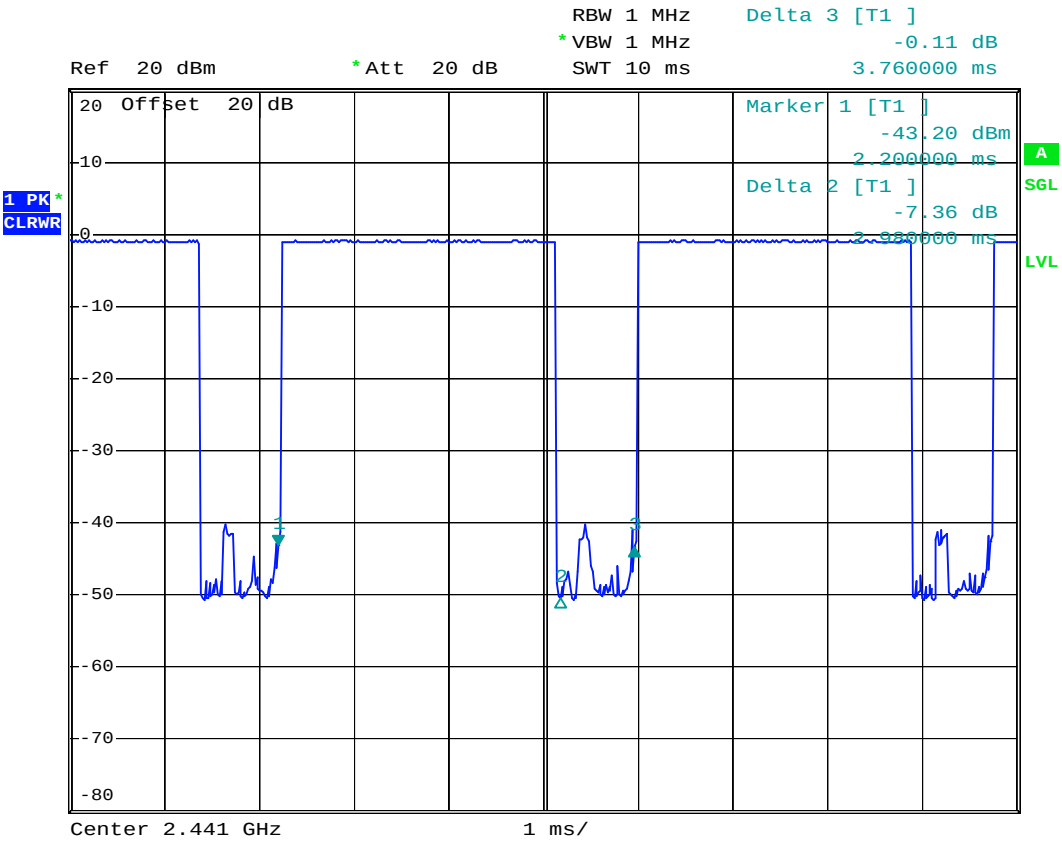


Date: 7.AUG.2007 11:12:01

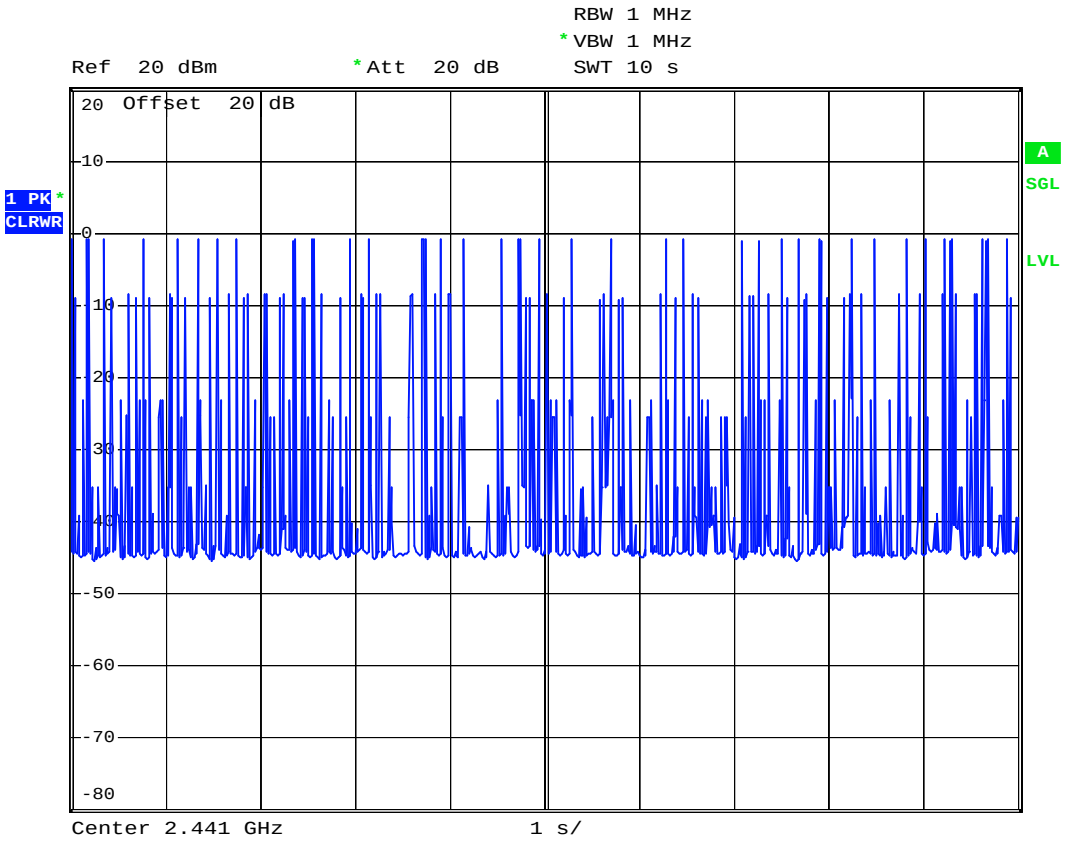


Date: 7.AUG.2007 11:13:58

BT(1Mbps)_DH5 (CH39)

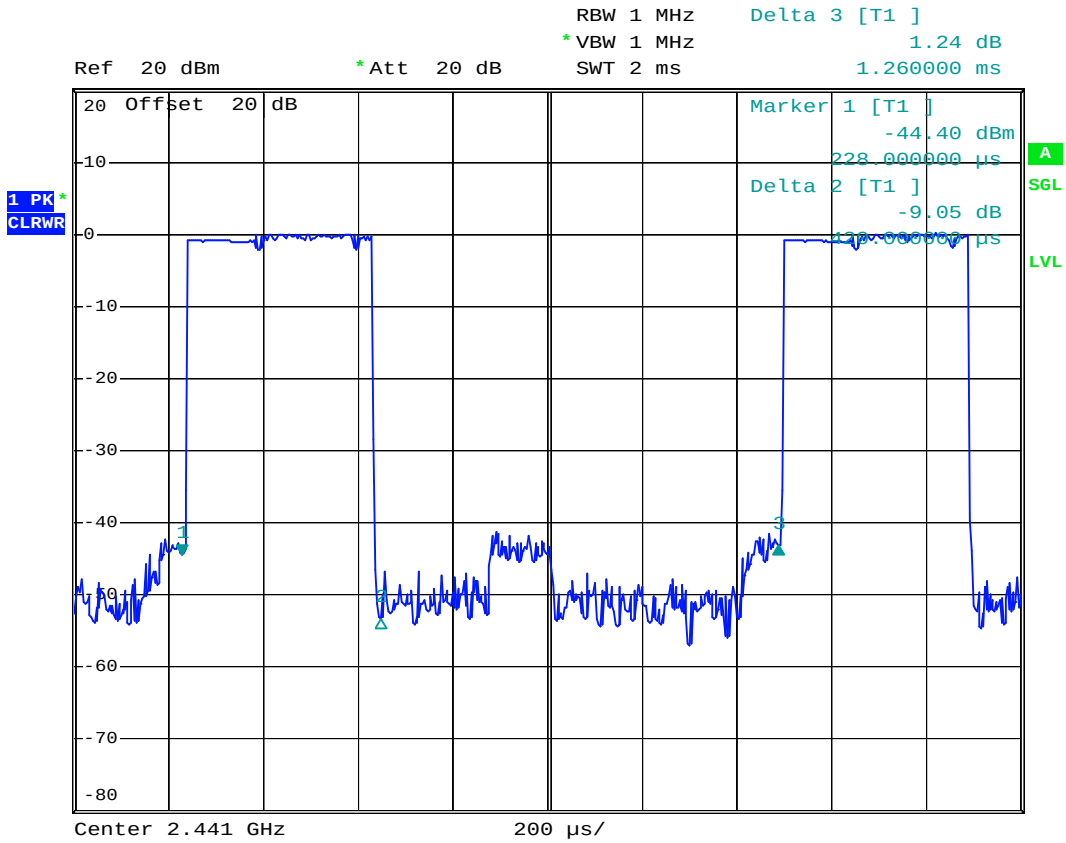


Date: 7.AUG.2007 11:12:40

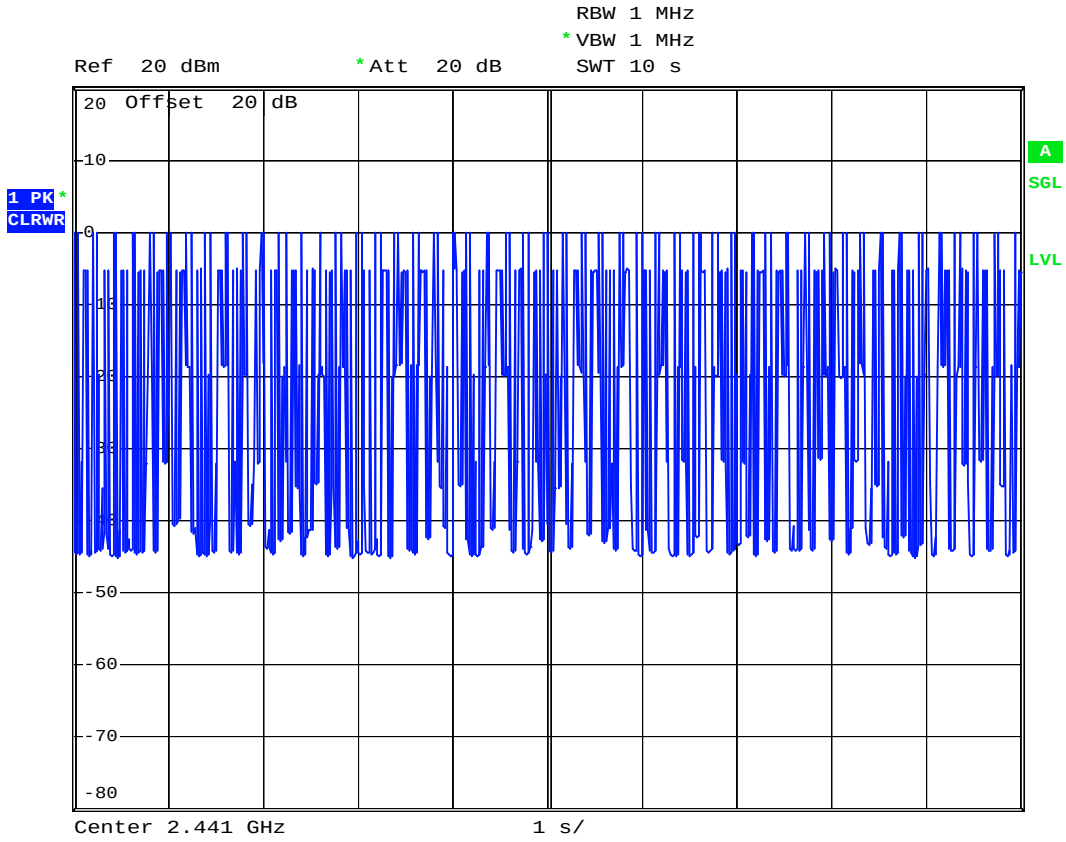


Date: 7.AUG.2007 11:14:32

BT-EDR(2Mbps)_DH1(CH39)

