



FCC Test Report

for

47 CFR Part 15 Subpart C

Equipment : Quad-band Smart Phone
Trade Name : ASUS
Model No. : P527
FCC ID : MSQP527
Filing Type : Certification
Applicant : ASUSTek COMPUTER INC.
4F., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

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- The data shown in this test report were carried out on Sep. 30, 2007 at **Sporton International Inc. LAB.**
- Report No.: FR781408, Report Version: Rev. 01.

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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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1. General Description of Equipment under Test

1.1 Applicant

ASUSTek COMPUTER INC.

4F., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

1.2 Manufacturer

1. ASUSTeK Computer Inc.

No. 5, Shing Yeh Street, 333 Kwei Shan Hsiang, Taoyuan Hsien, Taiwan

2. ProTek (Shanghai) Ltd.

No.3768, Xiu Yan Road, Nanhui District, 201315 Shanghai, People's Republic of China

3. MainTek Computer (Suzhou) Co., Ltd.

No. 233 Jing Feng Road · 215011 Suzhou New District, Jiangsu, People's Republic of China

1.3 Basic Description of Equipment under Test

Equipment		Quad-band Smart Phone
Trade Name		ASUS
Model Name		P527
AC Adapter	Brand Name	TPT
	Model Name	JSP050090UU
	ASUS P/N	04G267013800
	Power Rating	I/P:100-240Vac, 50-60Hz, 0.3A; O/P: 5Vdc, 0.9A, 4.5W
	AC Power Cord Type	1.65 meter shielded cable without ferrite non-core
Car Charger	Brand Name	L&K
	Model Name	G12PCL-530-0011
	ASUS P/N	04G267011910
	Power Rating	I/P: 12V/24V; O/P: 5V, 900mA
	Power Cord Type	0.6 meter non-shielded cable without ferrite non-core
Battery	Brand Name	ASUS
	Model Name	SBP-06
	ASUS P/N	07G016043459
	Rating	3.7Vdc, 1300mAh
	Type	Li-ion
Earphone	Brand Name	ASUS
	ASUS P/N	04G170012520
	Signal line Type	1.8 meter non-shielded cable without ferrite non-core
USB Cable	Brand Name	Foxconn
	ASUS P/N	14G000506200
	Signal line Type	0.7 meter shielded cable with ferrite core
Holster	Brand Name	ASUS
	ASUS P/N	15G180904400
	Color	Black

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) : Pi/4-DQPSK Bluetooth EDR (3Mbps) : 8-DPSK		
2. Number of Channels	WLAN : 11 Channels Bluetooth : 79 Channels		
3. Frequency Band	WLAN : 2400MHz ~ 2483.5MHz Bluetooth : 2400MHz ~ 2483.5MHz		
4. Carrier Frequency of each channel	WLAN : $2412 + (n - 1) * 5\text{MHz}$; $n = 1 - 11$ Bluetooth : $2402 + n * 1\text{MHz}$, $n = 0 \sim 78$		
5. Channel Spacing	WLAN : 5MHz Bluetooth : 1MHz		
6. Maximum Output Power to Antenna (Normal Condition)	WLAN: 802.11b : 20.57 dBm / 802.11g: 22.81 dBm Bluetooth (1Mbps): 1.35 dBm Bluetooth EDR (2Mbps) : 2.21 dBm Bluetooth EDR (3Mbps) : 2.45 dBm		
7. Type of Antenna Connector	N/A		
8. Antenna Type	WLAN : PIFA Antenna Bluetooth : PIFA Antenna		
9. Antenna Gain	WLAN : -3 dBi BT : -3 dBi		
10. HW Version :	Rev: 1.02		
11. SW Version :	3.12.070809.000S-FTA		
12. Function Type	Transmitter		Transceiver V

2 Test Configuration of Equipment under Test

2.1 Test Manner

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

2.2 Test Mode

Application			
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: GSM850 Idle Mode + BT Link + WLAN Link + MPEG4 + Camera + Earphone + GPS Rx + Adapter		
	Mode 2: GSM850 Idle Mode + BT Link + WLAN Link + MPEG4 + Camera + Earphone + GPS Rx + USB Link		
	Mode 3: PCS1900 Idle Mode + BT Link + WLAN Link + MPEG4 + Camera + Earphone + GPS Rx + USB Link		
	Mode 4: EDGE Idle Mode + BT Link + WLAN Link + MPEG4 + Camera + Earphone + GPS Rx + USB Link		

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

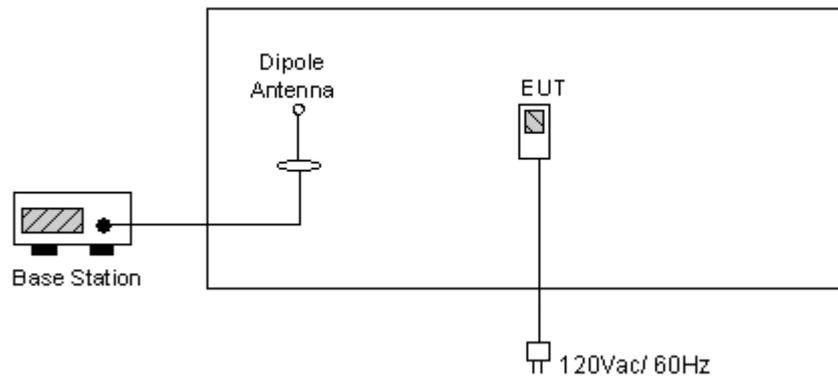
2.3 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Power Cord / Cable
1.	Notebook	DELL	D400	E2K24GBRL	Unshielded, 1.2m
2.	Base Station	R&S	CMU200	N/A	Unshielded, 1.8m
3.	WLAN AP	SMC	SMC-100	HEDWG4005ACC	Unshielded, 1.8m
4.	BT Base Station	Anritus	8852A	N/A	Unshielded, 1.8m
5.	Bluetooth Earphone	Engotech	ET-BH111	PQY471087	N/A
6.	RS-232 Mouse	State	MS-303	DoC	Shielded, 1.2m

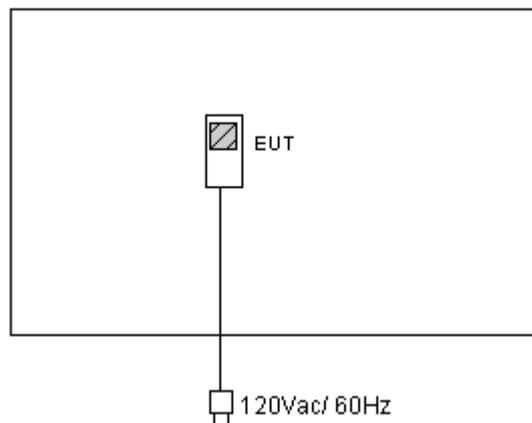
2.4 Connection Diagram of Test System

<Radiated Emission >

Bluetooth Tx Mode

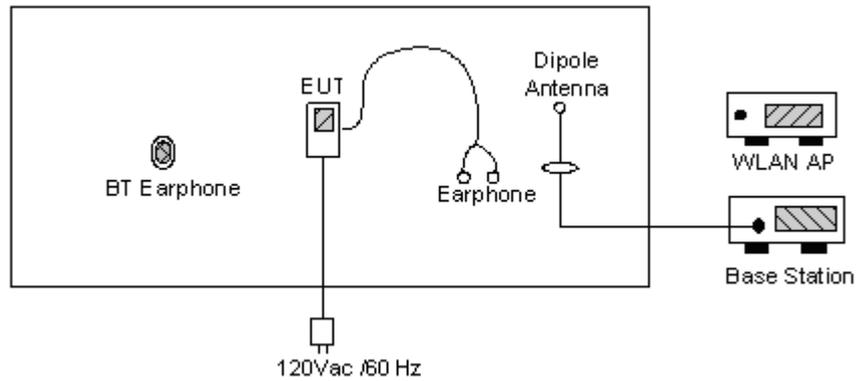


WLAN Tx Mode

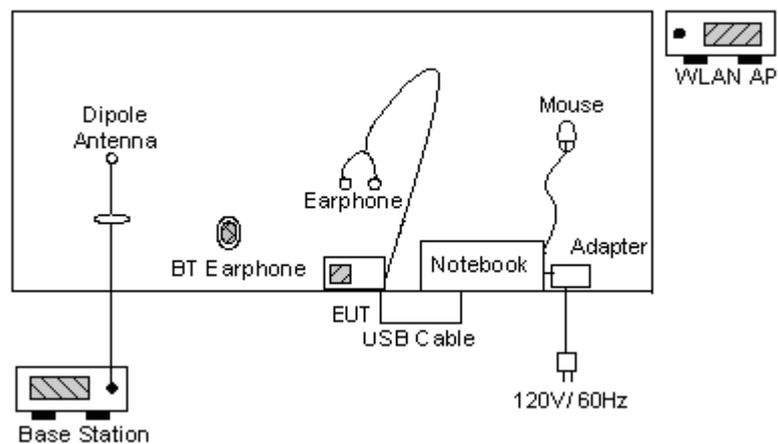


<Conducted Emission>

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, 03CH06-HY

4.1 Test Voltage

AC 120V / 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2003

4.3 Test Compliance

47 CFR Part 15 Subpart C

4.4 Frequency Range

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

4.5 Test Distance

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



5. Test Data and Test Result

5.1 List of Measurements and Examinations

The Emission Mode: Wireless LAN

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

**The Emission Mode: Bluetooth**

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

5.2 6dB Bandwidth Measurement

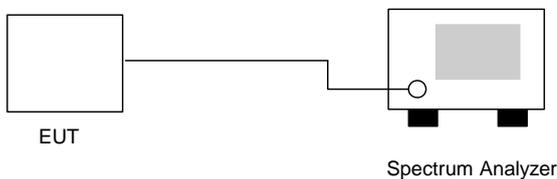
5.2.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.2.2 Test Procedure :

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

5.2.3 Test Setup Layout :



5.2.4 Test Result :

Application Type : WLAN 802.11b/g

Temperature : 26~28°C

Relative Humidity : 49~51%

Test Engineer : Sun

802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	10.08	> 0.5MHz	Mode 1
06	2437	10.08	> 0.5MHz	Mode 2
11	2462	10.08	> 0.5MHz	Mode 3

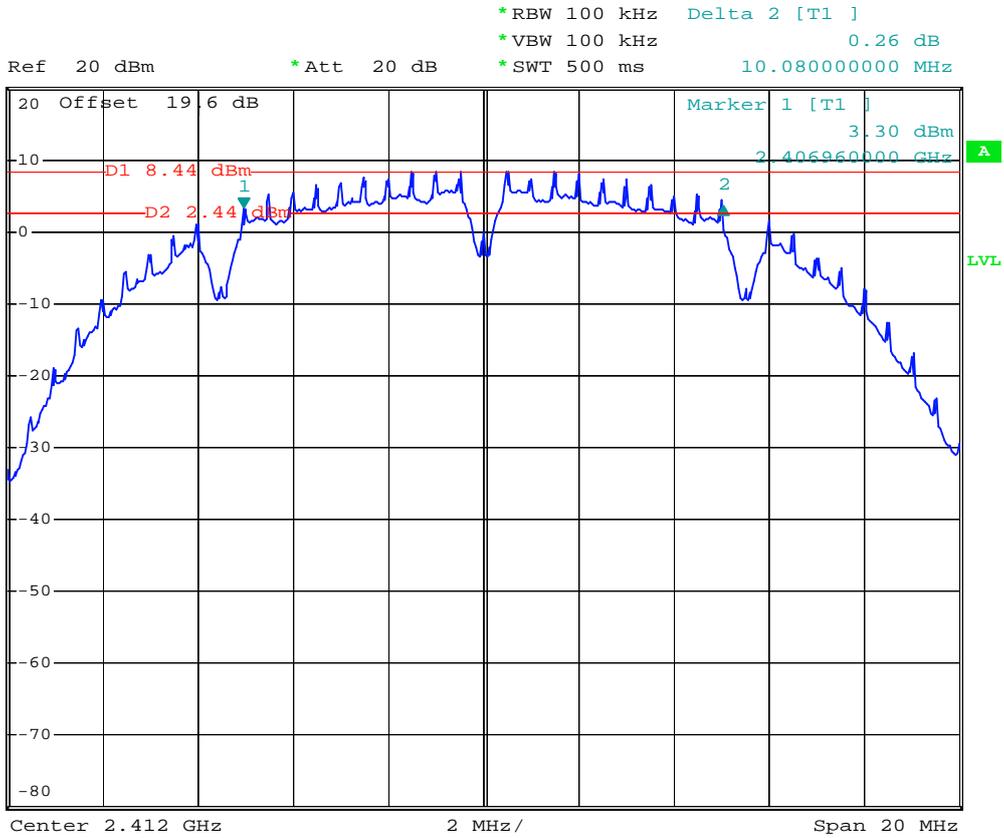
802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.36	> 0.5MHz	Mode 4
06	2437	16.32	> 0.5MHz	Mode 5
11	2462	16.36	> 0.5MHz	Mode 6



5.2.5 6dB Bandwidth

Mode 1



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Mode 2

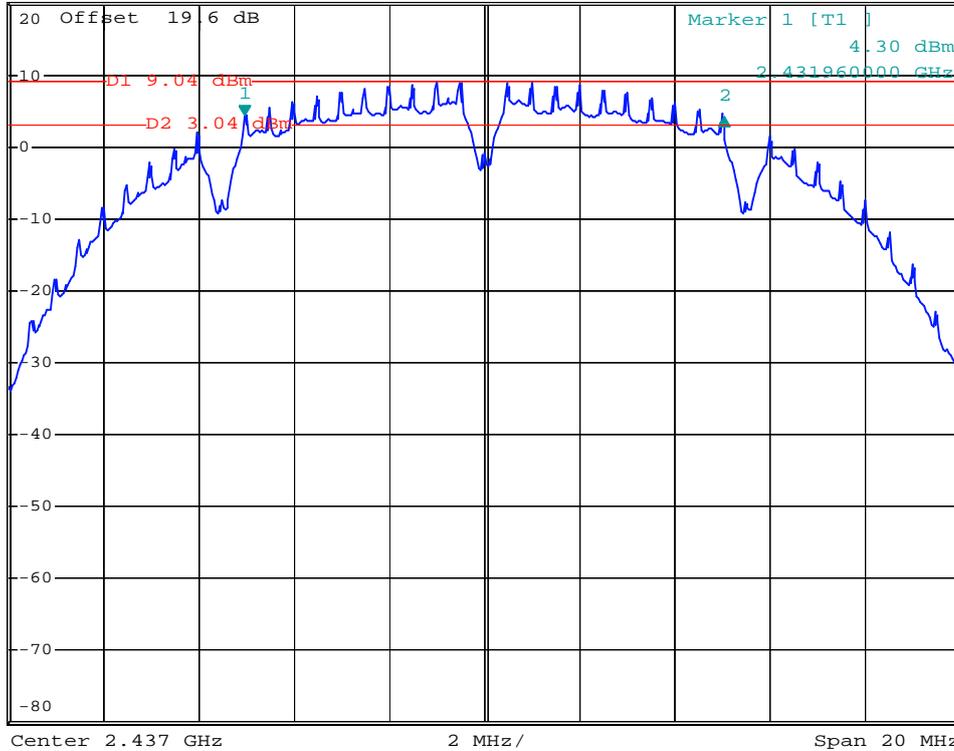


*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz -0.27 dB
 *SWT 500 ms 10.08000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK VIEW



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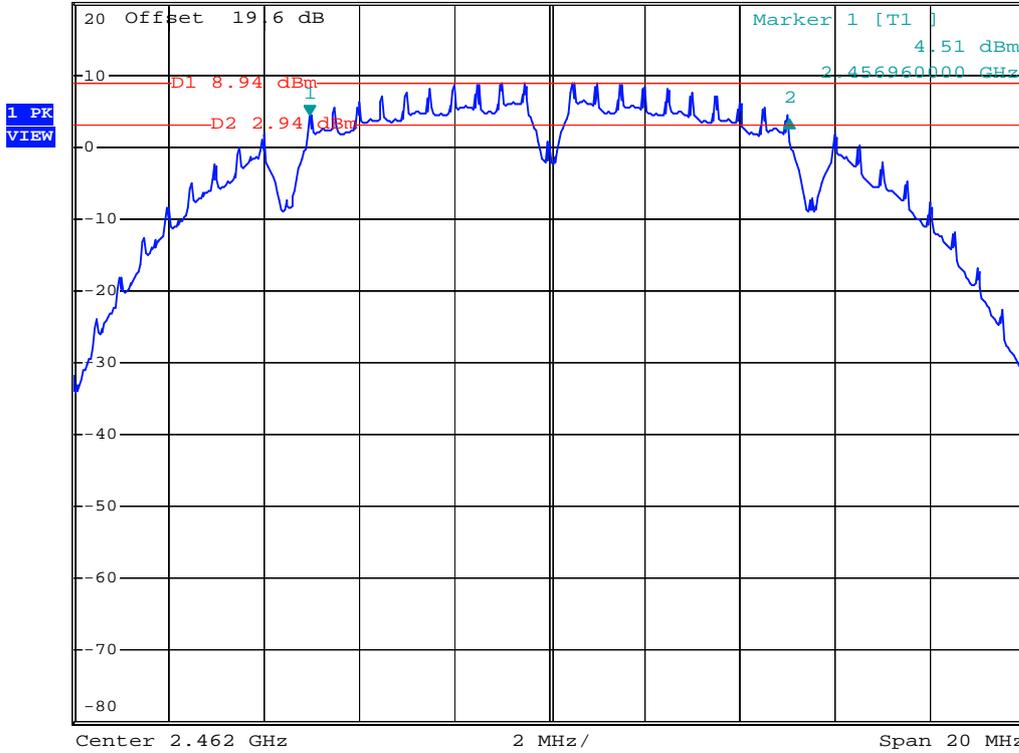
Mode 3



*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz -0.77 dB
 *SWT 500 ms 10.08000000 MHz

Ref 20 dBm

*Att 20 dB



Date: 15.SEP.2007 06:30:26



Mode 4

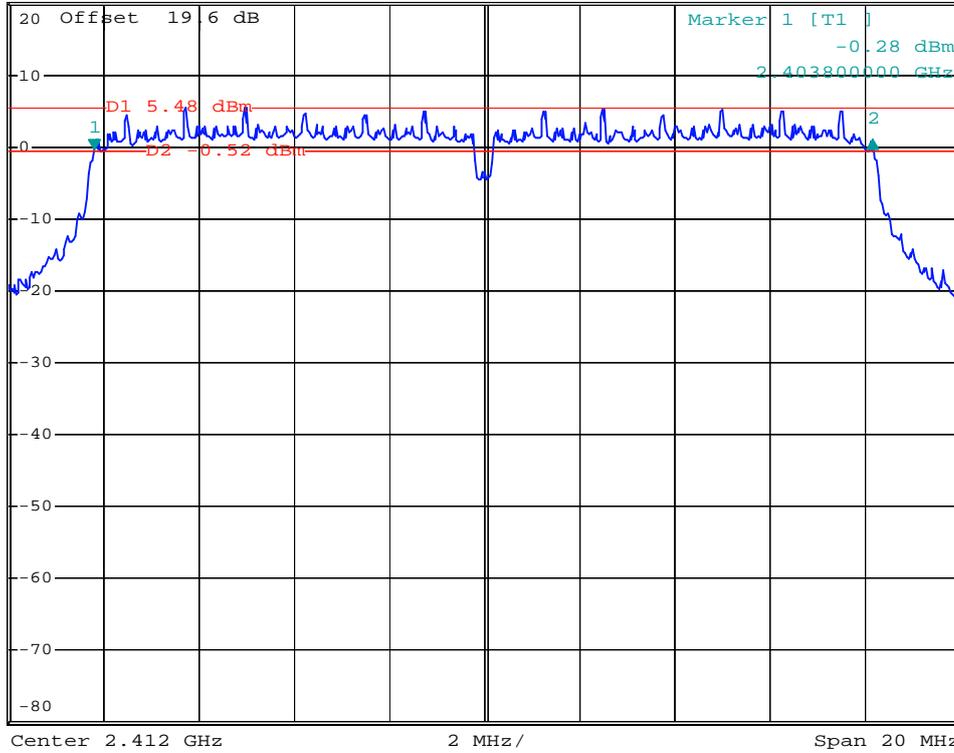


*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz 1.24 dB
 *SWT 500 ms 16.36000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
VIEW



Date: 15.SEP.2007 06:35:33



Mode 5

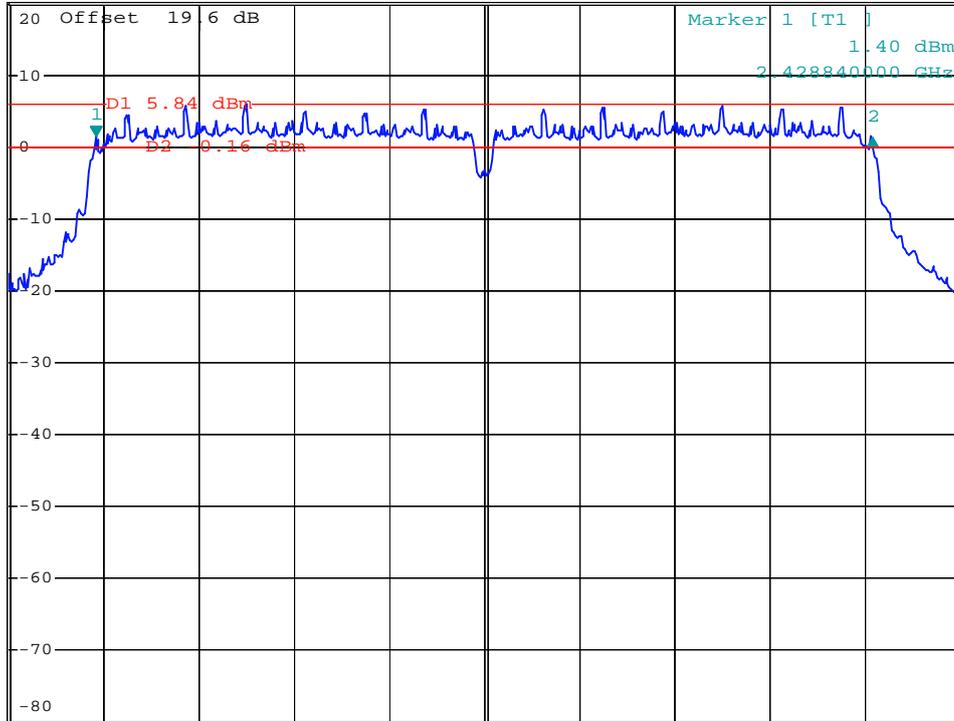


*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz -0.13 dB
 *SWT 500 ms 16.32000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK VIEW



Center 2.437 GHz

2 MHz/

Span 20 MHz

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Mode 6

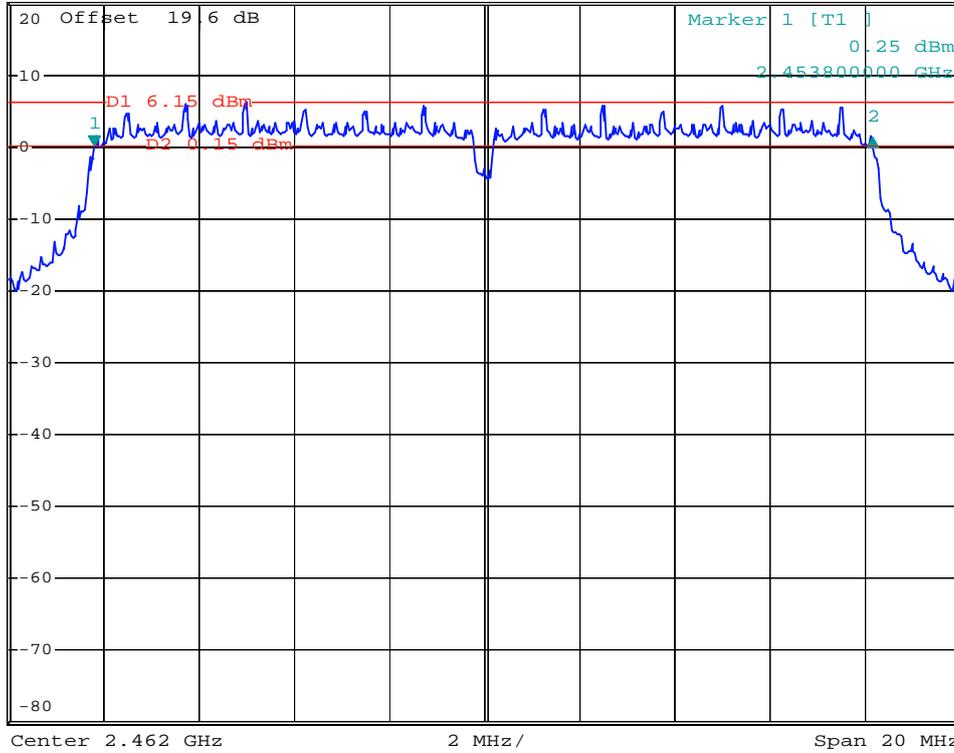


*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz 0.95 dB
 *SWT 500 ms 16.36000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK VIEW



Date: 15.SEP.2007 06:32:39

5.3 Power Spectral Density Measurement

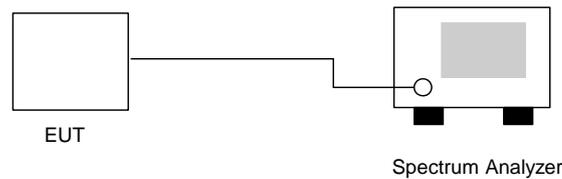
5.3.1 Measuring Instruments :

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 : 26~28°C
Relative Humidity : 49~51%
Test Enginner : Sun

802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-5.01	8	Mode 1
06	2437	-4.63	8	Mode 2
11	2462	-4.48	8	Mode 3

802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-7.95	8	Mode 4
06	2437	-7.65	8	Mode 5
11	2462	-7.09	8	Mode 6



5.3.5 Power Spectral Density

Mode 1

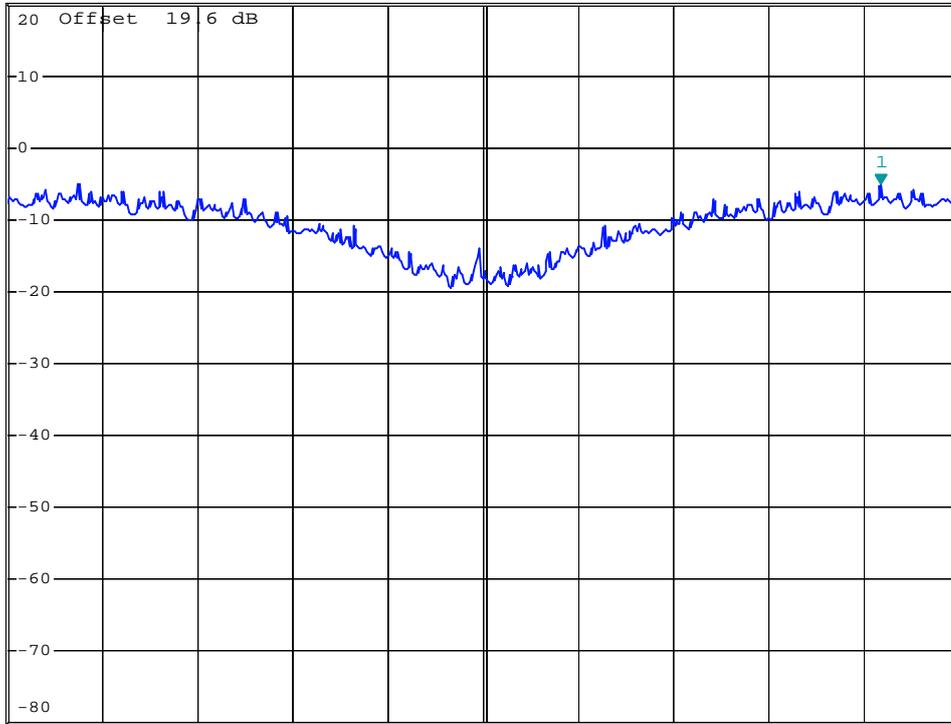


*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -5.01 dBm
*SWT 500 s 2.412627000 GHz

