



FCC TEST REPORT

for

47 CFR Part 15 Subpart C

Equipment : GSM Quad-band mobile phone with GPRS, Bluetooth, Wi-Fi, GPS
Trade Name : glofiish
Model No. : X500 / X500⁺
FCC ID : SPUX500
Filing Type : Certification
Applicant : **E-TEN Information Systems Co., Ltd.**
9F., No. 256, Yangguang Street, Neihu Chiu, Taipei, Taiwan114, R.O.C.

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- The data shown in this test report were carried out on Oct. 30, 2006 at **Sporton International Inc. LAB.**
- Report No.: FR6D0809, Report Version: Rev. 01

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History of this test report

Report Issue Date: Dec. 12, 2006

Report No.	Description



1. General Description of Equipment under Test

1.1 Applicant

E-TEN Information Systems Co., Ltd.

9F., No. 256, Yangguang Street, Neihu Chiu, Taipei, Taiwan114, R.O.C.

1.2 Manufacturer

E-TEN Information Systems Co., Ltd.

9F., No. 256, Yangguang Street, Neihu Chiu, Taipei, Taiwan114, R.O.C.

1.3 Basic Description of Equipment under Test

Equipment	: GSM Quad-band mobile phone with GPRS, Bluetooth, Wi-Fi, GPS
Trade Name	: glofiish
Model No.	: X500 / X500 ⁺
FCC ID	: SPUX500
Power Supply Type	: Switching, From battery 3.7V
AC Power Cord	: AC 120V, Wall-mount, 1.8 meter, 2 pin
Adapter	: Phihong, PSC05R
Battery	: Foxlink, 454261
Earphone	: Merry, EMC147-018-01
Data Cable	: Golden Bridge, GB-A5049

1.4 Feature of Equipment under Test

Product Feature & Specification	
1. DUT Type	GSM Quad-band mobile phone with GPRS, Bluetooth, Wi-Fi, GPS
2. Trade Name	glofish
3. Model Name	X500 / X500 ⁺
4. FCC ID	SPUX500
5. Tx Frequency	GSM850 : 824 ~ 849 MHz PCS1900 : 1850 ~ 1910 MHz Bluetooth : 2400 ~ 2483.5 MHz WLAN : 2400 ~ 2483.5 MHz
6. Rx Frequency	GSM850 : 869 ~ 894 MHz PCS1900 : 1930 ~ 1990 MHz Bluetooth : 2400 ~ 2483.5 MHz WLAN : 2400 ~ 2483.5 MHz
7. Number of Channels	Bluetooth : 79 WLAN : 11
8. Carrier Frequency of Each Channel	Bluetooth : 2402+n*1 MHz; n=0~78 WLAN : 2412+(n-1)*5 MHz; n=1~11
9. Antenna Connector	N/A
10. Antenna Type	Fixed Internal
11. Antenna Gain	Bluetooth: -2 dBi WLAN: 1 dBi
1. HW Version	D2H
2. SW Version	R30_032_0220
12. Maximum Output Power	GSM850: 32.03 dBm DCS1900: 28.8 dBm Bluetooth : 0.78 dBm 802.11b : 18.88 dBm ; 802.11g : 21.56 dBm
13. Type of Modulation	GSM850 / PCS1900 : GMSK Bluetooth : GFSK WLAN : DSSS / OFDM
14. DUT Stage	Production Unit
15. Application Type	Certification

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.
- For spurious emission below 1GHz, only one channel of each application was tested because it is not related to channel selection.
- 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.

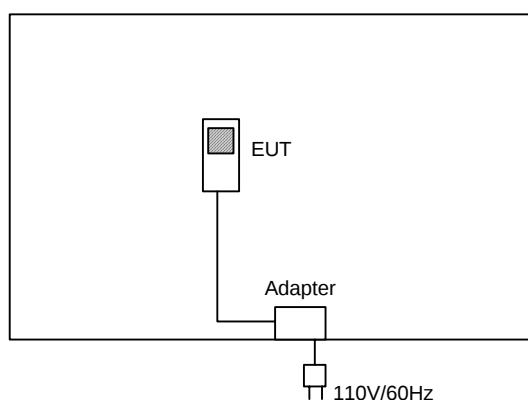
2.2 Test Mode

Application			
	802.11b	802.11g	BT
Radiated Emission	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: PCS Idle Mode + BT Link + WLAN Link + Earphone + Camera + MPEG 4		

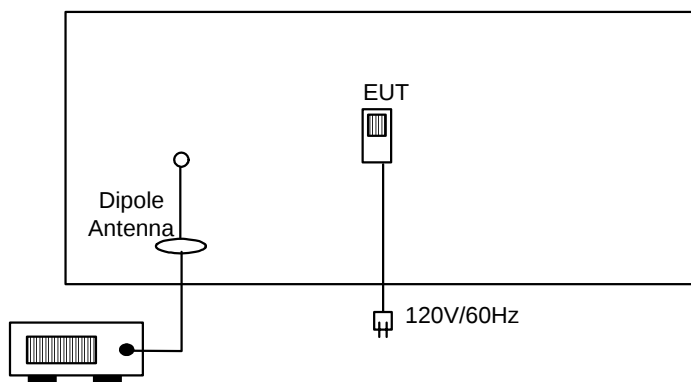
2.3 Connection Diagram of Test System

<Radiated Emission>

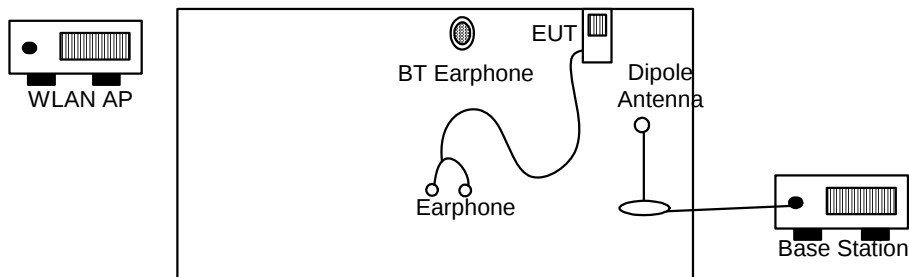
Mode 1-6



Mode 7-9



<Conducted Emission>



2.4 Ancillary Equipment List

Item	Asset	Model Name	Power Cord
1.	Base Station (R&S)	CMU 200	N/A
2.	WLAN AP (SMC)	SMC-100	N/A



3. RF Utility

The EUT is linked with BT earphone and WLAN AP for conducted emission or in BT continuous Tx mode controlled by RF utility and base station simulator or in WLAN continuous Tx mode controlled by RF utility for radiation emission and other conducted tests.



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. Conducted Emission : from 150 KHz to 30 MHz
- b. Radiated Emission : 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 & 20dB 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

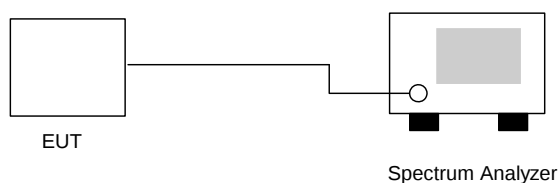
5.2.1 Measuring Instruments :

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 : 23°C
- Relative Humidity : 47%
- Test Enginner : James

802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	10.16	> 0.5MHz	Mode 1
06	2437	9.44	> 0.5MHz	Mode 2
11	2462	10.16	> 0.5MHz	Mode 3

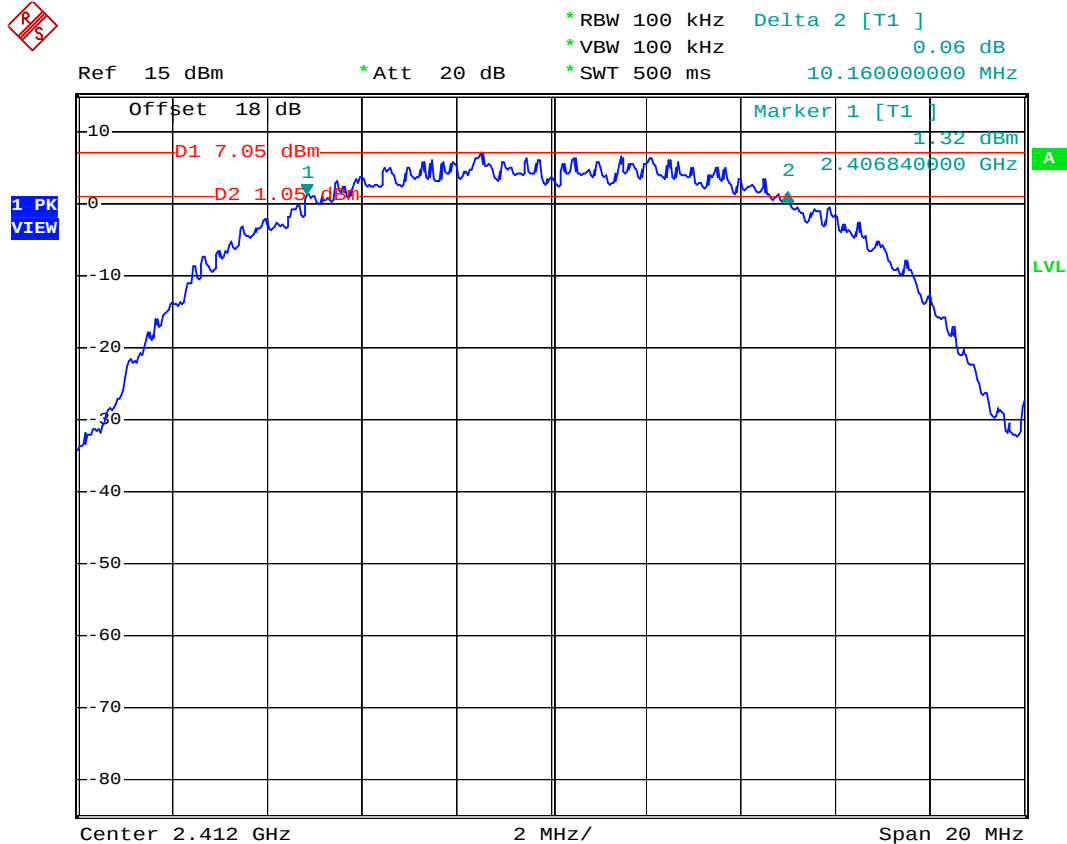
802.11g

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



5.2.5 6dB Bandwidth

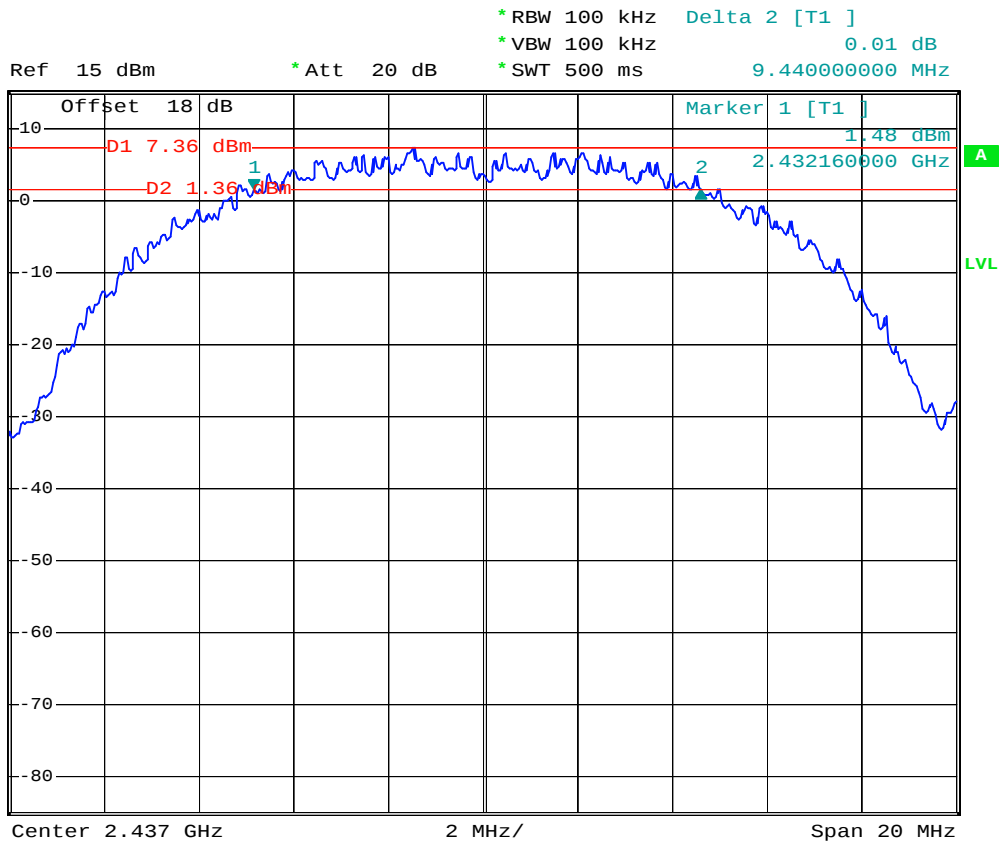
Mode 1



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Mode 2



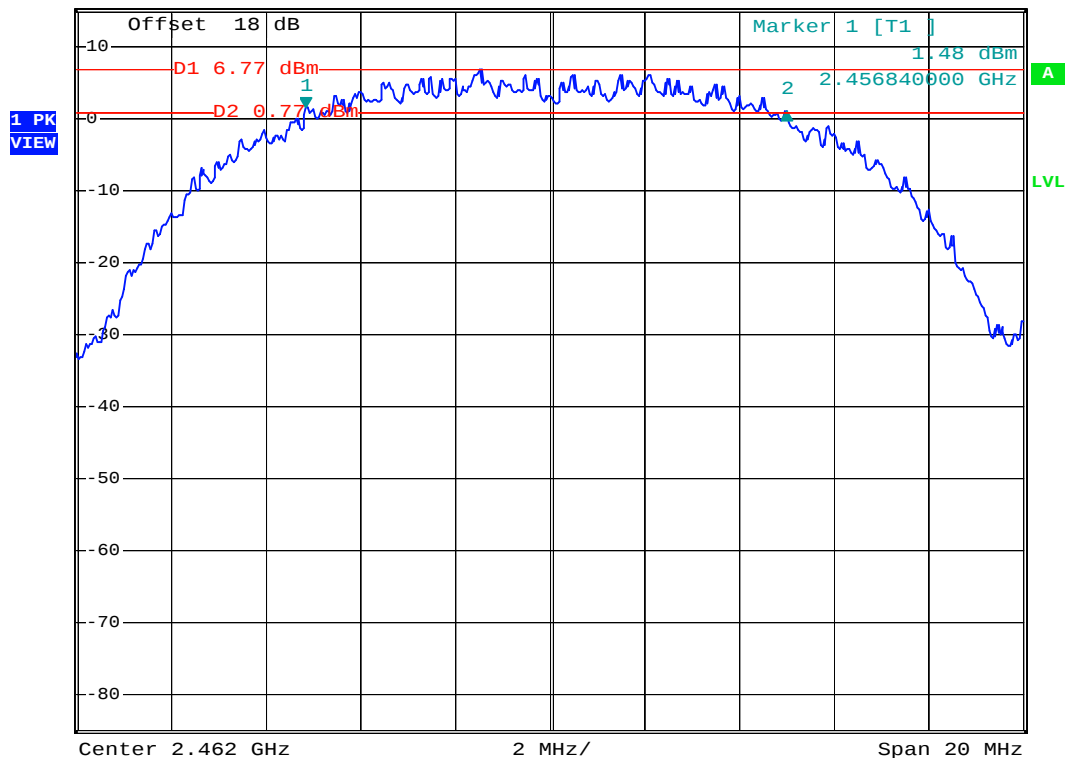
Date: 8.AUG.2006 20:59:38



Mode 3



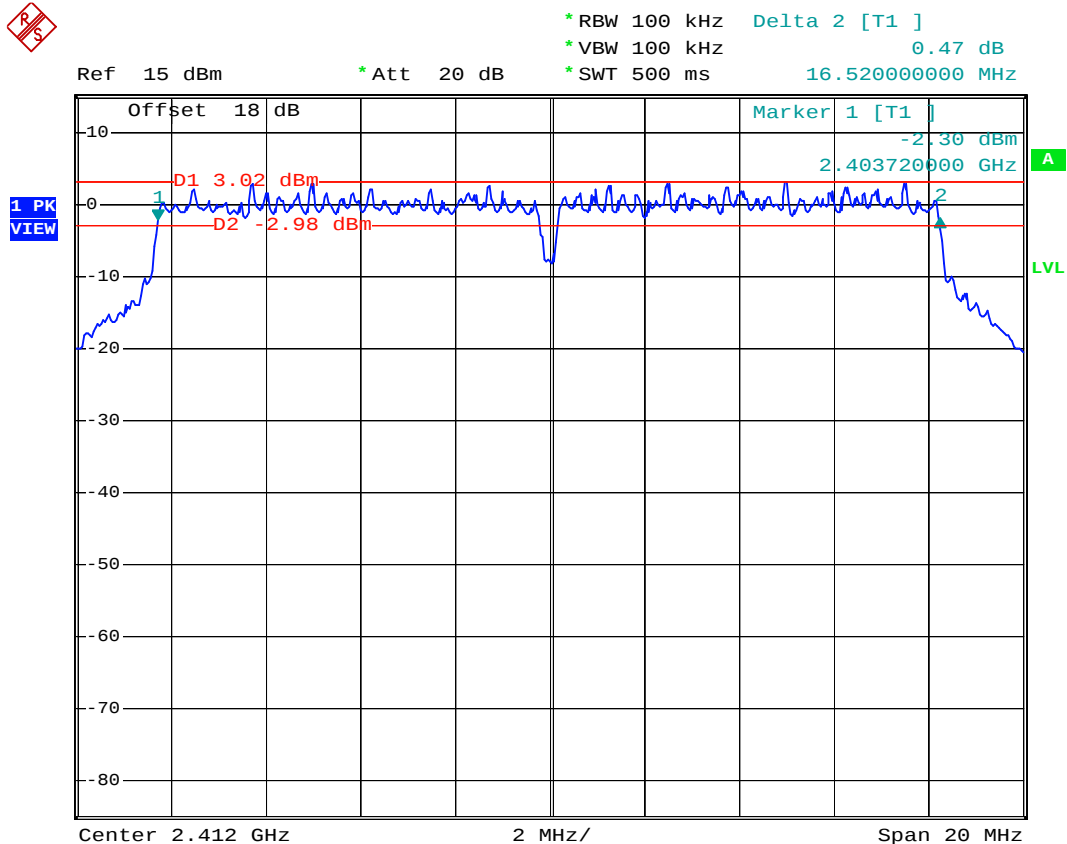
Ref 15 dBm * Att 20 dB * RBW 100 kHz Delta 2 [T1]
* VBW 100 kHz -0.52 dB
* SWT 500 ms 10.160000000 MHz



Date: 8.AUG.2006 21:01:21



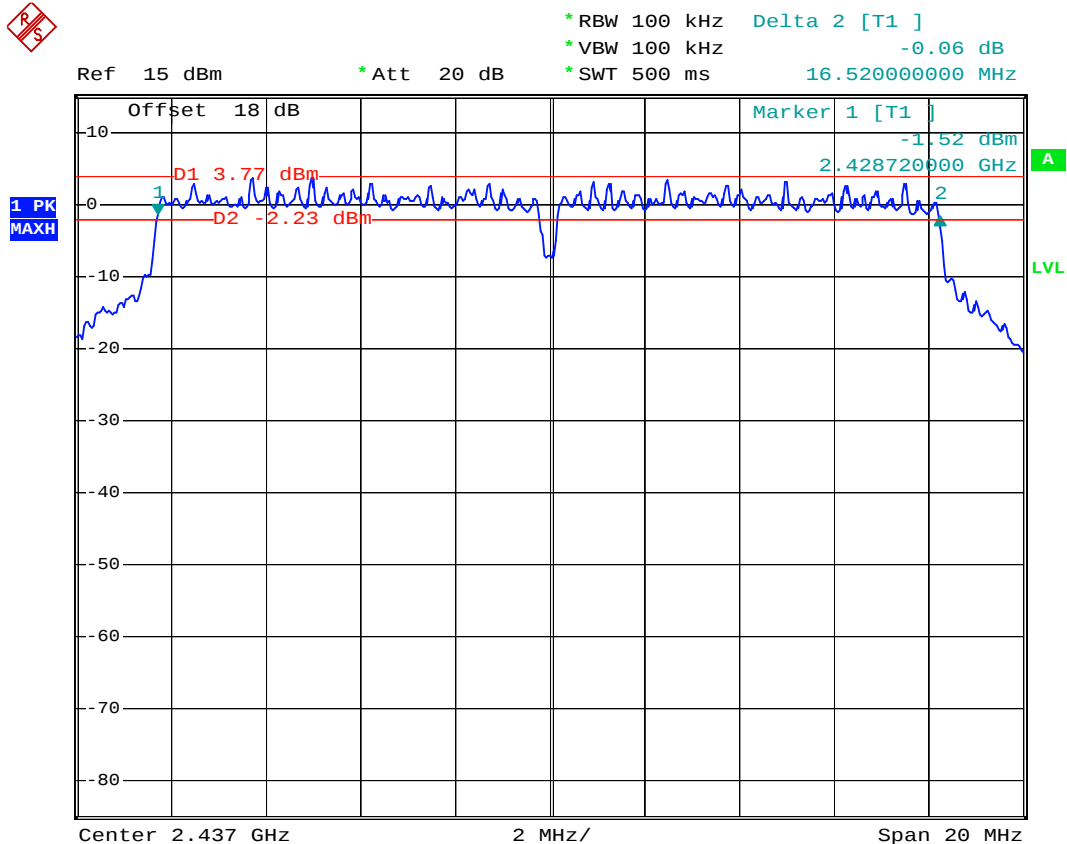
Mode 4



Date: 8.AUG.2006 21:07:44



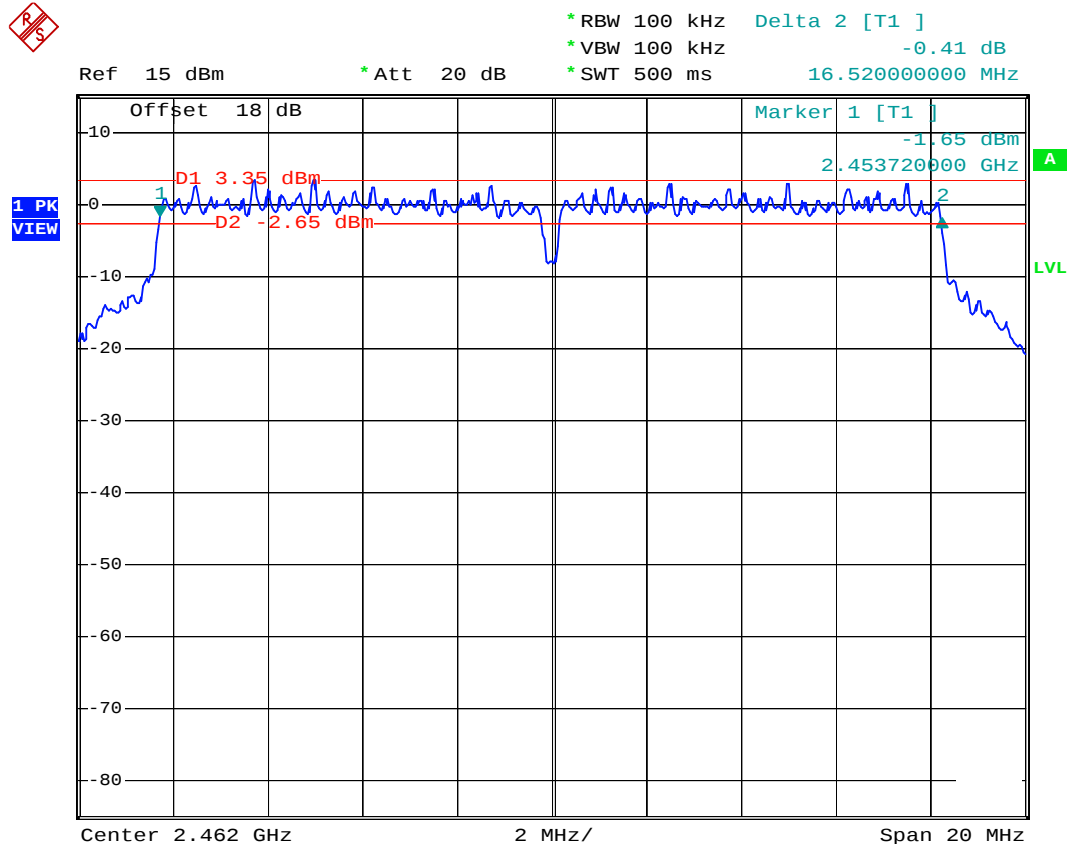
Mode 5



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Mode 6



Date: 8.AUG.2006 21:03:12

5.3 Power Spectral Density Measurement

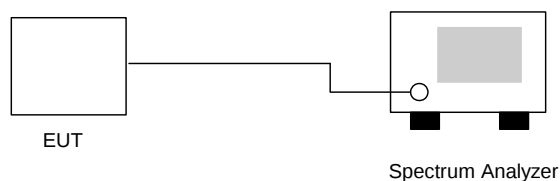
5.3.1 Measuring Instruments :