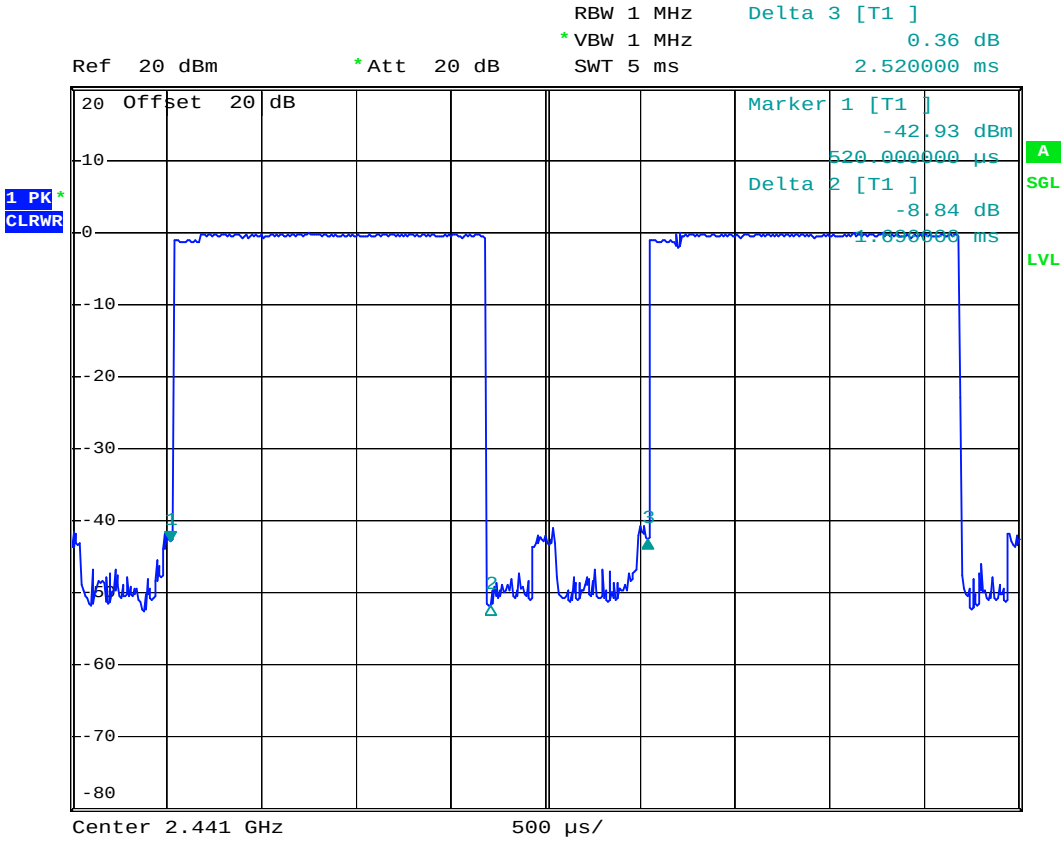


Date: 7.AUG.2007 11:35:36

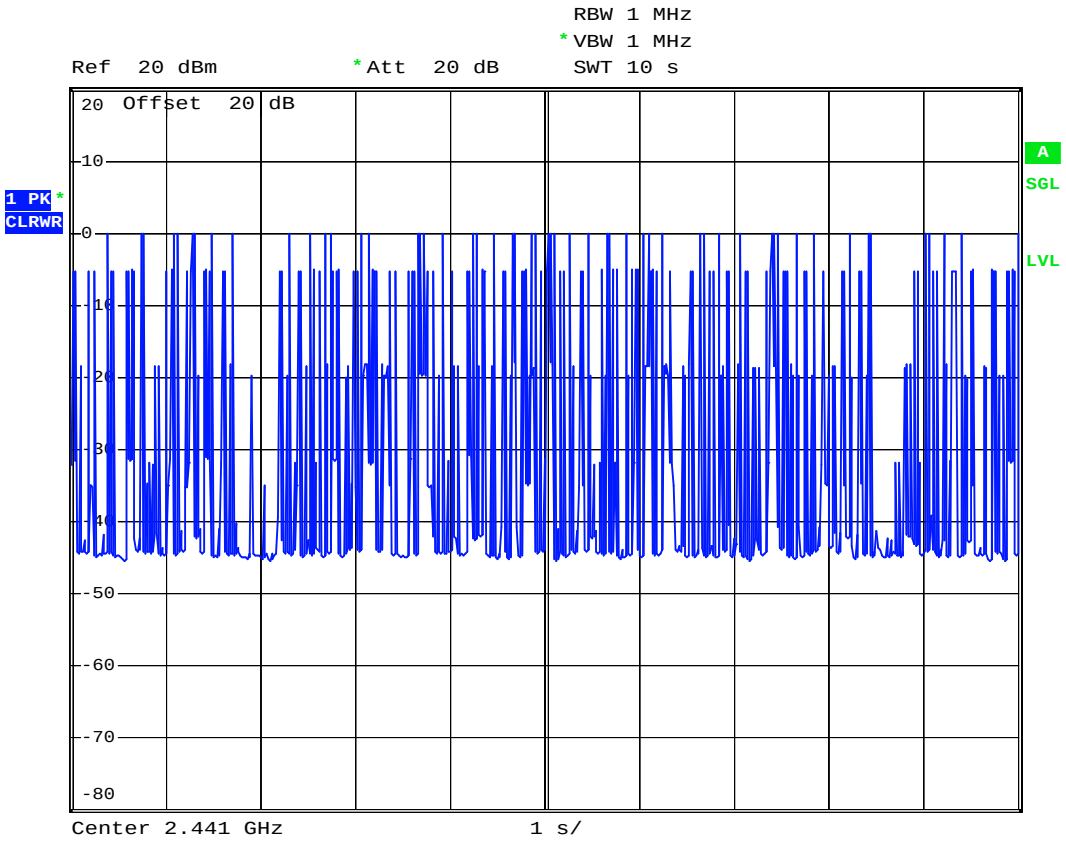


Date: 7.AUG.2007 11:41:30

BT-EDR(2Mbps)_DH3 (CH39)

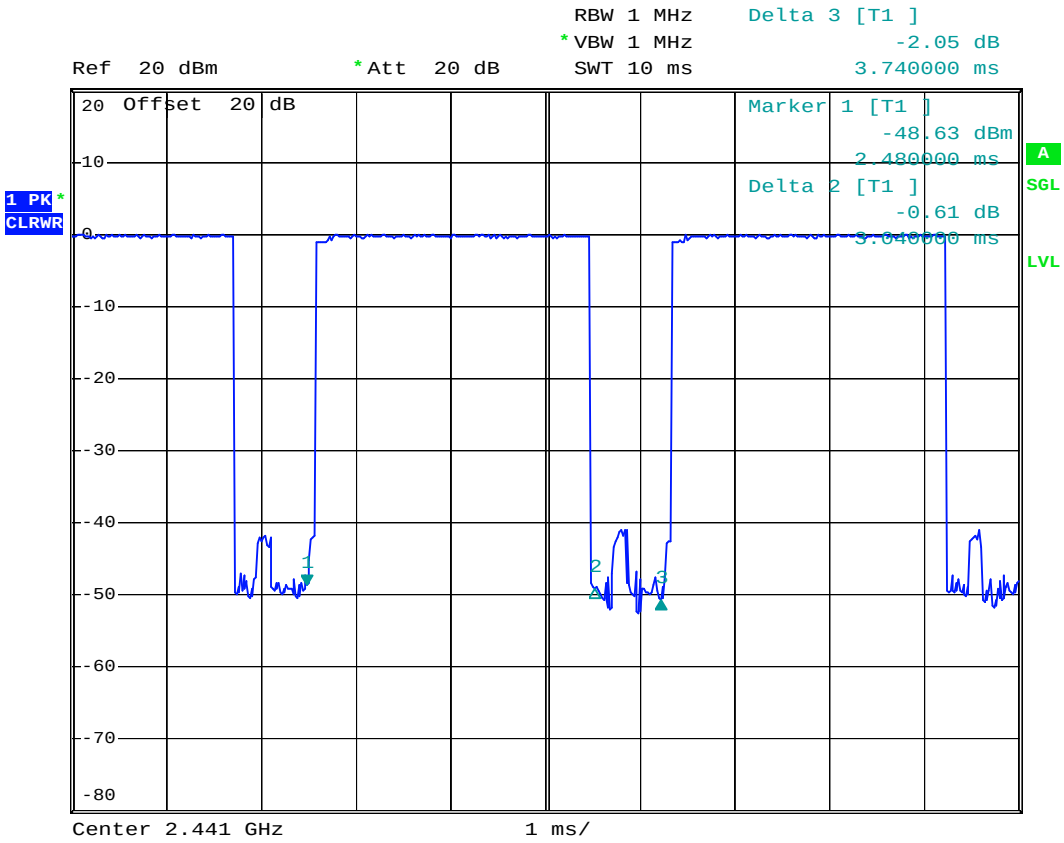


Date: 7.AUG.2007 11:39:55

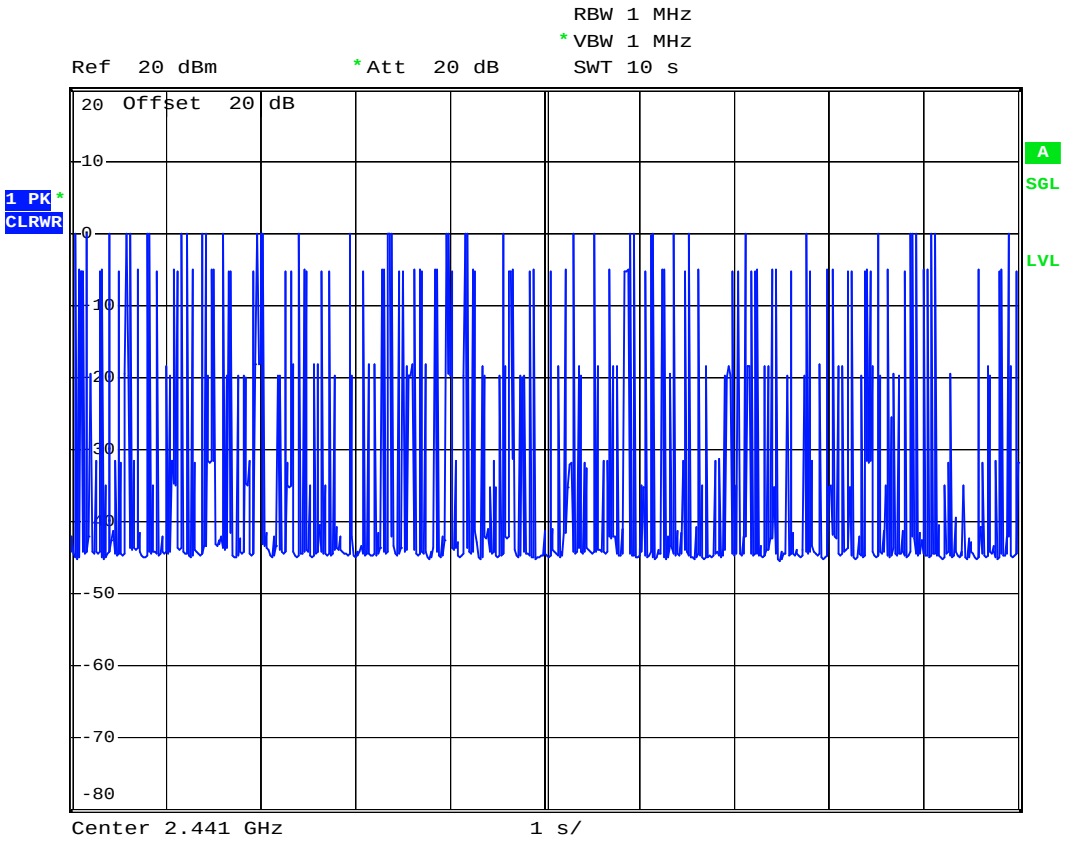


Date: 7.AUG.2007 11:41:59

BT-EDR(2Mbps)_DH5 (CH39)

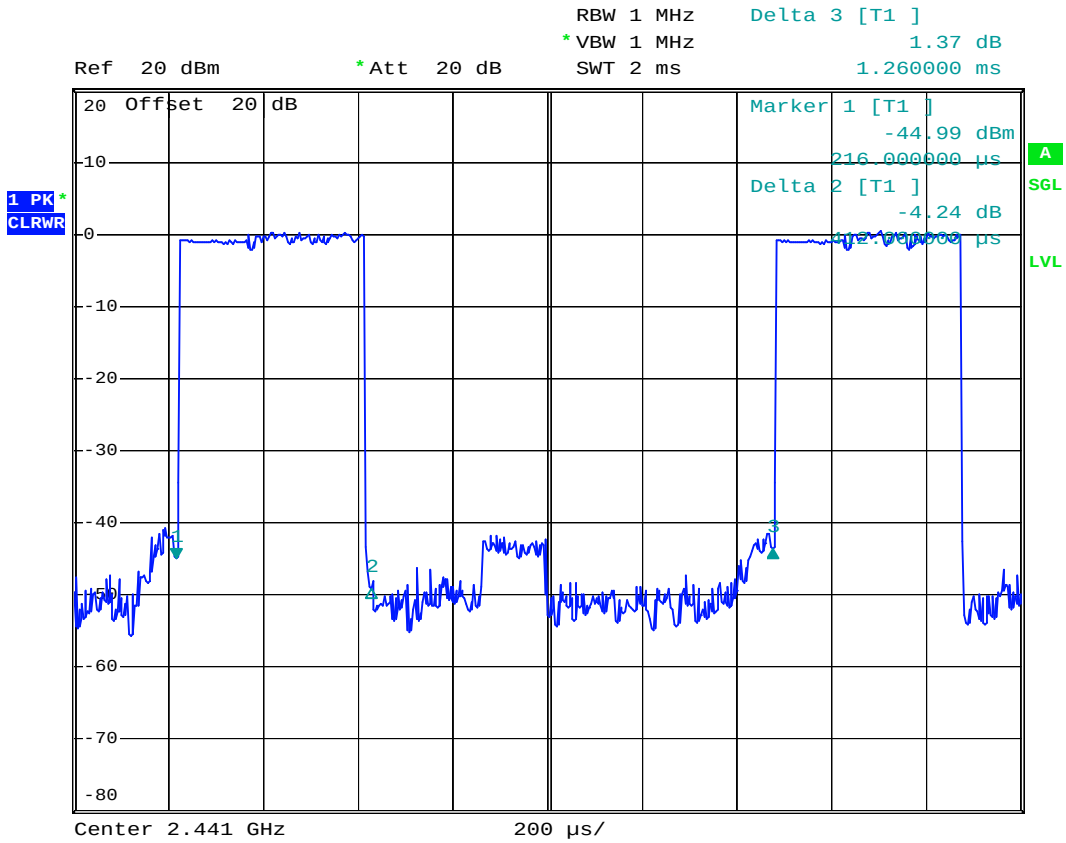


Date: 7.AUG.2007 11:40:33

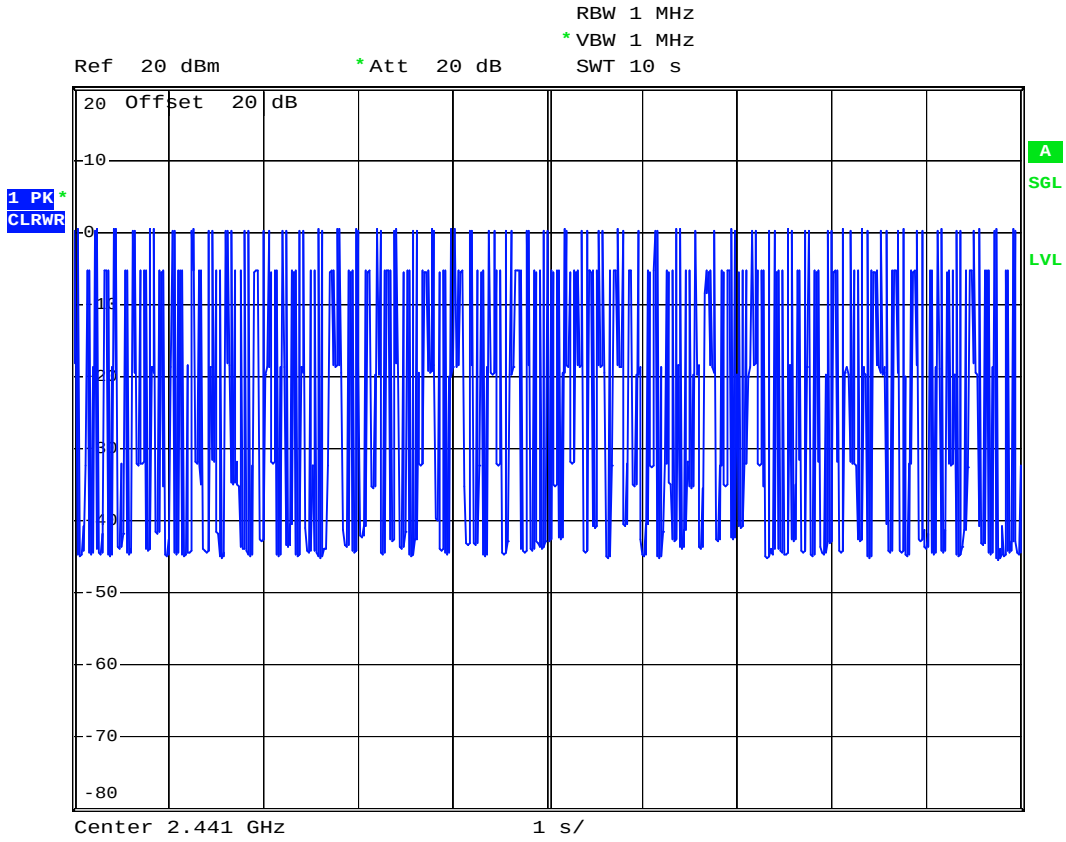


Date: 7.AUG.2007 11:42:28

BT-EDR(3Mbps)_DH1 (CH39)

