



FCC TEST REPORT

for

47 CFR Part 15 Subpart C

Equipment : Pocket PC (PDA)
Trade Name : Mio DigiWalker
Model No. : Mio P550
FCC ID : P4Q-MIOP550
Filing Type : Certification
Applicant : **Mitac International Corporation**
6th FL., NO. 187, TIDING BLVD., SEC. 2, TAIPEI, TAIWAN, R.O.C.

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- The data shown in this test report were carried out on Mar. 22, 2006 at **Sporton International Inc. LAB.**
- Report No.: FR631101, Report Version: Rev. 02

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Report Version: Rev. 02



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1. General Description of Equipment under Test

1.1 Applicant

Mitac International Corporation

6th FL., NO. 187, TIDING BLVD., SEC. 2, TAIPEI, TAIWAN, R.O.C.

1.2 Manufacturer

Mitac Computer (KunShan) Co., Ltd.

No. 269, 2nd Road, Export Processing Zone, Changjiang South Road, KunShan, JiangSuprov. China

1.3 Basic Description of Equipment under Test

Equipment	: Pocket PC (PDA)
Trade Name	: Mio DigiWalker
Model No.	: Mio P550
FCC ID	: P4Q-MIOP550
Power Supply Type	: Switching, From Battery 3.7V
AC Power Cord	: AC 120V, Wall-mount, 1.8 meter, 2pin
Battery	: E4MT111202B12
AC Charger	: Phihong, PSC05R-050
DC Charger	: Atech, ATP1-68HT0501-NC1.1

**1.4 Feature of Equipment under Test**

Product Feature & Specification			
1. Type of Modulation	WLAN: DSSS / OFDM Bluetooth: GFSK		
2. Number of Channels	WLAN: 11 Channels BT: 79 Channels		
3. Frequency Band	WLAN/BT: 2.4GHz~2.4835GHz		
4. Carrier Frequency of each channel	WLAN: $2412\text{MHz}+(n-1)*5\text{MHz}$, $n=1\sim 11$ BT: $2402\text{MHz}+n*1\text{MHz}$, $n=0\sim 78$		
5. Channel Spacing	WLAN: 5MHz BT: 1MHz		
6. Maximum Output Power to Antenna (Normal Condition)	802.11b: 17.31 dBm 802.11g: 14.90 dBm BT: 2.69 dBm		
7. Type of Antenna Connector	N/A		
8. Antenna Type	Patch Antenna		
9. Antenna Gain	WLAN: -3 dBi Bluetooth: -1 dBi		
10. Function Type	Transmitter		Transceiver V
11. Power Rating (DC/AC Voltage) :	3.7V / 1200mA		

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. For spurious emission below 1GHz, only one channel of each application was tested because it is not related to channel selection.
- c. The EUT is programmed to transmit signal continuously for all testings.
- d. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000MHz.

2.2 Test Mode

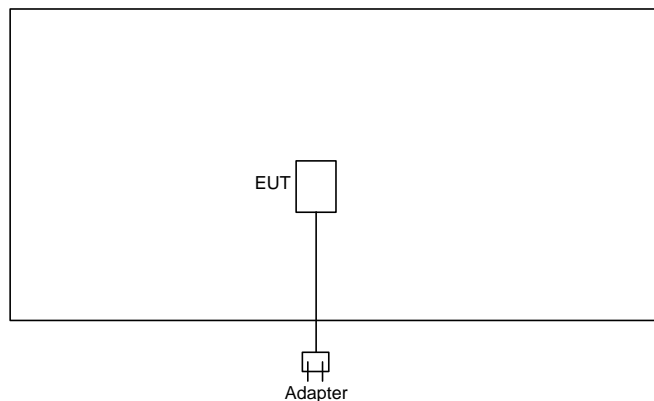
Application			
Radiated Emission	802.11b	802.11g	BT
	Mode 1: Tx_CH01_2412 MHz	Mode 4: Tx_CH01_2412 MHz	Mode 7: Tx_CH00_2402 MHz
	Mode 2: Tx_CH06_2437 MHz	Mode 5: Tx_CH06_2437 MHz	Mode 8: Tx_CH39_2441 MHz
	Mode 3: Tx_CH11_2462 MHz	Mode 6: Tx_CH11_2462 MHz	Mode 9: Tx_CH78_2480 MHz
Conducted Emission	Mode 1: GPS Rx Mode + BT Link + WLAN Link + Earphone		

Remark: The co-location for 802.11b and BT was verified to be compliant with the limit.

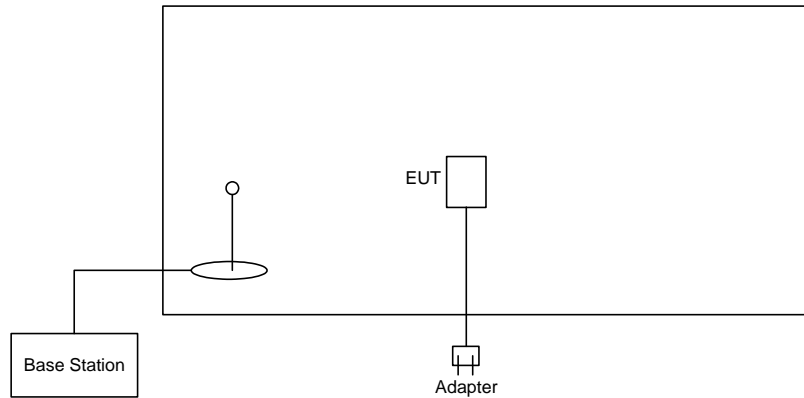
2.3 Connection Diagram of Test System

Radiated Emission

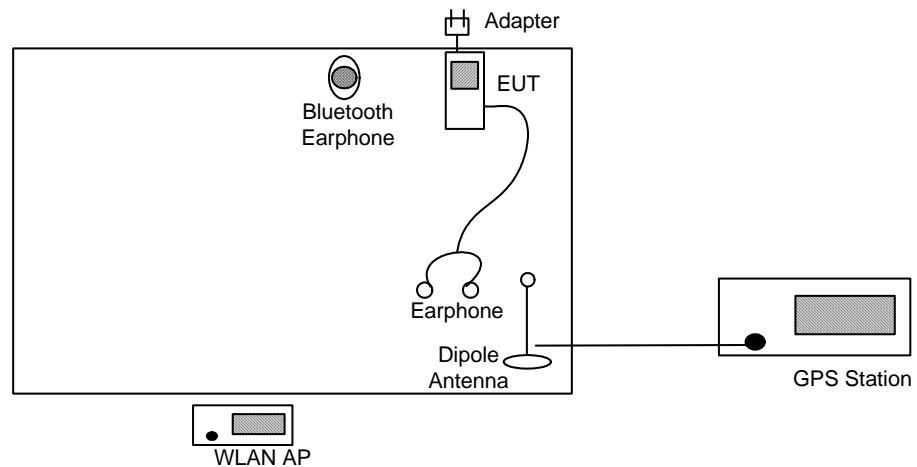
<WLAN>



<Bluetooth>



Conducted Emission



2.4 Ancillary Equipment List

Item	Asset	Trade Name	Model Name	Power Cord
1.	Adapter	PHIHONG	PSC05R-050	AC 100-240V
2.	Base Station	R&S	CMU200	AC 100-240V
3.	Dipole Antenna	Sporton	N/A	N/A
4.	Bluetooth Earphone	Free Style	JD-100	N/A
5.	GPS Station	T&H	GP-50	AC 100-240V
6.	WLAN AP	SMC	SMC-100	AC 100-240V
7.	Earphone	N/A	N/A	N/A



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

120V/ 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2003

4.3 Test in Compliance with

47 CFR Part 15 Subpart C

4.4 Frequency Range Investigated

a. 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
<u>15.247(a) (1)</u>	Hopping Channel Bandwidth	Pass
<u>15.247(a)(1)</u>	Hopping Channel Separation	Pass
<u>15.247(a)(1)(iii)</u>	Number of Hopping Frequency Used	Pass
<u>15.247(a)(1)(iii)</u>	Dwell Time of Each Frequency	Pass
<u>15.247(b)</u>	Output Power	Pass
15.247(c)	100kHz Bandwidth of Frequency Band Edges	Pass
15.209(a)	Radiated Emission	Pass
<u>15.203</u> 15.247(b)(4)	Antenna Requirement	Pass

5.2 6dB Bandwidth Measurement

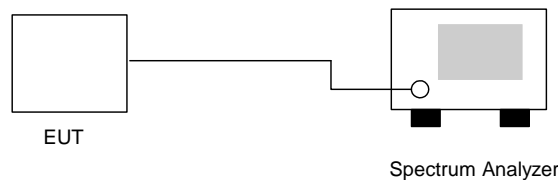
5.2.1 Measuring Instruments :

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 : 24°C
- Relative Humidity : 52%
- Test Enginner : Andy

802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	8.96	> 0.5MHz	Mode 1
06	2437	8.96	> 0.5MHz	Mode 2
11	2462	8.96	> 0.5MHz	Mode 3

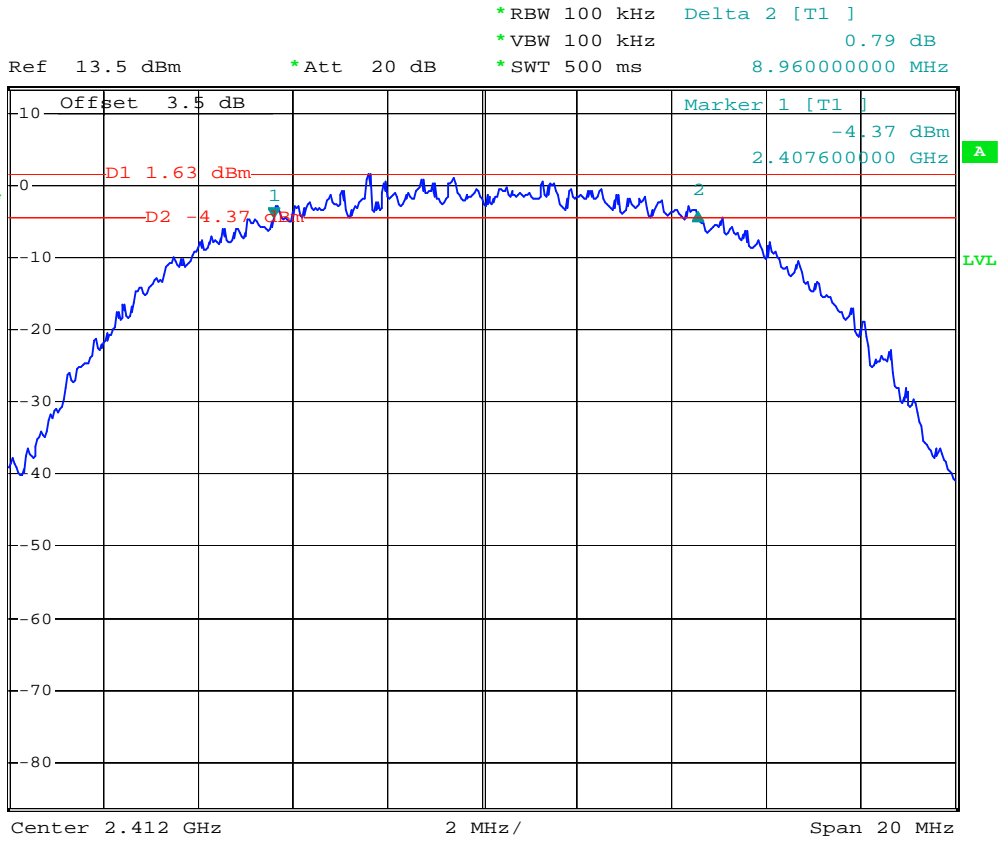
802.11g

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



5.2.5 6dB Bandwidth

Mode 1



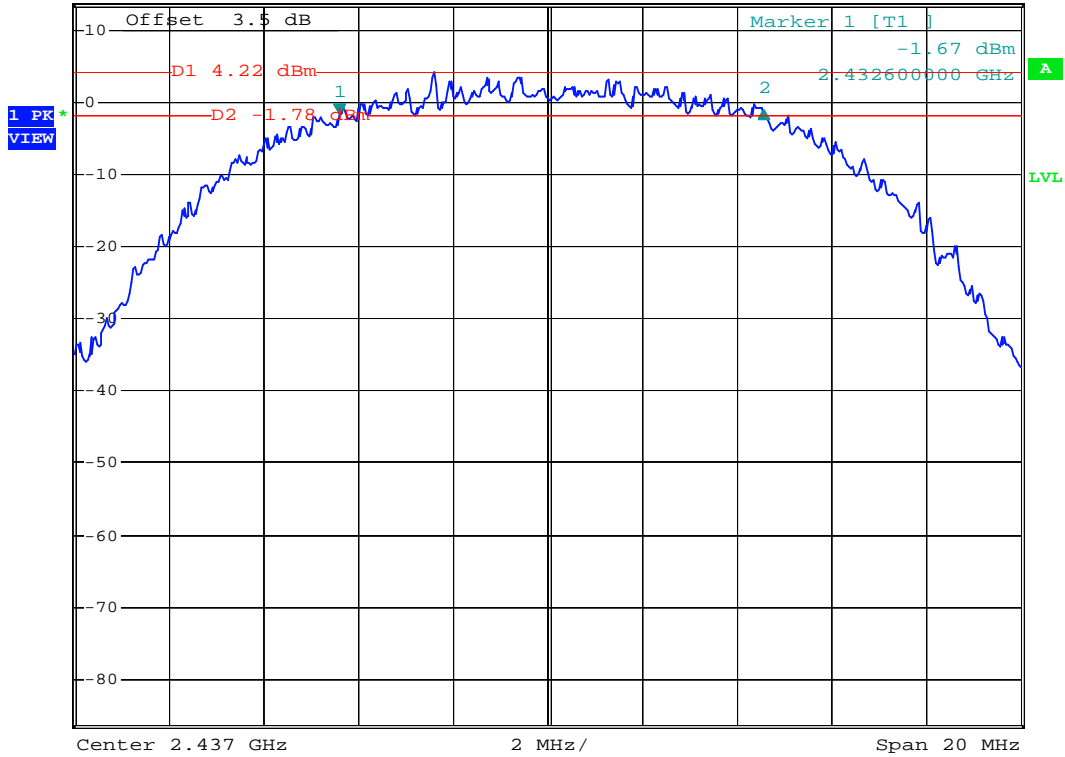
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Mode 2



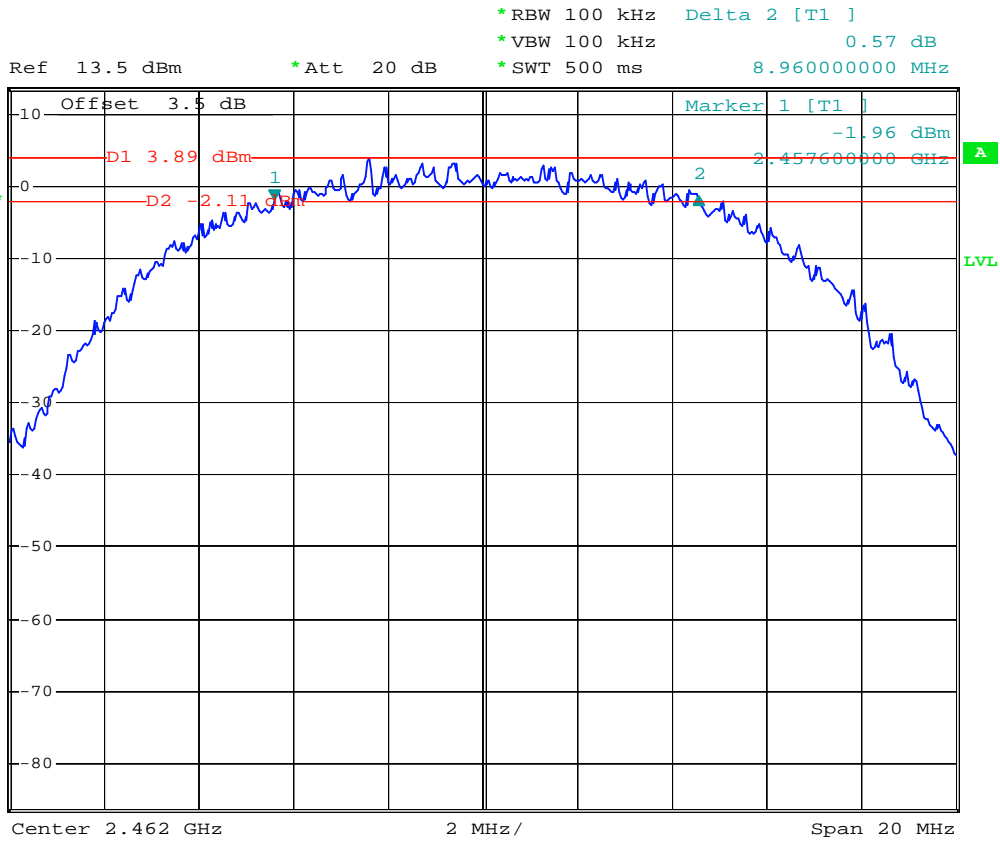
Ref 13.5 dBm *Att 20 dB *RBW 100 kHz Delta 2 [T1]
*VBW 100 kHz 0.63 dB
*SWT 500 ms 8.960000000 MHz



Date: 22.MAR.2006 11:28:45



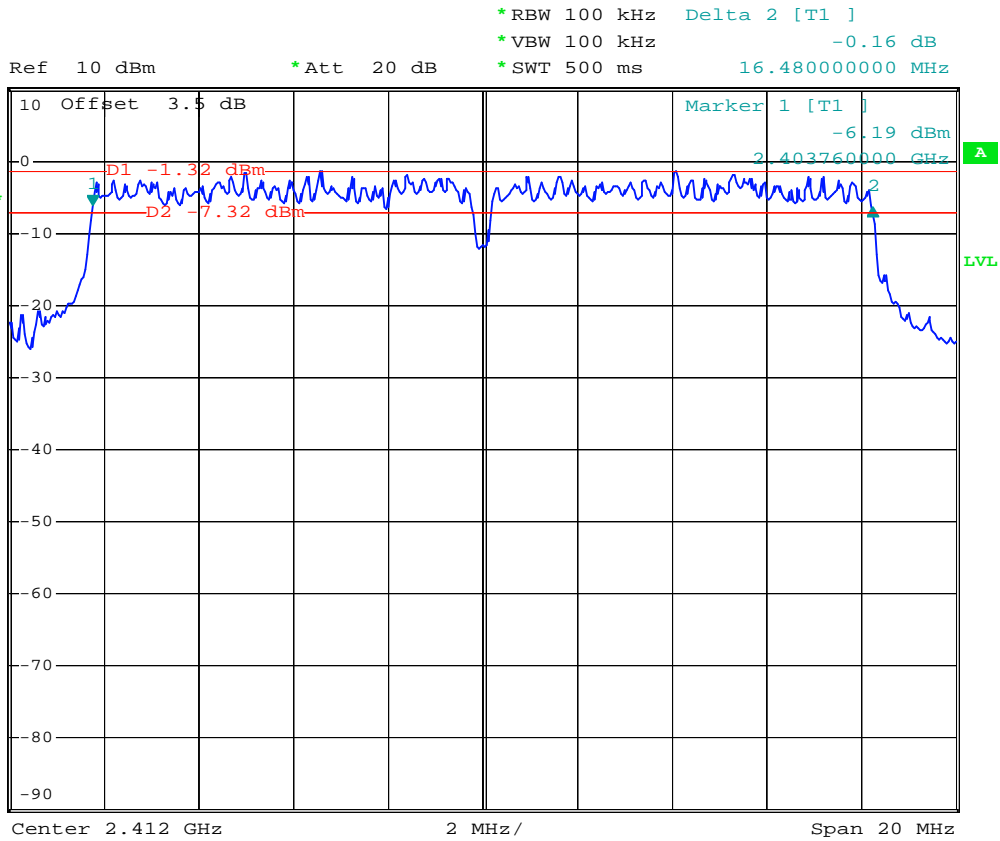
Mode 3



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Mode 4



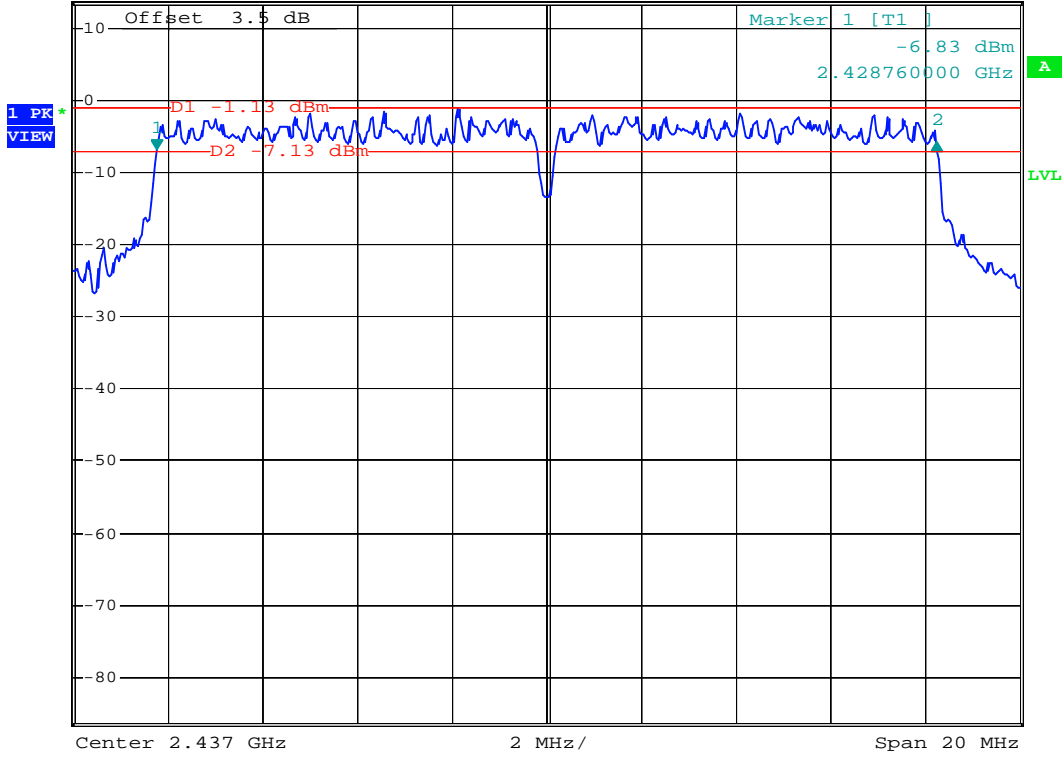
Date: 22.MAR.2006 11:15:19



Mode 5



Ref 13.5 dBm *Att 20 dB *RBW 100 kHz Delta 2 [T1]
*VBW 100 kHz 1.08 dB
*SWT 500 ms 16.48000000 MHz



