Testing Laboratory
1190

FCC Test Report

for

47 CFR Part 15 Subpart C

Equipment	**:**	**UMPC**
Trade Name	**:**	**HTC**
Model No.	**:**	**CLIO100**
FCC ID	**:**	**NM8CL**
Filing Type	**:**	**Certification**
Applicant	**:**	**High Tech Computer Corp.** No. 23, Xinghua Rd., Taoyuan 330, Taiwan

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- The data shown in this test report were carried out on Sep. 09, 2007 at **Sporton International Inc. LAB.**
- Report No.: FR780709-01, Report Version: Rev. 03.

Jones Tsai
Manager

SPORTON International Inc.

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

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History of this test report

Report Issue Date: Oct. 17, 2007

Report No.	Description

1. General Description of Equipment under Test

1.1 Applicant

High Tech Computer Corp.
No. 23, Xinghua Rd., Taoyuan 330, Taiwan

1.2 Manufacturer

High Tech Computer Corp.
No. 23, Xinghua Rd., Taoyuan 330, Taiwan

1.3 Basic Description of Equipment under Test

Equipment		UMPC
Trade Name		HTC
Model Name		CLIO100
UMPC 1		UMPC with LCD Panel 1
UMPC 2		UMPC with LCD Panel 2
AC Adapter	**Brand Name**	Delta
	Model Name	ADP-36CH B
	Power Rating	I/P: 100-240Vac, 1.2A, 50-60Hz; O/P: 12Vdc, 3A
	AC Power Cord Type	1.8 meter, core shielded cable
Battery 1	**Brand Name**	Simplo
	Model Name	CLIO160
	Rating	7.4Vdc, 2700mAh
	Type	Li-ion
Battery 2	**Brand Name**	Dynapack
	Model Name	CLIO160
	Rating	7.4Vdc, 2800mAh
	Type	Li-ion
Earphone	**Brand Name**	Cotron
	Model Name	CHM-311STV08005
	Signal line Type	1.7 meter non-shielded cable without ferrite core
LCD Panel 1	**Brand Name**	CPT
	Model Name	CLAA070LA01AT
LCD Panel 2	**Brand Name**	Toppoly
	Model Name	TD070TTEA1
Camera 1	**Brand Name**	Liteon
	Model Name	06P049
Camera 2	**Brand Name**	PRIMAX
	Model Name	DS50-70506HTT8
HDD 1	**Brand Name**	Toshiba
	Model Name	MK4009GAL (40G)
HDD 2	**Brand Name**	Samsung
	Model Name	HS06THB (60G)

Remark: Above EUT's information was declared by manufacturer. Please refer to the specifications of manufacturer or User's Manual for more detailed features description.

1.4 Feature of Equipment under Test

Product Feature & Specification				
1. Type of Modulation	WLAN: DSSS / OFDM Bluetooth(1Mbps): GFSK Bluetooth EDR (2Mbps): π/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 : 17.51 dBm 802.11g : 15.96 dBm Bluetooth(1Mbps) : 2.79dBm Bluetooth EDR (2Mbps) : 3.22dBm Bluetooth EDR (3Mbps) : 3.11 dBm			
7. Type of Antenna Connector	N/A			
8. Antenna Type	WLAN : PIFA Antenna Bluetooth : PIFA Antenna			
9. Antenna Gain	802.11b/g : 0 dBi BT : 0 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: UMPC 1 + GSM Idle + BT Idle + WLAN Idle + Earphone + Camera + MPEG4 + GPS Rx + Adapter + Monitor + iPod + Battery 1		
	Mode 2: UMPC 1 + EDGE Idle + BT Idle + WLAN Idle + Earphone + Camera + MPEG4 + GPS Rx + Adapter + Monitor + iPod + Battery 1		
	Mode 3: UMPC 1 + WCDMA Idle + BT Idle + WLAN Idle + Earphone + Camera + MPEG4 + GPS Rx + Adapter + Monitor + iPod + Battery 1		
	Mode 4: UMPC 1 + HSDPA Idle + BT Idle + WLAN Idle + Earphone + Camera + MPEG4 + GPS Rx + Adapter + Monitor + iPod + Battery 1		
	Mode 5: UMPC 1 + PCS Idle + BT Idle + WLAN Idle + Earphone + Camera + MPEG4 + GPS Rx + Adapter + Monitor + iPod + Battery 1		
	Mode 6: UMPC 1 + PCS Idle + BT Idle + WLAN Idle + Earphone + Camera + MPEG4 + GPS Rx + Adapter + Monitor + iPod + Battery 2		
	Mode 7: UMPC 2 + PCS Idle + BT Idle + WLAN Idle + Earphone + Camera + MPEG4 + GPS Rx + Adapter + Monitor + iPod + Battery 2		

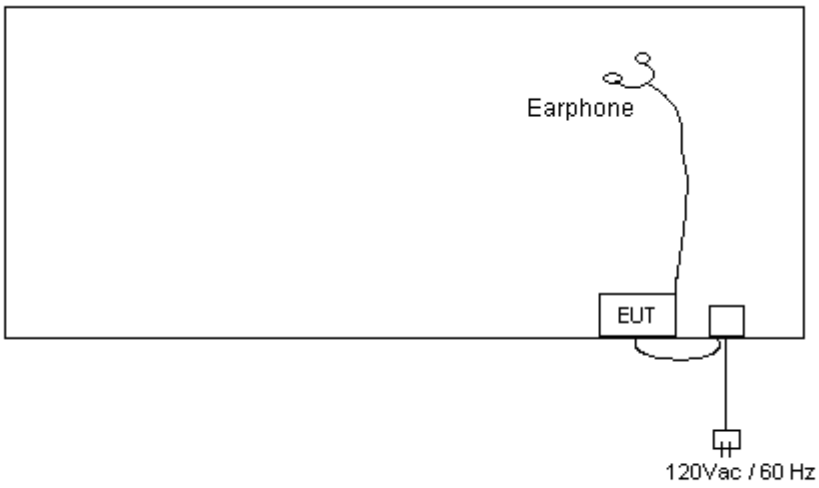
Note: For BT we tested Radiated emissions full modes in 2Mbps and retesting the worst channel, CH78, in 1Mbps and 3Mbps respectively.

2.3 Ancillary Equipment List

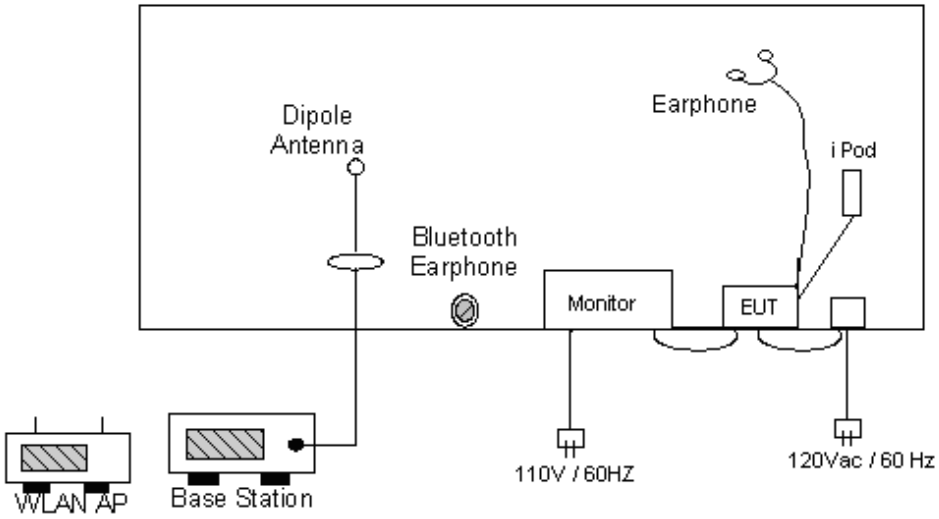
Item	Equipment	Trade Name	Model Name	FCC ID	Power Cord / Cable
1.	Monitor	VIEWSONIC	VCDTS21553-3P	DoC	1.8 m
2.	WLAN AP	SMC	SMC-100	HEDWG4005ACC	1.8 m
3.	Base Station	R&S	CMU 200	N/A	N/A
4.	Bluetooth Earphone	Engotech	ET-BH111	PQY471087	N/A
5.	iPod	Apple	A1199	DoC	1.2m

2.4 Connection Diagram of Test System

<Radiated Emission>



<Conducted Emission>



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

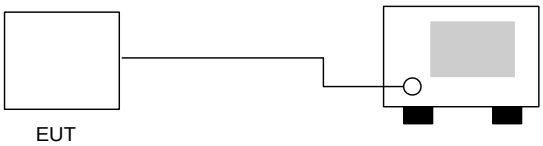
5.2.1 Measuring Instruments：

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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

802.11b

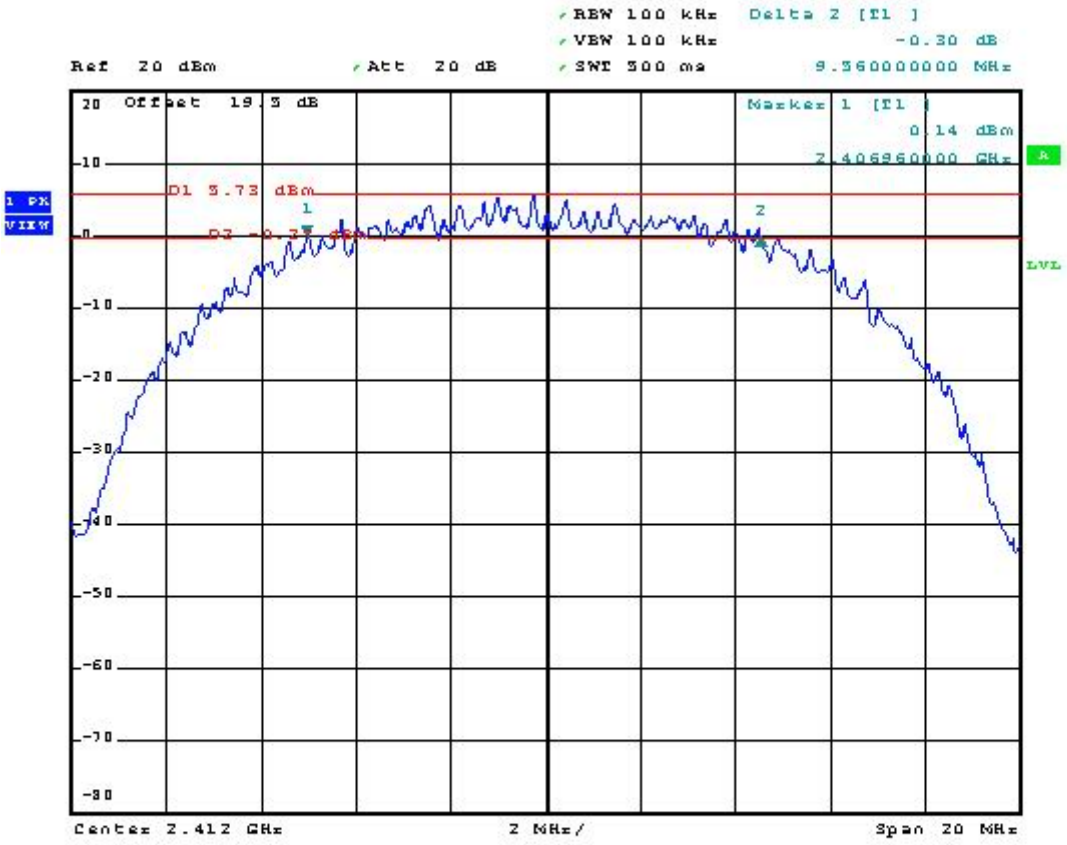
Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	9.56	> 0.5MHz	Mode 1
06	2437	9.56	> 0.5MHz	Mode 2
11	2462	9.56	> 0.5MHz	Mode 3

802.11g

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

5.2.5 6dB Bandwidth

Mode 1



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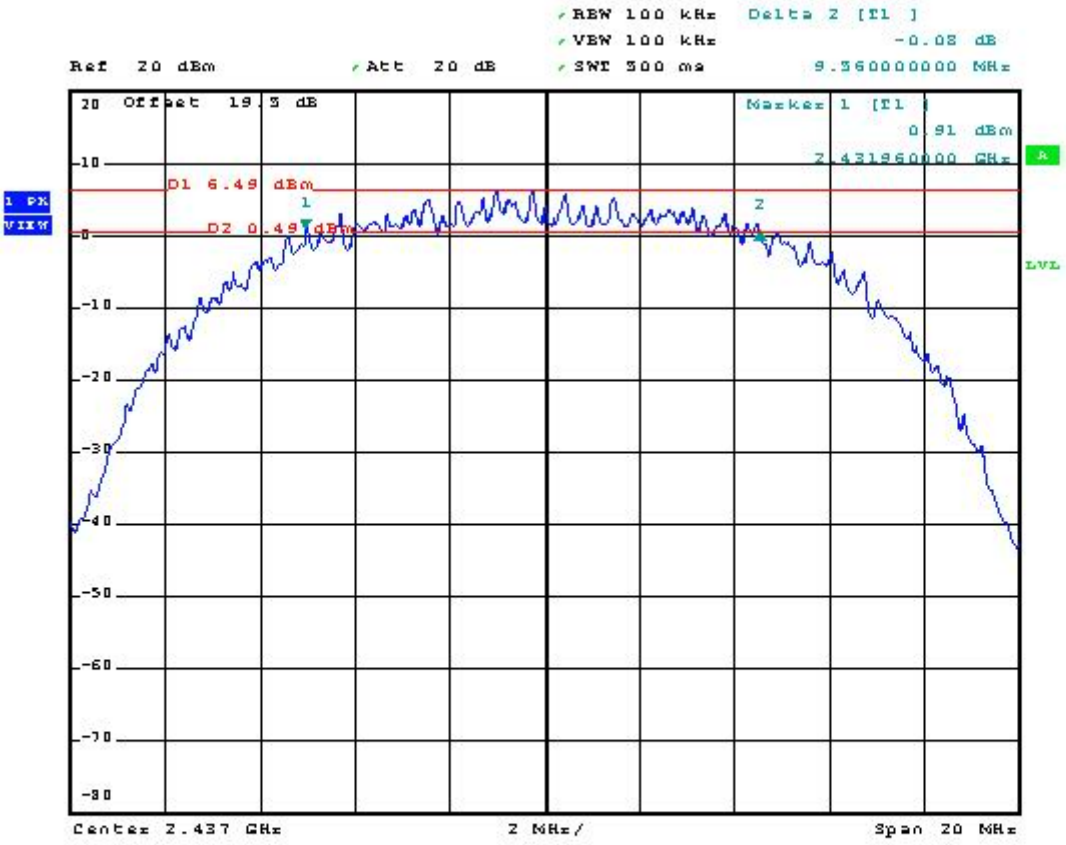

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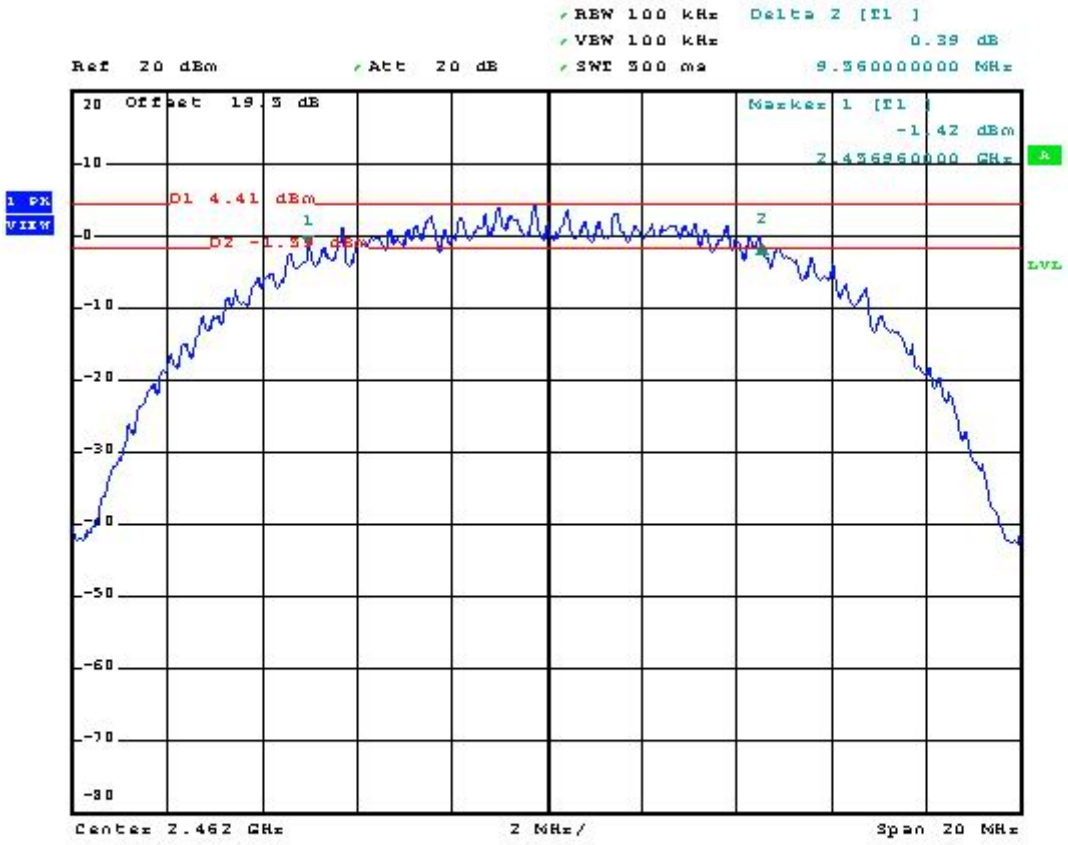
Mode 3