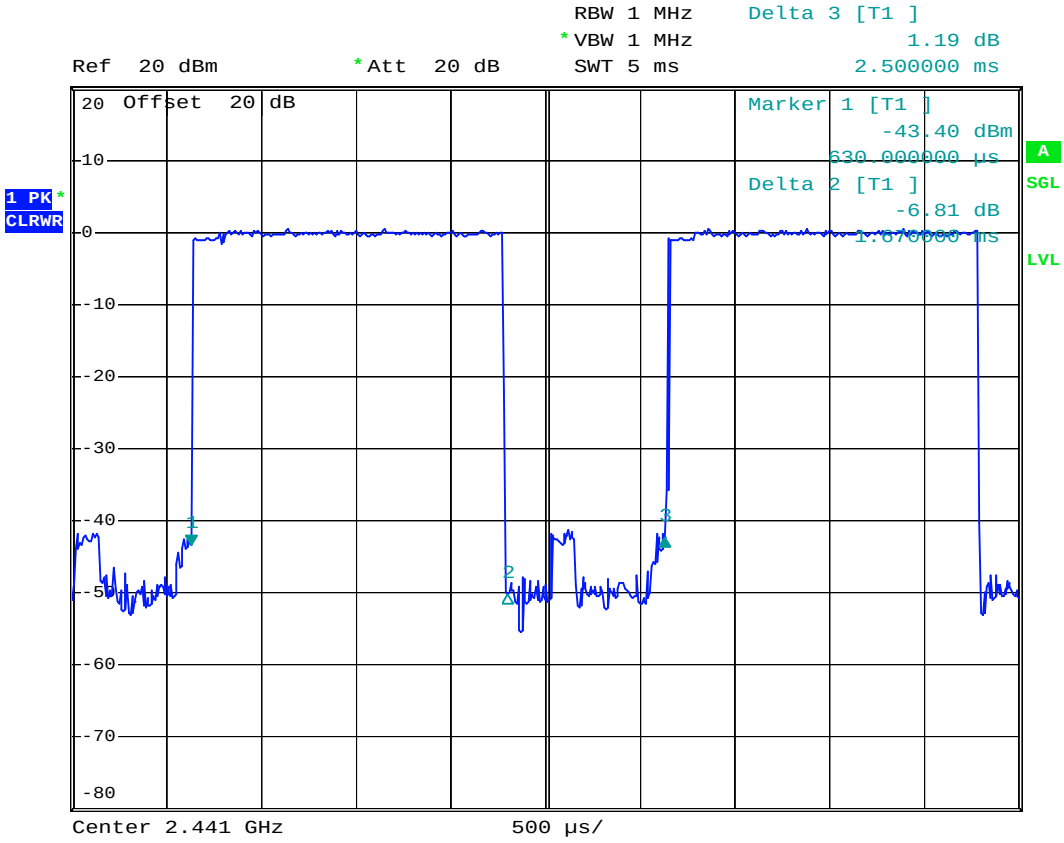


Date: 7.AUG.2007 11:59:48

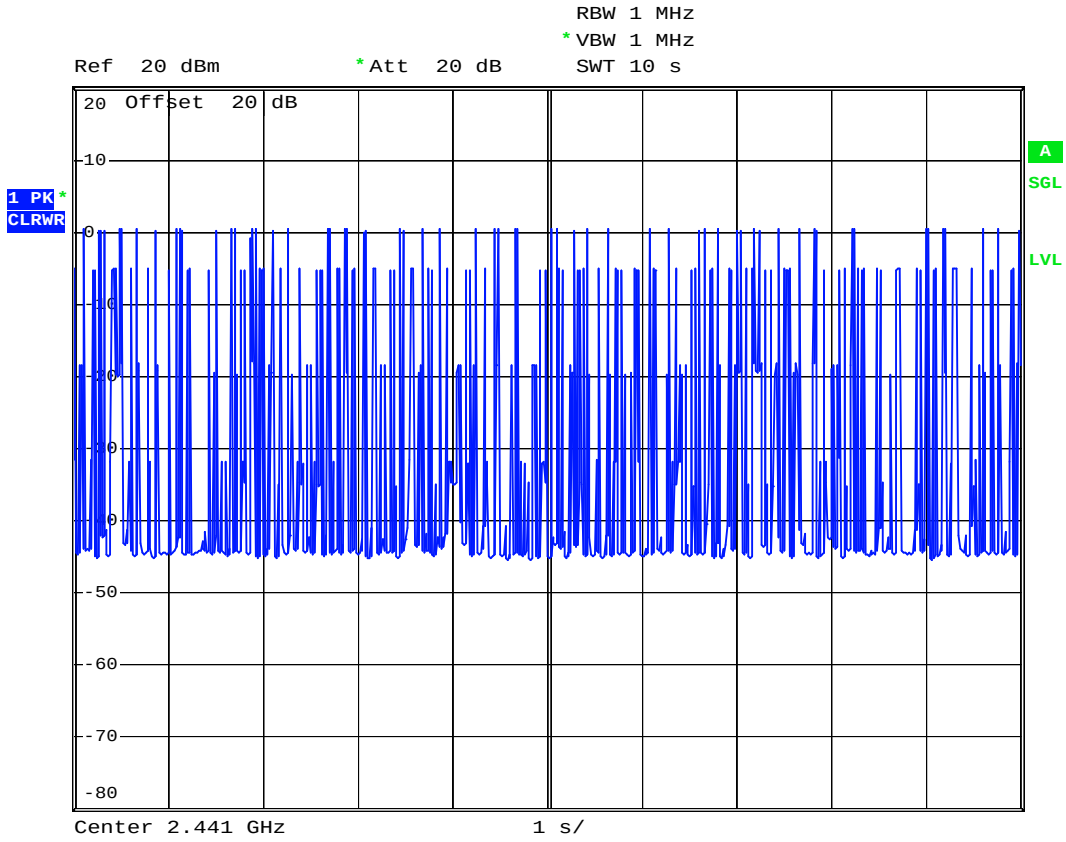


Date: 7.AUG.2007 12:03:24

BT-EDR(3Mbps)_DH3 (CH39)

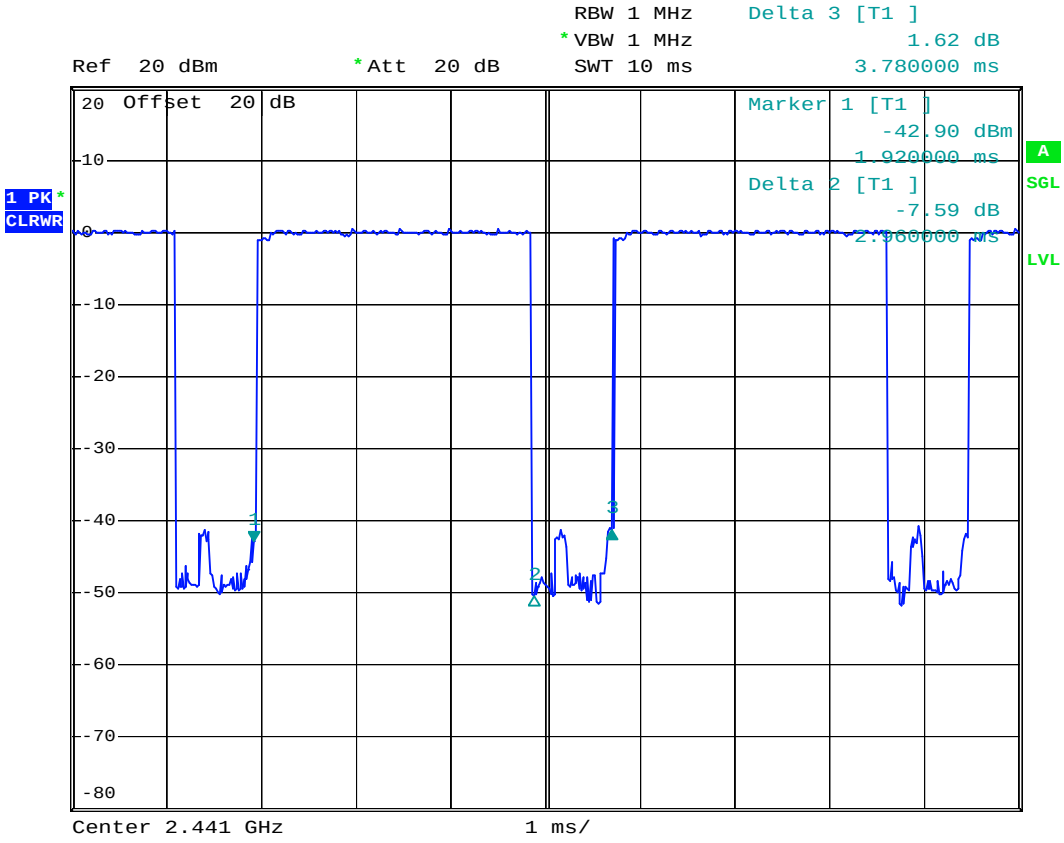


Date: 7.AUG.2007 12:00:29

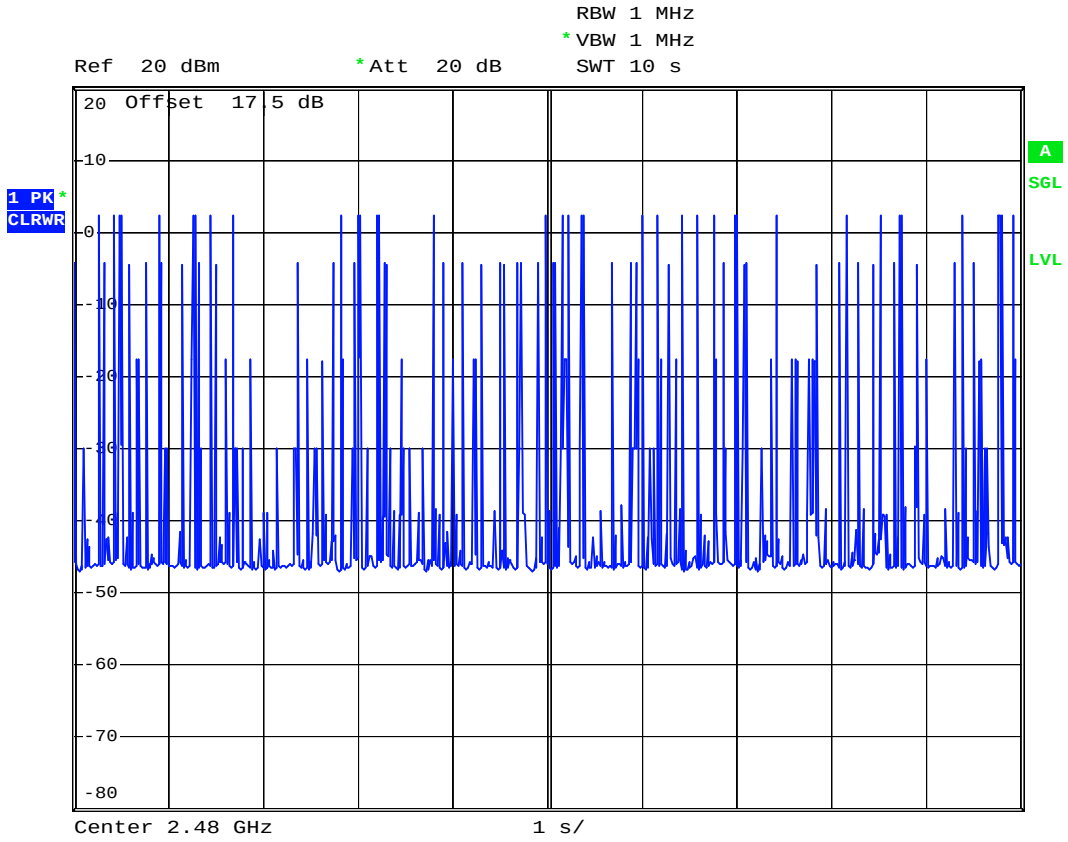


Date: 7.AUG.2007 12:03:52

BT-EDR(3Mbps)_DH5 (CH39)



Date: 7.AUG.2007 12:02:45



Date: 14.JUN.2007 21:54:51

5.9 Peak Output Power Measurement

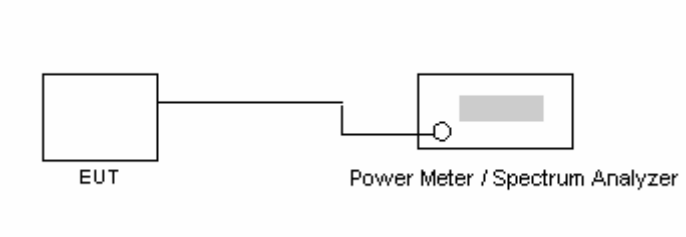
5.9.1 Measuring Instruments：

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℃
- Relative Humidity : 49~50%
- Test Enginner : Sum

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	15.23	1W/30 dBm
06	2437	14.16	1W/30 dBm
11	2462	14.23	1W/30 dBm

WLAN 802.11g

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	18.81	1W/30 dBm
06	2437	18.14	1W/30 dBm
11	2462	17.35	1W/30 dBm

BT(1Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	1.86	1W/30 dBm
39	2441	-0.52	1W/30 dBm
78	2480	-1.8	1W/30 dBm

BT-EDR(2Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	1.67	1W/30 dBm
39	2441	0.76	1W/30 dBm
78	2480	-0.7	1W/30 dBm

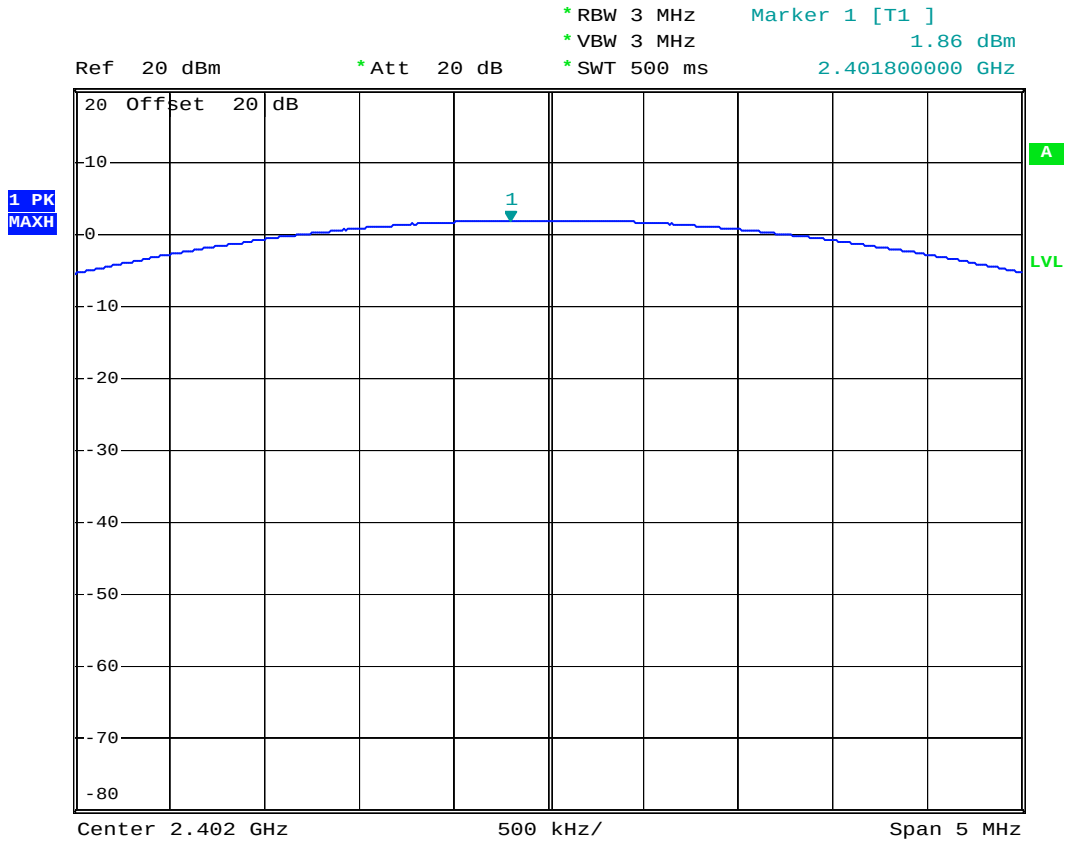
BT-EDR(3Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	1.86	1W/30 dBm
39	2441	0.92	1W/30 dBm
78	2480	-0.58	1W/30 dBm