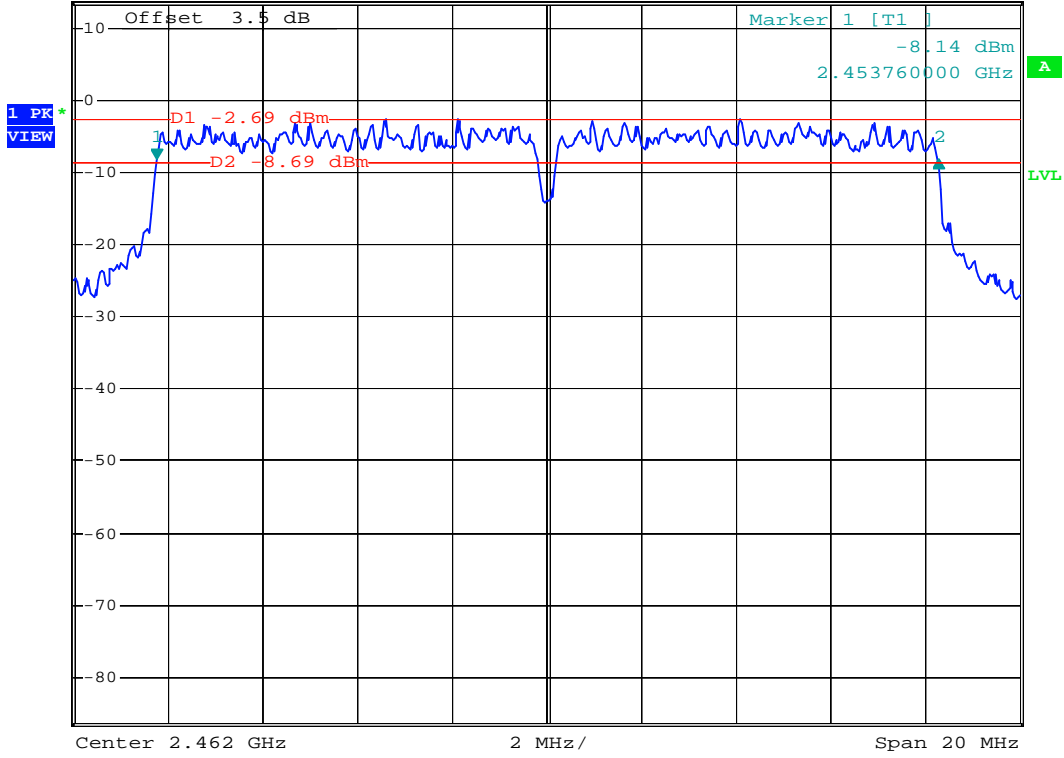
Date: 22.MAR.2006 11:18:35



Mode 6



Ref 13.5 dBm *Att 20 dB *RBW 100 kHz Delta 2 [T1]
*VBW 100 kHz -0.05 dB
*SWT 500 ms 16.52000000 MHz



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5.3 Power Spectral Density Measurement

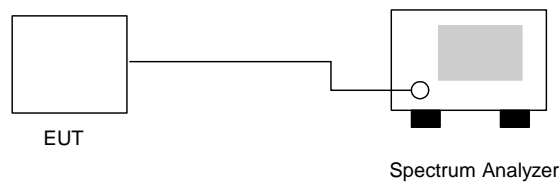
5.3.1 Measuring Instruments :

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 : 24°C
- Relative Humidity : 52%
- Test Enginner : Andy

802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-11.66	8	Mode 1
06	2437	-11.73	8	Mode 2
11	2462	-11.61	8	Mode 3

802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-16.41	8	Mode 4
06	2437	-15.99	8	Mode 5
11	2462	-17.41	8	Mode 6



Mode 2

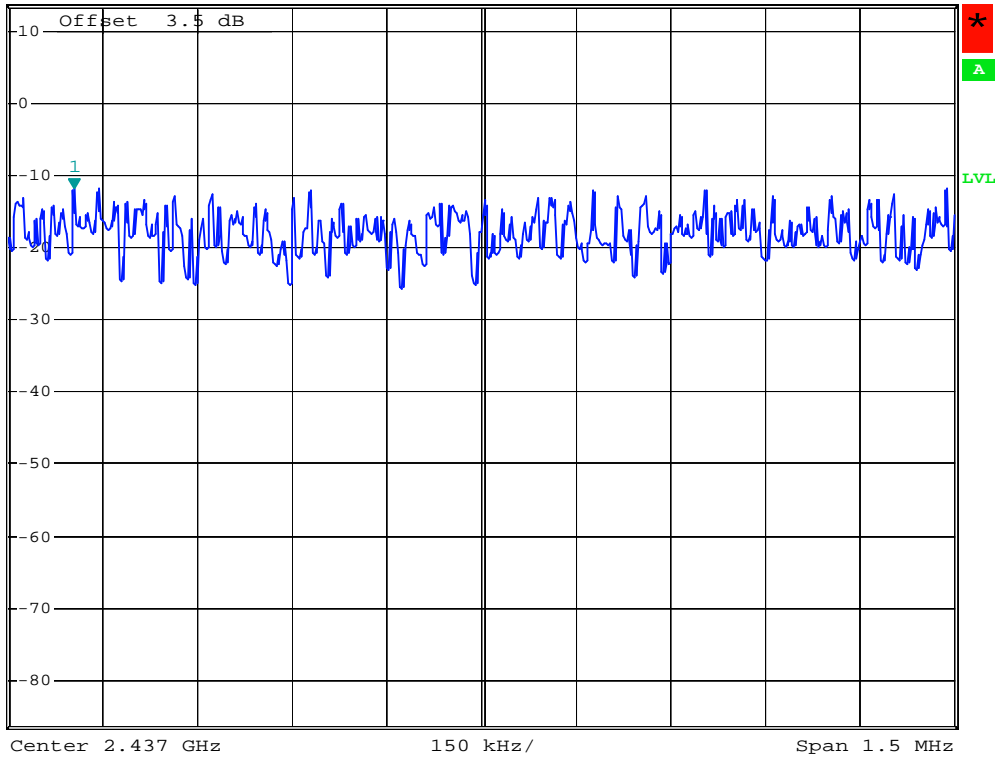


*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -11.73 dBm
*SWT 500 s 2.436355000 GHz

Ref 13.5 dBm

*Att 20 dB

1 PR
VIEW



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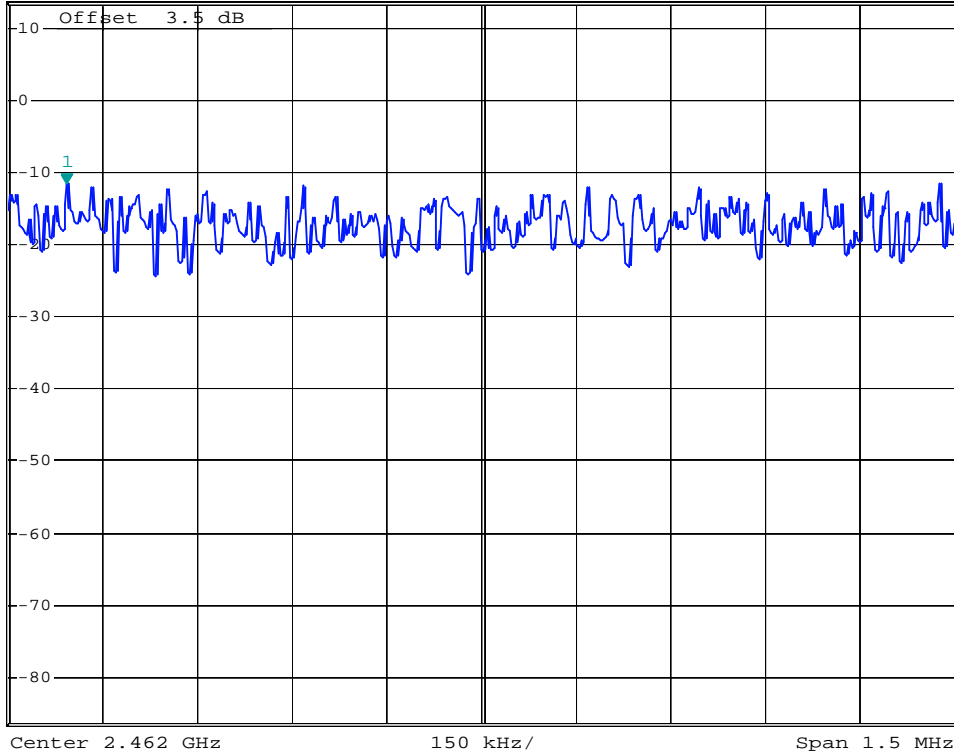
Mode 3



*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -11.61 dBm
*SWT 500 s 2.461343000 GHz

Ref 13.5 dBm

*Att 20 dB



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Mode 4

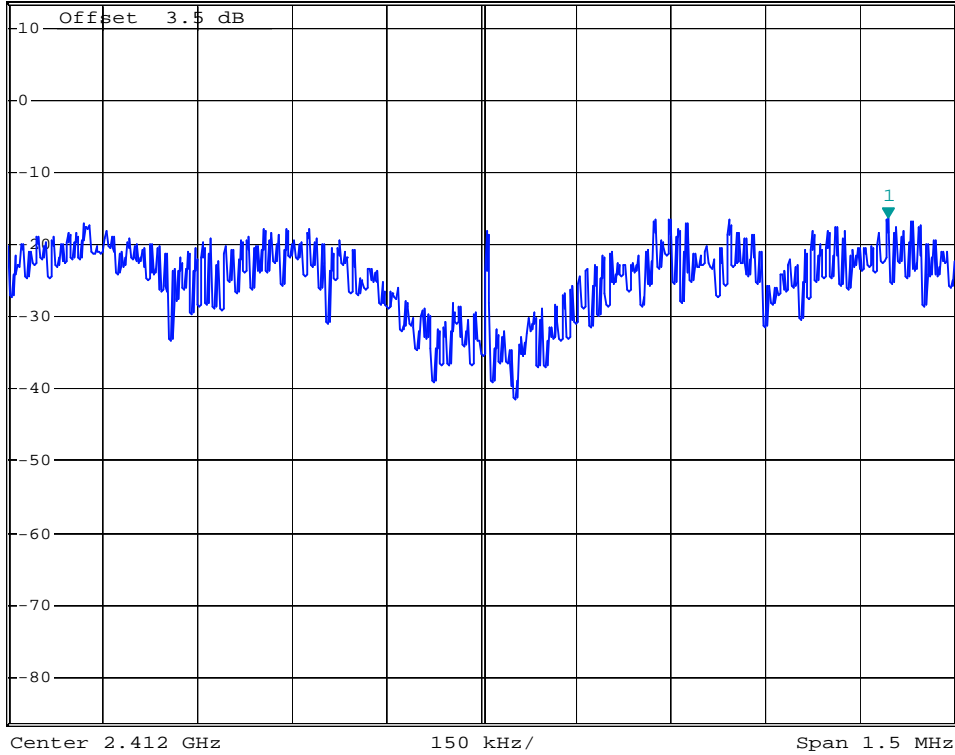


*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -16.41 dBm
*SWT 500 s 2.412645000 GHz

Ref 13.5 dBm

*Att 20 dB

1 PK
VIEW



Date: 22.MAR.2006 11:16:33



Mode 5

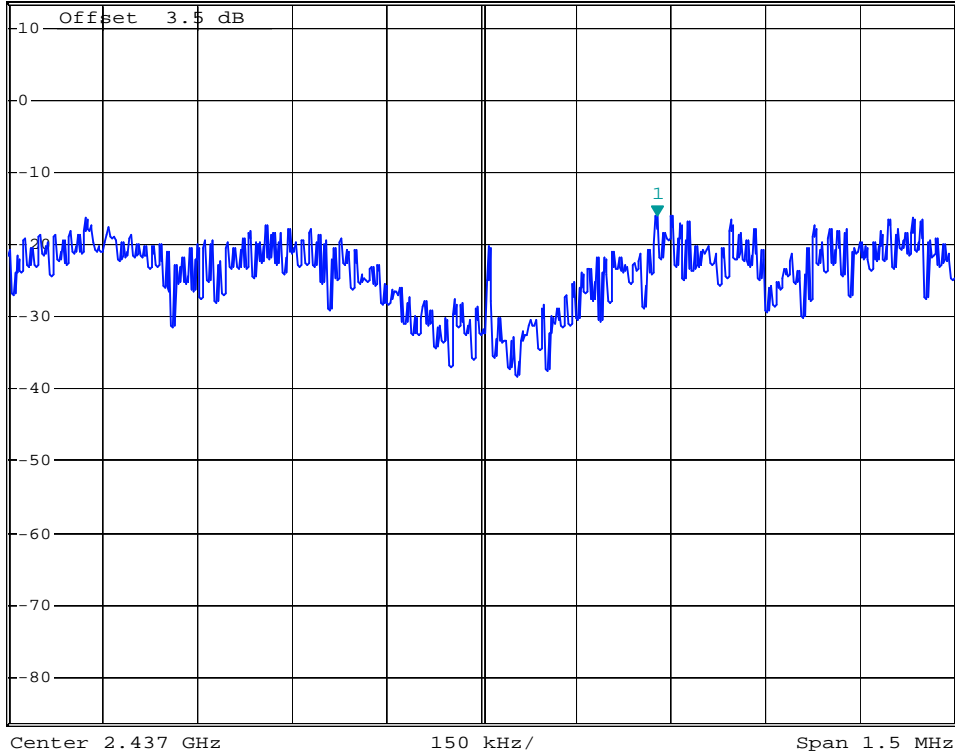


*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -15.99 dBm
*SWT 500 s 2.437279000 GHz

Ref 13.5 dBm

*Att 20 dB

1 PK
VIEW



Date: 22.MAR.2006 11:17:40



Mode 6

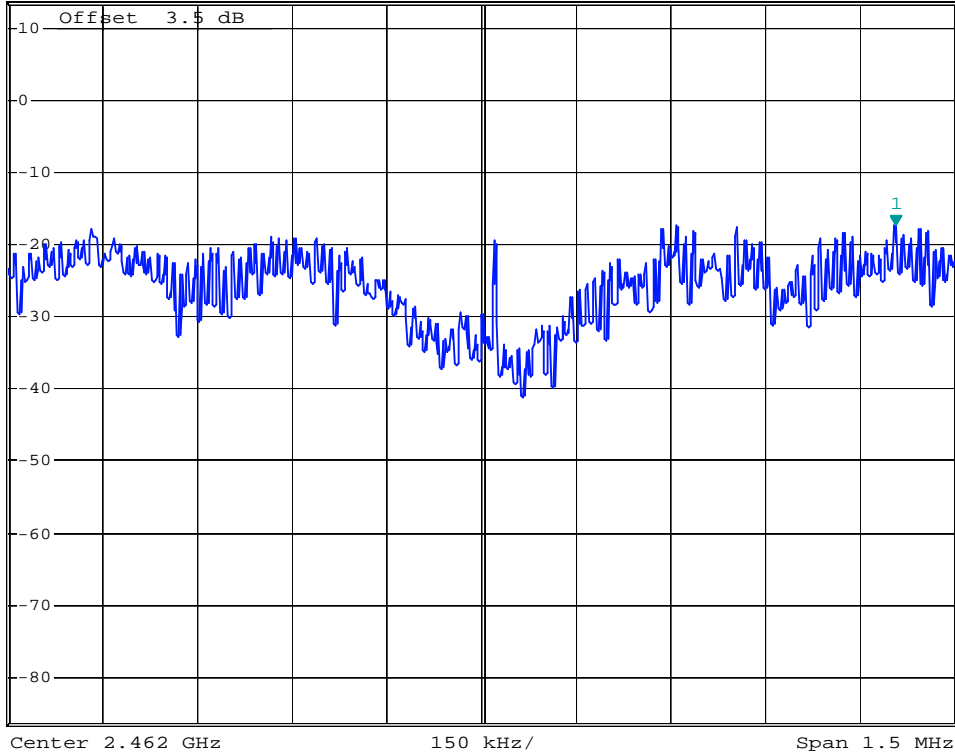


*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -17.41 dBm
*SWT 500 s 2.462657000 GHz

Ref 13.5 dBm

*Att 20 dB

1 PK
VIEW



Date: 22.MAR.2006 11:23:10



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 : 24°C
- Relative Humidity : 52%
- Test Enginner : Andy

- Test Result in WLAN lower band (Channel 1) : PASS
- Test Result in WLAN higher band (Channel 11) : PASS
- Test Result in BT lower band (Channel 00) : PASS
- Test Result in BT higher band (Channel 78) : 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
2390.00	54.58	-19.42	74.00	55.29	30.48	35.46	4.26	100	360	Peak
2390.00	41.83	-12.17	54.00	42.54	30.48	35.46	4.26	100	35	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
2390.00	55.65	-18.35	74.00	56.36	30.48	35.46	4.26	100	360	Peak
2390.00	42.56	-11.44	54.00	43.27	30.48	35.46	4.26	100	259	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
2483.50	50.59	-23.41	74.00	51.32	30.41	35.51	4.36	100	360	Peak
2483.50	40.01	-13.99	54.00	40.75	30.41	35.51	4.36	100	38	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
2483.50	50.41	-23.59	74.00	51.15	30.41	35.51	4.36	100	0	Peak
2483.50	40.48	-13.52	54.00	41.22	30.41	35.51	4.36	100	276	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
2390.00	62.06	-11.94	74.00	62.77	30.48	35.46	4.26	100	360	Peak
2390.00	43.09	-10.91	54.00	43.80	30.48	35.46	4.26	100	36	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
2390.00	67.05	-6.95	74.00	67.76	30.48	35.46	4.26	100	360	Peak
2390.00	46.66	-7.34	54.00	47.37	30.48	35.46	4.26	100	275	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
2483.50	56.01	-17.99	74.00	56.75	30.41	35.51	4.36	100	360	Peak
2483.50	41.86	-12.14	54.00	42.60	30.41	35.51	4.36	100	36	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
2483.50	60.06	-13.94	74.00	60.80	30.41	35.51	4.36	100	360	Peak
2483.50	44.64	-9.36	54.00	45.38	30.41	35.51	4.36	100	276	Average

Bluetooth

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
2344.00	50.60	-23.40	74.00	51.30	30.52	35.42	4.20	100	0	Peak
2344.00	39.40	-14.60	54.00	40.10	30.52	35.42	4.20	100	64	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
2358.00	50.49	-23.51	74.00	51.20	30.51	35.42	4.20	100	360	Peak
2358.00	39.43	-14.57	54.00	40.14	30.51	35.42	4.20	100	280	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
2483.50	66.45	-7.55	74.00	67.19	30.41	35.51	4.36	100	4	Peak
2483.50	43.45	-10.55	54.00	44.19	30.41	35.51	4.36	100	25	Average

CH78 (Vertical)

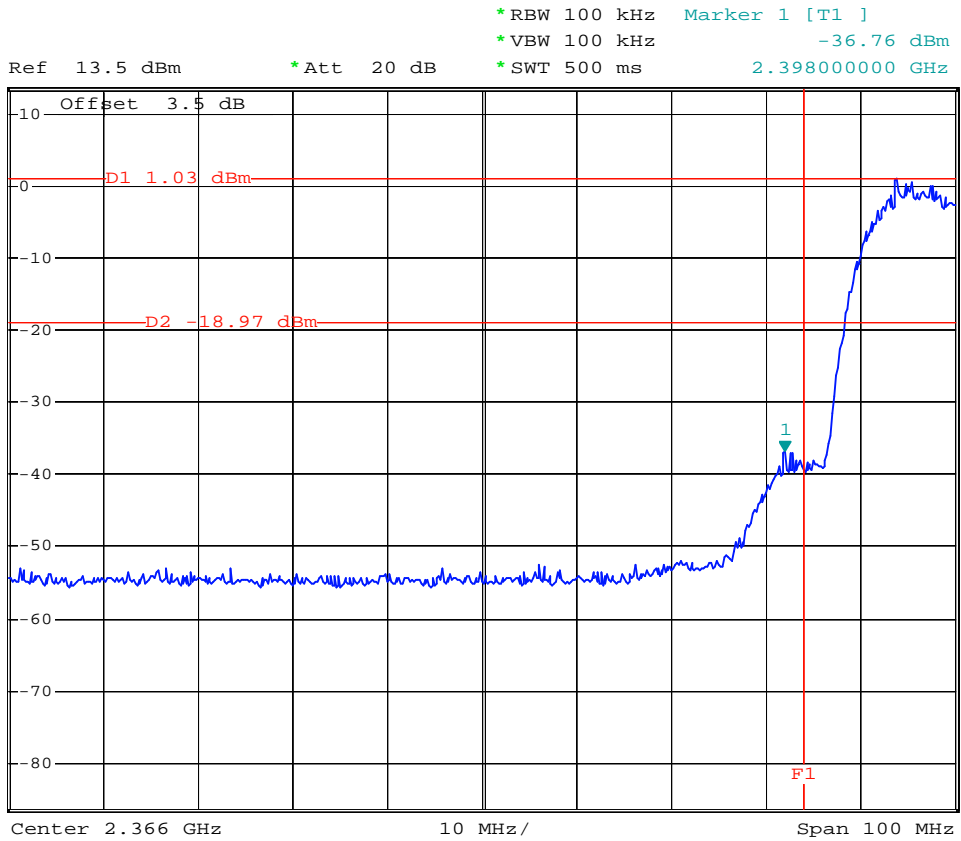
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	65.43	-8.57	74.00	66.17	30.41	35.51	4.36	100	333	Peak
2483.50	43.92	-10.08	54.00	44.66	30.41	35.51	4.36	100	260	Average



5.4.5 20dB Band Edge

<WLAN 802.11b>

CH01



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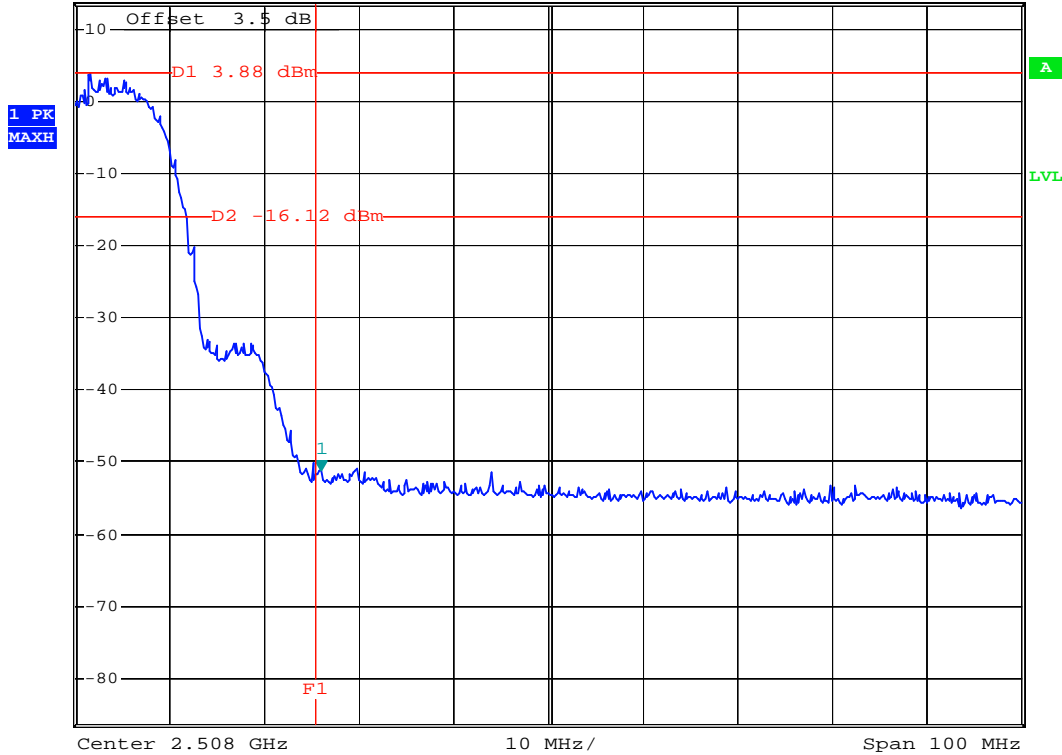