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 : 23°C
- Relative Humidity : 47%
- Test Enginner : James

802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-7.97	8	Mode 1
06	2437	-7.71	8	Mode 2
11	2462	-8.27	8	Mode 3

802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-11.01	8	Mode 4
06	2437	-10.79	8	Mode 5
11	2462	-11.16	8	Mode 6

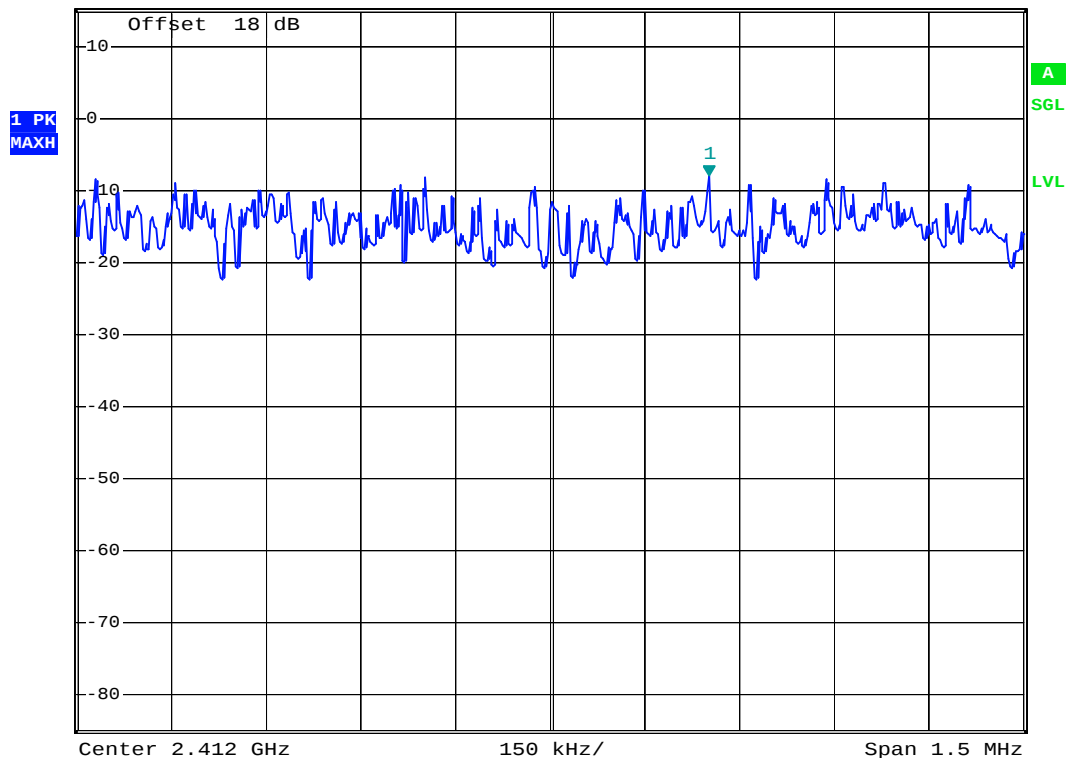


5.3.5 Power Spectral Density

Mode 1



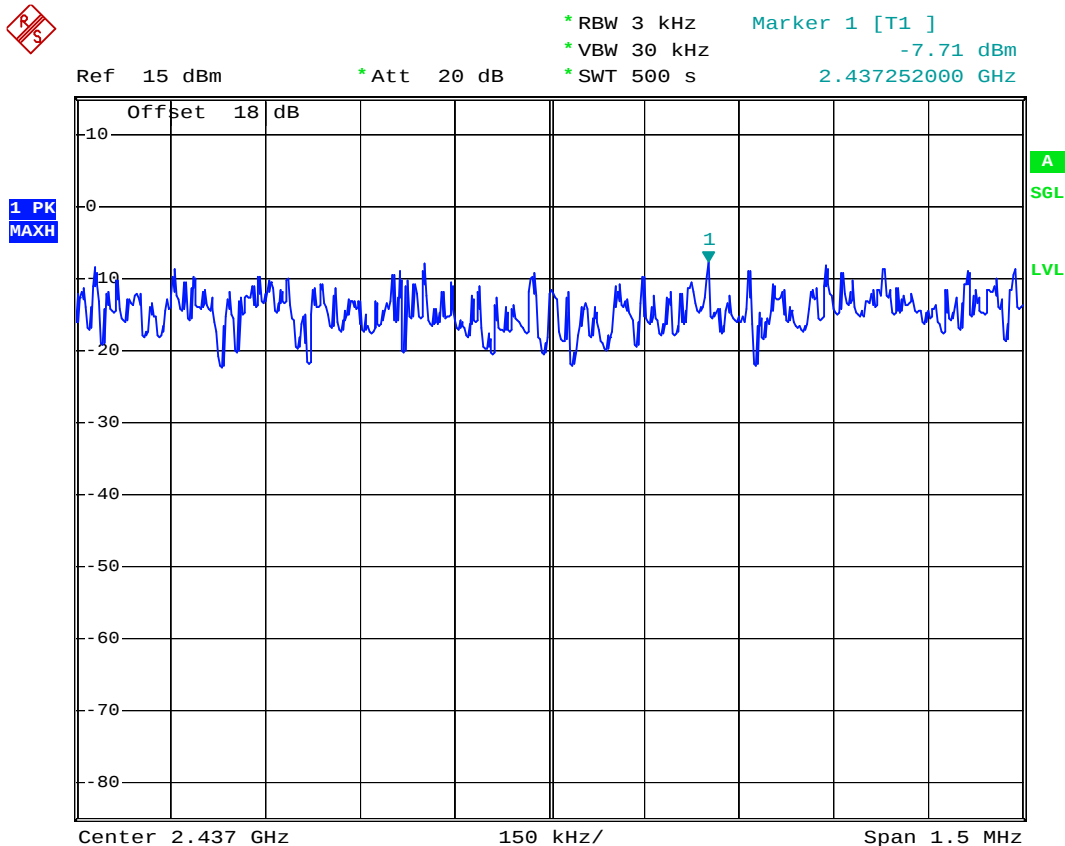
Ref 15 dBm * Att 20 dB * RBW 3 kHz Marker 1 [T1] -7.97 dBm
* VBW 30 kHz 2.412252000 GHz
* SWT 500 s



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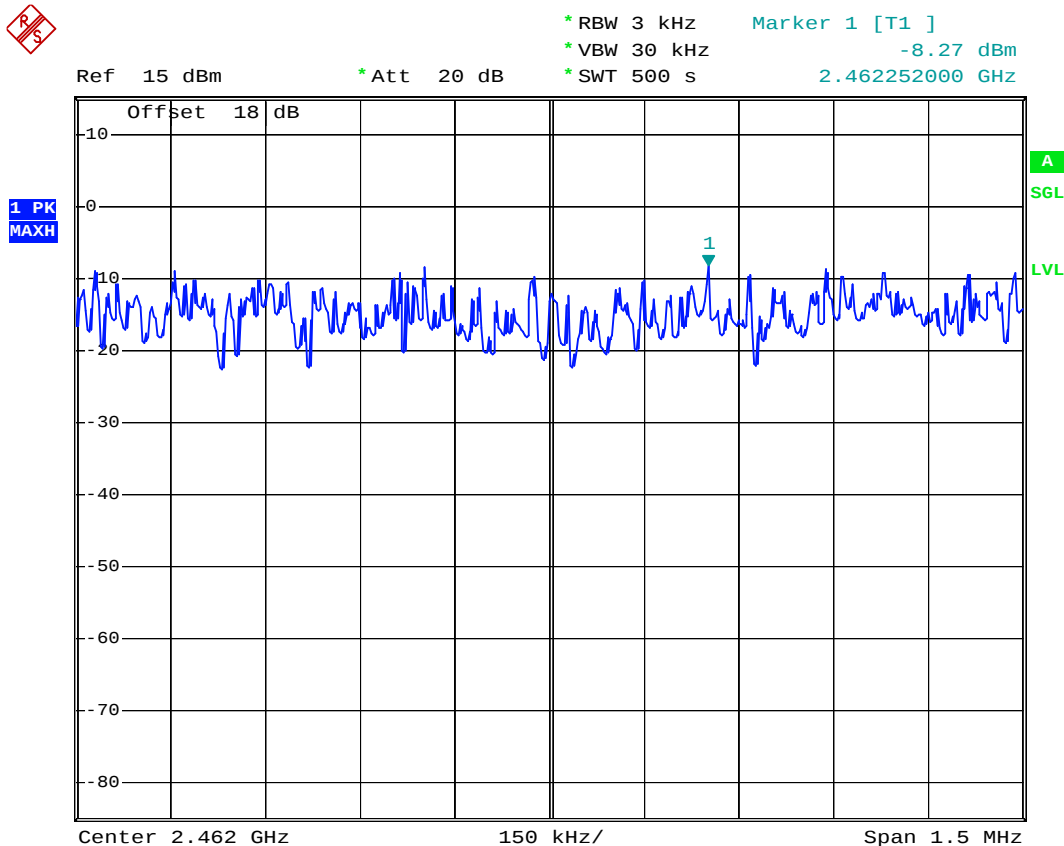
Mode 2



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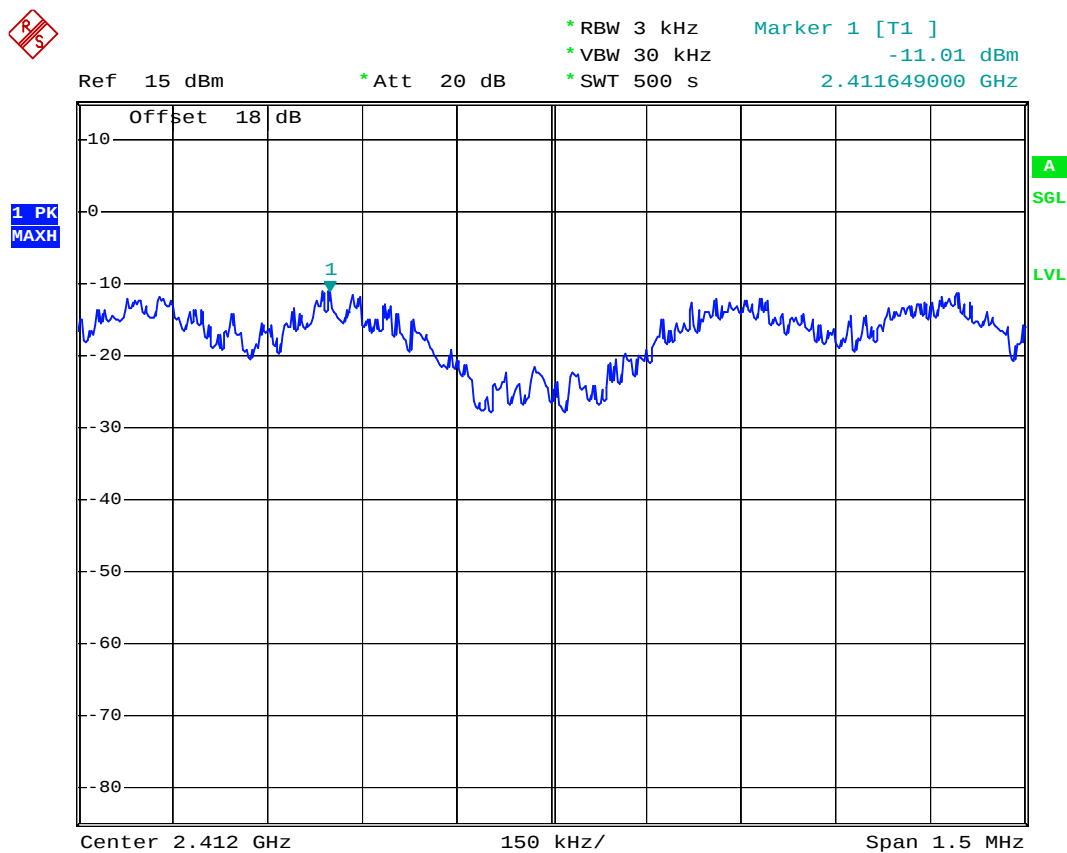


Mode 3



Date: 8.AUG.2006 22:27:51

Mode 4



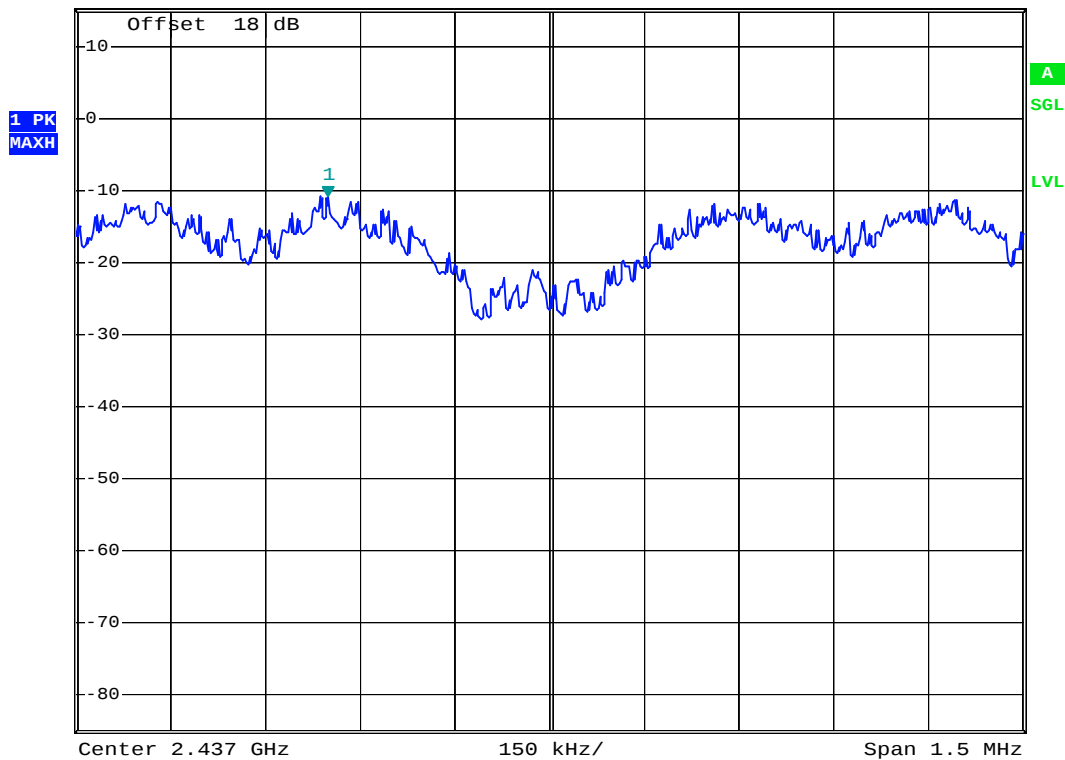
Date: 8.AUG.2006 21:54:34



Mode 5

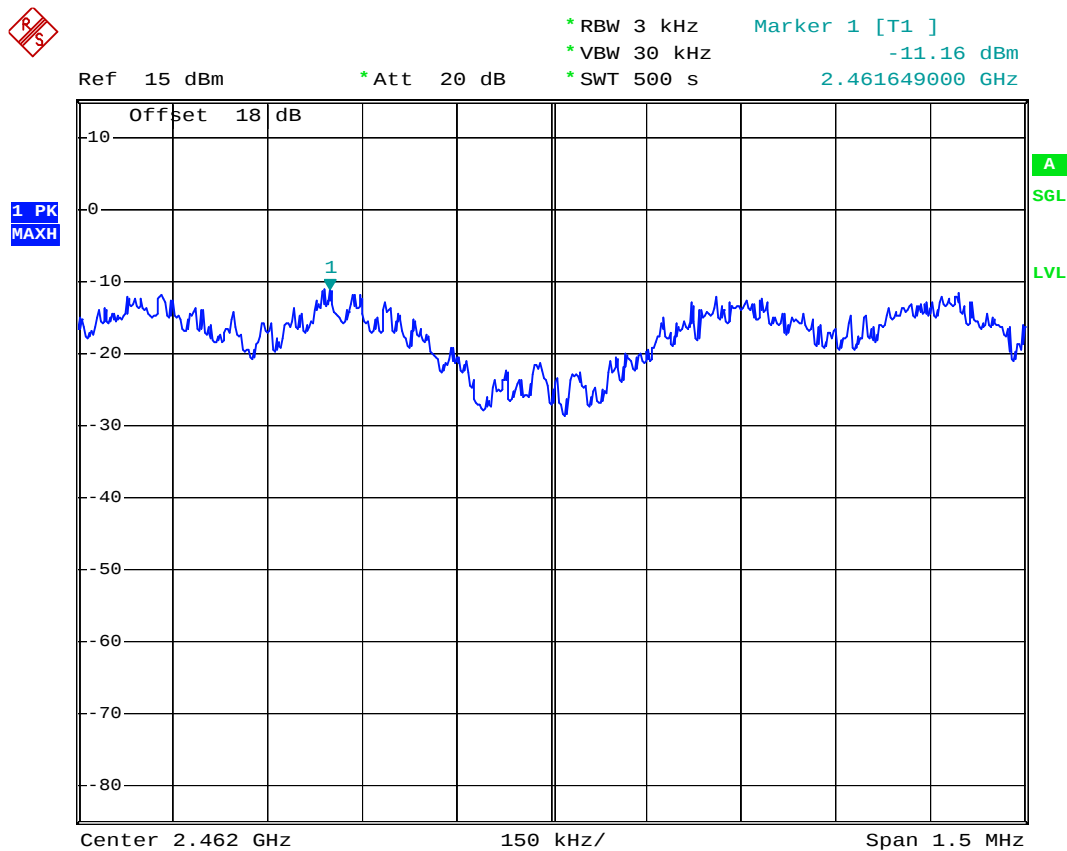


Ref 15 dBm *Att 20 dB *RBW 3 kHz Marker 1 [T1] -10.79 dBm
*VBW 30 kHz 2.436649000 GHz
*SWT 500 s



Date: 8.AUG.2006 21:45:05

Mode 6



Date: 8.AUG.2006 21:35:56



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 : 23°C
- Relative Humidity : 47%
- Test Enginner : James
- 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	Level	Over Limit	Limit Line	Read Level	Abtebba Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2381.0	63.33	-10.67	74.00	64.29	30.25	4.23	35.44	100	0	Peak
2381.0	47.74	-6.26	54.00	48.70	30.25	4.23	35.44	100	197	Average

CH01 (Vertical)

Frequency	Level	Over Limit	Limit Line	Read Level	Abtebba Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2381.0	55.04	-18.96	74.00	56.00	30.25	4.23	35.44	100	0	Peak
2381.0	44.99	-9.01	54.00	45.95	30.25	4.23	35.44	109	272	Average

**CH11 (Horizontal)**

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2487.0	61.65	-12.35	74.00	62.51	30.29	4.36	35.51	100	360	Peak
2487.0	49.35	-4.65	54.00	50.21	30.29	4.36	35.51	100	194	Average

CH11 (Vertical)

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2487.0	55.87	-18.13	74.00	56.73	30.29	4.36	35.51	100	271	Peak
2487.0	44.34	-9.66	54.00	45.20	30.29	4.36	35.51	108	360	Average

➤WLAN 802.11g**CH01 (Horizontal)**

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2390.0	69.73	-4.27	74.00	70.67	30.26	4.26	35.46	100	0	Peak
2390.0	50.03	-3.97	54.00	50.97	30.26	4.26	35.46	100	197	Average

CH01 (Vertical)

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2390.0	63.40	-10.60	74.00	64.34	30.26	4.26	35.46	100	0	Peak
2390.0	45.70	-8.30	54.00	46.64	30.26	4.26	35.46	107	79	Average

CH11 (Horizontal)

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2483.5	70.78	-3.22	74.00	71.64	30.29	4.36	35.51	100	0	Peak
2483.5	49.09	-4.91	54.00	49.95	30.29	4.36	35.51	100	193	Average

**CH11 (Vertical)**

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2483.5	63.55	-10.45	74.00	64.41	30.29	4.36	35.51	100	360	Peak
2483.5	44.15	-9.85	54.00	45.01	30.29	4.36	35.51	105	212	Average

➤BT**CH00 (Horizontal)**

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2316.3	50.01	-23.99	74.00	51.02	30.22	4.17	35.40	100	360	Peak
2316.3	38.46	-15.54	54.00	39.47	30.22	4.17	35.40	100	251	Average

CH00 (Vertical)

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2386.2	49.80	-24.20	74.00	50.75	30.26	4.23	35.44	100	0	Peak
2386.2	40.10	-13.90	54.00	41.05	30.26	4.23	35.44	100	256	Average

CH78 (Horizontal)

Frequency	Level	Over	Limit	Read	Abtebba	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2483.5	56.23	-17.77	74.00	57.09	30.29	4.36	35.51	100	360	Peak
2483.5	44.35	-9.65	54.00	45.21	30.29	4.36	35.51	100	213	Average

CH78 (Vertical)

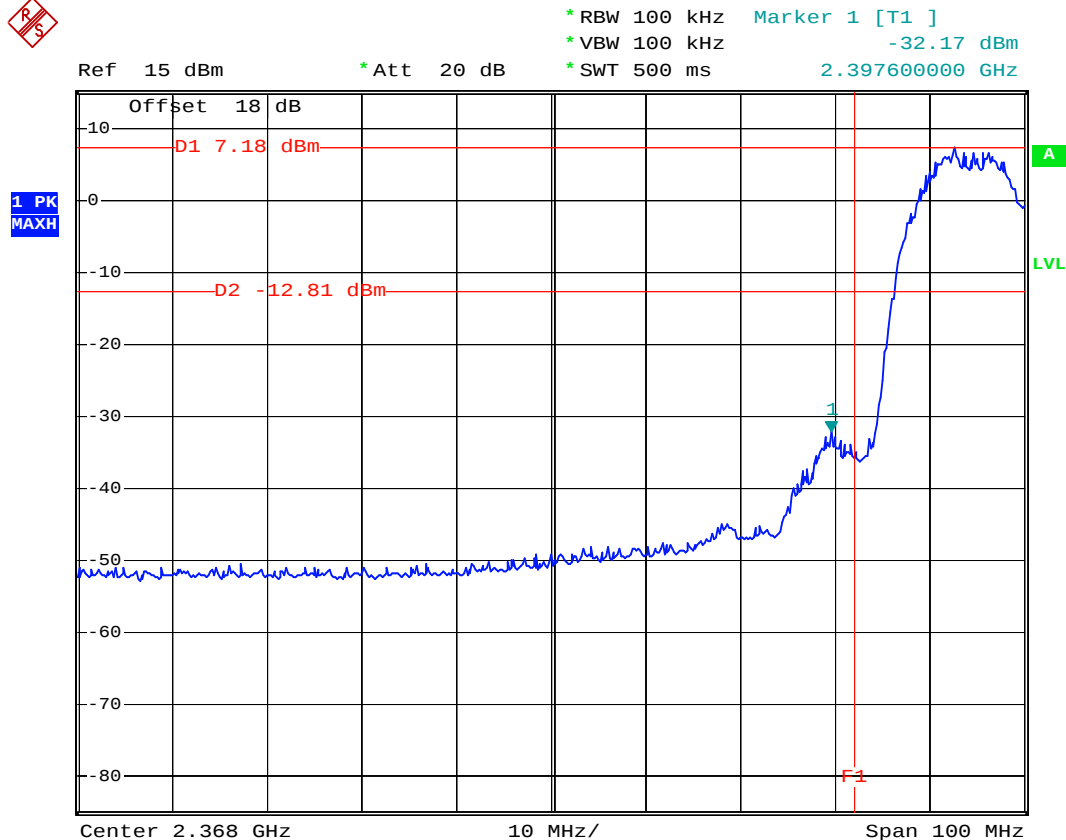
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		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	
2483.5	60.80	-13.20	74.00	61.66	30.29	4.36	35.51	100	0	Peak
2483.5	46.59	-7.41	54.00	47.45	30.29	4.36	35.51	100	173	Average