Ref 20 dBm

*Att 20 dB

1 PK*
CLRWR



Date: 15.SEP.2007 07:39:02



Mode 2

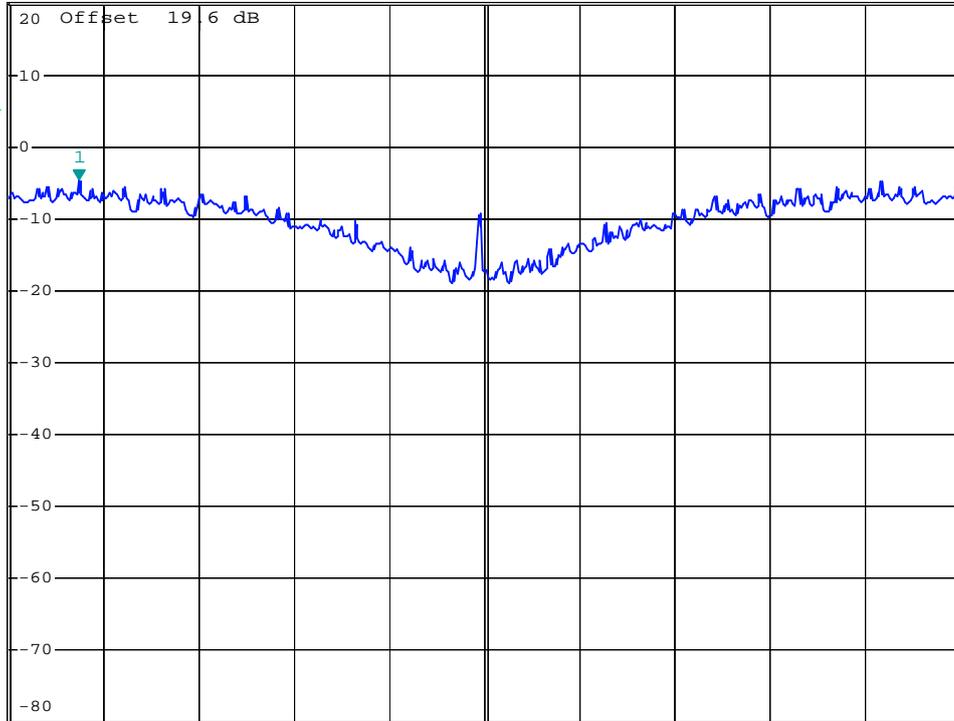


*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -4.63 dBm
*SWT 500 s 2.436361000 GHz

Ref 20 dBm

*Att 20 dB

1 PK*
CLRWR



Center 2.437 GHz

150 kHz/

Span 1.5 MHz

Date: 15.SEP.2007 07:48:16



Mode 3

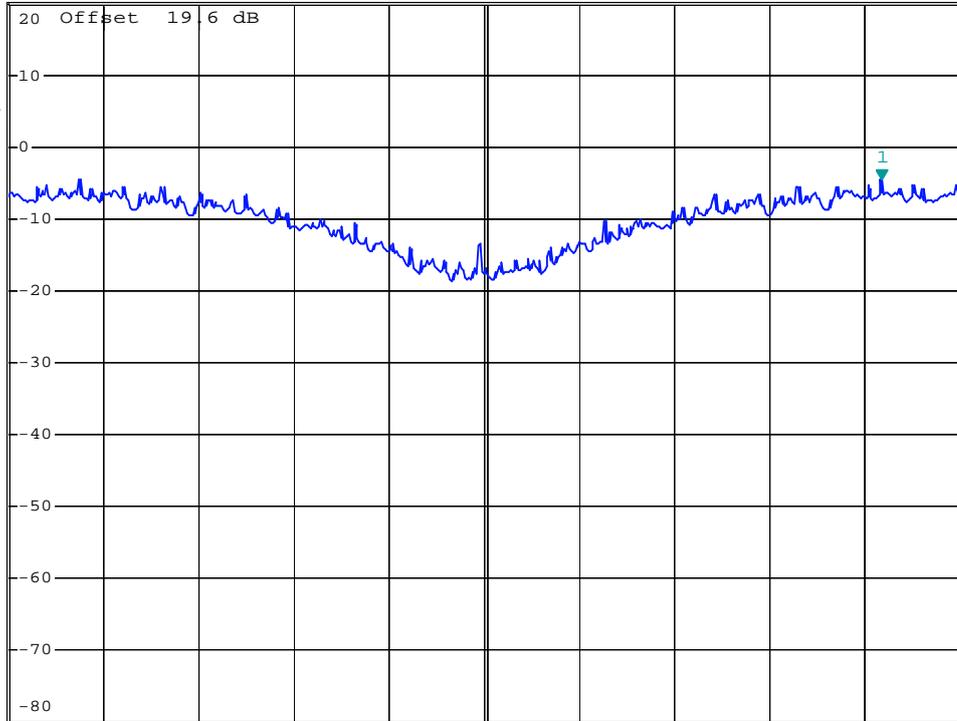


*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -4.48 dBm
*SWT 500 s 2.462627000 GHz

Ref 20 dBm

*Att 20 dB

1 PK*
CLRWR



Center 2.462 GHz

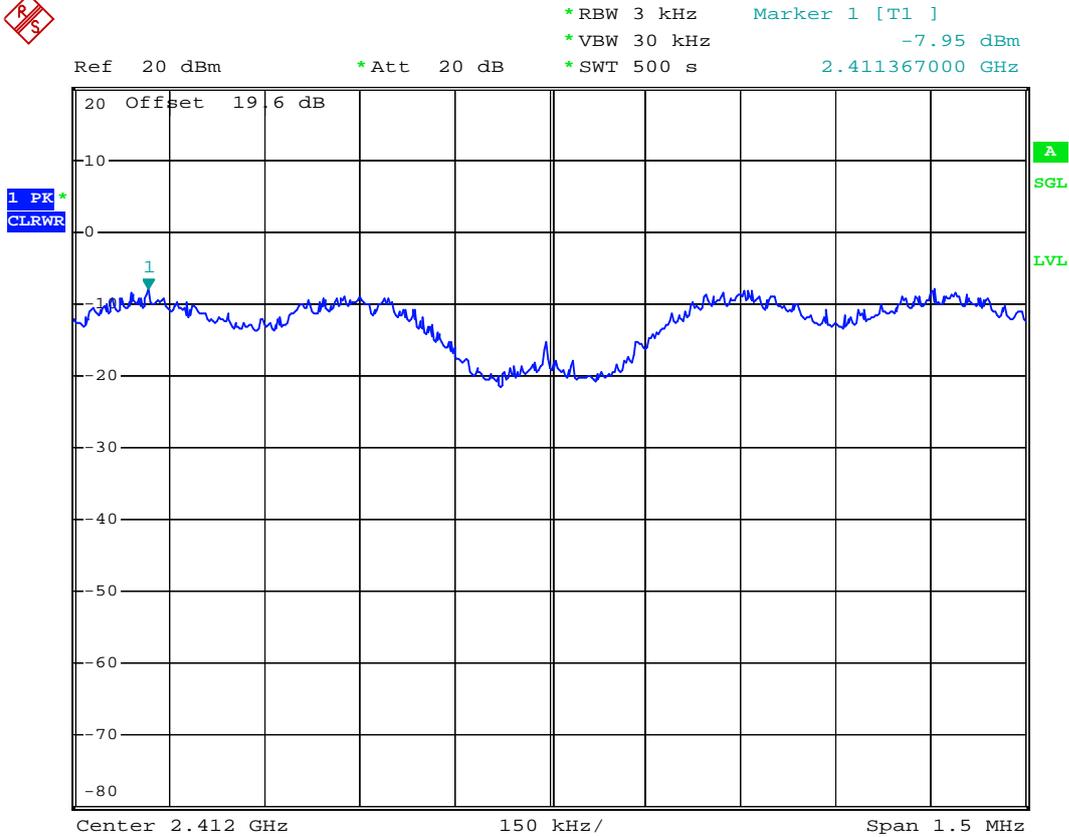
150 kHz/

Span 1.5 MHz

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Mode 4



Date: 15.SEP.2007 07:28:45



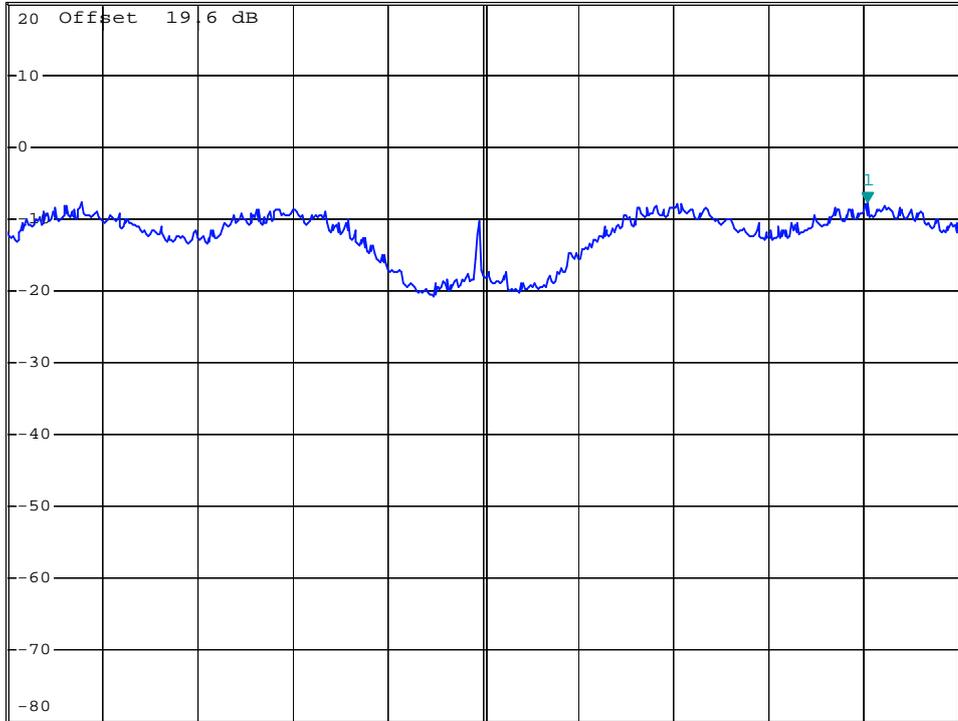
Mode 5



*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -7.65 dBm
*SWT 500 s 2.437606000 GHz

Ref 20 dBm

*Att 20 dB

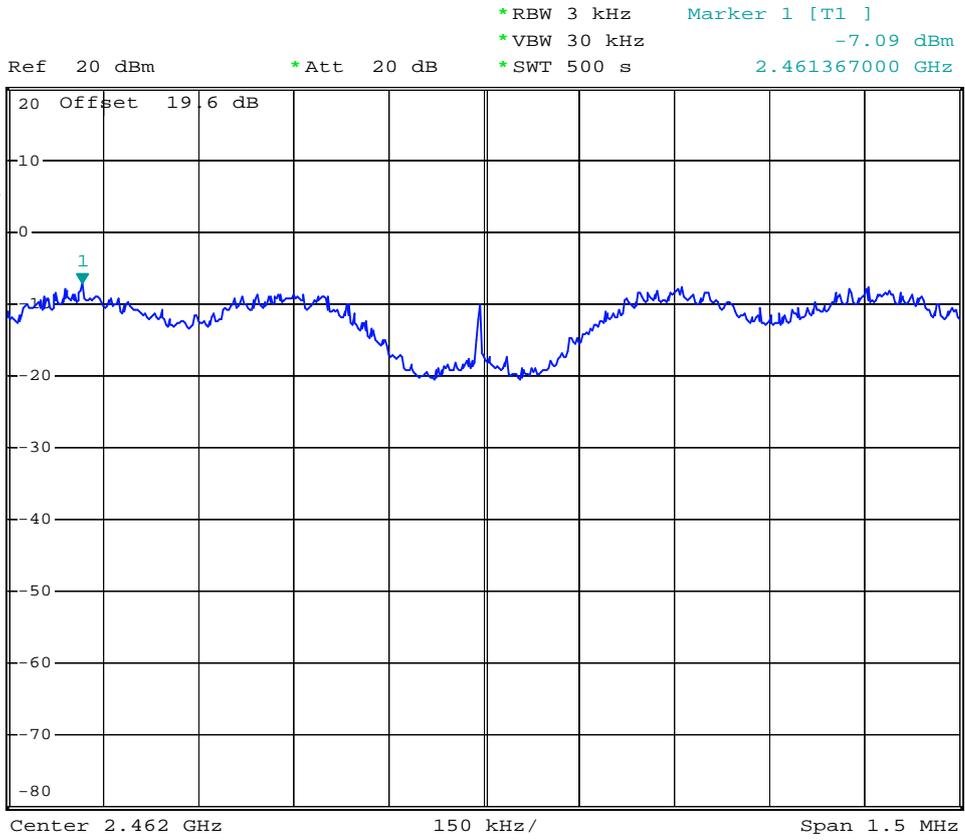


Center 2.437 GHz 150 kHz/ Span 1.5 MHz

Date: 15.SEP.2007 07:19:36



Mode 6



Date: 15.SEP.2007 08:06:23

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 : 26~28°C
 Relative Humidity : 49~51%
 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	54.37	-19.63	74.00	55.82	30.26	3.75	35.46	100	0	Peak
2390.0	45.86	-8.14	54.00	47.31	30.26	3.75	35.46	151	138	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	53.05	-20.95	74.00	54.50	30.26	3.75	35.46	100	0	Peak
2390.0	44.57	-9.43	54.00	46.02	30.26	3.75	35.46	104	103.	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	55.74	-18.26	74.00	57.10	30.29	3.86	35.51	100	0	Peak
2483.5	44.59	-9.41	54.00	45.95	30.29	3.86	35.51	149	168	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	52.00	-22.00	74.00	53.36	30.29	3.86	35.51	100	0	Peak
2483.5	42.11	-11.89	54.00	43.47	30.29	3.86	35.51	100	102	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	63.28	-10.72	74.00	64.73	30.26	3.75	35.46	100	0	Peak
2390.0	45.60	-8.40	54.00	47.05	30.26	3.75	35.46	100	92	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	66.94	-7.06	74.00	68.39	30.26	3.75	35.46	100	0	Peak
2390.0	48.14	-5.86	54.00	49.59	30.26	3.75	35.46	100	103	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	61.61	-12.39	74.00	62.97	30.29	3.86	35.51	100	0	Peak
2483.5	44.50	-9.50	54.00	45.86	30.29	3.86	35.51	150	176	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	55.78	-18.22	74.00	57.14	30.29	3.86	35.51	100	0	Peak
2483.5	41.03	-12.97	54.00	42.39	30.29	3.86	35.51	100	106	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
2483.5	68.24	-5.76	74.00	69.60	30.29	3.86	35.51	100	0	Peak
2483.5	42.98	-11.02	54.00	44.34	30.29	3.86	35.51	100	2	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	63.64	-10.36	74.00	65.00	30.29	3.86	35.51	100	0	Peak
2483.5	48.27	-5.73	54.00	49.63	30.29	3.86	35.51	100	209	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
2483.5	64.31	-9.69	74.00	65.67	30.29	3.86	35.51	100	0	Peak
2483.5	46.34	-7.66	54.00	47.70	30.29	3.86	35.51	182	9	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	64.35	-9.65	74.00	65.71	30.29	3.86	35.51	100	0	Peak
2483.5	47.24	-6.76	54.00	48.60	30.29	3.86	35.51	100	210	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
2390.0	50.21	-23.79	74.00	51.69	30.24	3.71	35.42	100	0	Peak
2390.0	38.64	-15.36	54.00	40.12	30.24	3.71	35.42	123	20	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
2390.0	54.24	-19.76	74.00	55.69	30.26	3.75	35.46	100	0	Peak
2390.0	41.29	-12.71	54.00	42.74	30.26	3.75	35.46	100	101	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	65.21	-8.79	74.00	66.57	30.29	3.86	35.51	100	0	Peak
2483.5	47.09	-6.91	54.00	48.45	30.29	3.86	35.51	150	23	Average

CH78 (Vertical)

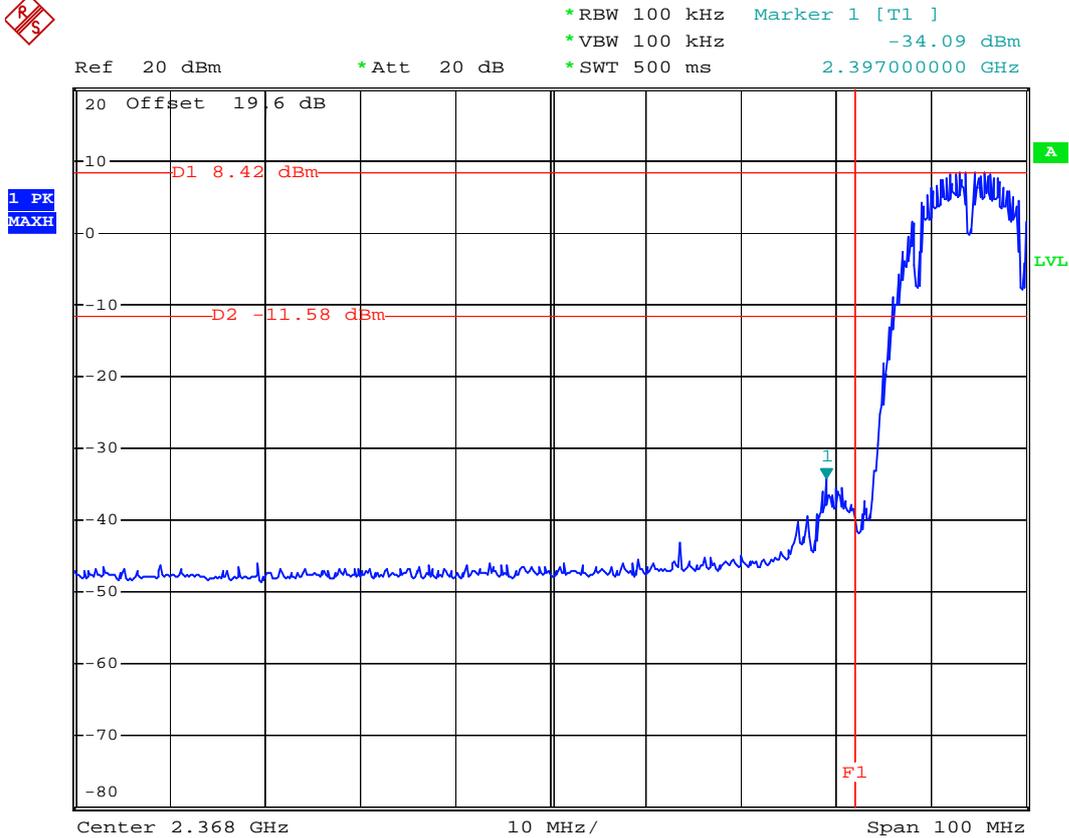
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	66.36	-7.64	74.00	67.72	30.29	3.86	35.51	100	0	Peak
2483.5	48.01	-5.99	54.00	49.37	30.29	3.86	35.51	100	80	Average



5.4.5 Band Edge

WLAN 802.11b

CH01



Date: 15.SEP.2007 06:42:39

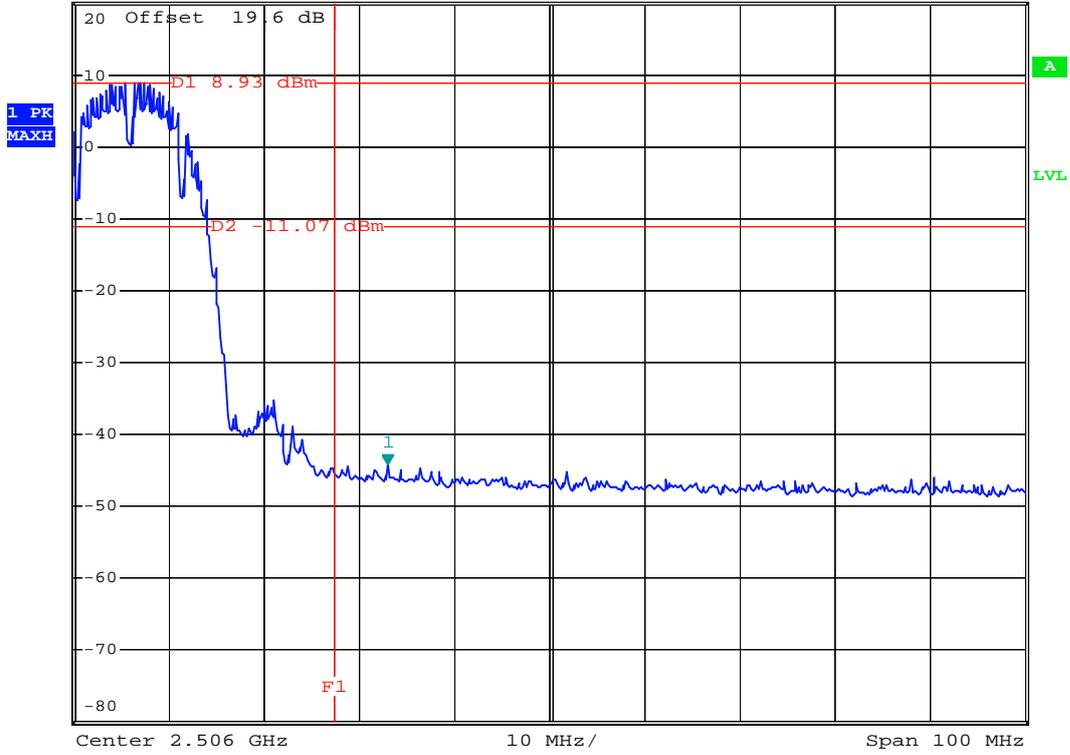


WLAN 802.11b

CH11



Ref 20 dBm *Att 20 dB *RBW 100 kHz Marker 1 [T1]
*VBW 100 kHz -44.24 dBm
*SWT 500 ms 2.489000000 GHz



Date: 15.SEP.2007 06:44:05



WLAN 802.11g

CH01

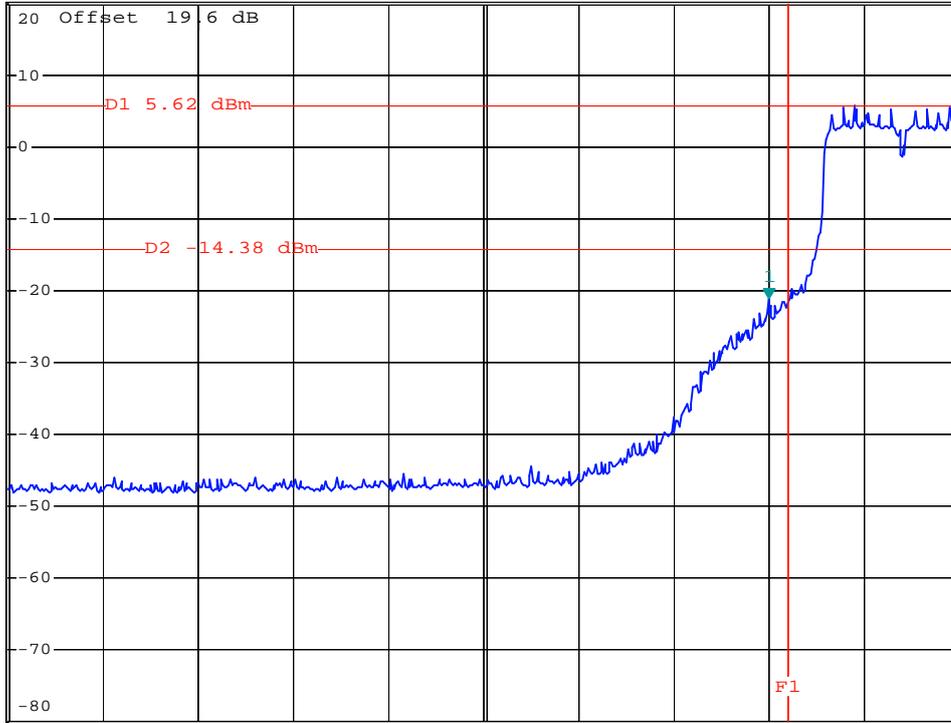


*RBW 100 kHz Marker 1 [T1]
 *VBW 100 kHz -21.18 dBm
 *SWT 500 ms 2.398000000 GHz

Ref 20 dBm

*Att 20 dB

1 PK
MAXH



Center 2.368 GHz

10 MHz/

Span 100 MHz

Date: 15.SEP.2007 06:40:11

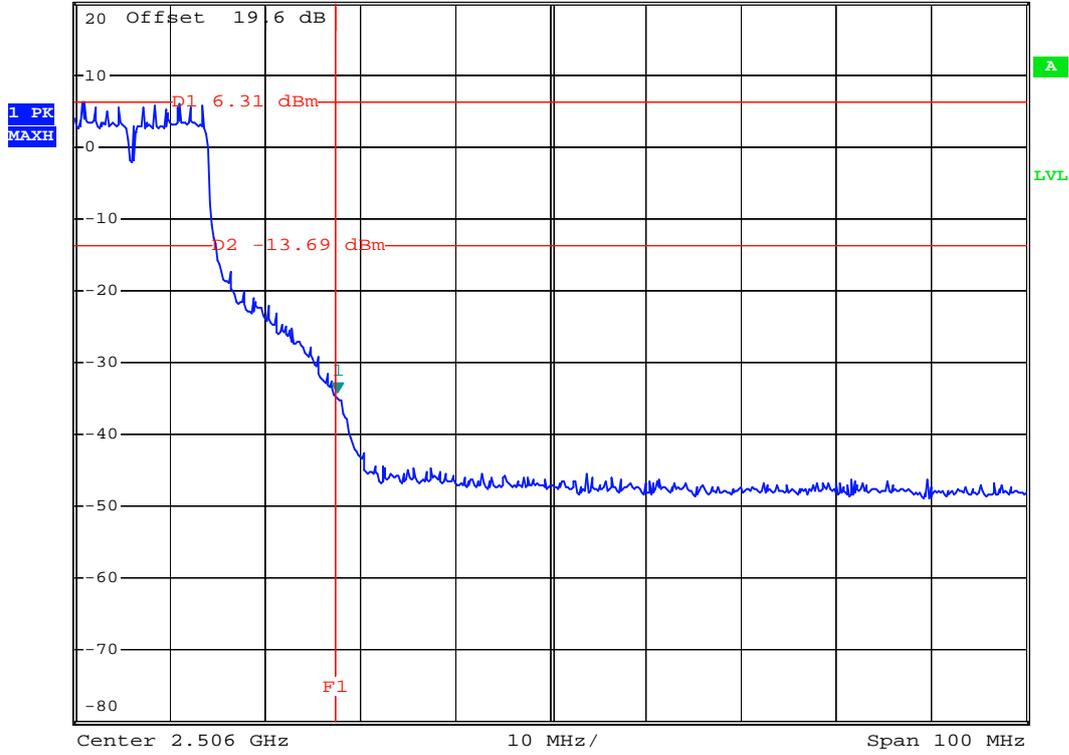


WLAN 802.11g

CH11



Ref 20 dBm *Att 20 dB *RBW 100 kHz Marker 1 [T1]
*VBW 100 kHz -34.17 dBm
*SWT 500 ms 2.483600000 GHz