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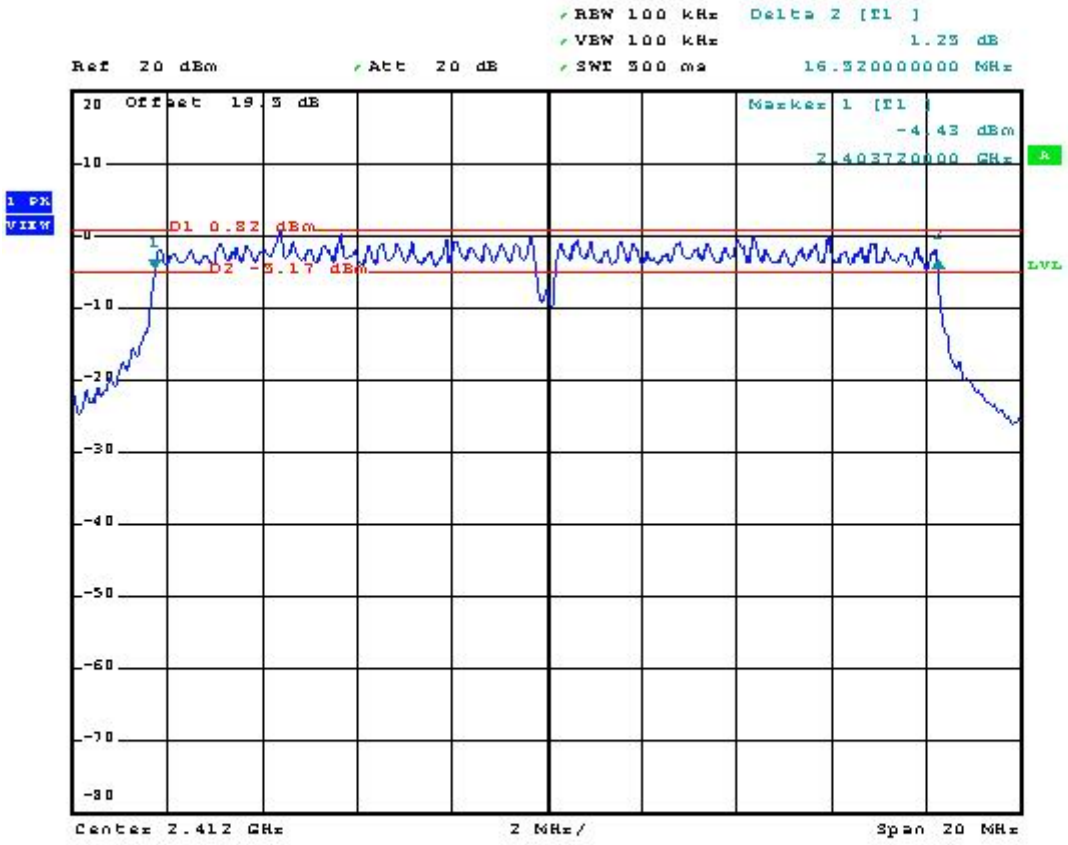
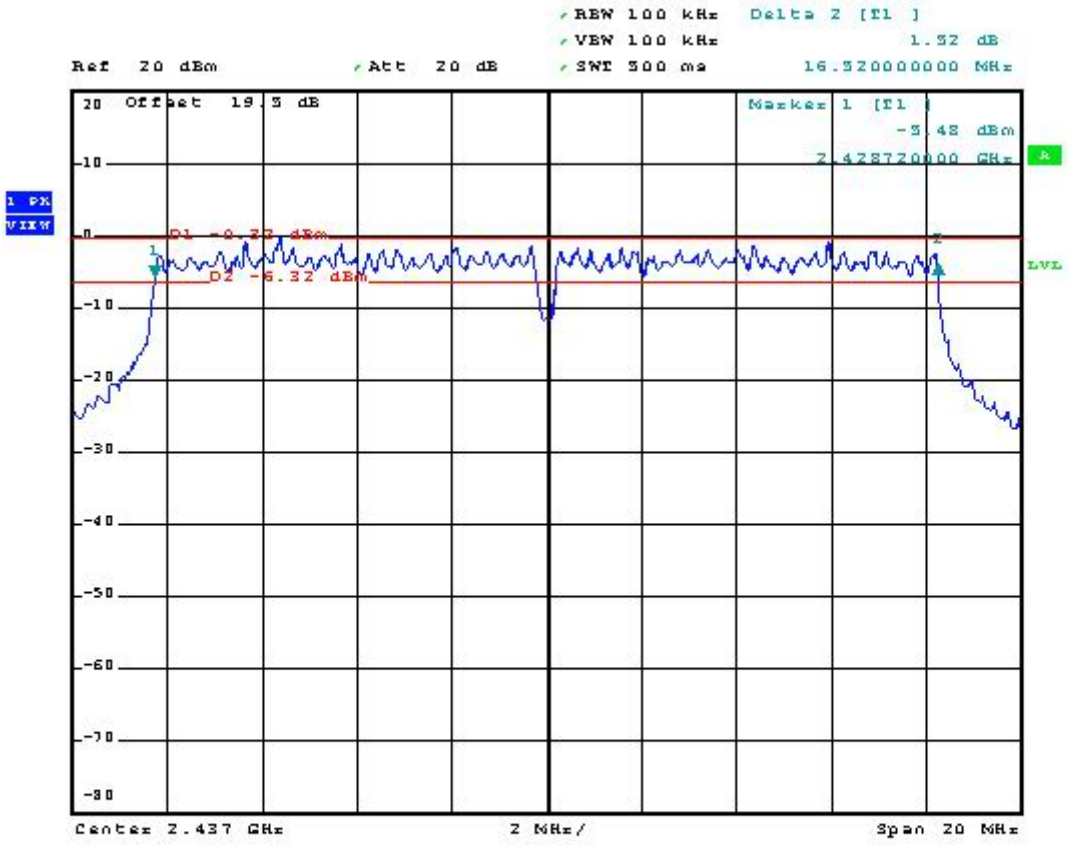
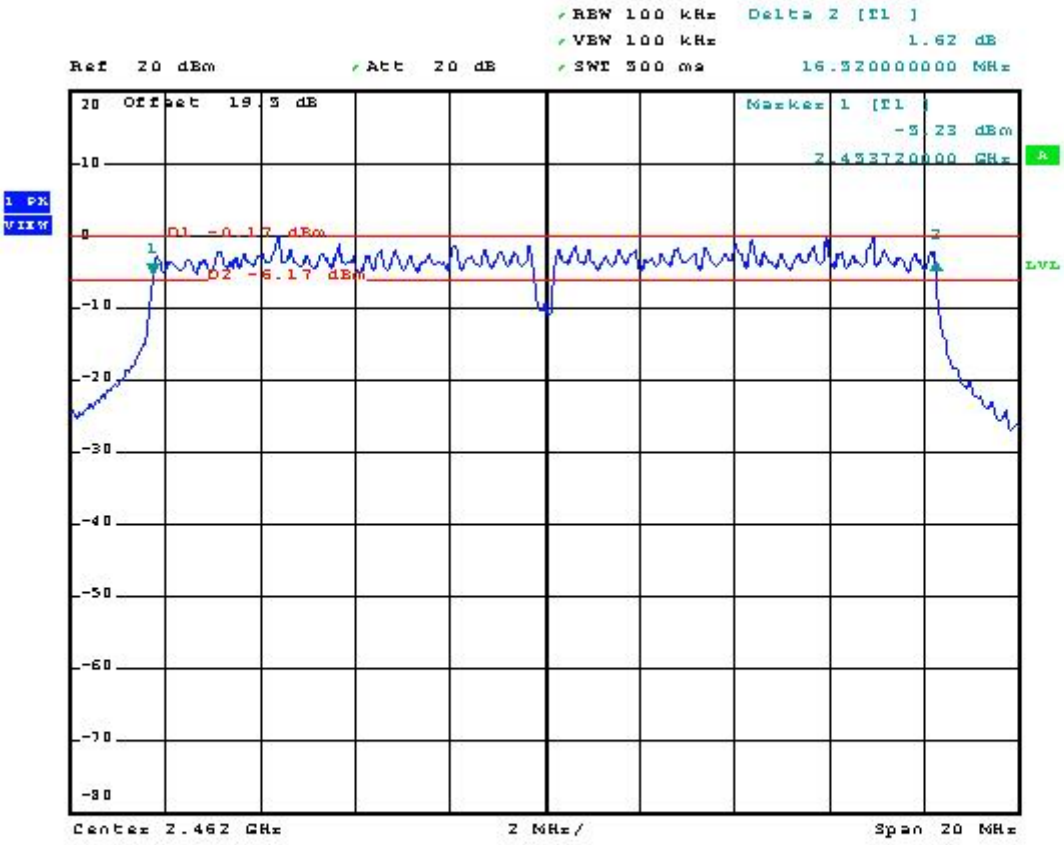
Mode 4


RBW 100 kHz
VBW 100 kHz
SWT 500 ms
Delta 2 [T1]
1.25 dB
16.520000000 MHz
Ref 20 dBm
Att 20 dB
Offset 19.5 dB
Marker 1 [T1]
-4.43 dBm
2.403720000 GHz
D1 0.82 dBm
D2 -5.17 dBm
1 PK
VIEW
LVL
Center 2.412 GHz
2 MHz/
Span 20 MHz
Date: 3.SEP.2007 08:50:58

Mode 5


RBW 100 kHz
VBW 100 kHz
SWT 500 ms
Delta 2 [T1]
1.52 dB
16.520000000 MHz
Ref 20 dBm
Att 20 dB
Offset 19.5 dB
Marker 1 [T1]
-5.48 dBm
2.428720000 GHz
D1 -0.77 dBm
D2 -6.32 dBm
1 PK
VIEW
LVL
Center 2.437 GHz
2 MHz/
Span 20 MHz
Date: 3.SEP.2007 07:43:28

Mode 6



Date: 3.SEP.2007 07:39:31

5.3 Power Spectral Density Measurement

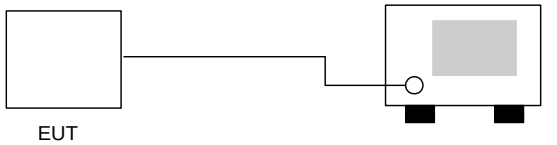
5.3.1 Measuring Instruments：

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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

802.11b

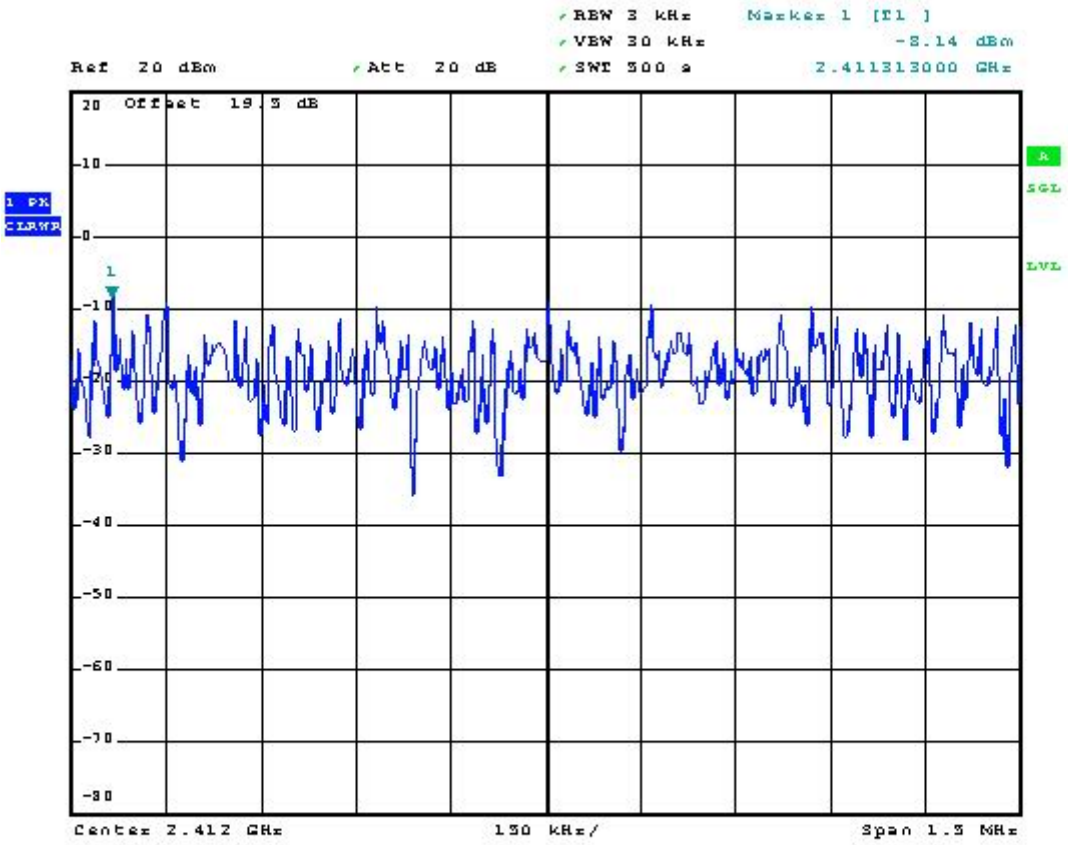
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-8.14	8	Mode 1
06	2437	-8.40	8	Mode 2
11	2462	-9.48	8	Mode 3

802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-13.39	8	Mode 4
06	2437	-15.01	8	Mode 5
11	2462	-14.77	8	Mode 6