CH11



*RBW 100 kHz Marker 1 [T1]
*VBW 100 kHz -51.27 dBm
*SWT 500 ms 2.483900000 GHz

Ref 13.5 dBm *Att 20 dB

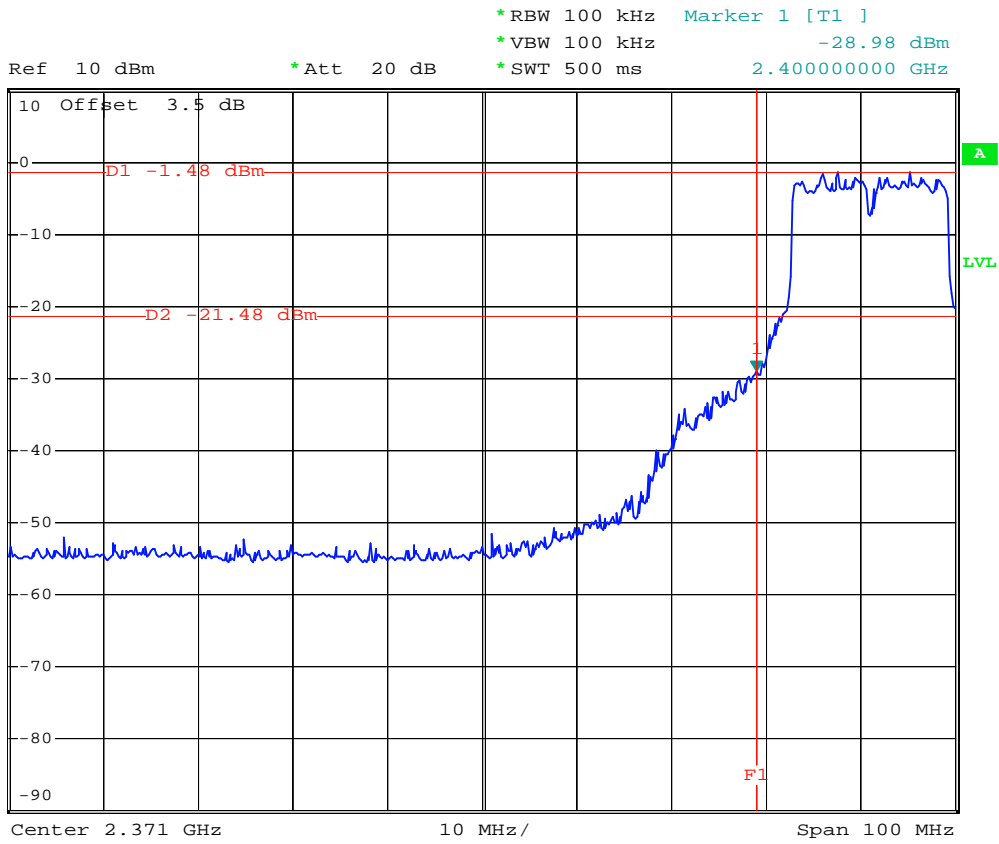


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<WLAN 802.11g>

CH01



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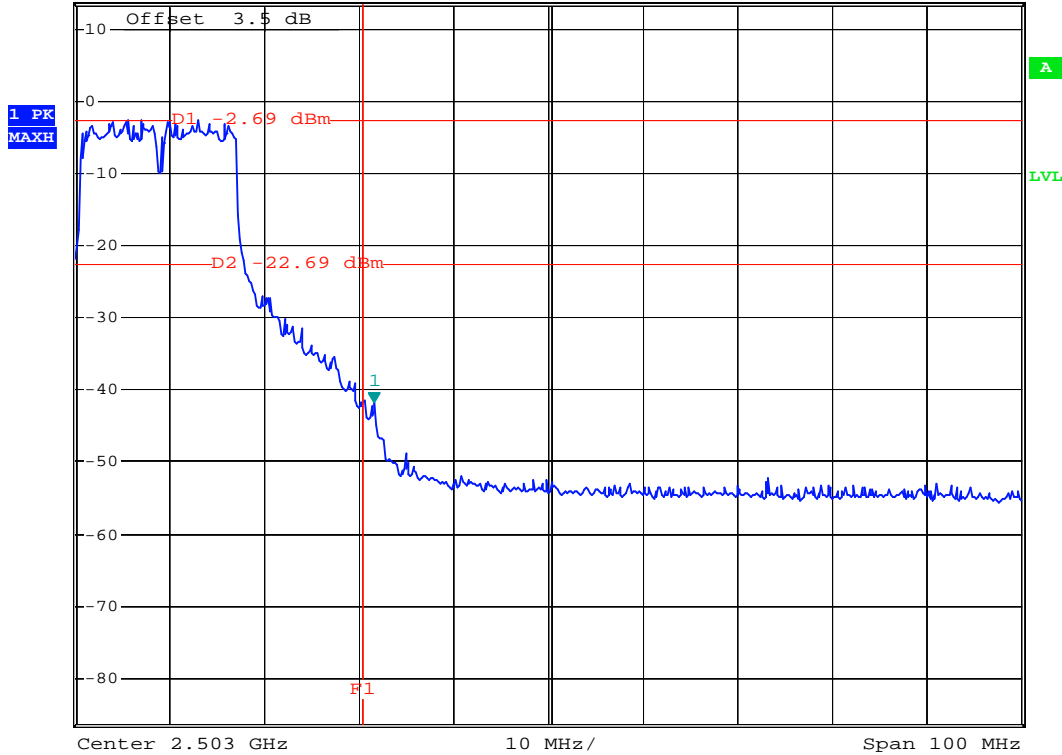


CH11



*RBW 100 kHz Marker 1 [T1]
*VBW 100 kHz -41.72 dBm
*SWT 500 ms 2.484500000 GHz

Ref 13.5 dBm *Att 20 dB



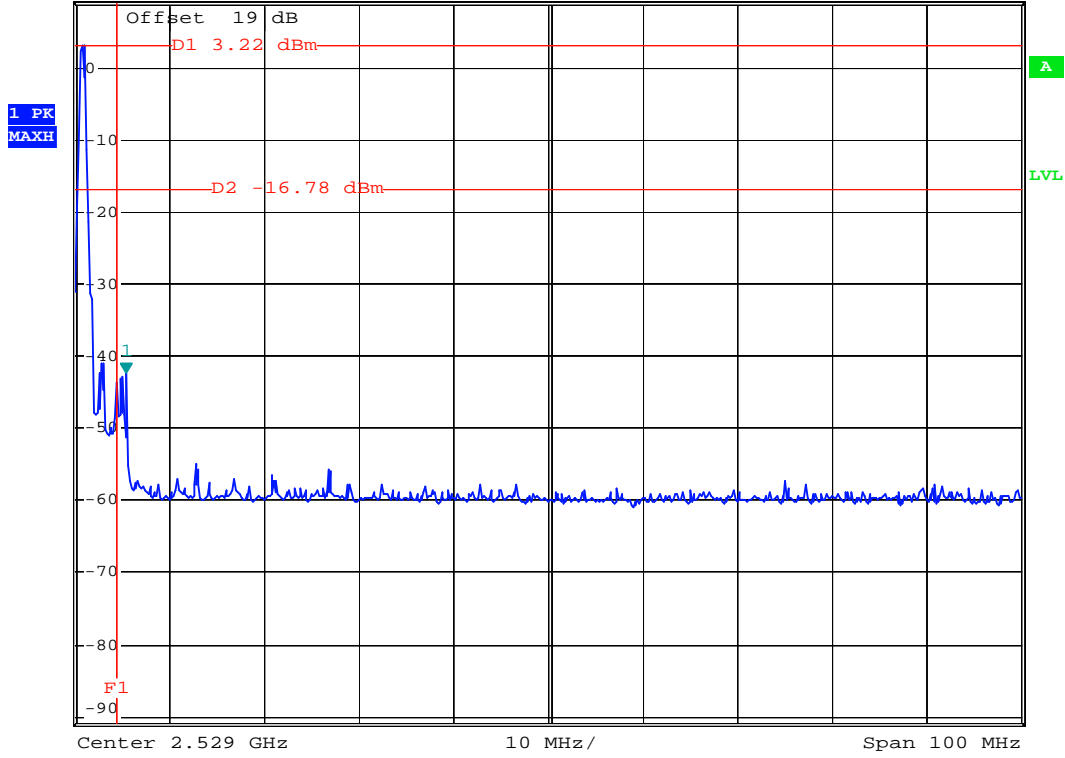
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CH78



Ref 9 dBm *Att 10 dB *RBW 100 kHz Marker 1 [T1]
*VBW 100 kHz -42.43 dBm
*SWT 500 ms 2.484400000 GHz



Date: 22.MAR.2006 09:49:11

5.5 Hopping Channel Separation

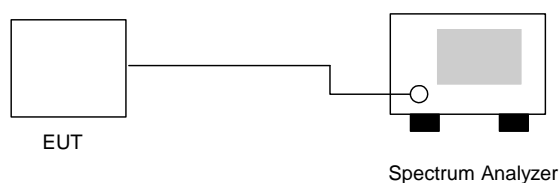
5.5.1 Measuring Instruments :

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 100kHz and VBW to 100kHz.
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
- Temperature : 24°C
- Relative Humidity : 52%
- Test Enginner : Andy

Channel	Carrier Frequency		Limits	Plot
	Frequency (MHz)	Separation (MHz)		
00	2402	1.000	0.878	Mode 1
39	2441	1.000	0.874	Mode 2
78	2480	1.004	0.880	Mode 3

Note: Limits =25kHz or the 20dB bandwidth of the hopping channel, which ever is greater

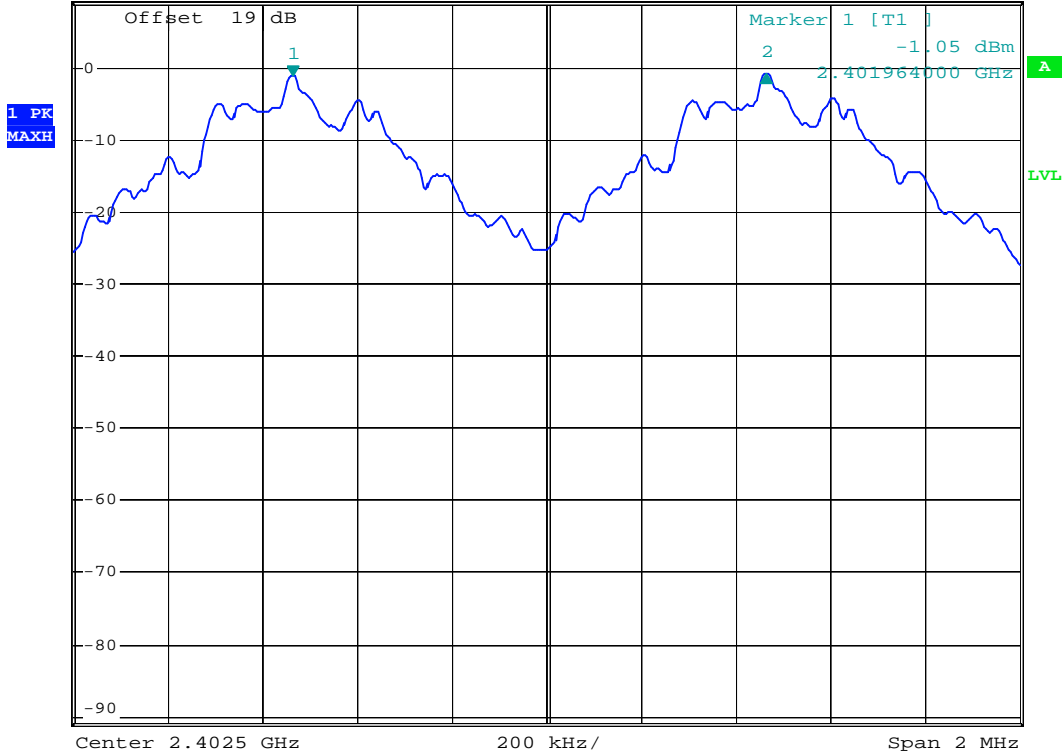


5.5.5 Hopping Channel Separation

Mode 1



Ref 9 dBm * Att 10 dB * RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz 0.30 dB
 * SWT 500 ms 1.000000000 MHz



Date: 22.MAR.2006 09:25:47



Mode 2

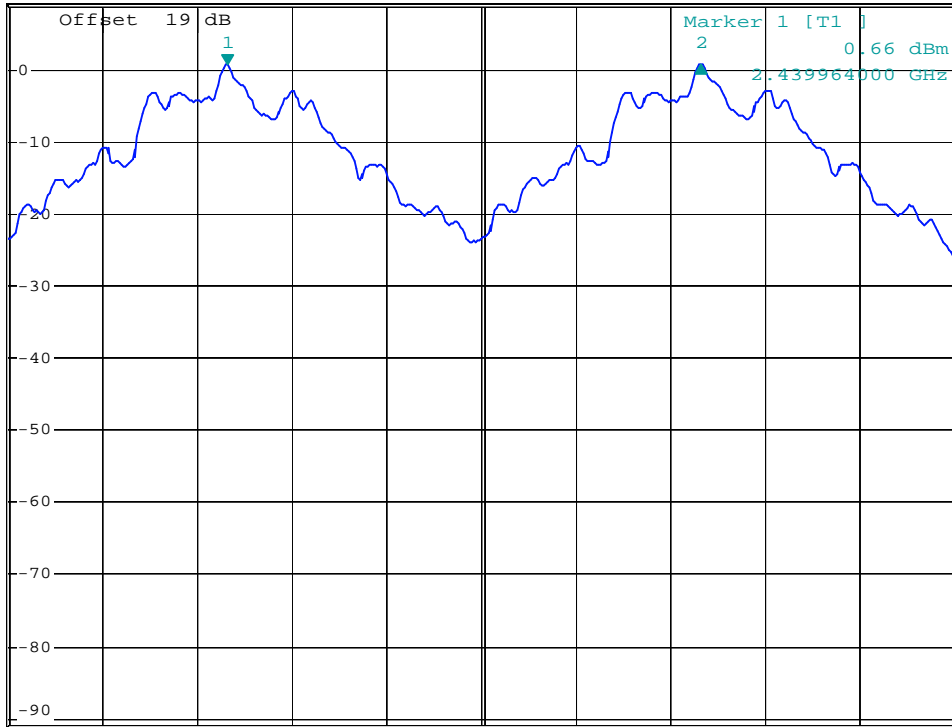


*RBW 30 kHz Delta 2 [T1]
*VBW 100 kHz 0.07 dB
*SWT 500 ms 1.000000000 MHz

Ref 9 dBm

*Att 10 dB

1 PK
MAXH



Center 2.4405 GHz 200 kHz/ Span 2 MHz

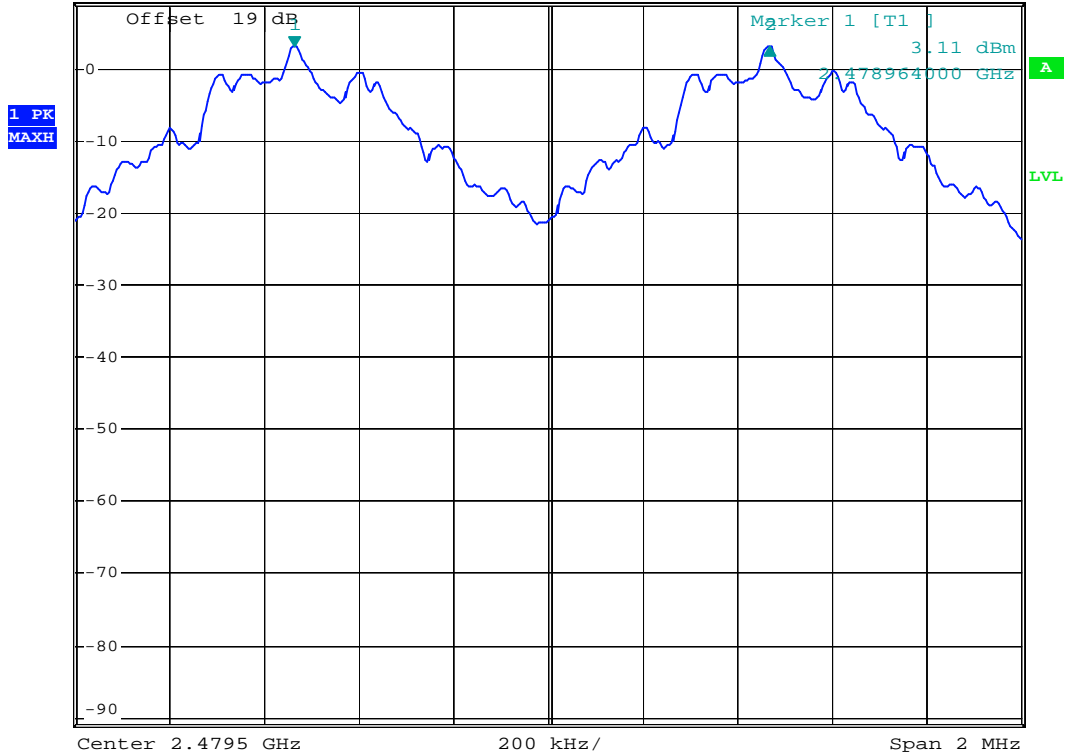
Date: 22.MAR.2006 09:26:15



Mode 3



*RBW 30 kHz Delta 2 [T1]
 *VBW 100 kHz 0.00 dB
 *SWT 500 ms 1.004000000 MHz
 Ref 9 dBm *Att 10 dB



Date: 22.MAR.2006 09:49:46

5.6 Number of Hopping Frequency

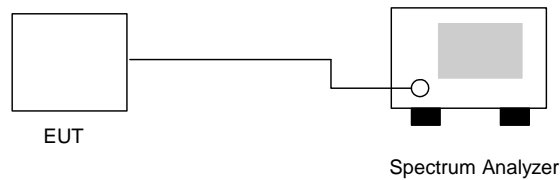
5.6.1 Measuring Instruments :

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 :



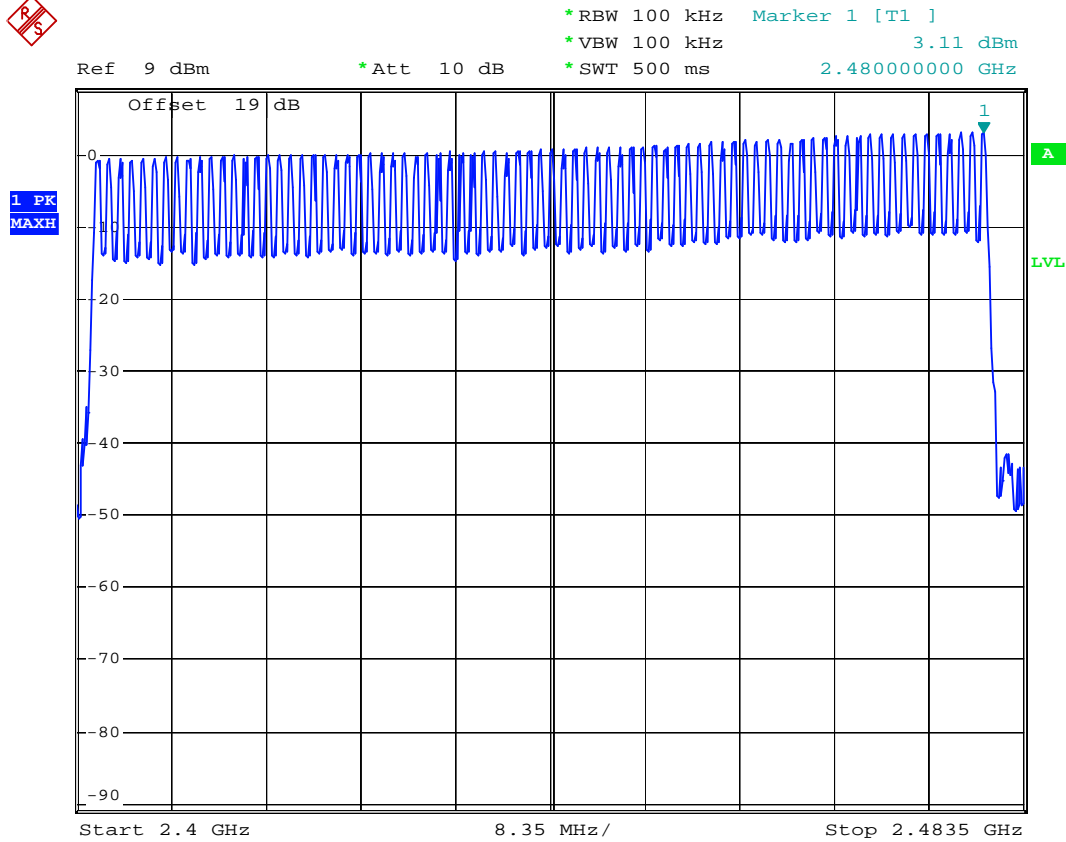
5.6.4 Test Result : See spectrum analyzer plots below

- Application Type : BT
- Temperature : 24°C,
- Relative Humidity : 52%
- Test Enginner : Andy

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



5.6.5 Number of Hopping Frequency



Date: 22.MAR.2006 09:38:01

5.7 Hopping Channel Bandwidth

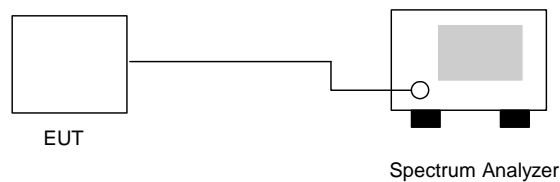
5.7.1 Measuring Instruments :

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
- Temperature : 24°C,
- Relative Humidity : 52%
- Test Enginner : Andy

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	0.878	1.000	Mode 1
39	2441	0.874	1.000	Mode 2
78	2480	0.880	1.000	Mode 3

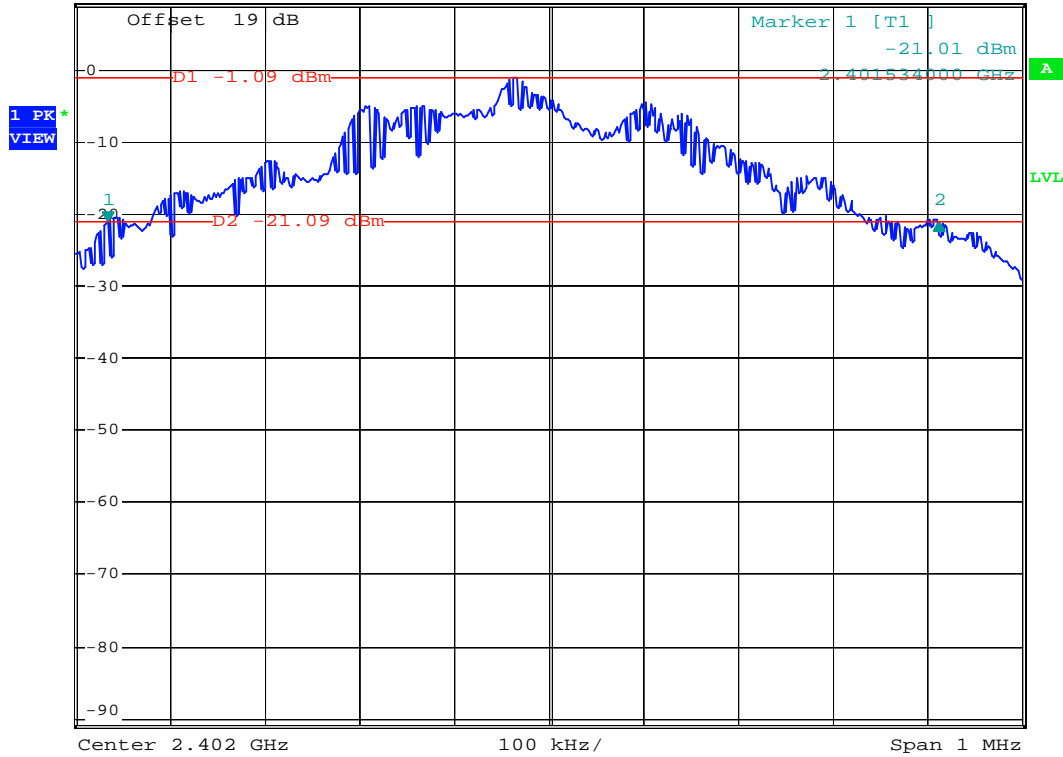


5.7.5 Hopping Channel Bandwidth

Mode 1



Ref 9 dBm *Att 10 dB *RBW 30 kHz Delta 2 [T1]
 *VBW 300 kHz -0.08 dB
 *SWT 500 ms 878.00000000 kHz