5.9.5 Output Power

BT(1Mbps)

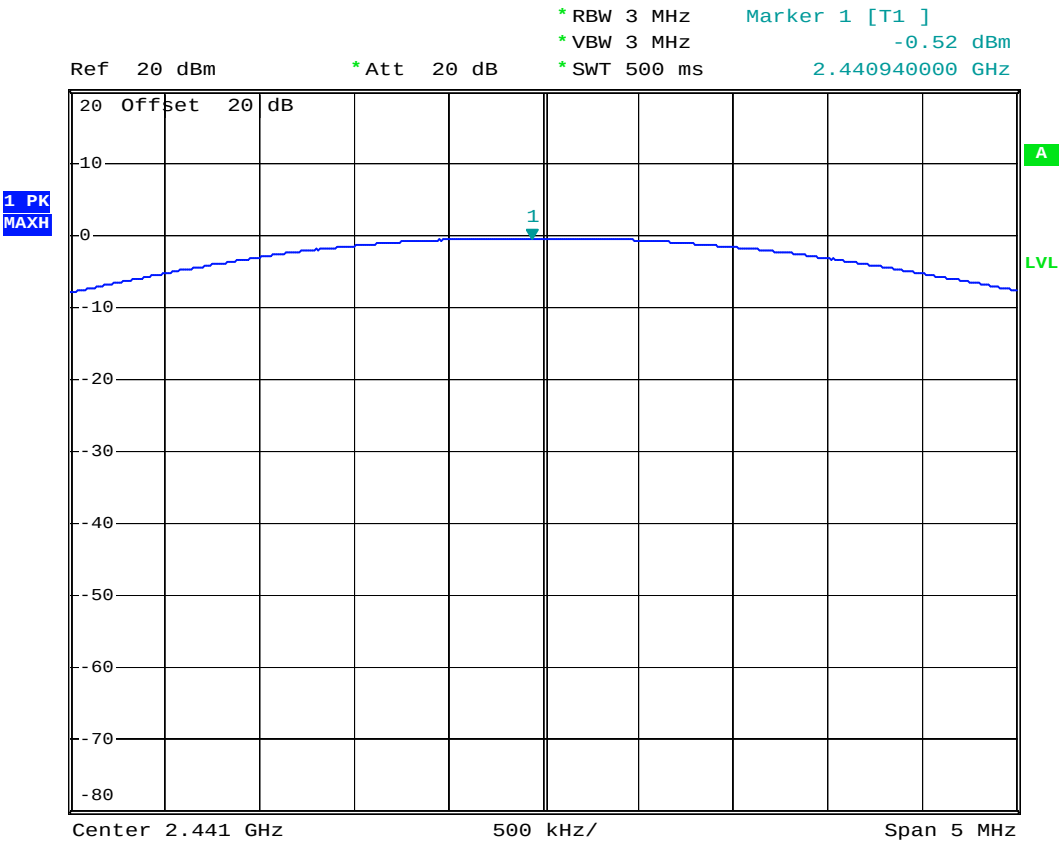
Mode : CH00 (2402MHz)



Date: 7.AUG.2007 10:56:00

BT(1Mbps)

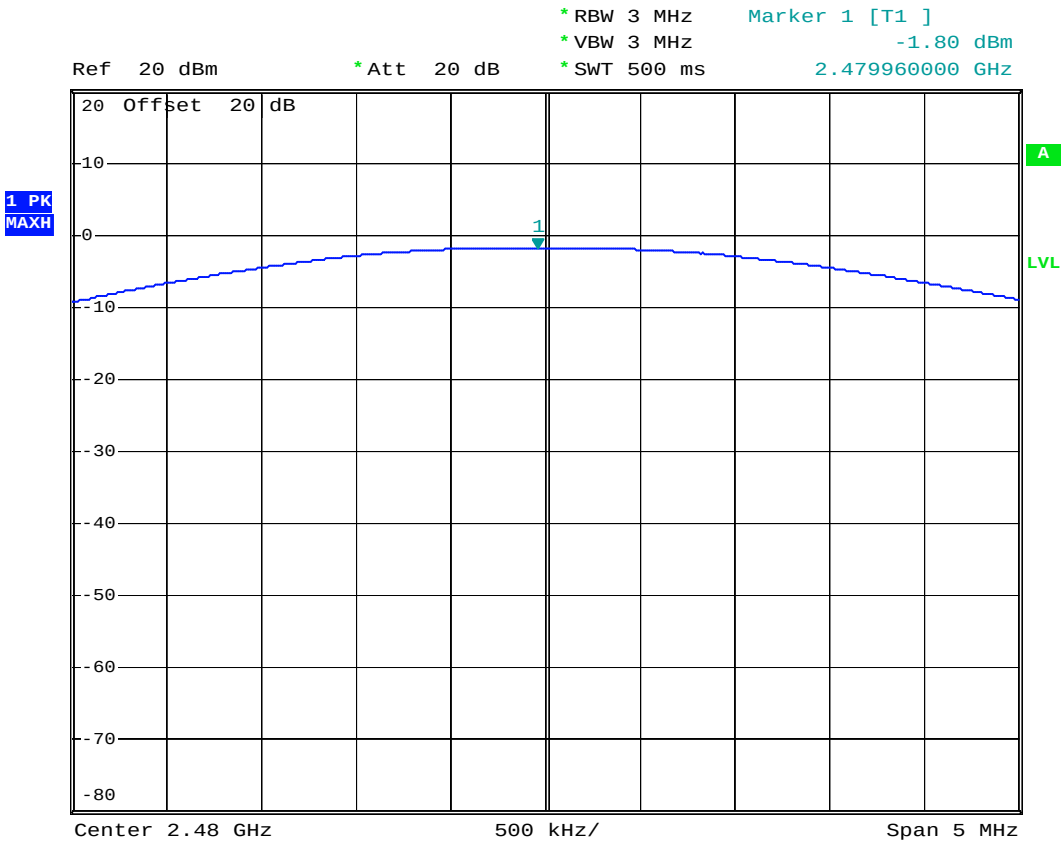
Mode : CH39 (2441MHz)



Date: 7.AUG.2007 10:56:14

BT(1Mbps)

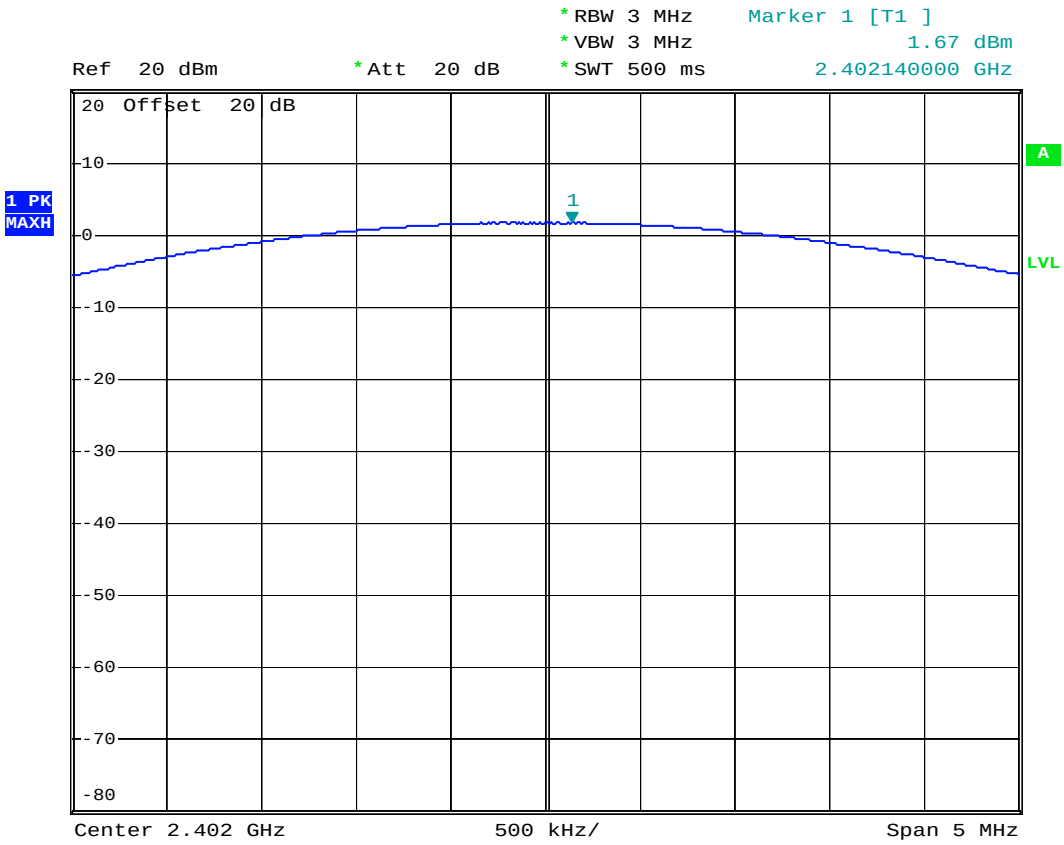
Mode : CH78 (2480MHz)



Date: 7.AUG.2007 10:56:30

BT-EDR(2Mbps)

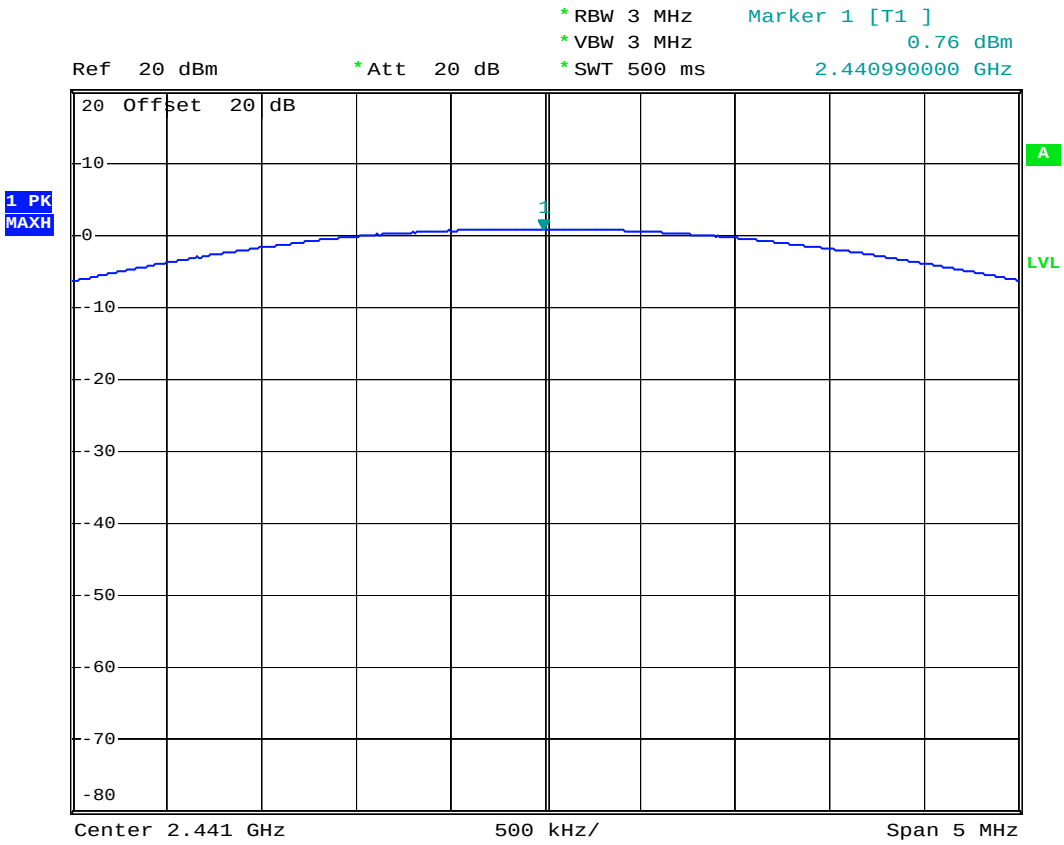
Mode : CH00 (2402MHz)



Date: 7.AUG.2007 11:25:24

BT-EDR(2Mbps)

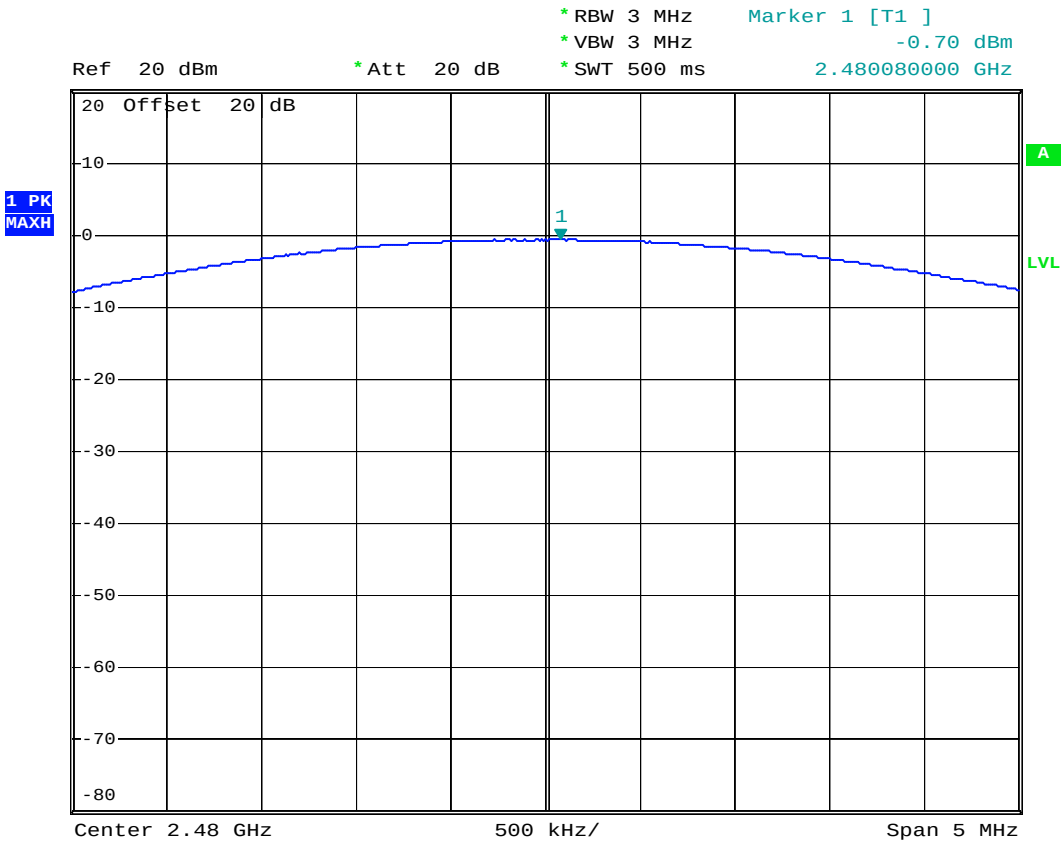
Mode : CH39 (2441MHz)