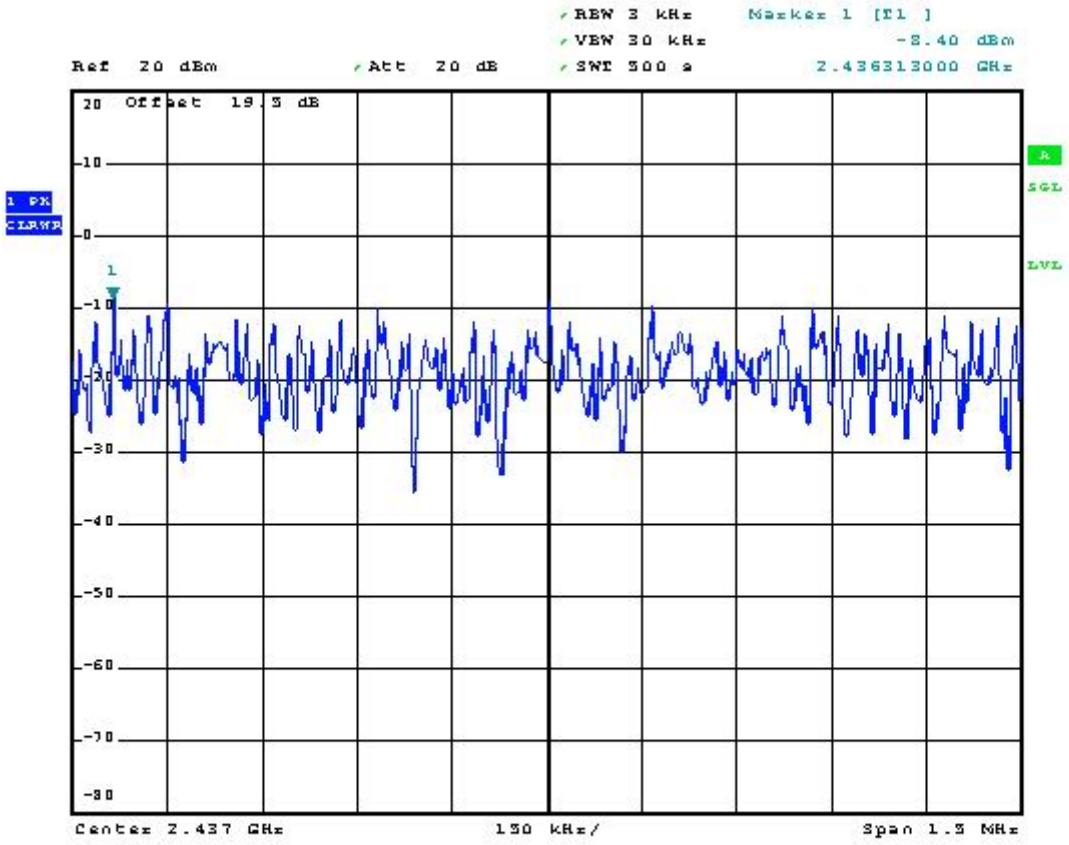
5.3.5 Power Spectral Density

Mode 1



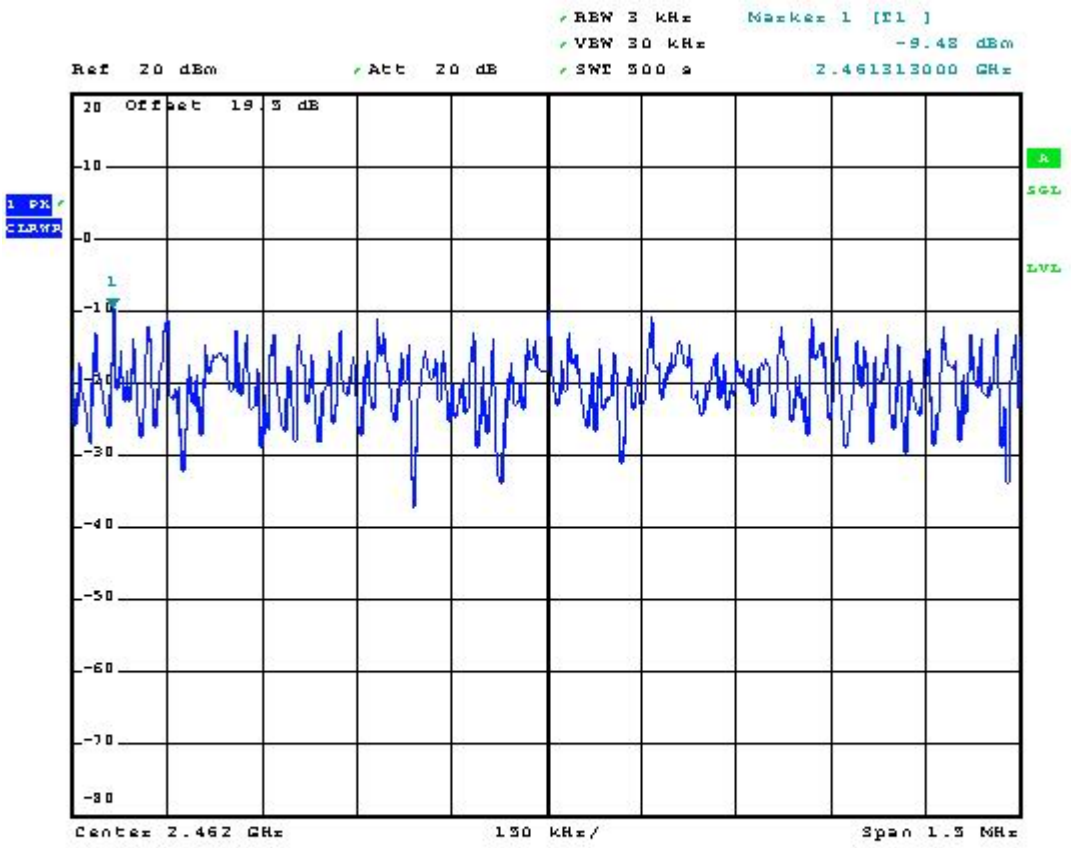
Date: 3.SEP.2007 08:47:51

Mode 2



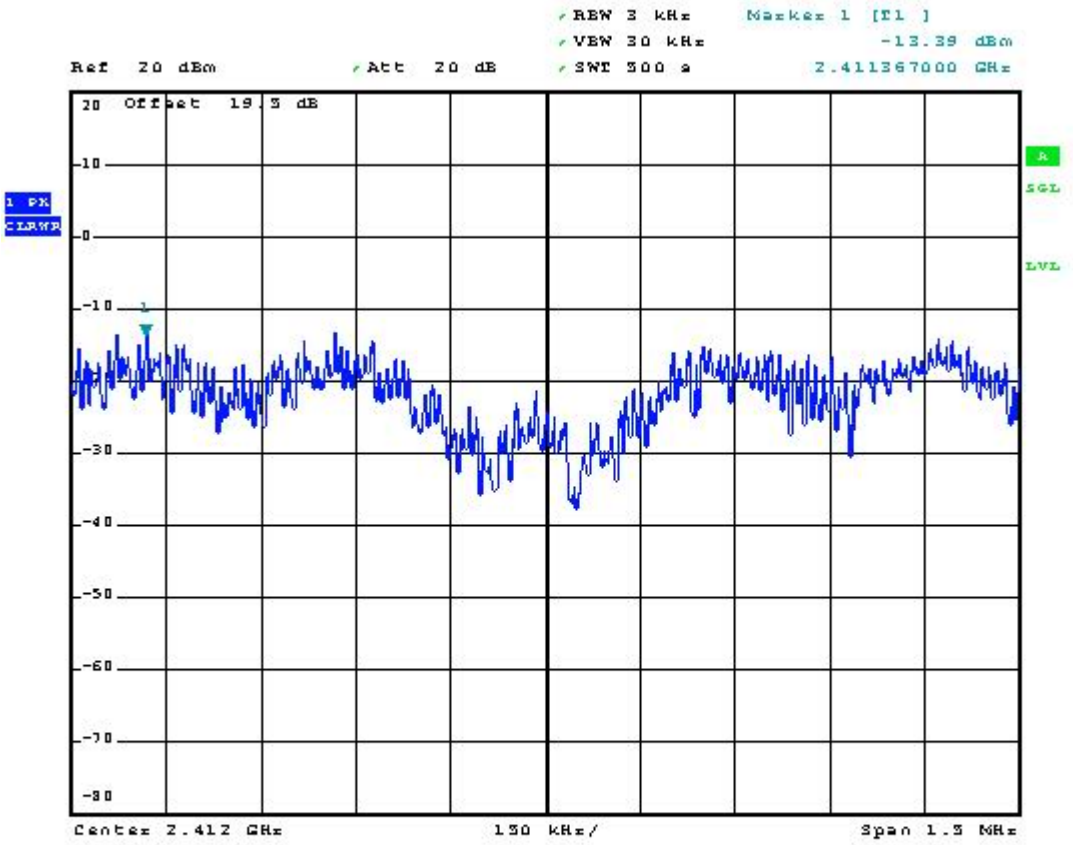
Date: 3.SEP.2007 07:08:54

Mode 3



Date: 3.SEP.2007 07:26:58

Mode 4



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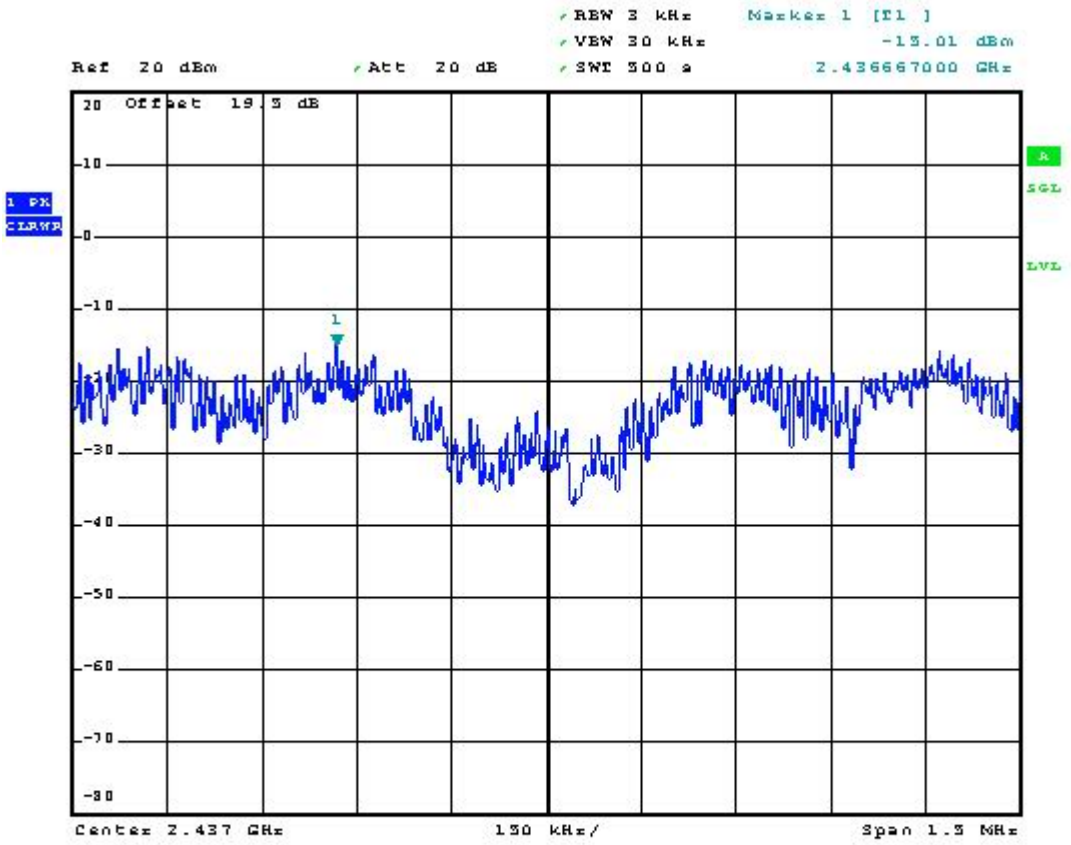
Mode 5



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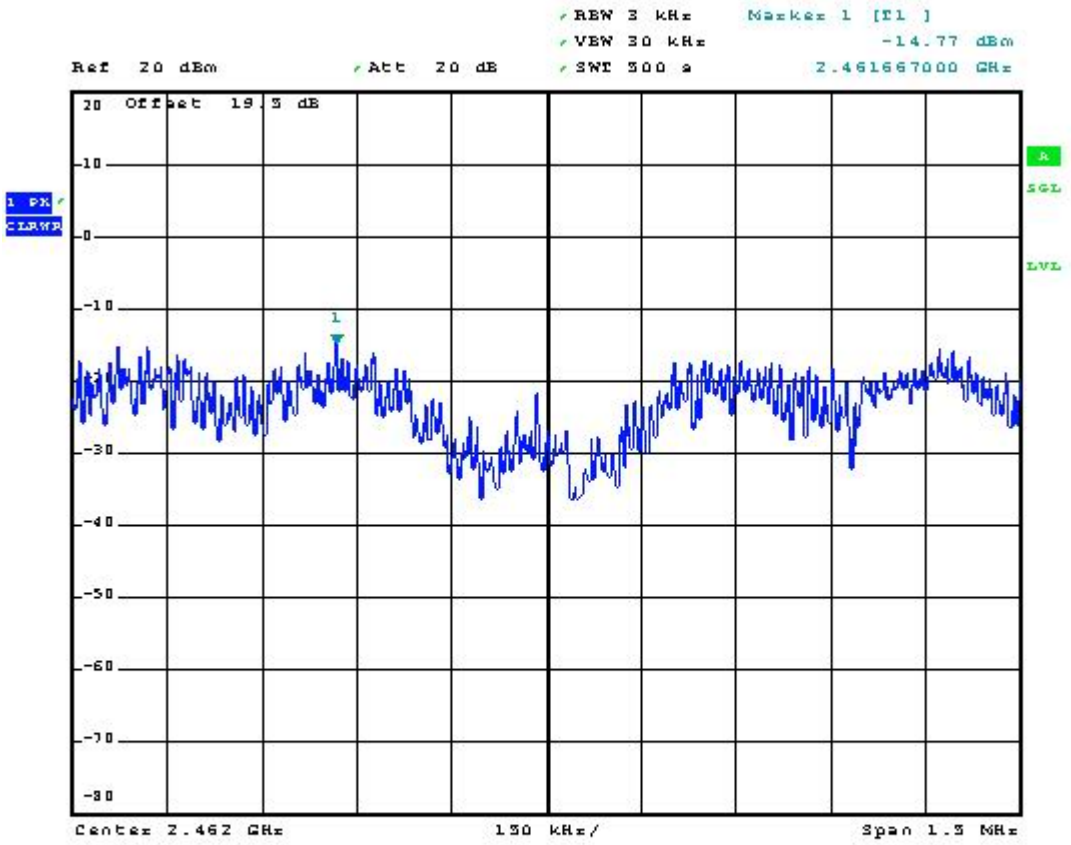
Mode 6



Date: 3.SEP.2007 07:37:43

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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

- 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
2390.0	53.42	-20.58	74.00	54.87	30.26	3.75	35.46	100	0	Peak
2390.0	43.35	-10.65	54.00	44.80	30.26	3.75	35.46	100	147	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
2390.0	57.52	-16.48	74.00	58.97	30.26	3.75	35.46	100	0	Peak
2390.0	46.77	-7.23	54.00	48.22	30.26	3.75	35.46	100	8	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
2483.5	54.71	-19.29	74.00	56.07	30.29	3.86	35.51	100	0	Peak
2483.5	43.98	-10.02	54.00	45.34	30.29	3.86	35.51	100	147	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
2483.5	58.98	-15.02	74.00	60.34	30.29	3.86	35.51	100	0	Peak
2483.5	47.61	-6.39	54.00	48.97	30.29	3.86	35.51	103	20	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
2390.0	61.69	-12.31	74.00	63.14	30.26	3.75	35.46	100	0	Peak
2390.0	45.96	-8.04	54.00	47.41	30.26	3.75	35.46	100	148	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
2390.0	67.07	-6.93	74.00	68.52	30.26	3.75	35.46	100	0	Peak
2390.0	51.41	-2.59	54.00	52.86	30.26	3.75	35.46	103	354	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
2483.5	56.26	-17.74	74.00	57.62	30.29	3.86	35.51	100	0	Peak
2483.5	43.34	-10.66	54.00	44.70	30.29	3.86	35.51	100	146	Average

CH11 (Vertical)

Frequency	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)	(dB)	(dB)	(cm)	(deg)	
2483.5	59.38	-14.62	74.00	60.74	30.29	3.86	35.51	100	0	Peak
2483.5	46.91	-7.09	54.00	48.27	30.29	3.86	35.51	100	20	Average

➢ BT(1Mbps)

CH78 (Horizontal)

Frequency	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)	(dB)	(dB)	(cm)	(deg)	
2483.5	57.26	-16.74	74.00	57.99	30.29	4.49	35.51	100	0	Peak
2483.5	50.30	-3.70	54.00	51.03	30.29	4.49	35.51	100	75	Average

CH78 (Vertical)

Frequency	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)	(dB)	(dB)	(cm)	(deg)	
2483.5	61.04	-12.96	74.00	61.77	30.29	4.49	35.51	100	360	Peak
2483.5	53.49	-0.51	54.00	54.22	30.29	4.49	35.51	100	282	Average

➢ BT-EDR(2Mbps)

CH00 (Horizontal)

Frequency	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)	(dB)	(dB)	(cm)	(deg)	
2365.9	38.42	-15.58	54.00	39.21	30.24	4.40	35.44	100	86	Average
2365.9	48.62	-25.38	74.00	49.41	30.24	4.40	35.44	100	0	Peak

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
2382.6	49.05	-24.95	74.00	49.83	30.25	4.40	35.44	100	360	Peak
2382.6	38.74	-15.26	54.00	39.52	30.25	4.40	35.44	100	286	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
2483.5	62.36	-11.64	74.00	63.09	30.29	4.49	35.51	100	0	Peak
2483.5	52.16	-1.84	54.00	52.89	30.29	4.49	35.51	100	88	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
2483.5	62.38	-11.62	74.00	63.11	30.29	4.49	35.51	100	360	Peak
2483.5	53.20	-0.80	54.00	53.93	30.29	4.49	35.51	100	78	Average

➢ BT-EDR(3Mbps)

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
2483.5	59.84	-14.16	74.00	60.57	30.29	4.49	35.51	100	0	Peak
2483.5	50.76	-3.24	54.00	51.49	30.29	4.49	35.51	191	75	Average

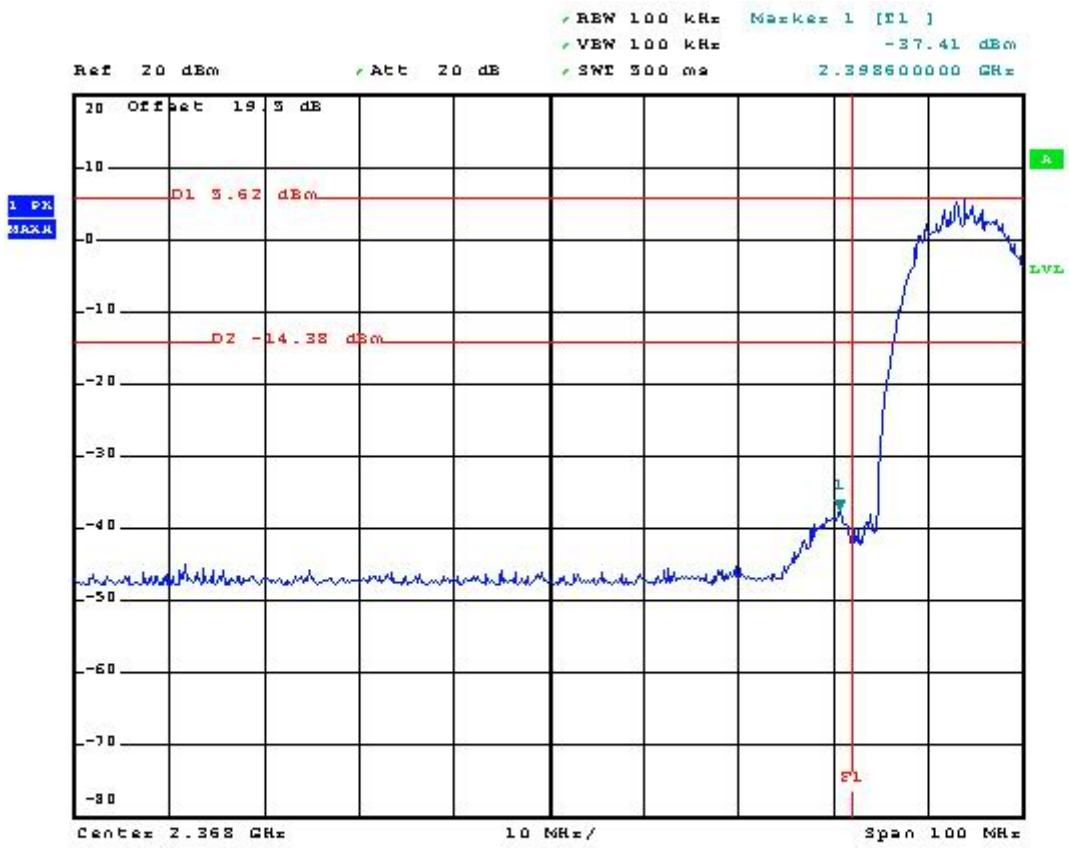
CH78 (Vertical)

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
2483.5	62.04	-11.96	74.00	62.77	30.29	4.49	35.51	100	360	Peak
2483.5	52.95	-1.05	54.00	53.68	30.29	4.49	35.51	100	286	Average