Date: 22.MAR.2006 09:24:34



Mode 2

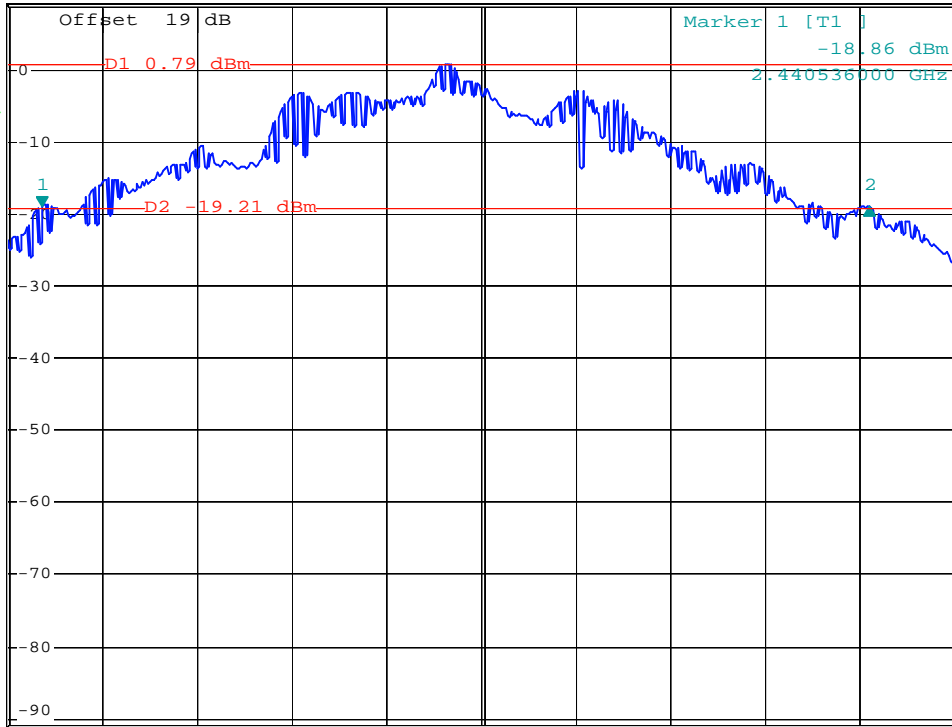


*RBW 30 kHz Delta 2 [T1]
 *VBW 300 kHz -0.17 dB
 *SWT 500 ms 874.00000000 kHz

Ref 9 dBm

*Att 10 dB

1 PK
VIEW



Center 2.441 GHz 100 kHz/ Span 1 MHz

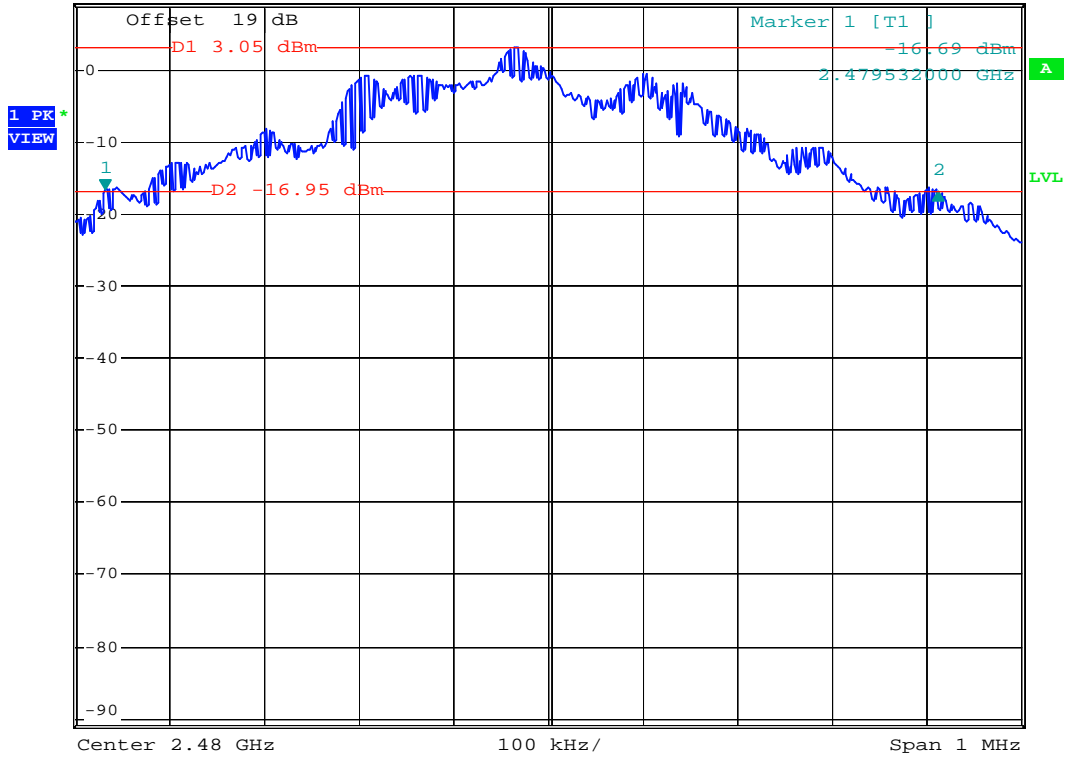
Date: 22.MAR.2006 09:27:06



Mode 3



Ref 9 dBm *Att 10 dB *RBW 30 kHz Delta 2 [T1]
*VBW 300 kHz -0.24 dB
*SWT 500 ms 880.00000000 kHz



Date: 22.MAR.2006 09:48:24

5.8 Dwell Time of Each Frequency

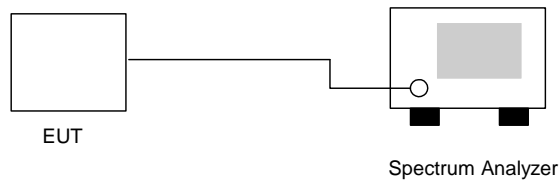
5.8.1 Measuring Instruments :

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 $= 79 * 0.4 * (1600/79) * t$ (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
- Temperature : 24°C
- Relative Humidity : 52%
- Test Enginner : Andy

Ch00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	7.3	548	0.126	0.4
DH3	4.2	1818	0.241	0.4
DH5	3.5	3078	0.340	0.4

**CH39**

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.2	554	0.144	0.4
DH3	5.1	1818	0.293	0.4
DH5	3.2	3078	0.311	0.4

CH78

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	7.4	550	0.129	0.4
DH3	4.2	1820	0.242	0.4
DH5	3.7	3080	0.360	0.4

Remark:

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

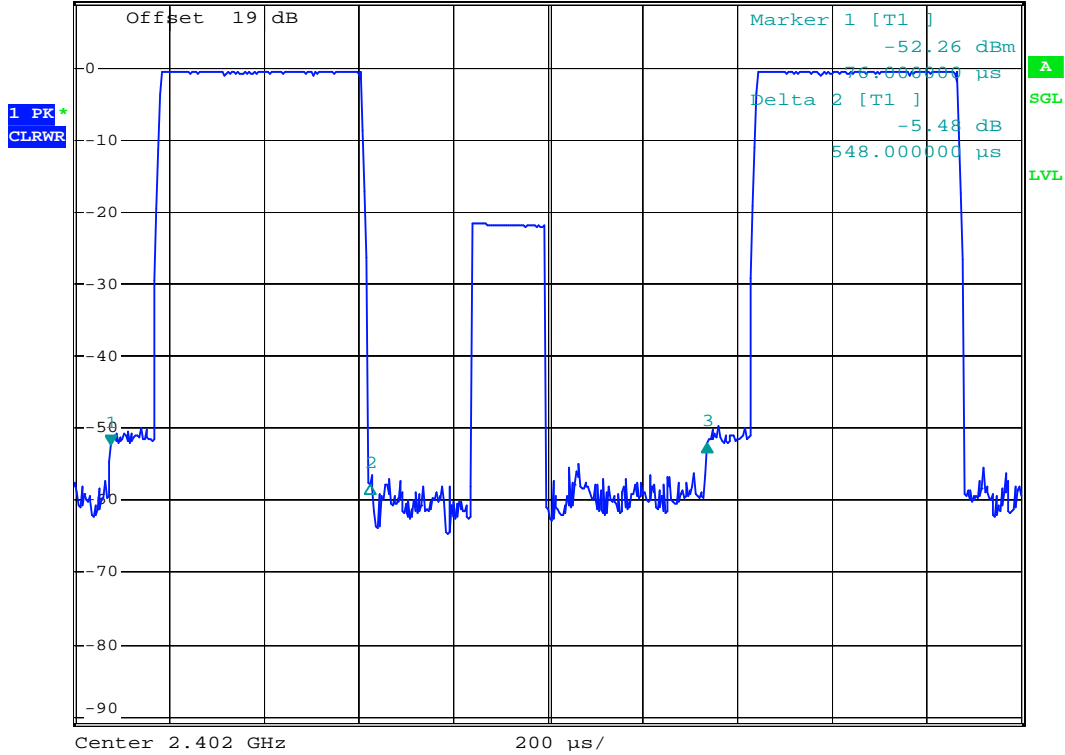


5.8.5 Dwell Time

DH1 (CH00)



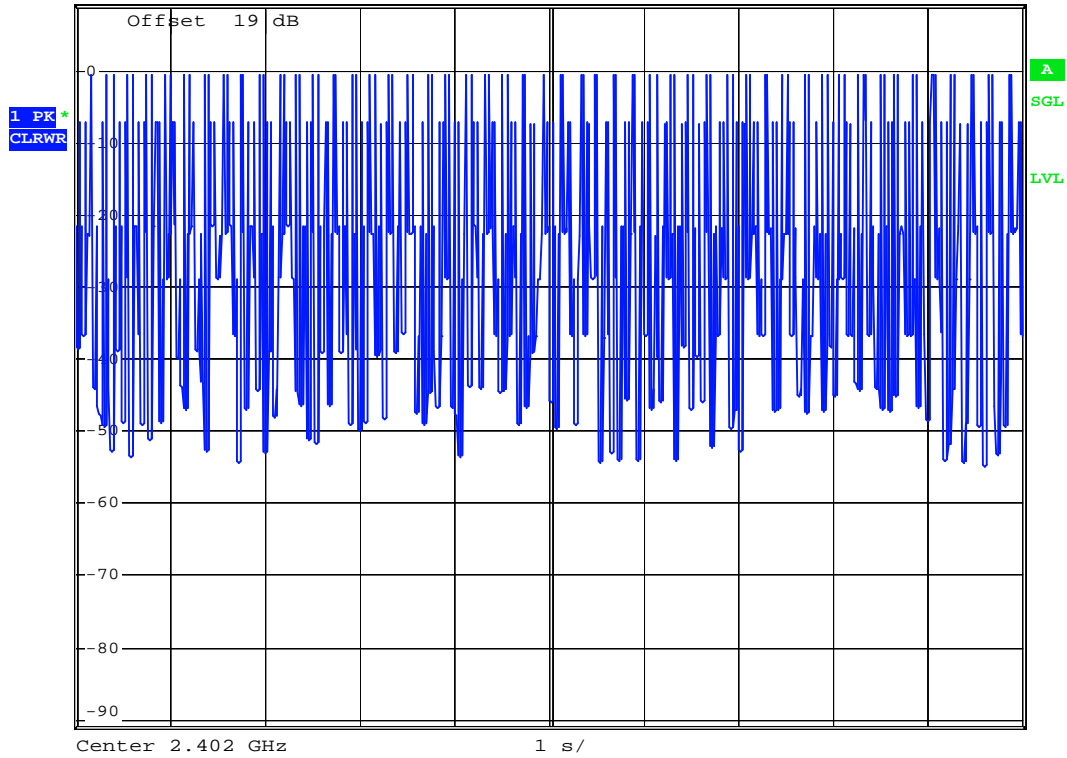
RBW 1 MHz Delta 3 [T1]
 *VBW 1 MHz 0.24 dB
 Ref 9 dBm *Att 10 dB SWT 2 ms 1.260000 ms



Date: 22.MAR.2006 09:39:02



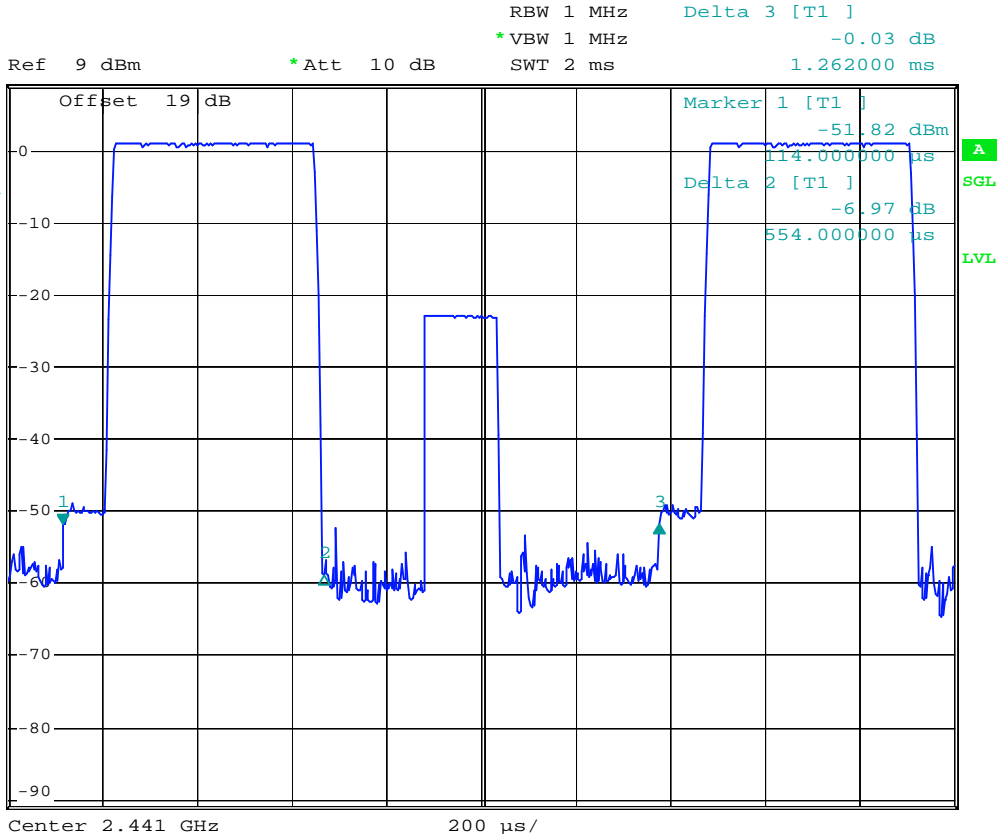
Ref 9 dBm *Att 10 dB RBW 1 MHz
*VBW 1 MHz SWT 10 s



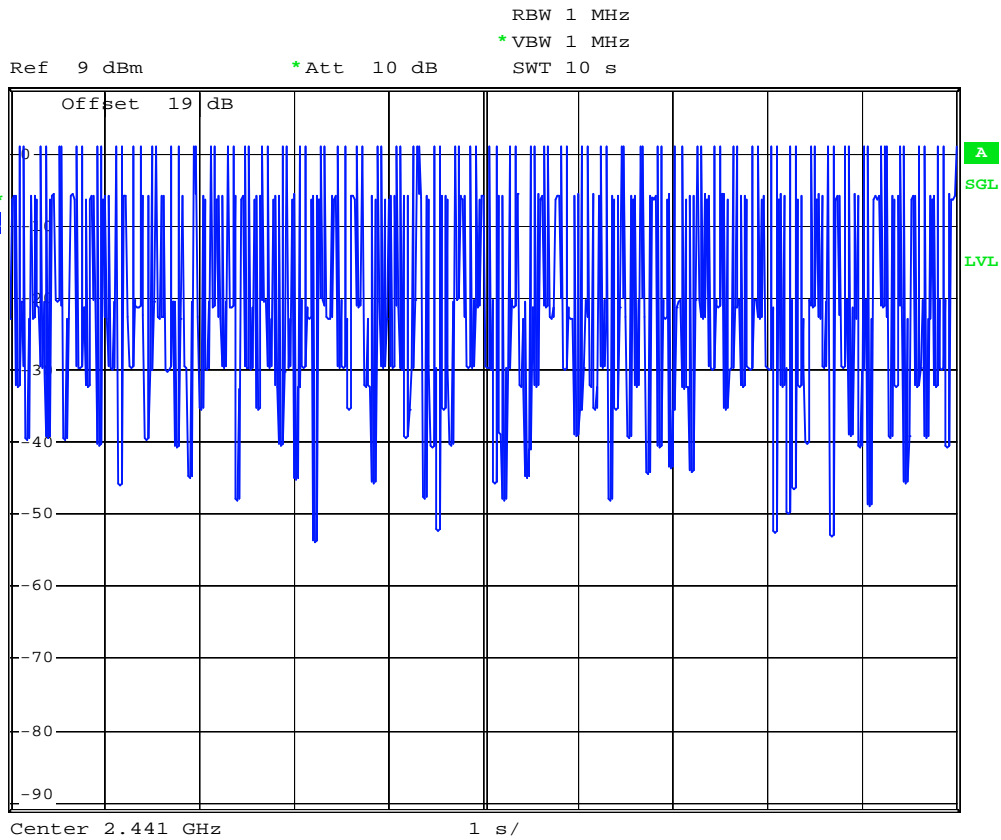
Date: 22.MAR.2006 09:47:15



DH1 (CH39)



Date: 22.MAR.2006 09:41:44



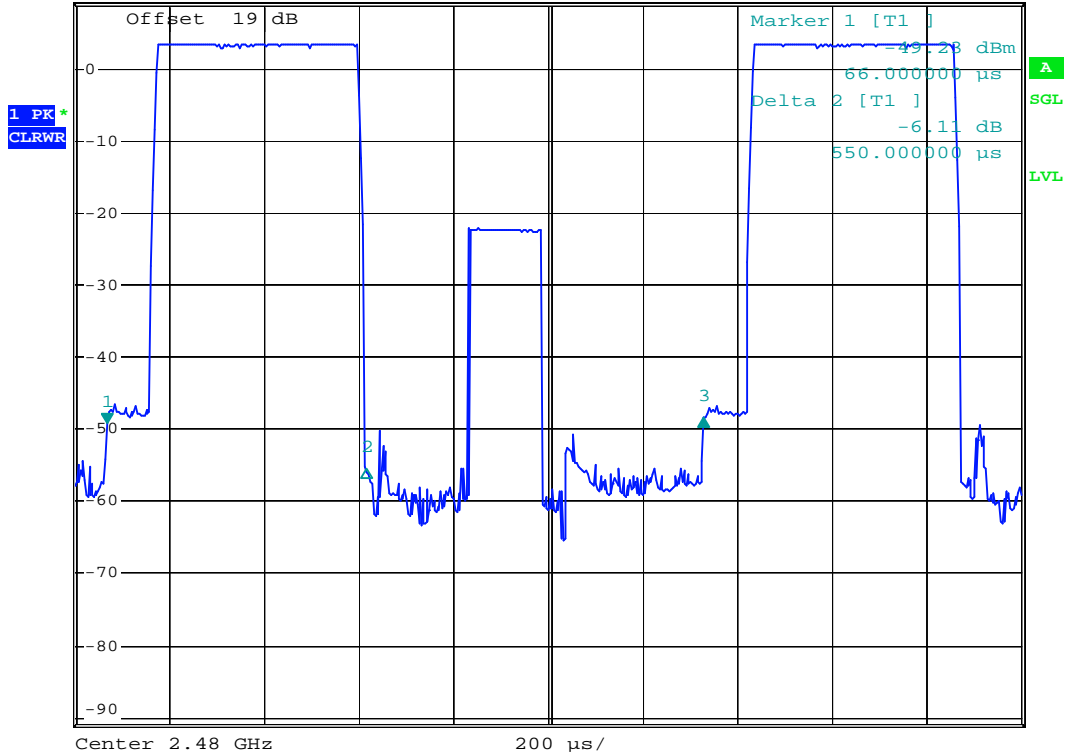
Date: 22.MAR.2006 09:46:53



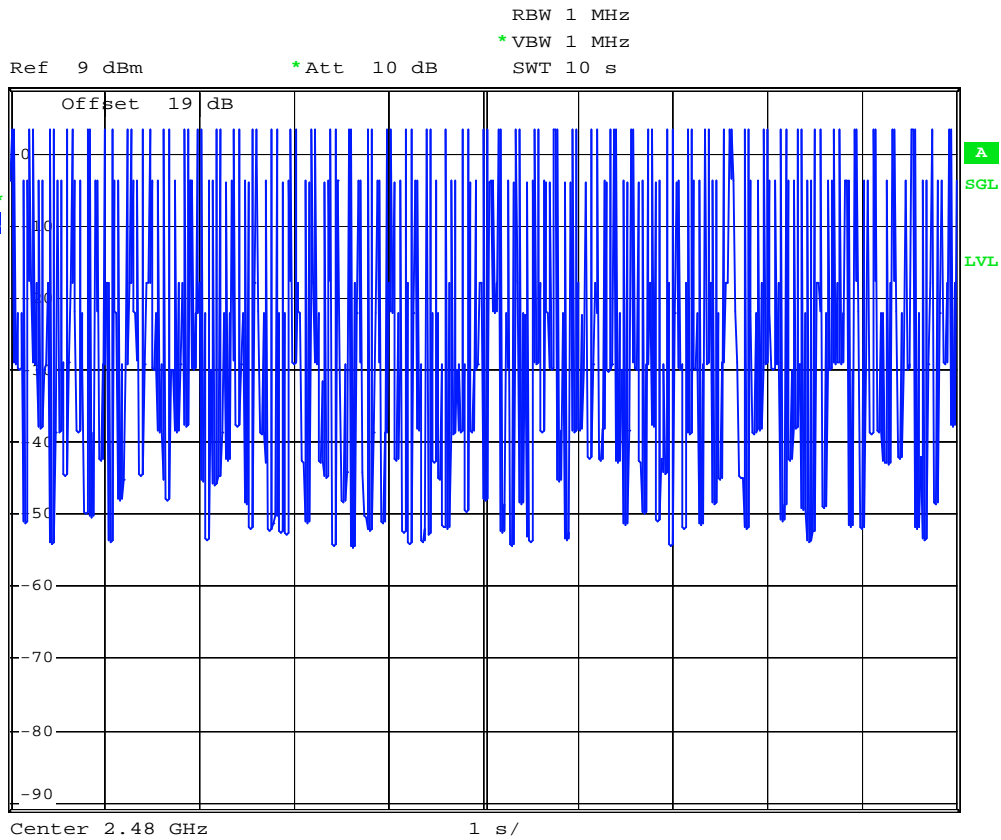
DH1 (CH78)



RBW 1 MHz Delta 3 [T1]
*VBW 1 MHz 1.00 dB
Ref 9 dBm *Att 10 dB SWT 2 ms 1.262000 ms