5.4.4 20dB Band Edge

WLAN 802.11b

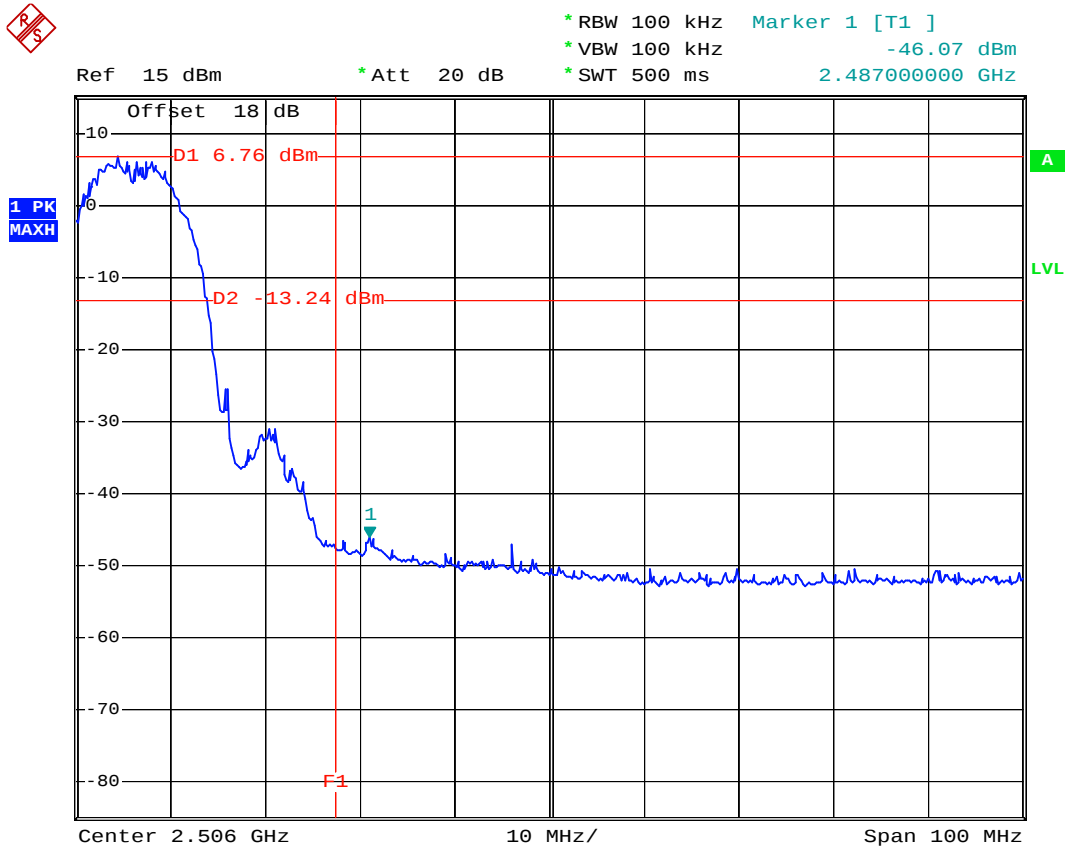
CH01



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CH11

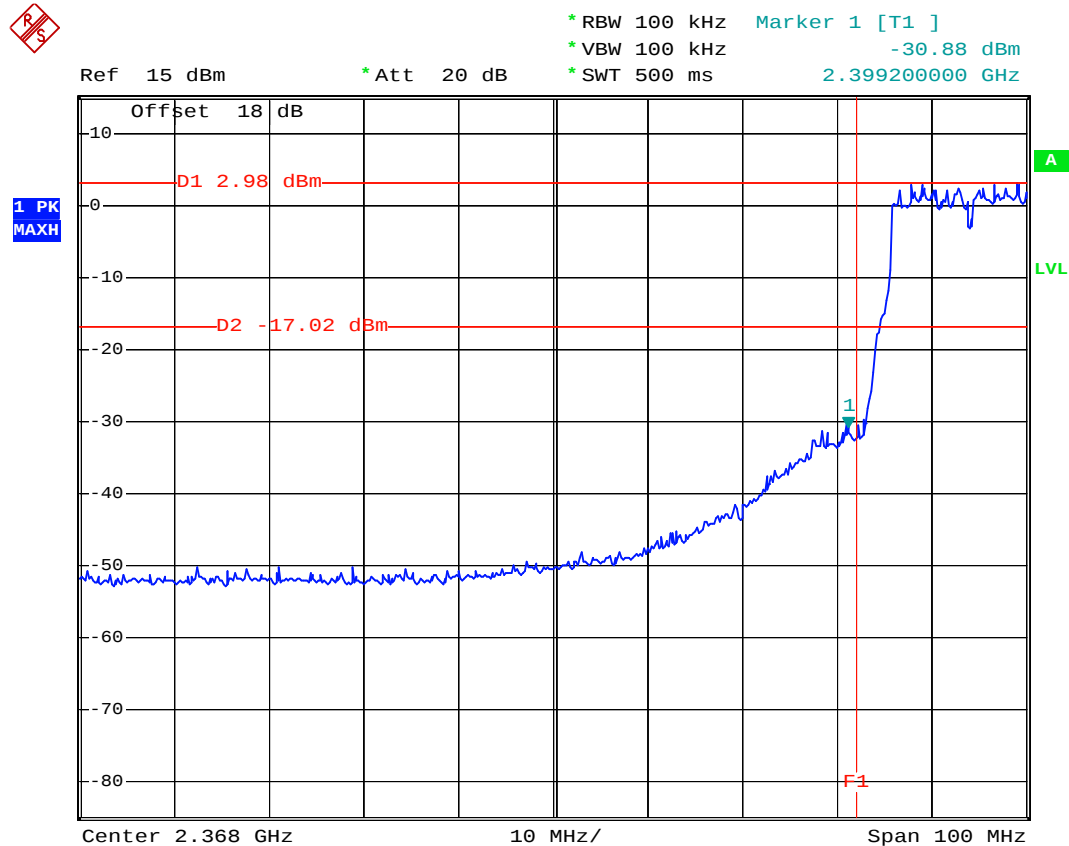


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WLAN 802.11g

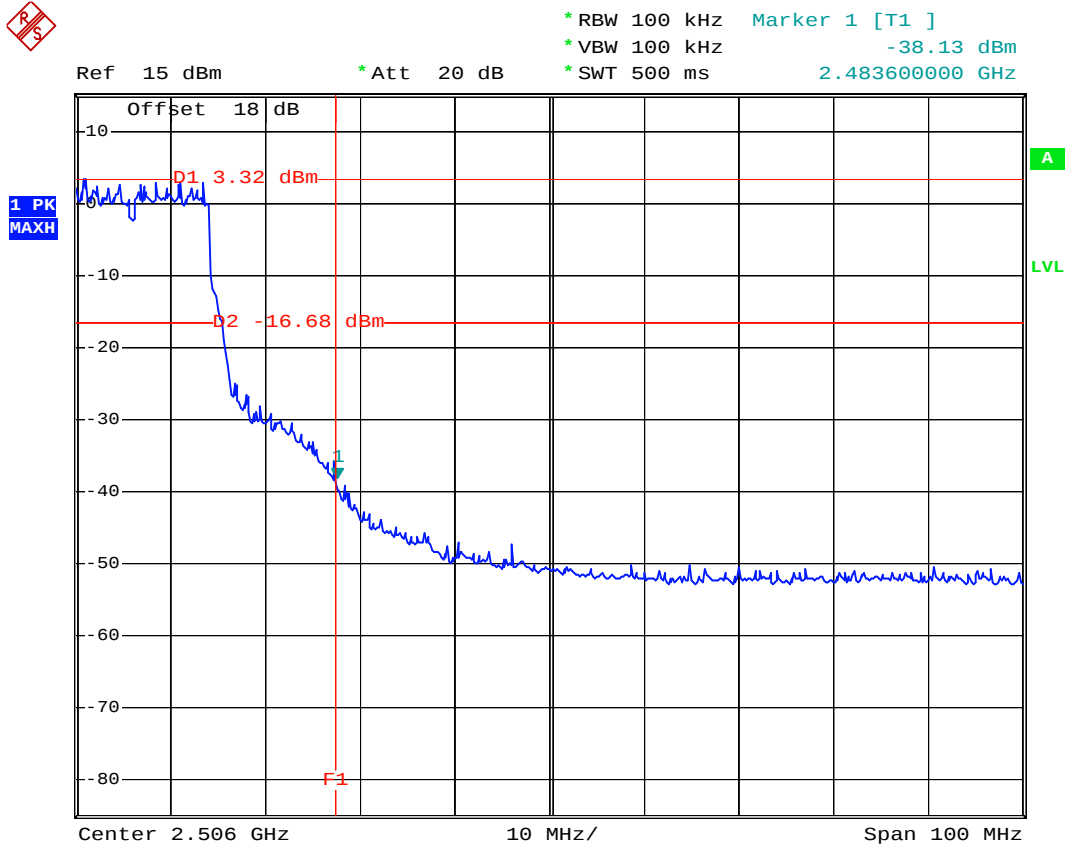
CH01



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CH11

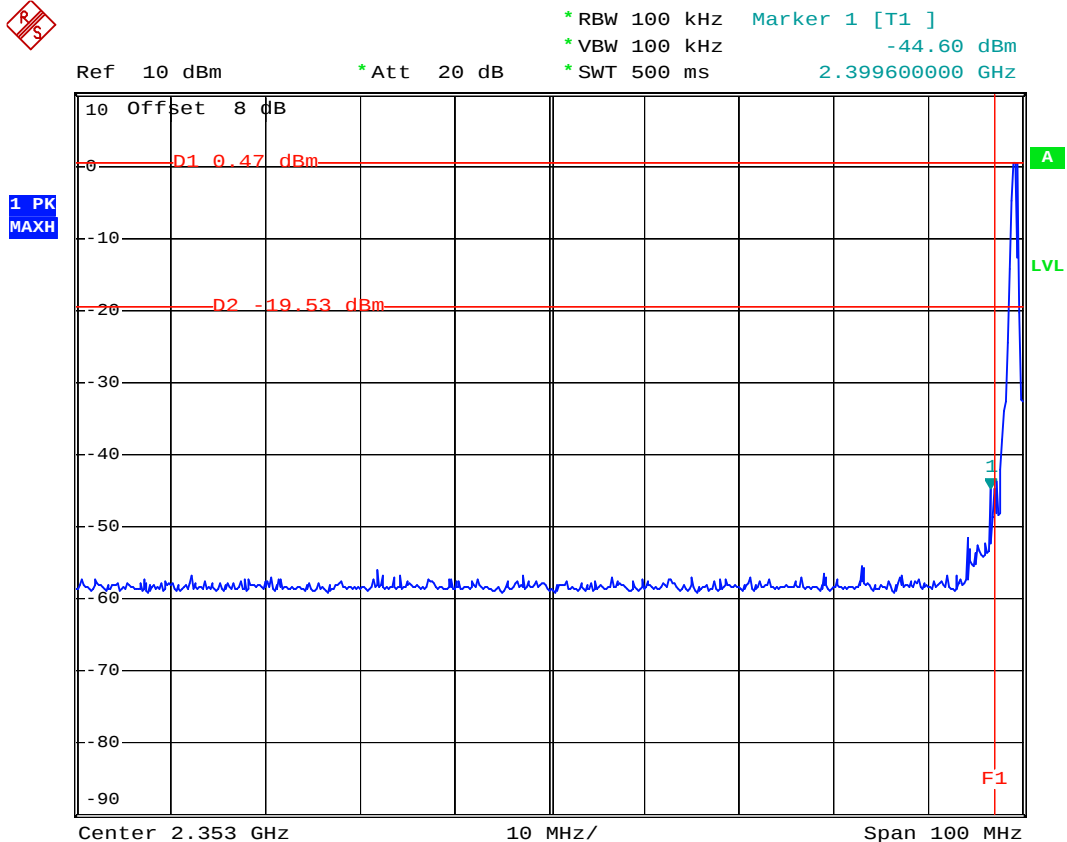


Date: 8.AUG.2006 21:15:53



Bluetooth

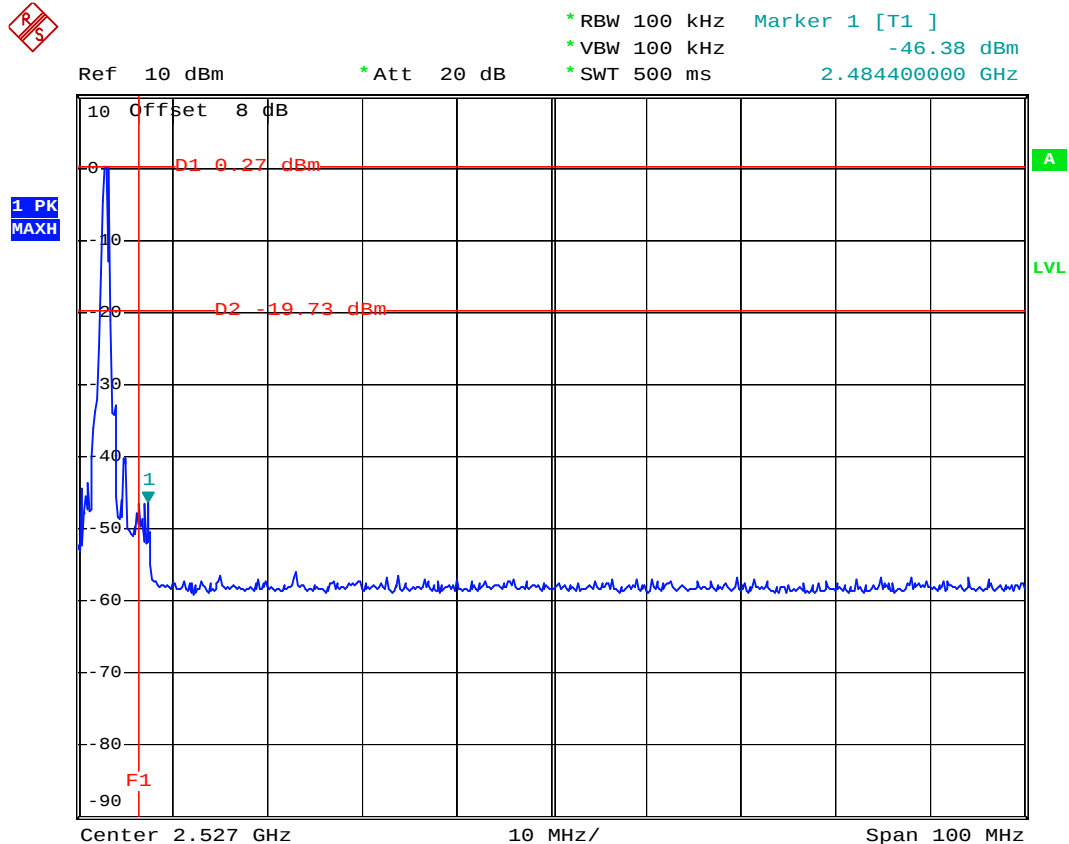
CH00



Date: 8.AUG.2006 12:00:33



CH78



Date: 8.AUG.2006 11:57:59

5.5 Hopping Channel Separation

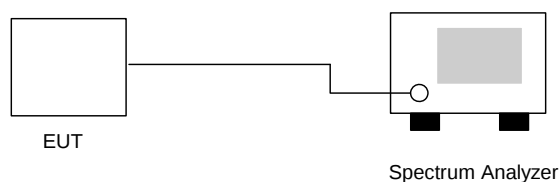
5.5.1 Measuring Instruments :

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 : 23°C
- Relative Humidity : 47%
- Test Enginner : James

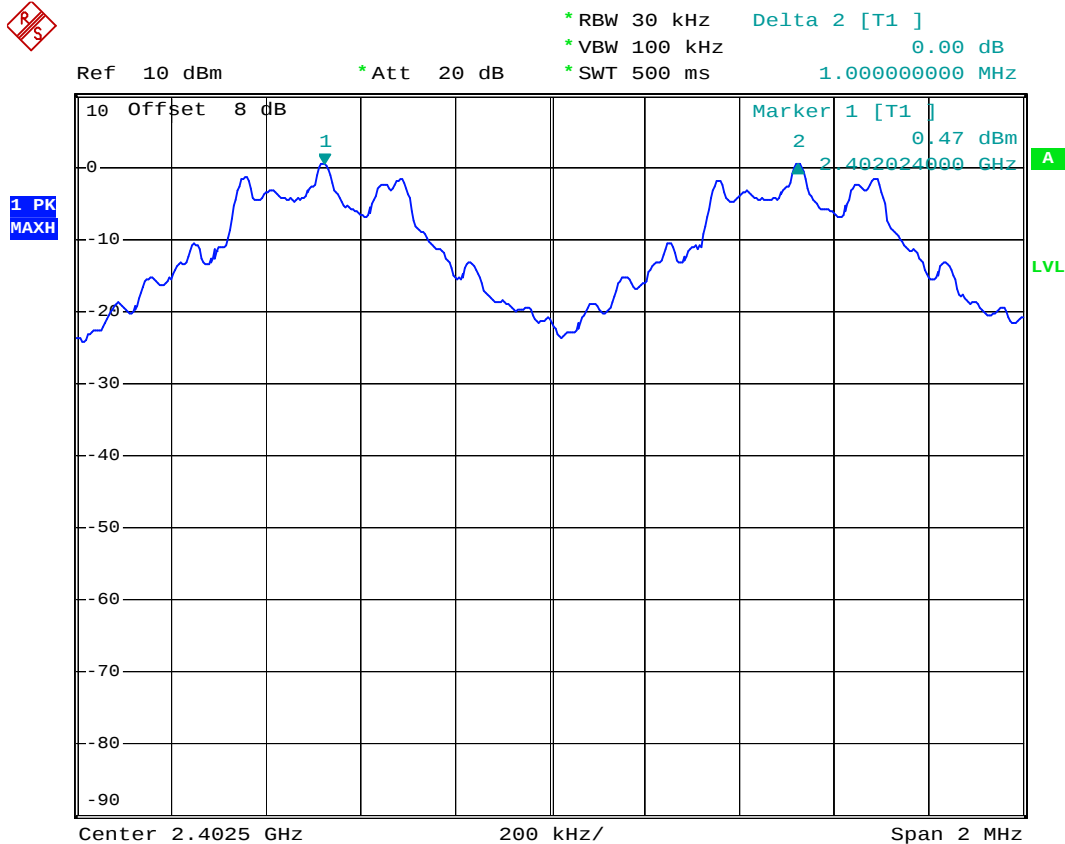
Channel	Carrier Frequency		Limits	Plot
	Frequency (MHz)	Separation (MHz)		
00	2402	1.000	0.834	Mode 7
39	2441	1.004	0.826	Mode 8
78	2480	1.000	0.828	Mode 9

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



5.5.5 Hopping Channel Separation

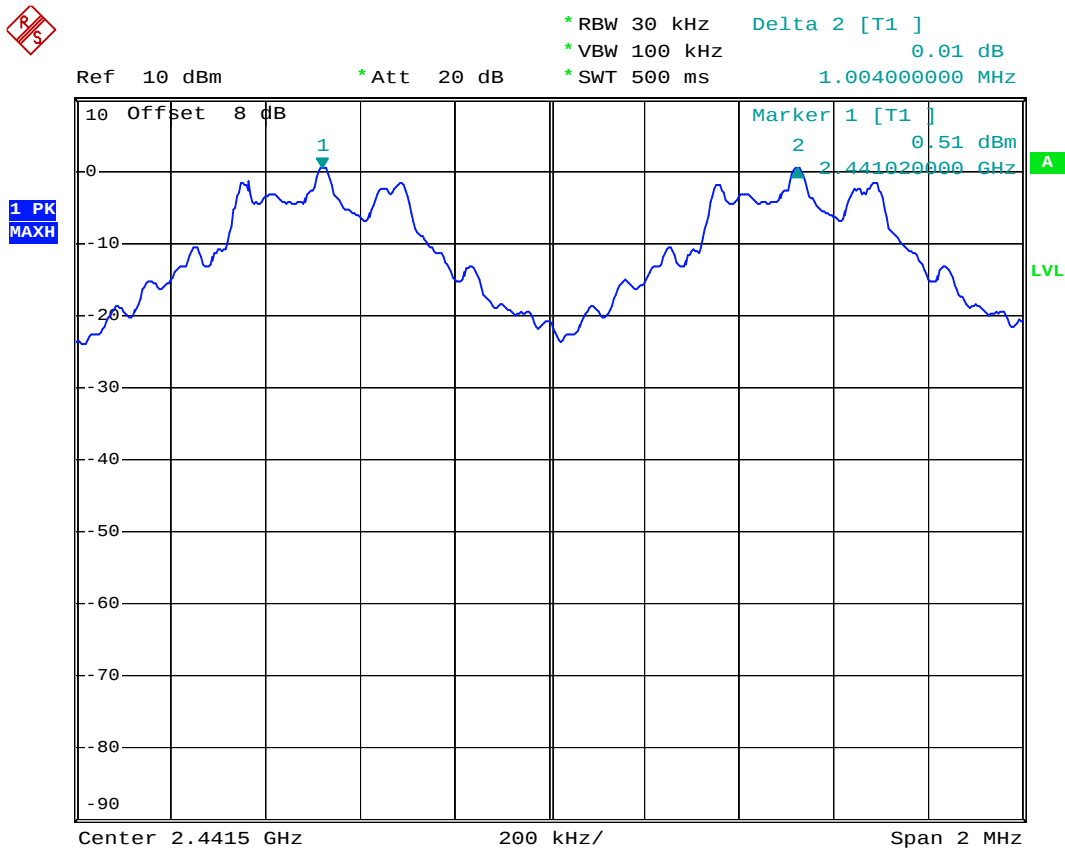
Mode 7



Date: 8.AUG.2006 12:01:18



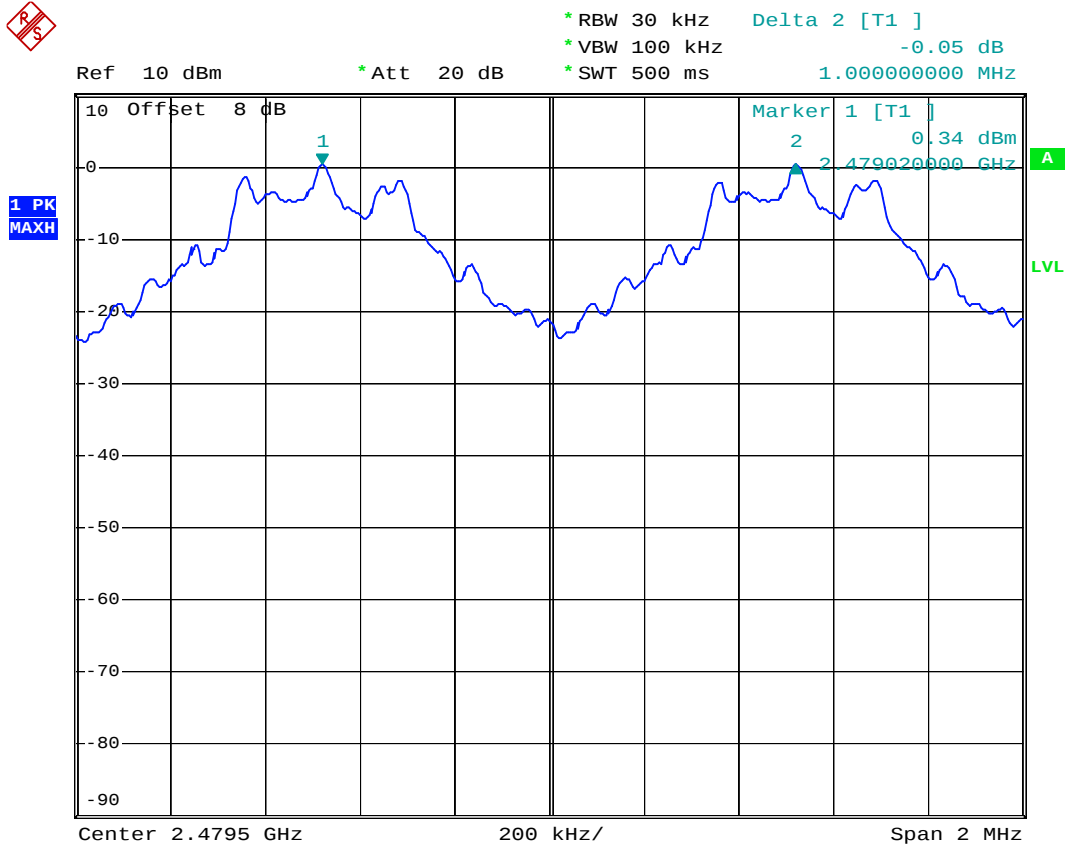
Mode 8



Date: 8.AUG.2006 12:02:35



Mode 9



Date: 8.AUG.2006 12:03:48

5.6 Number of Hopping Frequency

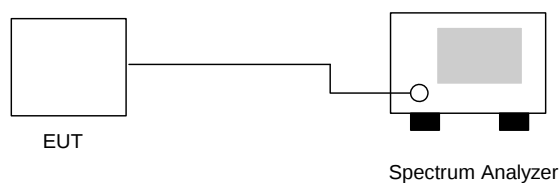
5.6.1 Measuring Instruments :