5.4.5 Band Edge

WLAN 802.11b

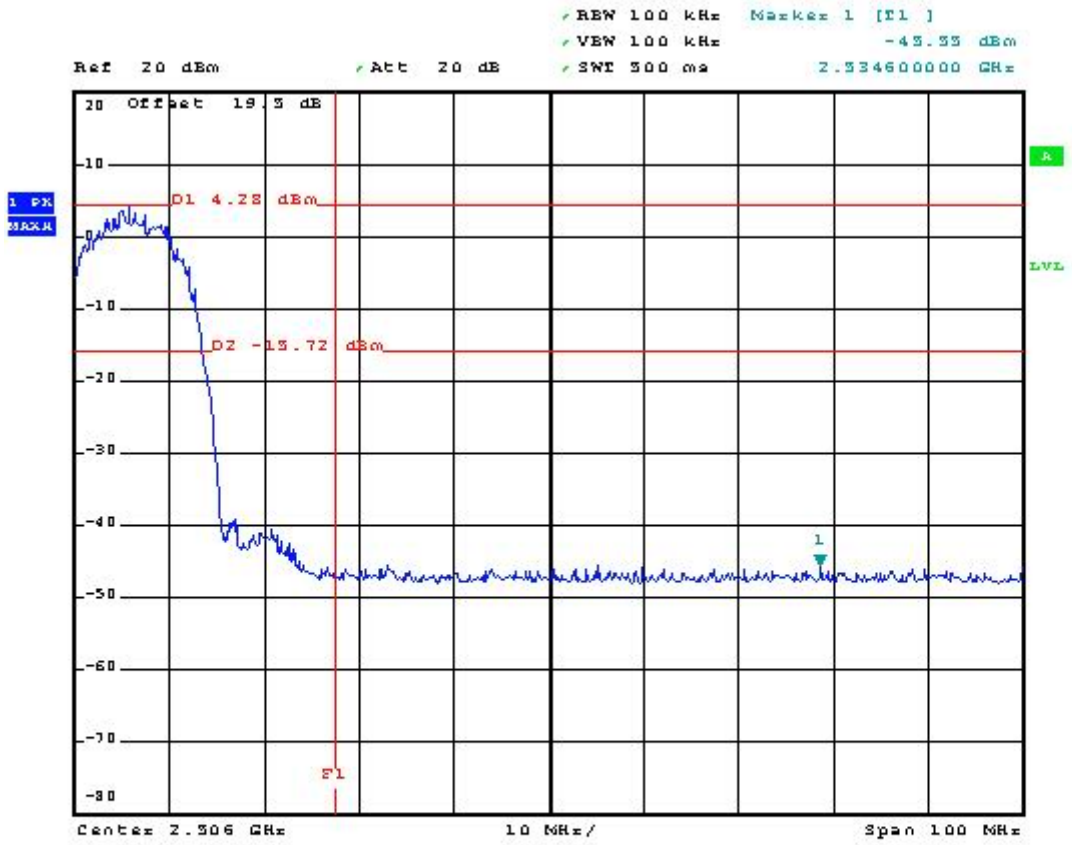
CH01



Date: 3.SEP.2007 08:36:45

WLAN 802.11b

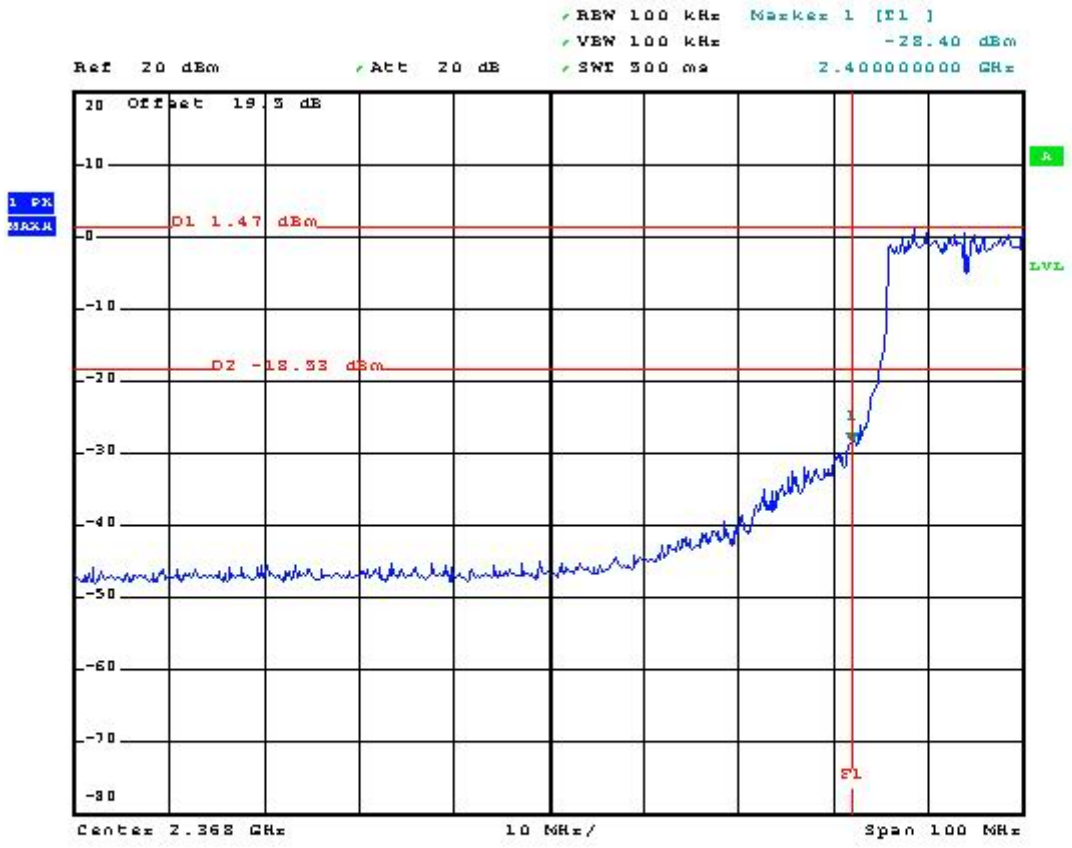
CH11



Date: 3.SEP.2007 07:17:19

WLAN 802.11g

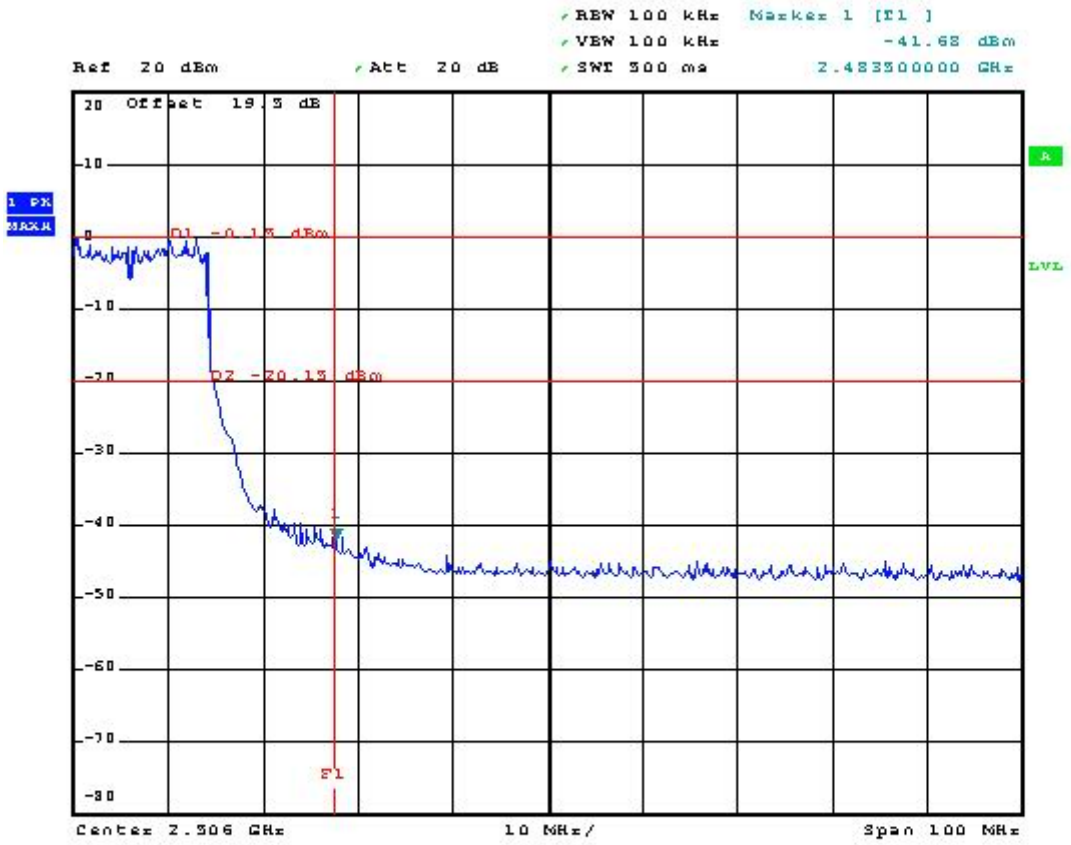
CH01



Date: 3.SEP.2007 08:21:15

WLAN 802.11g

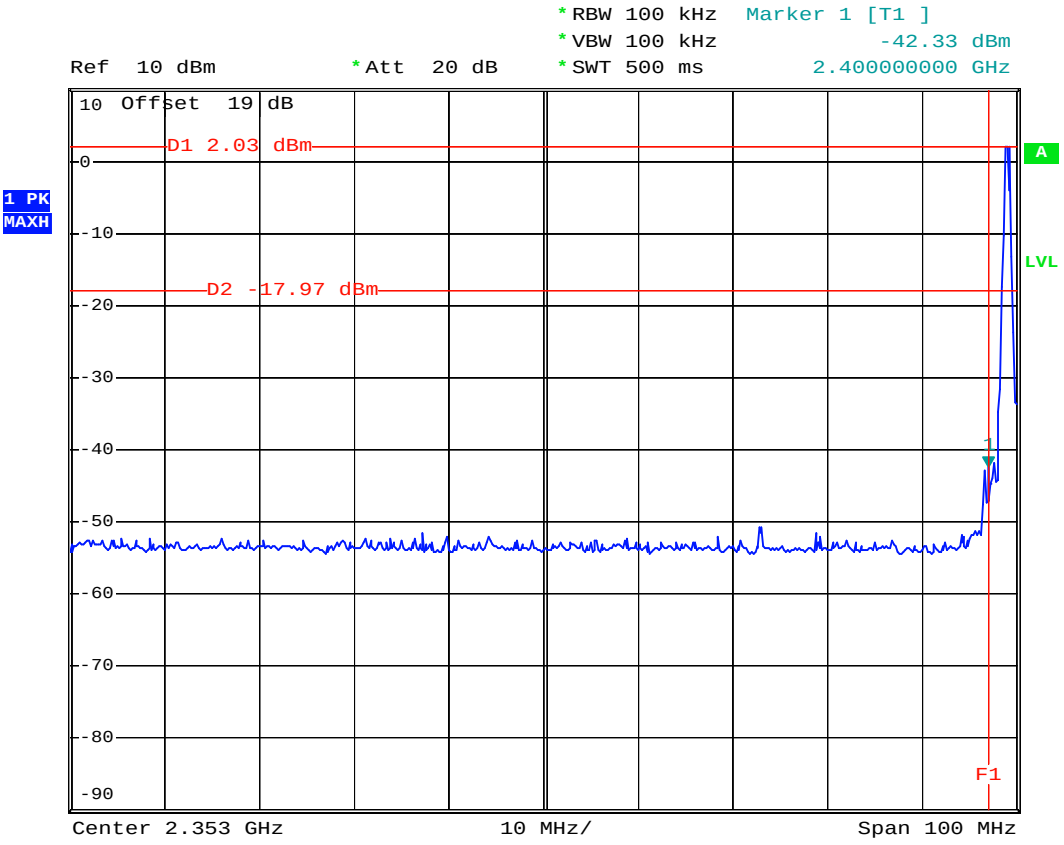
CH11



Date: 3.SEP.2007 07:41:03

BT(1Mbps)

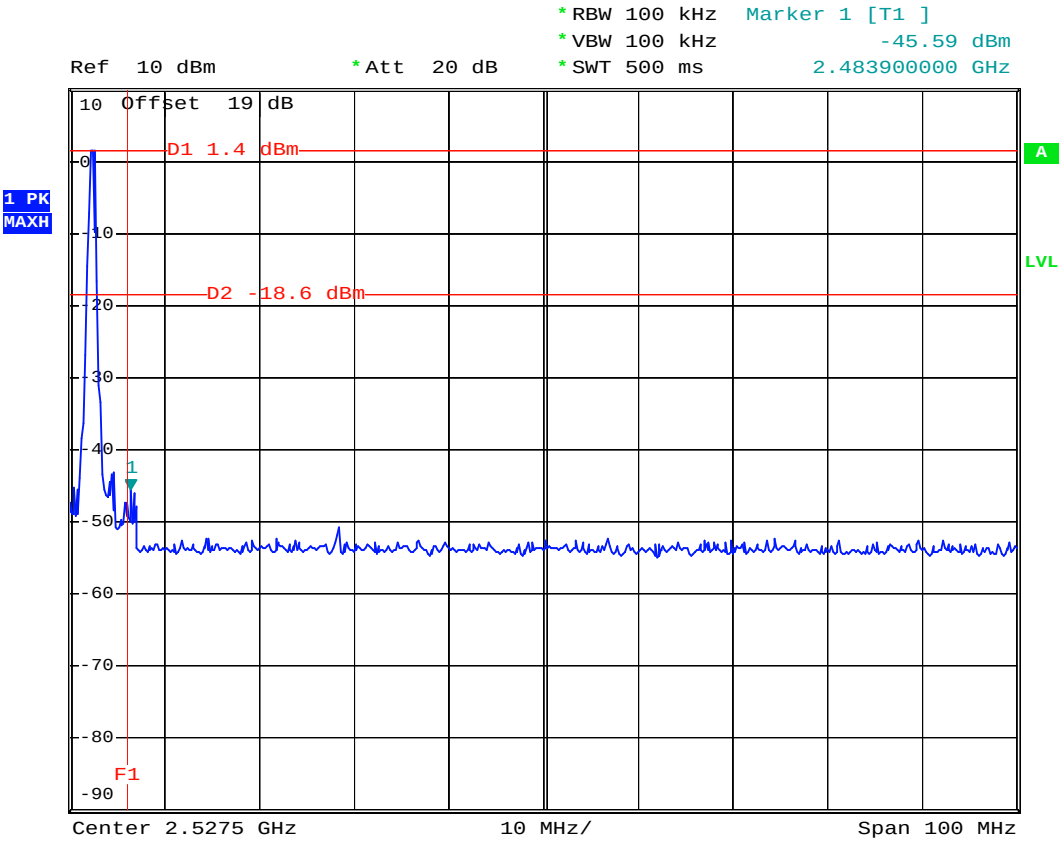
CH00



Date: 3.SEP.2007 01:30:16

BT(1Mbps)

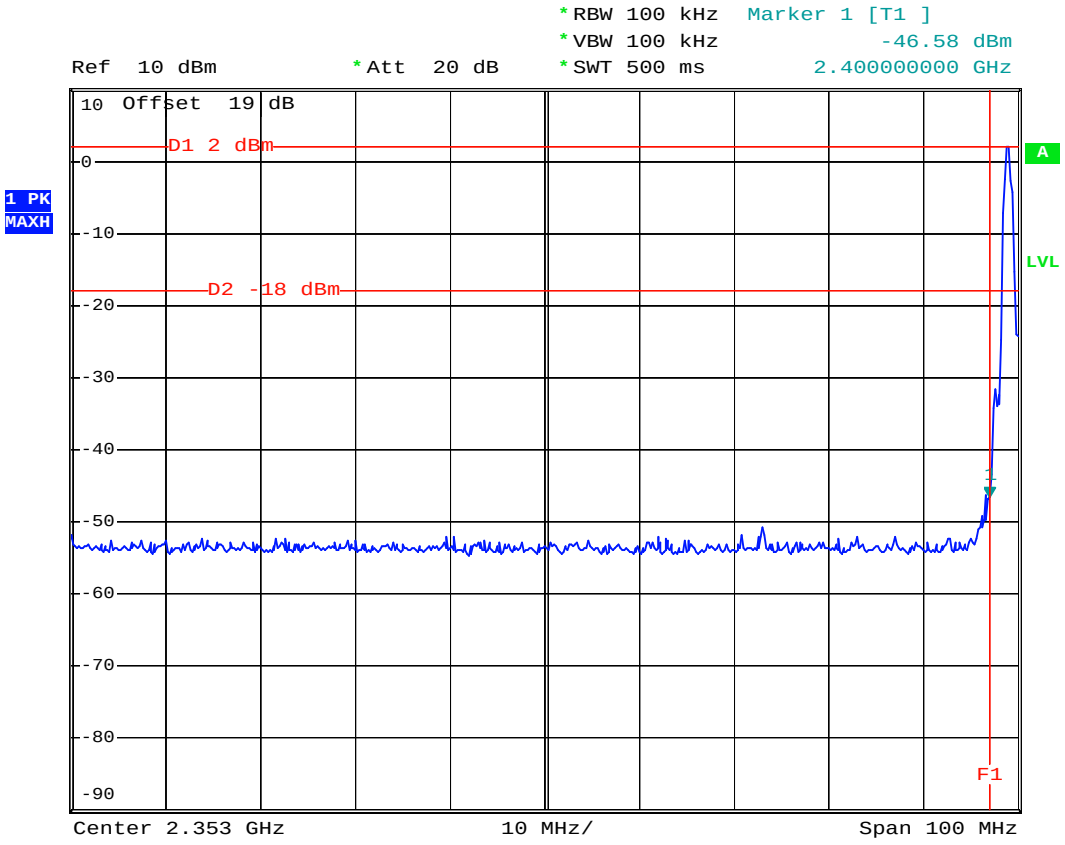
CH78



Date: 3.SEP.2007 01:32:22

BT-EDR(2Mbps)

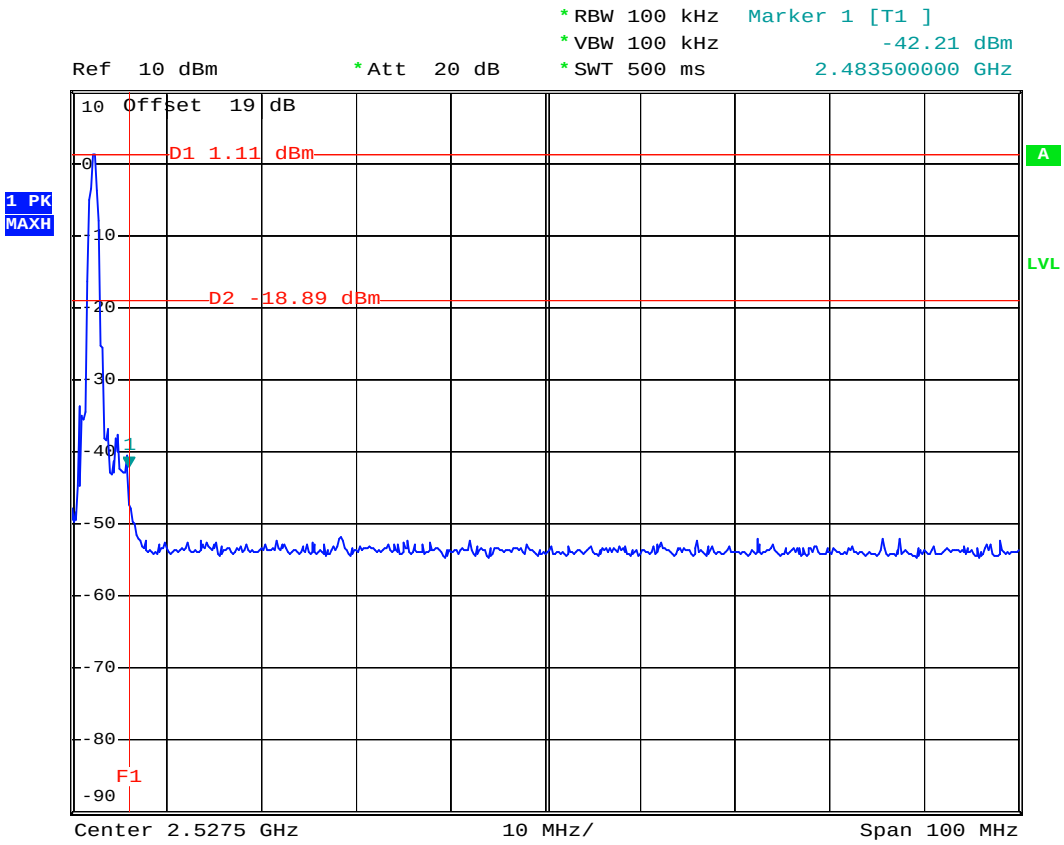
CH00



Date: 3.SEP.2007 00:36:43

BT-EDR(2Mbps)

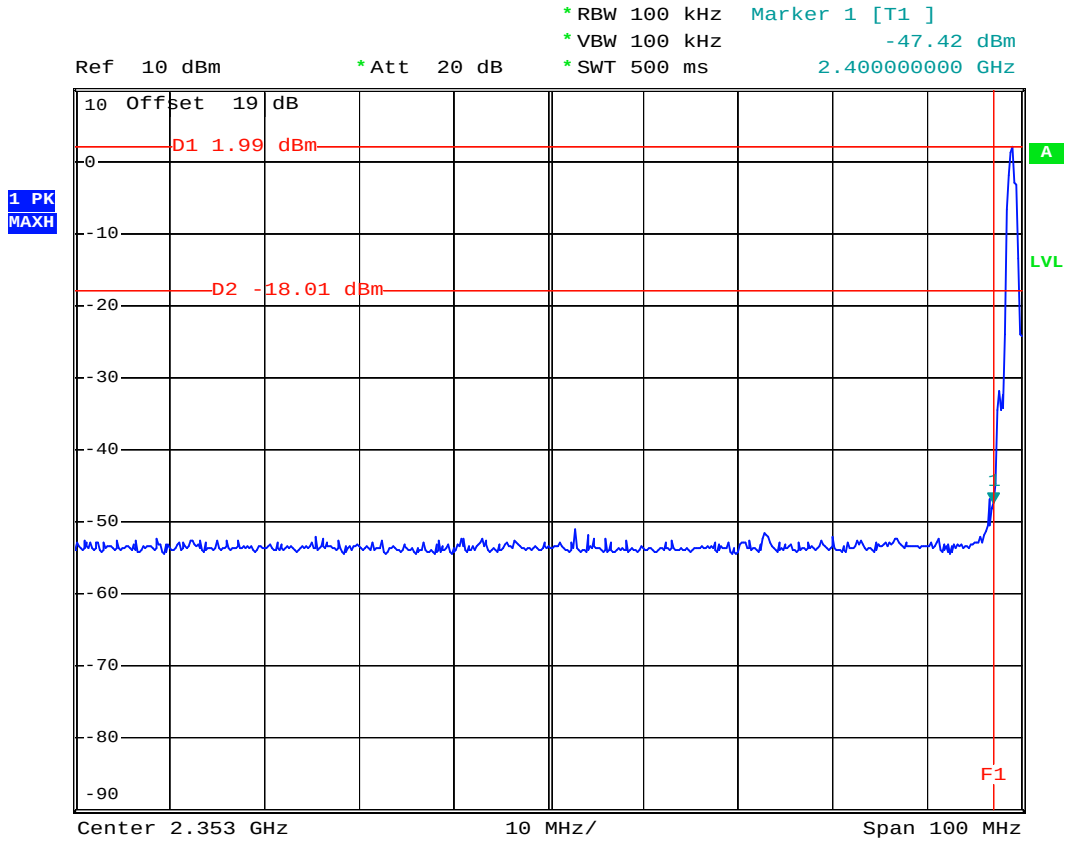
CH78



Date: 3.SEP.2007 00:38:48

BT-EDR(3Mbps)