Date: 7.AUG.2007 11:25:36

BT-EDR(2Mbps)

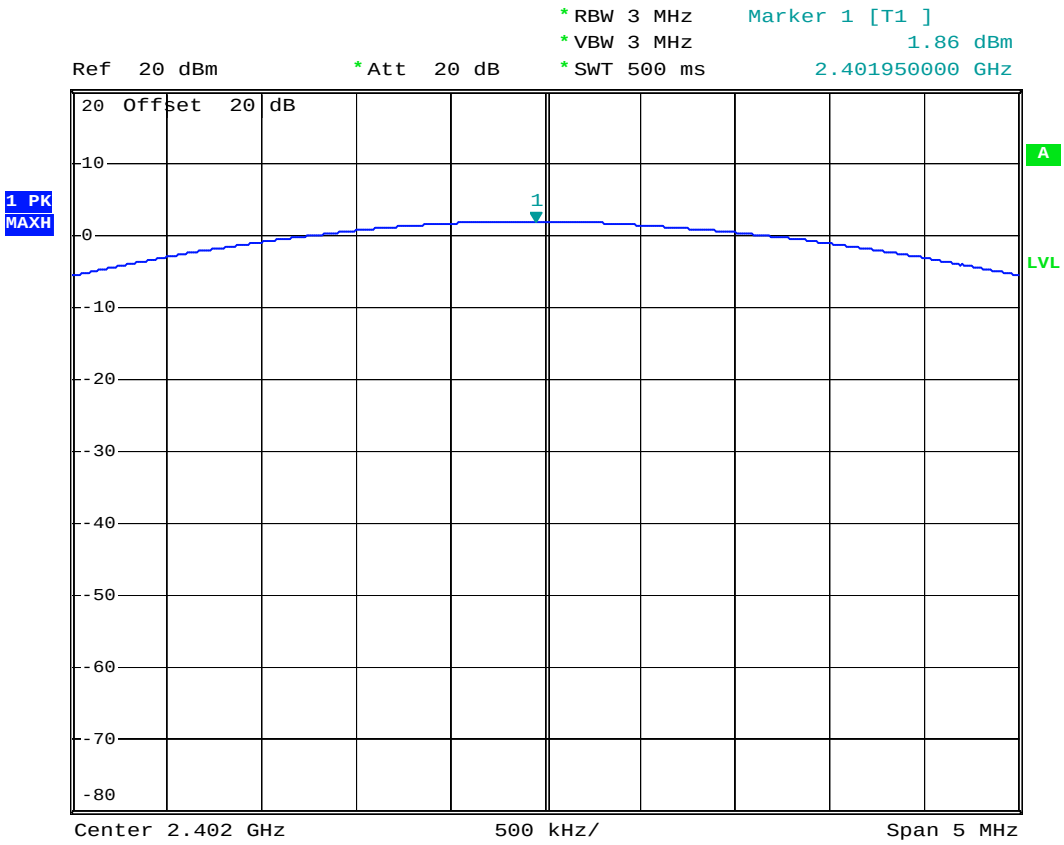
Mode : CH78 (2480MHz)



Date: 7.AUG.2007 11:25:58

BT-EDR(3Mbps)

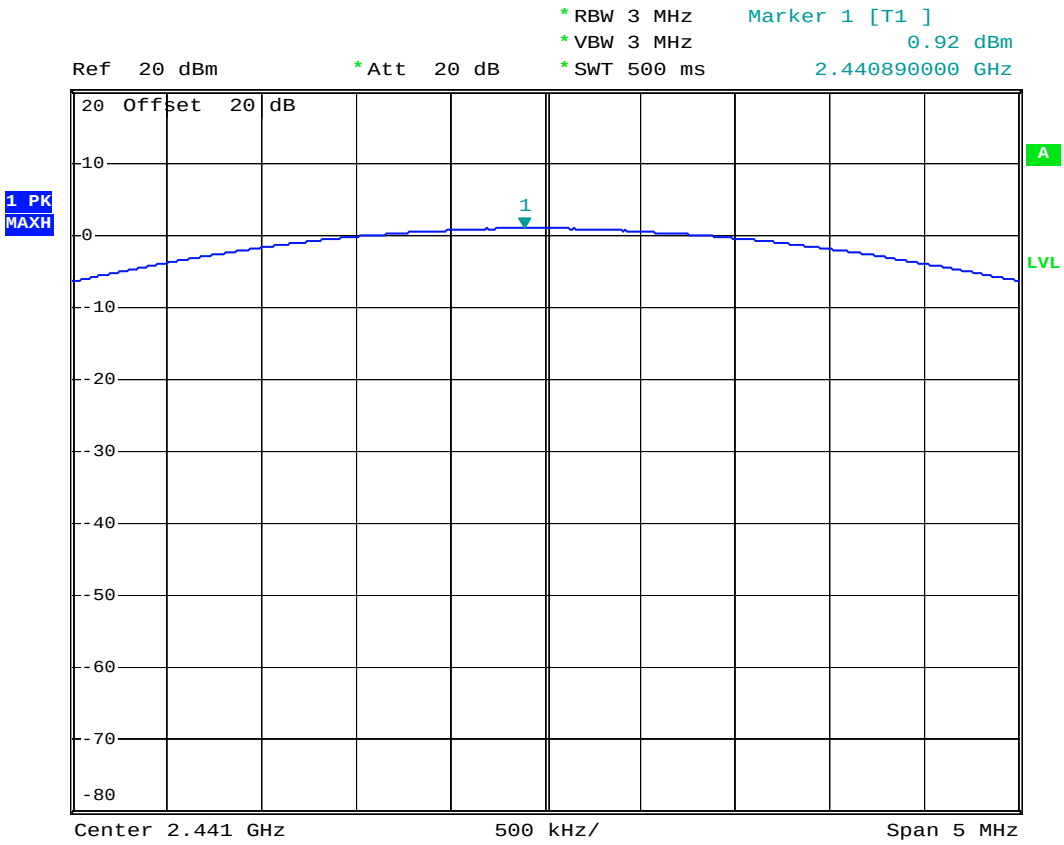
Mode : CH00 (2402MHz)



Date: 7.AUG.2007 11:49:41

BT-EDR(3Mbps)

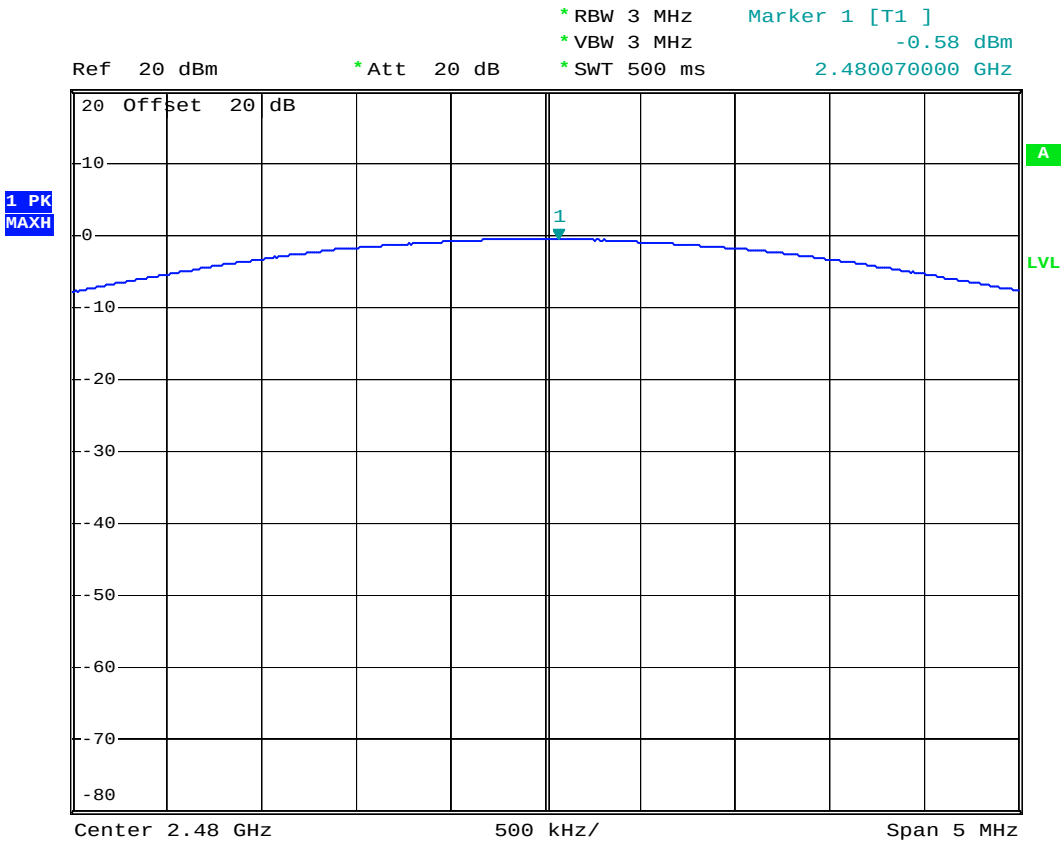
Mode : CH39 (2441MHz)



Date: 7.AUG.2007 11:49:58

BT-EDR(3Mbps)

Mode : CH78 (2480MHz)



Date: 7.AUG.2007 11:50:15

5.10 Conducted Emission

5.10.1 Measuring Instruments

As describ ed in chapter 6 of this test Report.

The receiver setting :

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

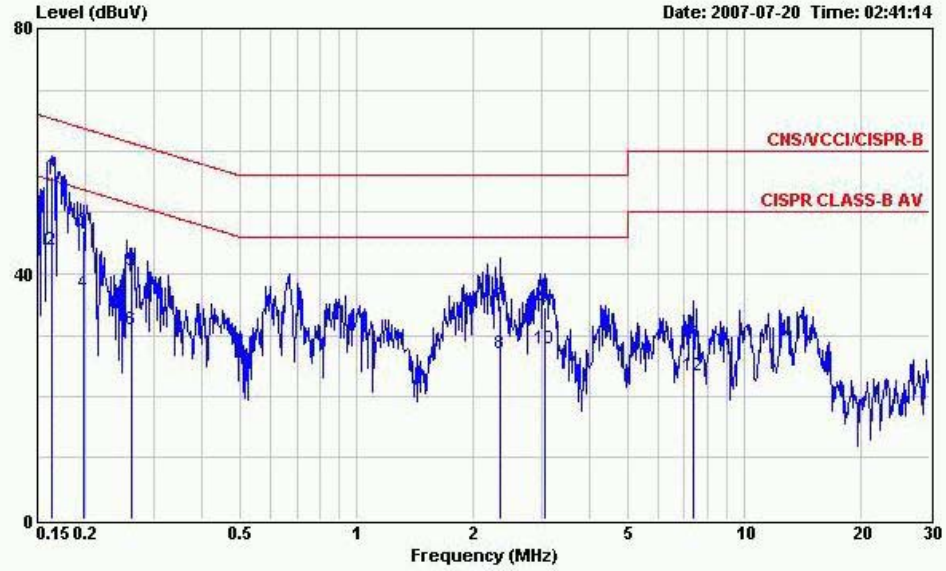
5.10.2 Test Procedures：

a. 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.
b. Connect EUT to the power port of a line impedance stabilization network (LISN).
c. All the support units are connected to the other LISN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched.
h. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

5.10.3 Test Data

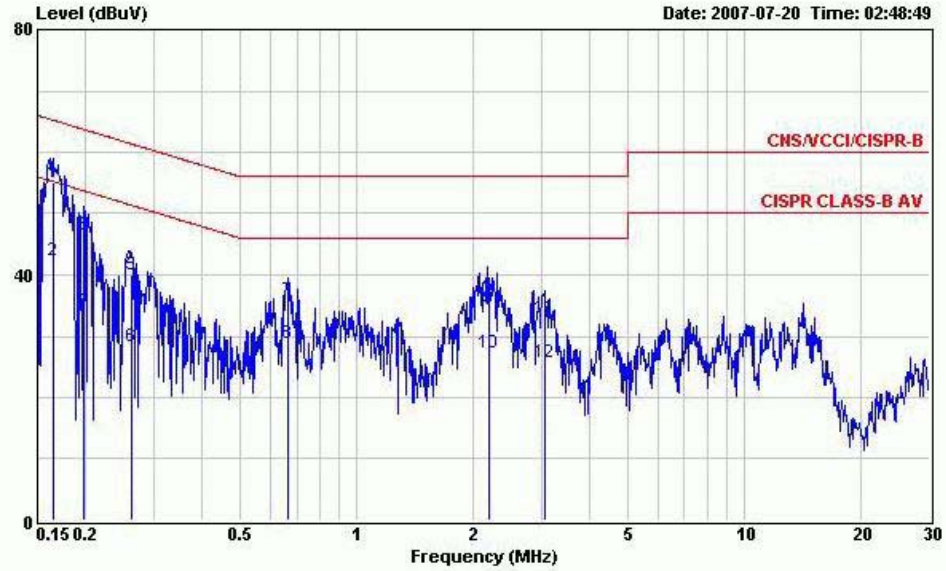
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum
- Test Mode : Mode 1

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



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : PDA Smart Phone(WiFi_802.11b/g/BT_v2.0
: EDR_VOIP)
Power : 120V/60Hz
Model : FR771809
Memo : WLAN Link+BT Link+MPEG4+Adaptor
Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.163	55.74	-9.56	65.30	55.56	0.08	0.10	QP
2	0.163	43.91	-11.39	55.30	43.73	0.08	0.10	Average
3	0.198	47.12	-16.57	63.69	46.92	0.10	0.10	QP
4	0.198	37.01	-16.68	53.69	36.81	0.10	0.10	Average
5	0.262	40.54	-20.84	61.38	40.36	0.08	0.10	QP
6	0.262	31.01	-20.37	51.38	30.83	0.08	0.10	Average
7	2.351	34.86	-21.14	56.00	34.52	0.22	0.12	QP
8	2.351	27.08	-18.92	46.00	26.74	0.22	0.12	Average
9	3.042	34.54	-21.46	56.00	34.19	0.19	0.16	QP
10	3.042	27.82	-18.18	46.00	27.47	0.19	0.16	Average
11	7.373	28.86	-31.14	60.00	28.30	0.29	0.27	QP
12	7.373	23.25	-26.75	50.00	22.69	0.29	0.27	Average