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 :



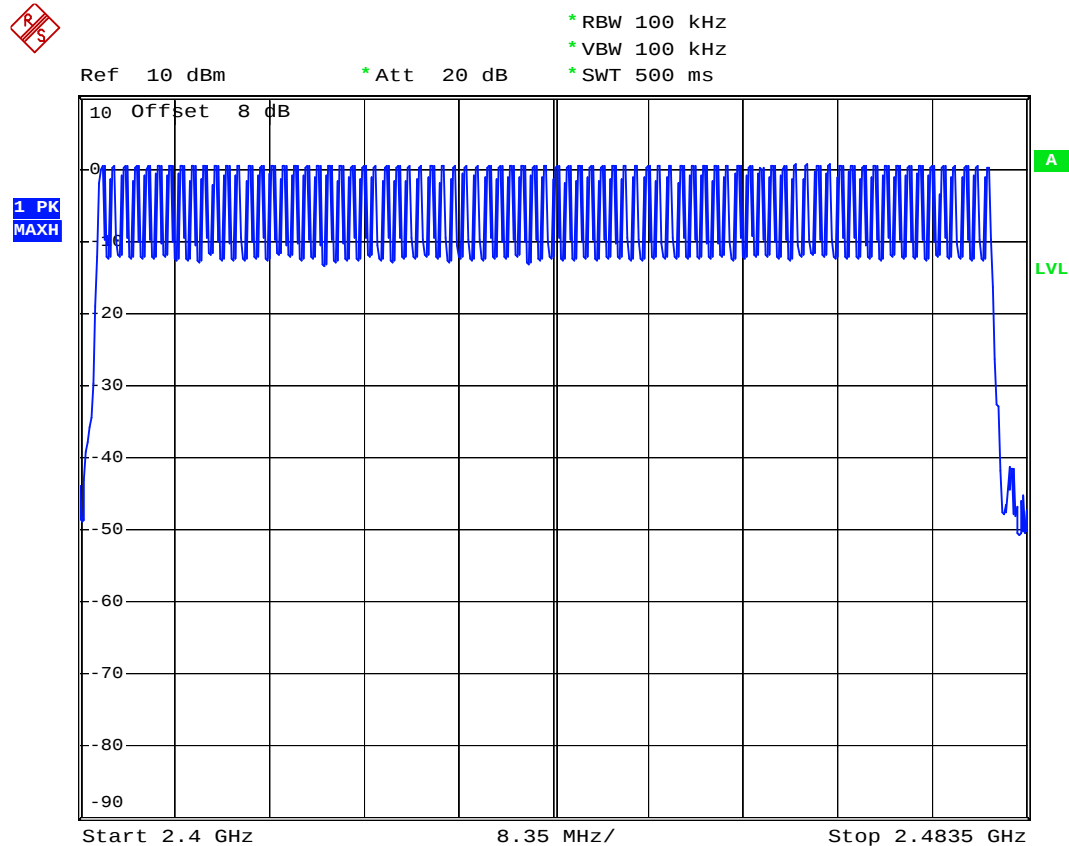
5.6.4 Test Result : See spectrum analyzer plots below

- Application Type : BT
- Temperature : 23°C
- Relative Humidity : 47%
- Test Enginner : James

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



5.6.5 Number of Hopping Frequency



Date: 8.AUG.2006 20:48:18

5.7 Hopping Channel Bandwidth

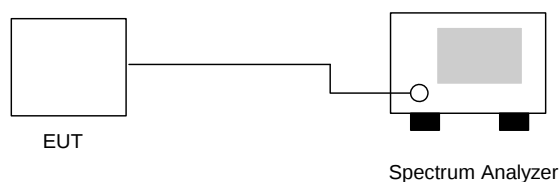
5.7.1 Measuring Instruments :

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 : 23°C
- Relative Humidity : 47%
- Test Enginner : James

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	0.834	1.000	Mode 7
39	2441	0.826	1.000	Mode 8
78	2480	0.828	1.000	Mode 9



5.7.5 Hopping Channel Bandwidth

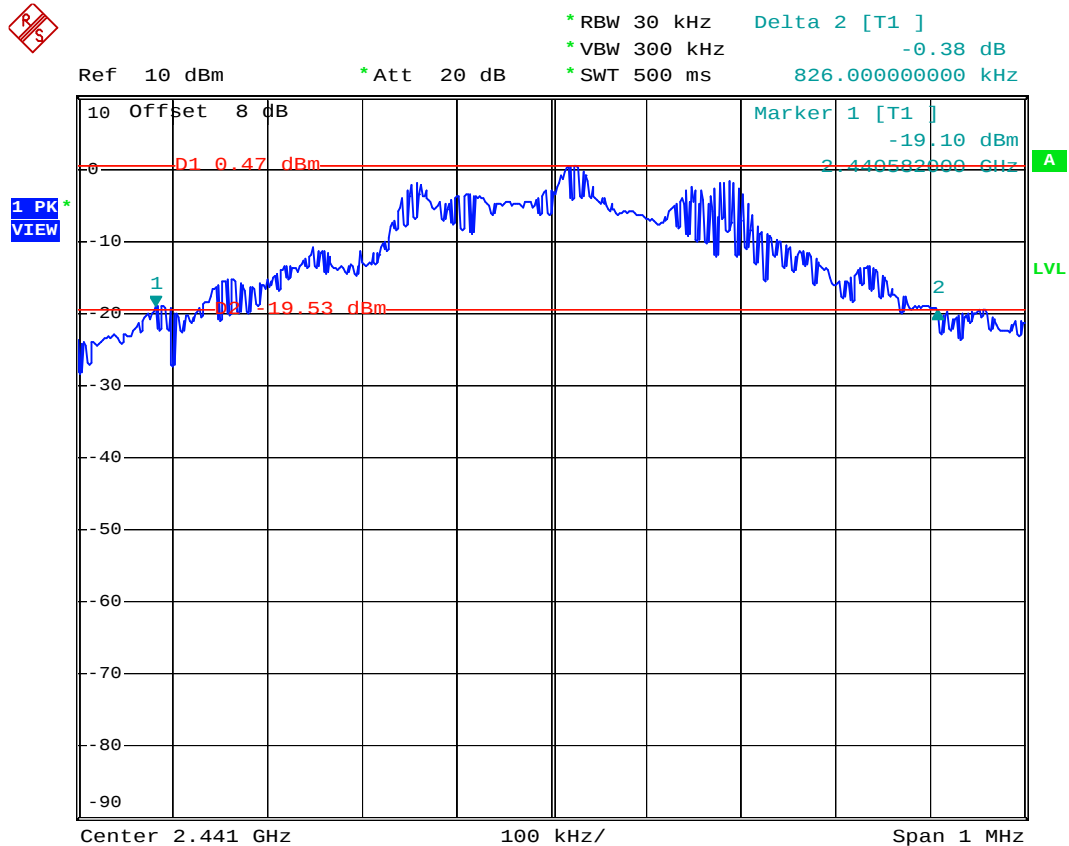
Mode 7



Date: 8.AUG.2006 11:50:48



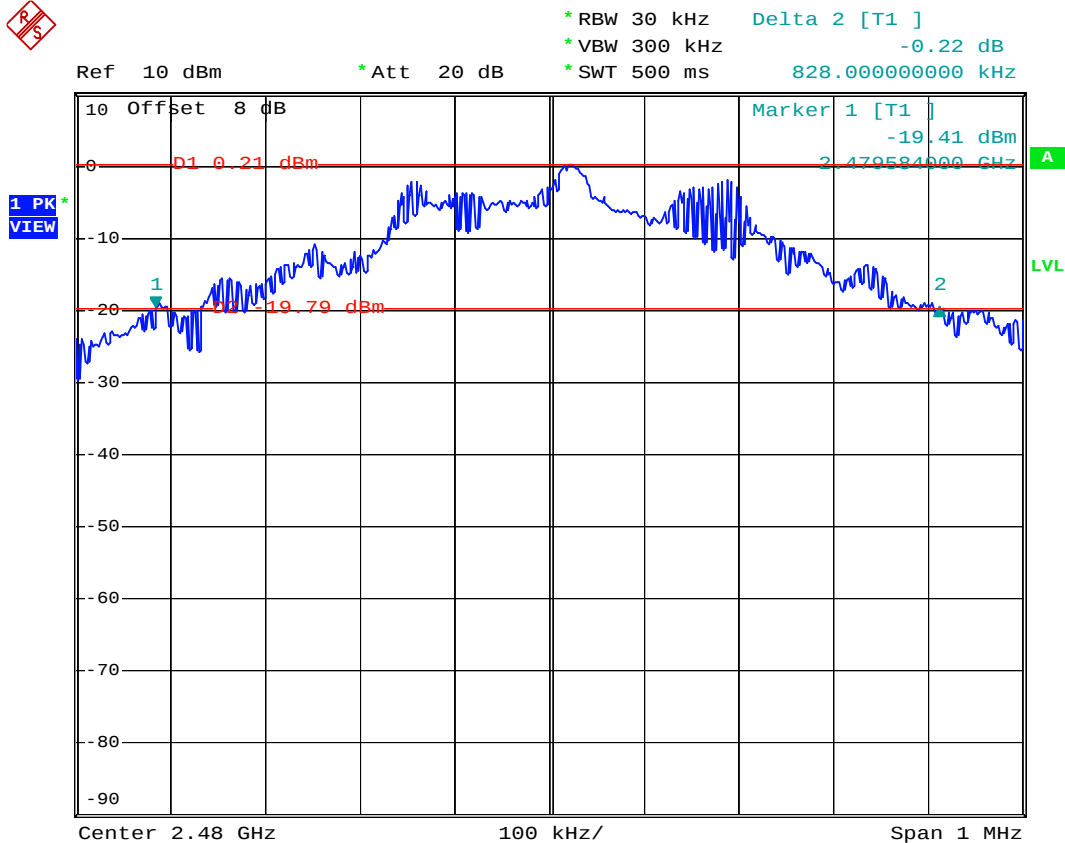
Mode 8



Date: 8.AUG.2006 11:53:13



Mode 9



Date: 8.AUG.2006 11:55:02

5.8 Dwell Time of Each Frequency

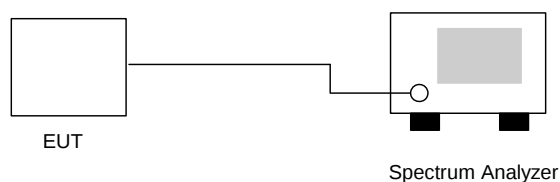
5.8.1 Measuring Instruments :

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 : 23°C
- Relative Humidity : 47%
- Test Enginner : James

Ch00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8	556	0.141	0.4
DH3	4.8	1840	0.279	0.4
DH5	3.2	3090	0.312	0.4

**CH39**

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.7	556	0.153	0.4
DH3	4.3	1820	0.247	0.4
DH5	3.2	3130	0.317	0.4

CH78

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	8.6	556	0.151	0.4
DH3	4.9	1830	0.283	0.4
DH5	3.3	3170	0.331	0.4

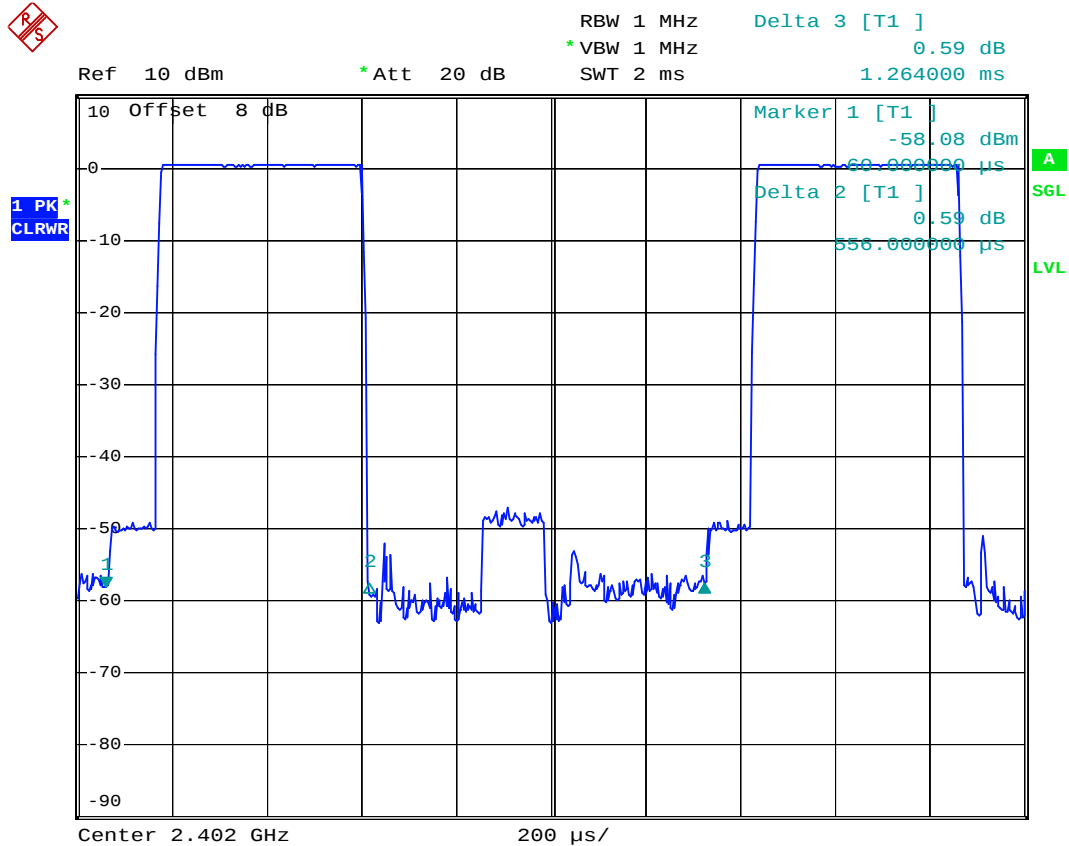
Remark:

1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x 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)

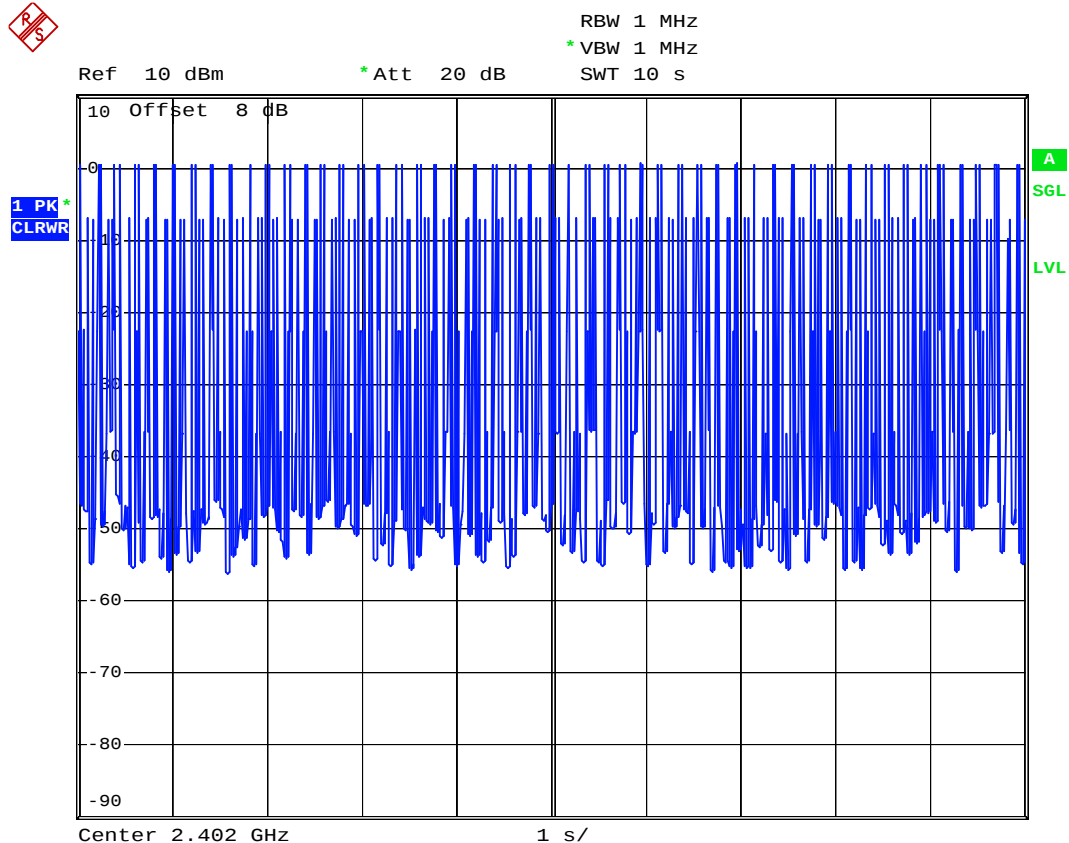


Date: 8.AUG.2006 12:04:54



FCC TEST REPORT

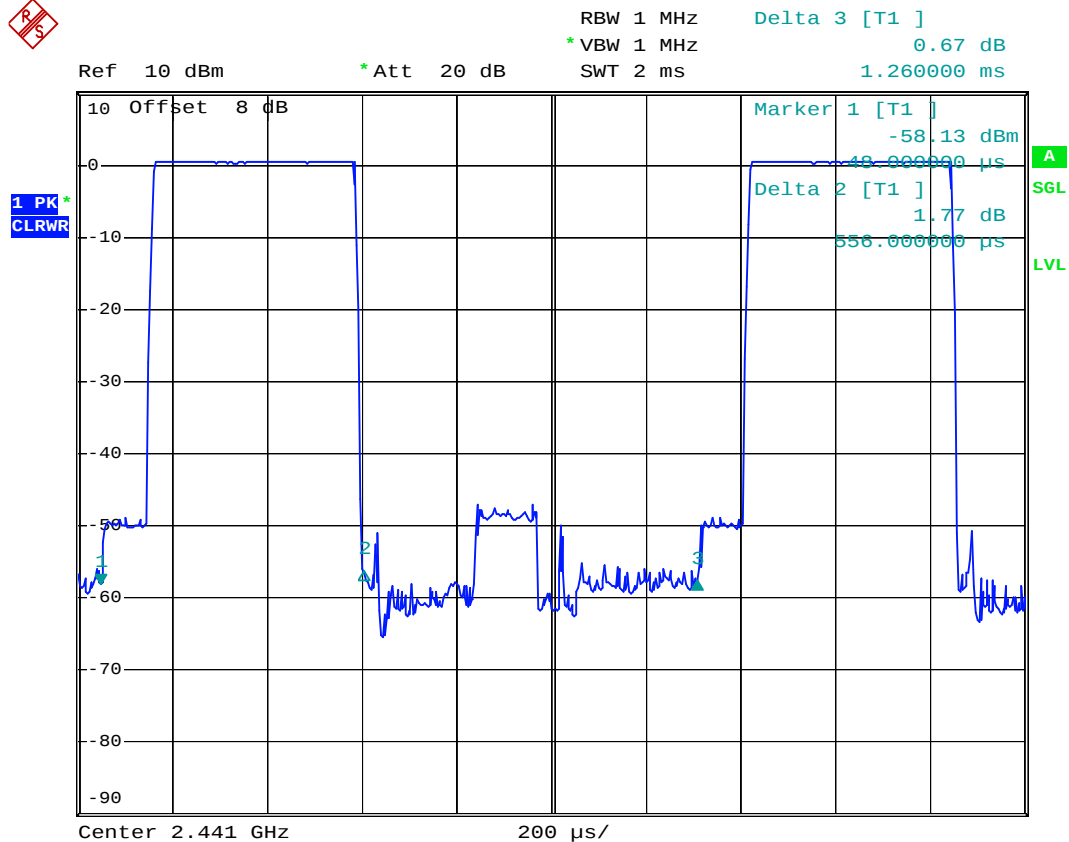
Report No. : FR6D0809



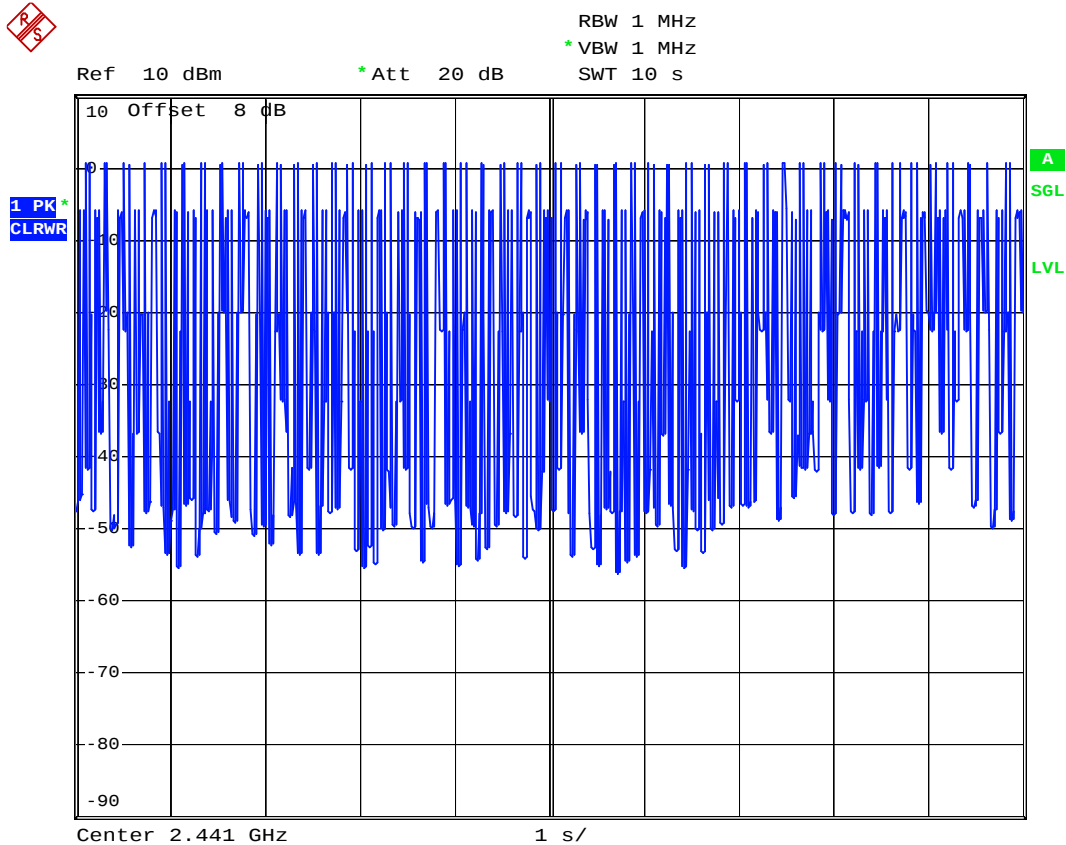
Date: 8.AUG.2006 12:11:01



DH1 (CH39)