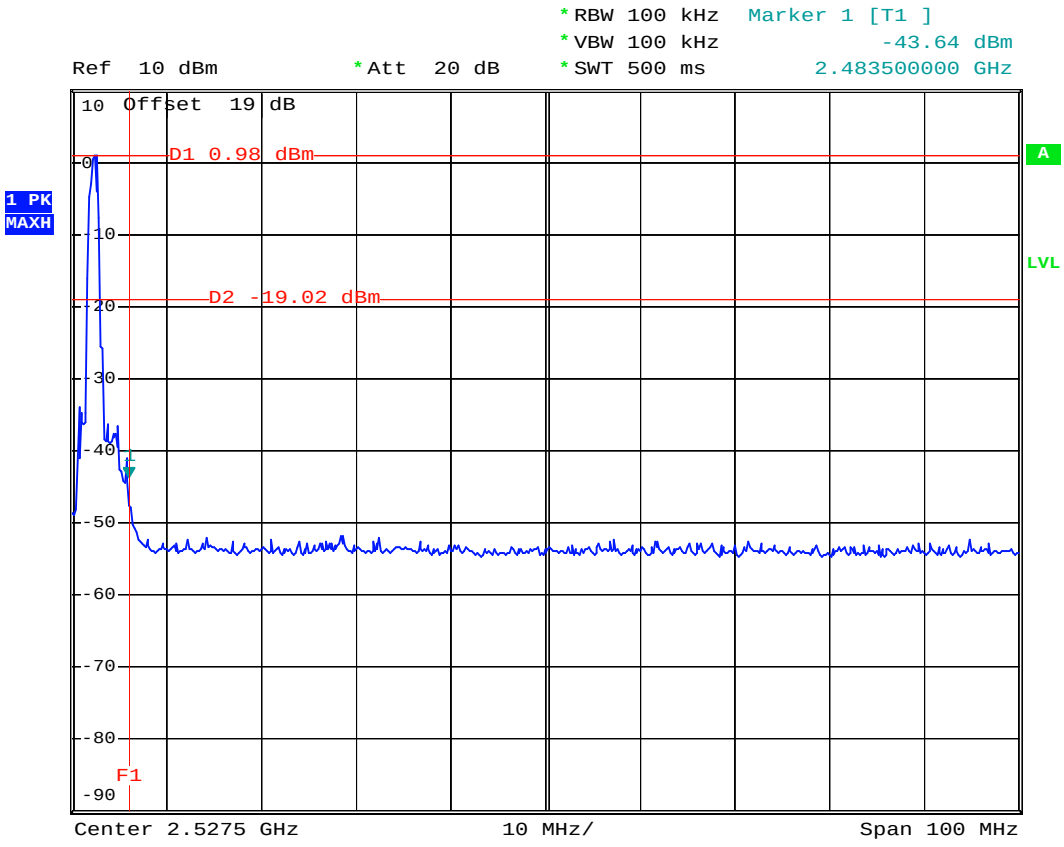
CH00



Date: 3.SEP.2007 00:34:29

BT-EDR(3Mbps)

CH78



Date: 3.SEP.2007 00:40:25

5.5 Hopping Channel Separation

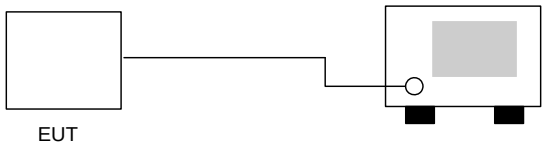
5.5.1 Measuring Instruments：

As described in chapter 6 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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.004	0.631	Mode 7
39	2441	1.004.	0.629	Mode 8
78	2480	1.004	0.632	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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.821	Mode 10
39	2441	1.000	0.824	Mode 11
78	2480	1.000	0.824	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

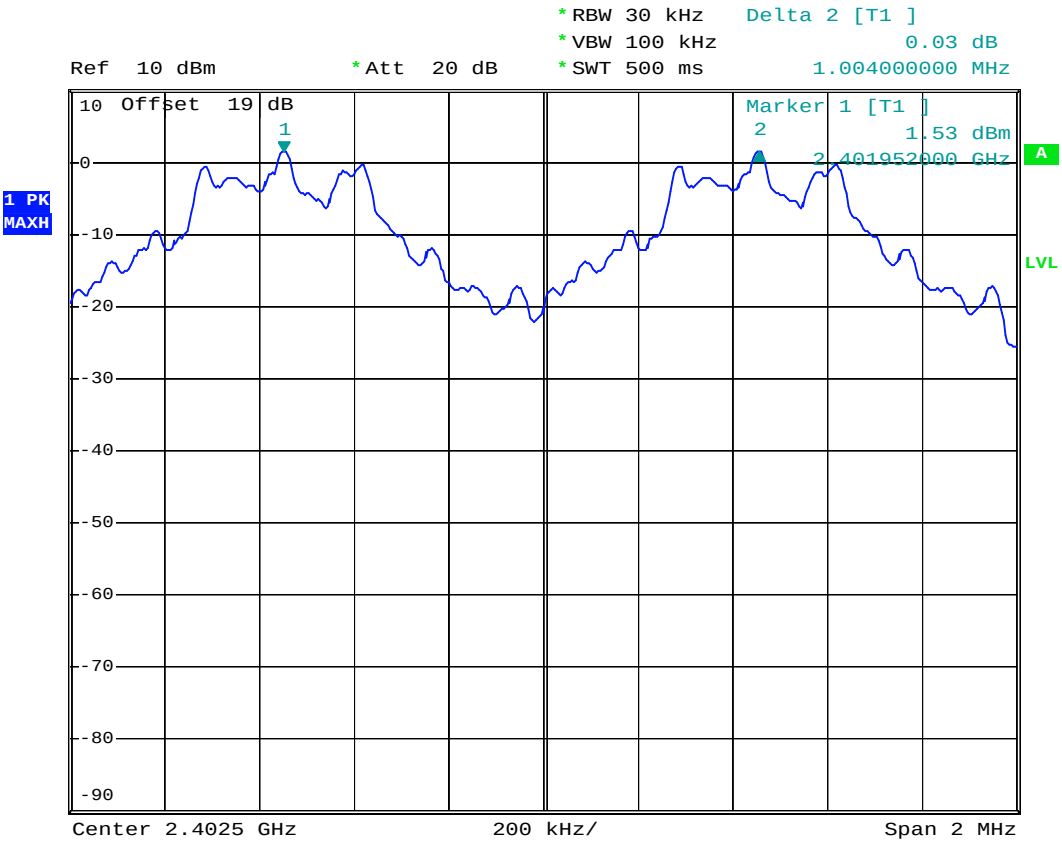
- Application Type : BT-EDR(3Mbps)
- Temperature : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.837	Mode 13
39	2441	1.000	0.835	Mode 14
78	2480	1.008	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.