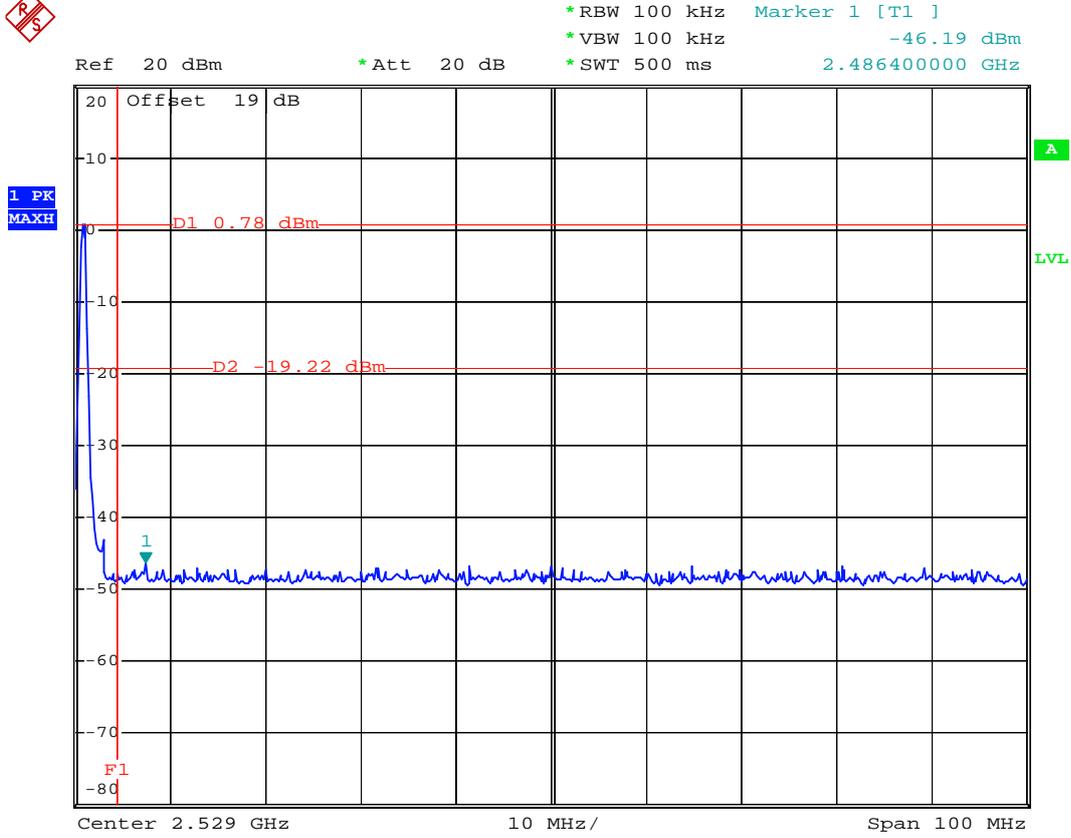


Date: 15.SEP.2007 06:45:10



BT(1Mbps)

CH78

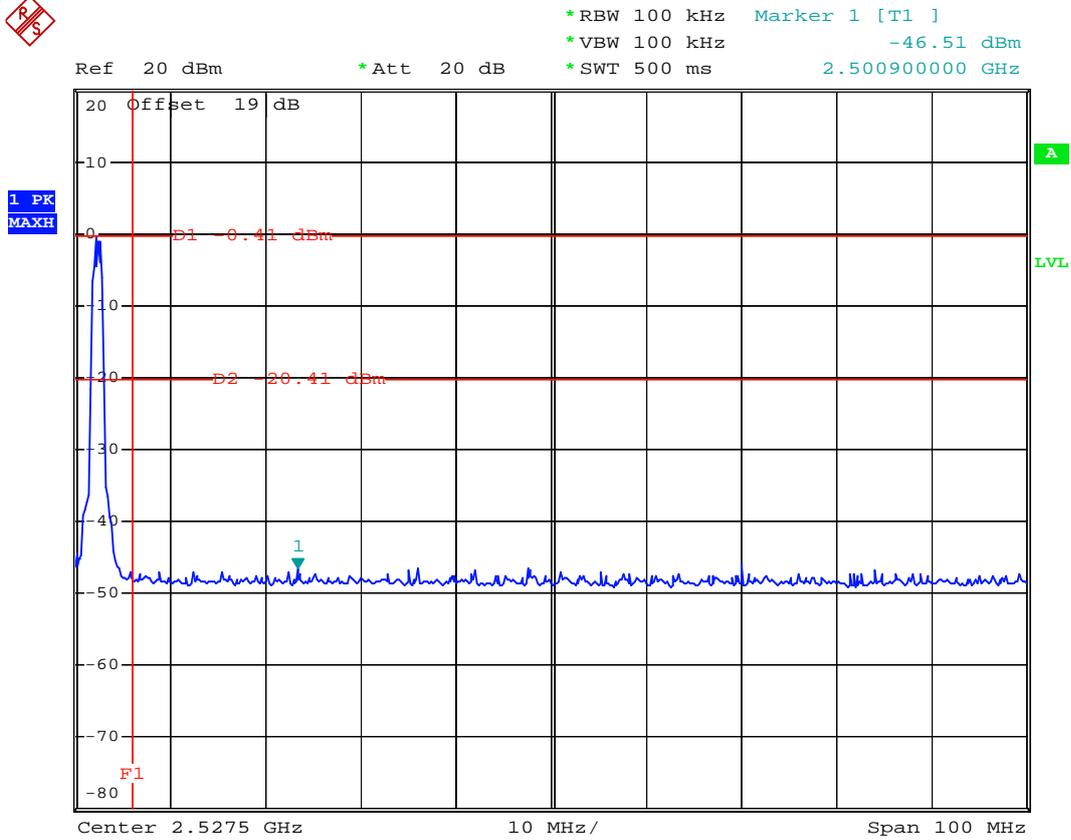


Date: 12.SEP.2007 20:39:03



BT-EDR(2Mbps)

CH78



Date: 12.SEP.2007 21:53:11



BT-EDR(3Mbps)

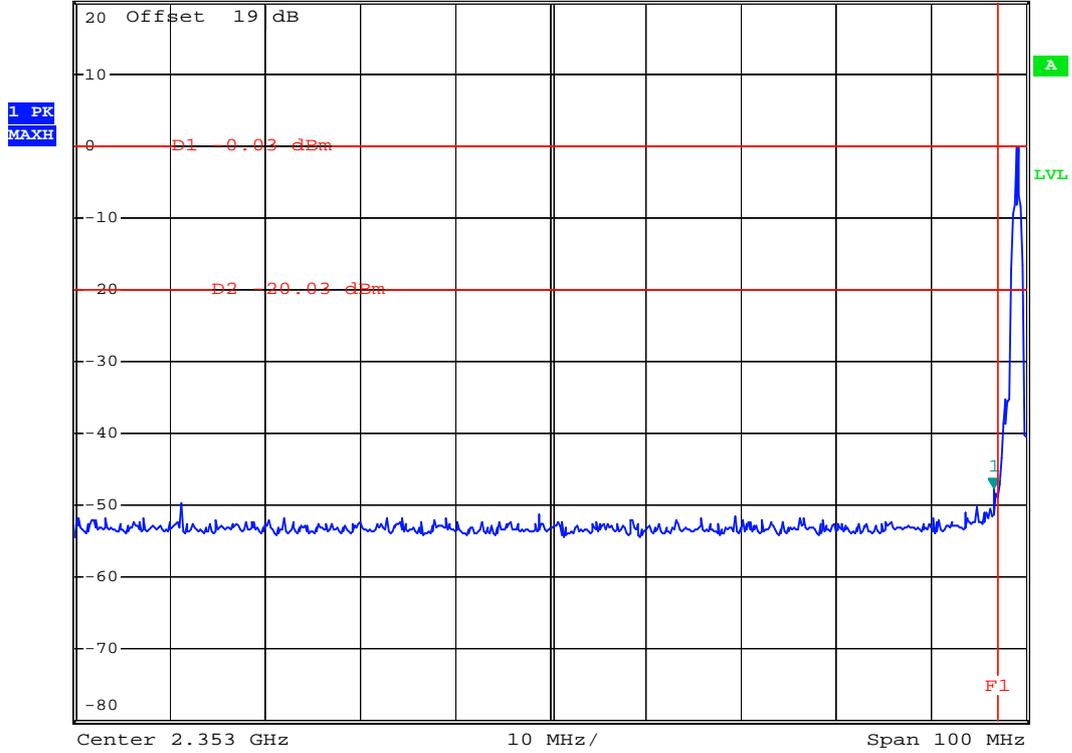
CH00



*RBW 30 kHz Marker 1 [T1]
 *VBW 300 kHz -47.66 dBm
 *SWT 500 ms 2.399600000 GHz

Ref 20 dBm

*Att 20 dB



Date: 12.SEP.2007 22:26:59



BT-EDR(3Mbps)

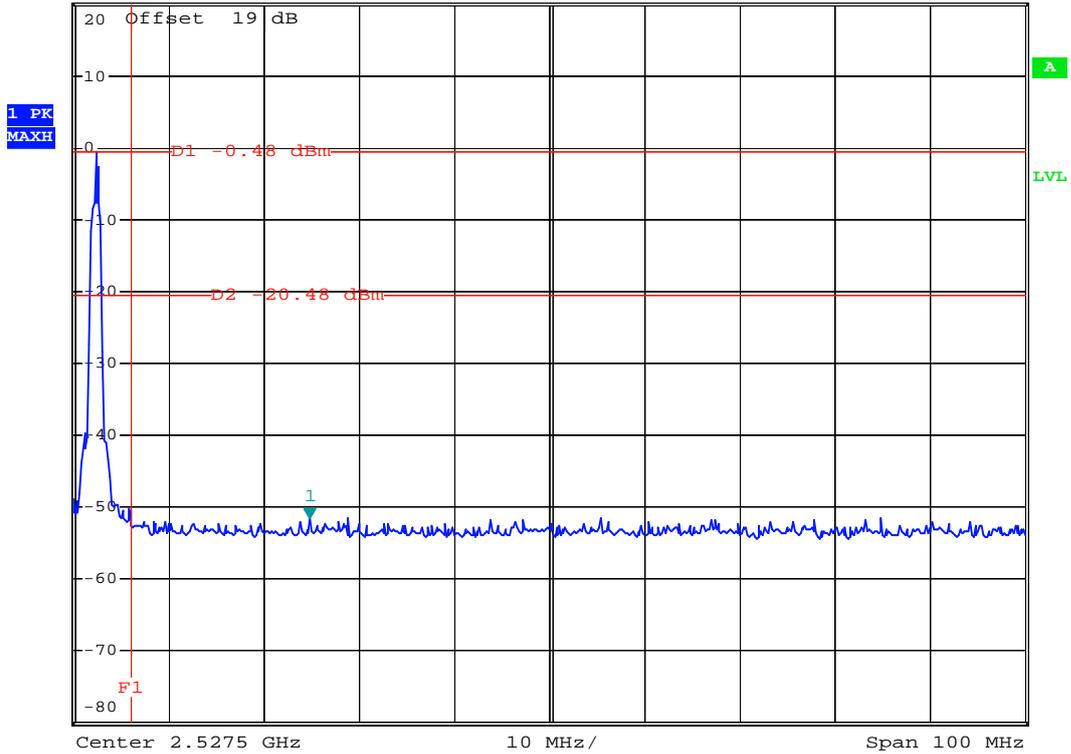
CH78



*RBW 30 kHz Marker 1 [T1]
*VBW 300 kHz -51.40 dBm
*SWT 500 ms 2.502300000 GHz

Ref 20 dBm

*Att 20 dB



Date: 12.SEP.2007 22:25:31

5.5 Hopping Channel Separation

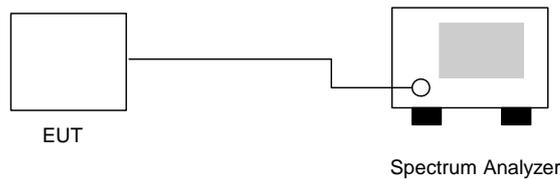
5.5.1 Measuring Instruments :

As described in chapter 9 of this test report.

5.5.2 Test Procedure :

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

5.5.3 Test Setup Layout :



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

Application Type : BT(1Mbps)

Temperature : 26~28°C

Relative Humidity : 49~51%

Test Engineer : Sun

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.506	Mode 7
39	2441	1.004	0.506	Mode 8
78	2480	1.004	0.490	Mode 9

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



5.5.5 est Result : The spectrum analyzer plots are attached as below

Application Type : BT-EDR(2Mbps)

Temperature : 26~28°C

Relative Humidity : 49~51%

Test Engineer : Sun

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.008	0.872	Mode 7
39	2441	1.008	0.848	Mode 8
78	2480	1.000	0.851	Mode 9

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

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

Application Type : BT-EDR(3Mbps)

Temperature : 26~28°C

Relative Humidity : 49~51%

Test Engineer : Sun

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.851	Mode 7
39	2441	1.008	0.859	Mode 8
78	2480	1.008	0.848	Mode 9

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



5.5.7 Hopping Channel Separation

Mode 7

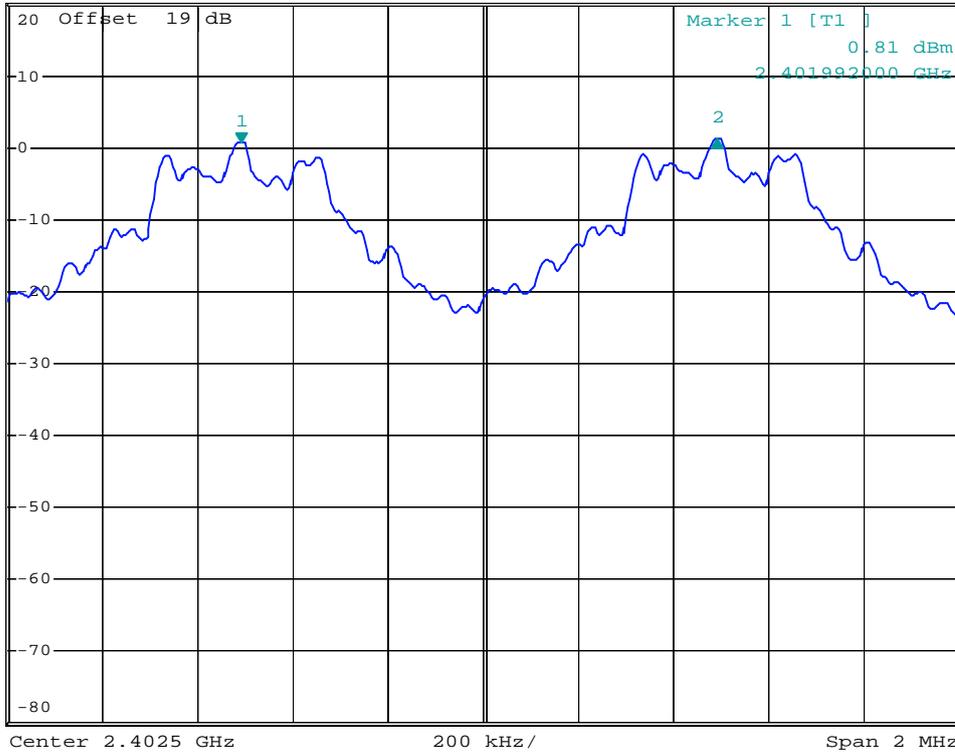


*RBW 30 kHz Delta 2 [T1]
*VBW 100 kHz 0.50 dB
*SWT 500 ms 1.000000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
MAXH



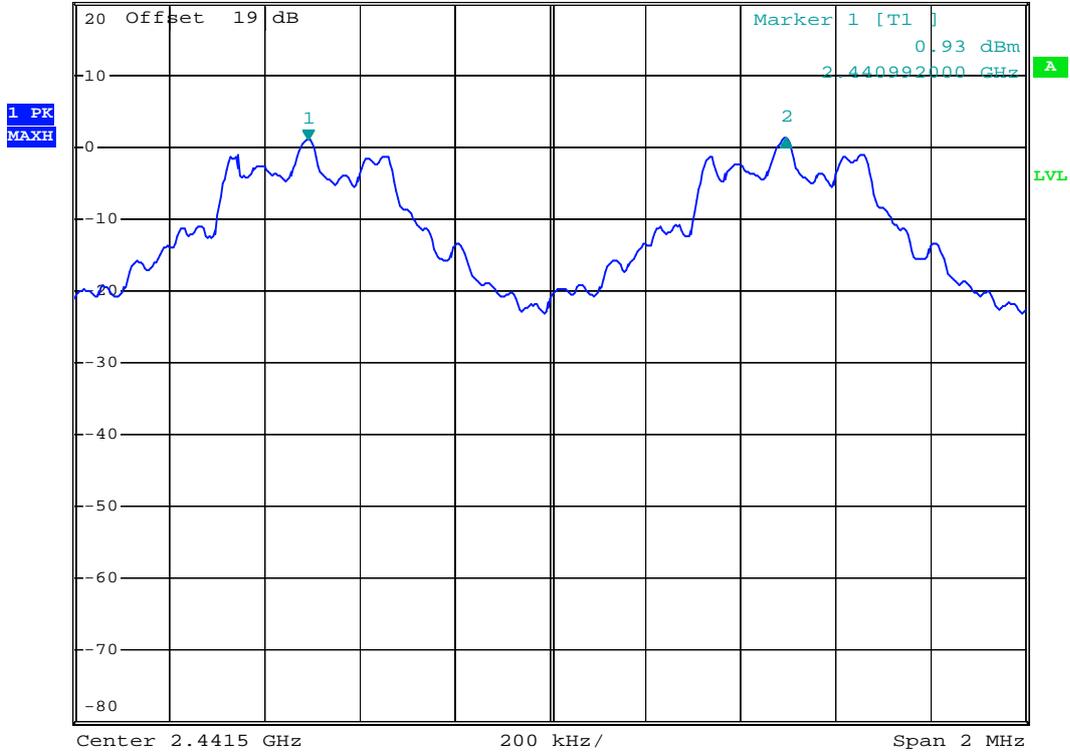
Date: 12.SEP.2007 21:27:29



Mode 8



Ref 20 dBm *Att 20 dB *RBW 30 kHz Delta 2 [T1]
 *VBW 100 kHz 0.26 dB
 *SWT 500 ms 1.004000000 MHz



Date: 12.SEP.2007 21:28:43



Mode 9

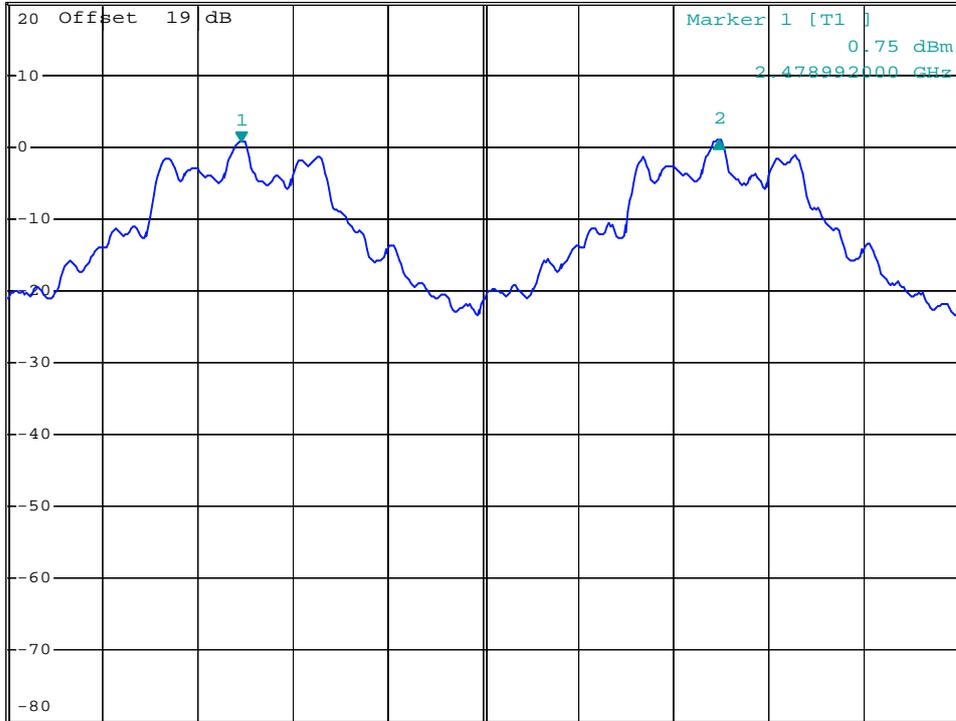


*RBW 30 kHz Delta 2 [T1]
*VBW 100 kHz 0.28 dB
*SWT 500 ms 1.004000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
MAXH



Center 2.4795 GHz 200 kHz/ Span 2 MHz

Date: 12.SEP.2007 21:29:31



Mode 10



*RBW 30 kHz Delta 2 [T1]
*VBW 100 kHz -1.15 dB
*SWT 500 ms 1.008000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
MAXH



Center 2.4025 GHz 400 kHz/ Span 4 MHz

Date: 12.SEP.2007 21:54:08



Mode 11

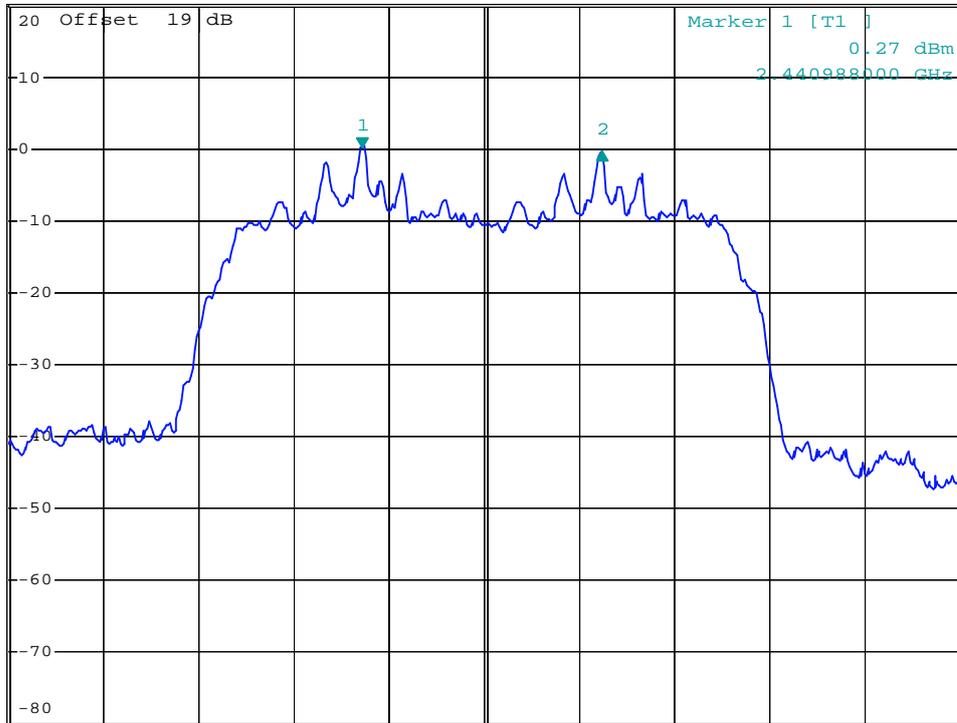


*RBW 30 kHz Delta 2 [T1]
*VBW 100 kHz -0.60 dB
*SWT 500 ms 1.008000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
MAXH



Center 2.4415 GHz 400 kHz/ Span 4 MHz

Date: 12.SEP.2007 21:55:01



Mode 12

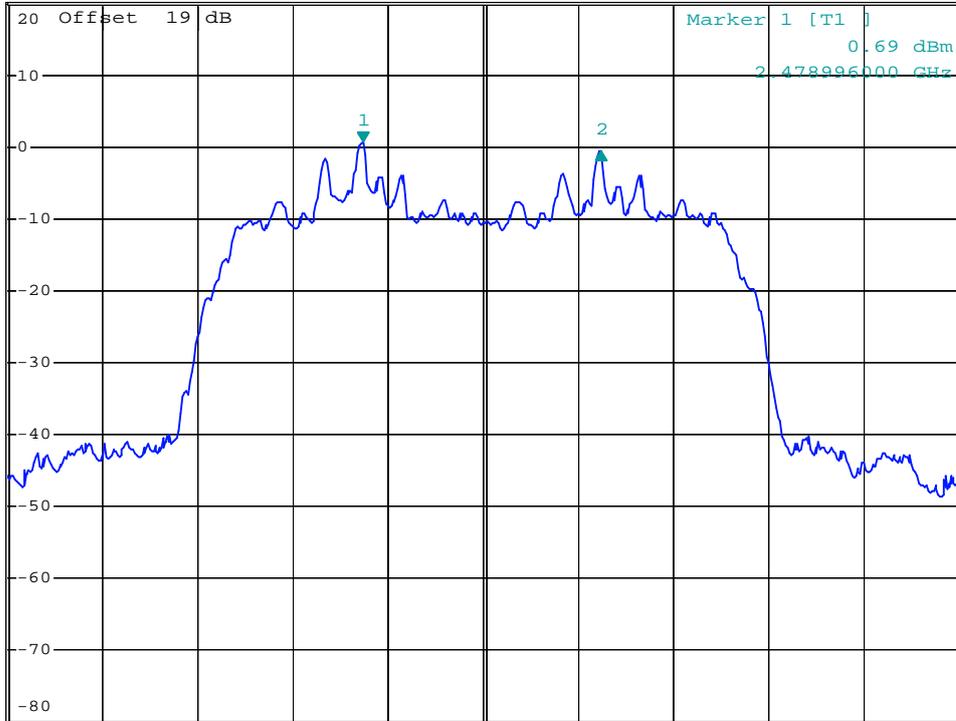


*RBW 30 kHz Delta 2 [T1]
*VBW 100 kHz -1.28 dB
*SWT 500 ms 1.00000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
MAXH



Center 2.4795 GHz 400 kHz/ Span 4 MHz

Date: 12.SEP.2007 21:55:49



Mode 13

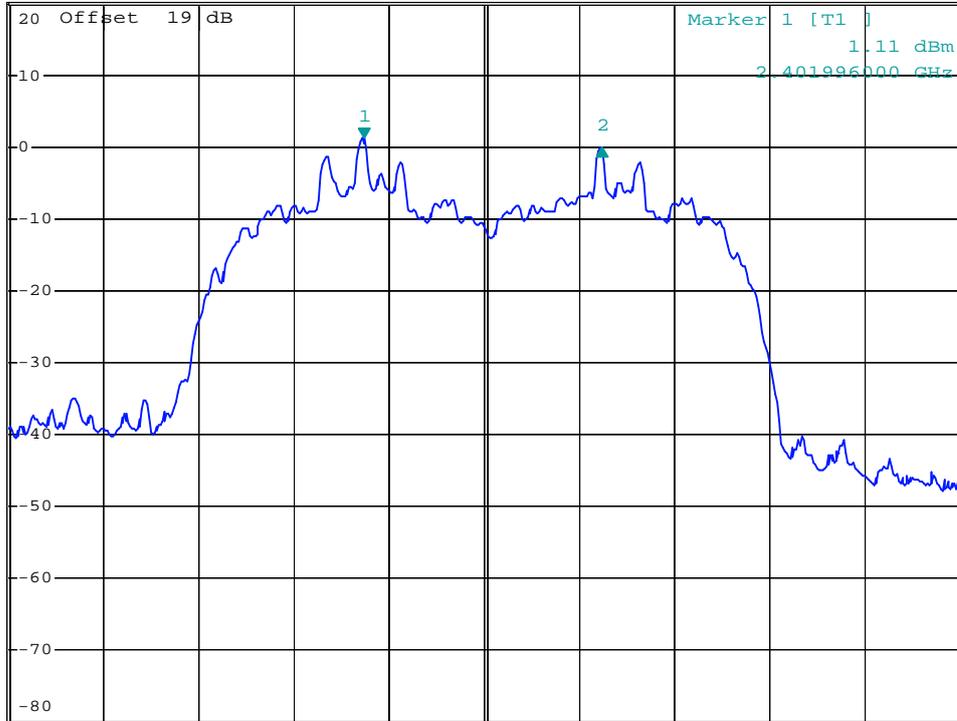


*RBW 30 kHz Delta 2 [T1]
*VBW 300 kHz -1.14 dB
*SWT 500 ms 1.00000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
MAXH