Date: 22.MAR.2006 09:42:13



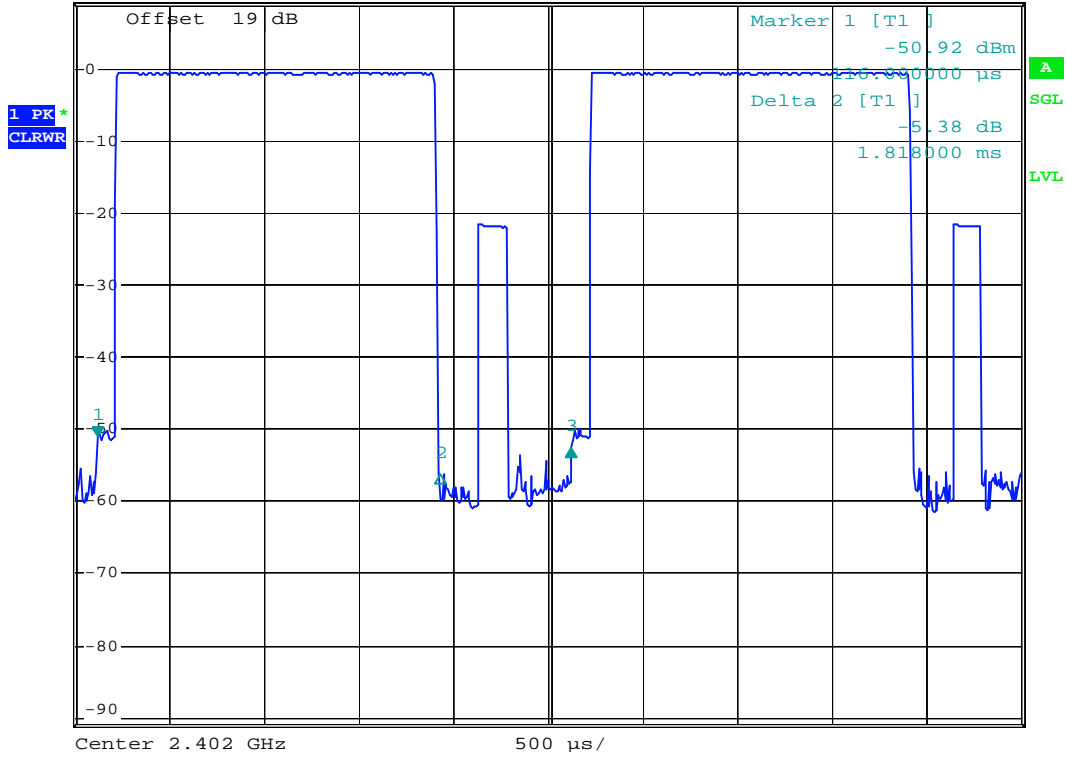
Date: 22.MAR.2006 09:46:28



DH3 (CH00)



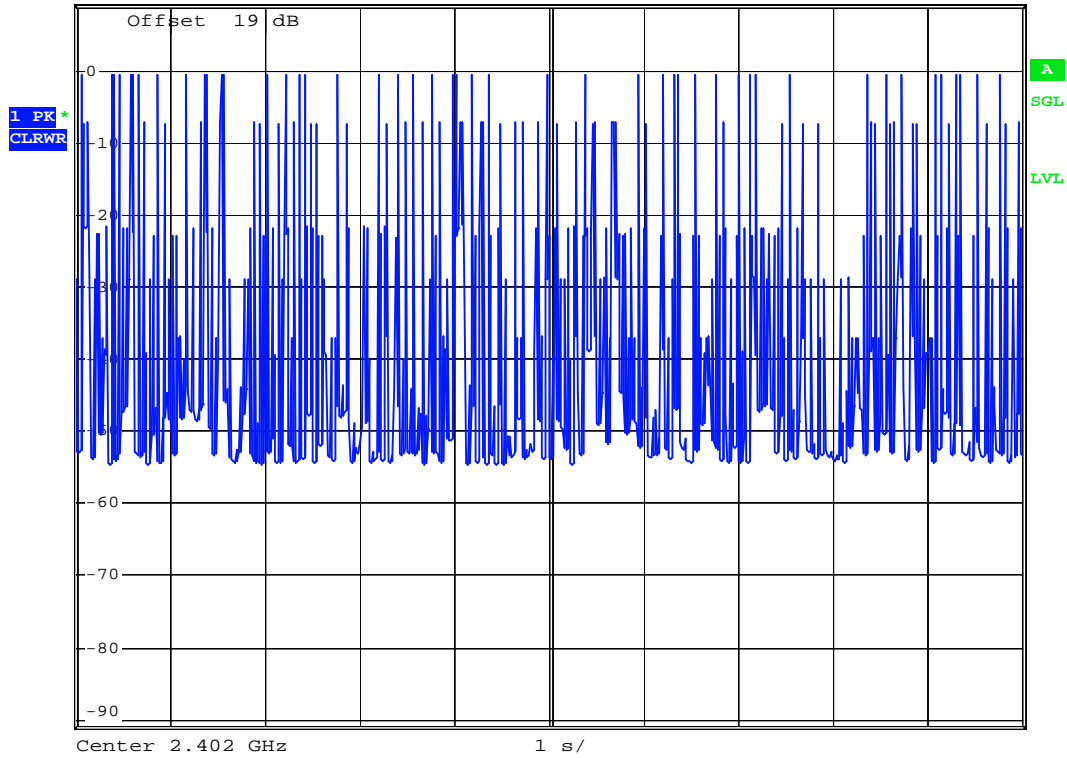
RBW 1 MHz Delta 3 [T1]
 *VBW 1 MHz -1.62 dB
 Ref 9 dBm *Att 10 dB SWT 5 ms 2.500000 ms



Date: 22.MAR.2006 09:39:32



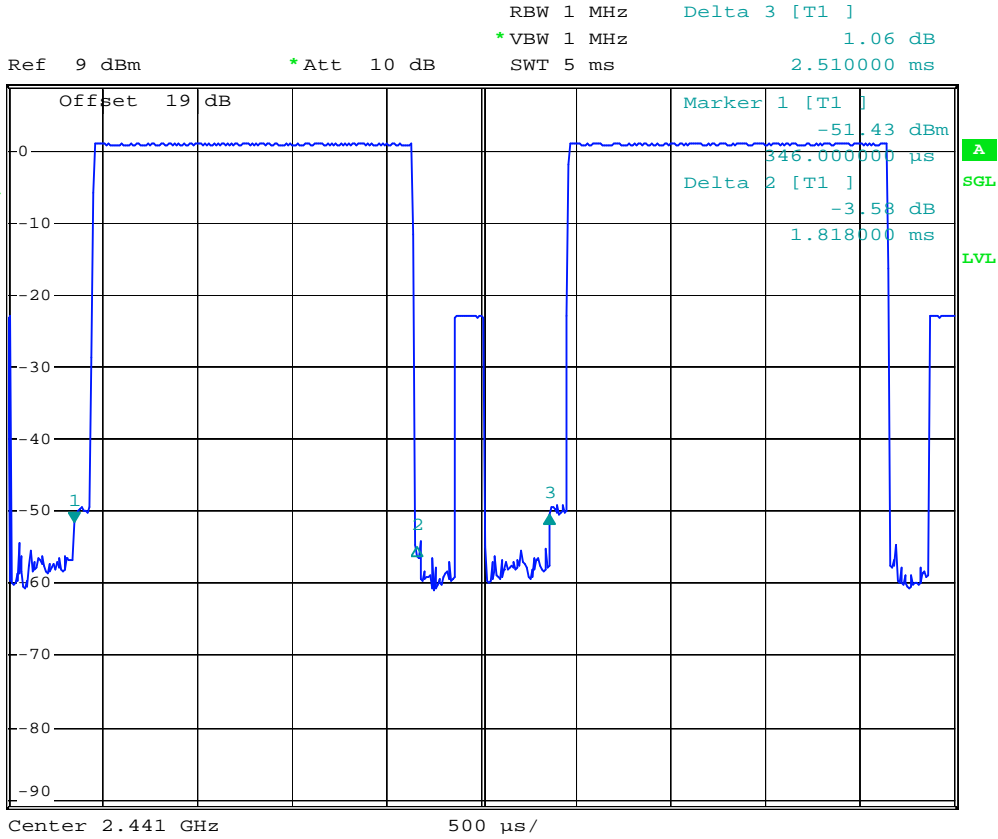
Ref 9 dBm *Att 10 dB RBW 1 MHz
*VBW 1 MHz SWT 10 s



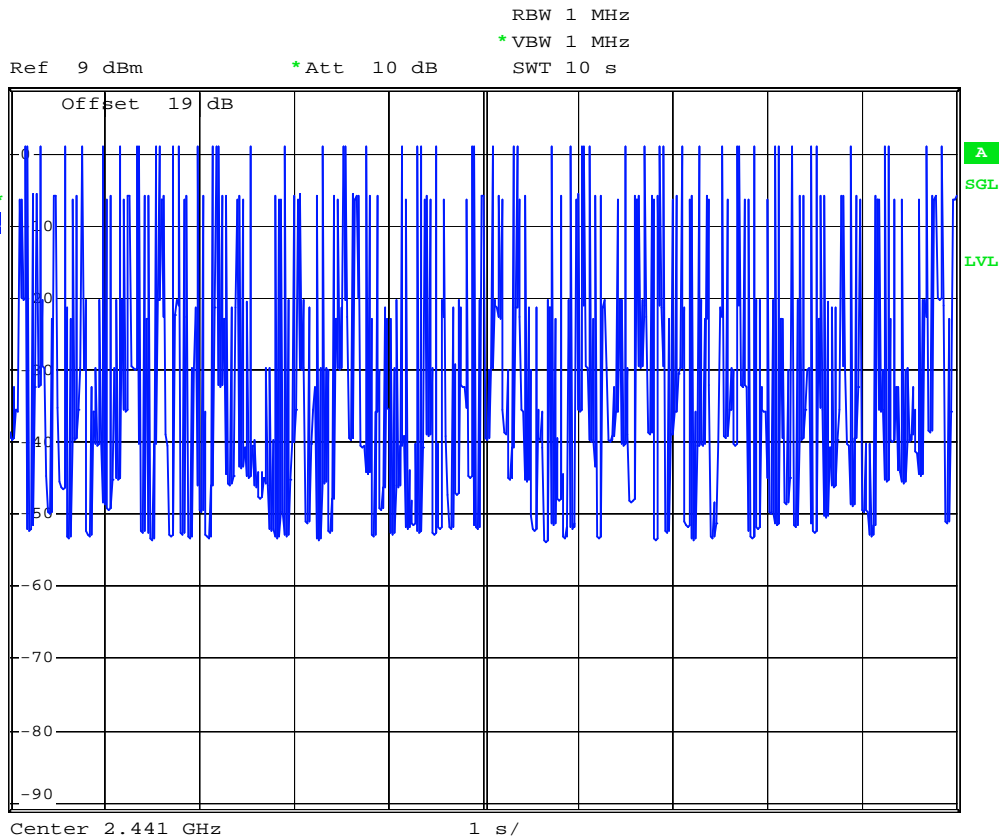
Date: 22.MAR.2006 09:45:10



DH3 (CH39)



Date: 22.MAR.2006 09:41:08



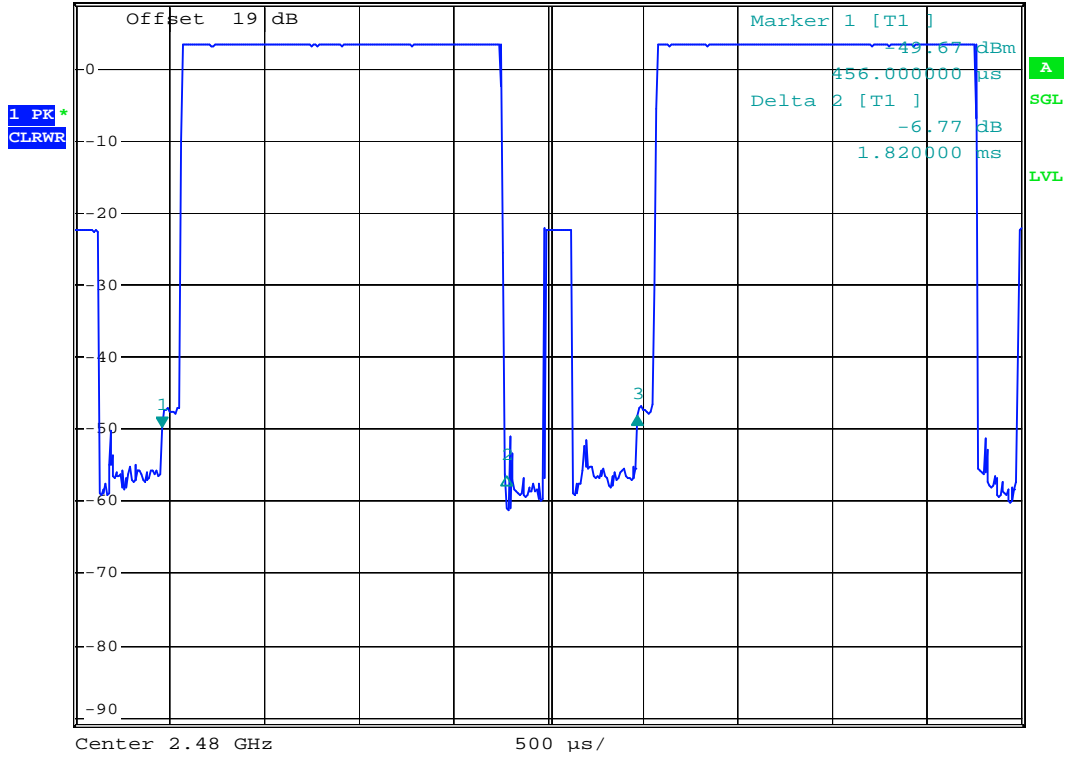
Date: 22.MAR.2006 09:45:31



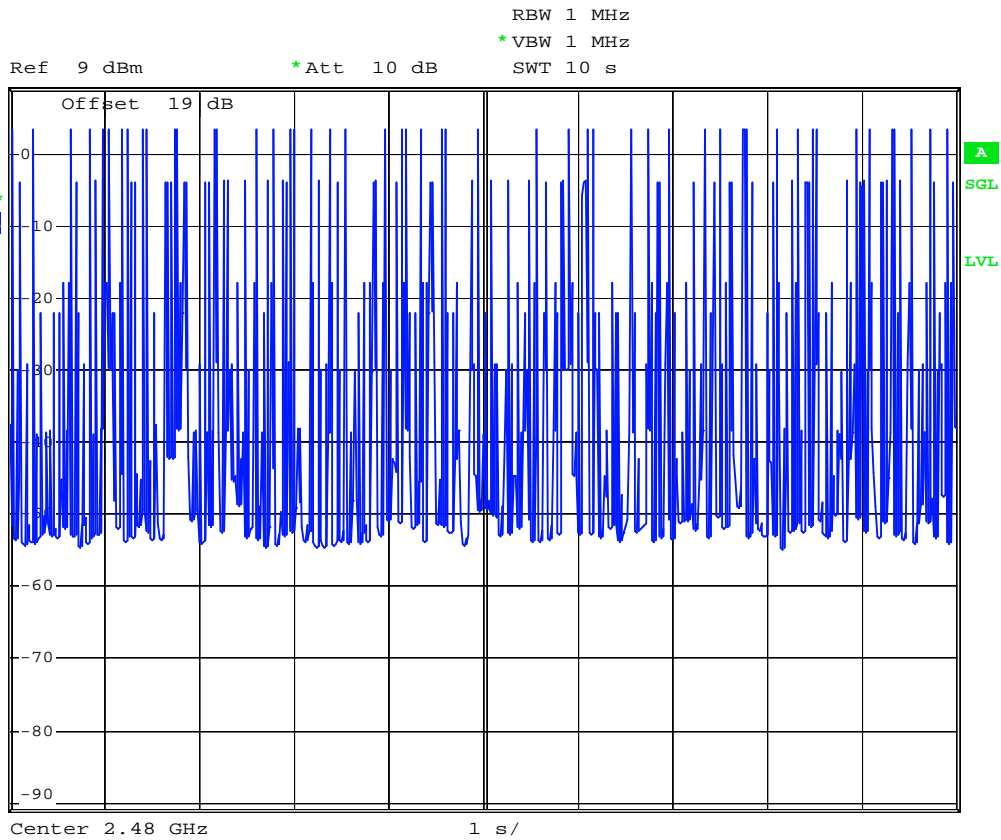
DH3 (CH78)



RBW 1 MHz Delta 3 [T1]
 *VBW 1 MHz 1.48 dB
 Ref 9 dBm *Att 10 dB SWT 5 ms 2.512000 ms



Date: 22.MAR.2006 09:42:43



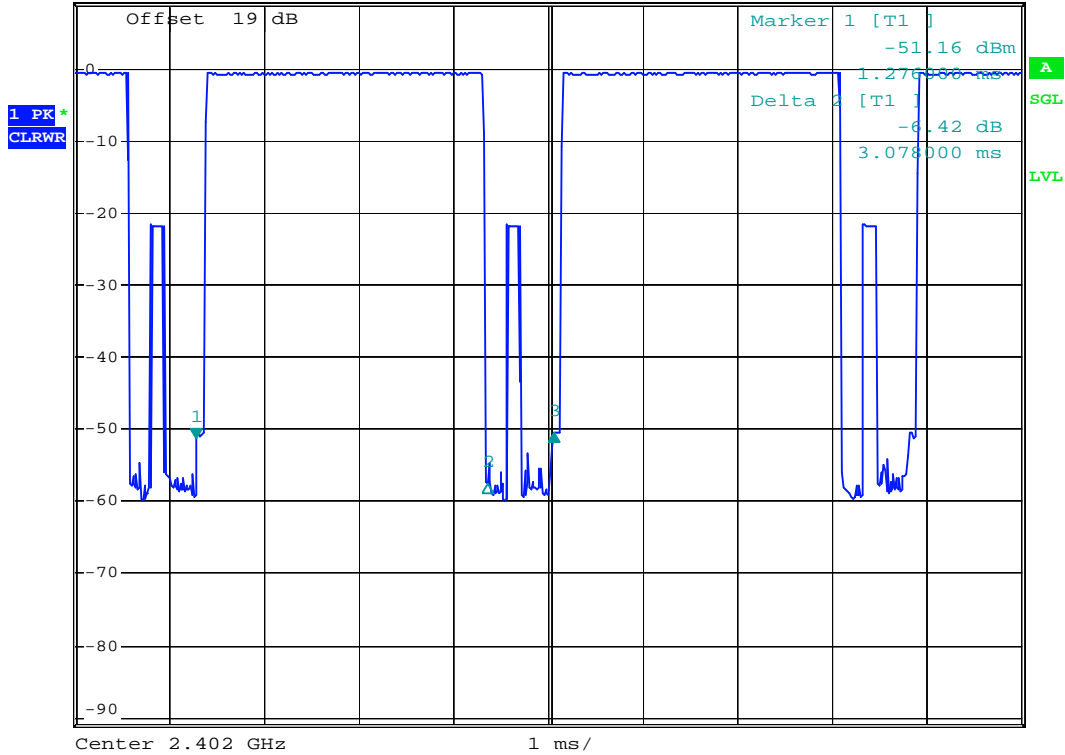
Date: 22.MAR.2006 09:46:03



DH5 (CH00)



RBW 1 MHz Delta 3 [T1]
 *VBW 1 MHz 0.74 dB
 Ref 9 dBm *Att 10 dB SWT 10 ms 3.780000 ms

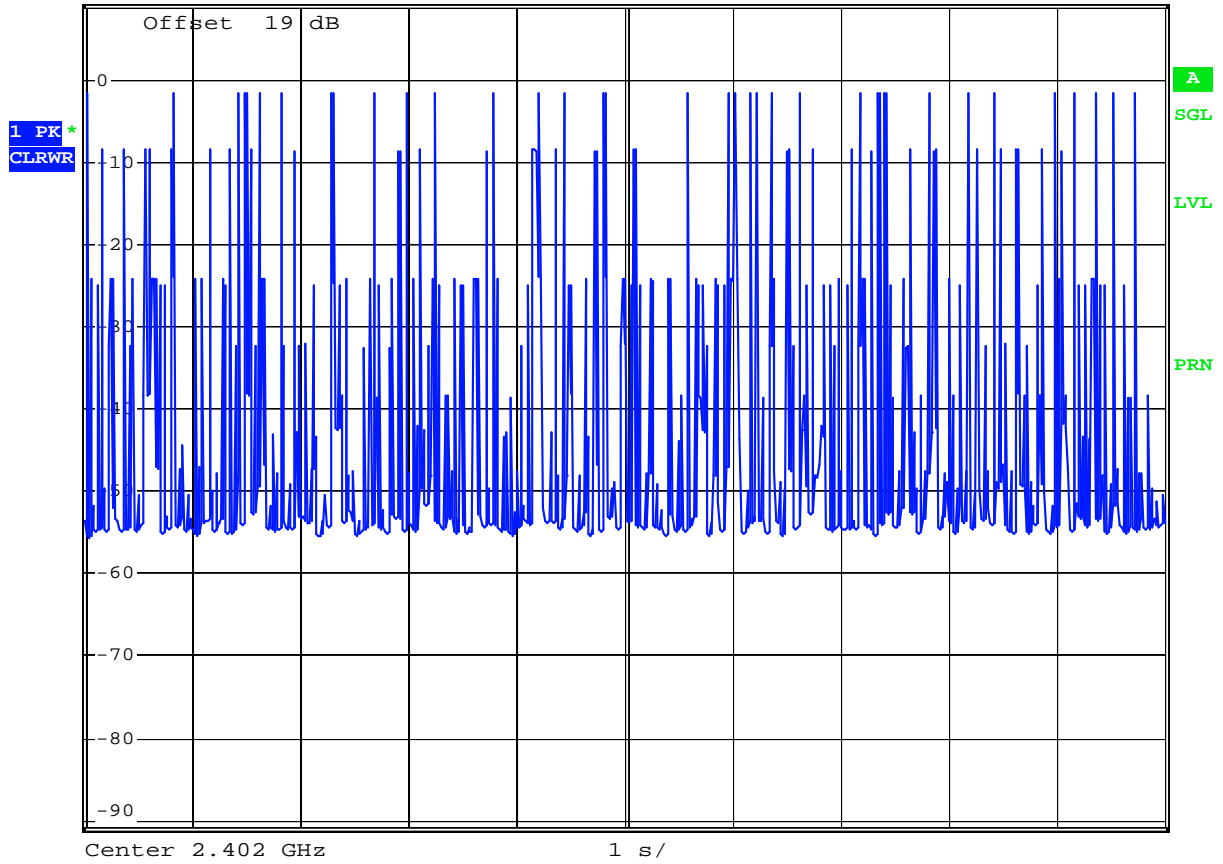


Date: 22.MAR.2006 09:39:59



RBW 1 MHz
*VBW 1 MHz

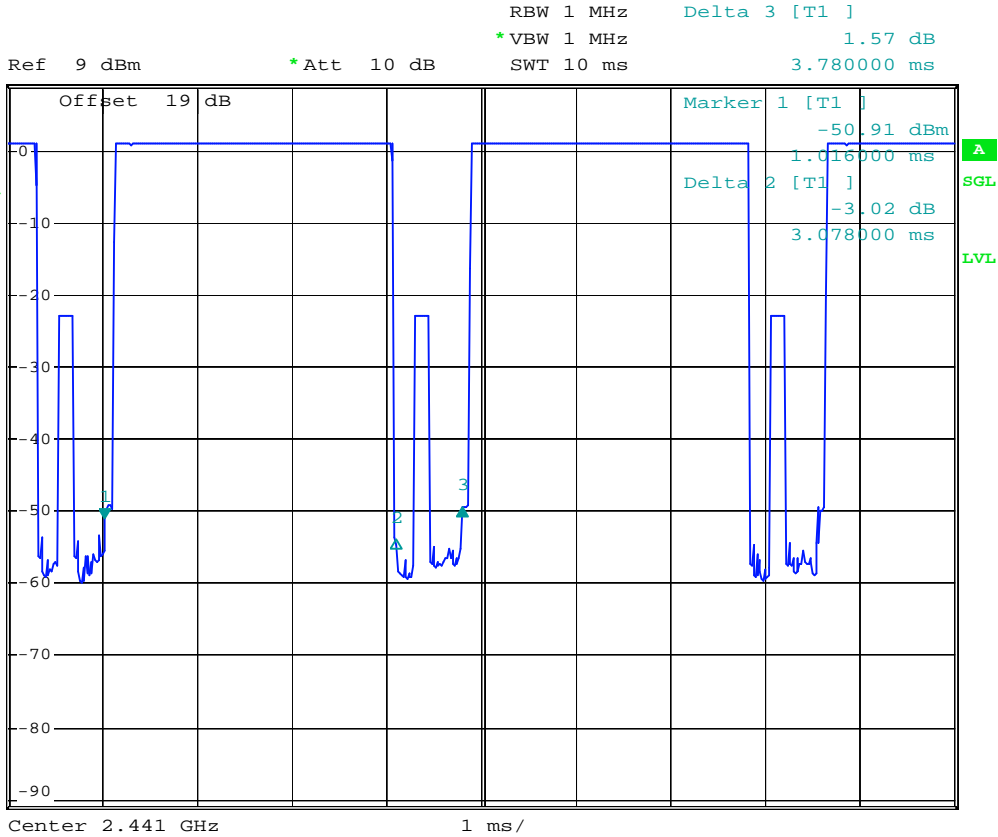
Ref 9 dBm *Att 10 dB SWT 10 s



Date: 22.MAR.2006 16:09:32



DH5 (CH39)