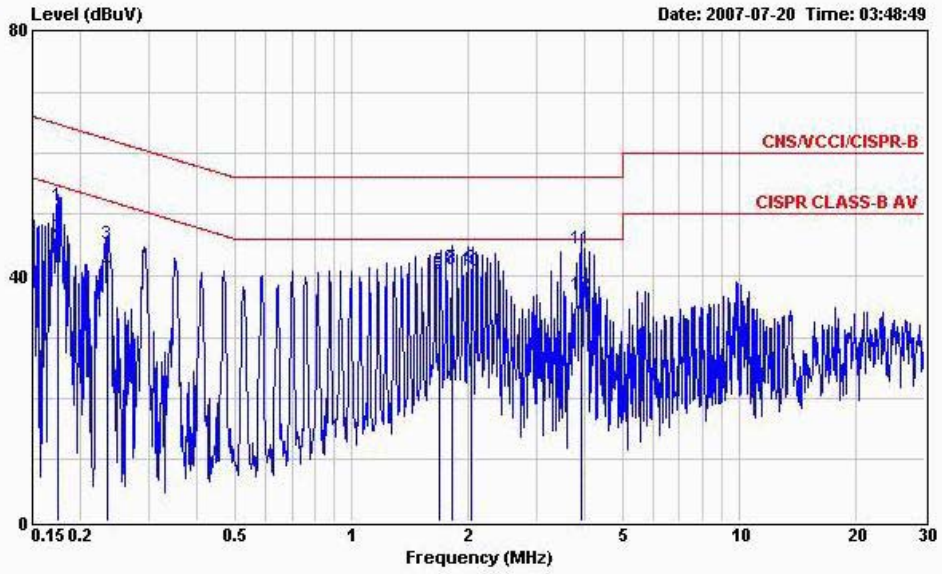


Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : PDA Smart Phone(WiFi_802.11b/g/BT_v2.0
: EDR_VOIP)
Power : 120V/60Hz
Model : FR771809
Memo : WLAN Link+BT Link+MPEG4+Adaptor
Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.165	55.19	-9.99	65.18	55.01	0.08	0.10	QP
2	0.165	42.45	-12.73	55.18	42.27	0.08	0.10	Average
3	0.197	46.49	-17.24	63.73	46.29	0.10	0.10	QP
4	0.197	34.37	-19.36	53.73	34.17	0.10	0.10	Average
5	0.263	39.93	-21.41	61.34	39.75	0.08	0.10	QP
6	0.263	28.30	-23.04	51.34	28.12	0.08	0.10	Average
7	0.664	35.87	-20.13	56.00	35.66	0.11	0.10	QP
8	0.664	28.75	-17.25	46.00	28.54	0.11	0.10	Average
9	2.183	34.56	-21.44	56.00	34.23	0.23	0.10	QP
10	2.183	27.19	-18.81	46.00	26.86	0.23	0.10	Average
11	3.042	33.07	-22.93	56.00	32.78	0.19	0.10	QP
12	3.042	25.78	-20.22	46.00	25.49	0.19	0.10	Average

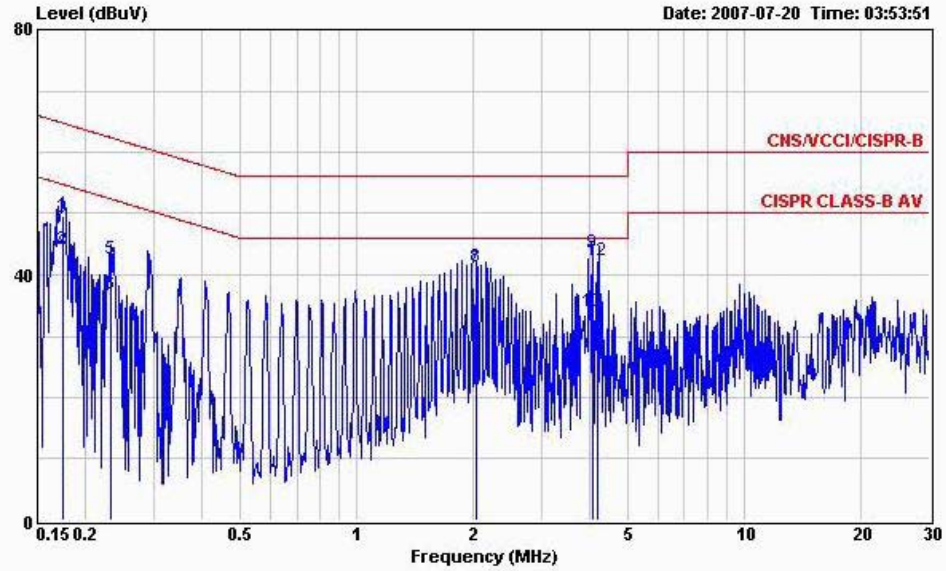
- Temperature : 26~27℃
- Relative Humidity : 49~50%
- Test Enginner : Sum
- Test Mode : Mode 2

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



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : PDA Smart Phone(WiFi_802.11b/g/BT_v2.0
: EDR_VOIP)
Power : 120V/60Hz
Model : FR771809
Memo : WLAN Link+BT Link+MPEG4+USB Link
Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.174	51.42	-13.35	64.77	51.23	0.09	0.10	QP
2	0.174	46.28	-8.49	54.77	46.09	0.09	0.10	Average
3	0.235	45.17	-17.10	62.27	44.98	0.09	0.10	QP
4	0.235	40.75	-11.52	52.27	40.56	0.09	0.10	Average
5	1.687	40.70	-15.30	56.00	40.38	0.22	0.10	QP
6	1.687	40.22	-5.78	46.00	39.90	0.22	0.10	Average
7	1.806	41.41	-14.59	56.00	41.08	0.23	0.10	QP
8	1.806	41.01	-4.99	46.00	40.68	0.23	0.10	Average
9	2.040	41.39	-14.61	56.00	41.05	0.24	0.10	QP
10	2.040	40.82	-5.18	46.00	40.48	0.24	0.10	Average
11	3.904	44.33	-11.67	56.00	43.97	0.16	0.20	QP
12	3.904	36.81	-9.19	46.00	36.45	0.16	0.20	Average



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : PDA Smart Phone(WiFi_802.11b/g/BT_v2.0
: EDR_VOIP)
Power : 120V/60Hz
Model : FR771809
Memo : WLAN Link+BT Link+MPEG4+USB Link
Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.174	49.61	-15.16	64.77	49.42	0.09	0.10	QP
2	0.174	44.16	-10.61	54.77	43.97	0.09	0.10	Average
3	0.175	49.29	-15.43	64.72	49.10	0.09	0.10	QP
4	0.175	43.88	-10.84	54.72	43.69	0.09	0.10	Average
5	0.232	42.59	-19.79	62.38	42.40	0.09	0.10	QP
6	0.232	36.89	-15.49	52.38	36.70	0.09	0.10	Average
7	2.031	40.96	-15.04	56.00	40.62	0.24	0.10	QP
8	2.031	41.43	-4.57	46.00	41.09	0.24	0.10	Average
9	4.070	43.62	-12.38	56.00	43.36	0.16	0.10	QP
10	4.070	34.03	-11.97	46.00	33.77	0.16	0.10	Average
11	4.183	33.90	-12.10	46.00	33.63	0.17	0.10	Average
12	4.183	42.39	-13.61	56.00	42.12	0.17	0.10	QP

5.11 Radiated Emission Measurement

5.11.1 Measuring Instruments

As described in chapter 6 of this Report.

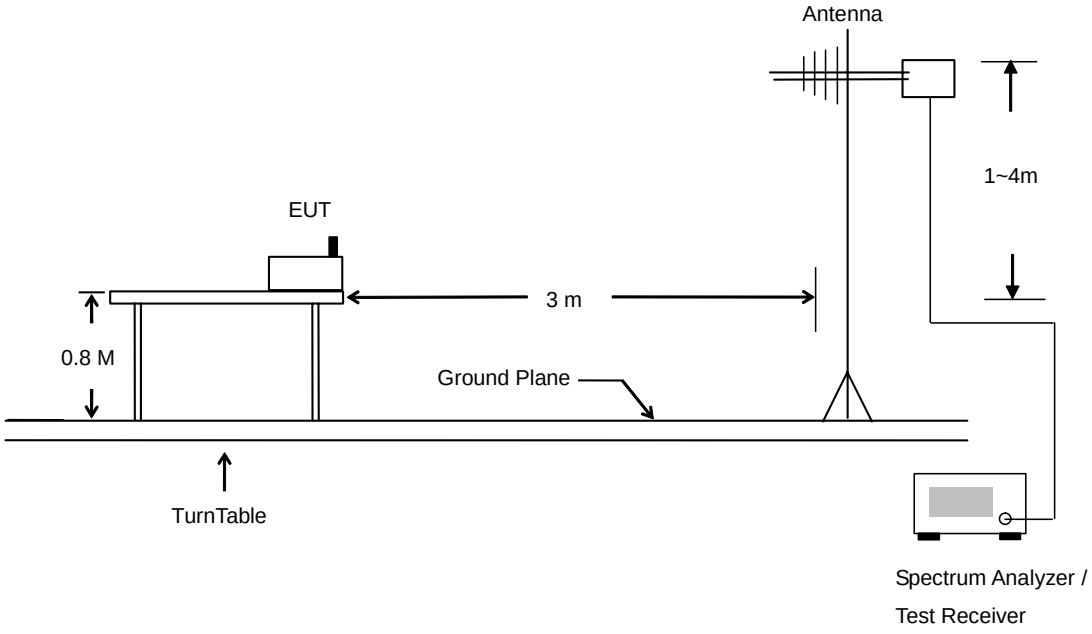
The spectrum analyzer setting :

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

5.11.2 Test Procedures

a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. 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.
e. 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.
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
g. 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.
h. 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.

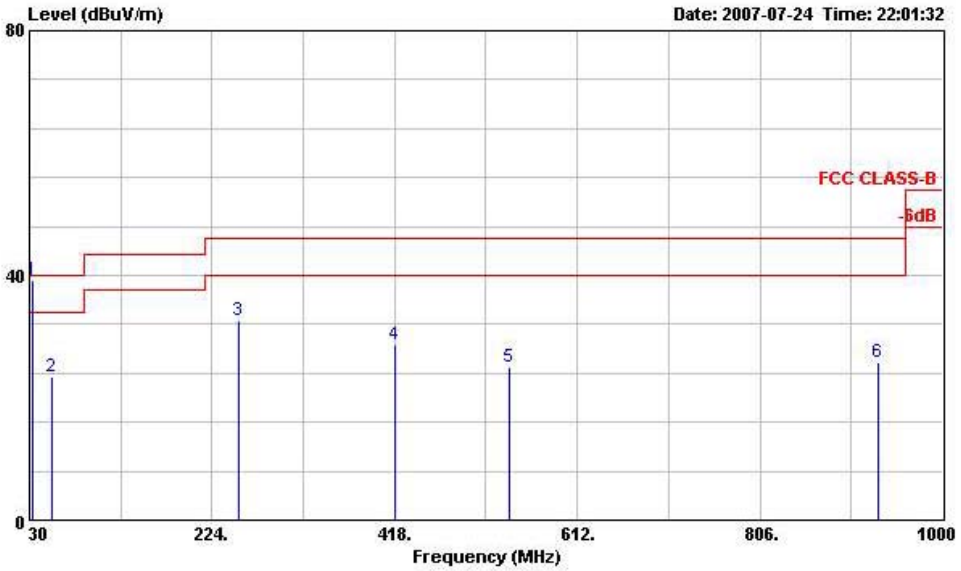
5.11.3 Typical Test Setup Layout of Radiated Emission



5.11.4 Test Data

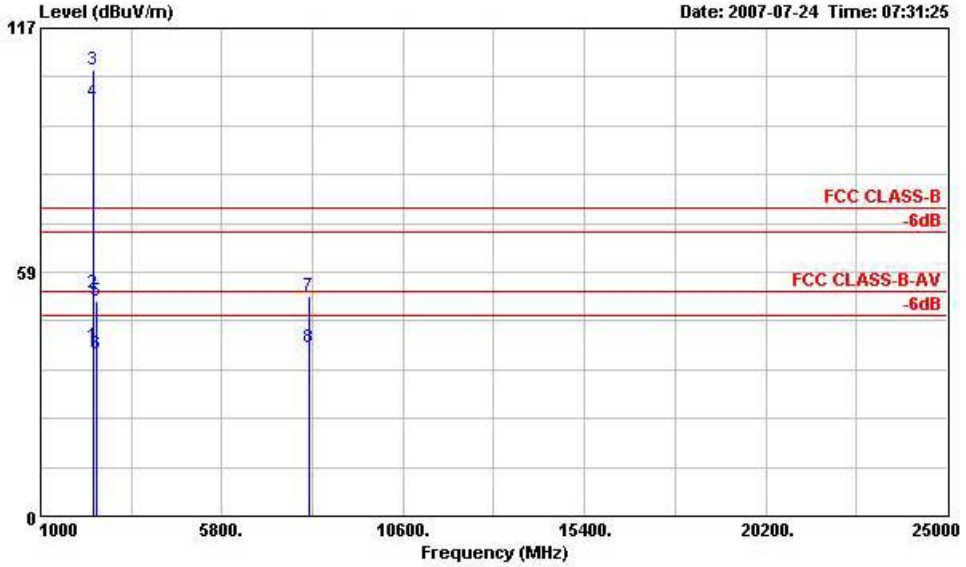
- Temperature : 26~27℃
- Relating Humidity : 52~53%
- Test Enginner : Andrew
- Test Mode : Mode 1
- Polarization : Horizontal

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



Site :03CH04-HY
Condition:FCC CLASS-B 3m ANT2724 HORIZONTAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MOME :11b Tx_CH01;2412MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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 @	32.700	39.12	-0.88	40.00	55.15	16.33	0.66	33.02	224	278	QP
2	53.490	23.42	-16.58	40.00	49.56	5.93	0.81	32.88	---	---	Peak
3	253.020	32.56	-13.44	46.00	50.97	12.55	1.91	32.88	---	---	Peak
4	419.000	28.81	-17.19	46.00	43.26	15.97	2.39	32.81	---	---	Peak
5	539.400	25.02	-20.98	46.00	36.59	18.07	2.73	32.37	---	---	Peak
6	932.100	25.71	-20.29	46.00	29.23	24.32	3.58	31.42	---	---	Peak