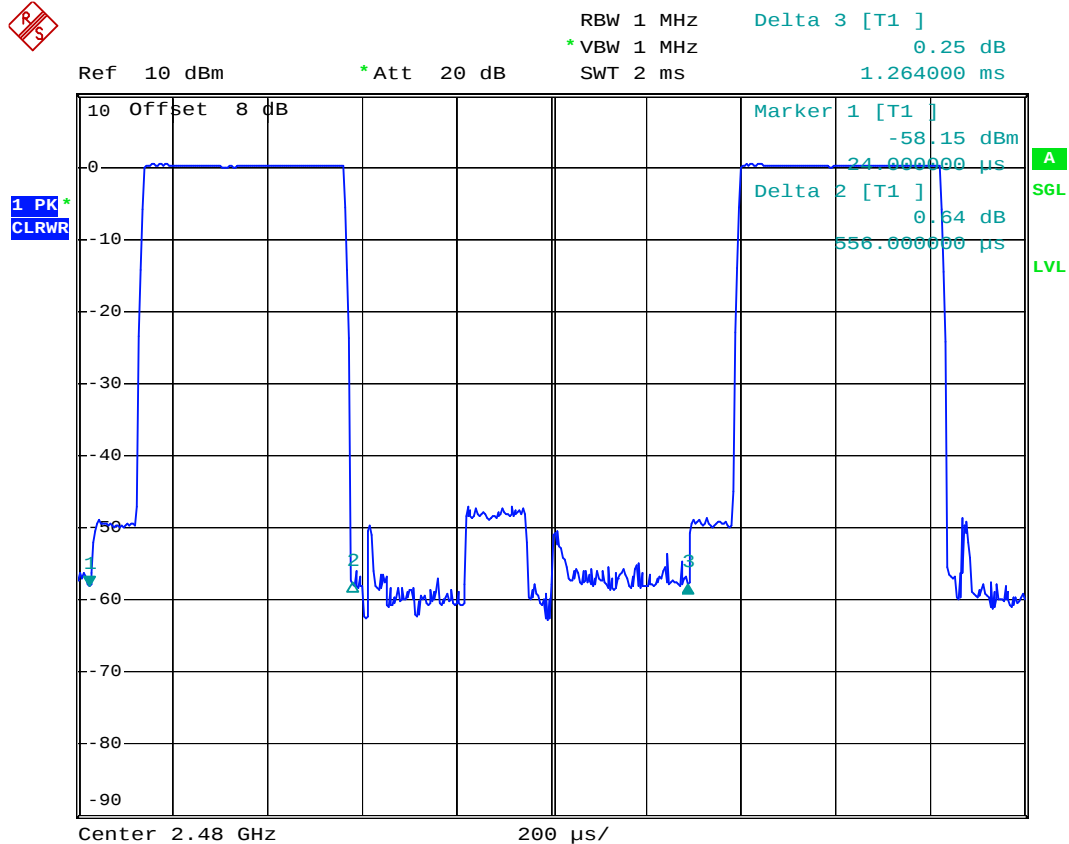
Date: 8.AUG.2006 12:05:20



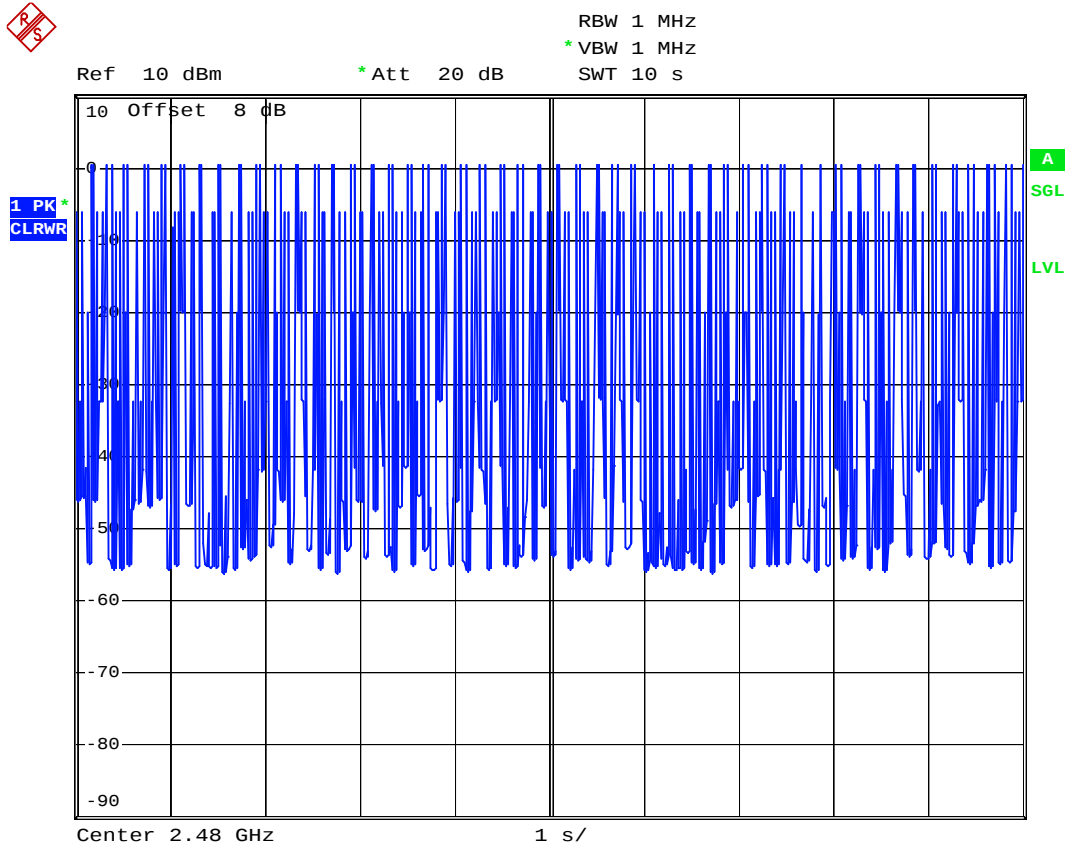
Date: 8.AUG.2006 12:11:21



DH1 (CH78)



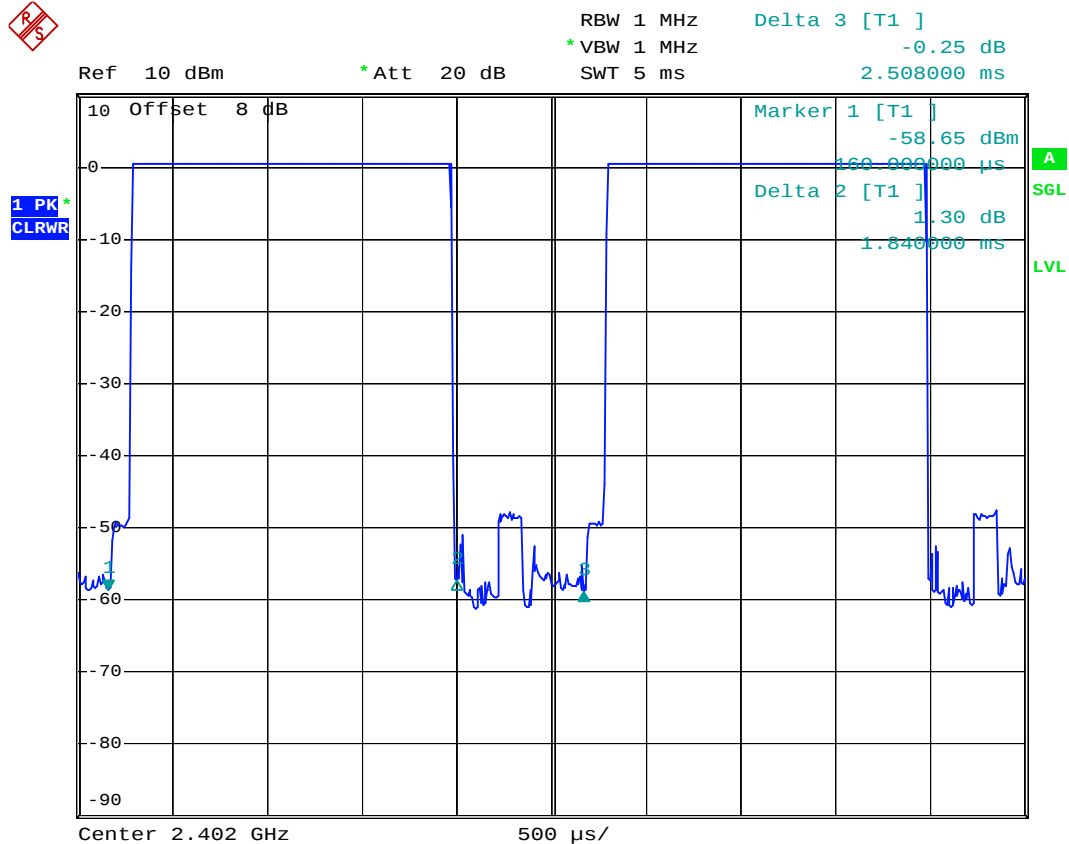
Date: 8.AUG.2006 12:05:47



Date: 8.AUG.2006 12:11:41



DH3 (CH00)

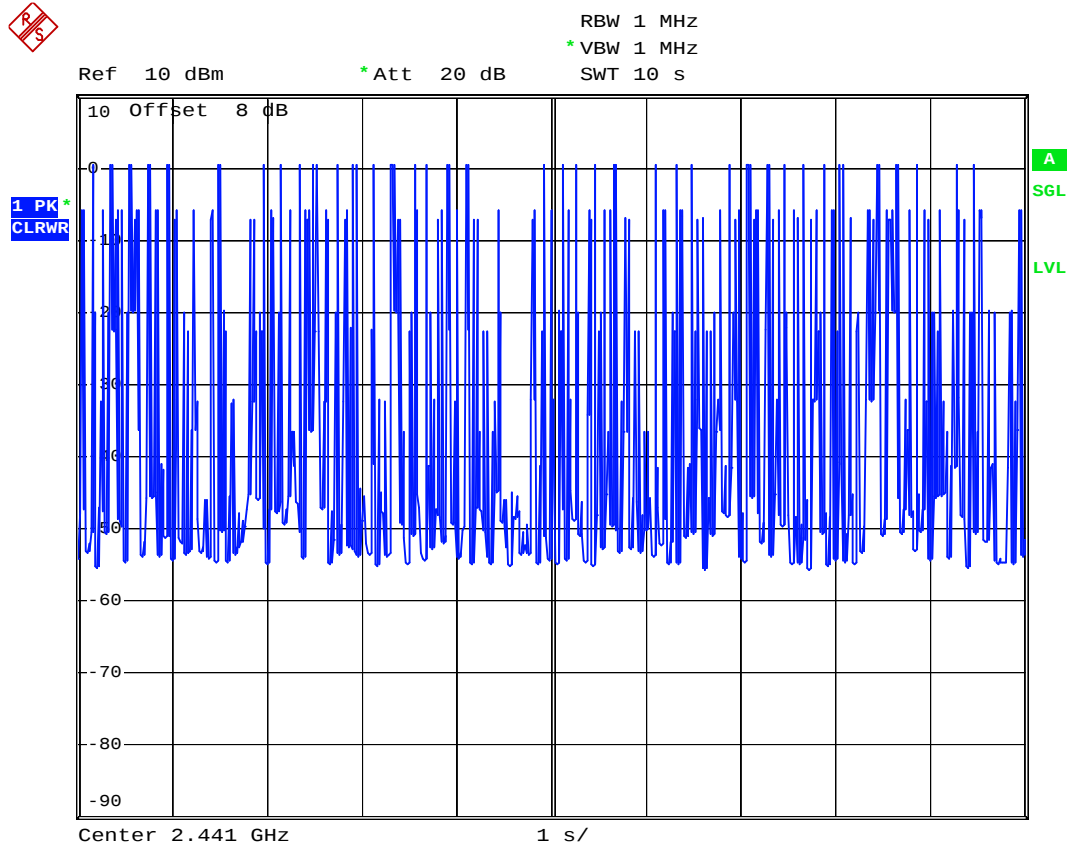


Date: 8.AUG.2006 12:06:42



FCC TEST REPORT

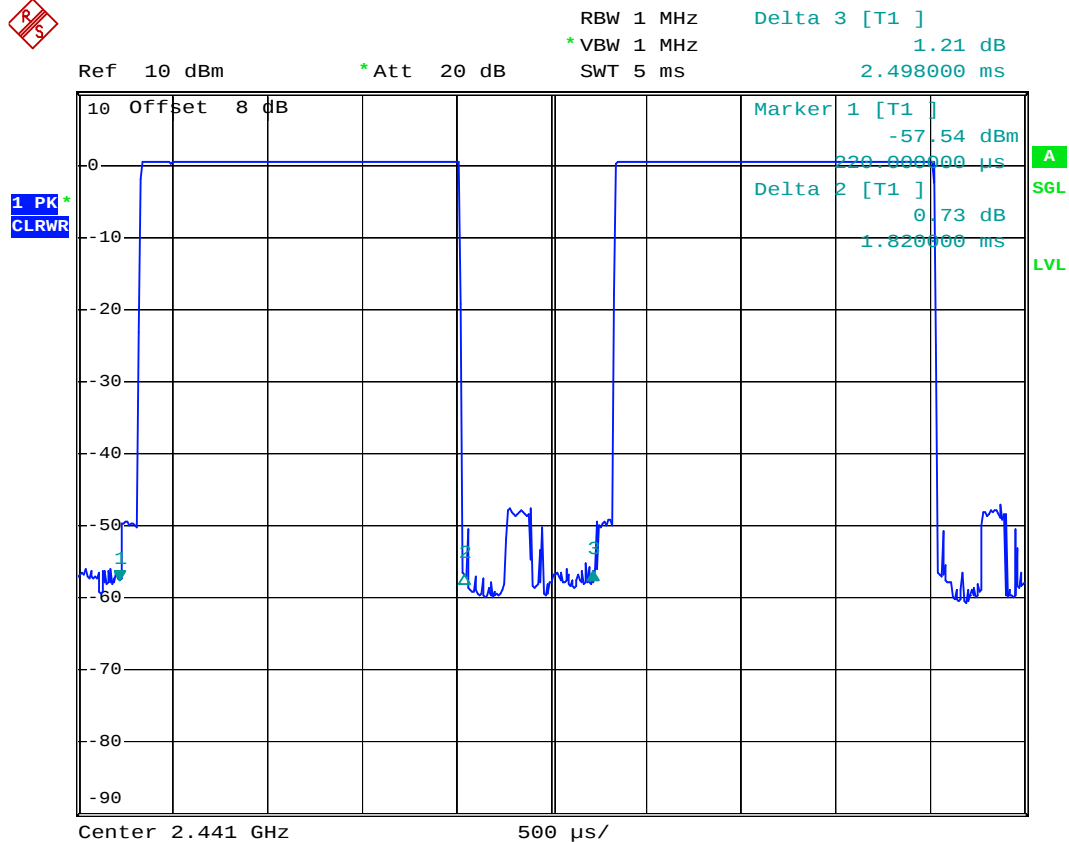
Report No. : FR6D0809



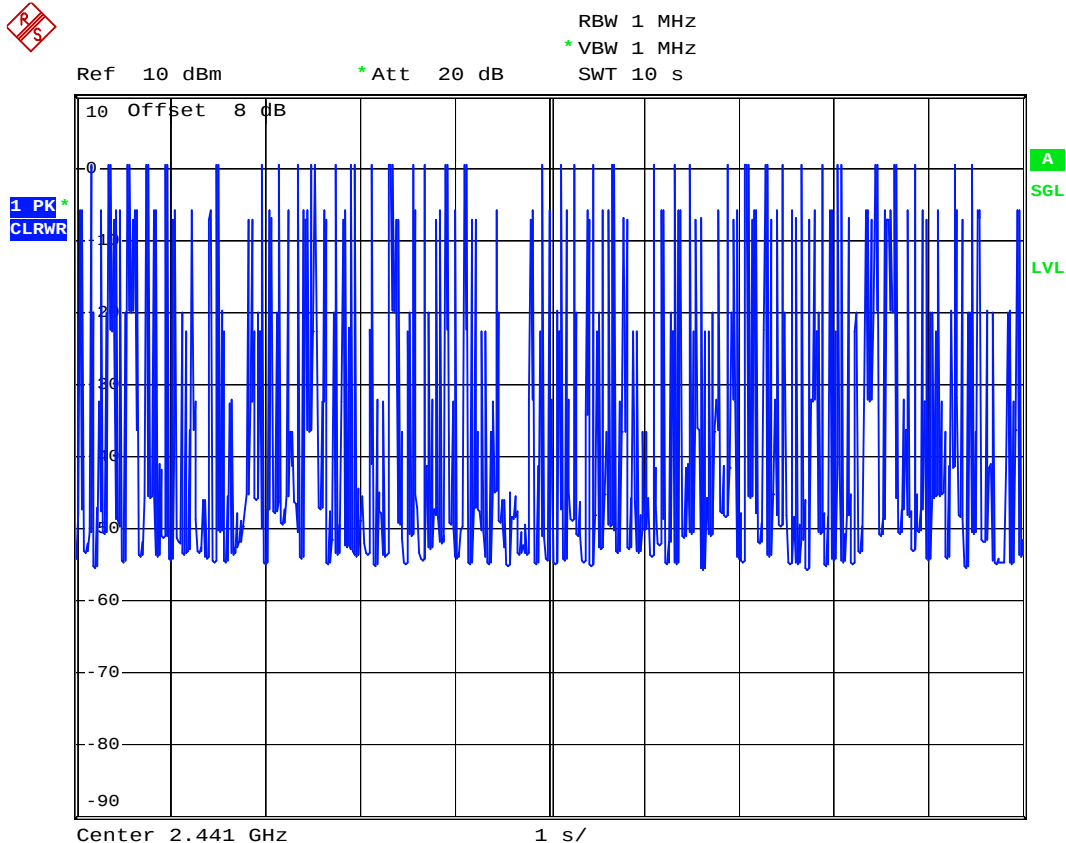
Date: 8.AUG.2006 20:24:49



DH3 (CH39)



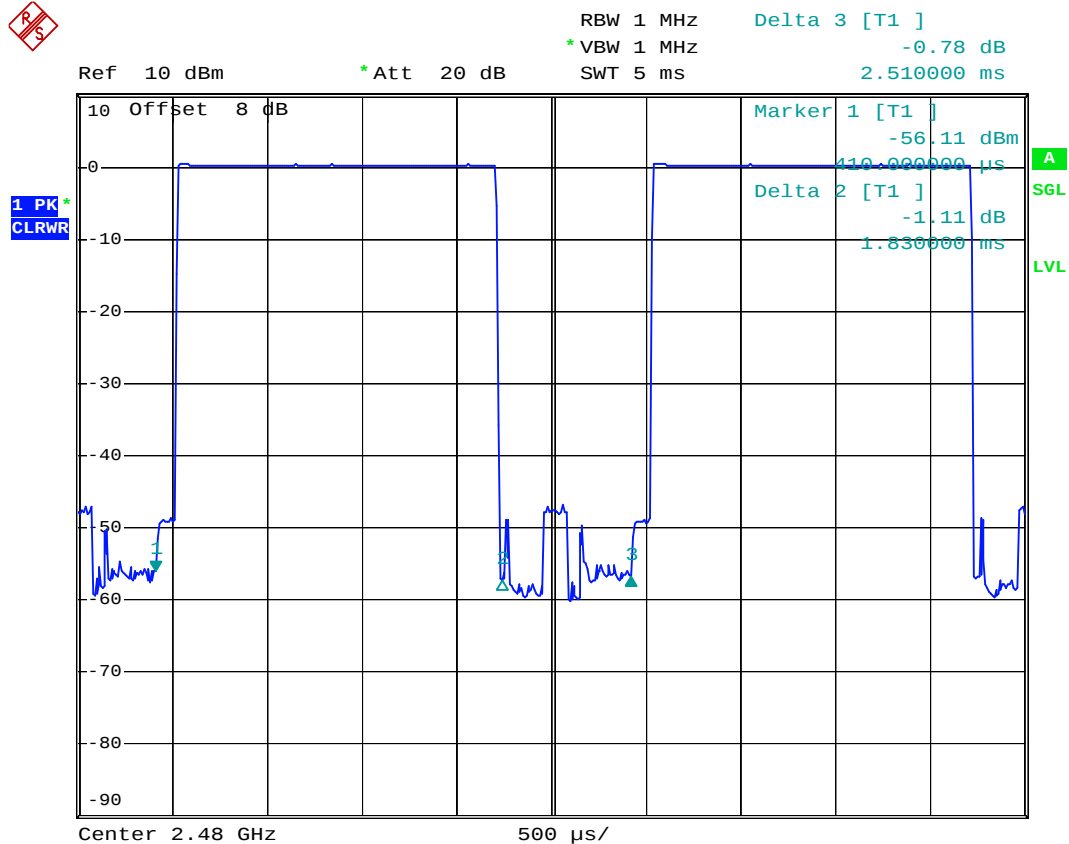
Date: 8.AUG.2006 12:07:05



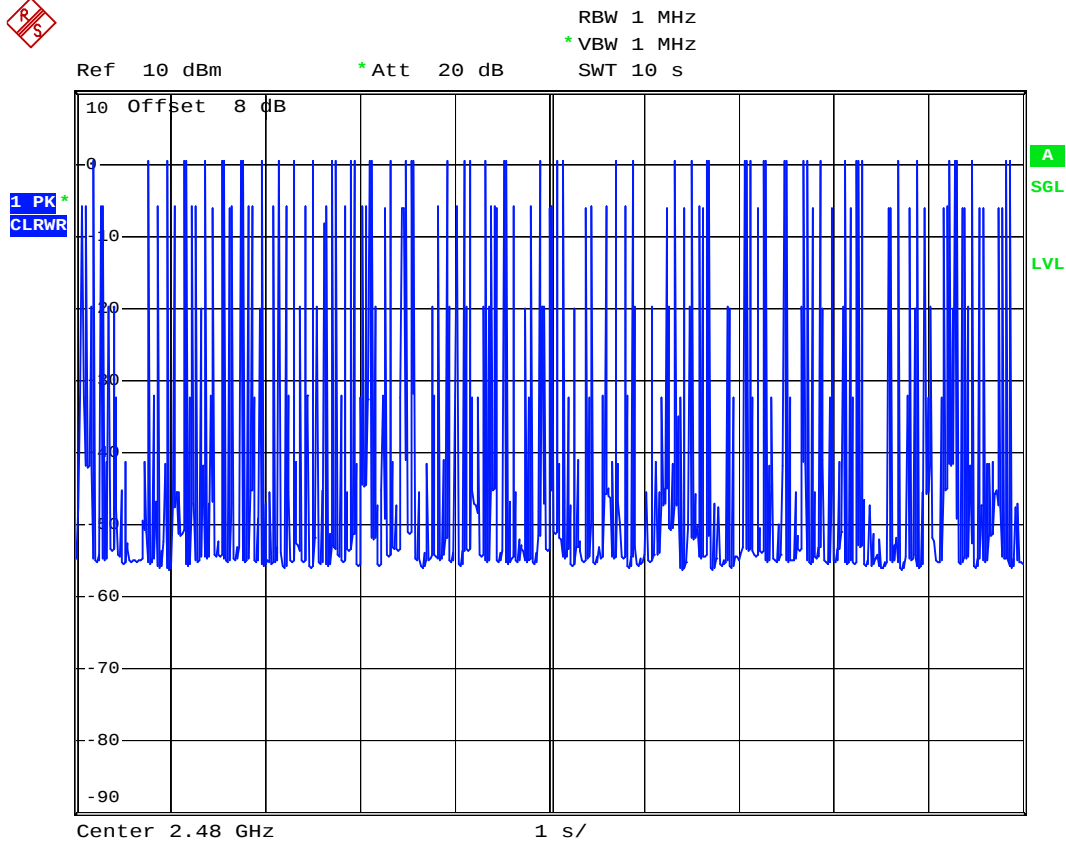
Date: 8.AUG.2006 20:24:49



DH3 (CH78)