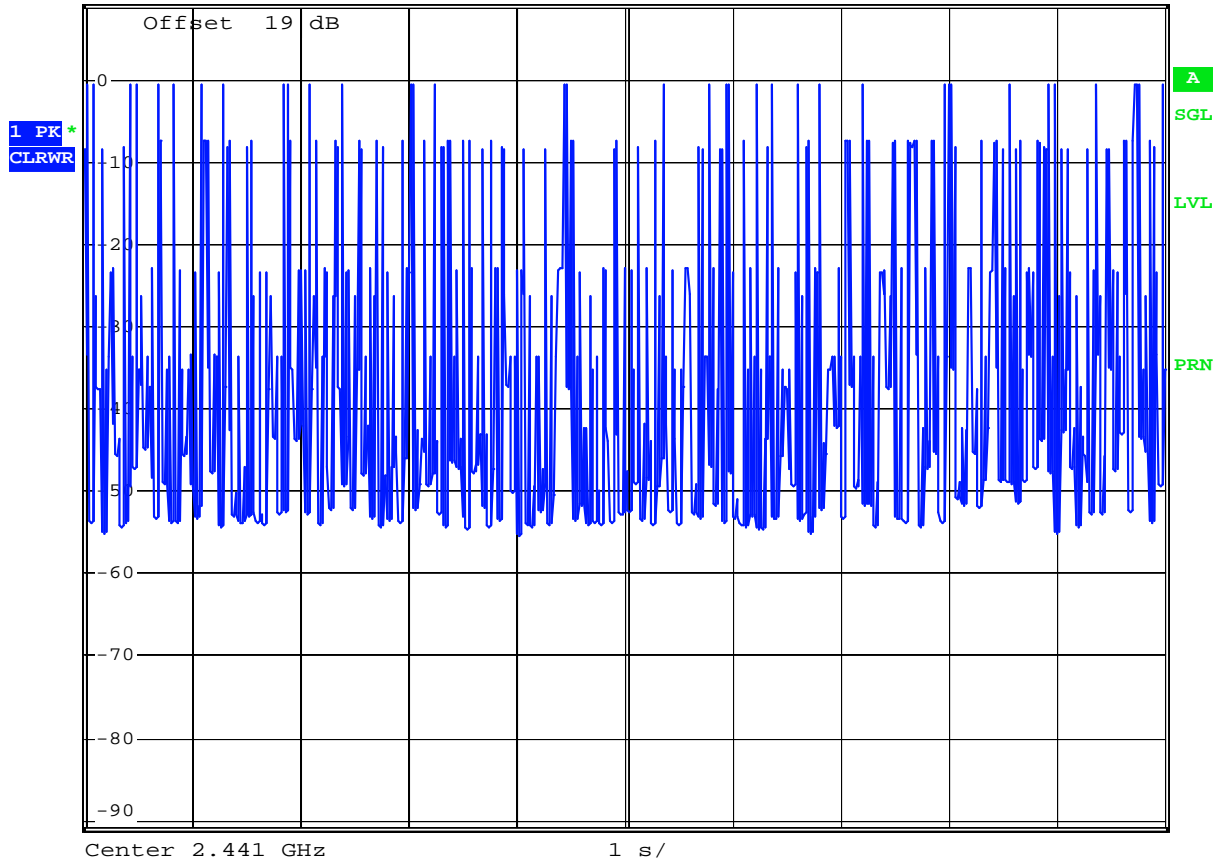


Date: 22.MAR.2006 09:40:35



RBW 1 MHz
*VBW 1 MHz

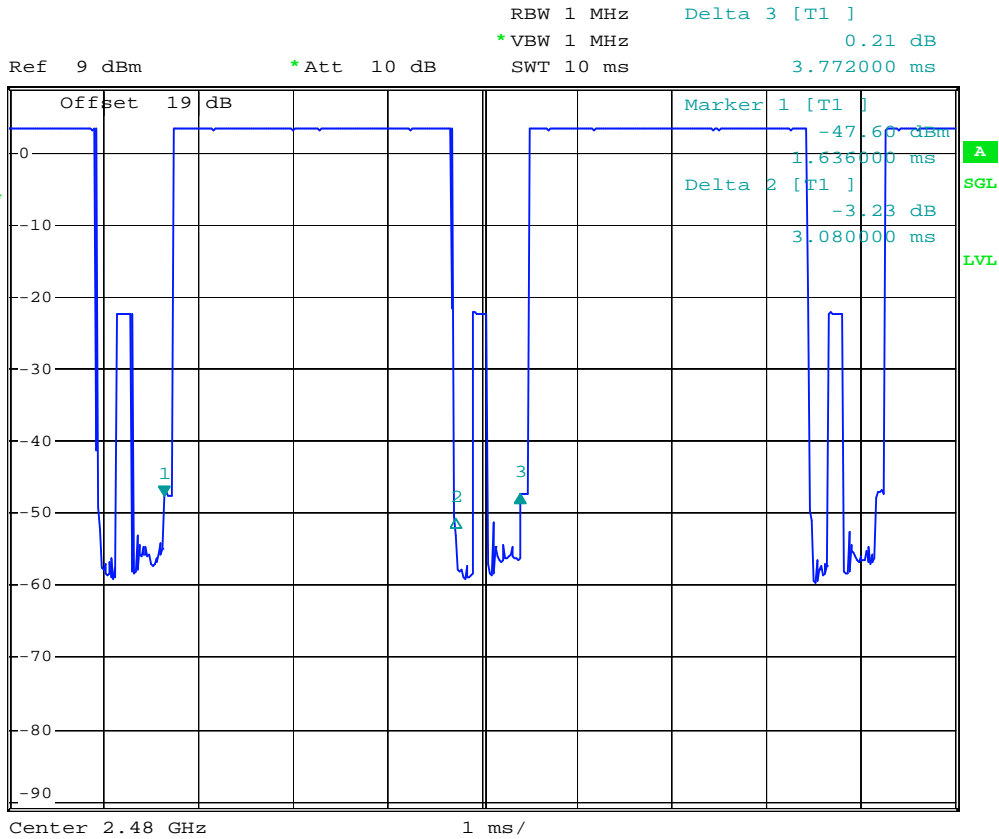
Ref 9 dBm *Att 10 dB SWT 10 s



Date: 22.MAR.2006 16:11:27



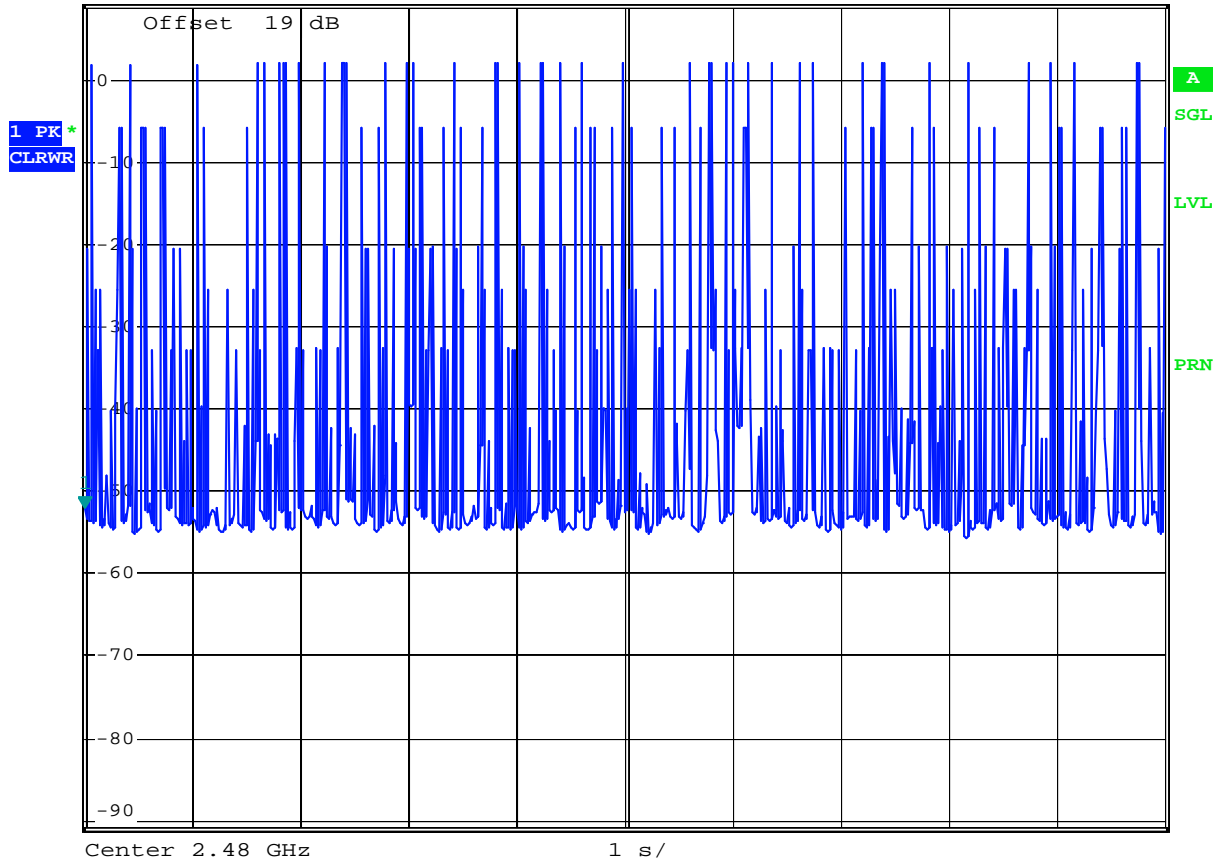
DH5 (CH78)



Date: 22.MAR.2006 09:43:18



Ref 9 dBm *Att 10 dB RBW 1 MHz Marker 1 [T1]
*VBW 1 MHz -51.96 dBm
SWT 10 s 2.000000 ms



Date: 22.MAR.2006 16:04:14

5.9 Peak Output Power Measurement

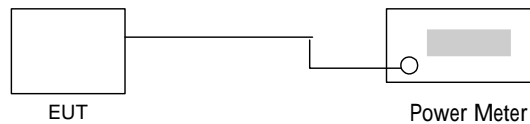
5.9.1 Measuring Instruments :

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 : 24°C
- Relative Humidity : 52 %
- Test Enginner : Andy

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	17.31	1W/30 dBm
06	2437	17.12	1W/30 dBm
11	2462	17.25	1W/30 dBm

WLAN 802.11g

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	14.19	1W/30 dBm
06	2437	14.90	1W/30 dBm
11	2462	14.54	1W/30 dBm



BT

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	2.69	1W/30 dBm
39	2441	1.13	1W/30 dBm
78	2480	2.30	1W/30 dBm



5.9.5 Output Power

Mode 1: CH00 (2402MHz)

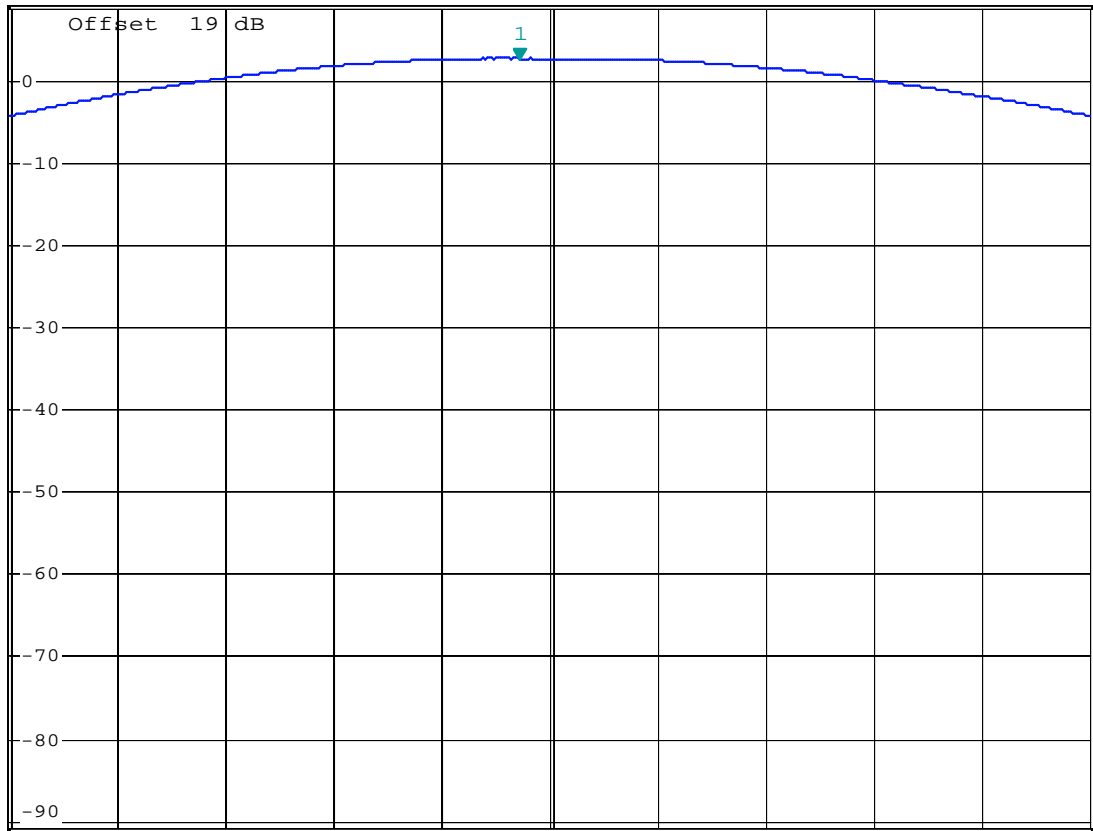


* RBW 3 MHz Marker 1 [T1]
* VBW 3 MHz 2.69 dBm
* SWT 500 ms 2.401860000 GHz

Ref 9 dBm

* Att 10 dB

1 PK
MAXH



Center 2.402 GHz

500 kHz/

Span 5 MHz

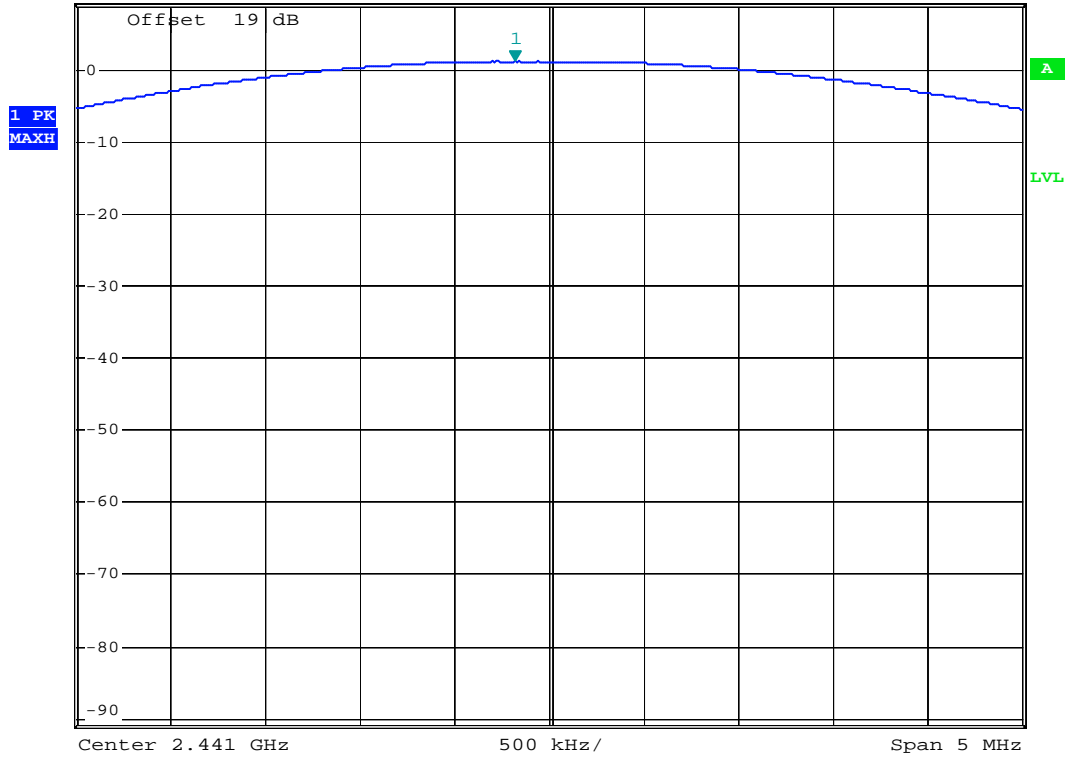
Date: 22.MAR.2006 16:37:55



Mode 2: CH39 (2441MHz)



Ref 9 dBm *Att 10 dB *RBW 3 MHz Marker 1 [T1] *VBW 3 MHz 1.13 dBm
*SWT 500 ms 2.440820000 GHz



Date: 22.MAR.2006 09:27:30



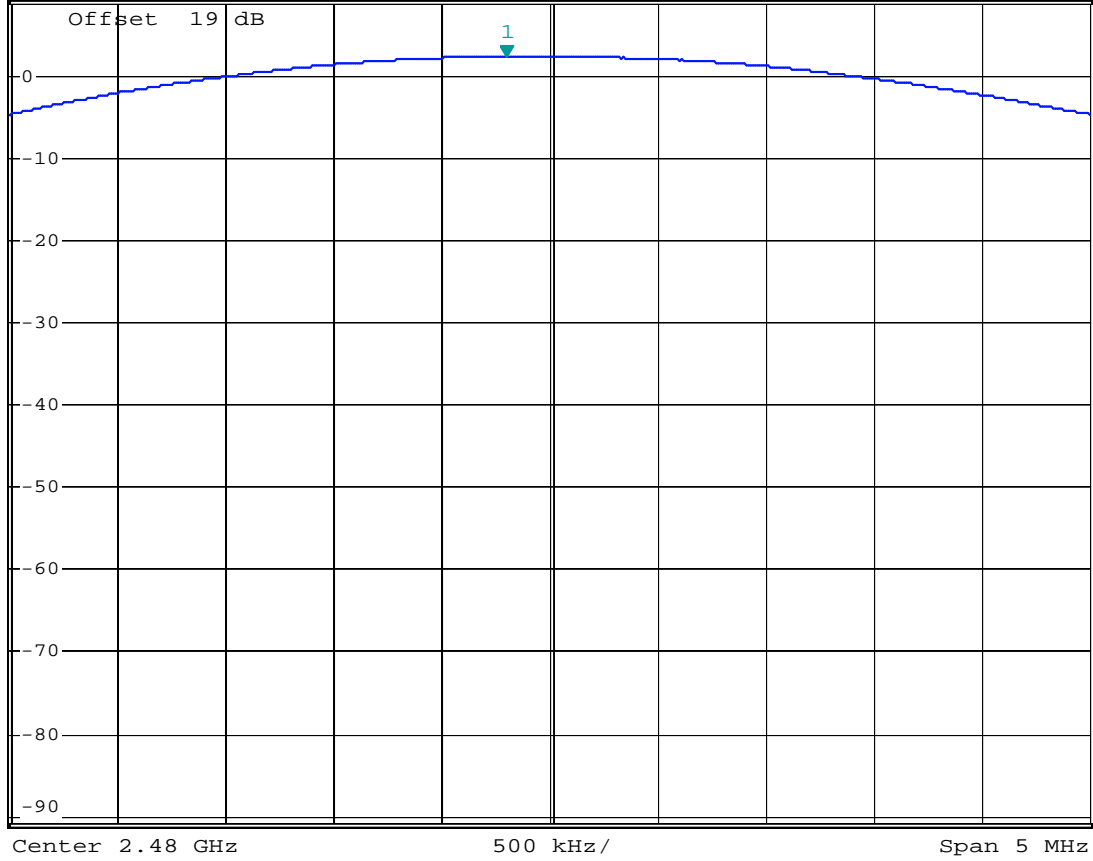
Mode 3: CH78 (2480MHz)



* RBW 3 MHz Marker 1 [T1]
 * VBW 3 MHz 2.30 dBm
 * SWT 500 ms 2.47980000 GHz

Ref 9 dBm

* Att 10 dB



Date: 22.MAR.2006 16:02:59



5.10 Conducted Emission

5.10.1 Measuring Instruments

As described in chapter 6 of this test Report.