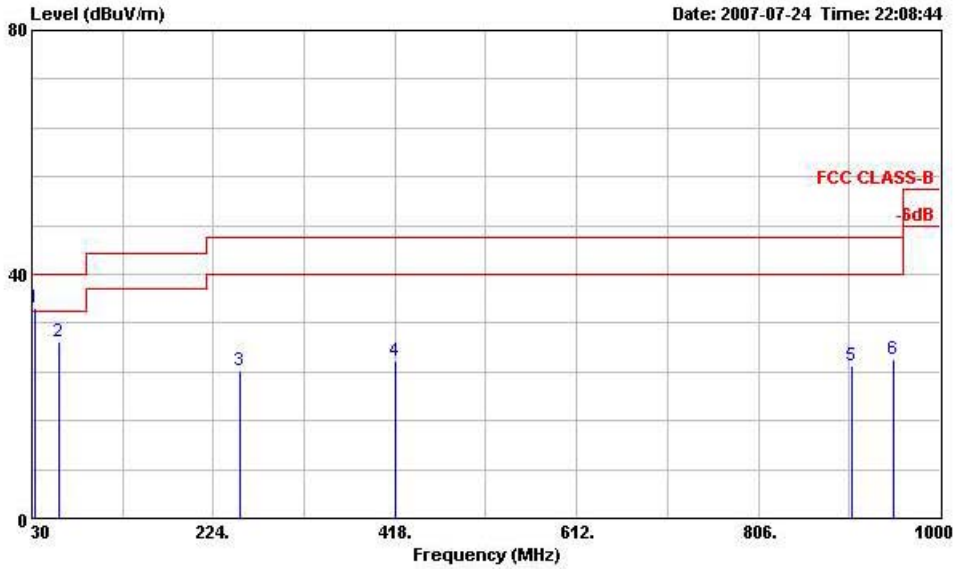
Site :03CH04-HY
Condition:FCC CLASS-B 3m HF-ANT-6903 HORIZONTAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MOME :11b Tx_CH01;2412MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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	2388.850	40.69	-13.31	54.00	42.65	28.07	3.74	33.78	100	45	Average
2	2388.850	53.67	-20.33	74.00	55.63	28.07	3.74	33.78	100	0	Peak
3 @	2412.000	107.10			109.01	28.11	3.76	33.78	100	0	Peak
4 @	2412.000	99.17			101.08	28.11	3.76	33.78	100	45	Average
5	2492.000	51.43	-22.57	74.00	53.09	28.30	3.84	33.80	100	0	Peak
6	2492.000	38.85	-15.15	54.00	40.51	28.30	3.84	33.80	100	45	Average
7	8094.000	52.86	-21.14	74.00	42.86	36.92	6.81	33.73	100	0	Peak
8	8094.000	40.30	-13.70	54.00	30.30	36.92	6.81	33.73	100	228	Average

Remark: #3 and #4 Fundamental Signal

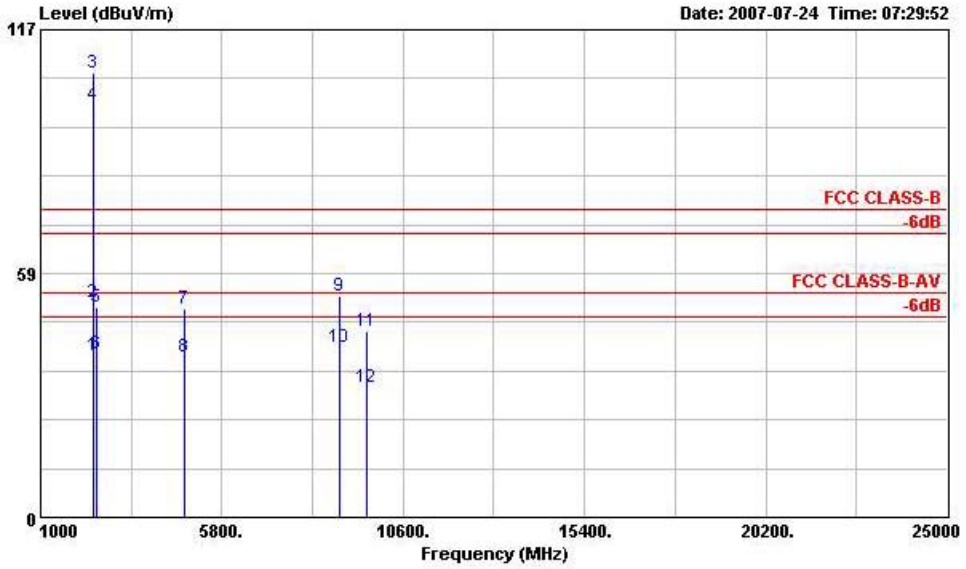
- Polarization : Vertical

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



Site :03CH04-HY
Condition:FCC CLASS-B 3m ANT2724 VERTICAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MODE :11b Tx_CH01;2412MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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 !	32.700	34.43	-5.57	40.00	50.46	16.33	0.66	33.02	100	335	Peak
2	58.890	29.04	-10.96	40.00	57.25	3.76	0.85	32.83	---	---	Peak
3	253.020	24.28	-21.72	46.00	42.69	12.55	1.91	32.88	---	---	Peak
4	419.000	25.90	-20.10	46.00	40.35	15.97	2.39	32.81	---	---	Peak
5	906.200	24.92	-21.08	46.00	29.09	23.66	3.60	31.43	---	---	Peak
6	951.000	26.13	-19.87	46.00	29.18	24.79	3.57	31.41	---	---	Peak



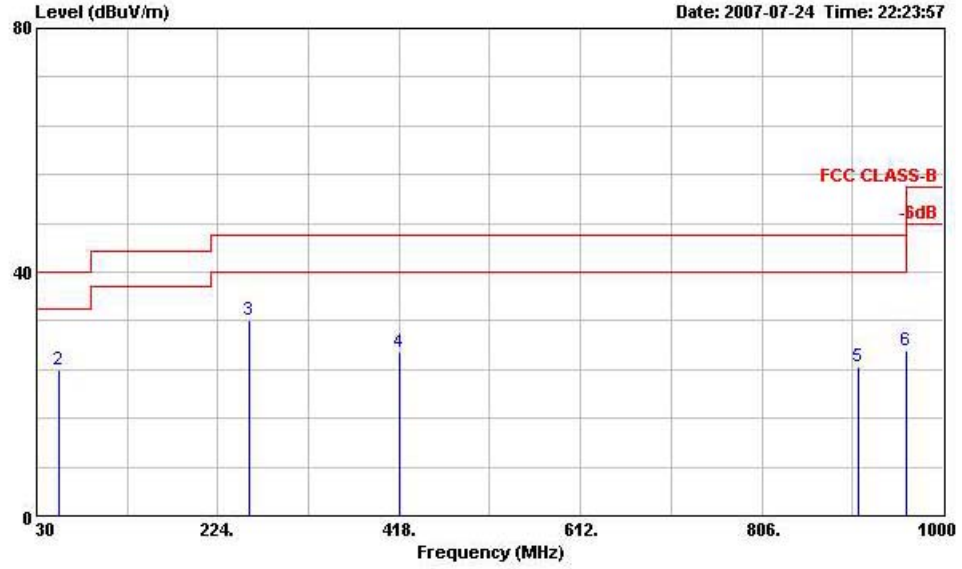
Site :03CH04-HY
Condition:FCC CLASS-B 3m HF-ANT-6903 VERTICAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MOME :11b Tx_CH01;2412MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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	2388.090	38.99	-15.01	54.00	40.95	28.07	3.74	33.78	100	333	Average
2	2388.090	51.57	-22.43	74.00	53.53	28.07	3.74	33.78	100	0	Peak
3 @	2412.000	106.59			108.50	28.11	3.76	33.78	100	0	Peak
4 @	2412.000	99.03			100.94	28.11	3.76	33.78	100	333	Average
5	2486.000	50.33	-23.67	74.00	52.03	28.26	3.84	33.80	100	0	Peak
6	2486.000	39.24	-14.76	54.00	40.94	28.26	3.84	33.80	100	333	Average
7	4824.000	50.08	-23.92	74.00	45.61	32.89	5.88	34.30	100	0	Peak
8	4824.000	38.34	-15.66	54.00	33.87	32.89	5.88	34.30	100	12	Average
9	8913.000	52.98	-21.02	74.00	42.49	37.98	7.23	34.72	100	0	Peak
10	8913.000	40.69	-13.31	54.00	30.20	37.98	7.23	34.72	100	341	Average
11	9648.000	44.64	-29.36	74.00	82.13	-10.09	7.60	35.00	100	0	Peak
12	9648.000	31.33	-22.67	54.00	68.80	-10.07	7.60	35.00	100	340	Average

Remark: #3 and #4 Fundamental Signal

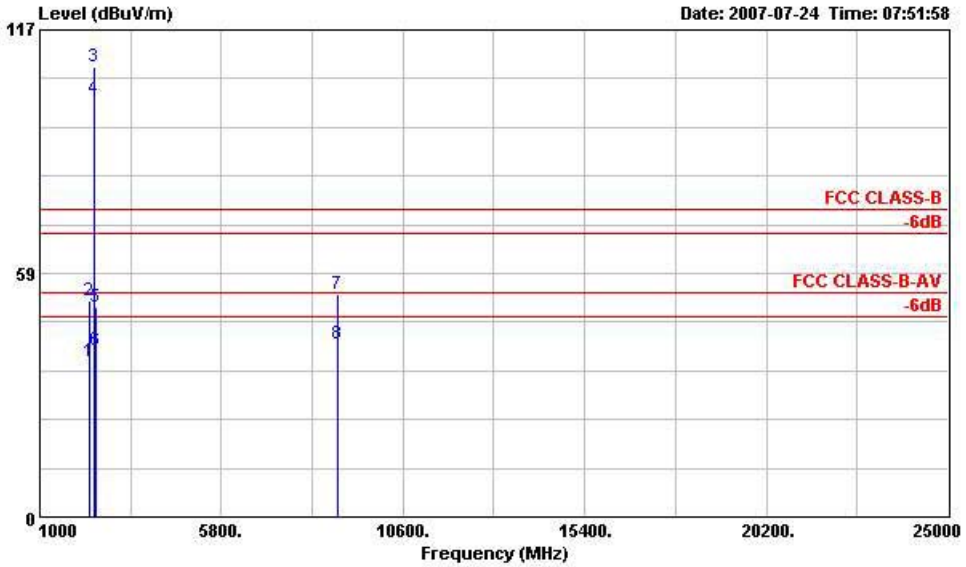
- Test Mode : Mode 2
- Polarization : Horizontal

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




```
Site      :03CH04-HY
Condition:FCC CLASS-B 3m ANT2724 HORIZONTAL
EUT       :PDA Smart Phone (WiFi_802.11b/g/
          :BT_v2.0 EDR_VOIP)
POWER     :110Vac/60Hz
MODEL     :TR 771809
MOME      :11b Tx_CH06;2437MHz
PLANE     :E2
Data Rate:11
```

	Freq	Level	Over Limit	Limit Line	Read 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 @	30.810	39.47	-0.53	40.00	55.40	16.36	0.64	32.93	135	290	QP
2	54.570	24.05	-15.95	40.00	50.53	5.57	0.82	32.88	---	---	Peak
3	257.610	31.98	-14.02	46.00	50.40	12.53	1.92	32.87	---	---	Peak
4	419.000	26.78	-19.22	46.00	41.23	15.97	2.39	32.81	---	---	Peak
5	909.700	24.53	-21.47	46.00	28.60	23.76	3.60	31.43	---	---	Peak
6	960.100	27.08	-26.92	54.00	29.75	25.04	3.61	31.32	---	---	Peak



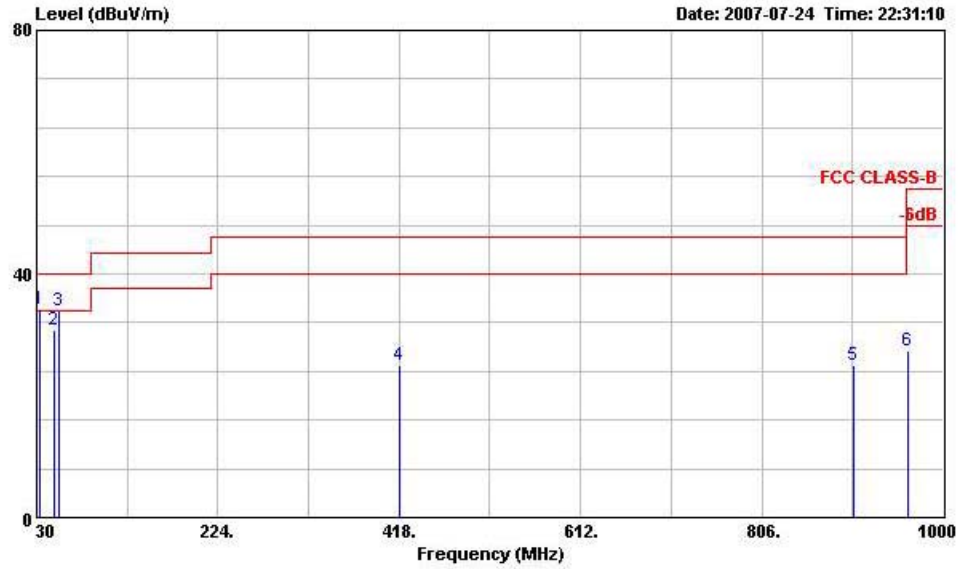
Site :03CH04-HY
Condition:FCC CLASS-B 3m HF-ANT-6903 HORIZONTAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MOME :11b Tx_CH06;2437MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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	2324.000	37.48	-16.52	54.00	39.66	27.92	3.66	33.77	100	271	Average
2	2324.000	51.99	-22.01	74.00	54.17	27.92	3.66	33.77	100	0	Peak
3 @	2437.000	107.97			109.78	28.19	3.79	33.79	100	0	Peak
4 @	2437.000	100.63			102.44	28.19	3.79	33.79	100	271	Average
5	2494.000	50.29	-23.71	74.00	51.95	28.30	3.84	33.80	100	0	Peak
6	2494.000	39.93	-14.07	54.00	41.59	28.30	3.84	33.80	100	271	Average
7	8889.000	53.34	-20.66	74.00	42.86	37.96	7.22	34.70	100	0	Peak
8	8889.000	41.38	-12.62	54.00	30.90	37.96	7.22	34.70	100	354	Average