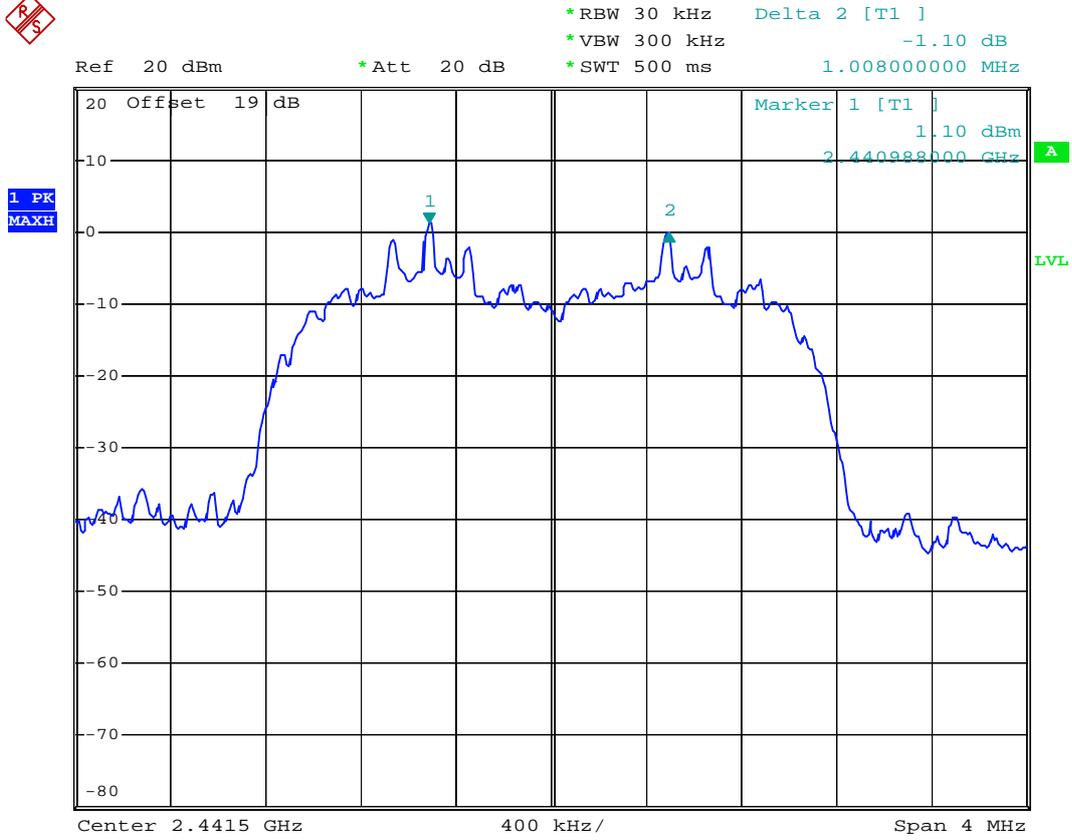


Center 2.4025 GHz 400 kHz / Span 4 MHz

Date: 12.SEP.2007 22:27:53



Mode 14



Date: 12.SEP.2007 22:28:44



Mode 15

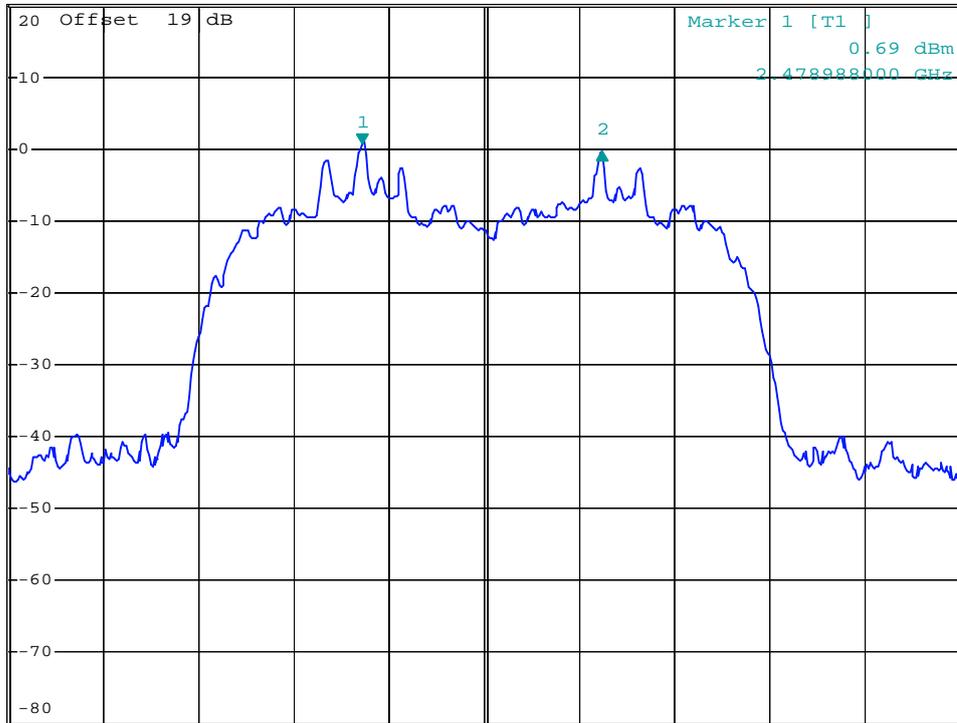


*RBW 30 kHz Delta 2 [T1]
*VBW 300 kHz -1.11 dB
*SWT 500 ms 1.008000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
MAXH



Center 2.4795 GHz 400 kHz/ Span 4 MHz

Date: 12.SEP.2007 22:29:28

5.6 Number of Hopping Frequency

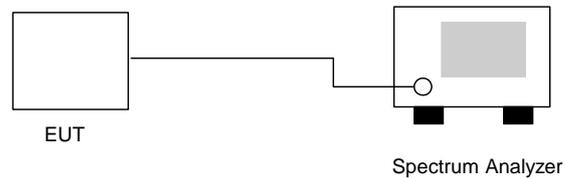
5.6.1 Measuring Instruments :

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 : 26~28°C
Relative Humidity : 49~51%
Test Enginner : Sun

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

5.6.5 Test Result : See spectrum analyzer plots below

Application Type : BT-EDR(2Mbps)
Temperature : 26~28°C
Relative Humidity : 49~51%
Test Enginner : Sun

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

5.6.6 Test Result : See spectrum analyzer plots below

Application Type : BT-EDR(3Mbps)
Temperature : 26~28°C
Relative Humidity : 49~51%
Test Enginner : Sun

5.6.7 Number of Hopping Frequency (Channel)	5.6.8 Limits (Channel)
79	15



5.6.9 Number of Hopping Frequency

BT(1Mbps)

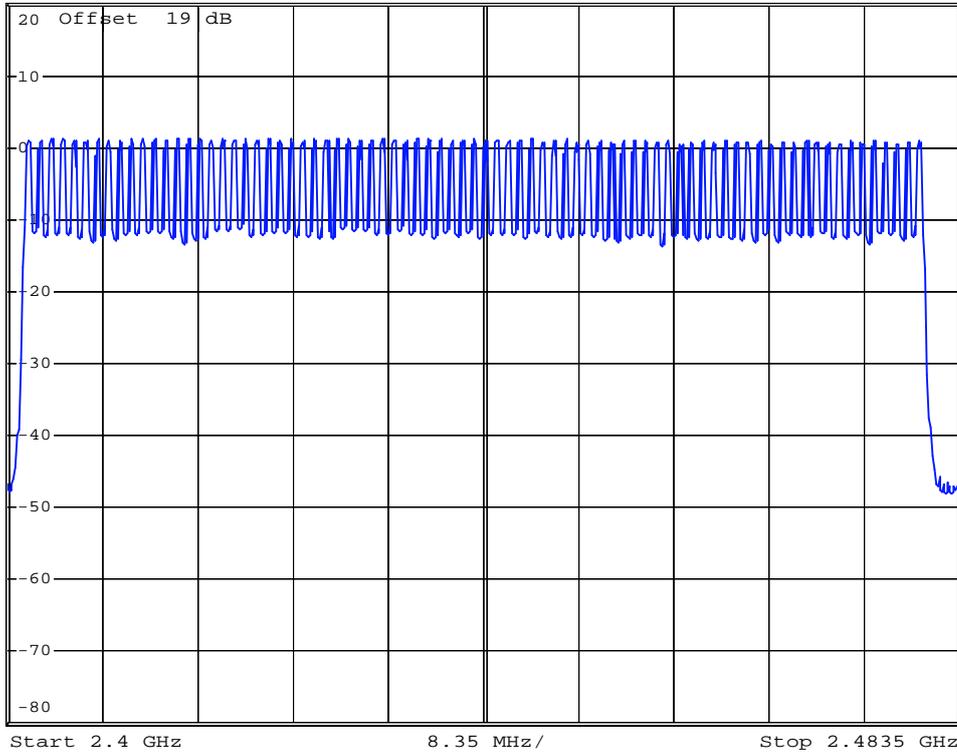


*RBW 100 kHz
*VBW 100 kHz
*SWT 500 ms

Ref 20 dBm

*Att 20 dB

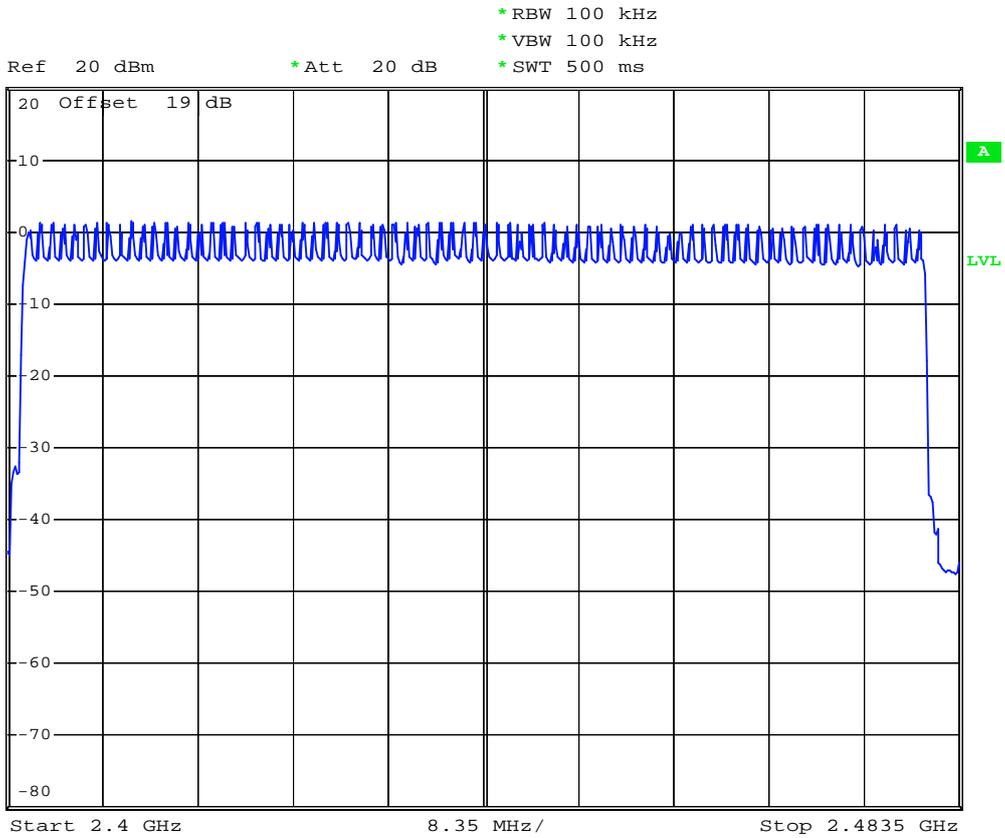
1 PK
MAXH



Date: 12.SEP.2007 21:44:16



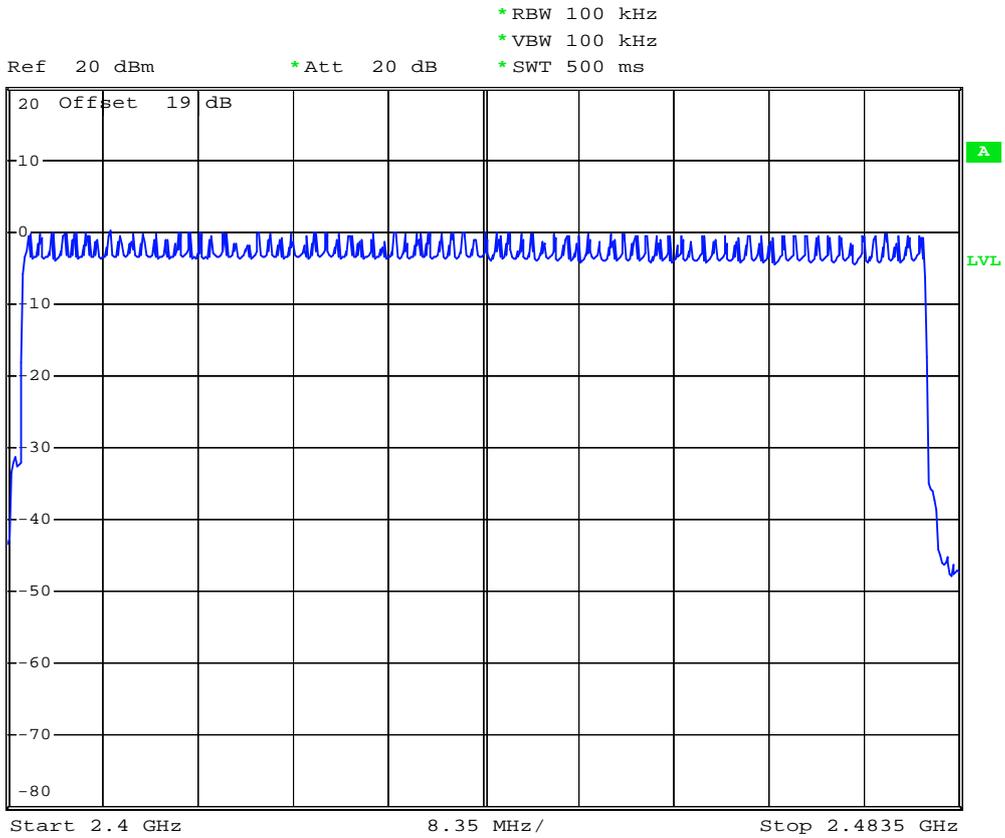
BT-EDR(2Mbps)



Date: 12.SEP.2007 22:18:20



BT-EDR(3Mbps)



Date: 12.SEP.2007 22:43:34

5.7 Hopping Channel Bandwidth

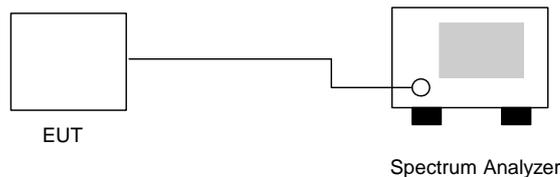
5.7.1 Measuring Instruments :

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 : 26~28°C

Relative Humidity : 49~51%

Test Engineer : Sun

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	0.759	Mode 7
39	2441	0.759	Mode 8
78	2480	0.735	Mode 9



5.7.5 Test Result : See spectrum analyzer plots below

Application Type : BT-EDR(2Mbps)
Temperature : 26~28°C
Relative Humidity : 49~51%
Test Enginner : Sun

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.308	Mode 10
39	2441	1.272	Mode 11
78	2480	1.276	Mode 12

5.7.6 Test Result : See spectrum analyzer plots below

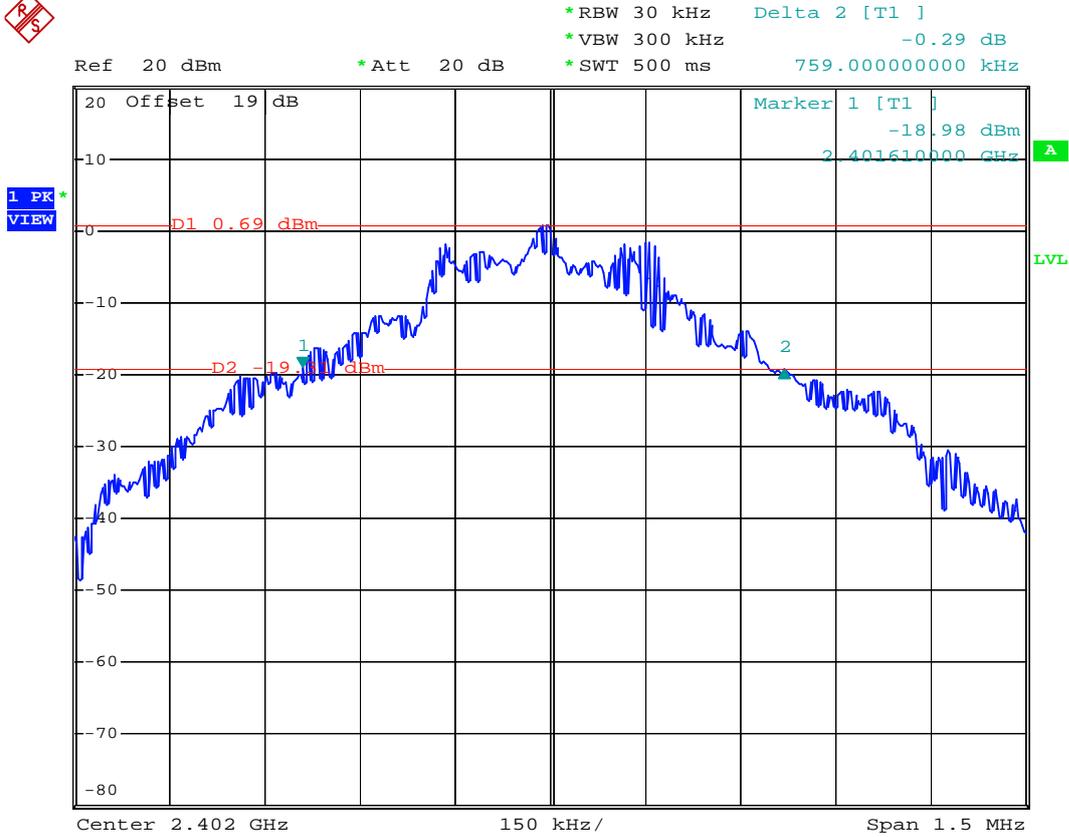
Application Type : BT-EDR(3Mbps)
Temperature : 26~28°C
Relative Humidity : 49~51%
Test Enginner : Sun

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.276	Mode 13
39	2441	1.288	Mode 14
78	2480	1.272	Mode 15



5.7.7 Hopping Channel Bandwidth

Mode 7



Date: 12.SEP.2007 20:29:41



Mode 8

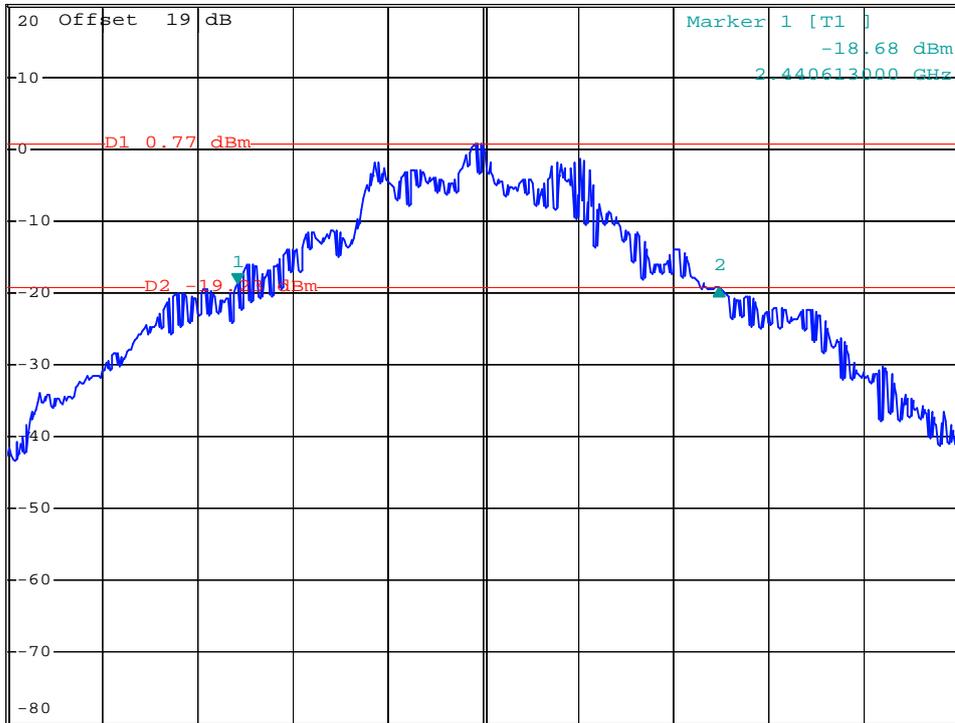


*RBW 30 kHz Delta 2 [T1]
*VBW 300 kHz -0.46 dB
*SWT 500 ms 759.00000000 kHz

Ref 20 dBm

*Att 20 dB

1 PK VIEW



Center 2.441 GHz 150 kHz/ Span 1.5 MHz

Date: 12.SEP.2007 20:30:22



Mode 9

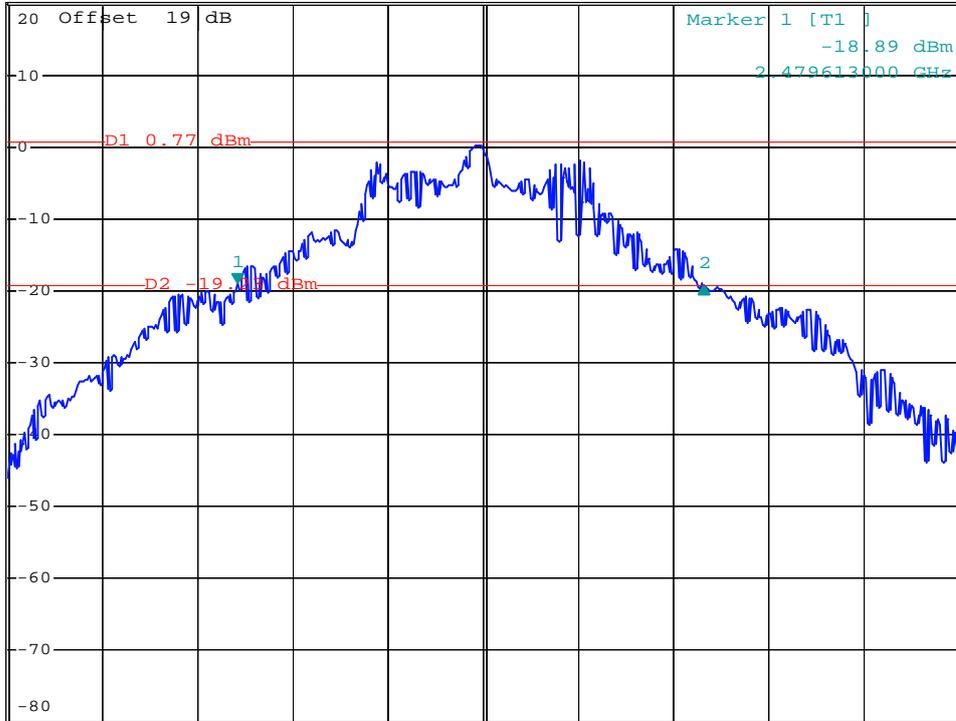


*RBW 30 kHz Delta 2 [T1]
*VBW 300 kHz -0.29 dB
*SWT 500 ms 735.00000000 kHz

Ref 20 dBm

*Att 20 dB

1 PK
VIEW



Center 2.48 GHz

150 kHz/

Span 1.5 MHz

Date: 12.SEP.2007 20:37:47



Mode 10

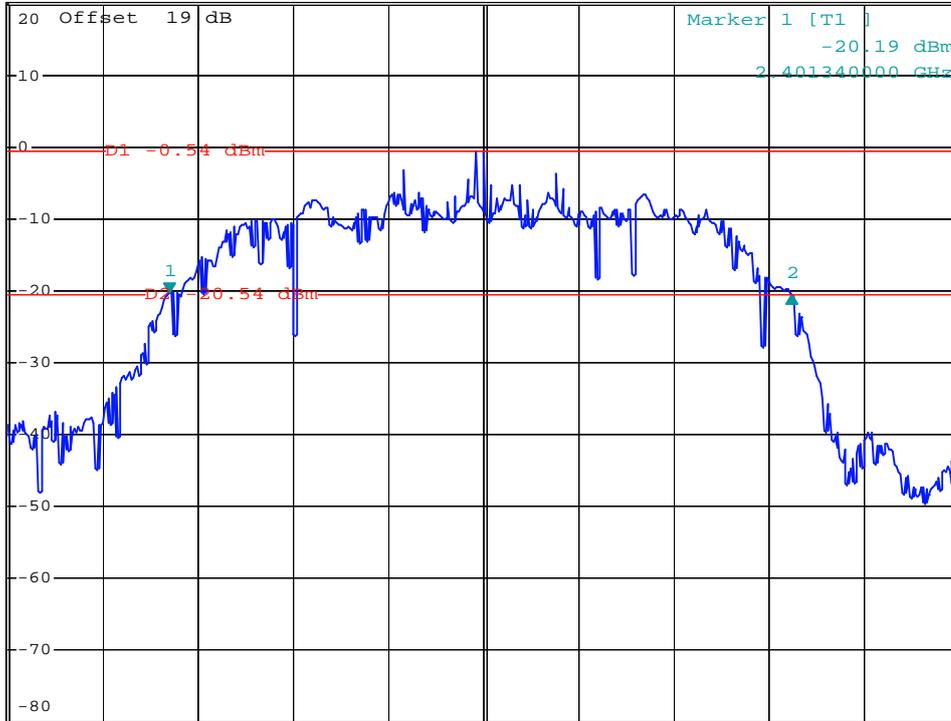


*RBW 30 kHz Delta 2 [T1]
 *VBW 300 kHz -0.31 dB
 *SWT 500 ms 1.308000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK VIEW



Center 2.402 GHz

200 kHz/

Span 2 MHz

Date: 12.SEP.2007 21:47:04



Mode 11

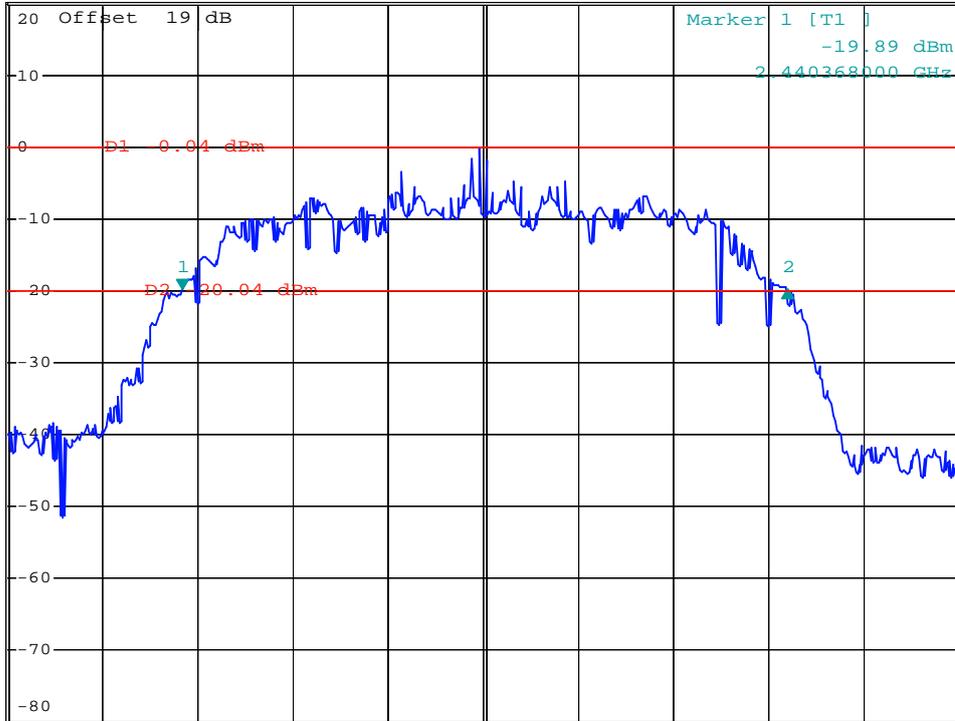


*RBW 30 kHz Delta 2 [T1]
 *VBW 300 kHz 0.24 dB
 *SWT 500 ms 1.272000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK
VIEW