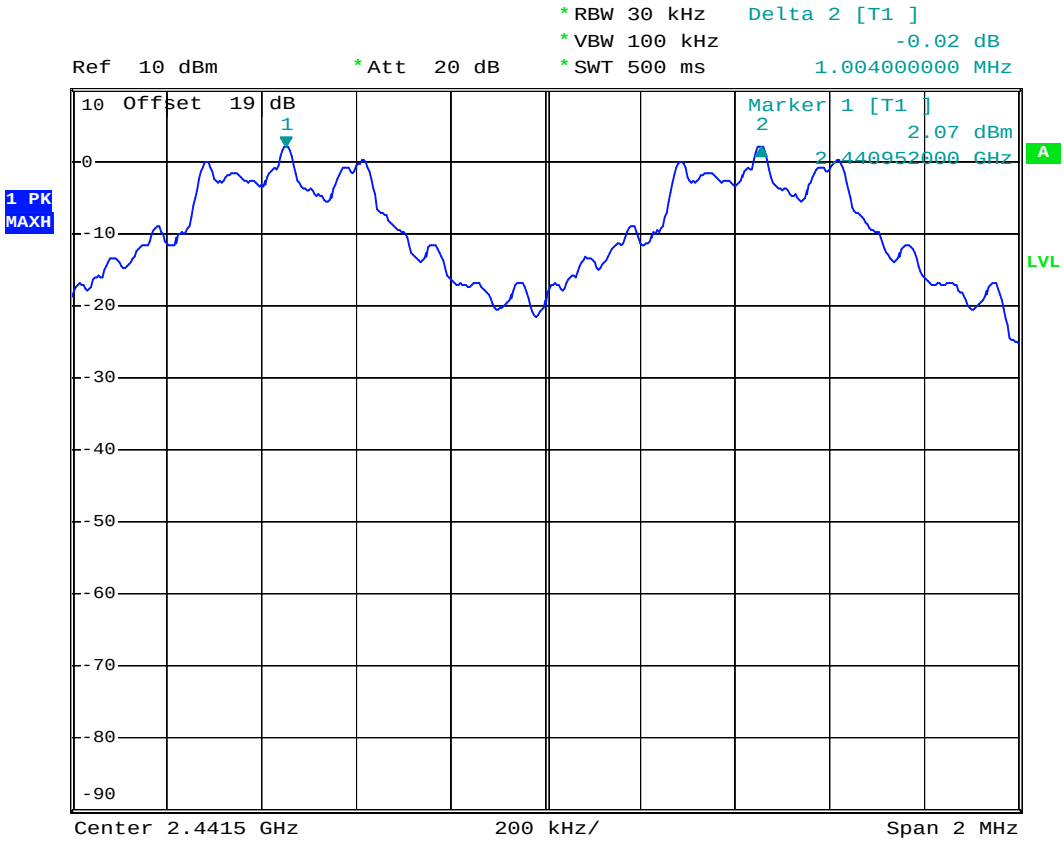
5.5.5 Hopping Channel Seperation

Mode 7



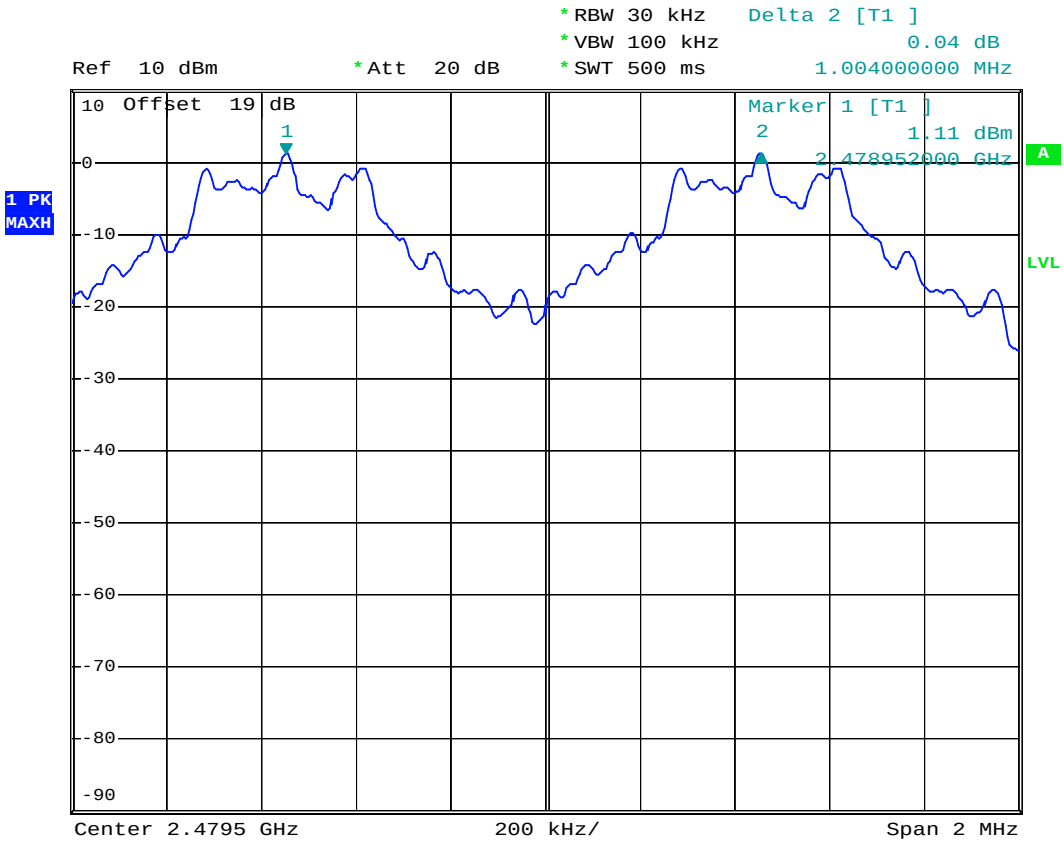
Date: 3.SEP.2007 01:35:59

Mode 8



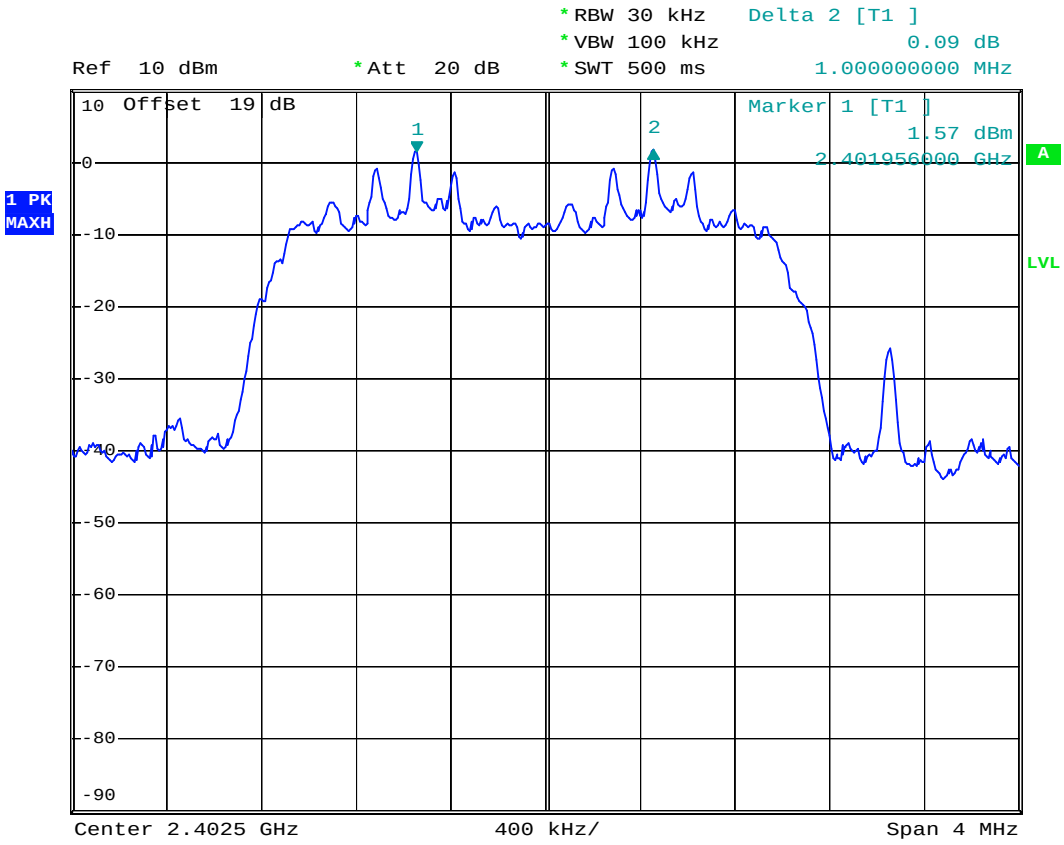
Date: 3.SEP.2007 01:35:15

Mode 9



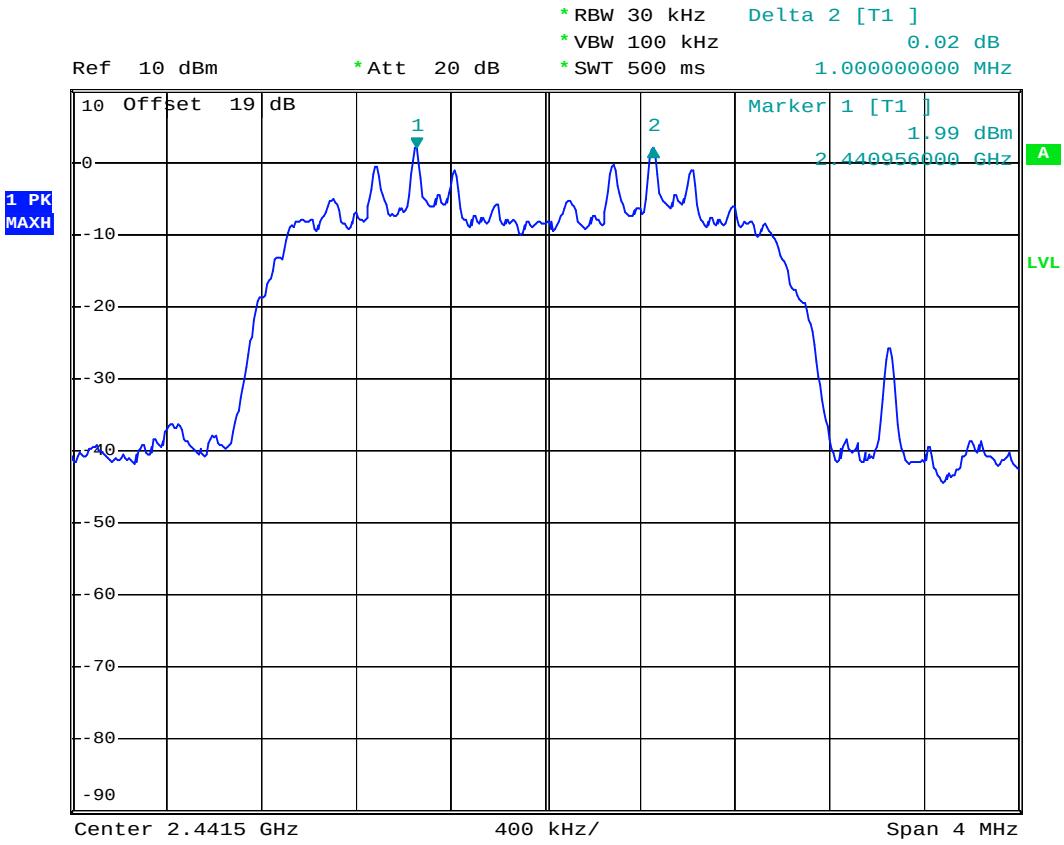
Date: 3.SEP.2007 01:34:16

Mode 10



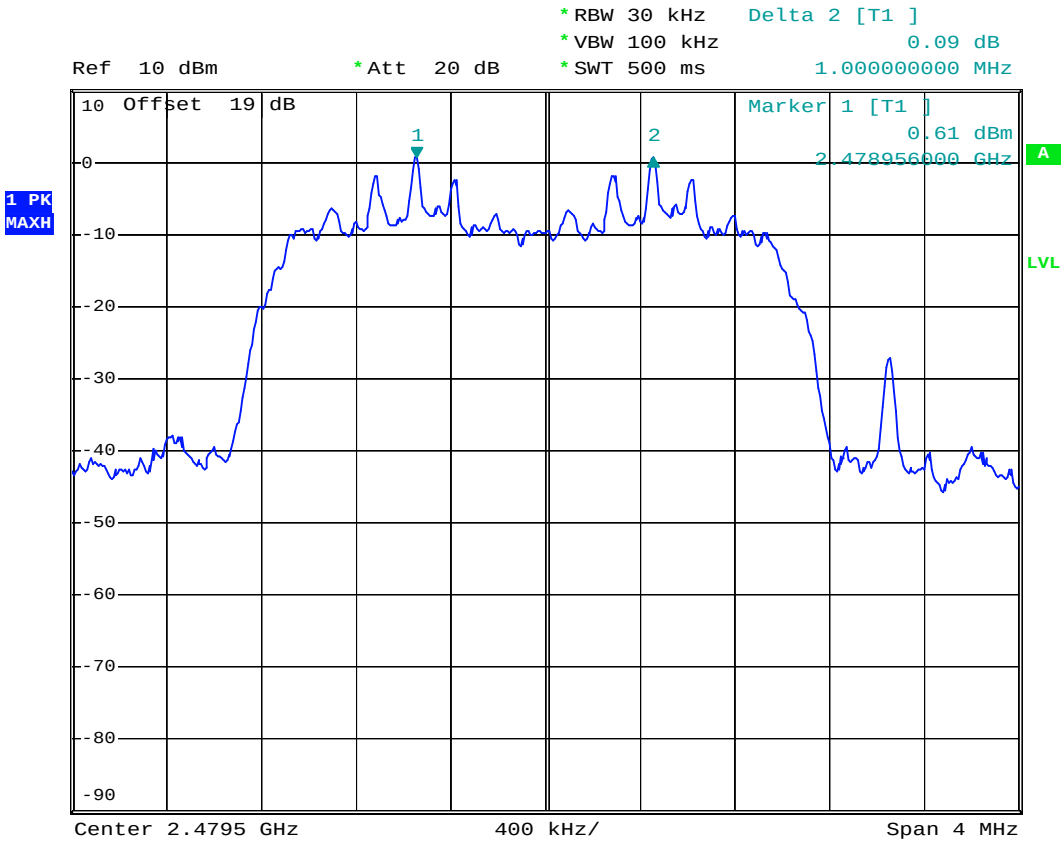
Date: 3.SEP.2007 00:52:06

Mode 11



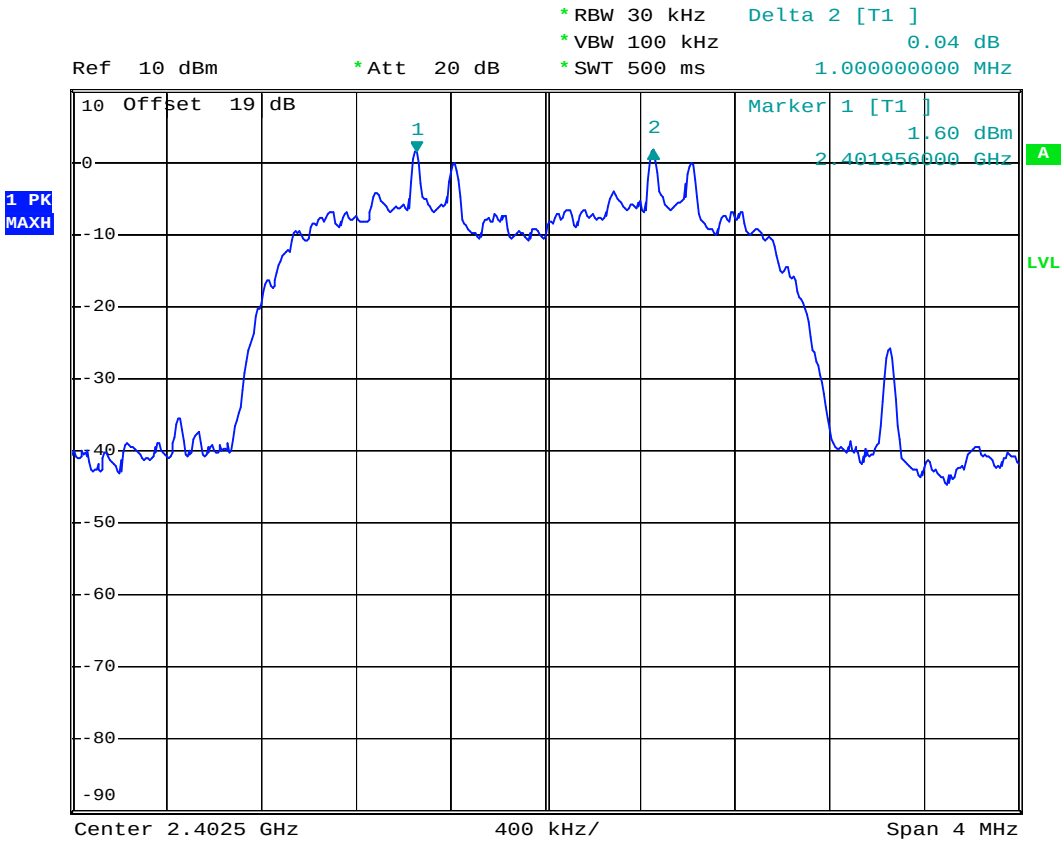
Date: 3.SEP.2007 00:48:04

Mode 12



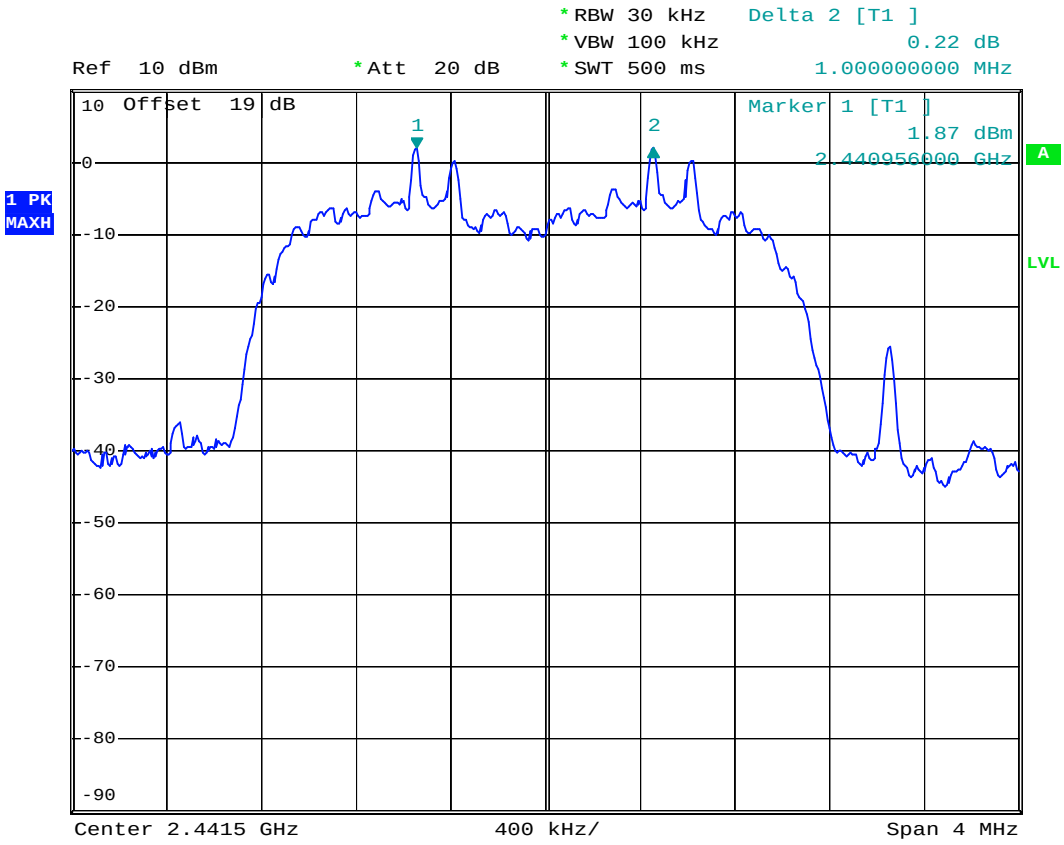
Date: 3.SEP.2007 00:44:16

Mode 13



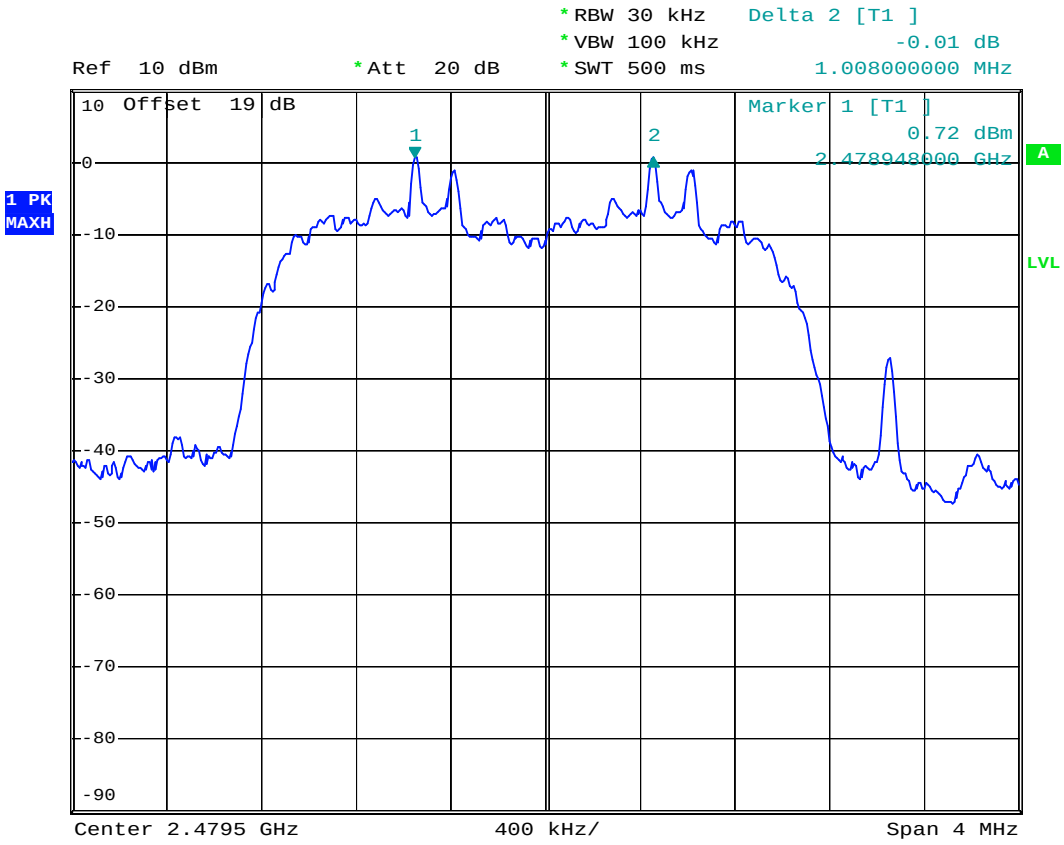
Date: 3.SEP.2007 00:50:37

Mode 14



Date: 3.SEP.2007 00:49:20

Mode 15



Date: 3.SEP.2007 00:42:32

5.6 Number of Hopping Frequency

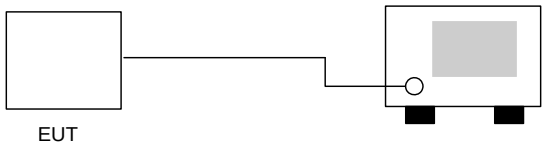
5.6.1 Measuring Instruments：

As described in chapter 6 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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

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

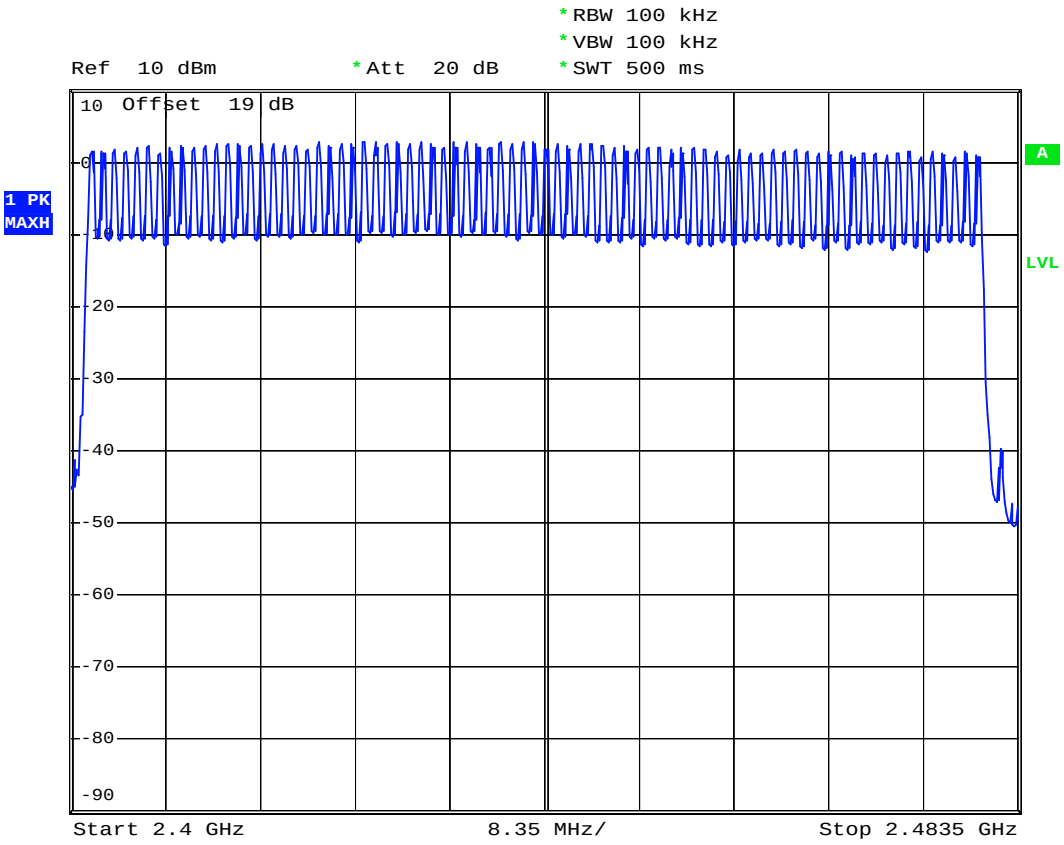
5.6.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(3Mbps)
- Temperature : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

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

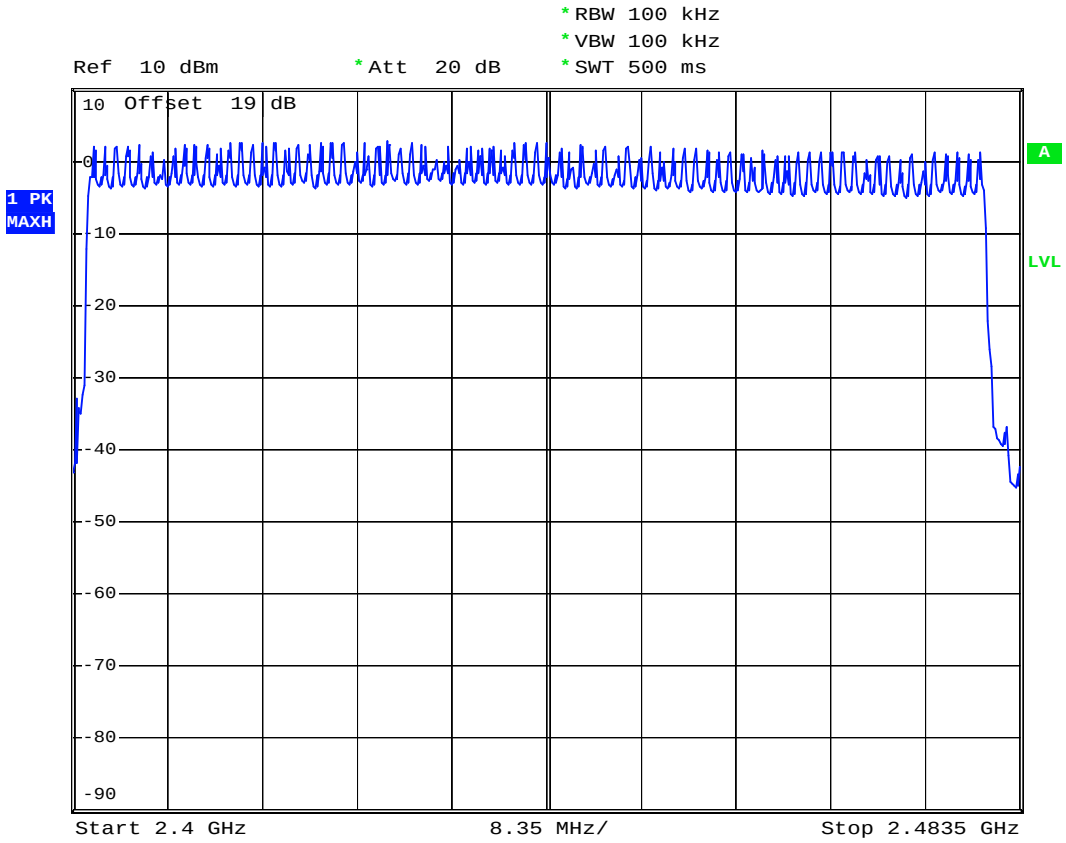
5.6.5 Number of Hopping Frequency

BT(1Mbps)