Remark: #3 and #4 Fundamental Signal

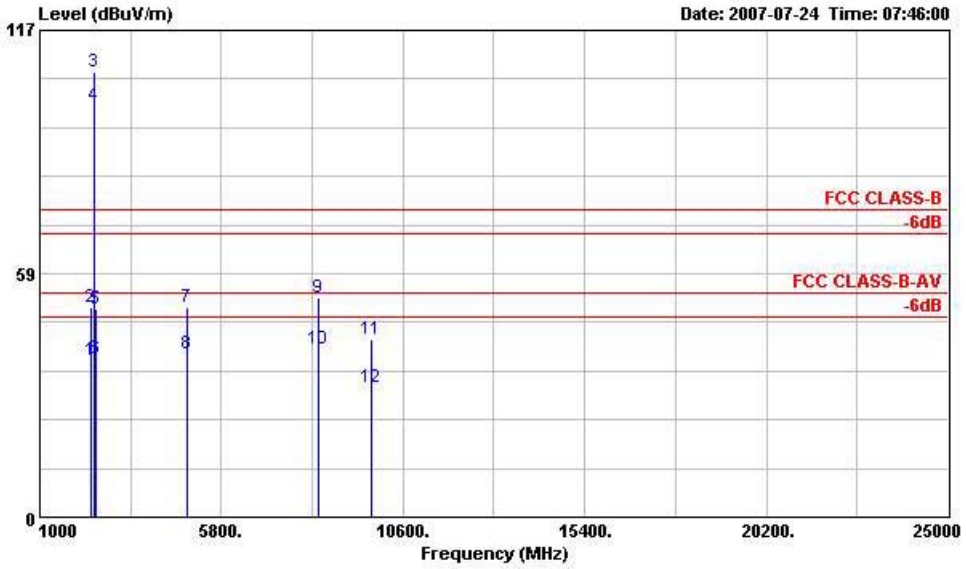
- Polarization : Vertical

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



Site :03CH04-HY
Condition:FCC CLASS-B 3m ANT2724 VERTICAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MODE :11b Tx_CH06;2437MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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 !	32.700	34.33	-5.67	40.00	50.36	16.33	0.66	33.02	151	329	QP
2	48.090	30.71	-9.29	40.00	54.83	8.03	0.77	32.91	---	---	Peak
3	54.300	33.89	-6.11	40.00	60.37	5.57	0.82	32.88	---	---	Peak
4	419.000	24.88	-21.12	46.00	39.33	15.97	2.39	32.81	---	---	Peak
5	904.100	24.95	-21.05	46.00	29.17	23.61	3.60	31.43	---	---	Peak
6	962.900	27.45	-26.55	54.00	30.01	25.11	3.62	31.30	---	---	Peak



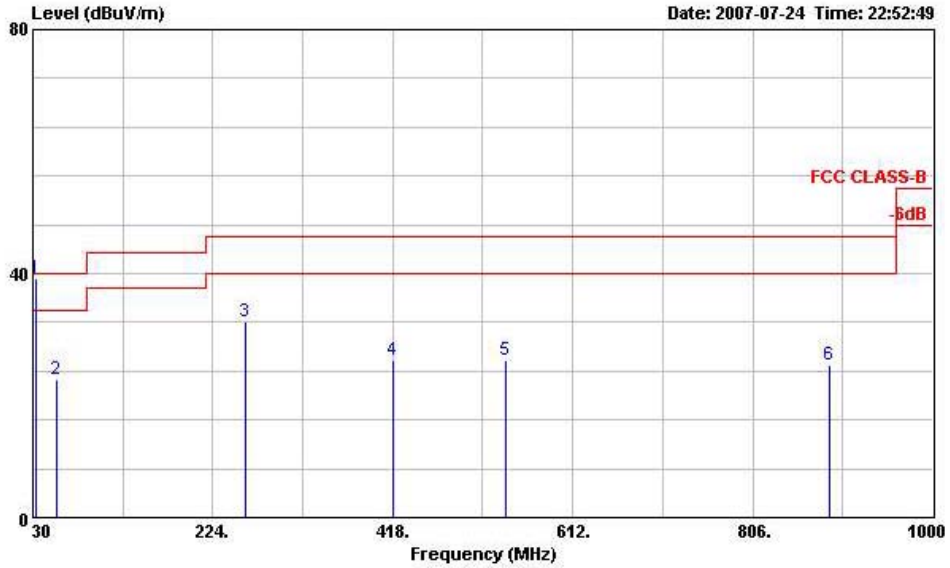
Site :03CH04-HY
Condition:FCC CLASS-B 3m HF-ANT-6903 VERTICAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MODE :11b Tx_CH06;2437MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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	2364.000	37.74	-16.26	54.00	39.80	28.00	3.71	33.77	100	180	Average
2	2364.000	50.57	-23.43	74.00	52.63	28.00	3.71	33.77	100	0	Peak
3 @	2437.000	106.88			108.69	28.19	3.79	33.79	100	0	Peak
4 @	2437.000	98.90			100.71	28.19	3.79	33.79	100	180	Average
5	2486.000	49.99	-24.01	74.00	51.69	28.26	3.84	33.80	100	0	Peak
6	2486.000	38.25	-15.75	54.00	39.95	28.26	3.84	33.80	100	180	Average
7	4874.000	50.57	-23.43	74.00	45.98	32.98	5.91	34.30	100	0	Peak
8	4874.000	39.34	-14.66	54.00	34.75	32.98	5.91	34.30	100	11	Average
9	8382.000	52.63	-21.37	74.00	42.53	37.33	6.96	34.19	100	0	Peak
10	8382.000	40.50	-13.50	54.00	30.40	37.33	6.96	34.19	100	199	Average
11	9748.000	42.57	-31.43	74.00	79.79	-9.87	7.65	35.00	100	0	Peak
12	9748.000	31.20	-22.80	54.00	68.40	-9.85	7.65	35.00	100	360	Average

Remark: #3 and #4 Fundamental Signal

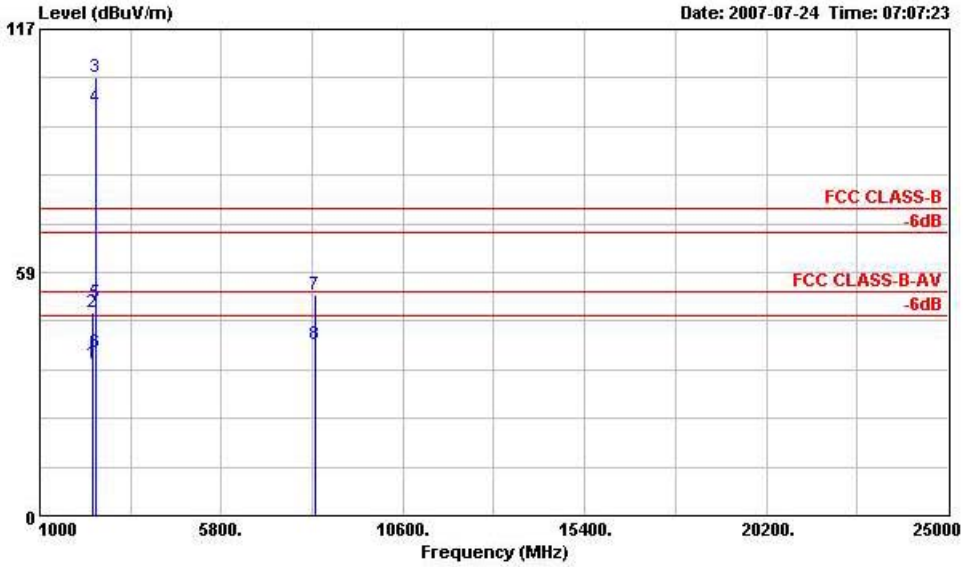
- Test Mode : Mode 3
- Polarization : Horizontal

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



Site :03CH04-HY
Condition:FCC CLASS-B 3m ANT2724 HORIZONTAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MOME :11b Tx_CH11;2462MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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 @	32.700	39.29	-0.71	40.00	55.32	16.33	0.66	33.02	135	312	QP
2	55.650	22.75	-17.25	40.00	49.58	5.21	0.83	32.87	---	---	Peak
3	259.770	32.04	-13.96	46.00	50.46	12.52	1.93	32.87	---	---	Peak
4	419.000	25.84	-20.16	46.00	40.29	15.97	2.39	32.81	---	---	Peak
5	539.400	25.87	-20.13	46.00	37.44	18.07	2.73	32.37	---	---	Peak
6	889.400	24.98	-21.02	46.00	29.78	23.12	3.61	31.53	---	---	Peak



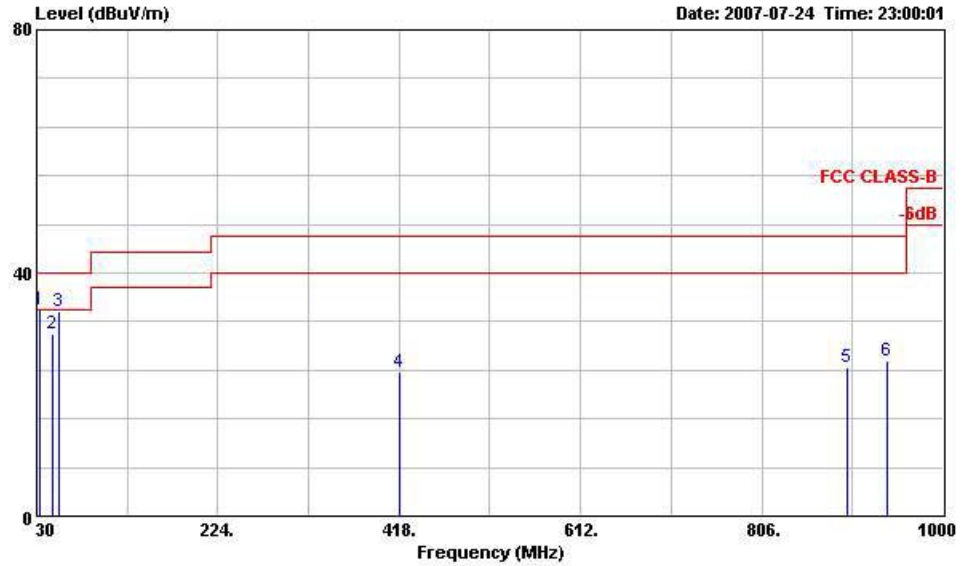
Site :03CH04-HY
Condition:FCC CLASS-B 3m HF-ANT-6903 HORIZONTAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MOME :11b Tx_CH11;2462MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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	2382.000	36.66	-17.34	54.00	38.66	28.03	3.74	33.78	100	271	Average
2	2382.000	49.06	-24.94	74.00	51.06	28.03	3.74	33.78	100	0	Peak
3 @	2462.000	105.33			107.08	28.22	3.81	33.79	100	0	Peak
4 @	2462.000	97.98			99.73	28.22	3.81	33.79	100	271	Average
5	2483.500	51.27	-22.73	74.00	52.97	28.26	3.84	33.80	100	0	Peak
6	2483.500	39.32	-14.68	54.00	41.02	28.26	3.84	33.80	100	271	Average
7	8262.000	53.12	-20.88	74.00	43.08	37.16	6.90	34.02	100	0	Peak
8	8262.000	41.24	-12.76	54.00	31.20	37.16	6.90	34.02	100	322	Average

Remark: #3 and #4 Fundamental Signal

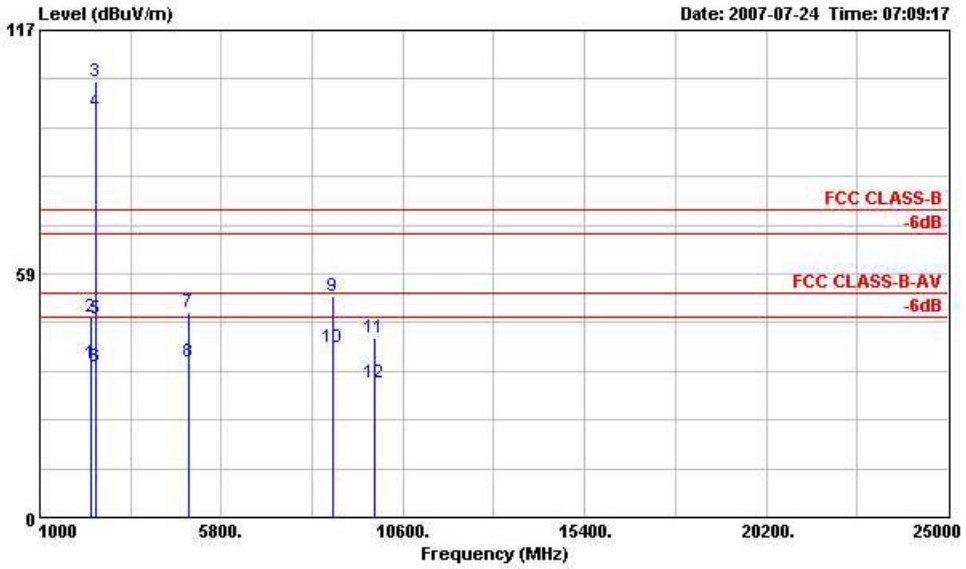
- Polarization : Vertical

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




```
Site      :03CH04-HY
Condition:FCC CLASS-B 3m ANT2724 VERTICAL
EUT       :PDA Smart Phone (WiFi_802.11b/g/
          :BT_v2.0 EDR_VOIP)
POWER     :110Vac/60Hz
MODEL     :TR 771809
MOME      :11b Tx_CH11;2462MHz
PLANE     :E2
Data Rate:11
```

	Freq	Level	Over Limit	Limit Line	Read 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 !	32.700	34.07	-5.93	40.00	50.10	16.33	0.66	33.02	169	360	QP
2	47.820	30.00	-10.00	40.00	53.63	8.53	0.76	32.92	---	---	Peak
3	54.030	33.57	-6.43	40.00	60.05	5.57	0.82	32.88	---	---	Peak
4	419.000	23.77	-22.23	46.00	38.22	15.97	2.39	32.81	---	---	Peak
5	897.800	24.46	-21.54	46.00	28.86	23.44	3.60	31.45	---	---	Peak
6	939.800	25.57	-20.43	46.00	28.89	24.52	3.58	31.42	---	---	Peak



Site :03CH04-HY
Condition:FCC CLASS-B 3m HF-ANT-6903 VERTICAL
EUT :PDA Smart Phone (WiFi_802.11b/g/
:BT_v2.0 EDR_VOIP)
POWER :110Vac/60Hz
MODEL :TR 771809
MODE :11b Tx_CH11;2462MHz
PLANE :E2
Data Rate:11

	Freq	Level	Over Limit	Limit Line	Read 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	2340.000	36.82	-17.18	54.00	38.94	27.96	3.69	33.77	104	178	Average
2	2340.000	48.30	-25.70	74.00	50.42	27.96	3.69	33.77	100	0	Peak
3 @	2462.000	104.82			106.57	28.22	3.81	33.79	100	0	Peak
4 @	2462.000	97.35			99.10	28.22	3.81	33.79	104	178	Average
5	2483.500	47.54	-26.46	74.00	49.24	28.26	3.84	33.80	100	0	Peak
6	2483.500	35.99	-18.01	54.00	37.69	28.26	3.84	33.80	104	178	Average
7	4924.000	49.45	-24.55	74.00	44.73	33.08	5.95	34.30	100	0	Peak
8	4924.000	37.52	-16.48	54.00	32.80	33.08	5.95	34.30	100	304	Average
9	8766.000	53.14	-20.86	74.00	42.78	37.82	7.16	34.62	100	0	Peak
10	8766.000	40.86	-13.14	54.00	30.50	37.82	7.16	34.62	100	258	Average
11	9848.000	43.22	-30.78	74.00	80.13	-9.63	7.72	35.00	100	0	Peak
12	9848.000	32.49	-21.51	54.00	69.40	-9.63	7.72	35.00	100	312	Average

Remark: #3 and #4 Fundamental Signal