Center 2.441 GHz 200 kHz/ Span 2 MHz

Date: 12.SEP.2007 21:47:48



Mode 14

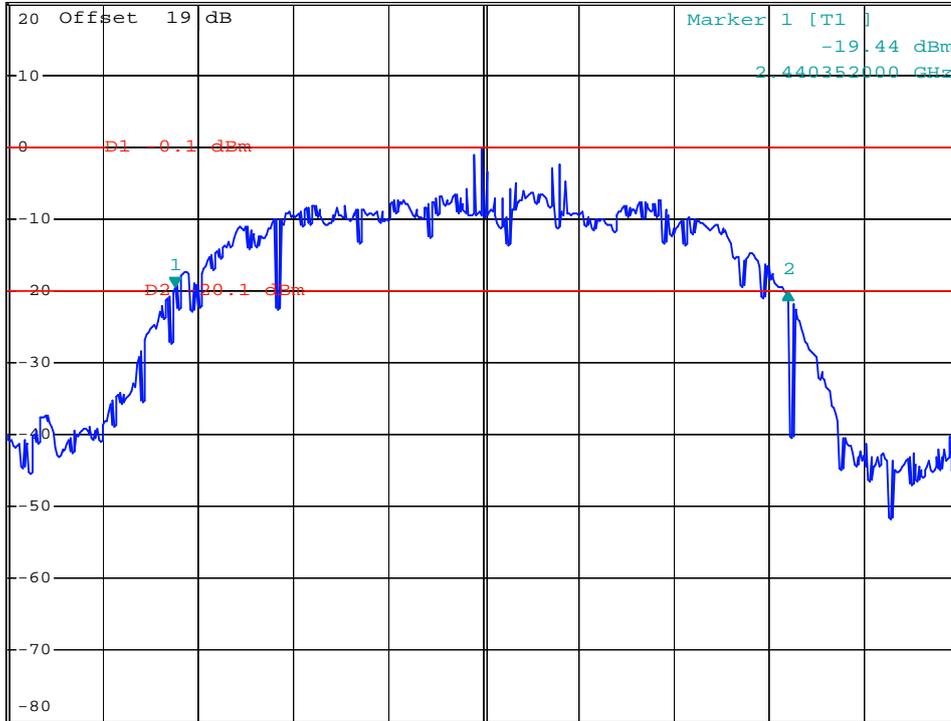


*RBW 30 kHz Delta 2 [T1]
 *VBW 300 kHz -0.65 dB
 *SWT 500 ms 1.288000000 MHz

Ref 20 dBm

*Att 20 dB

1 PK VIEW



Center 2.441 GHz

200 kHz/

Span 2 MHz

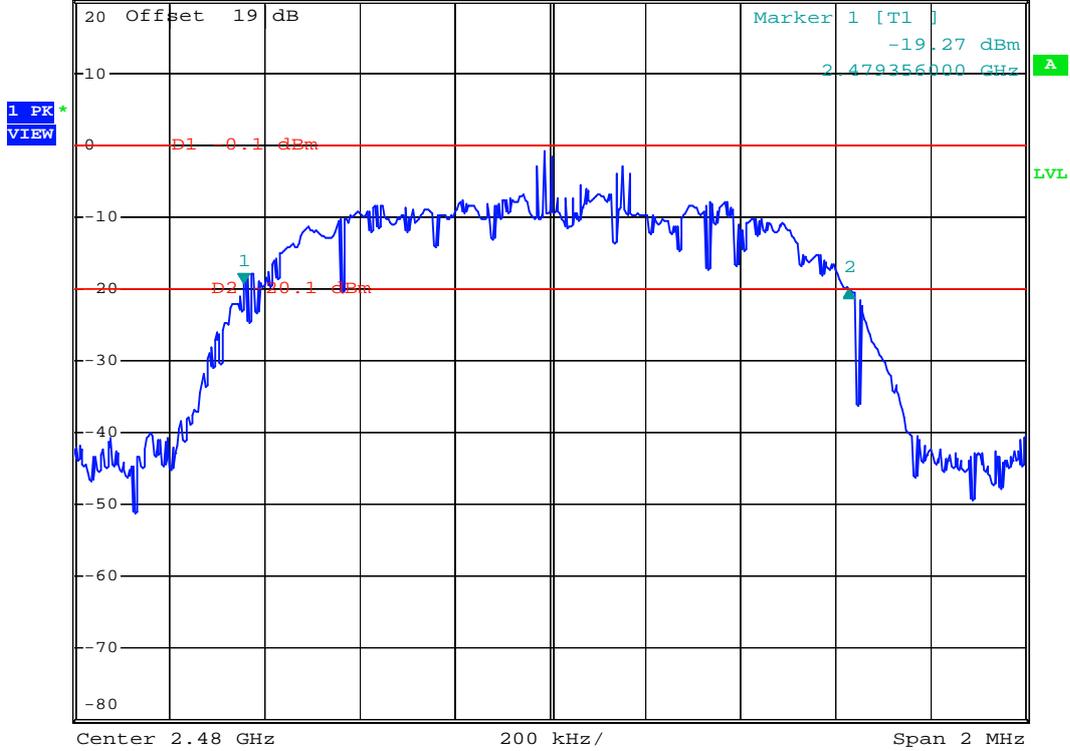
Date: 12.SEP.2007 22:23:04



Mode 15



Ref 20 dBm *Att 20 dB *RBW 30 kHz Delta 2 [T1]
 *VBW 300 kHz -0.75 dB
 *SWT 500 ms 1.272000000 MHz



Date: 12.SEP.2007 22:24:04

5.8 Dwell Time of Each Frequency

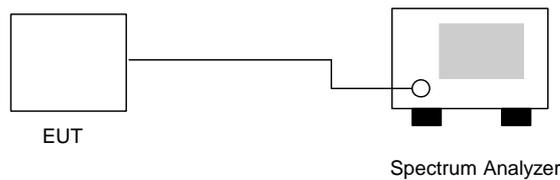
5.8.1 Measuring Instruments :

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 : 26~28°C
 Relative Humidity : 49~51%
 Test Engineer : Sun

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.1	460	0.132	0.4
DH3	4.7	1720	0.255	0.4
DH5	3.7	3020	0.353	0.4



5.8.5 Test Result : See spectrum analyzer plots below

Application Type : BT-EDR(2Mbps)
Temperature : 26~28°C
Relative Humidity : 49~51%
Test Enginner : Sun

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.3	452	0.133	0.4
DH3	4.5	1710	0.243	0.4
DH5	2.8	3050	0.270	0.4

5.8.6 Test Result : See spectrum analyzer plots below

Application Type : BT-EDR(3Mbps)
Temperature : 26~28°C
Relative Humidity : 49~51%
Test Enginner : Sun

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.4	452	0.134	0.4
DH3	4.9	1732	0.268	0.4
DH5	3.3	2992	0.312	0.4

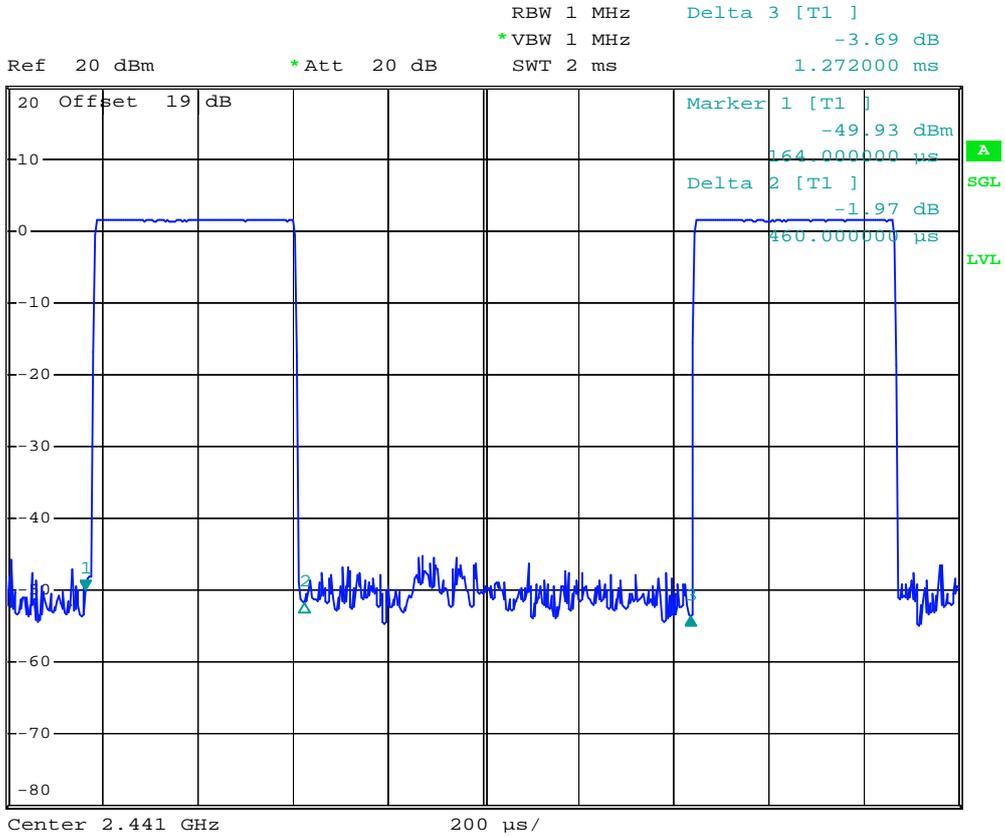
※ Remark:

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)



5.8.7 Dwell Time

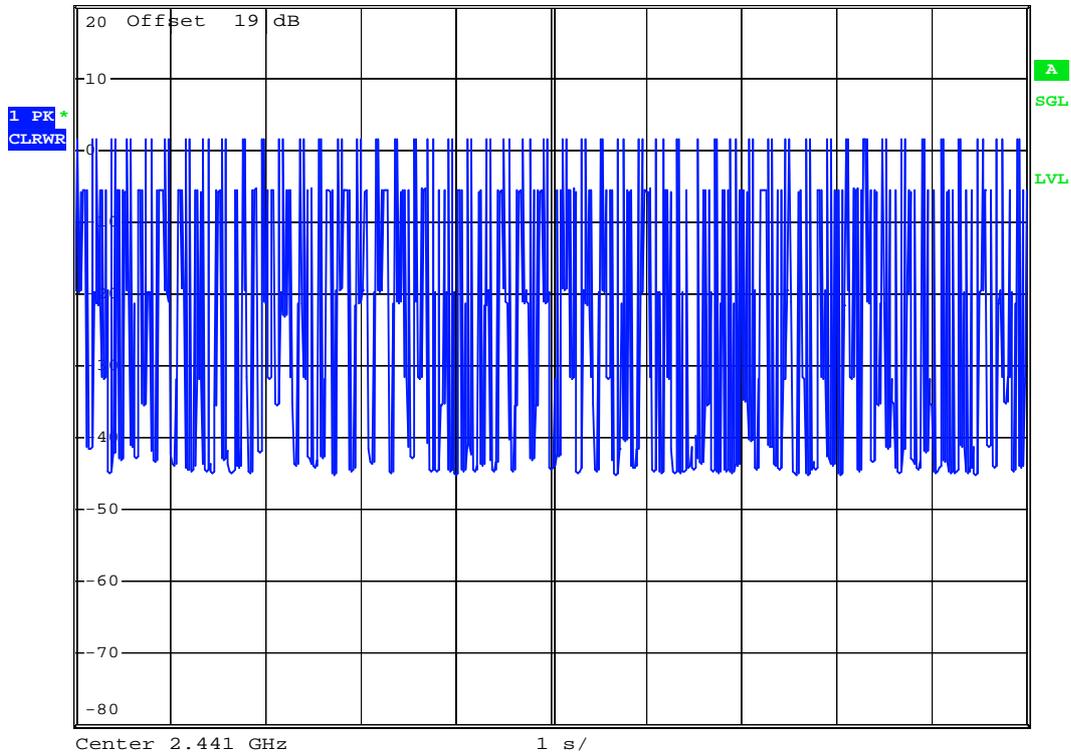
BT(1Mbps)_DH1 (CH39)



Date: 12.SEP.2007 21:30:31



Ref 20 dBm *Att 20 dB RBW 1 MHz
*VBW 1 MHz SWT 10 s



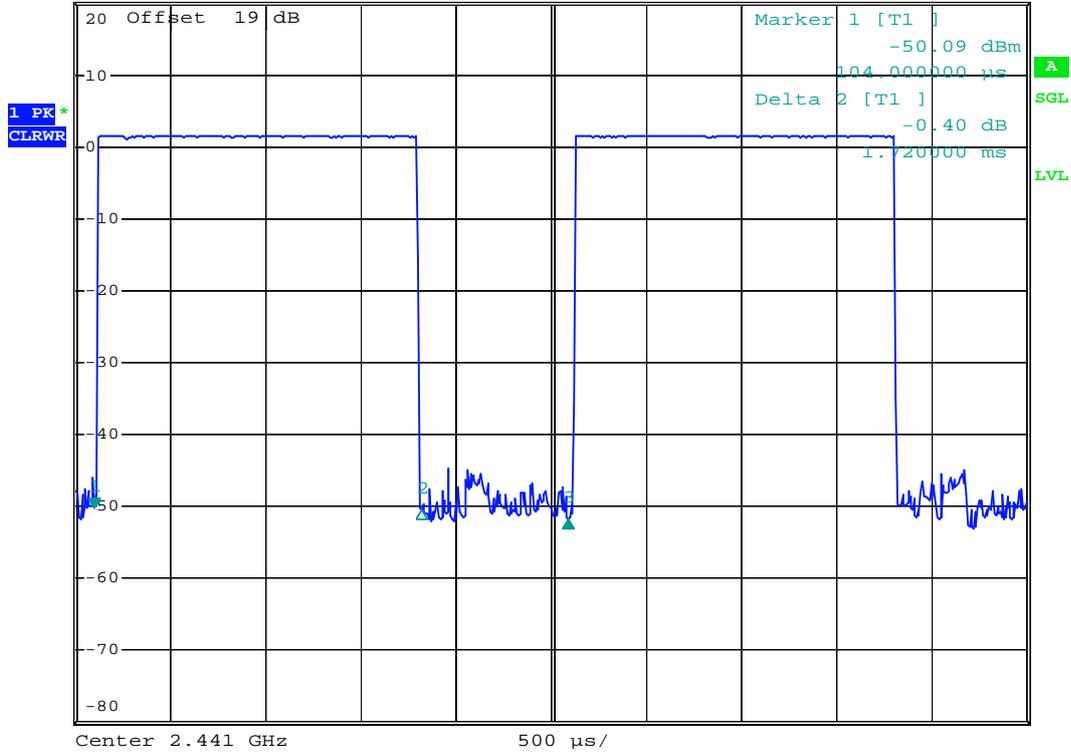
Date: 12.SEP.2007 21:32:34



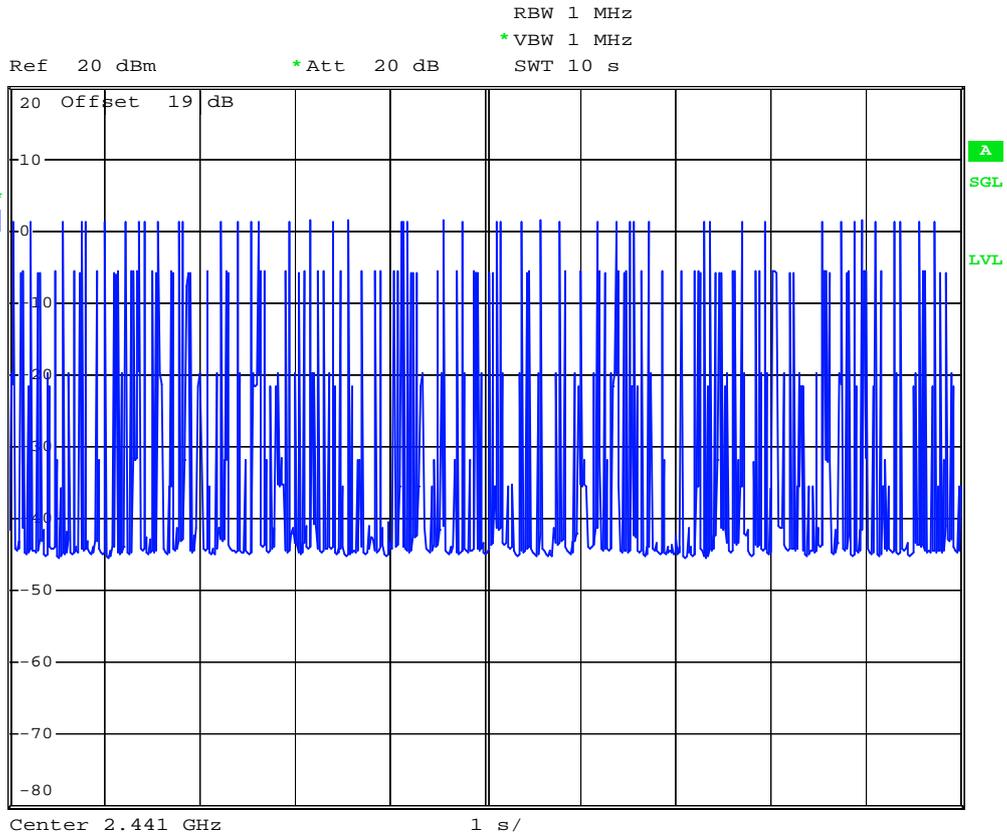
BT(1Mbps)_DH3 (CH39)



Ref 20 dBm *Att 20 dB RBW 1 MHz Delta 3 [T1] -1.80 dB
 *VBW 1 MHz SWT 5 ms 2.482000 ms



Date: 12.SEP.2007 21:31:17



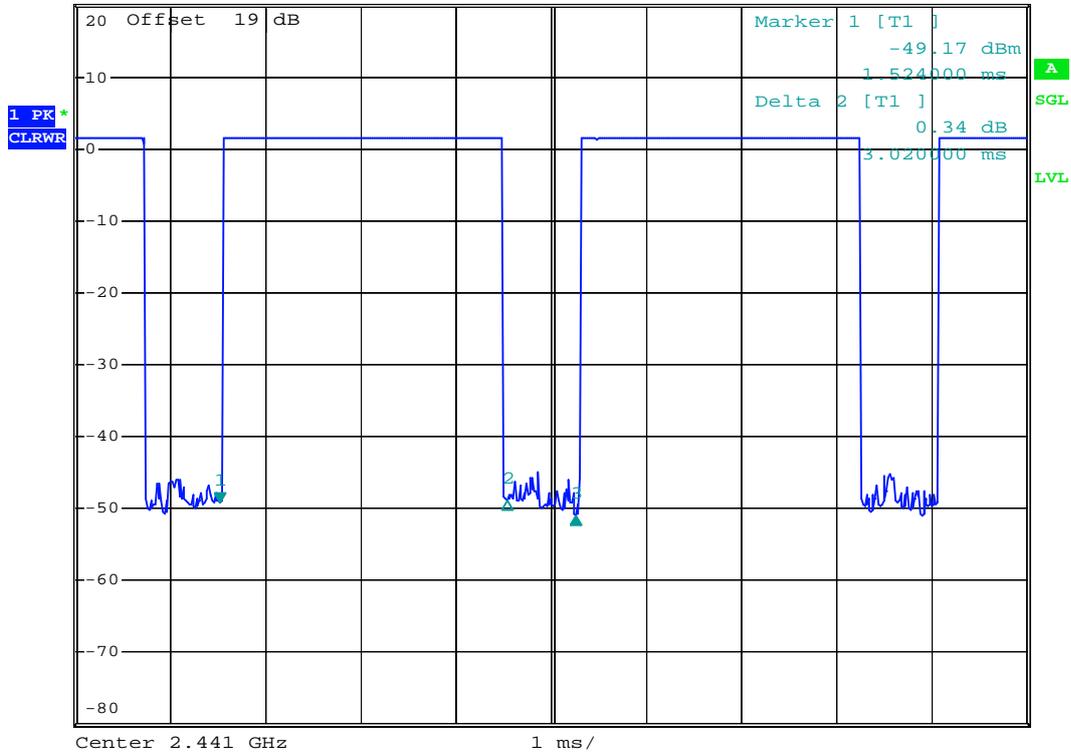
Date: 12.SEP.2007 21:33:11



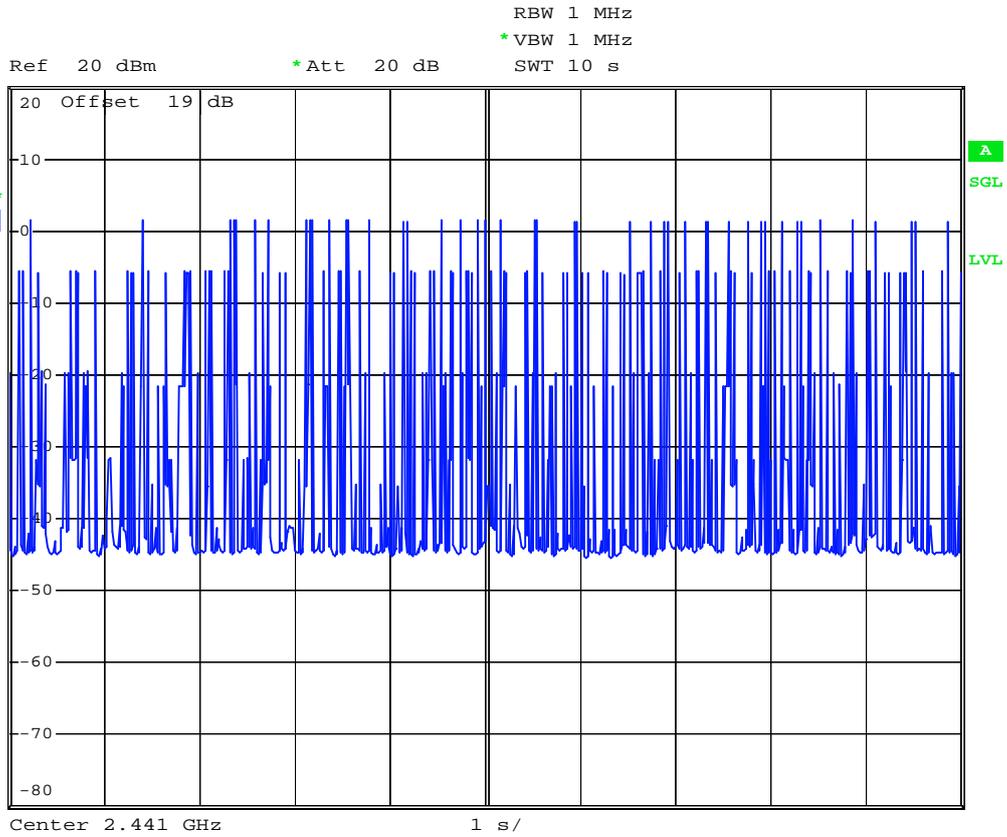
BT(1Mbps)_DH5 (CH39)



Ref 20 dBm *Att 20 dB RBW 1 MHz Delta 3 [T1] -1.81 dB
 *VBW 1 MHz SWT 10 ms 3.742000 ms



Date: 12.SEP.2007 21:31:53



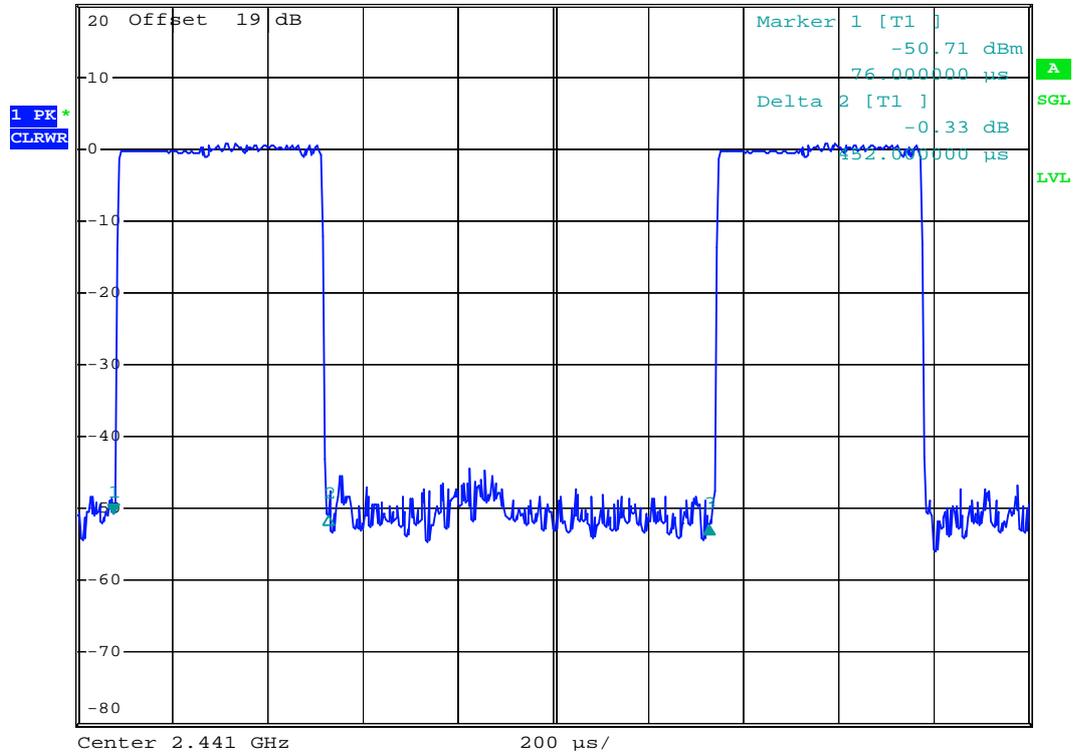
Date: 12.SEP.2007 21:33:42



BT-EDR(2Mbps)_DH1(CH39)



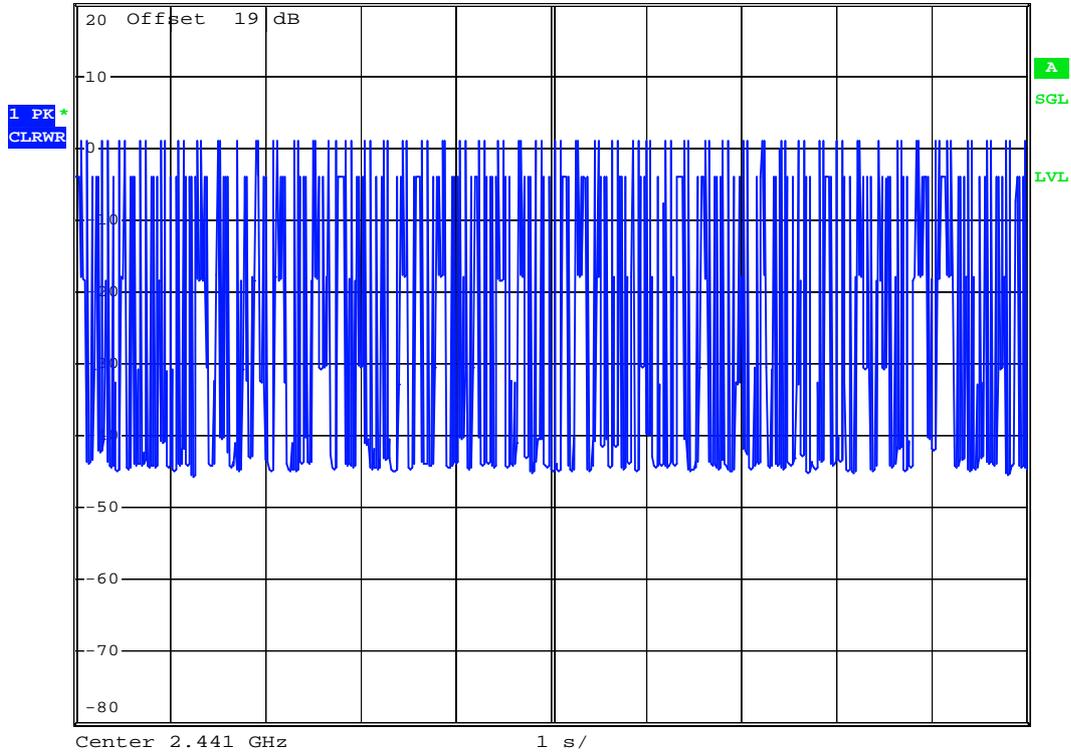
Ref 20 dBm *Att 20 dB RBW 1 MHz Delta 3 [T1] -1.65 dB
 *VBW 1 MHz SWT 2 ms 1.252000 ms