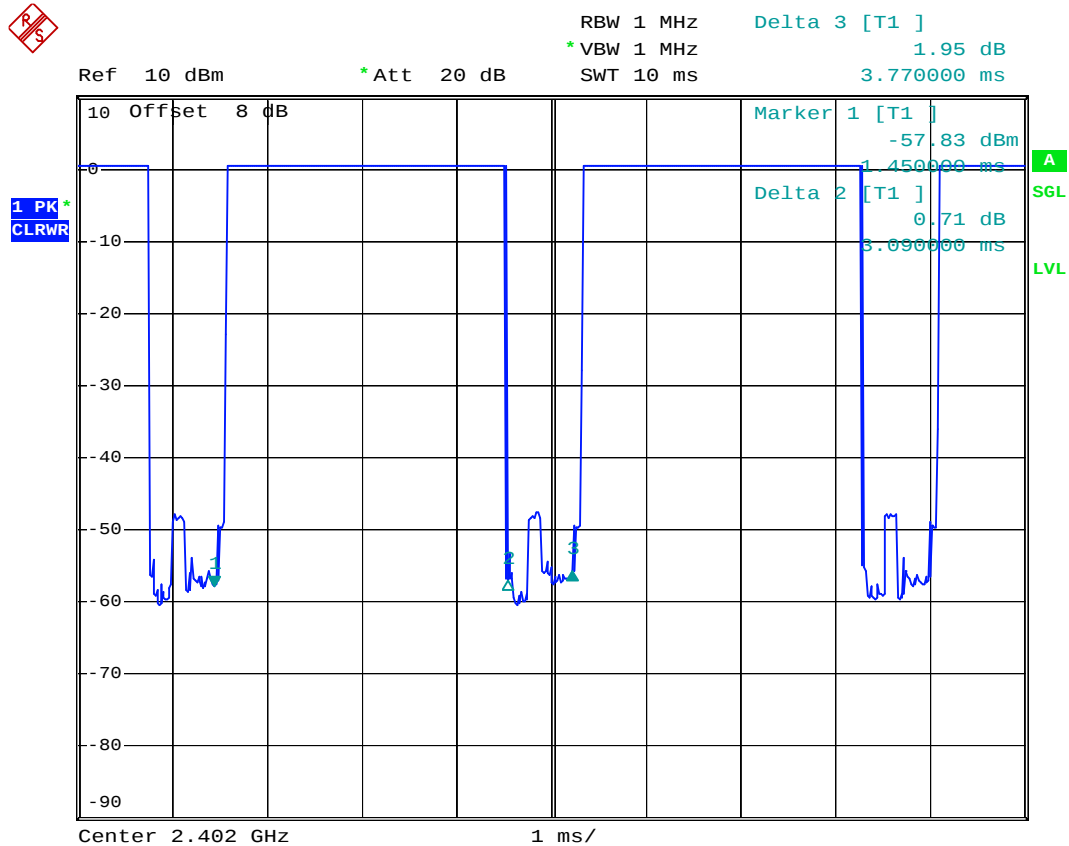
Date: 8.AUG.2006 12:07:42



Date: 8.AUG.2006 20:25:20



DH5 (CH00)

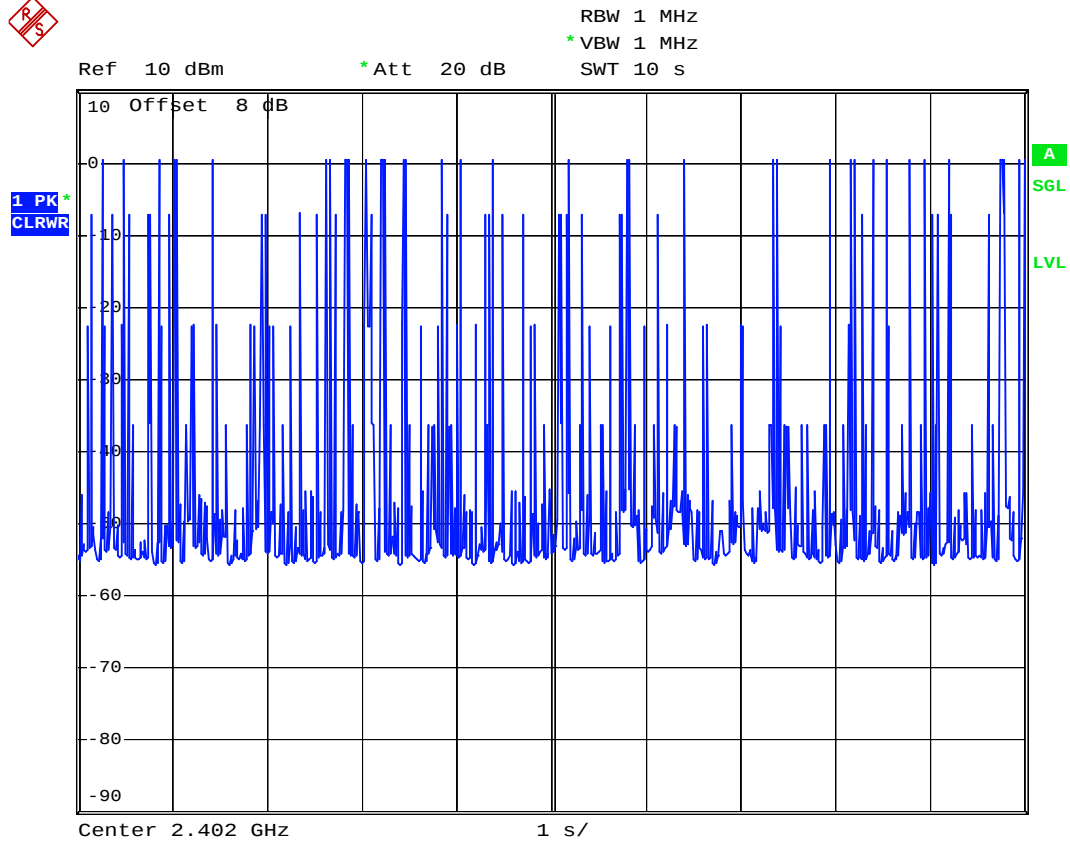


Date: 8.AUG.2006 12:09:02



FCC TEST REPORT

Report No. : FR6D0809



Date: 8.AUG.2006 20:26:18

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

FCC ID : SPUX500

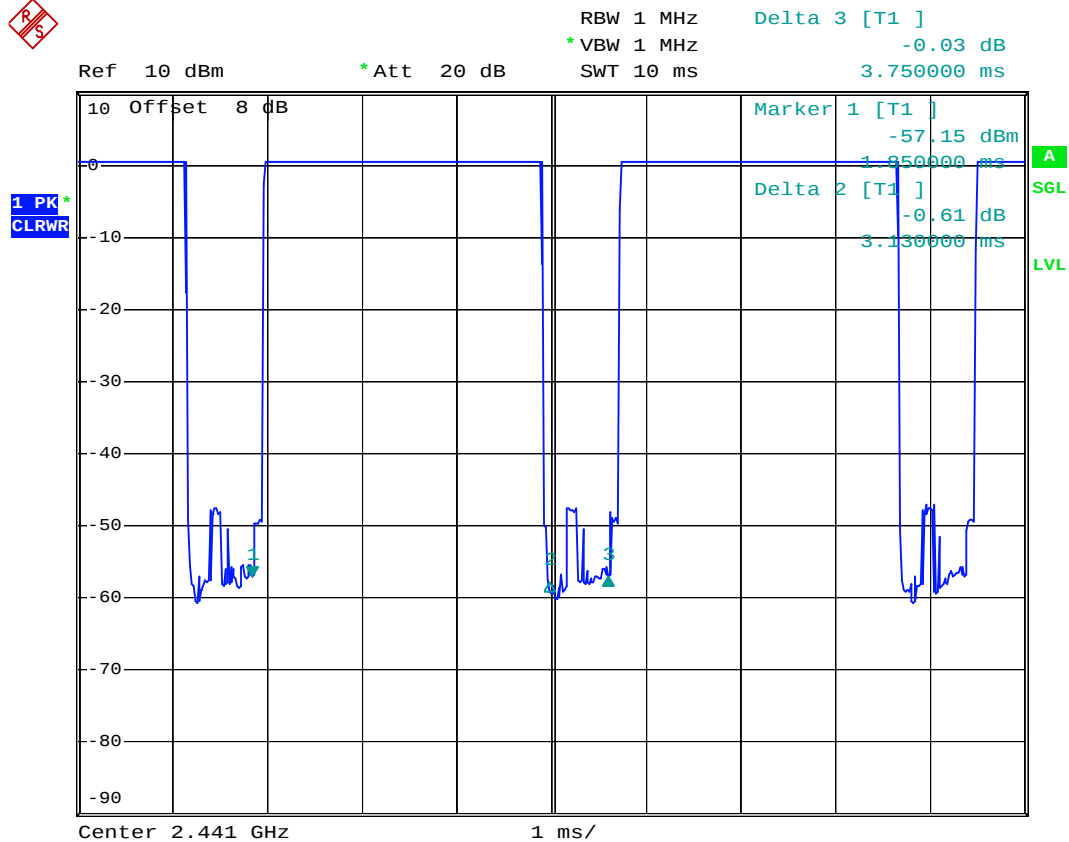
Page No. : 58 of 130

Report Issued Date : Dec. 12, 2006

Report Version : Rev. 01



DH5 (CH39)

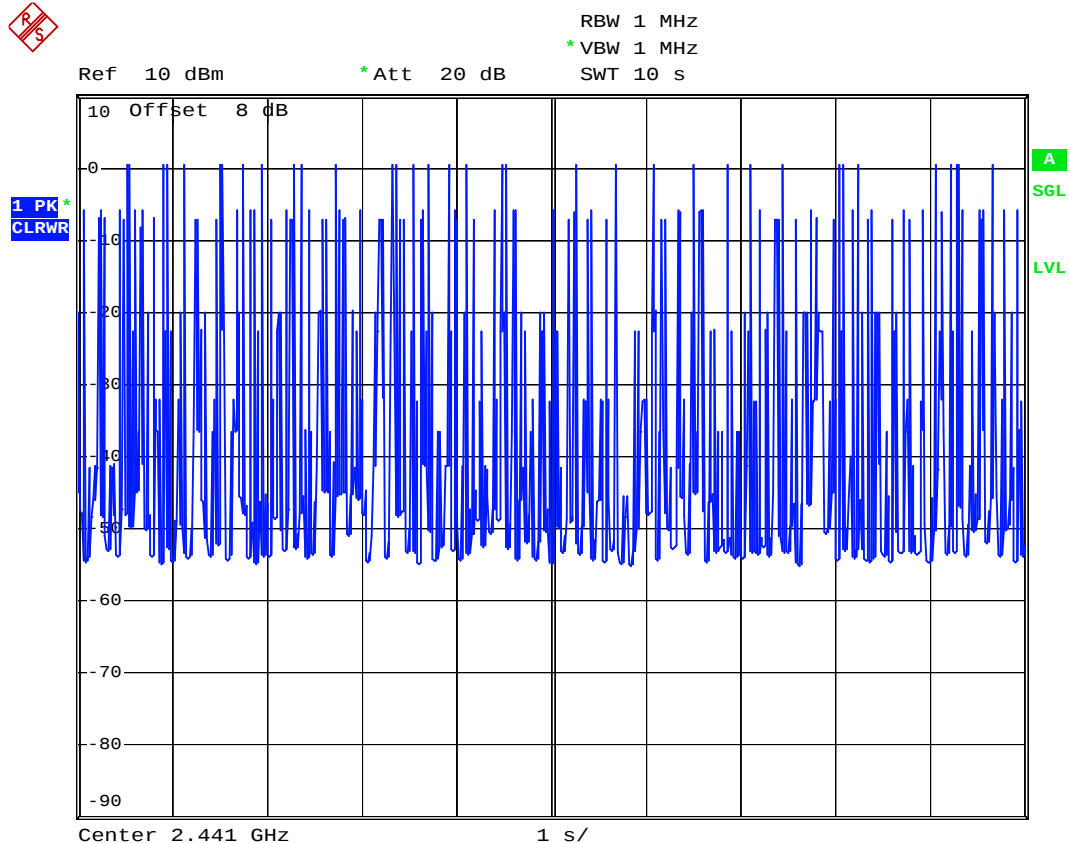


Date: 8.AUG.2006 12:09:31



FCC TEST REPORT

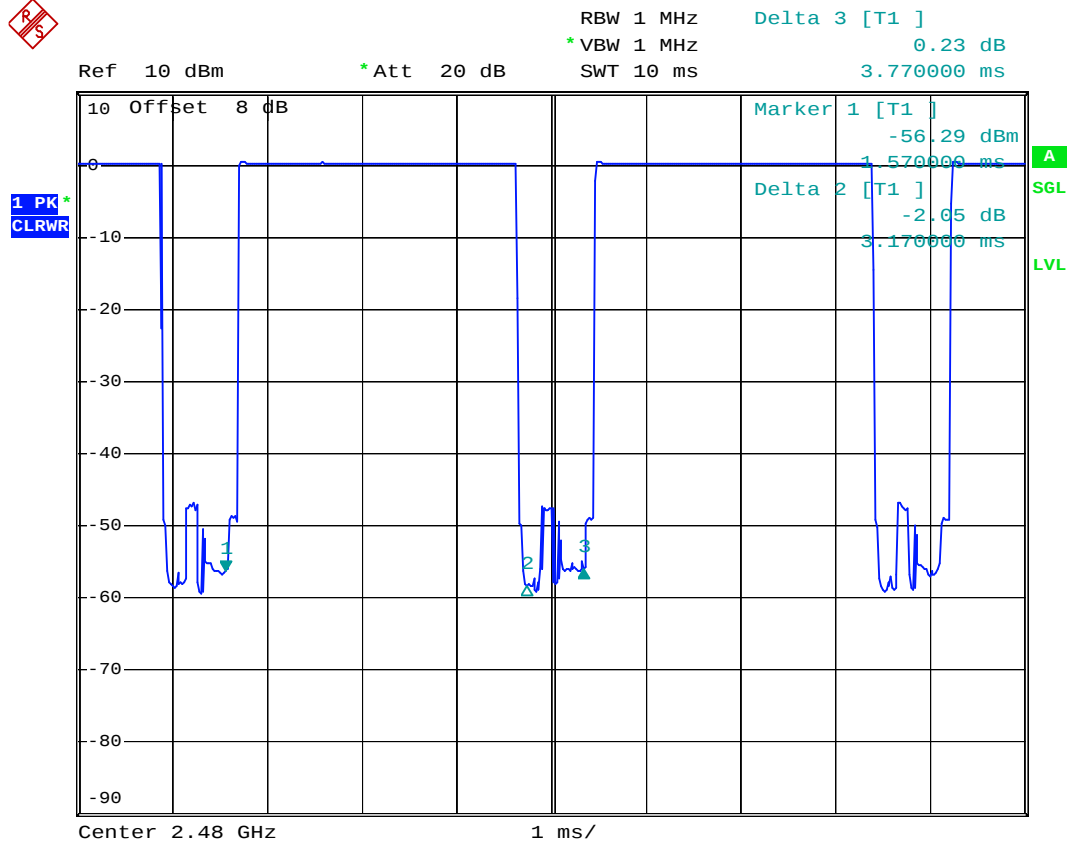
Report No. : FR6D0809



Date: 8.AUG.2006 20:26:49



DH5 (CH78)

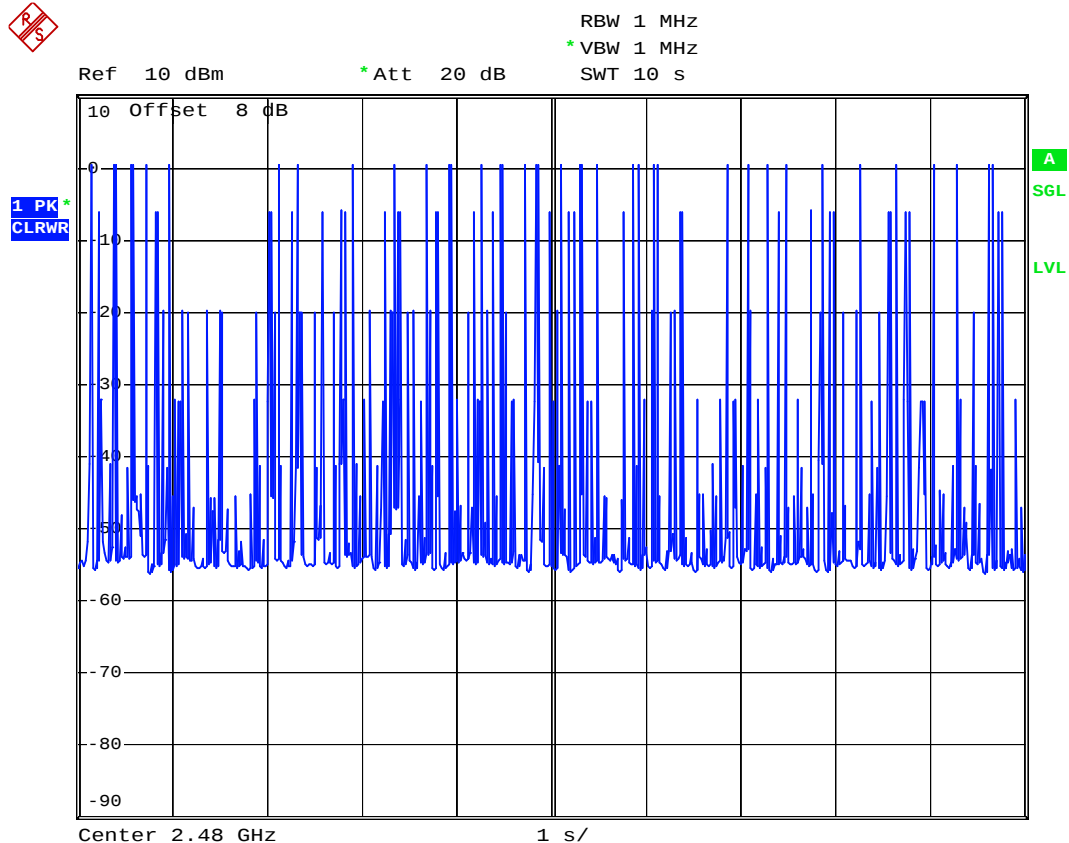


Date: 8.AUG.2006 12:10:04



FCC TEST REPORT

Report No. : FR6D0809



Date: 8.AUG.2006 20:27:29

5.9 Peak Output Power Measurement

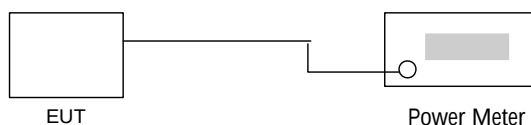
5.9.1 Measuring Instruments :

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 : 23°C
- Relative Humidity : 47%
- Test Enginner : James

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	18.74	1W/30 dBm
06	2437	18.88	1W/30 dBm
11	2462	18.75	1W/30 dBm

**WLAN 802.11g**

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	21.56	1W/30 dBm
06	2437	21.41	1W/30 dBm
11	2462	21.05	1W/30 dBm

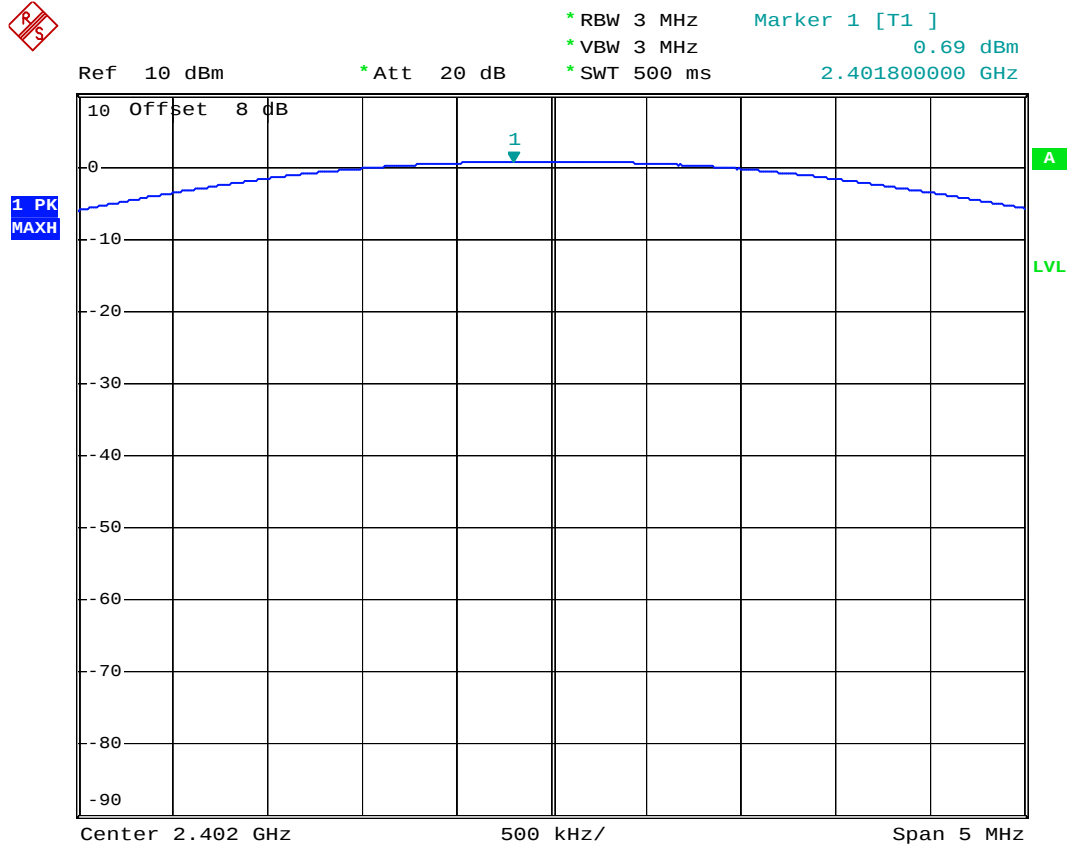
Bluetooth

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	0.69	1W/30 dBm
39	2441	0.78	1W/30 dBm
78	2480	0.48	1W/30 dBm



5.9.5 Output Power

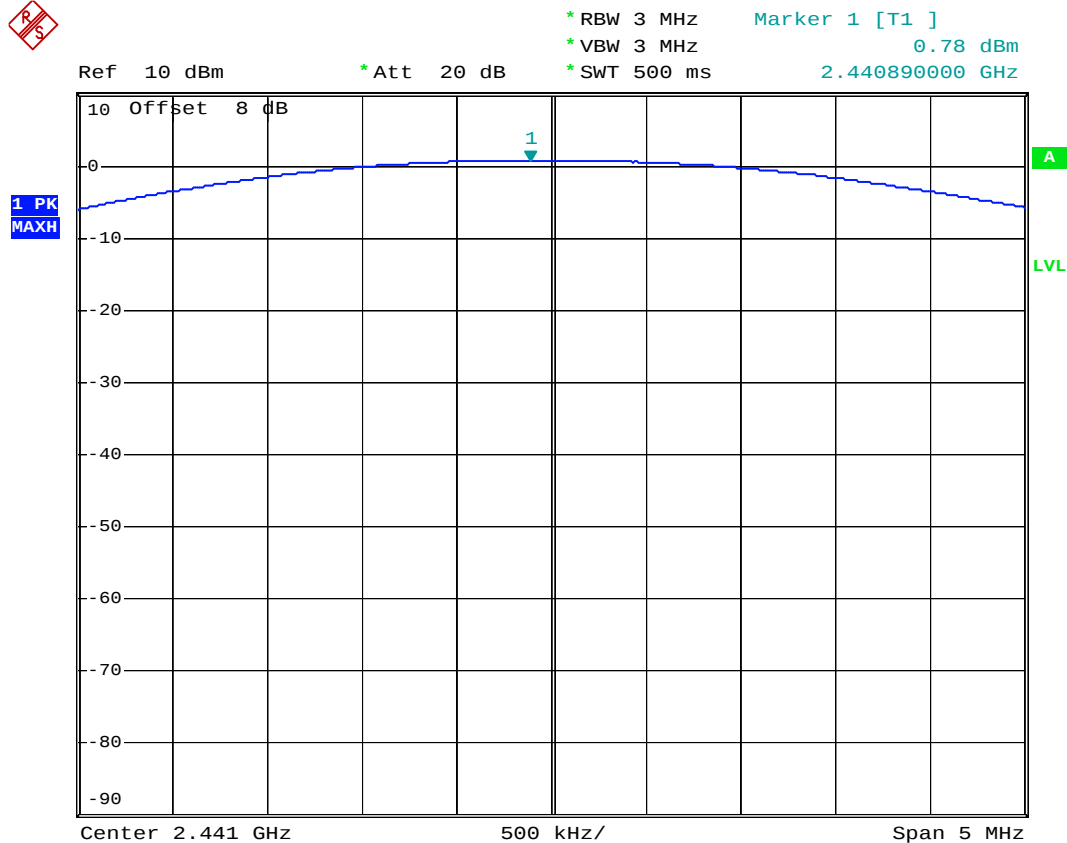
BT Mode : CH00 (2402MHz)



Date: 8.AUG.2006 11:47:49



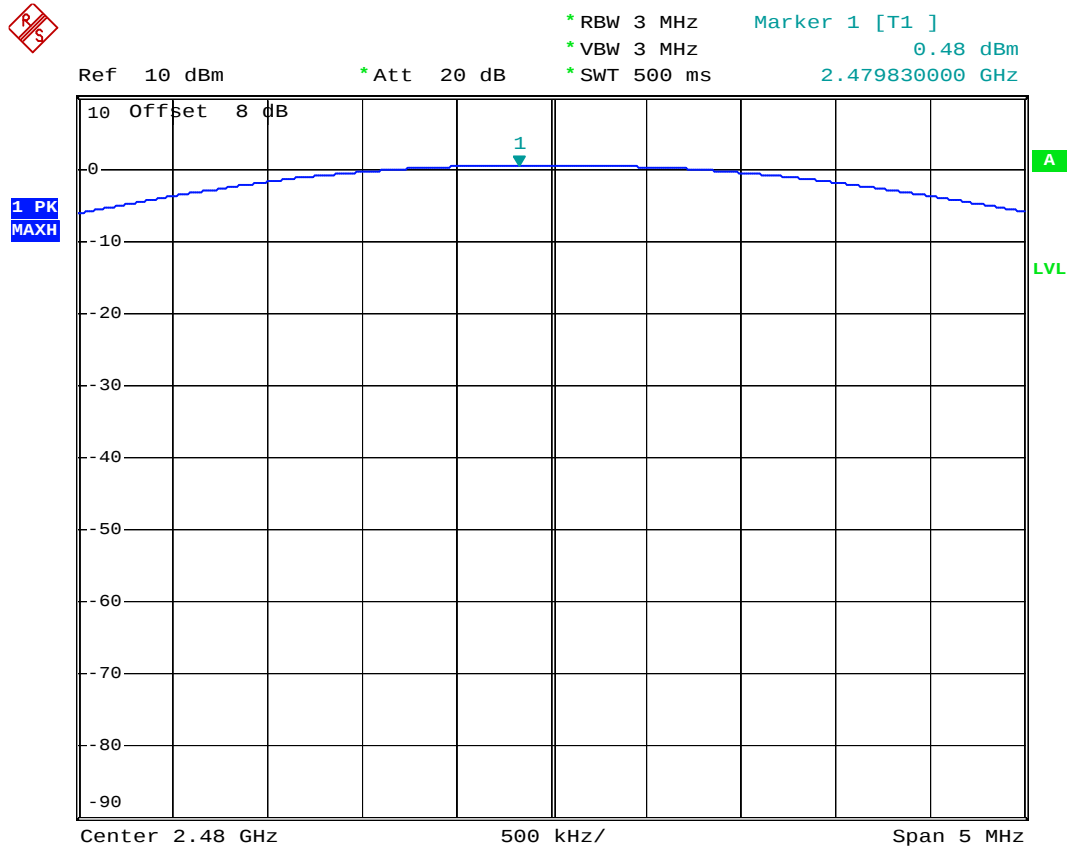
BT Mode : CH39 (2441MHz)



Date: 8.AUG.2006 11:48:23



BT Mode : CH78 (2480MHz)



Date: 8.AUG.2006 11:48:40



5.10 Conducted Emission

5.10.1 Measuring Instruments

As described in chapter 6 of this test Report.