5.10.2 Test Procedures :

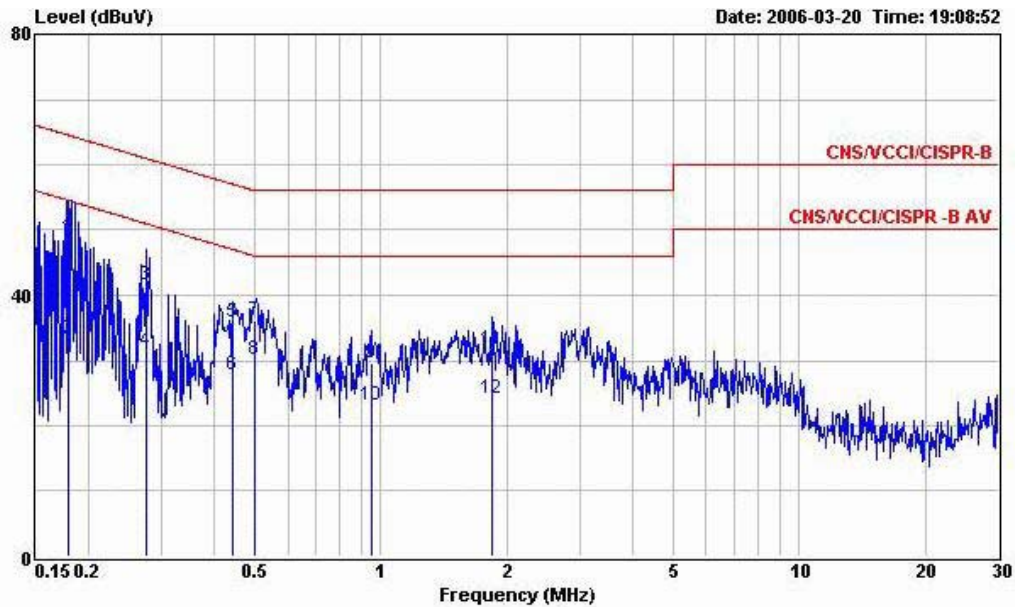
- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of a line impedance stabilization network (LISN).
- c. All the support units are connected to the other LISN.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

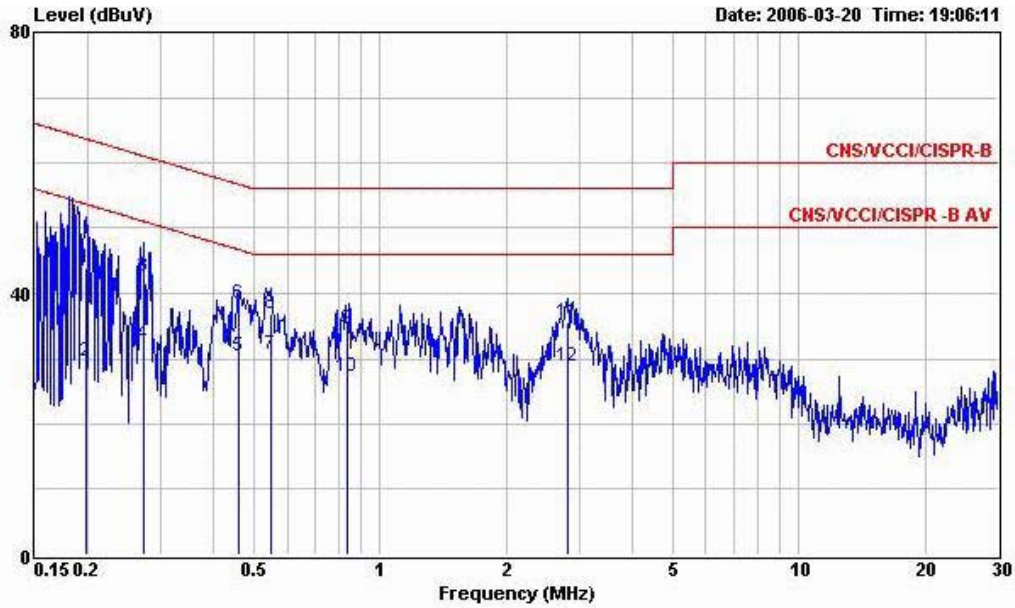
- Temperature : 24 °C
- Relating Humidity : 52 %
- Test Enginner : Andy
- Test Mode : Mode 1

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



Site : site
 Condition : CNS/VCCI/CISPR-B 2001/004 200505 LINE
 EUT : GPS Bluetooth PDA
 Power : 110V/50Hz
 Model : TE631101
 Memo : GPS RX+Earphone+BT Link+WLAN Link
 Memo :
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.178	48.94	-15.62	64.56	48.76	0.06	0.12	QP
2	0.178	33.23	-21.33	54.56	33.05	0.06	0.12	Average
3	0.275	41.58	-19.39	60.97	41.43	0.06	0.09	QP
4	0.275	31.48	-19.49	50.97	31.33	0.06	0.09	Average
5	0.444	35.77	-21.22	56.99	35.64	0.07	0.06	QP
6	0.444	27.78	-19.21	46.99	27.65	0.07	0.06	Average
7	0.502	36.12	-19.88	56.00	35.98	0.07	0.07	QP
8	0.502	30.25	-15.75	46.00	30.11	0.07	0.07	Average
9	0.948	29.64	-26.36	56.00	29.43	0.11	0.10	QP
10	0.948	23.06	-22.94	46.00	22.85	0.11	0.10	Average
11	1.850	31.76	-24.24	56.00	31.51	0.11	0.14	QP
12	1.850	24.24	-21.76	46.00	23.99	0.11	0.14	Average



Site : site
 Condition : CNS/VCCI/CISPR-B 2001/004 200505 NEUTRAL
 EUT : GPS Bluetooth PDA
 Power : 110V/60Hz
 Model : TE631101
 Memo : GPS RX+Earphone+BT Link+WLAN Link
 Memo :
 Memo :

	Over	Limit	Read	Probe	Cable		
Freq	Level	Limit	Line	Level	Factor	Loss	Remark
MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.198	43.83	-19.86	63.69	43.60	0.11	0.12 QP
2	0.198	29.72	-23.97	53.69	29.49	0.11	0.12 Average
3	0.273	42.51	-18.52	61.03	42.31	0.11	0.09 QP
4	0.273	32.17	-18.86	51.03	31.97	0.11	0.09 Average
5	0.459	30.29	-16.42	46.71	30.09	0.13	0.07 Average
6	0.459	38.37	-18.34	56.71	38.17	0.13	0.07 QP
7	0.546	30.67	-15.33	46.00	30.45	0.15	0.07 Average
8	0.546	36.87	-19.13	56.00	36.65	0.15	0.07 QP
9	0.833	34.65	-21.35	56.00	34.35	0.21	0.09 QP
10	0.833	27.25	-18.75	46.00	26.95	0.21	0.09 Average
11	2.810	35.63	-20.37	56.00	35.24	0.23	0.16 QP
12	2.810	28.81	-17.19	46.00	28.42	0.23	0.16 Average



5.11 Radiated Emission Measurement

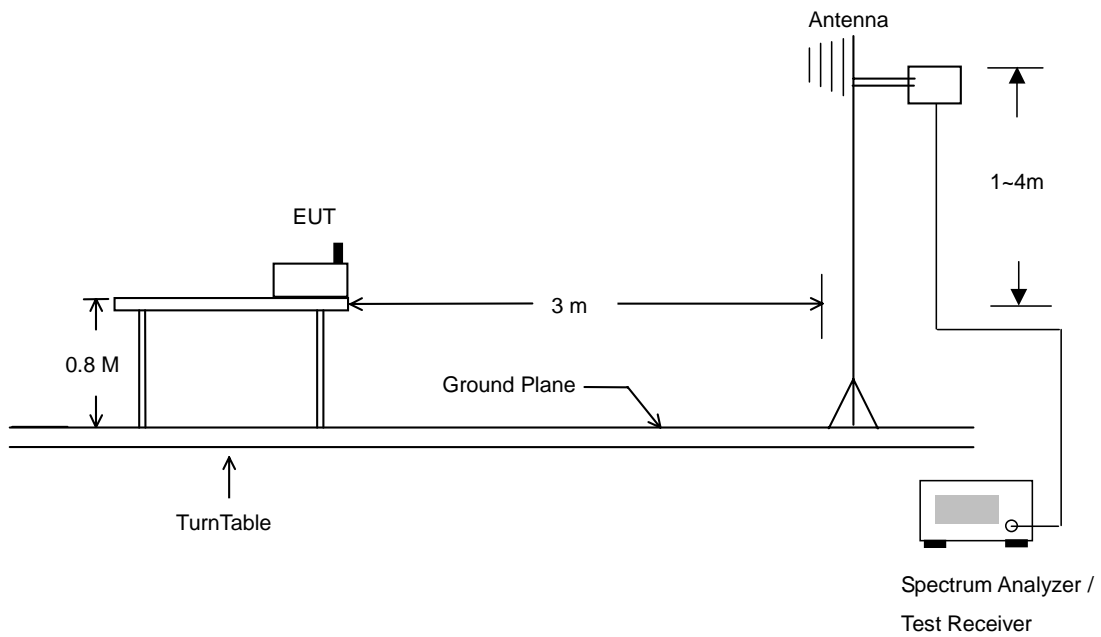
5.11.1 Measuring Instruments

As described in chapter 6 of this Report.

5.11.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- e. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. For testing below 1GHz, If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

5.11.3 Typical Test Setup Layout of Radiated Emission

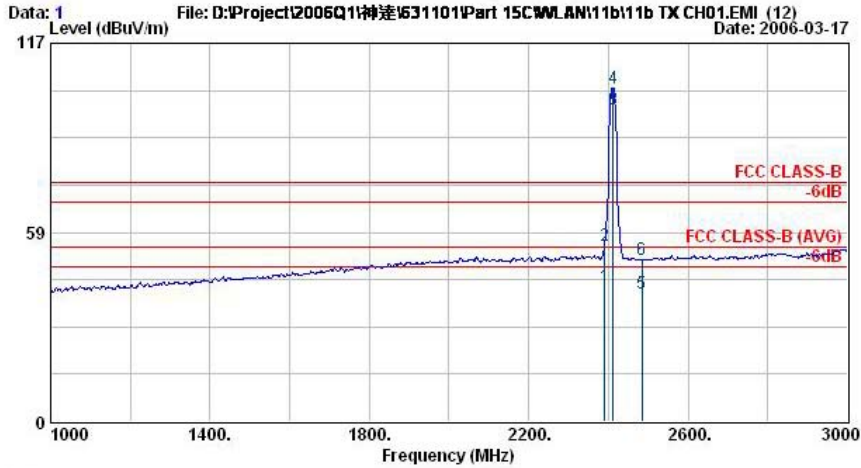




5.11.4 Test Data

- Temperature : 26°C
- Relating Humidity : 56%
- Test Enginner : Andy
- Test Mode : Mode 1
- Polarization : Horizontal

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



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH01,2412MHz
 Plane : E1

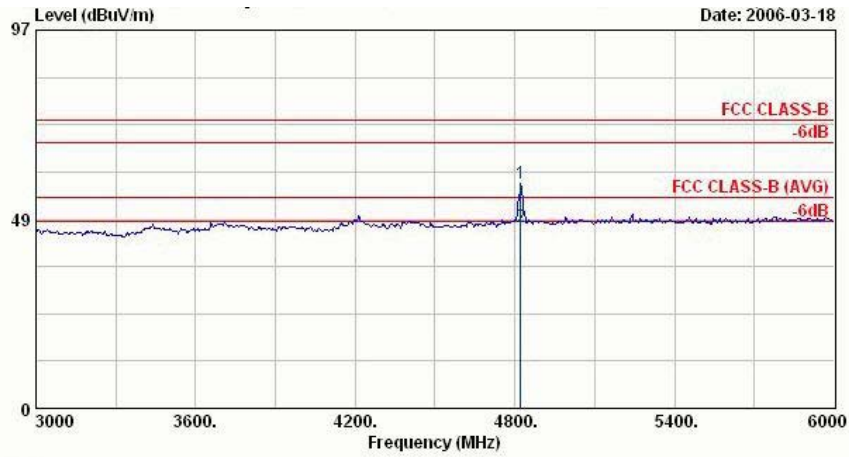
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	41.83	-12.17	54.00	42.54	30.48	35.46	4.26	100	35	Average
2	2390.00	54.58	-19.42	74.00	55.29	30.48	35.46	4.26	100	360	Peak
3 @	2412.00	96.48			97.20	30.47	35.46	4.26	100	35	Average
4 X	2412.00	103.19			103.92	30.47	35.46	4.26	100	360	Peak
5	2483.50	39.72	-14.28	54.00	40.46	30.41	35.51	4.36	100	35	Average
6	2483.50	49.99	-24.01	74.00	50.73	30.41	35.51	4.36	100	360	Peak

Remark: #3 and #4 Fundamental Signal.



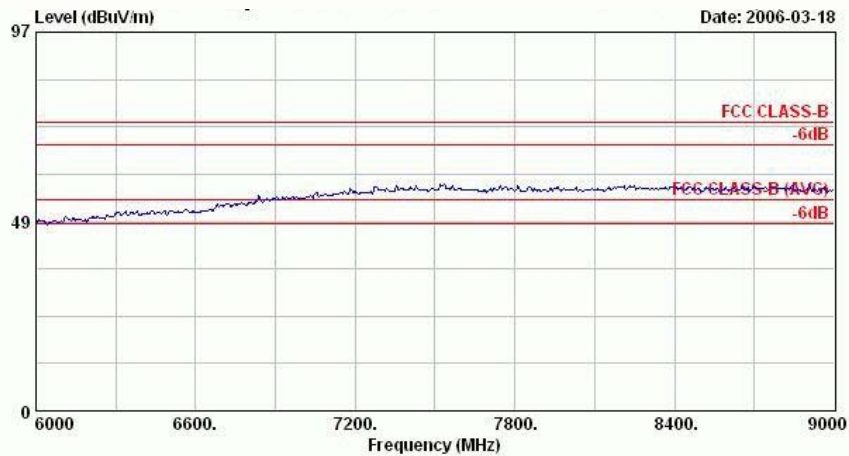
FCC TEST REPORT

Report No. : FR631101



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH01_2412MHz
 Plane : E1

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	4821.00	57.71	-16.29	74.00	54.37	33.21	36.12	6.24	200	0	Peak
2	4821.00	46.50	-7.50	54.00	43.16	33.21	36.12	6.24	100	2	Average

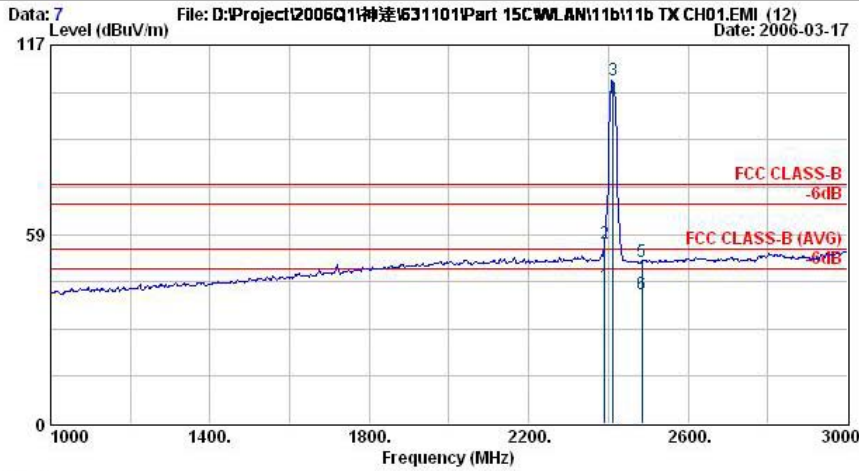


Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH01_2412MHz
 Plane : E1



▪ Polarization : Vertical

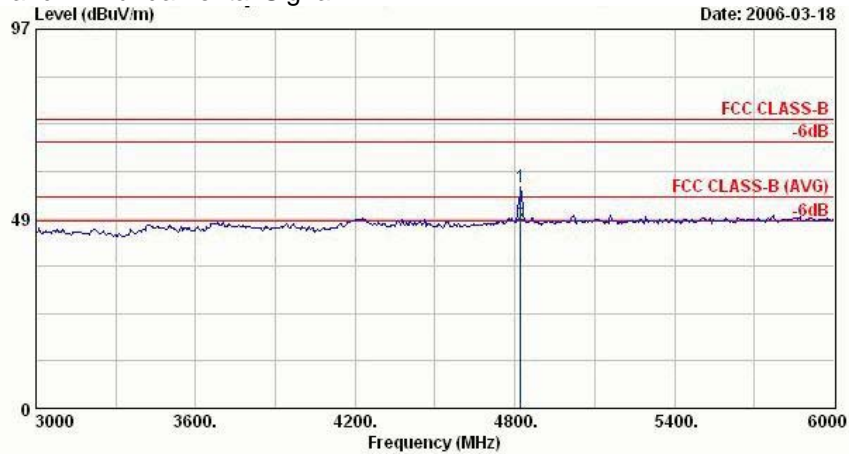
The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 VERTICAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH01_2412MHz
 Plane : E1

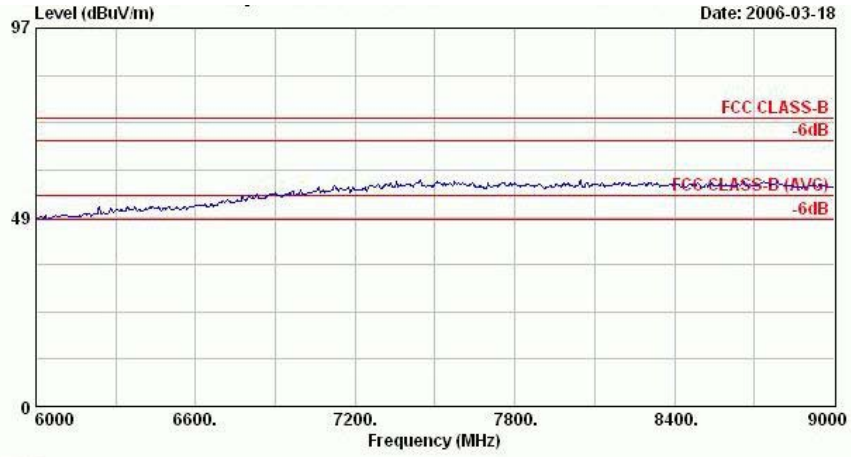
	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	42.56	-11.44	54.00	43.27	30.48	35.46	4.26	100	259	Average
2	2390.00	55.65	-18.35	74.00	56.36	30.48	35.46	4.26	100	360	Peak
3 X	2412.00	105.92			106.64	30.47	35.46	4.26	100	360	Peak
4 @	2412.00	99.48			100.20	30.47	35.46	4.26	100	259	Average
5	2483.50	50.02	-23.98	74.00	50.76	30.41	35.51	4.36	100	360	Peak
6	2483.50	39.85	-14.15	54.00	40.59	30.41	35.51	4.36	100	259	Average

Remark: #3 and #4 Fundamental Signal.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 VERTICAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH01_2412MHz
 Plane : E1

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	4821.00	56.60	-17.40	74.00	53.26	33.21	36.12	6.24	200	360	Peak
2	4821.00	46.89	-7.11	54.00	43.55	33.21	36.12	6.24	100	78	Average

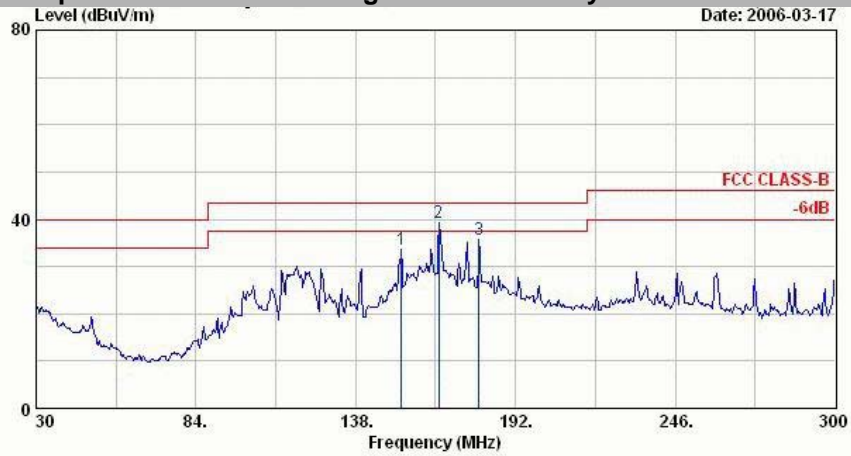


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : GPS Bluetooth PDA
Power : 120Vac/60Hz
Model : FR631101
Memo : 11b TX_CH01_2412MHz
Plane : E1



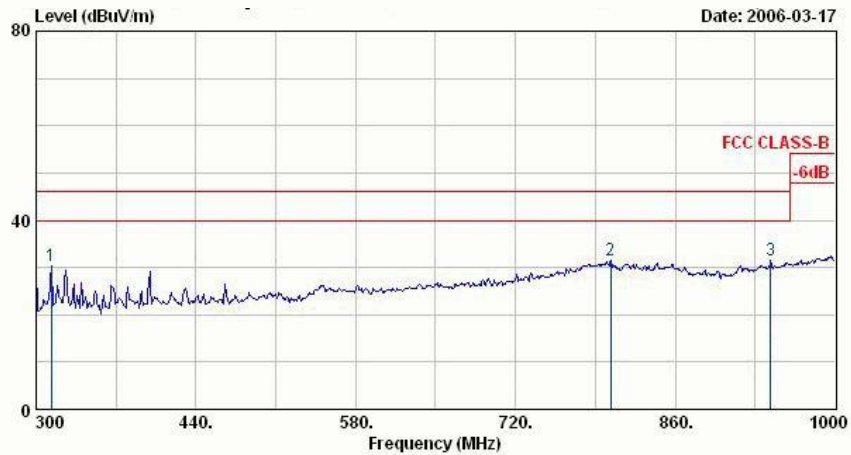
- Test Mode : Mode 2
- Polarization : Horizontal

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



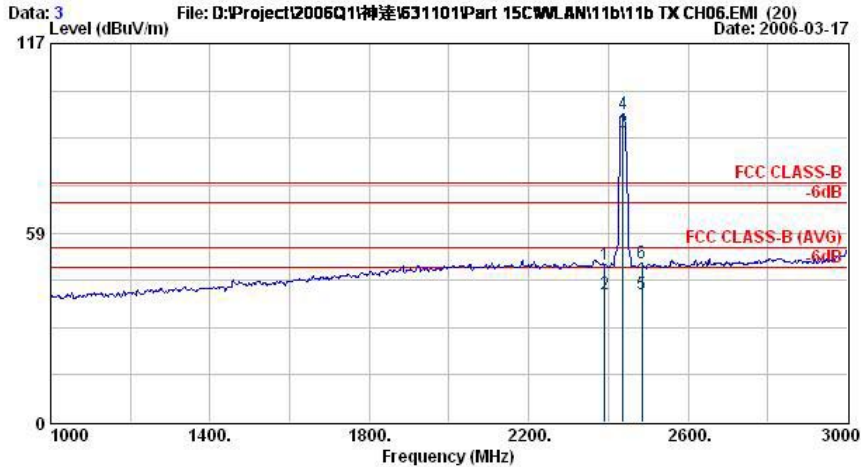
Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : GPS Buetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX _CH06,2437MHz
 Plane : E1

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	Pos	deg
1	153.39	33.74	-9.76	43.50	52.87	9.34	31.52	3.04	400	0 Peak
2 @	166.08	39.29	-4.21	43.50	57.62	9.95	31.47	3.18	122	283 Peak
3	179.58	35.81	-7.69	43.50	54.75	9.14	31.39	3.32	400	0 Peak



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : GPS Buetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX _CH06,2437MHz
 Plane : E1

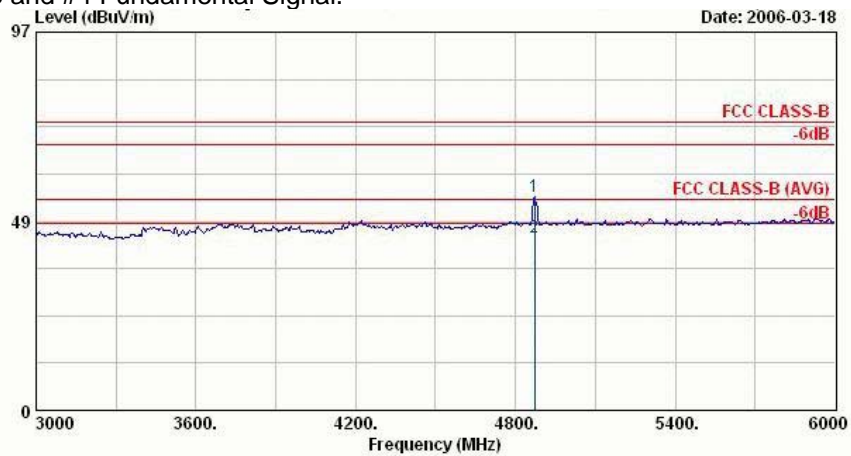
	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	Pos	deg
1	313.30	30.20	-15.80	46.00	43.07	13.34	30.67	4.47	100	0 Peak
2	803.30	31.50	-14.50	46.00	32.46	21.84	30.26	7.47	100	0 Peak
3	943.30	31.62	-14.38	46.00	32.35	21.26	30.26	8.26	100	0 Peak



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Buetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH06,2437MHz
 Plane : E1