Date: 12.SEP.2007 21:56:39



Ref 20 dBm *Att 20 dB RBW 1 MHz
*VBW 1 MHz SWT 10 s



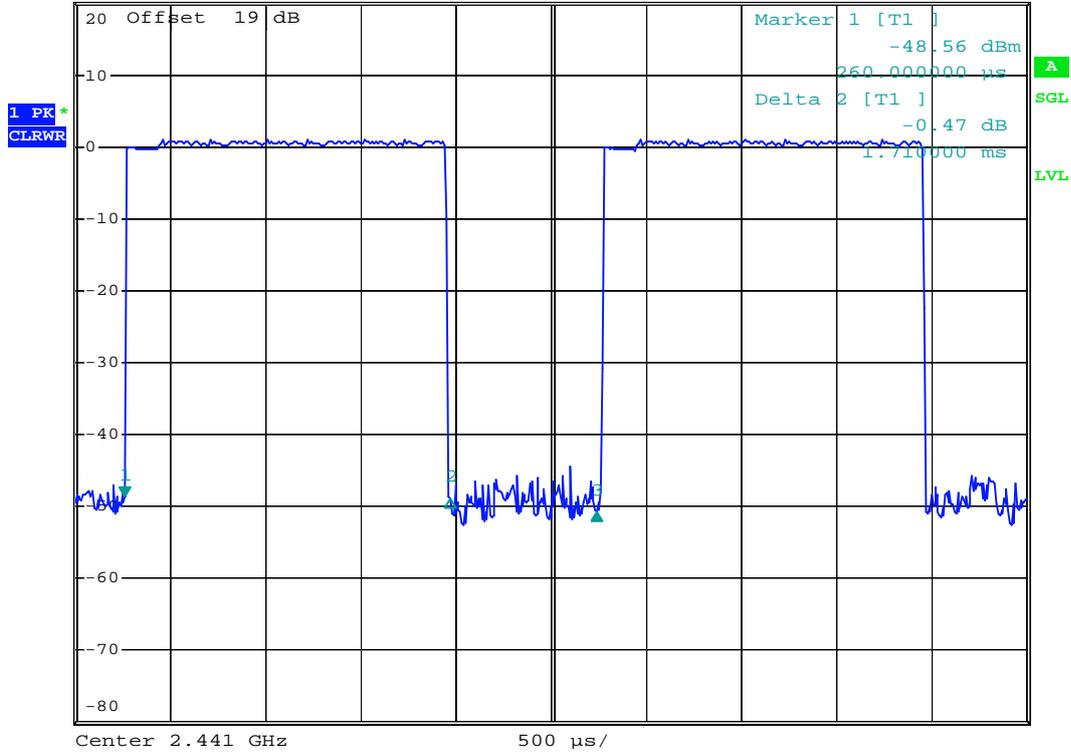
Date: 12.SEP.2007 21:59:58



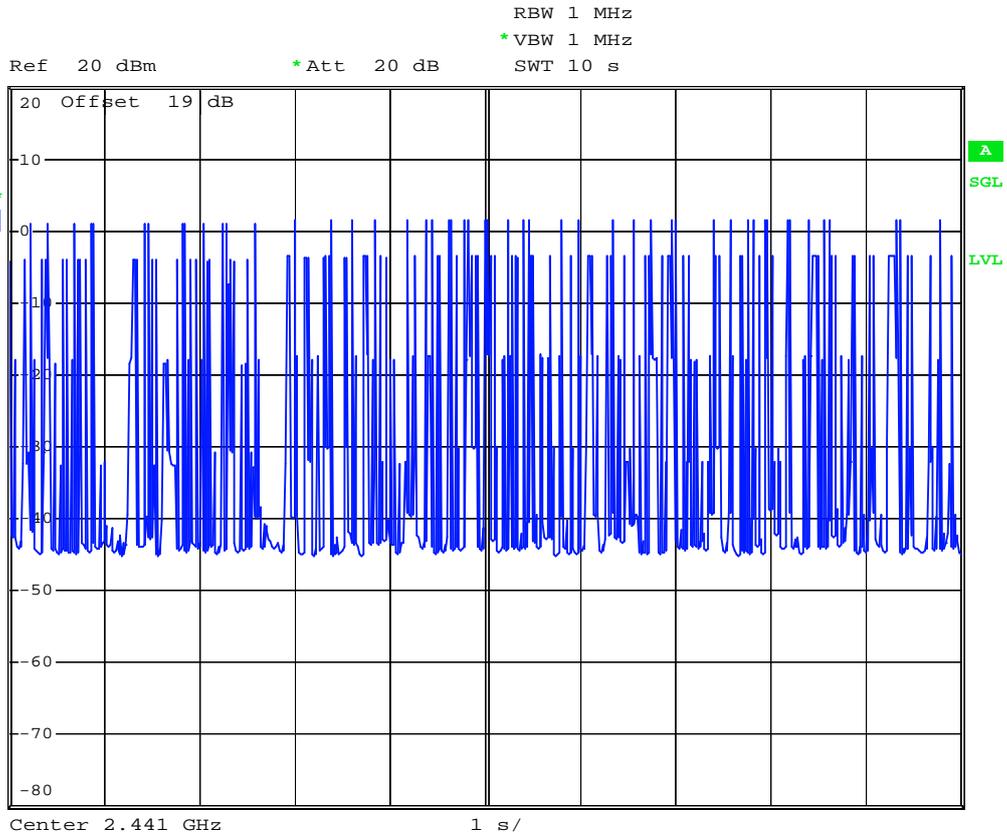
BT-EDR(2Mbps)_DH3 (CH39)



Ref 20 dBm *Att 20 dB RBW 1 MHz Delta 3 [T1] -2.23 dB
 *VBW 1 MHz SWT 5 ms 2.480000 ms



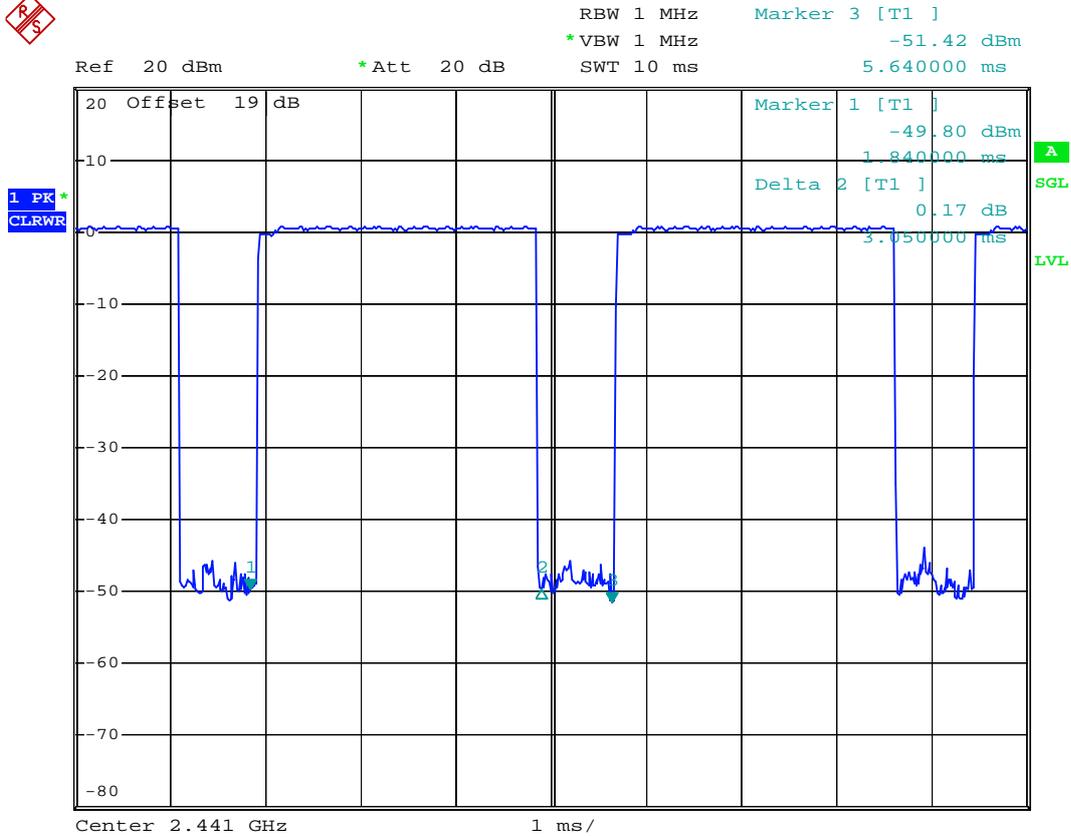
Date: 12.SEP.2007 21:57:44



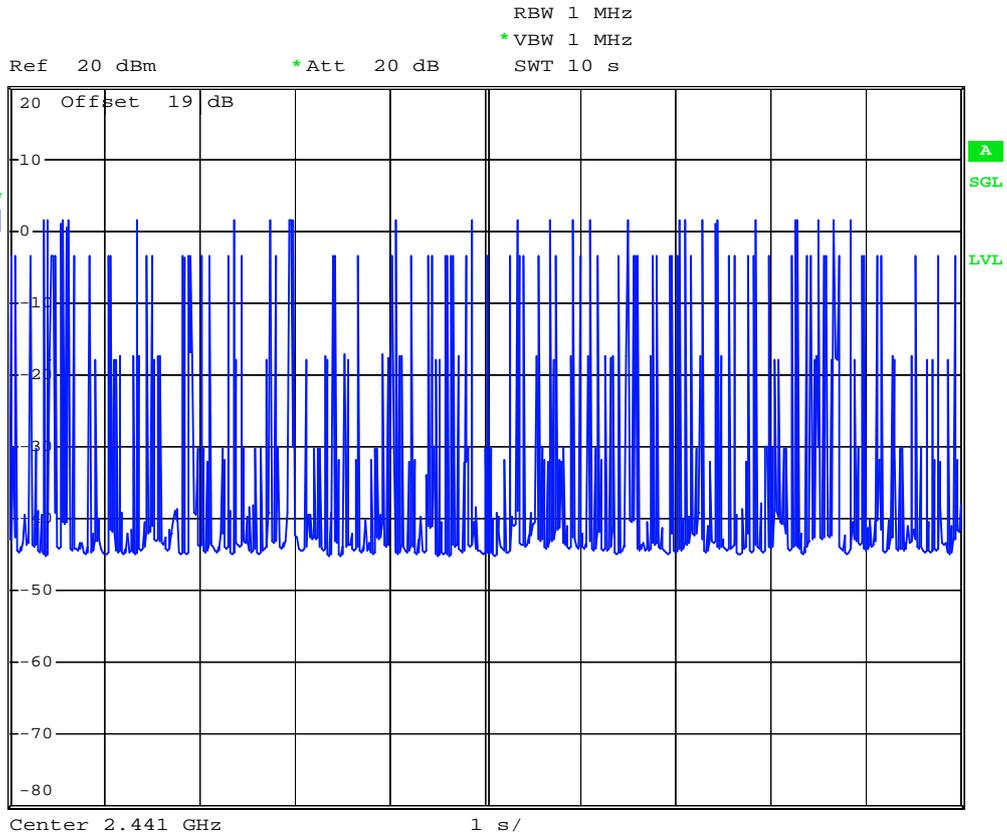
Date: 12.SEP.2007 22:00:51



BT-EDR(2Mbps)_DH5 (CH39)



Date: 12.SEP.2007 21:59:12



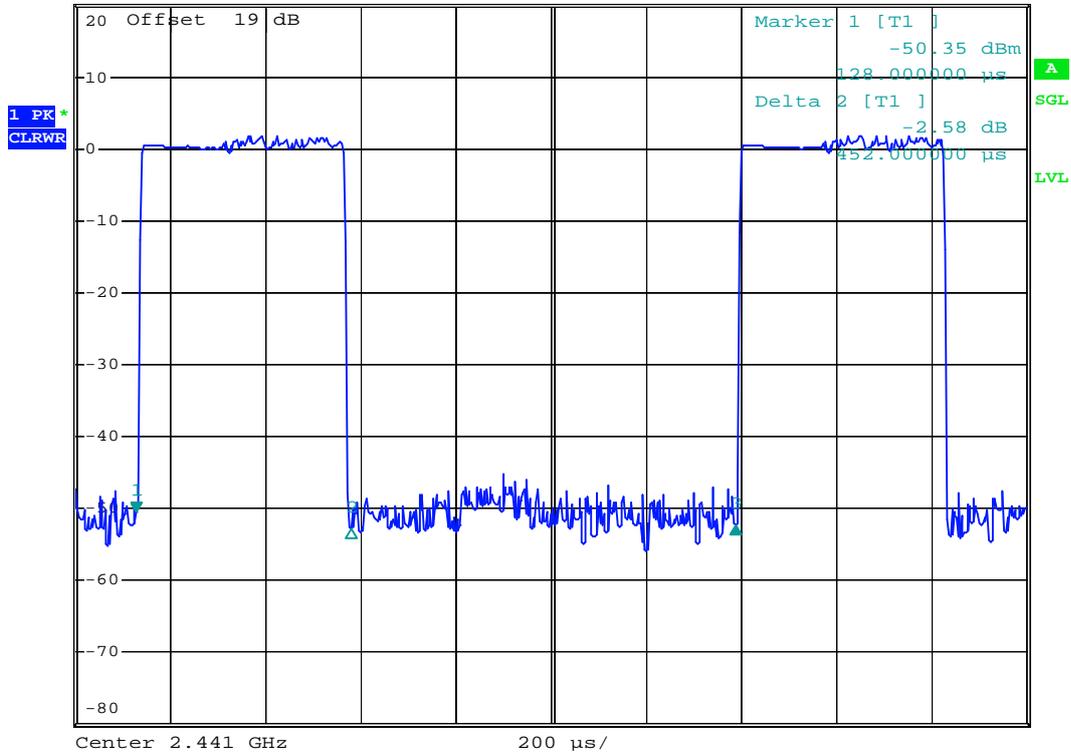
Date: 12.SEP.2007 22:01:22



BT-EDR(3Mbps)_DH1 (CH39)



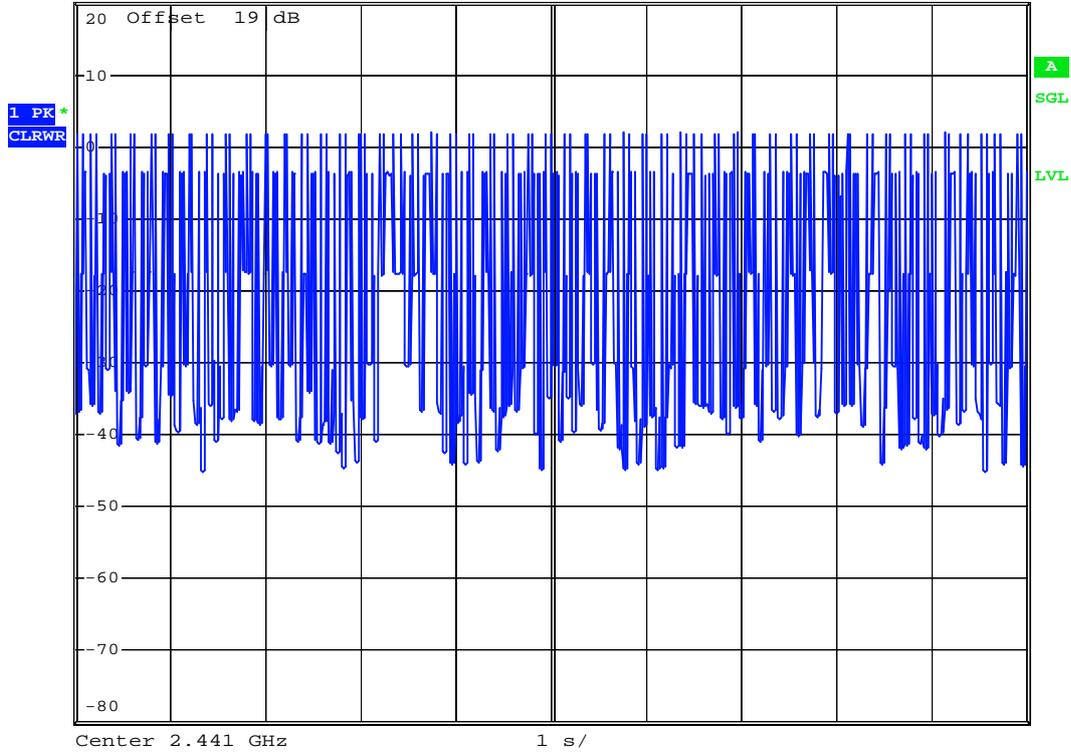
Ref 20 dBm *Att 20 dB RBW 1 MHz Delta 3 [T1] -1.90 dB
 *VBW 1 MHz SWT 2 ms 1.260000 ms



Date: 12.SEP.2007 22:30:21



Ref 20 dBm *Att 20 dB RBW 1 MHz
*VBW 1 MHz SWT 10 s



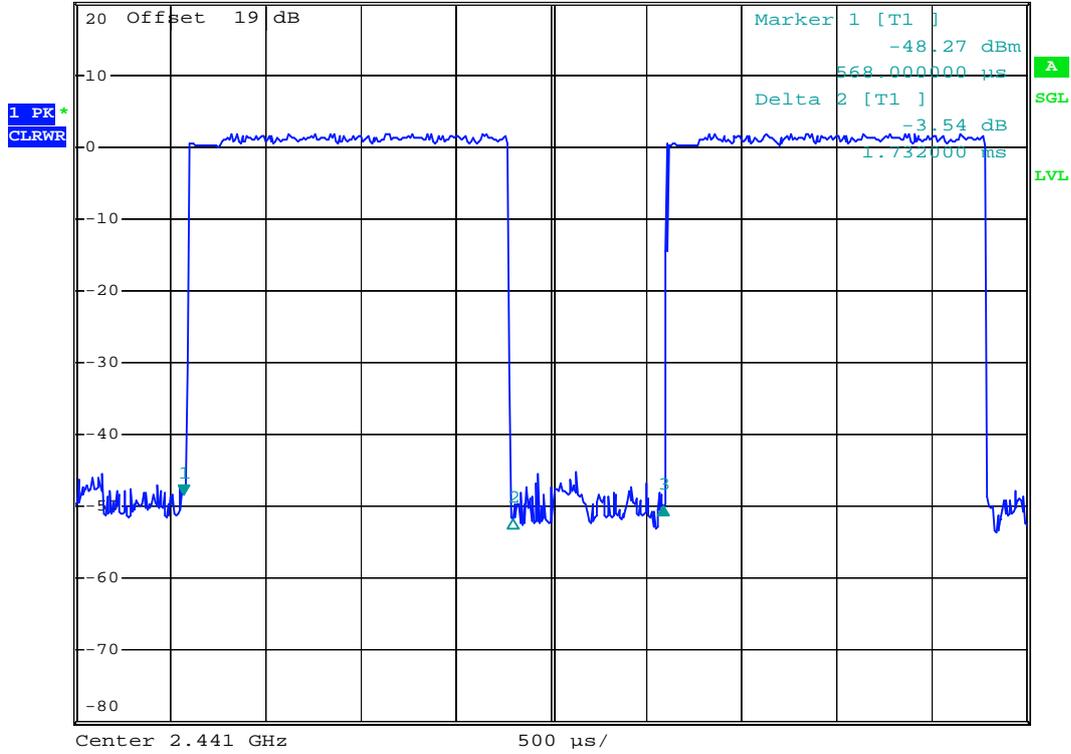
Date: 12.SEP.2007 22:32:59



BT-EDR(3Mbps)_DH3 (CH39)



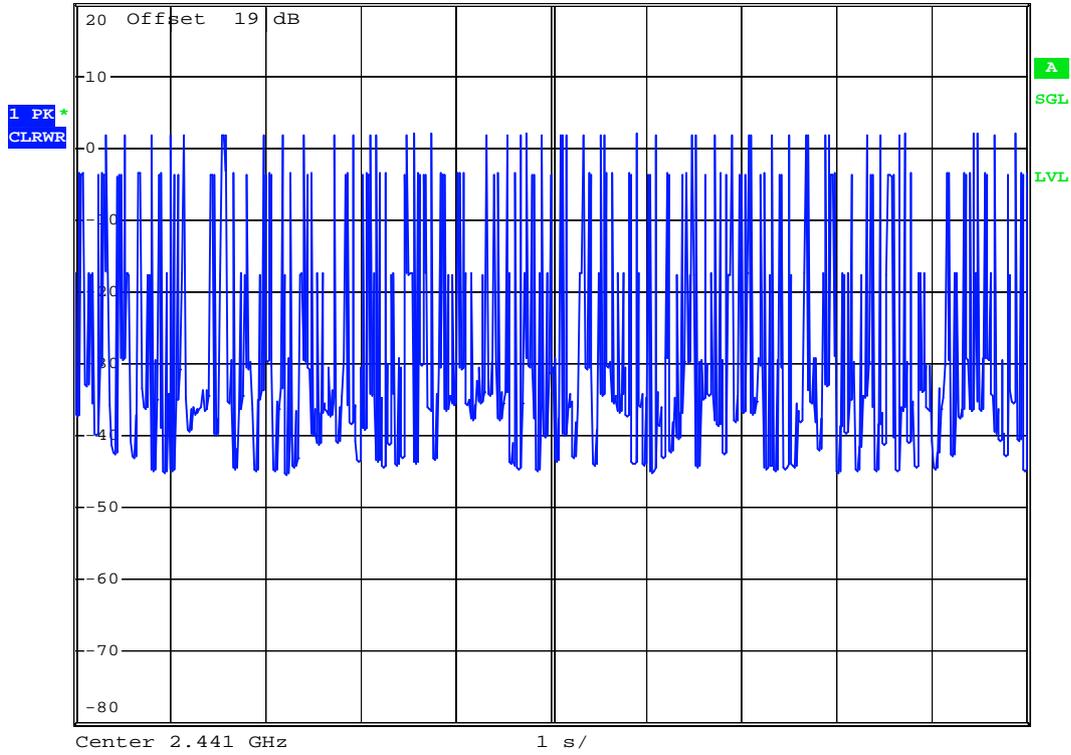
RBW 1 MHz Delta 3 [T1]
 *VBW 1 MHz -1.56 dB
 Ref 20 dBm *Att 20 dB SWT 5 ms 2.520000 ms



Date: 12.SEP.2007 22:31:10



Ref 20 dBm *Att 20 dB RBW 1 MHz
*VBW 1 MHz SWT 10 s



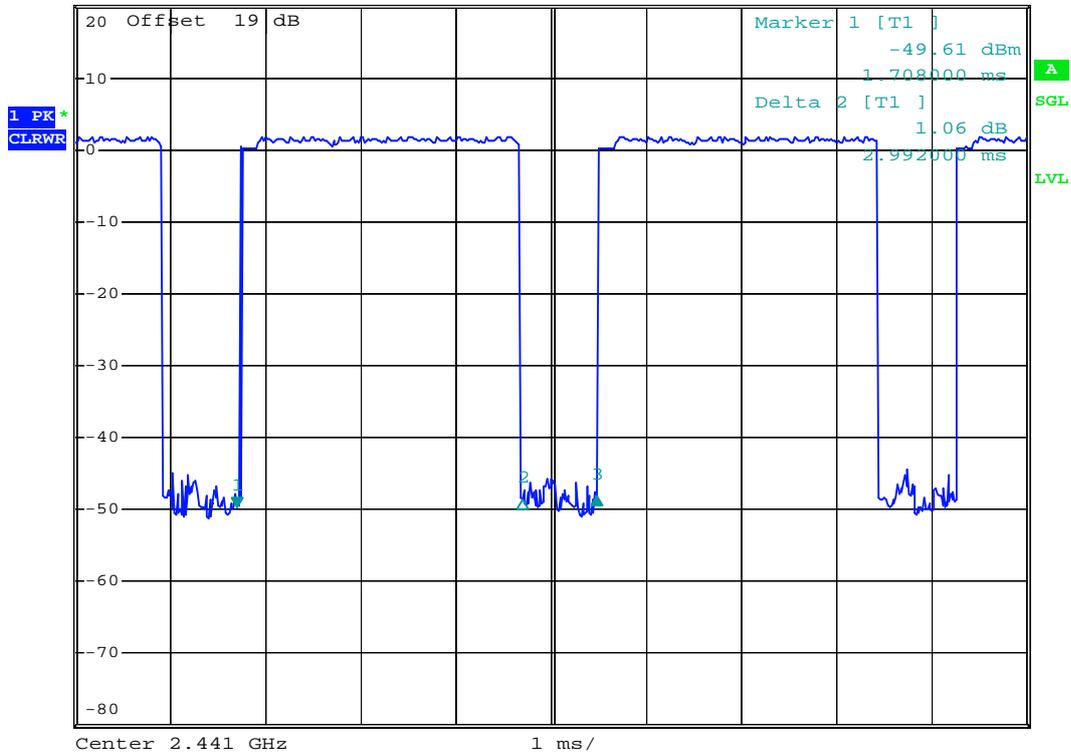
Date: 12.SEP.2007 22:33:25



BT-EDR(3Mbps)_DH5 (CH39)



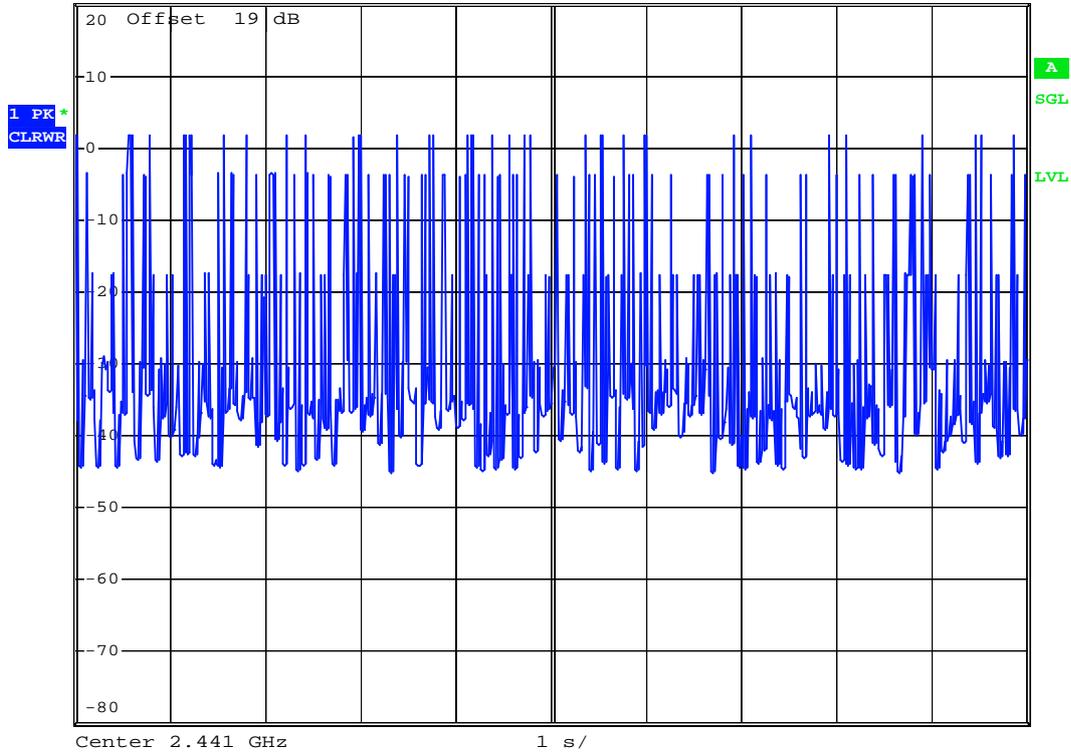
Ref 20 dBm *Att 20 dB RBW 1 MHz Delta 3 [T1] 1.45 dB
 *VBW 1 MHz 1.45 dB
 SWT 10 ms 3.780000 ms