5.10.2 Test Procedures :

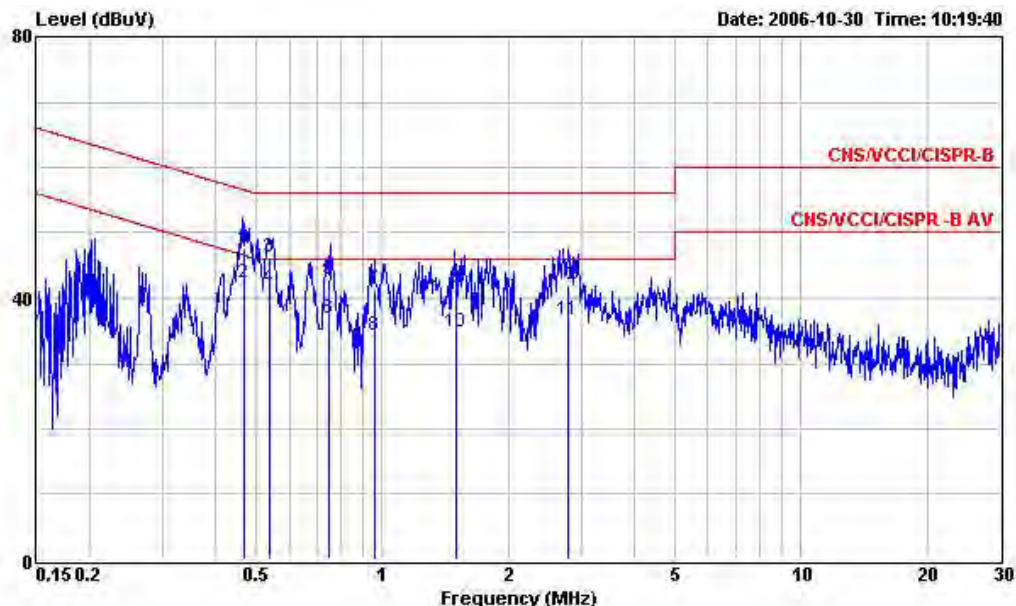
- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of a line impedance stabilization network (LISN).
- c. All the support units are connected to the other LISN.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

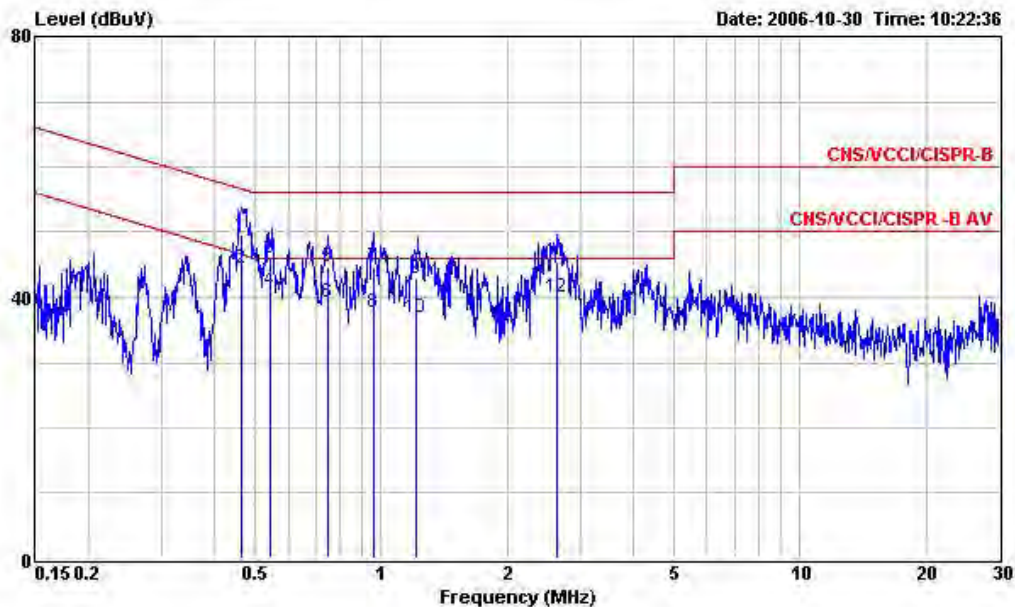
- Temperature : 23°C
- Relative Humidity : 47%
- Test Enginner : James
- Test Mode : Mode 1

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



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : PDA MOBILE PHONE(GSM/GPRS/EDGE)
Power : 120V/60Hz
Model :
Memo : PCS1900 IDLE+BT LINK+WLAN LINK
Memo : +EARPHONE+CAMERA+MPEG4+GPS Rx+ADAPTOR
Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.467	47.44	-9.14	56.58	47.18	0.10	0.16	QP
2	0.467	42.37	-4.21	46.58	42.11	0.10	0.16	Average
3	0.540	46.15	-9.85	56.00	45.91	0.10	0.14	QP
4	0.540	41.45	-4.55	46.00	41.21	0.10	0.14	Average
5	0.747	42.87	-13.13	56.00	42.66	0.10	0.11	QP
6	0.747	36.84	-9.16	46.00	36.63	0.10	0.11	Average
7	0.958	41.38	-14.62	56.00	41.20	0.10	0.08	QP
8	0.958	34.20	-11.80	46.00	34.02	0.10	0.08	Average
9	1.501	41.61	-14.39	56.00	41.40	0.10	0.11	QP
10	1.501	34.74	-11.26	46.00	34.53	0.10	0.11	Average
11	2.777	36.57	-9.43	46.00	36.15	0.15	0.27	Average
12	2.777	42.01	-13.99	56.00	41.59	0.15	0.27	QP



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : PDA MOBILE PHONE(GSM/GPRS/EDGE)
Power : 120V/60Hz
Model :
Memo : PCS1900 IDLE+BT LINK+WLAN LINK
Memo : +EARPHONE+CAMERA+MPEG4+GPS Rx+ADAPTOR
Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.465	49.69	-6.91	56.60	49.43	0.10	0.16	QP
2	0.465	44.51	-2.09	46.60	44.25	0.10	0.16	Average
3	0.543	46.07	-9.93	56.00	45.83	0.10	0.14	QP
4	0.543	40.93	-5.07	46.00	40.69	0.10	0.14	Average
5	0.743	44.76	-11.24	56.00	44.55	0.10	0.11	QP
6	0.743	39.19	-6.81	46.00	38.98	0.10	0.11	Average
7	0.958	44.65	-11.35	56.00	44.47	0.10	0.08	QP
8	0.958	37.56	-8.44	46.00	37.38	0.10	0.08	Average
9	1.217	42.84	-13.16	56.00	42.65	0.10	0.09	QP
10	1.217	37.00	-9.00	46.00	36.81	0.10	0.09	Average
11	2.637	45.53	-10.47	56.00	45.18	0.10	0.25	QP
12	2.637	40.08	-5.92	46.00	39.73	0.10	0.25	Average



5.11 Radiated Emission Measurement

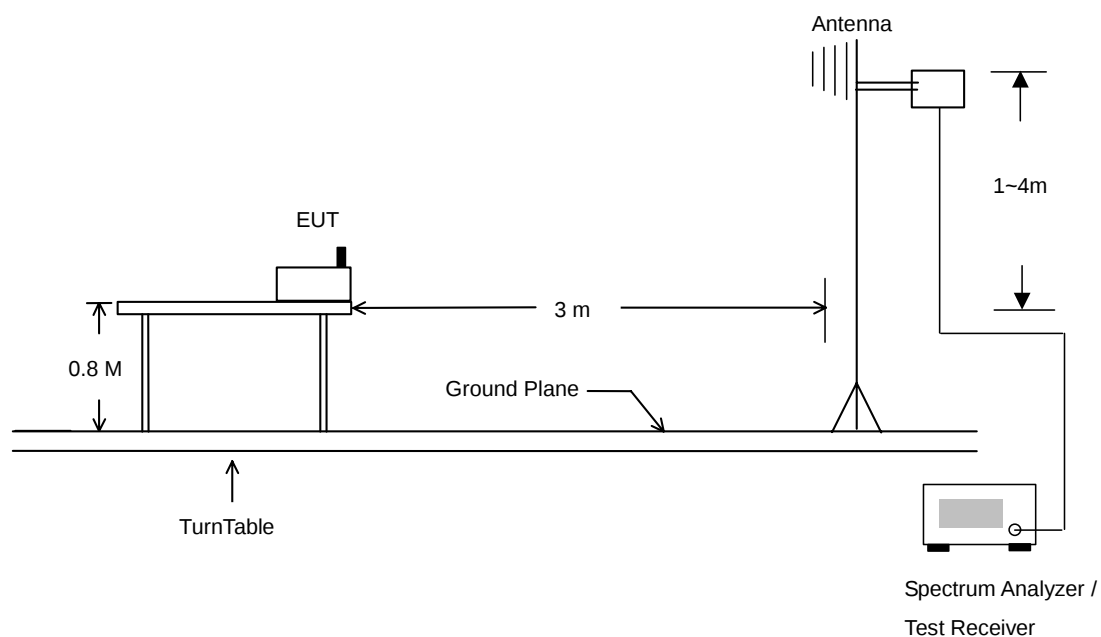
5.11.1 Measuring Instruments

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

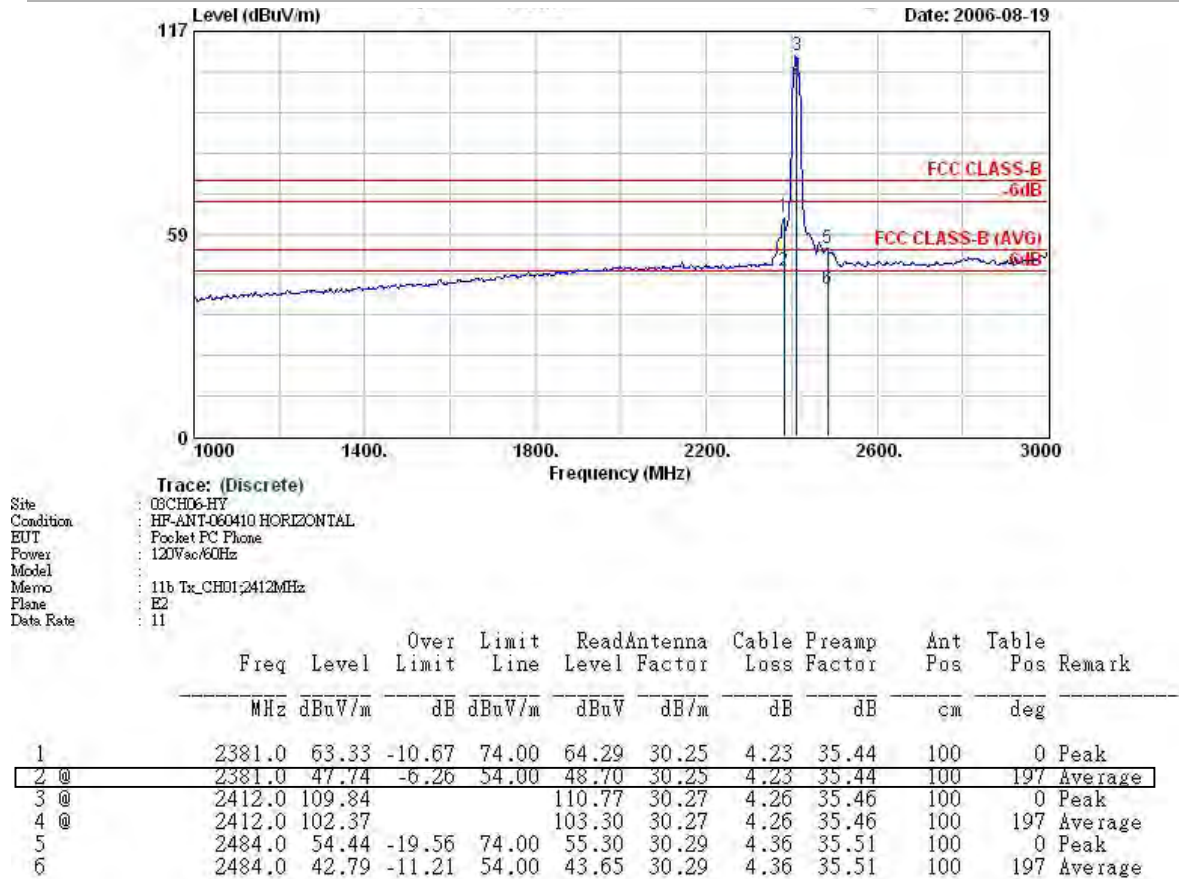




5.11.4 Test Data

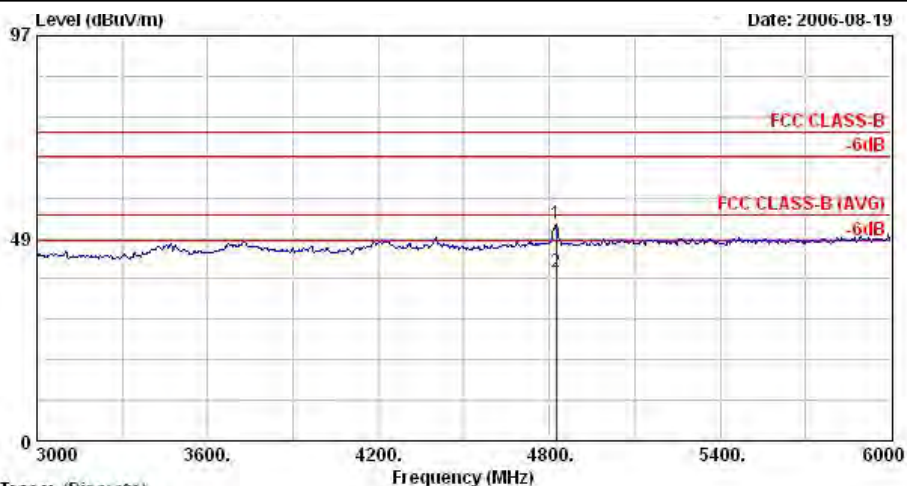
- Temperature : 24°C
- Relative Humidity : 52%
- Test Enginner : Sam
- Test Mode : Mode 1
- Polarization : Horizontal

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

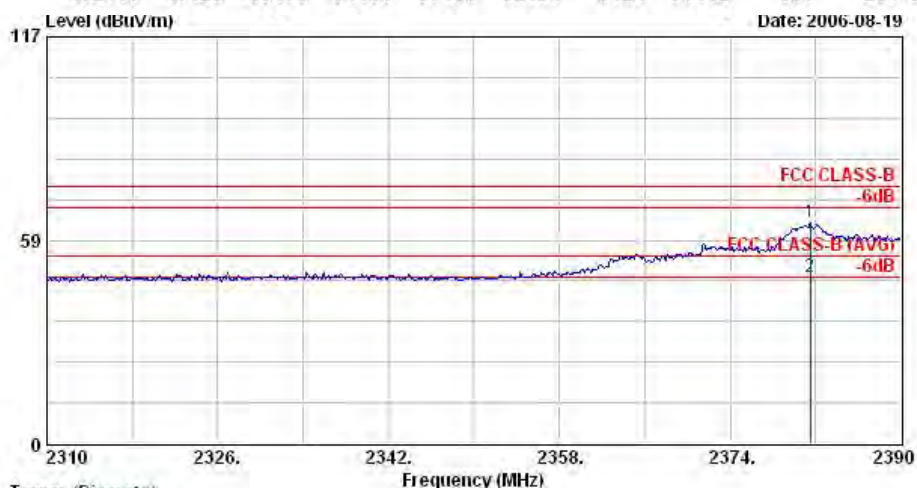


Remark:

- #3 Fundamental Signal
- #4 Fundamental Signal



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	4824.0	51.81	-22.19	74.00	48.74	32.94	6.24	36.12	100	0 Peak
2	4824.0	40.25	-13.75	54.00	37.18	32.94	6.24	36.12	100	214 Average

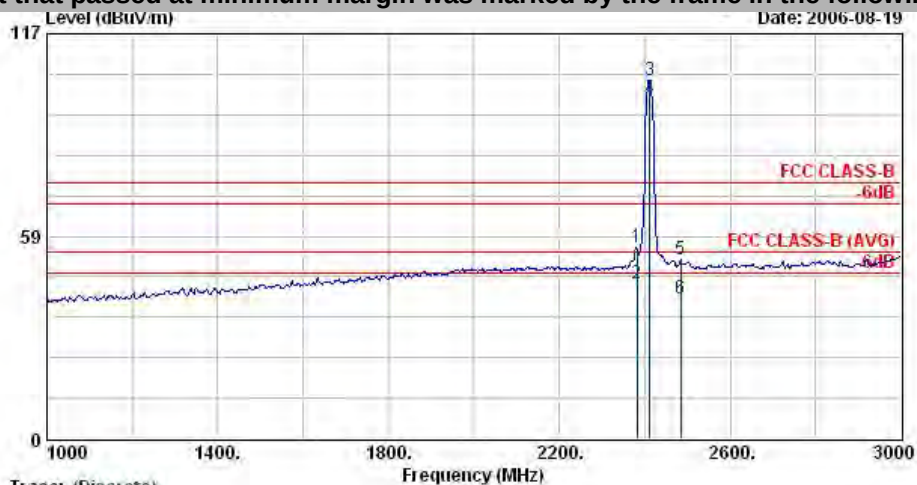


	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	2381.5	63.33	-10.67	74.00	64.29	30.25	4.23	35.44	100	0 Peak
2 @	2381.5	47.74	-6.26	54.00	48.70	30.25	4.23	35.44	100	197 Average



- Polarization : Vertical

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

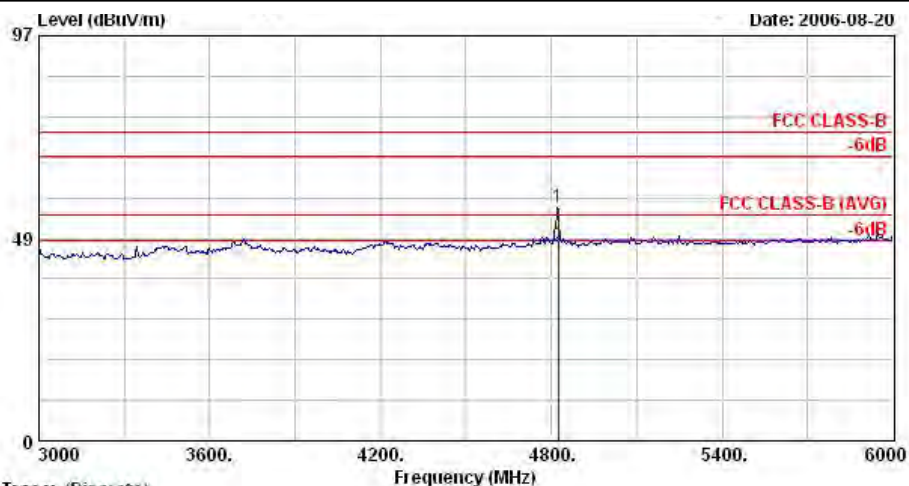


Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH01;2412MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	2381.0	55.04	-18.96	74.00	56.00	30.25	4.23	35.44	100	0 Peak
2	2381.0	44.99	-9.01	54.00	45.95	30.25	4.23	35.44	109	272 Average
3 @	2412.0	103.53			104.46	30.27	4.26	35.46	100	0 Peak
4 @	2412.0	98.19			99.12	30.27	4.26	35.46	109	272 Average
5	2484.0	51.59	-22.41	74.00	52.45	30.29	4.36	35.51	100	0 Peak
6	2484.0	40.51	-13.49	54.00	41.37	30.29	4.36	35.51	109	272 Average

Remark:

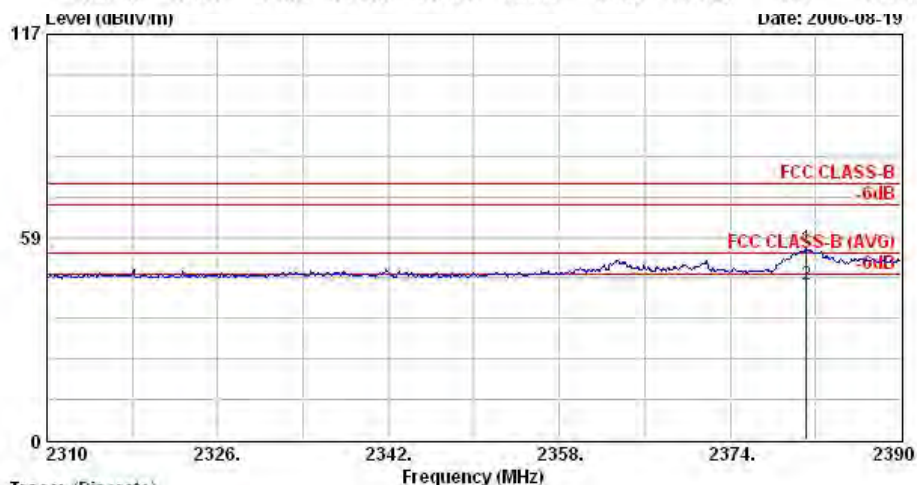
1. #3 Fundamental Signal
2. #4 Fundamental Signal



Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH01,2412MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	4824.0	56.02	-17.98	74.00	52.95	32.94	6.24	36.12	100	360 Peak
2 @	4824.0	46.48	-7.52	54.00	43.41	32.94	6.24	36.12	100	194 Average



Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH01,2412MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	2381.1	55.04	-18.96	74.00	55.99	30.25	4.23	35.44	100	0 Peak
2 @	2381.1	44.99	-9.01	54.00	45.95	30.25	4.23	35.44	109	272 Average

Remark: There is no more obvious spurious emission except the listings above.