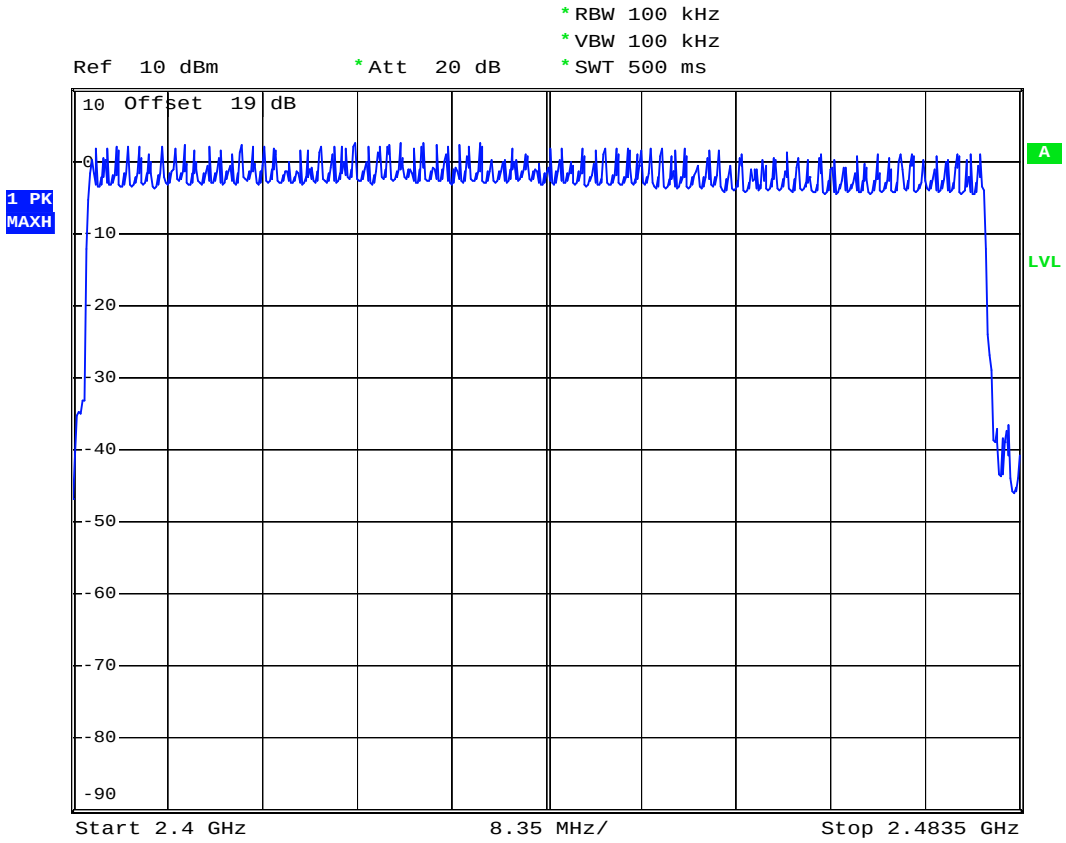
Date: 3.SEP.2007 01:51:44

BT-EDR(2Mbps)



Date: 3.SEP.2007 01:15:33

BT-EDR(3Mbps)



Date: 3.SEP.2007 01:19:14

5.7 Hopping Channel Bandwidth

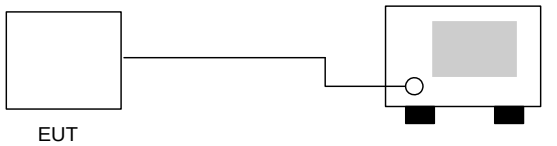
5.7.1 Measuring Instruments：

As described in chapter 6 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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	0.946	Mode 7
39	2441	0.944	Mode 8
78	2480	0.948	Mode 9

5.7.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(2Mbps)
- Temperature : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.232	Mode 10
39	2441	1.236	Mode 11
78	2480	1.236	Mode 12

5.7.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(3Mbps)
- Temperature : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.256	Mode 13
39	2441	1.252	Mode 14
78	2480	1.256	Mode 15

5.7.5 Hopping Channel Bandwidth

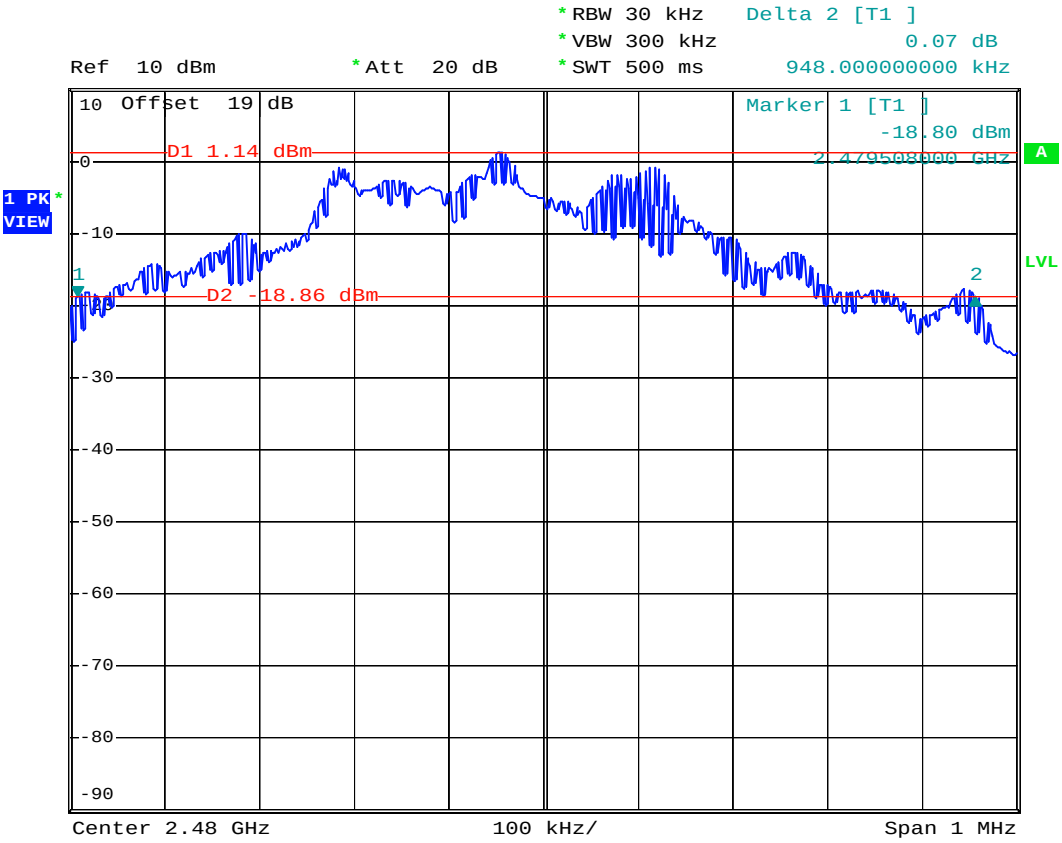
Mode 7

Date: 3.SEP.2007 01:27:42

Mode 8

Date: 3.SEP.2007 01:26:30

Mode 9



Date: 3.SEP.2007 01:25:08

Mode 10

Date: 2.SEP.2007 23:25:53

Mode 11

Date: 2.SEP.2007 23:23:58

Mode 12

Date: 3.SEP.2007 02:16:07

Mode 13

Date: 2.SEP.2007 23:27:15

Mode 14

Date: 3.SEP.2007 02:14:42

Mode 15

Date: 2.SEP.2007 23:19:48

5.8 Dwell Time of Each Frequency

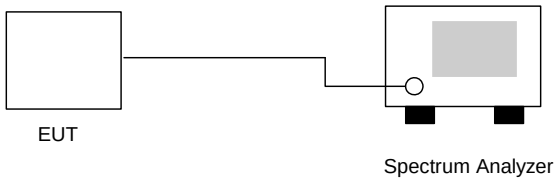
5.8.1 Measuring Instruments：

As described in chapter 6 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 : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.8	436	0.135	0.4
DH3	4.9	1706	0.264	0.4
DH5	2.9	2966	0.272	0.4

5.8.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(2Mbps)
- Temperature : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9	448	0.127	0.4
DH3	4.9	1720	0.266	0.4
DH5	3	3000	0.284	0.4

5.8.4 Test Result：See spectrum analyzer plots below

- Application Type : BT-EDR(3Mbps)
- Temperature : 27~28℃
- Relative Humidity : 51~53%
- Test Enginner : Sun

Ch39

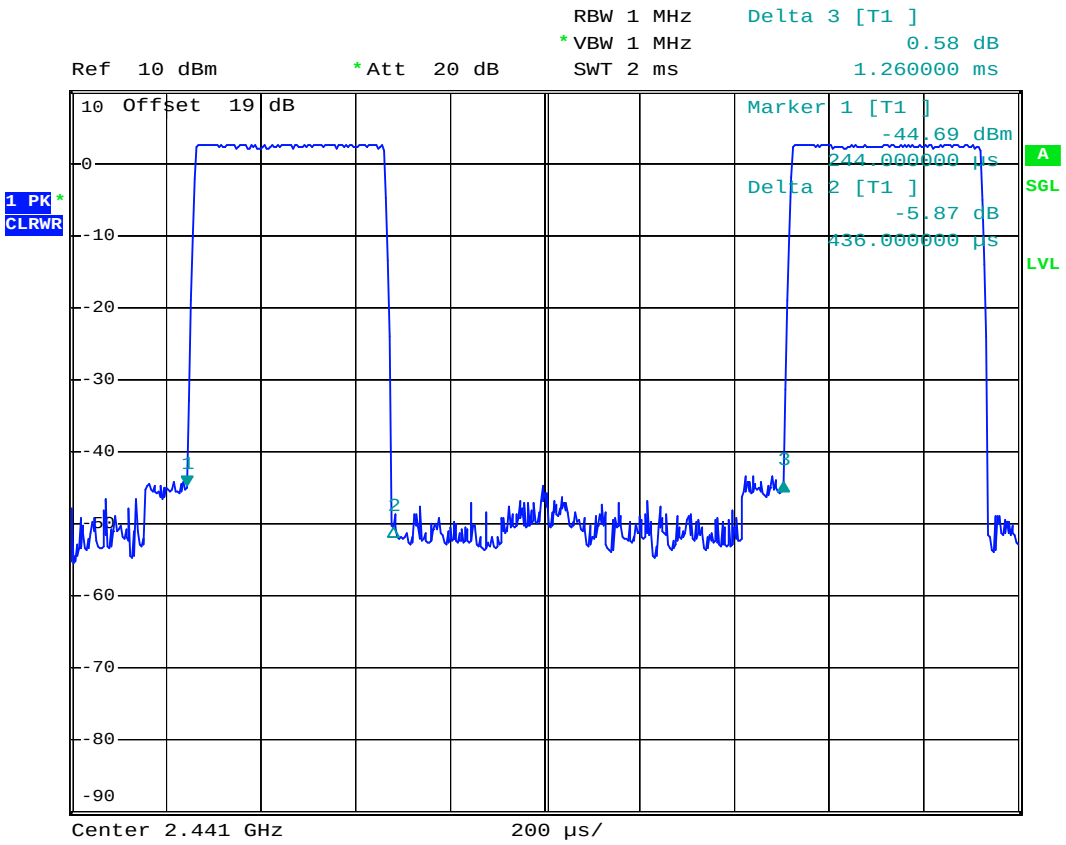
Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.8	448	0.125	0.4
DH3	4.8	1710	0.259	0.4
DH5	3.2	2980	0.301	0.4

※ Remark:

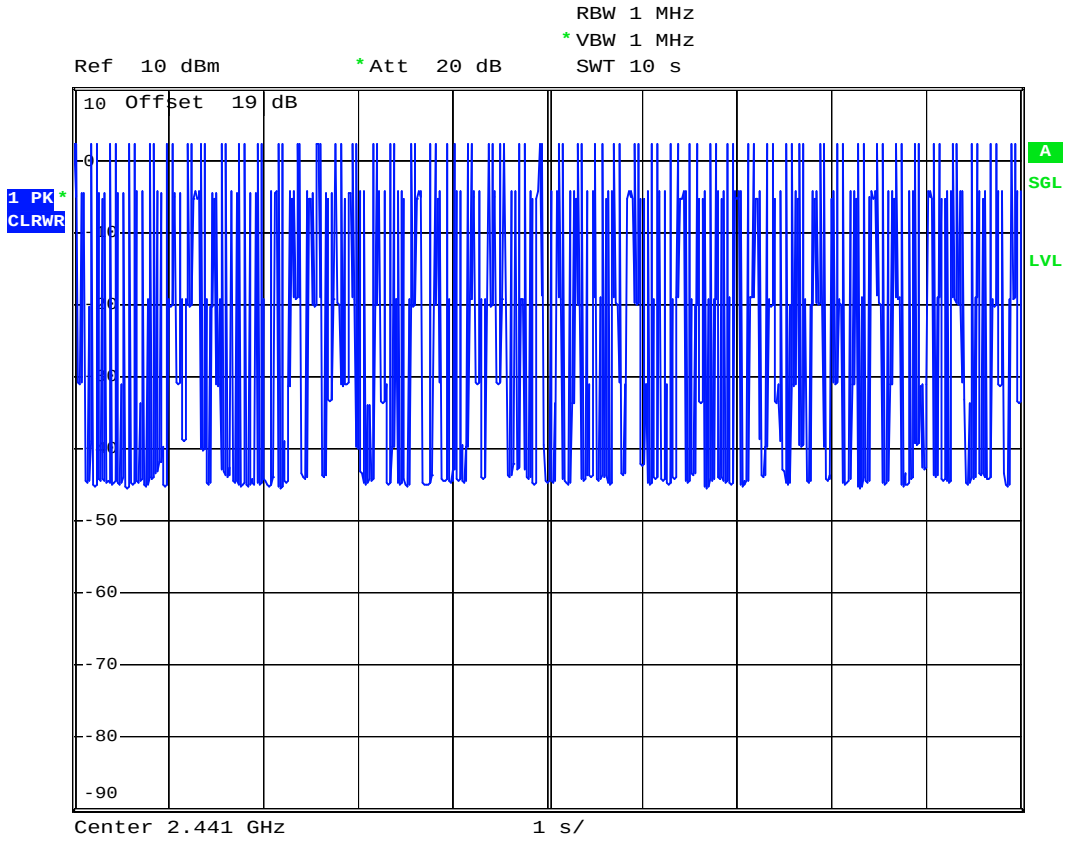
1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79 channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

5.8.5 Dwell Time

BT(1Mbps)_DH1 (CH39)

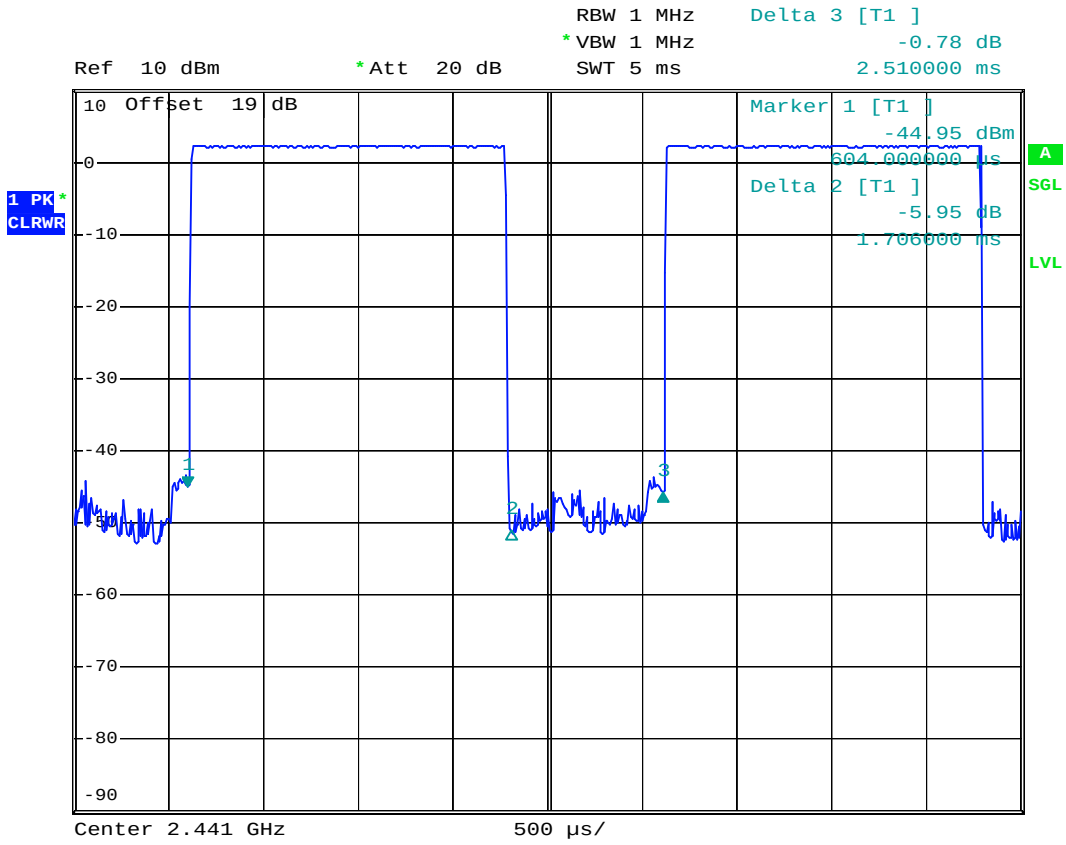


Date: 3.SEP.2007 01:38:01

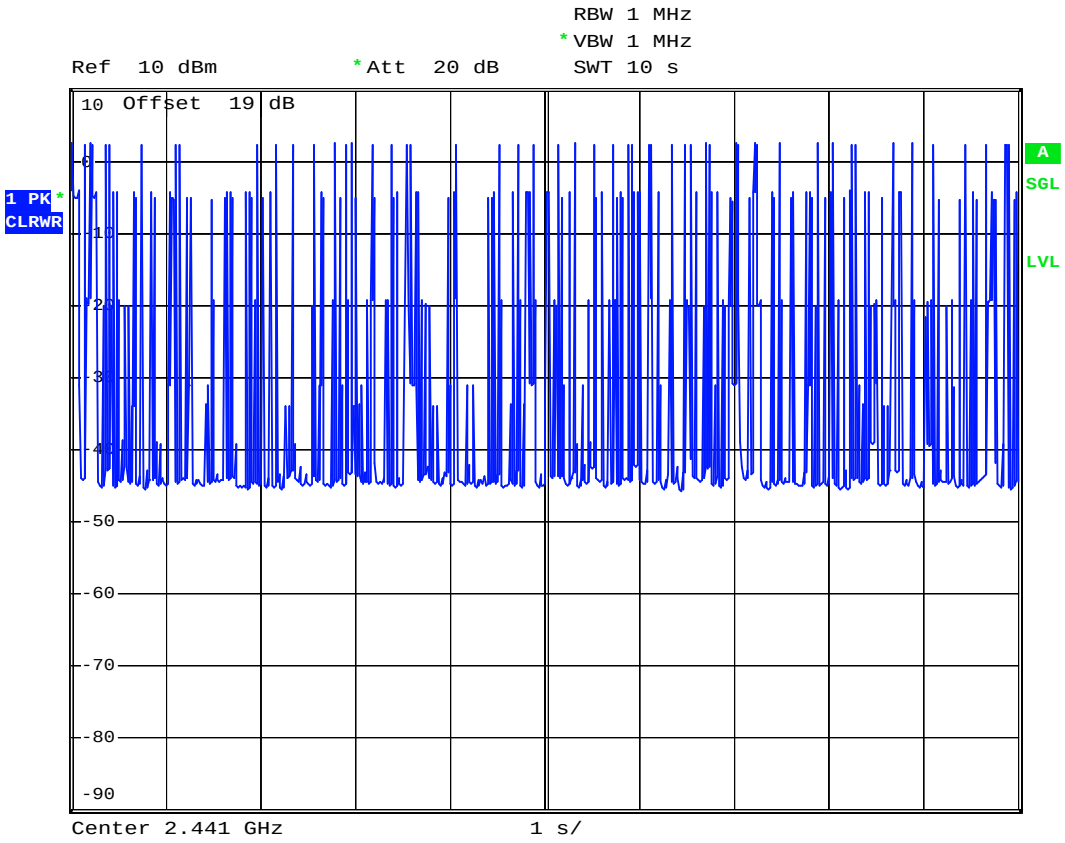


Date: 3.SEP.2007 01:41:50

BT(1Mbps)_DH3 (CH39)