Date: 12.SEP.2007 22:32:12



Ref 20 dBm *Att 20 dB RBW 1 MHz
*VBW 1 MHz SWT 10 s



Date: 12.SEP.2007 22:33:53

5.9 Peak Output Power Measurement

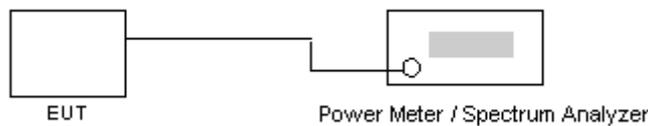
5.9.1 Measuring Instruments :

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 : 26~28°C

Relative Humidity : 49~51%

Test Engineer : Sun

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	20.09	1W/30 dBm
06	2437	20.31	1W/30 dBm
11	2462	20.57	1W/30 dBm

WLAN 802.11g

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	22.43	1W/30 dBm
06	2437	22.46	1W/30 dBm
11	2462	22.81	1W/30 dBm



BT(1Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	1.35	1W/30 dBm
39	2441	1.34	1W/30 dBm
78	2480	1.01	1W/30 dBm

BT-EDR(2Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	2.21	1W/30 dBm
39	2441	2.15	1W/30 dBm
78	2480	1.95	1W/30 dBm

BT-EDR(3Mbps)

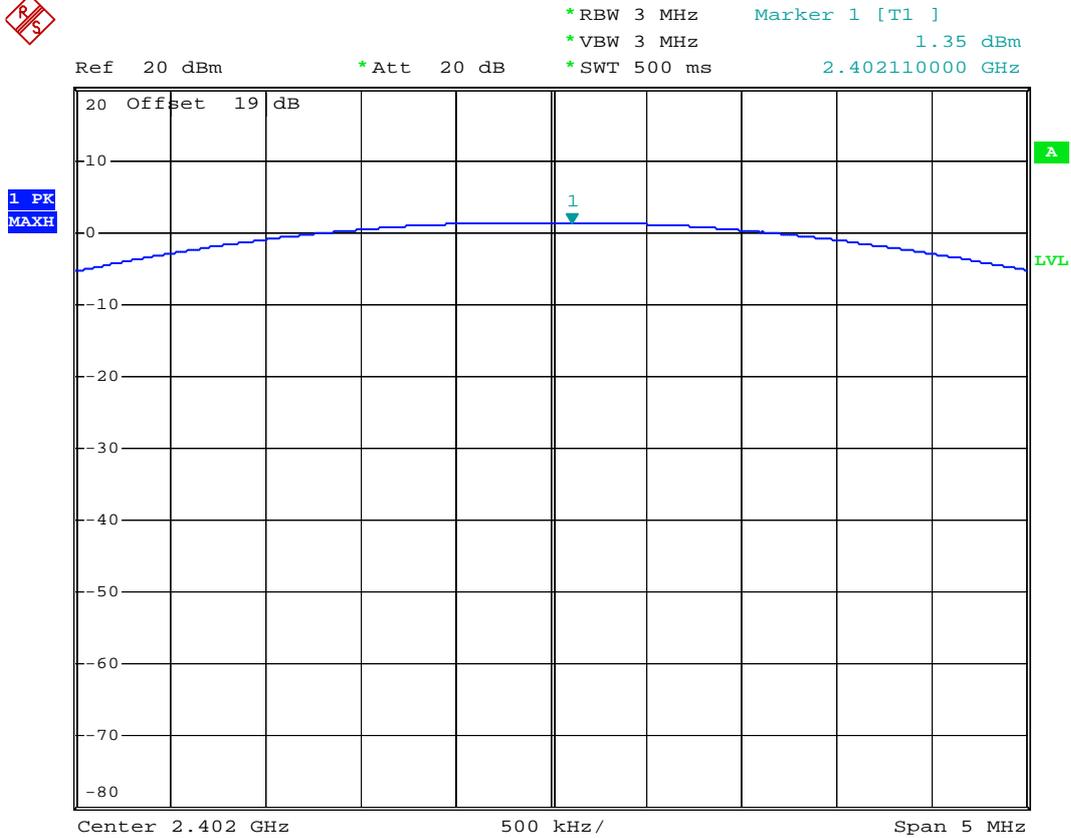
Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	2.45	1W/30 dBm
39	2441	2.18	1W/30 dBm
78	2480	2.08	1W/30 dBm



5.9.5 Output Power

BT(1Mbps)

Mode : CH00 (2402MHz)



Date: 12.SEP.2007 20:27:31

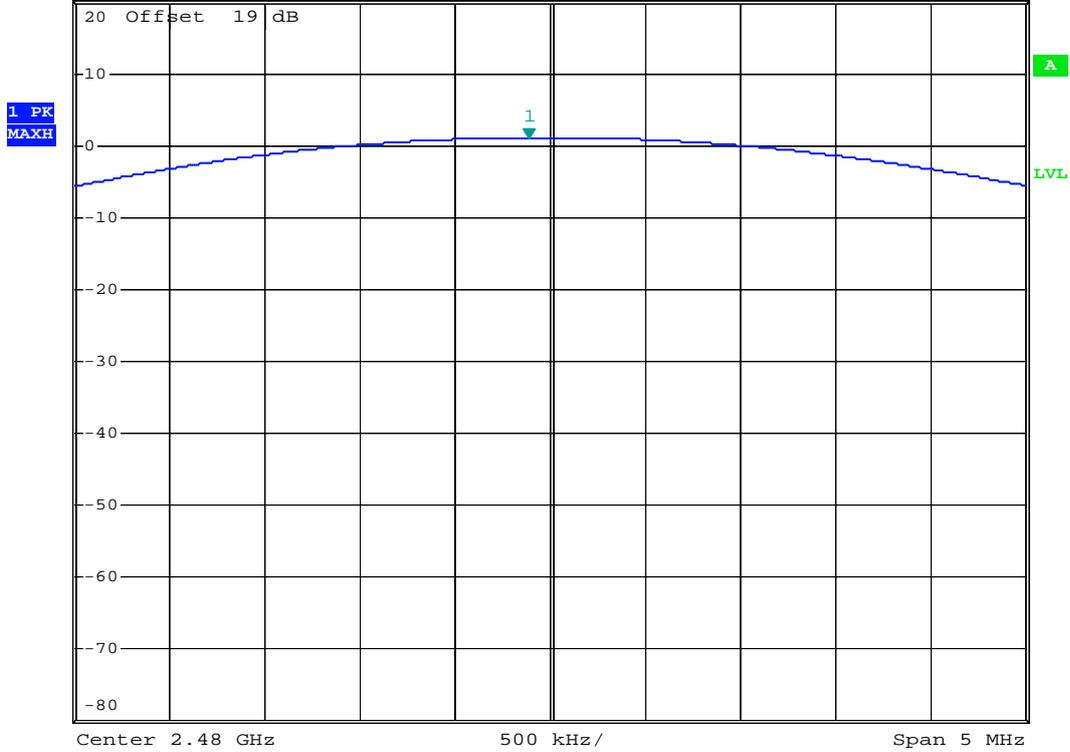


BT(1Mbps)

Mode : CH78 (2480MHz)



*RBW 3 MHz Marker 1 [T1]
 *VBW 3 MHz 1.01 dBm
 *SWT 500 ms 2.479890000 GHz
 Ref 20 dBm *Att 20 dB



Date: 12.SEP.2007 20:28:10

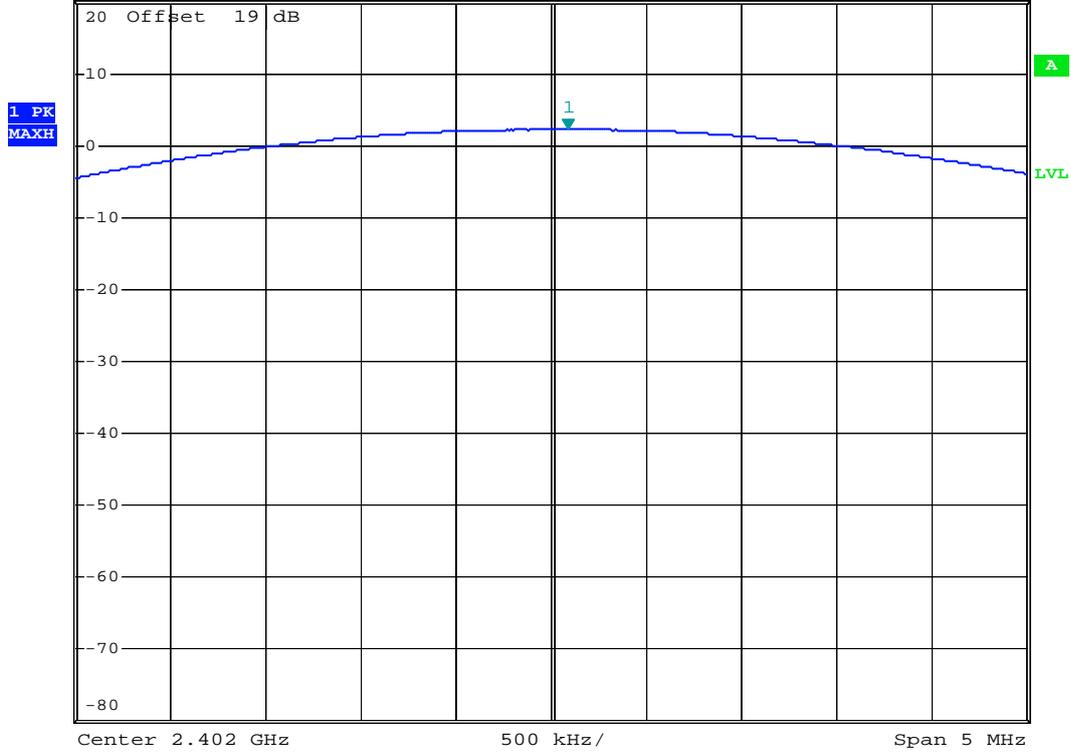


BT-EDR(2Mbps)

Mode : CH00 (2402MHz)



*RBW 3 MHz Marker 1 [T1]
 *VBW 3 MHz 2.21 dBm
 *Att 20 dB *SWT 500 ms 2.402090000 GHz
 Ref 20 dBm Offset 19 dB

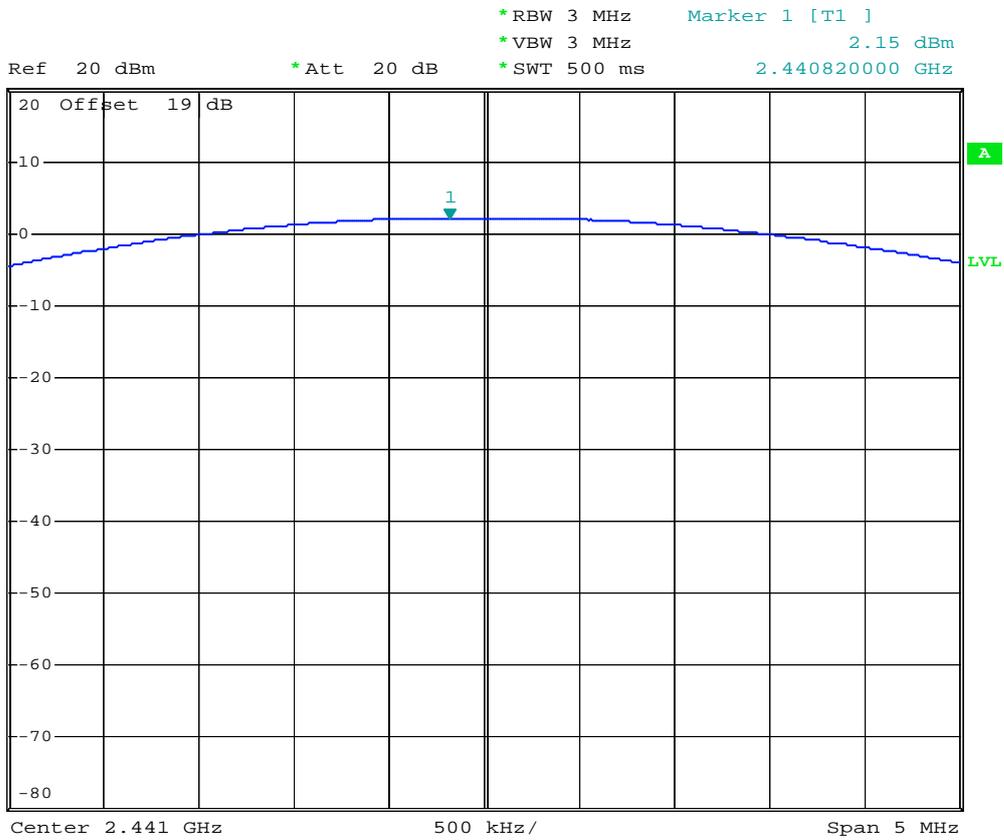


Date: 12.SEP.2007 21:45:50



BT-EDR(2Mbps)

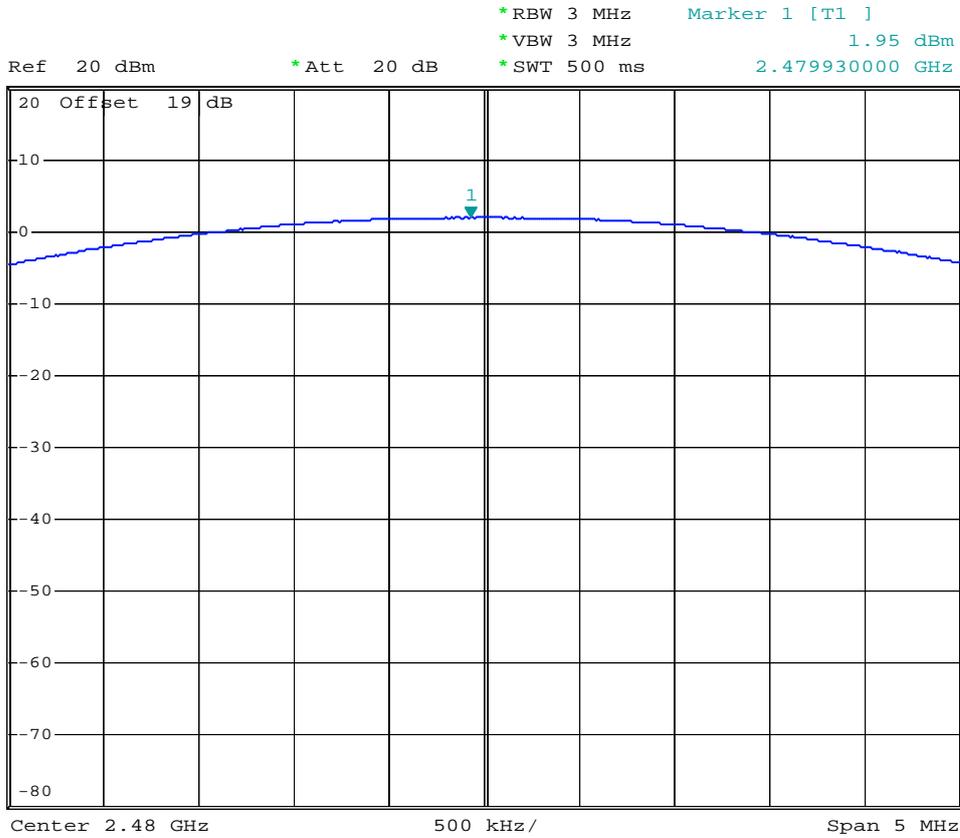
Mode : CH39 (2441MHz)



Date: 12.SEP.2007 21:46:04



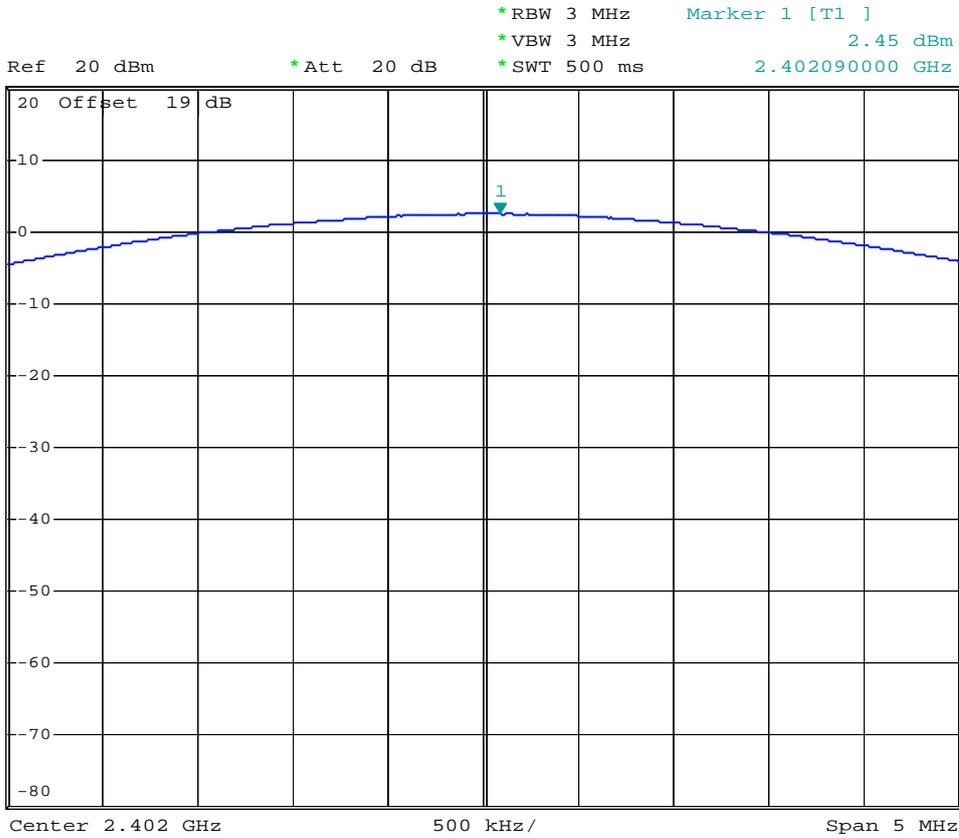
BT-EDR(2Mbps)
Mode : CH78 (2480MHz)



Date: 12.SEP.2007 21:46:16



BT-EDR(3Mbps)
Mode : CH00 (2402MHz)



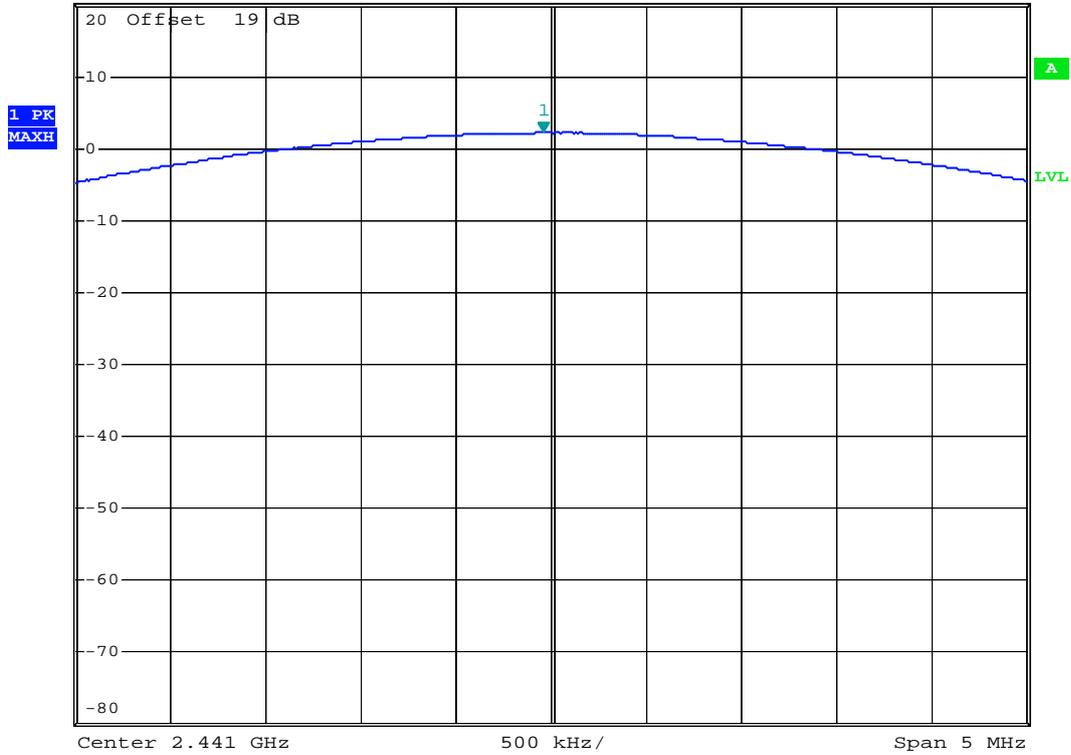
Date: 12.SEP.2007 22:57:48



BT-EDR(3Mbps)
Mode : CH39 (2441MHz)



*RBW 3 MHz Marker 1 [T1]
 *VBW 3 MHz 2.18 dBm
 *SWT 500 ms 2.440960000 GHz
 Ref 20 dBm *Att 20 dB



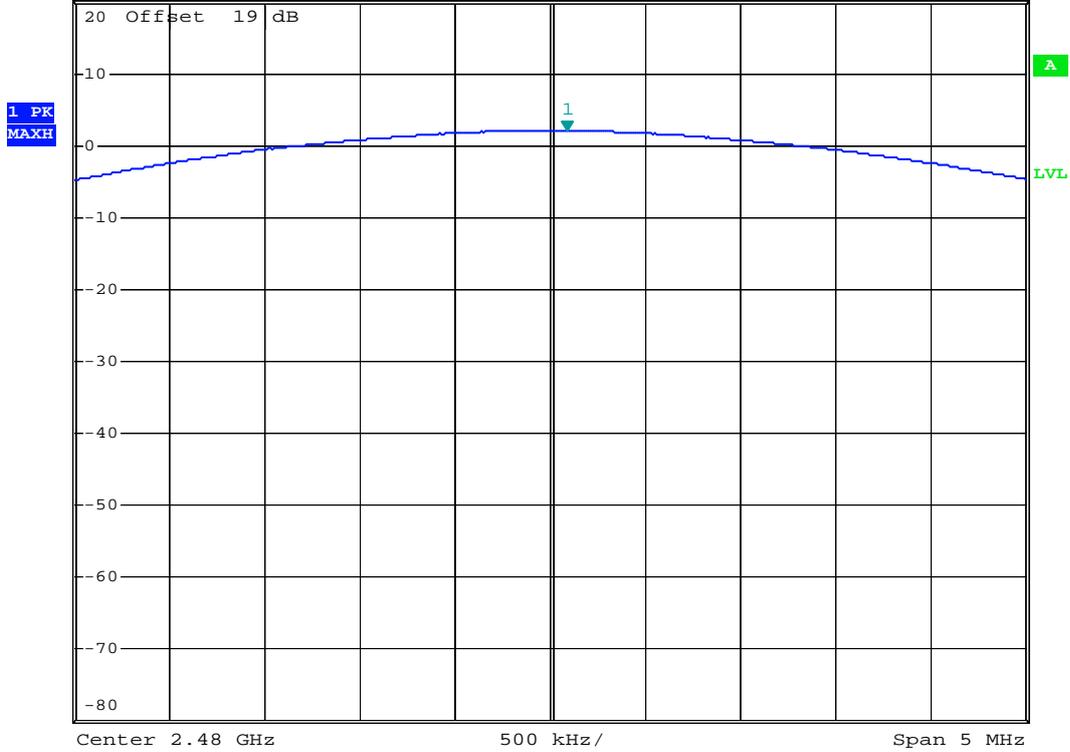
Date: 12.SEP.2007 22:19:24



BT-EDR(3Mbps)
Mode : CH78 (2480MHz)



Ref 20 dBm *Att 20 dB *RBW 3 MHz Marker 1 [T1]
*VBW 3 MHz 2.08 dBm
*SWT 500 ms 2.480090000 GHz



Date: 12.SEP.2007 22:20:35



5.10 Conducted Emission

5.10.1 Measuring Instruments

As described in chapter 6 of this test Report.