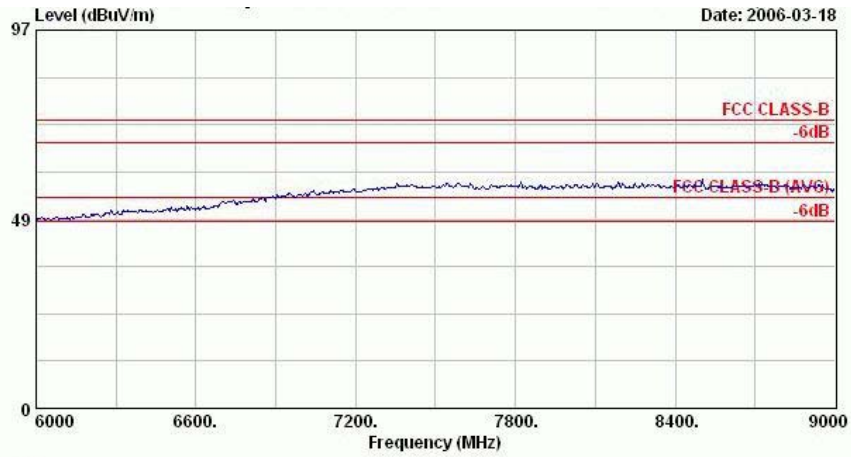
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	48.89	-25.11	74.00	49.60	30.48	35.46	4.26	100	0	Peak
2	2390.00	39.56	-14.44	54.00	40.27	30.48	35.46	4.26	100	36	Average
3 X	2437.00	89.50			90.24	30.44	35.47	4.29	100	36	Average
4 X	2437.00	95.39			96.13	30.44	35.47	4.29	100	0	Peak
5	2483.50	39.73	-14.27	54.00	40.47	30.41	35.51	4.36	100	36	Average
6	2483.50	49.07	-24.93	74.00	49.81	30.41	35.51	4.36	100	0	Peak

Remark: #3 and #4 Fundamental Signal.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Buetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH06,2437MHz
 Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	4872.00	54.90	-19.10	74.00	51.37	33.39	36.16	6.30	200	0	Peak
2	4872.00	44.26	-9.74	54.00	40.73	33.39	36.16	6.30	100	9	Average

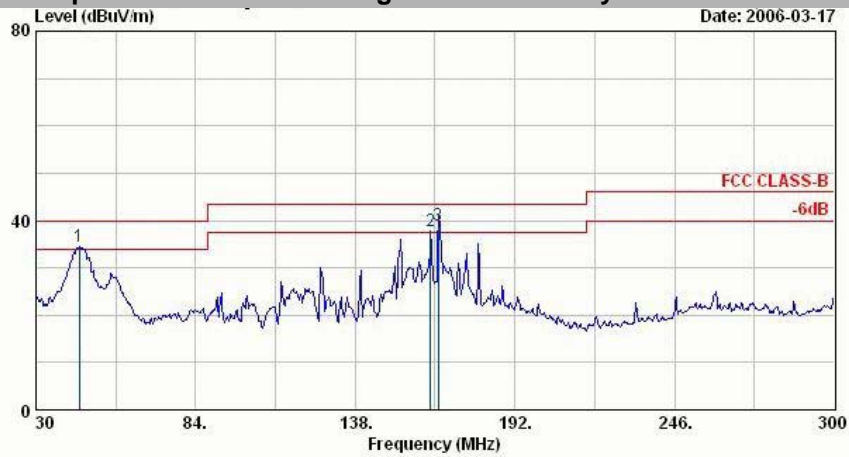


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : GPS Bluetooth PDA
Power : 120Vac/60Hz
Model : FR631101
Memo : 11b TX_CH06,2437MHz
Plane : E1



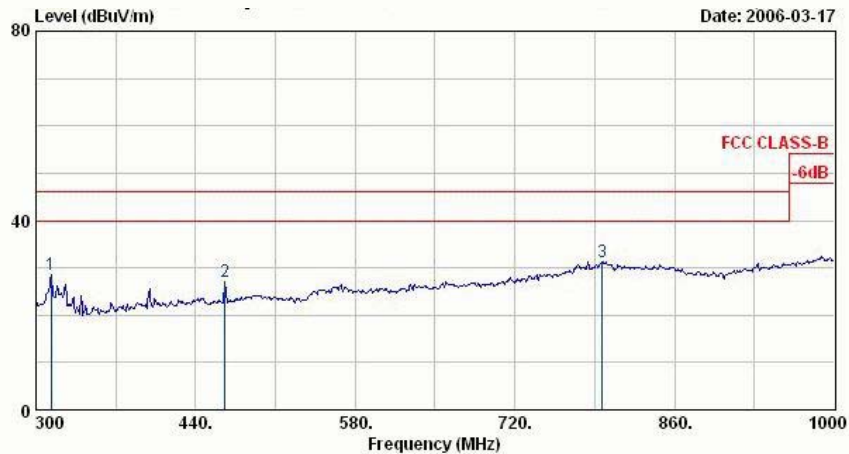
▪ Polarization : Vertical

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



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH06,2437MHz
 Plane : E1

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	44.58	34.48	-5.52	40.00	52.37	12.10	31.62	1.63	400	0	Peak
2	163.38	37.69	-5.81	43.50	55.98	10.09	31.53	3.15	400	0	Peak
3	166.08	38.87	-4.63	43.50	57.20	9.95	31.47	3.18	100	216	QP



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH06,2437MHz
 Plane : E1

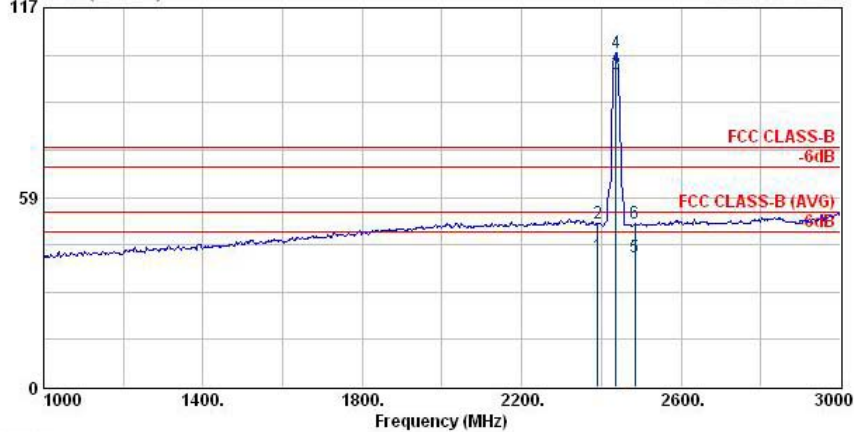
	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	313.30	28.62	-17.38	46.00	41.49	13.34	30.67	4.47	100	0	Peak
2	465.90	27.05	-18.95	46.00	35.71	16.67	30.82	5.49	100	0	Peak
3	796.30	31.20	-14.80	46.00	32.11	21.79	30.14	7.44	100	0	Peak



FCC TEST REPORT

Report No. : FR631101

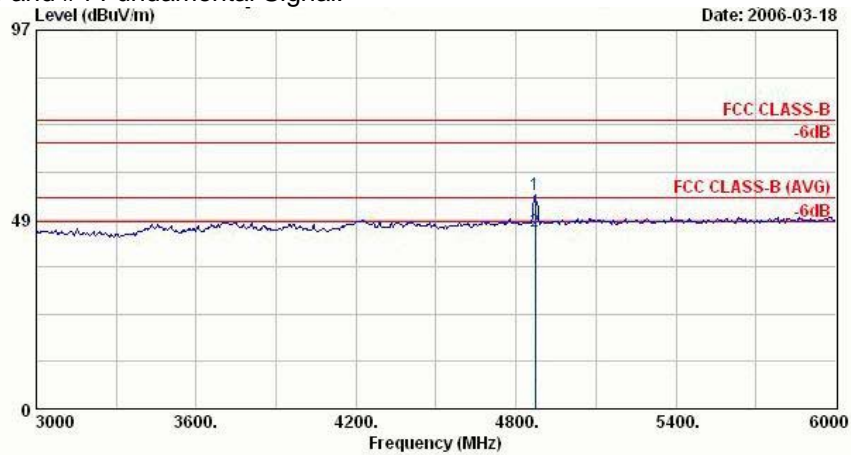
Data: 13 File: D:\Project\2006Q1\神達\631101\Part 15C\WLAN\11b\11b TX CH06.EMI (20) Date: 2006-03-17



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 VERTICAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH06,2437MHz
 Plane : E1

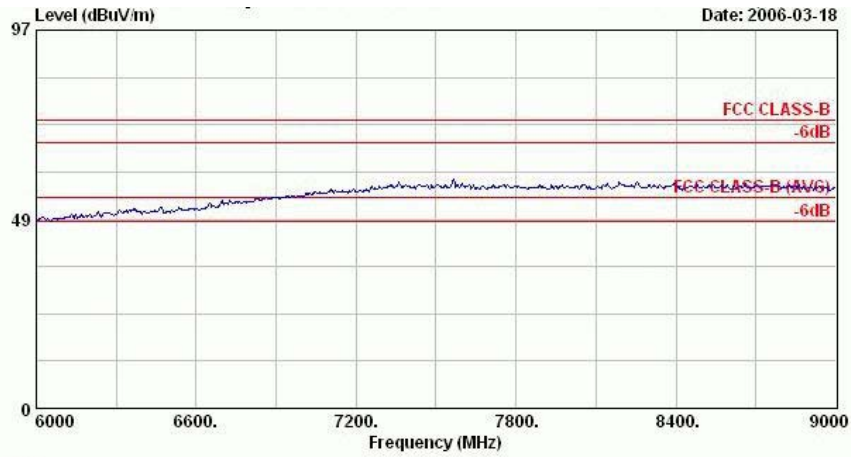
	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	40.46	-13.54	54.00	41.17	30.48	35.46	4.26	100	250	Average
2	2390.00	50.51	-23.49	74.00	51.22	30.48	35.46	4.26	100	360	Peak
3 X	2437.00	96.34			97.08	30.44	35.47	4.29	100	250	Average
4 X	2437.00	103.04			103.78	30.44	35.47	4.29	100	360	Peak
5	2483.50	39.85	-14.15	54.00	40.59	30.41	35.51	4.36	100	250	Average
6	2483.50	50.43	-23.57	74.00	51.17	30.41	35.51	4.36	100	360	Peak

Remark: #3 and #4 Fundamental Signal.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 VERTICAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH06,2437MHz
 Plane : E1

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	4872.00	54.86	-19.14	74.00	51.33	33.39	36.16	6.30	200	360	Peak
2	4872.00	45.55	-8.45	54.00	42.02	33.39	36.16	6.30	122	326	Average

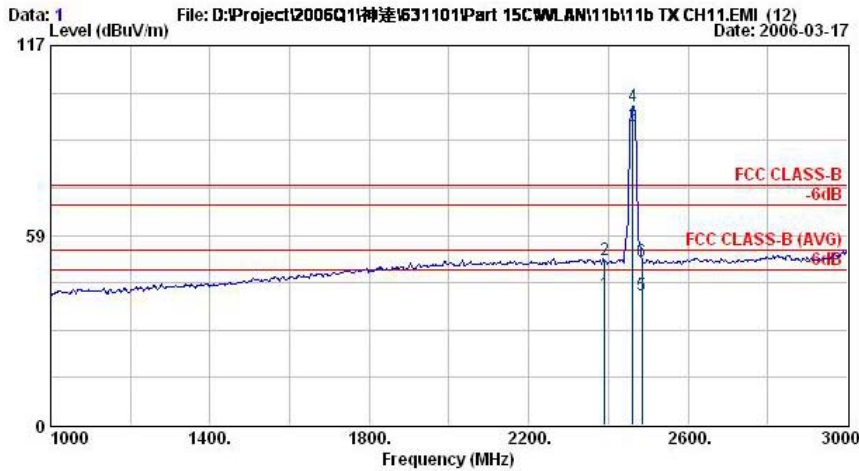


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : GPS Bluetooth PDA
Power : 120Vac/60Hz
Model : FR631101
Memo : 11b TX_CH06,2437MHz
Plane : E1



- Test Mode : Mode 3
- Polarization : Horizontal

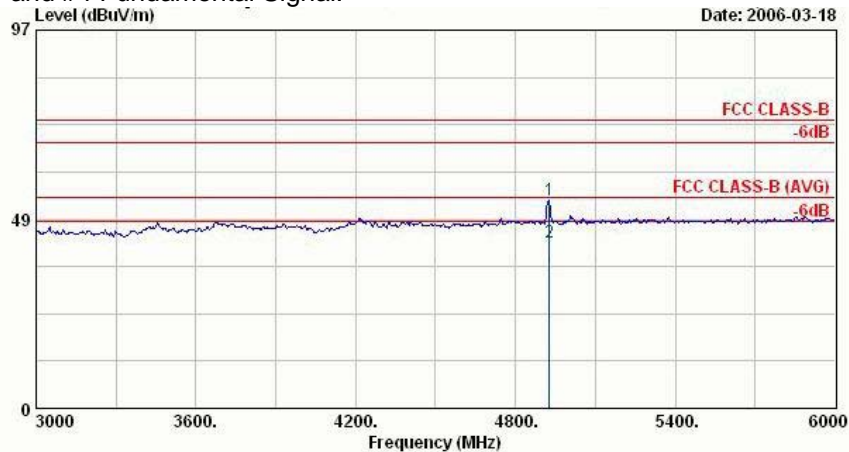
The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH11_2462MHz
 Plane : E1

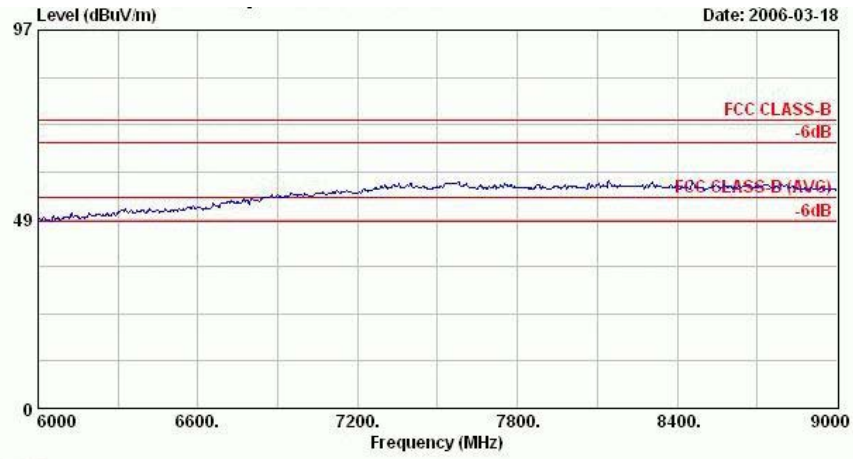
	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	2390.00	40.26	-13.74	54.00	40.97	30.48	35.46	4.26	100	38 Average
2	2390.00	50.99	-23.01	74.00	51.71	30.48	35.46	4.26	100	360 Peak
3 @	2462.00	92.40			93.14	30.43	35.49	4.33	100	38 Average
4 X	2462.00	98.37			99.11	30.43	35.49	4.33	100	360 Peak
5	2483.50	40.01	-13.99	54.00	40.75	30.41	35.51	4.36	100	38 Average
6	2483.50	50.59	-23.41	74.00	51.32	30.41	35.51	4.36	100	360 Peak

Remark: #3 and #4 Fundamental Signal.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH11_2462MHz
 Plane : E1

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	4926.00	53.35	-20.65	74.00	49.63	33.57	36.21	6.36	200	0 Peak
2	4926.00	42.45	-11.55	54.00	38.73	33.57	36.21	6.36	100	350 Average

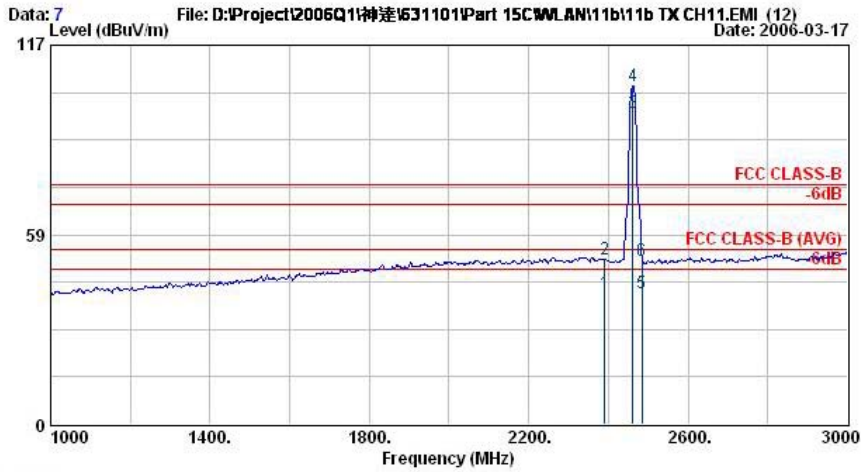


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : GPS Bluetooth PDA
Power : 120Vac/60Hz
Model : FR631101
Memo : 11b TX_CH11_2462MHz
Plane : E1



- Polarization : Vertical

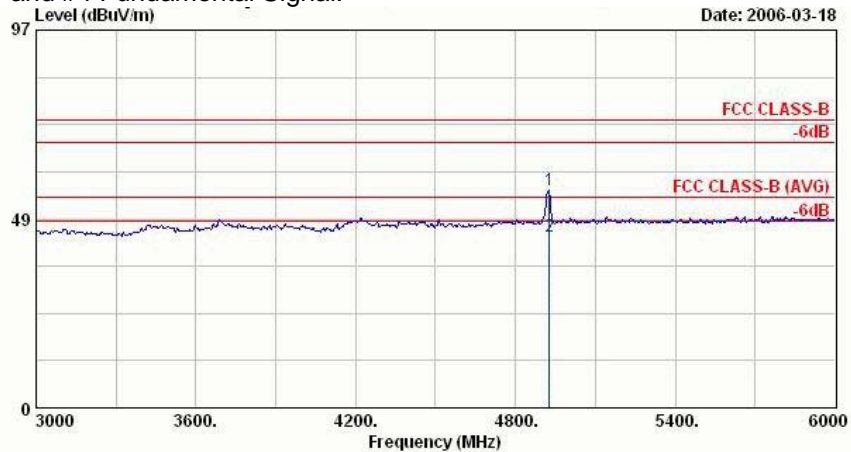
The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 VERTICAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH11;2462MHz
 Plane : E1

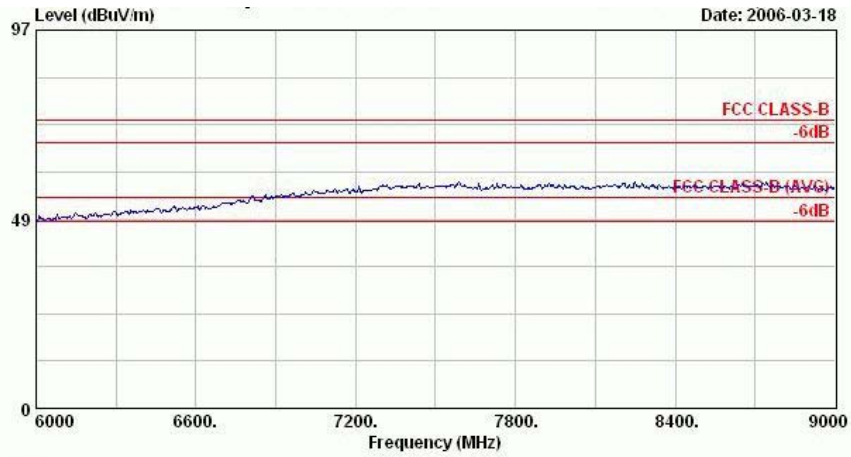
	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2390.00	40.62	-13.38	54.00	41.33	30.48	35.46	4.26	100	276 Average
2	2390.00	50.83	-23.17	74.00	51.54	30.48	35.46	4.26	100	0 Peak
3 @	2462.00	96.08			96.82	30.43	35.49	4.33	100	276 Average
4 X	2462.00	104.47			105.21	30.43	35.49	4.33	100	0 Peak
5	2483.50	40.48	-13.52	54.00	41.22	30.41	35.51	4.36	100	276 Average
6	2483.50	50.41	-23.59	74.00	51.15	30.41	35.51	4.36	100	0 Peak

Remark: #3 and #4 Fundamental Signal.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 VERTICAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11b TX_CH11;2462MHz
 Plane : E1

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	4926.00	56.05	-17.95	74.00	52.33	33.57	36.21	6.36	200	360 Peak
2	4926.00	44.08	-9.92	54.00	40.36	33.57	36.21	6.36	100	74 Average

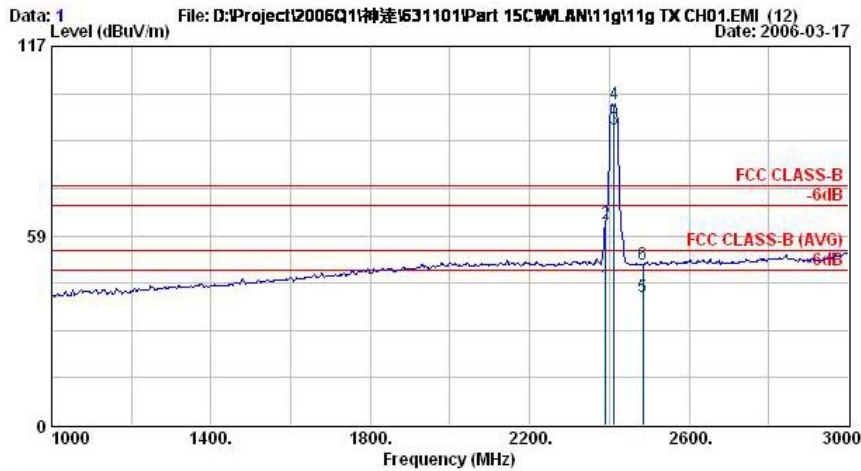


Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : GPS Bluetooth PDA
Power : 120Vac/60Hz
Model : FR631101
Memo : 11b TX_CH11_2462MHz
Plane : E1



- Test Mode : Mode 4
- Polarization : Horizontal

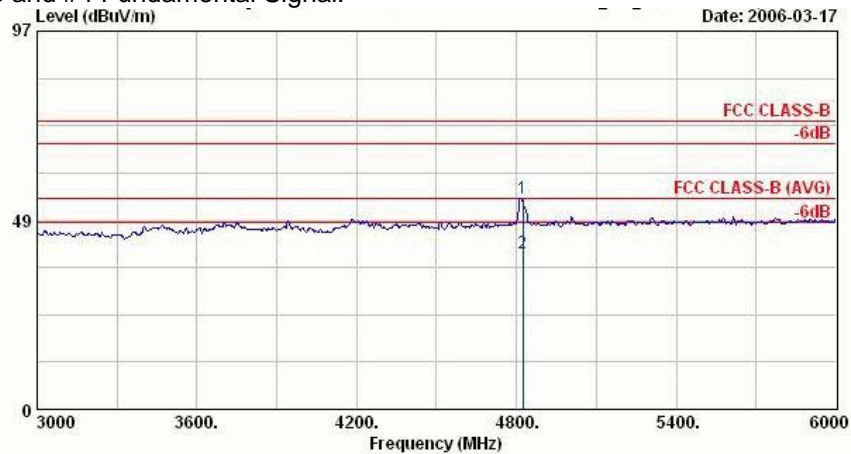
The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11g TX_CH01,2412MHz
 Plane : E1

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	2390.00	43.09	-10.91	54.00	43.80	30.48	35.46	100	36	Average
2	2390.00	62.06	-11.94	74.00	62.77	30.48	35.46	100	360	Peak
3 @	2412.00	91.24			91.96	30.47	35.46	100	36	Average
4 X	2412.00	99.35			100.08	30.47	35.46	100	360	Peak
5	2483.50	39.38	-14.62	54.00	40.12	30.41	35.51	100	36	Average
6	2483.50	49.60	-24.40	74.00	50.34	30.41	35.51	100	360	Peak

Remark: #3 and #4 Fundamental Signal.



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 HORIZONTAL
 EUT : GPS Bluetooth PDA
 Power : 120Vac/60Hz
 Model : FR631101
 Memo : 11g TX_CH01,2412MHz
 Plane : E1

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	4824.00	53.97	-20.03	74.00	50.70	33.16	36.10	200	0	Peak
2	4824.00	39.92	-14.08	54.00	36.58	33.21	36.12	153	161	Average