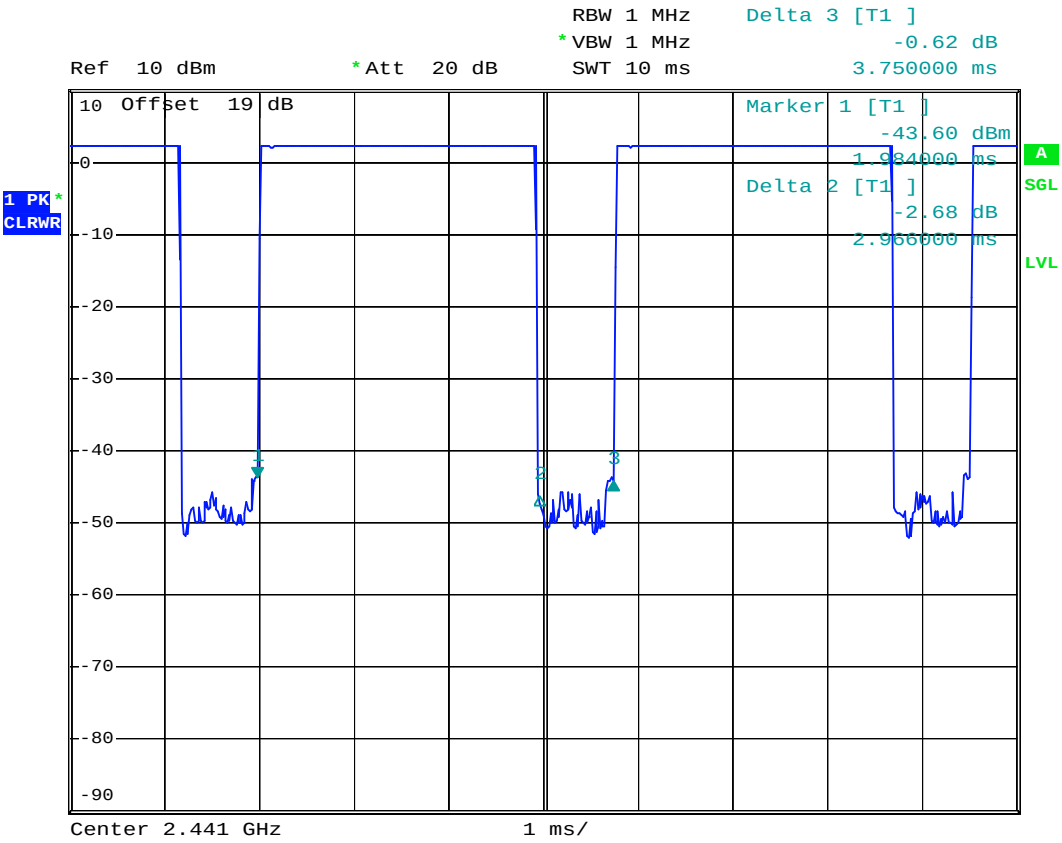


Date: 3.SEP.2007 01:38:59

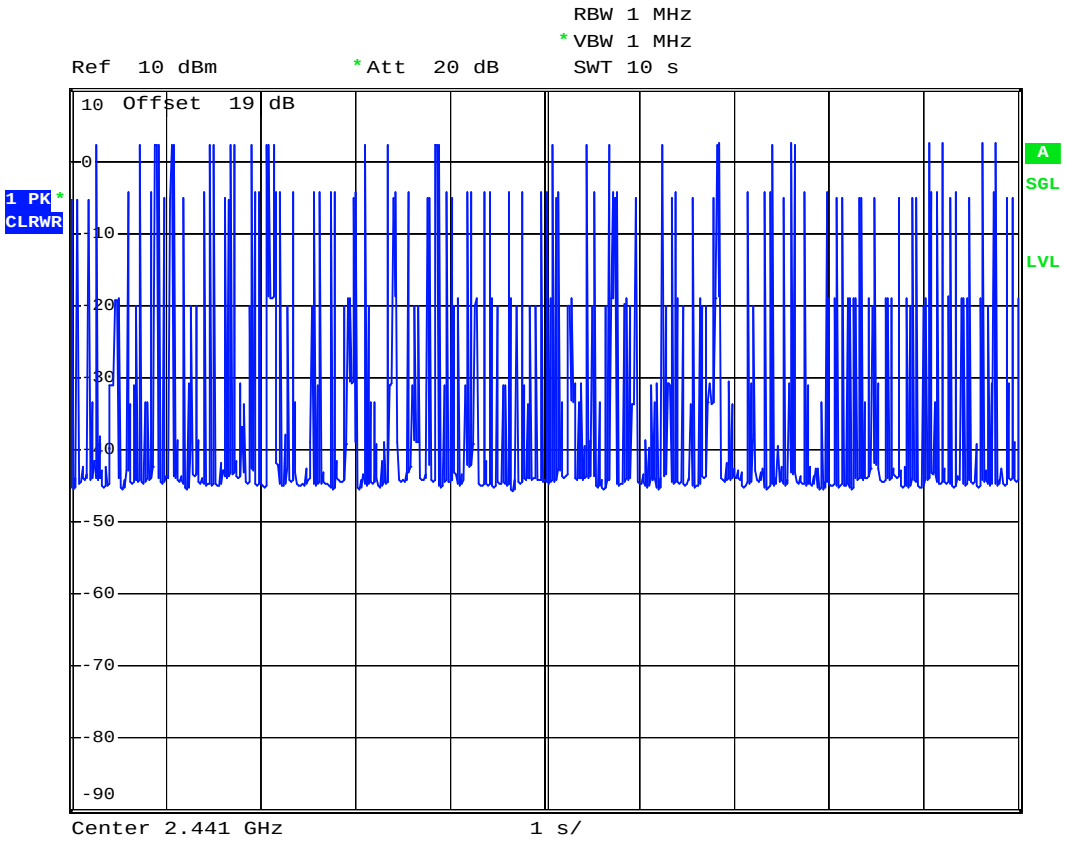


Date: 3.SEP.2007 01:42:48

BT(1Mbps)_DH5 (CH39)



Date: 3.SEP.2007 01:39:49



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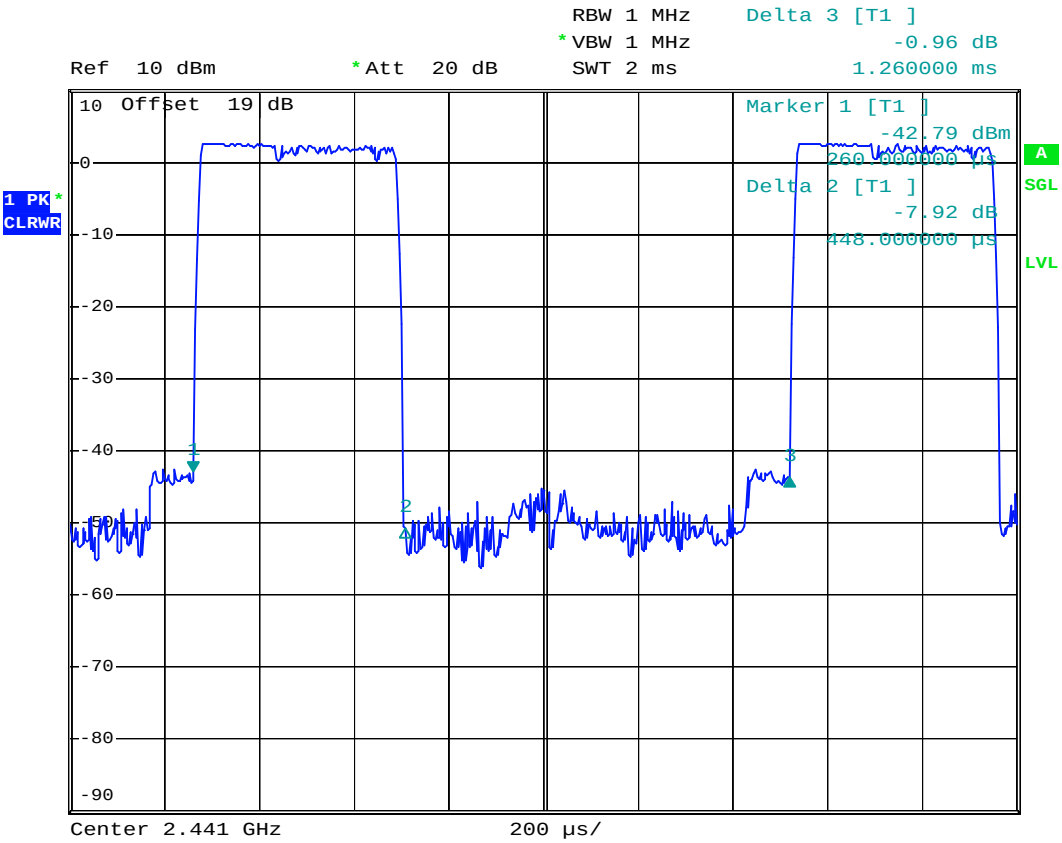
BT-EDR(2Mbps)_DH1(CH39)



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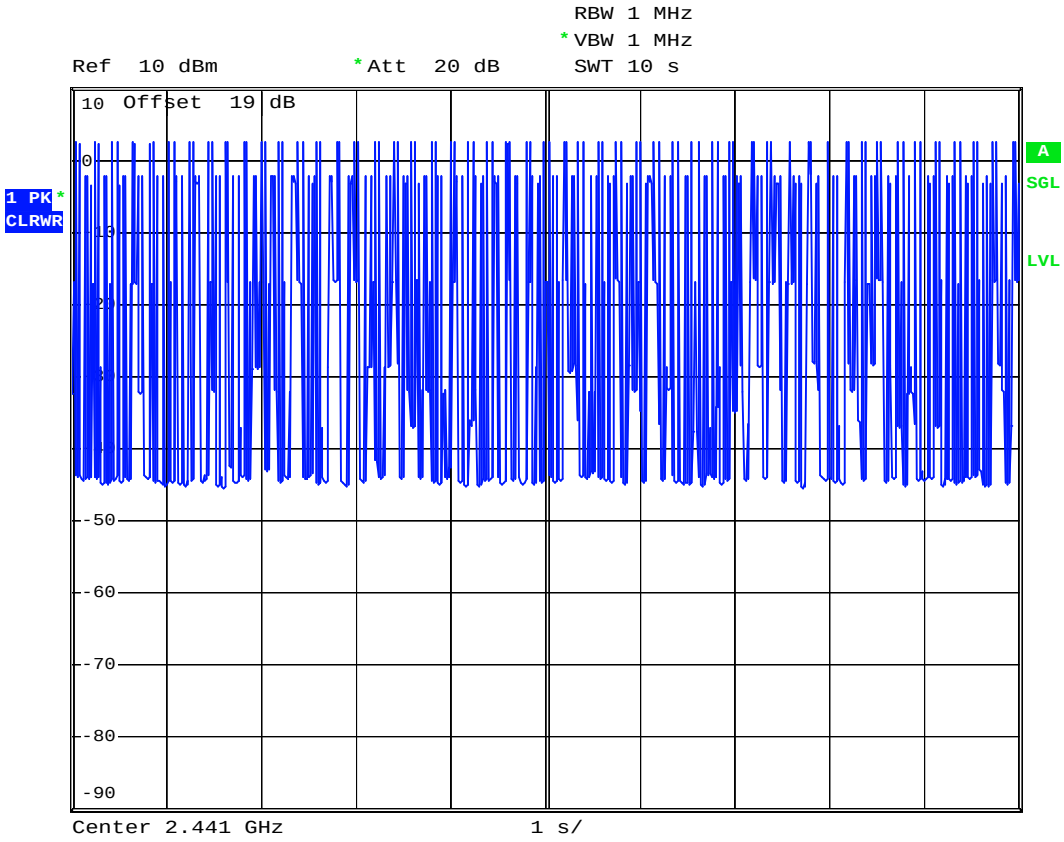

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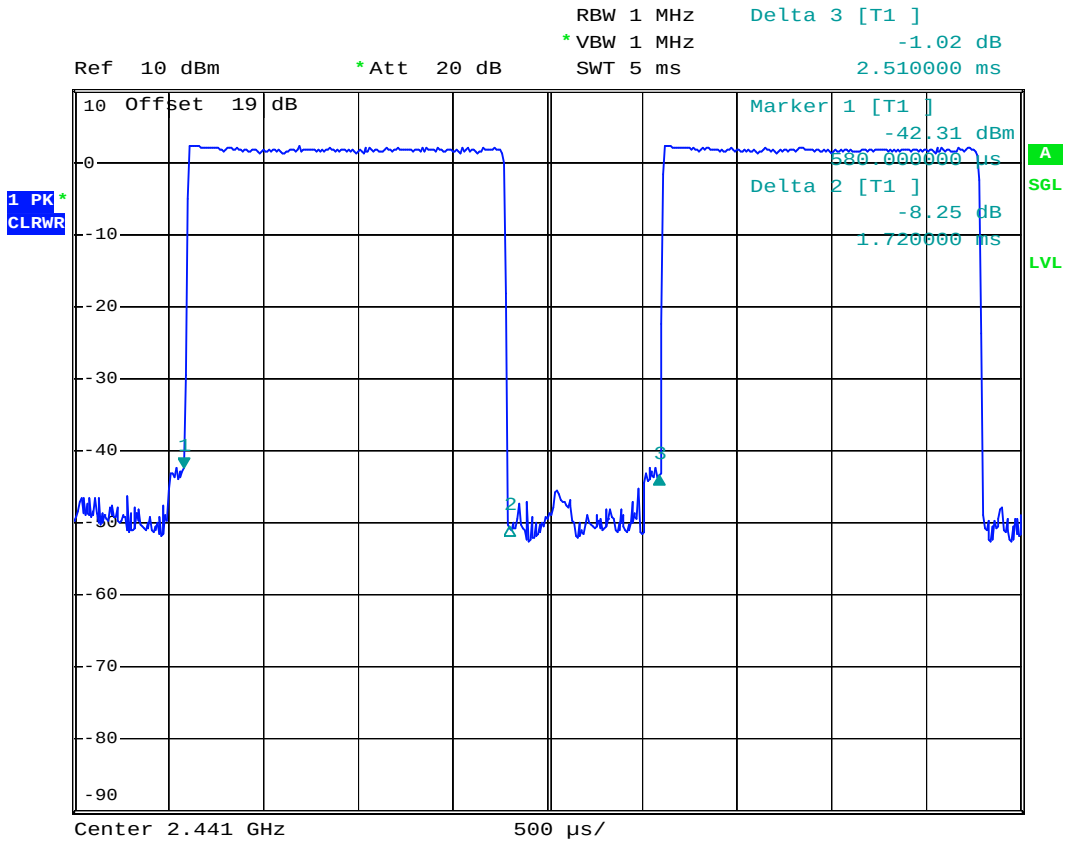
BT-EDR(2Mbps)_DH3 (CH39)



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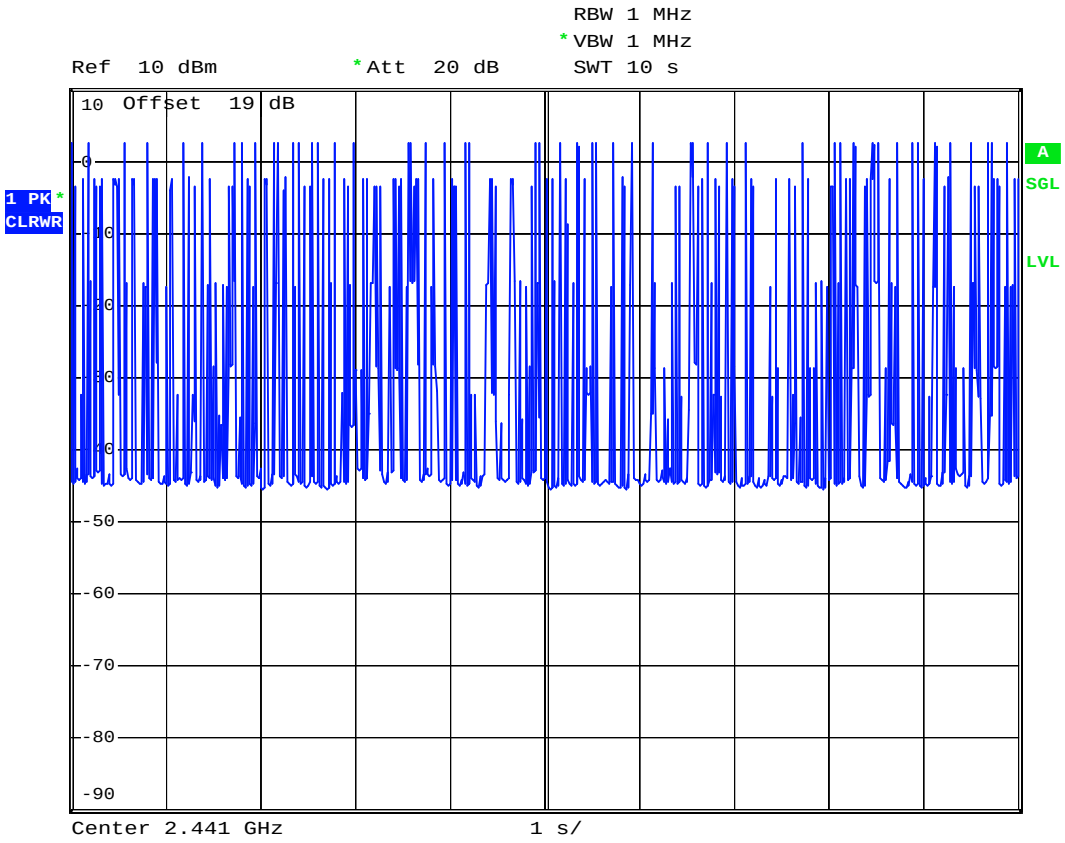

Date: 3.SEP.2007 01:07:54