The receiver setting :

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

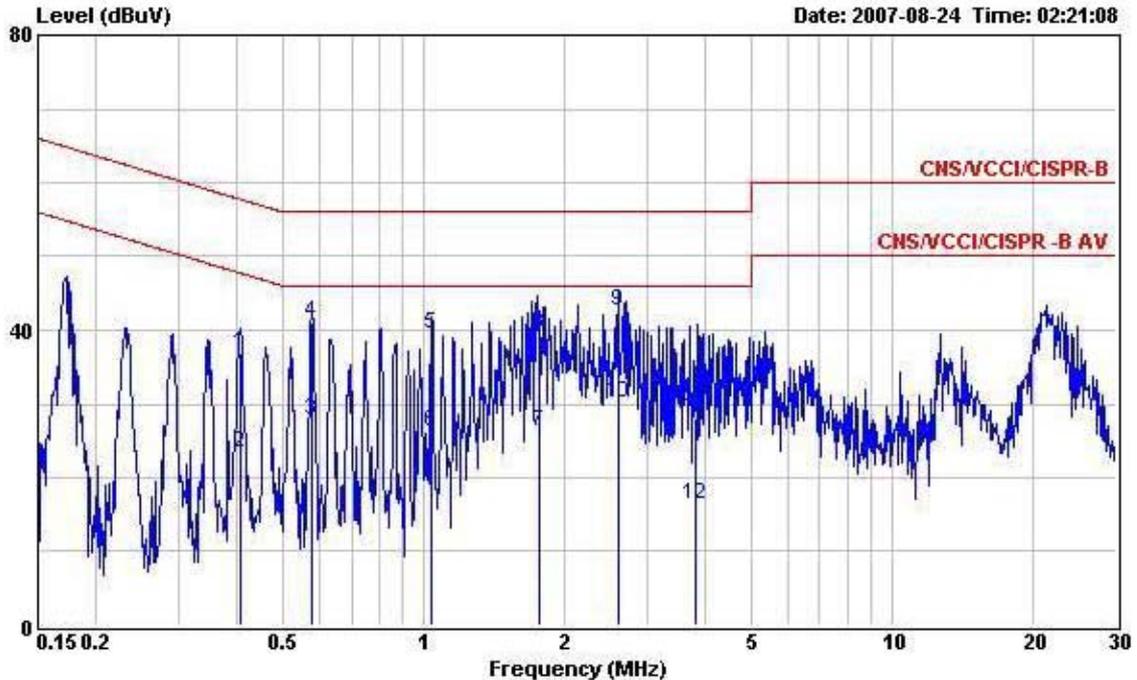
- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of a line impedance stabilization network (LISN).
- c. All the support units are connected to the other LISN.
- 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

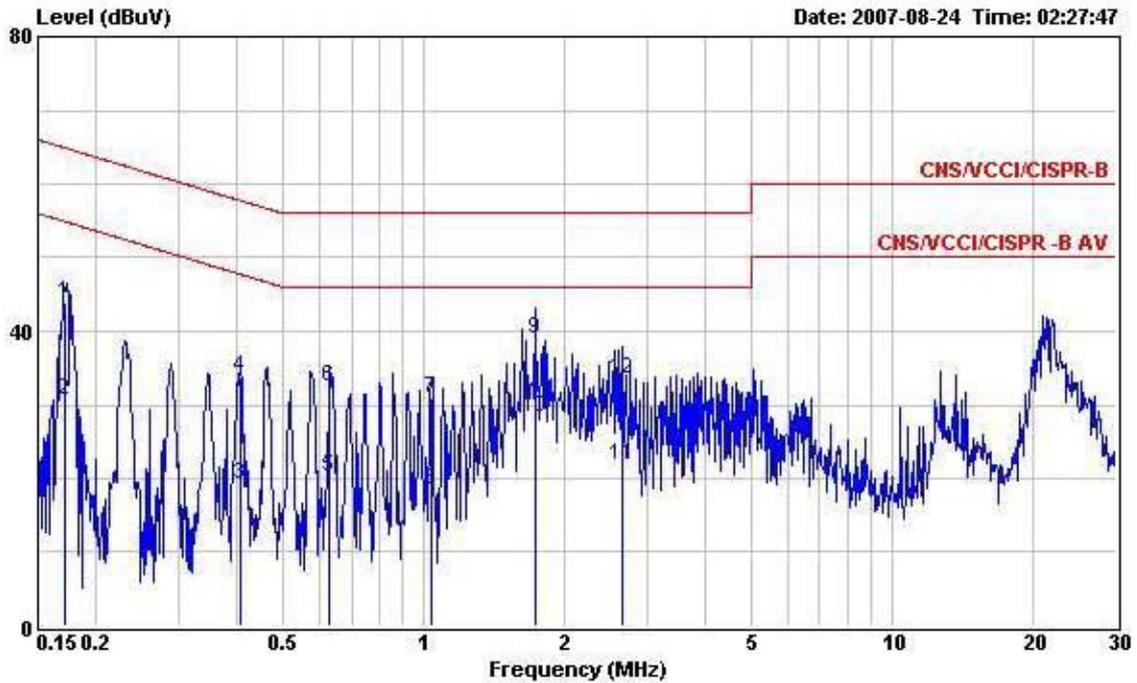
Temperature : 26~28°C
 Relative Humidity : 49~51%
 Test Enginner : Sun
 Test Mode : Mode 1

■ 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 : GSM/EDGE 850/900/1800/1900 Smart Phone
 : with BT_EDR, 802.11g, GPS, FM
 Power : 120Vac/60Hz
 Model : FD 781408
 Memo : GSM850 Idle+BT Link+WLAN Link+MPEG4
 : +Camera+Earphone+GPS Rx+Adaptor

	Over	Limit	Read	Cable	Probe		
Freq	Level	Limit	Line	Level	Loss	Factor	Remark
MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.406	37.01	-20.72	57.73	36.79	0.12	0.10 QP
2	0.406	23.50	-24.23	47.73	23.28	0.12	0.10 Average
3	0.576	27.86	-18.14	46.00	27.62	0.14	0.10 Average
4	0.576	40.99	-15.01	56.00	40.75	0.14	0.10 QP
5	1.039	39.42	-16.58	56.00	39.15	0.17	0.10 QP
6	1.039	26.28	-19.72	46.00	26.01	0.17	0.10 Average
7	1.757	26.11	-19.89	46.00	25.87	0.14	0.10 Average
8	1.757	39.56	-16.44	56.00	39.32	0.14	0.10 QP
9	2.594	42.48	-13.52	56.00	42.13	0.21	0.14 QP
10	2.594	30.02	-15.98	46.00	29.67	0.21	0.14 Average
11	3.816	27.95	-28.05	56.00	27.43	0.33	0.19 QP
12	3.816	16.48	-29.52	46.00	15.96	0.33	0.19 Average



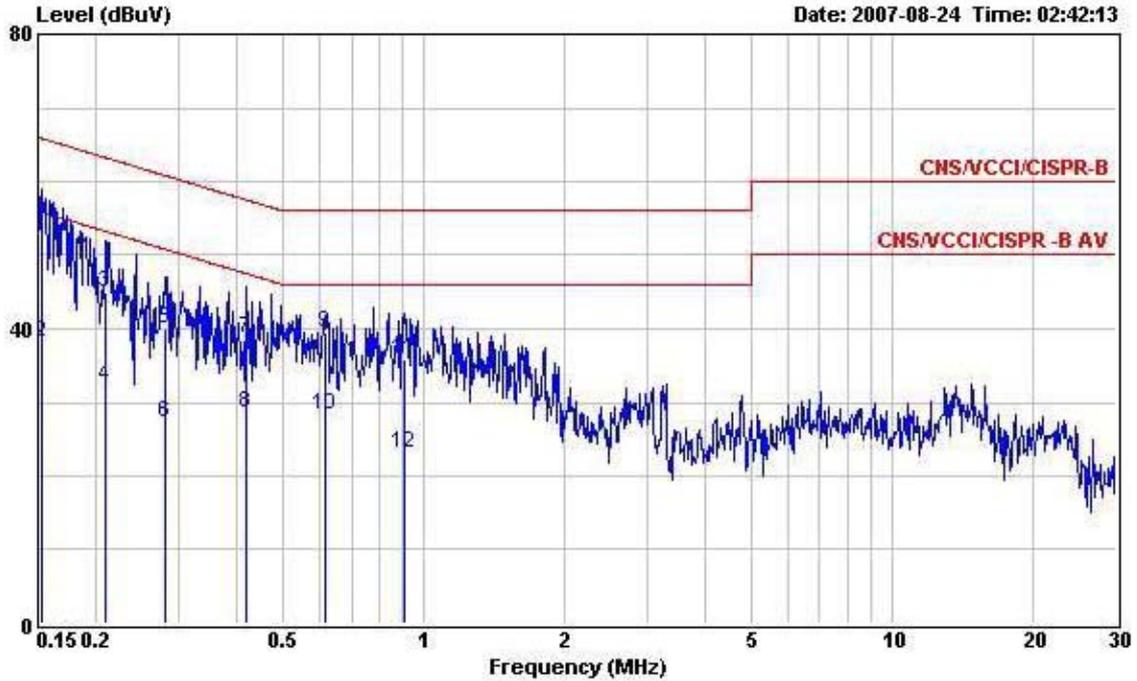
Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : GSM/EDGE 850/900/1800/1900 Smart Phone
 : with BT_EDR, 802.11g, GPS, FM
 Power : 120Vac/60Hz
 Model : FD 781408
 Memo : GSM850 Idle+BT Link+WLAN Link+MPEG4
 : +Camera+Earphone+GPS Rx+Adaptor

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.172	43.89	-20.97	64.86	43.70	0.09	0.10	QP
2	0.172	30.72	-24.14	54.86	30.53	0.09	0.10	Average
3	0.404	19.21	-28.56	47.77	18.99	0.12	0.10	Average
4	0.404	33.70	-24.07	57.77	33.48	0.12	0.10	QP
5	0.630	20.31	-25.69	46.00	20.07	0.14	0.10	Average
6	0.630	32.41	-23.59	56.00	32.17	0.14	0.10	QP
7	1.038	30.83	-25.17	56.00	30.56	0.17	0.10	QP
8	1.038	18.45	-27.55	46.00	18.18	0.17	0.10	Average
9	1.727	38.94	-17.06	56.00	38.70	0.14	0.10	QP
10	1.727	28.44	-17.56	46.00	28.20	0.14	0.10	Average
11	2.646	21.95	-24.05	46.00	21.63	0.22	0.10	Average
12	2.646	33.43	-22.57	56.00	33.11	0.22	0.10	QP



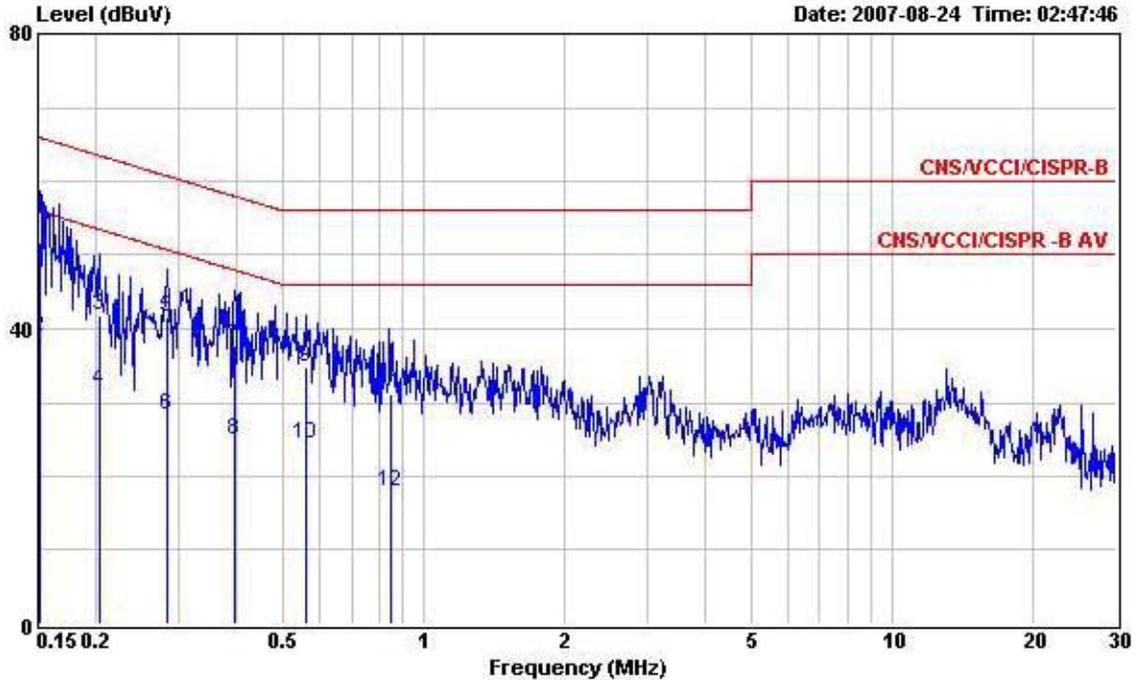
Temperature : 26~28°C
 Relative Humidity : 49~51%
 Test Enginner : Sun
 Test Mode : Mode 2

■ 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 : GSM/EDGE 850/900/1800/1900 Smart Phone
 : with BT_EDR, 802.11g, GPS, FM
 Power : From Notebook
 Model : FD 781408
 Memo : GSM850 Idle+BT Link+WLAN Link+MPEG4
 : +Camera+Earphone+GPS Rx+USB Link

Freq	Level	Over	Limit	Read	Cable	Probe	Remark
MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.153	53.45	-12.39	65.84	53.25	0.10	0.10 QP
2	0.153	38.16	-17.68	55.84	37.96	0.10	0.10 Average
3	0.209	44.89	-18.35	63.24	44.71	0.08	0.10 QP
4	0.209	32.33	-20.91	53.24	32.15	0.08	0.10 Average
5	0.280	40.11	-20.71	60.82	39.91	0.10	0.10 QP
6	0.280	27.33	-23.49	50.82	27.13	0.10	0.10 Average
7	0.419	38.69	-18.78	57.47	38.47	0.12	0.10 QP
8	0.419	28.66	-18.81	47.47	28.44	0.12	0.10 Average
9	0.617	39.46	-16.54	56.00	39.22	0.14	0.10 QP
10	0.617	28.39	-17.61	46.00	28.15	0.14	0.10 Average
11	0.909	35.84	-20.16	56.00	35.58	0.16	0.10 QP
12	0.909	23.03	-22.97	46.00	22.77	0.16	0.10 Average



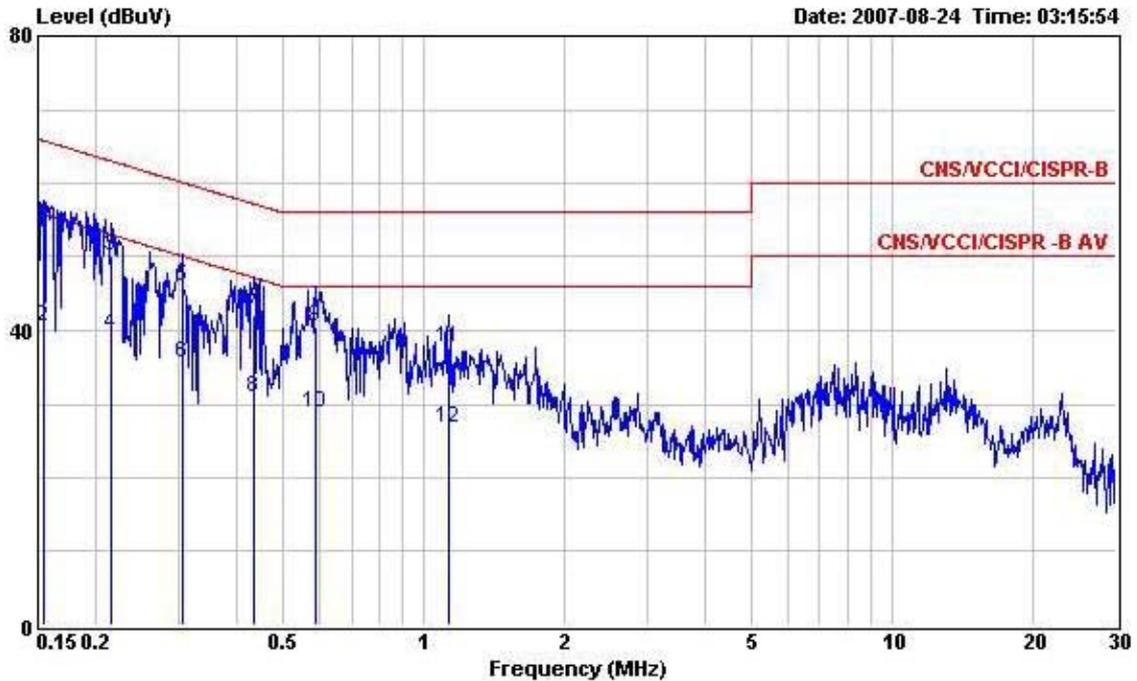
Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : GSM/EDGE 850/900/1800/1900 Smart Phone
 : with BT_EDR, 802.11g, GPS, FM
 Power : From Notebook
 Model : FD 781408
 Memo : GSM850 Idle+BT Link+WLAN Link+MPEG4
 : +Camera+Earphone+GPS Rx+USB Link

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.152	51.72	-14.17	65.89	51.52	0.10	0.10	QP
2	0.152	39.07	-16.82	55.89	38.87	0.10	0.10	Average
3	0.203	41.92	-21.57	63.49	41.74	0.08	0.10	QP
4	0.203	31.81	-21.68	53.49	31.63	0.08	0.10	Average
5	0.282	41.51	-19.25	60.76	41.31	0.10	0.10	QP
6	0.282	28.37	-22.39	50.76	28.17	0.10	0.10	Average
7	0.396	37.77	-20.17	57.94	37.55	0.12	0.10	QP
8	0.396	24.90	-23.04	47.94	24.68	0.12	0.10	Average
9	0.558	34.68	-21.32	56.00	34.44	0.14	0.10	QP
10	0.558	24.36	-21.64	46.00	24.12	0.14	0.10	Average
11	0.851	31.06	-24.94	56.00	30.80	0.16	0.10	QP
12	0.851	18.00	-28.00	46.00	17.74	0.16	0.10	Average



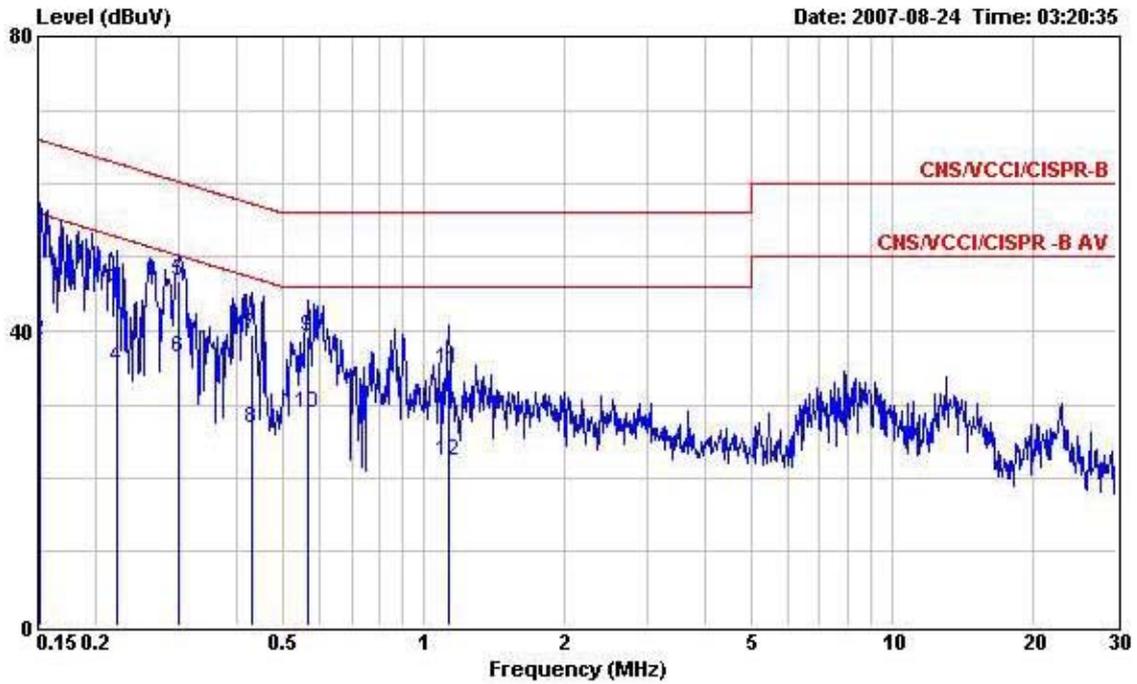
Temperature : 26~28°C
 Relative Humidity : 49~51%
 Test Enginner : Sun
 Test Mode : Mode 3

■ 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 : GSM/EDGE 850/900/1800/1900 Smart Phone
 : with BT_EDR, 802.11g, GPS, FM
 Power : From Notebook
 Model : FD 781408
 Memo : PCS1900 Idle+BT Link+WLAN Link+MPEG4
 : +Camera+Earphone+GPS Rx+USB Link

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.154	53.23	-12.55	65.78	53.03	0.10	0.10	QP
2	0.154	40.49	-15.29	55.78	40.29	0.10	0.10	Average
3	0.215	50.17	-12.84	63.01	49.99	0.08	0.10	QP
4	0.215	39.35	-13.66	53.01	39.17	0.08	0.10	Average
5	0.305	46.04	-14.07	60.11	45.84	0.10	0.10	QP
6	0.305	35.47	-14.64	50.11	35.27	0.10	0.10	Average
7	0.435	42.05	-15.11	57.16	41.83	0.12	0.10	QP
8	0.435	30.96	-16.20	47.16	30.74	0.12	0.10	Average
9	0.589	40.47	-15.53	56.00	40.23	0.14	0.10	QP
10	0.589	28.92	-17.08	46.00	28.68	0.14	0.10	Average
11	1.130	37.61	-18.39	56.00	37.35	0.16	0.10	QP
12	1.130	26.75	-19.25	46.00	26.49	0.16	0.10	Average



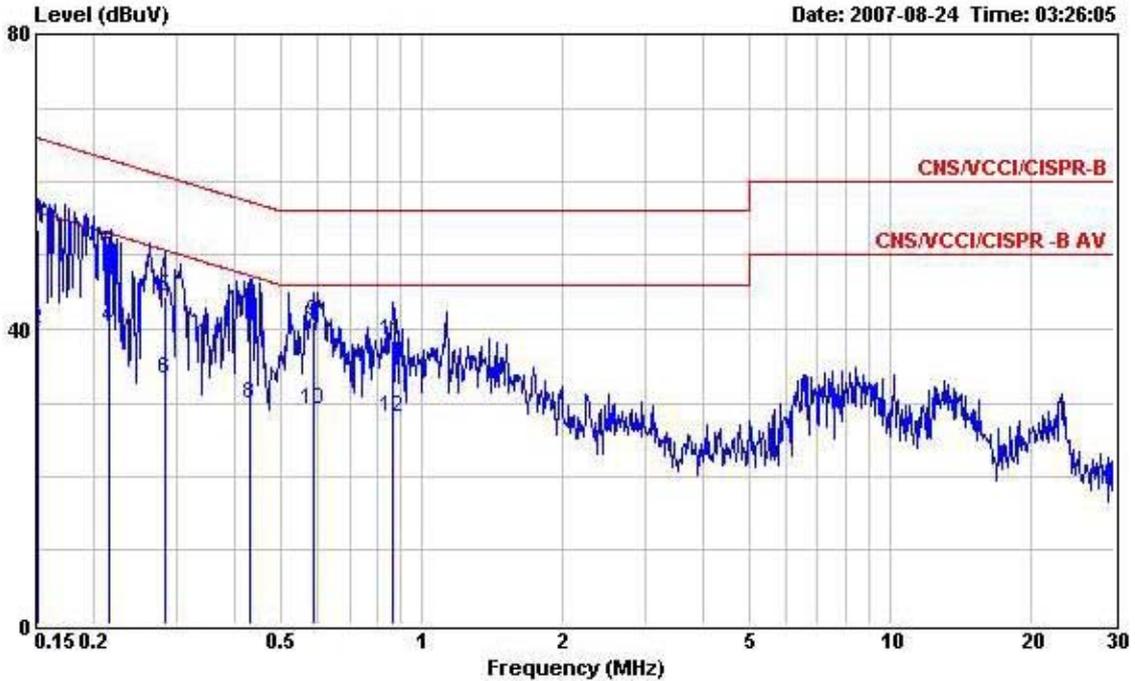
Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : GSM/EDGE 850/900/1800/1900 Smart Phone
 : with BT_EDR, 802.11g, GPS, FM
 Power : From Notebook
 Model : FD 781408
 Memo : PCS1900 Idle+BT Link+WLAN Link+MPEG4
 : +Camera+Earphone+GPS Rx+USB Link

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.152	51.77	-14.12	65.89	51.57	0.10	0.10	QP
2	0.152	38.80	-17.09	55.89	38.60	0.10	0.10	Average
3	0.222	45.78	-16.96	62.74	45.59	0.09	0.10	QP
4	0.222	35.17	-17.57	52.74	34.98	0.09	0.10	Average
5	0.299	46.81	-13.46	60.27	46.61	0.10	0.10	QP
6	0.299	36.37	-13.90	50.27	36.17	0.10	0.10	Average
7	0.428	39.48	-17.81	57.29	39.26	0.12	0.10	QP
8	0.428	26.72	-20.57	47.29	26.50	0.12	0.10	Average
9	0.567	39.29	-16.71	56.00	39.05	0.14	0.10	QP
10	0.567	28.72	-17.28	46.00	28.48	0.14	0.10	Average
11	1.130	34.81	-21.19	56.00	34.55	0.16	0.10	QP
12	1.130	22.22	-23.78	46.00	21.96	0.16	0.10	Average



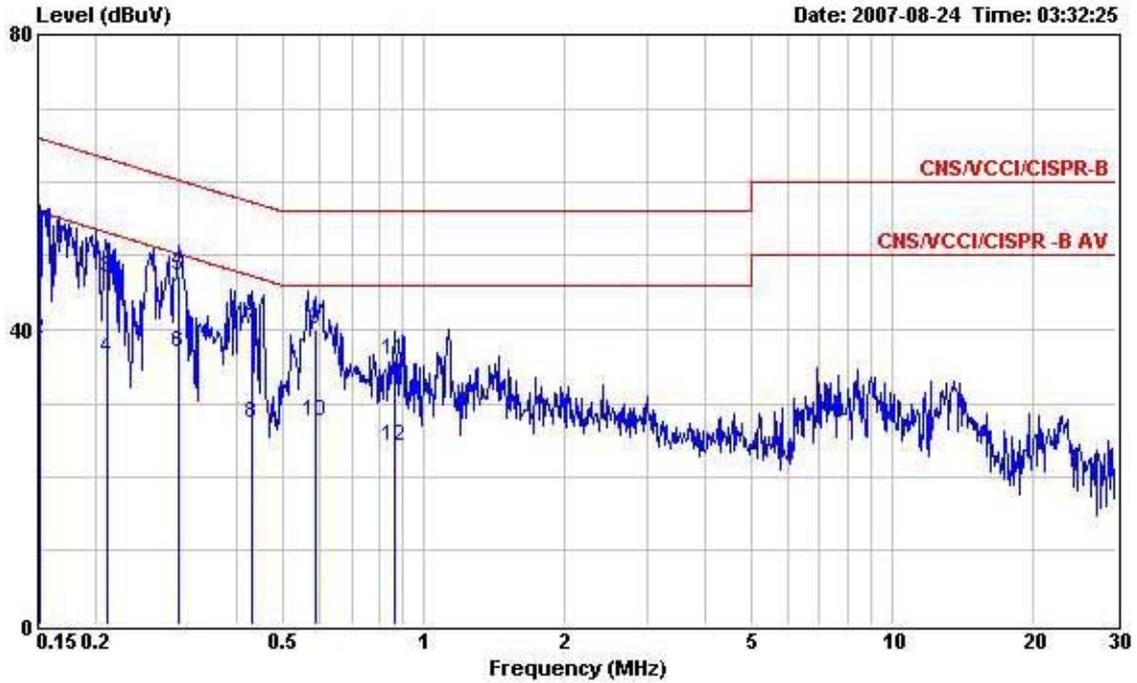
Temperature : 26~28°C
 Relative Humidity : 49~51%
 Test Enginner : Sun
 Test Mode : Mode 4

■ 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 : GSM/EDGE 850/900/1800/1900 Smart Phone
 : with BT_EDR, 802.11g, GPS, FM
 Power : From Notebook
 Model : FD 781408
 Memo : EDGE Idle+BT Link+WLAN Link+MPEG4
 : +Camera+Earphone+GPS Rx+USB Link

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.152	53.39	-12.50	65.89	53.19	0.10	0.10	QP
2	0.152	39.90	-15.99	55.89	39.70	0.10	0.10	Average
3	0.216	50.43	-12.54	62.97	50.25	0.08	0.10	QP
4	0.216	40.30	-12.67	52.97	40.12	0.08	0.10	Average
5	0.282	44.54	-16.22	60.76	44.34	0.10	0.10	QP
6	0.282	33.26	-17.50	50.76	33.06	0.10	0.10	Average
7	0.428	41.49	-15.80	57.29	41.27	0.12	0.10	QP
8	0.428	29.90	-17.39	47.29	29.68	0.12	0.10	Average
9	0.585	41.12	-14.88	56.00	40.88	0.14	0.10	QP
10	0.585	29.05	-16.95	46.00	28.81	0.14	0.10	Average
11	0.866	38.41	-17.59	56.00	38.15	0.16	0.10	QP
12	0.866	28.00	-18.00	46.00	27.74	0.16	0.10	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : GSM/EDGE 850/900/1800/1900 Smart Phone
 : with BT_EDR, 802.11g, GPS, FM
 Power : From Notebook
 Model : FD 781408
 Memo : EDGE Idle+BT Link+WLAN Link+MPEG4
 : +Camera+Earphone+GPS Rx+USB Link

	Freq	Level	Over Limit	Limit	Read Line	Cable Loss	Probe Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.152	51.95	-13.94	65.89	51.75	0.10	0.10	QP
2	0.152	38.80	-17.09	55.89	38.60	0.10	0.10	Average
3	0.211	47.00	-16.17	63.17	46.82	0.08	0.10	QP
4	0.211	35.99	-17.18	53.17	35.81	0.08	0.10	Average
5	0.300	47.20	-13.04	60.24	47.00	0.10	0.10	QP
6	0.300	36.77	-13.47	50.24	36.57	0.10	0.10	Average
7	0.428	40.09	-17.20	57.29	39.87	0.12	0.10	QP
8	0.428	27.18	-20.11	47.29	26.96	0.12	0.10	Average
9	0.585	40.00	-16.00	56.00	39.76	0.14	0.10	QP
10	0.585	27.57	-18.43	46.00	27.33	0.14	0.10	Average
11	0.866	35.96	-20.04	56.00	35.70	0.16	0.10	QP
12	0.866	24.18	-21.82	46.00	23.92	0.16	0.10	Average

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.