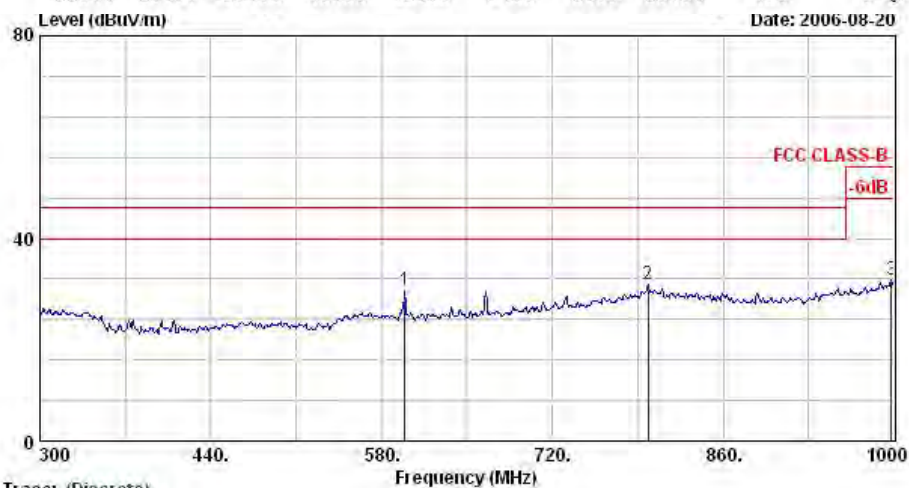
- Test Mode : Mode 2
- Polarization : Horizontal

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



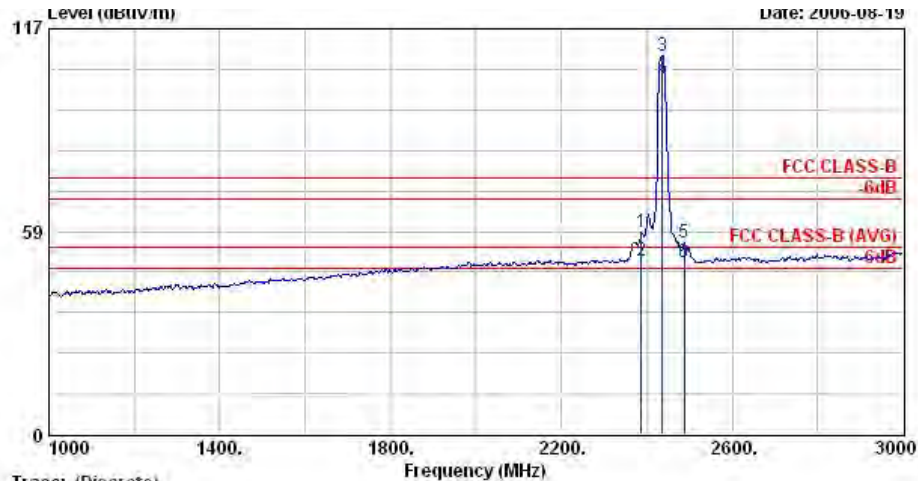
Trace: (Discrete)
Site : 08CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	39.2	27.96	-12.04	40.00	40.11	15.28	1.23	28.66	105	225 QP
2 @	151.2	25.10	-18.40	43.50	42.67	9.05	2.19	28.81	400	0 QP
3 @	220.1	25.97	-20.03	46.00	42.58	9.50	2.69	28.81	400	0 QP



Trace: (Discrete)
Site : 08CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	598.9	29.87	-16.13	46.00	36.01	17.97	4.66	28.77	100	0 QP
2 @	798.4	30.99	-15.01	46.00	32.42	21.84	5.60	28.87	100	0 QP
3 @	997.9	31.90	-22.10	54.00	31.55	22.91	6.22	28.79	100	0 QP



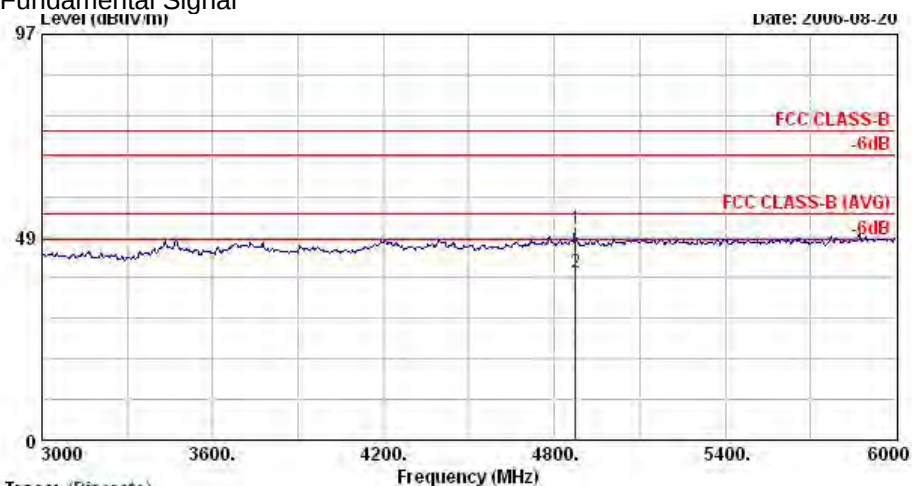
Trace: (Discrete)

Site : 03CHD6-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CHD6;2437MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	2388.0	58.50	-15.50	74.00	59.45	30.26	4.23	35.44	100	360 Peak
2 @	2388.0	49.82	-4.18	54.00	50.77	30.26	4.23	35.44	100	196 Average
3 @	2437.0	109		4.00	110.27	30.27	4.29	35.47	100	360 Peak
4 @	2437.0	102		4.00	103.60	30.28	4.29	35.47	100	196 Average
5 @	2488.0	55.18	-18.82	74.00	56.03	30.30	4.36	35.51	100	360 Peak
6 @	2488.0	49.47	-4.53	54.00	50.32	30.30	4.36	35.51	100	196 Average

Remark:

1. #3 Fundamental Signal
2. #4 Fundamental Signal



Trace: (Discrete)

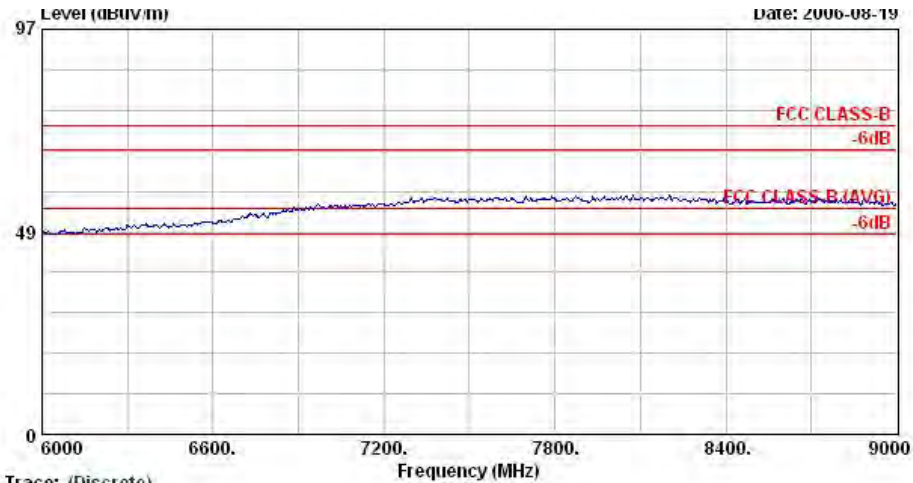
Site : 03CHD6-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CHD6;2437MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	4874.0	50.62	-23.38	74.00	47.34	33.14	6.30	36.16	100	360 Peak
2 @	4874.0	39.96	-14.04	54.00	36.68	33.14	6.30	36.16	107	19 Average

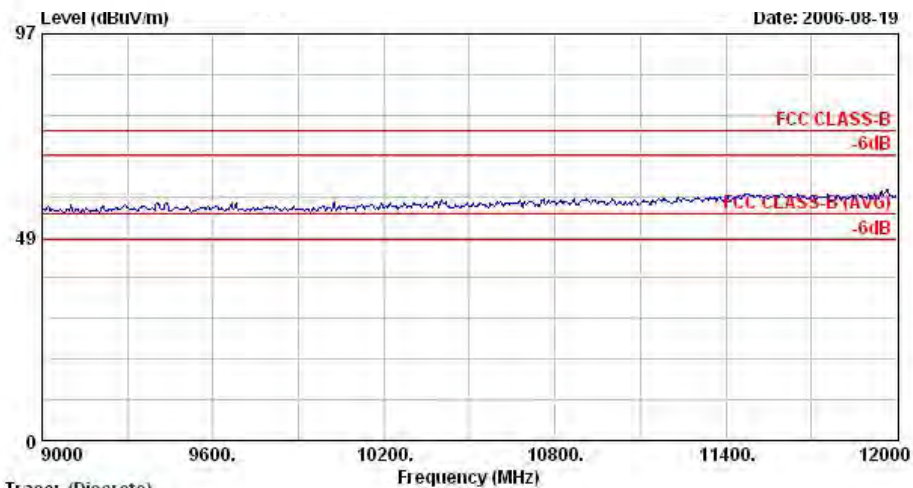


FCC TEST REPORT

Report No. : FR6D0809



Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06,2437MHz
Plane : E2
Data Rate : 11

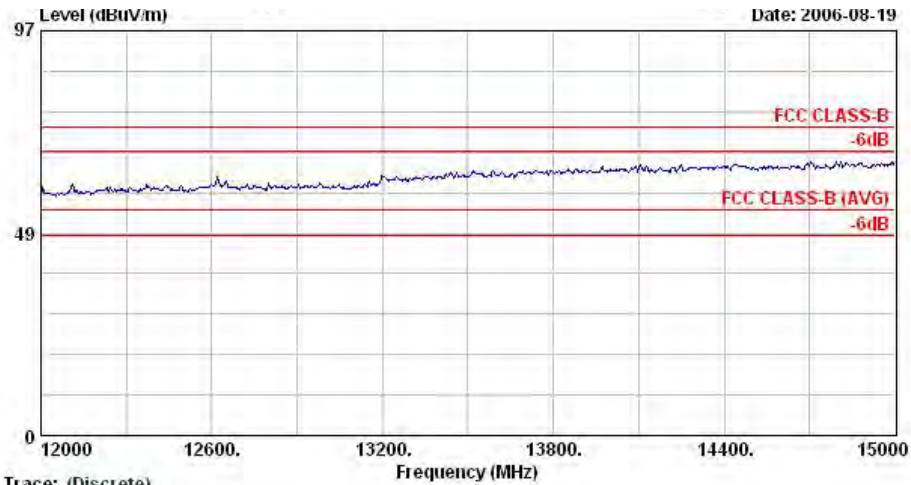


Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06,2437MHz
Plane : E2
Data Rate : 11



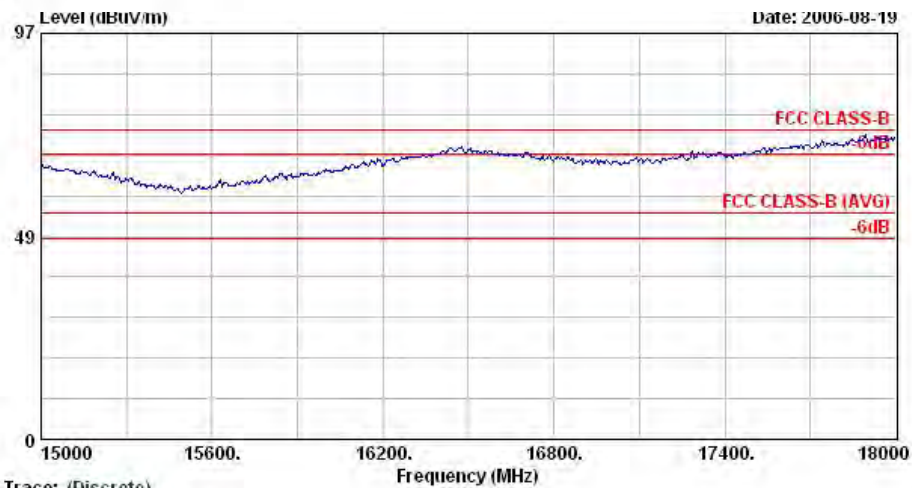
FCC TEST REPORT

Report No. : FR6D0809



Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CHU6;2437MHz
Plane : E2
Data Rate : 11



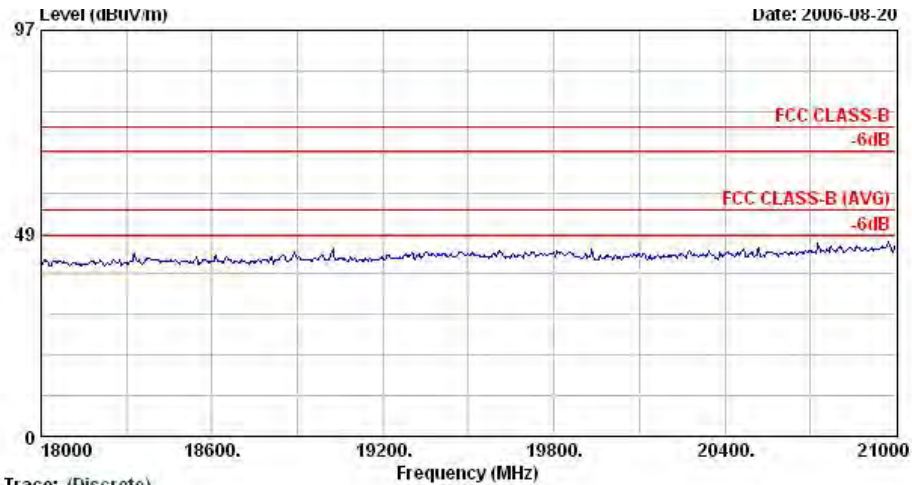
Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CHU6;2437MHz
Plane : E2
Data Rate : 11

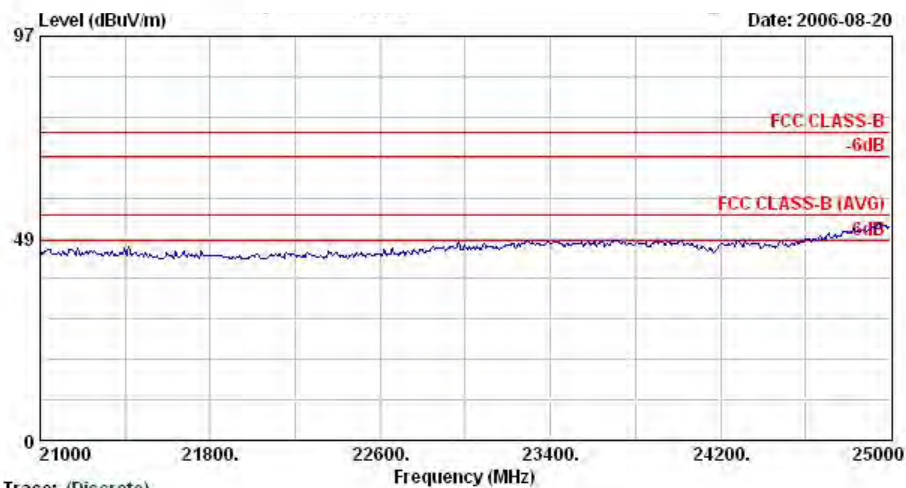


FCC TEST REPORT

Report No. : FR6D0809



Trace: (Discrete)
Site : 03CH06-HY
Condition : SHF-EHF HORN HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CHD6,2437MHz
Plane : E2
Data Rate : 11

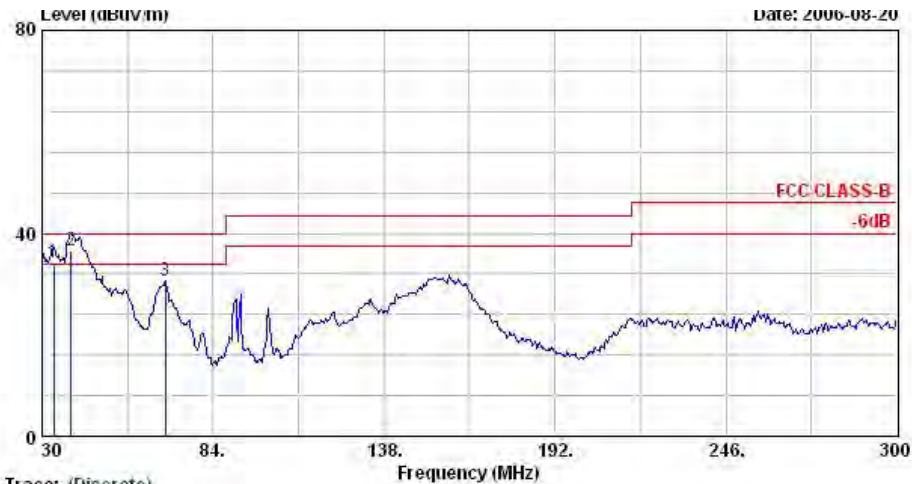


Trace: (Discrete)
Site : 03CH06-HY
Condition : SHF-EHF HORN HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CHD6,2437MHz
Plane : E2
Data Rate : 11



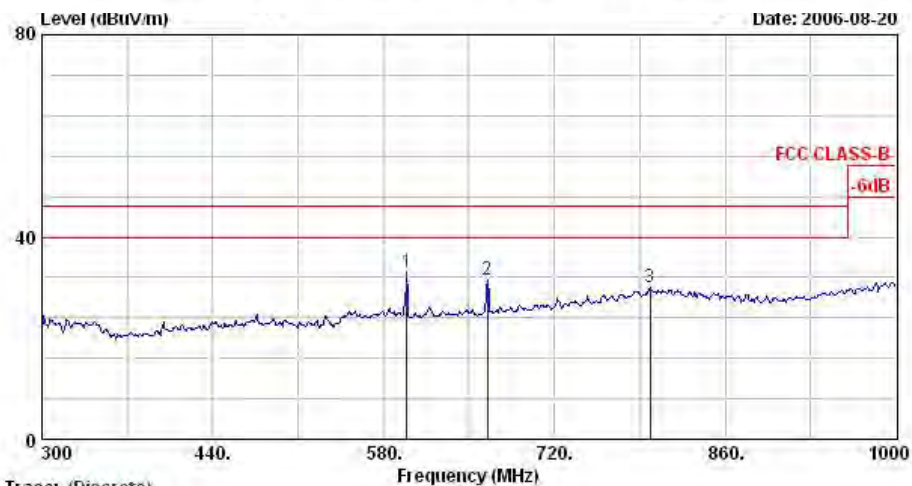
- Polarization : Vertical

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



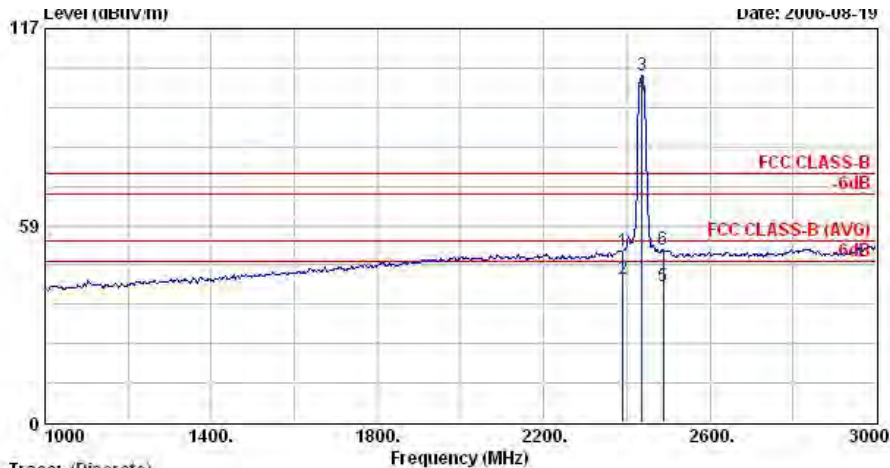
Trace: (Discrete)
 Site : 08CH06-HY
 Condition : BI-LOQ-2004-1122 VERTICAL
 EUT : Pocket PC Phone
 Power : 120Vac/60Hz
 Model :
 Memo : 11b Tx_CH06;2437MHz
 Plane : E2
 Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	33.8	34.31	-5.69	40.00	44.50	17.40	1.04	28.64	100	201 QP
2 @	39.2	36.55	-3.45	40.00	48.70	15.28	1.23	28.66	100	188 QP
3 @	68.9	30.53	-9.47	40.00	51.58	6.29	1.34	28.68	400	0 QP



Trace: (Discrete)
 Site : 08CH06-HY
 Condition : BI-LOQ-2004-1122 VERTICAL
 EUT : Pocket PC Phone
 Power : 120Vac/60Hz
 Model :
 Memo : 11b Tx_CH06;2437MHz
 Plane : E2
 Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	598.9	32.92	-13.08	46.00	39.06	17.97	4.66	28.77	100	0 QP
2 @	665.4	31.56	-14.44	46.00	36.98	18.66	4.93	29.01	100	0 QP
3 @	798.4	30.03	-15.97	46.00	31.45	21.84	5.60	28.87	100	0 QP

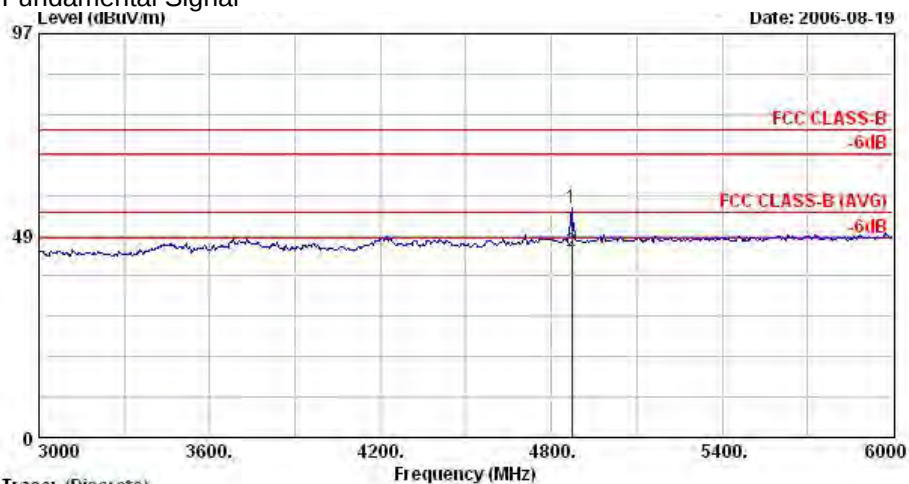


Trace: (Discrete)
Site : 03CH06-HY
Condition : HP-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06:2437MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	2390.0	51.06	-22.94	74.00	51.99	30.26	4.26	35.46	100	360 Peak
2 @	2390.0	42.53	-11.47	54.00	43.47	30.26	4.26	35.46	109	272 Average
3 @	2437.0	103.21			104.11	30.27	4.29	35.47	100	360 Peak
4 @	2437.0	97.59			98.49	30.28	4.29	35.47	109	272 Average
5 @	2488.0	40.62	-13.38	54.00	41.47	30.30	4.36	35.51	109	272 Average
6 @	2488.0	51.28	-22.72	74.00	52.14	30.30	4.36	35.51	100	360 Peak

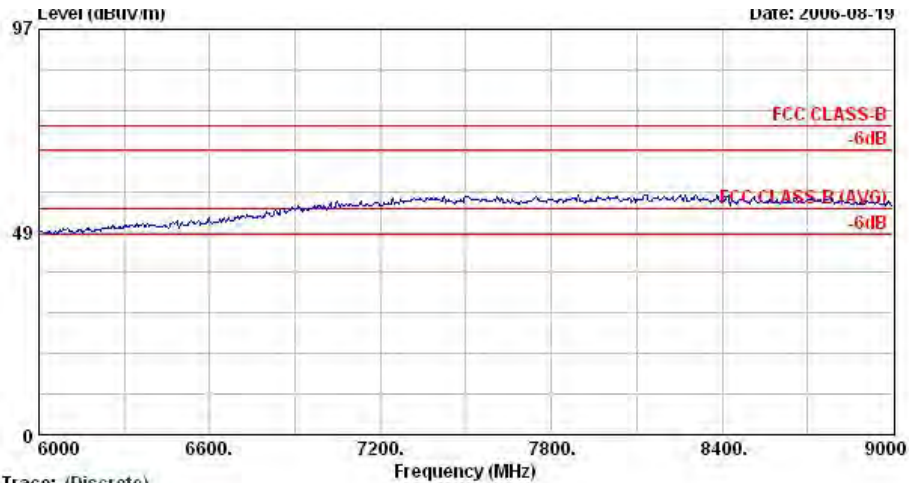
Remark:

1. #3 Fundamental Signal
2. #4 Fundamental Signal



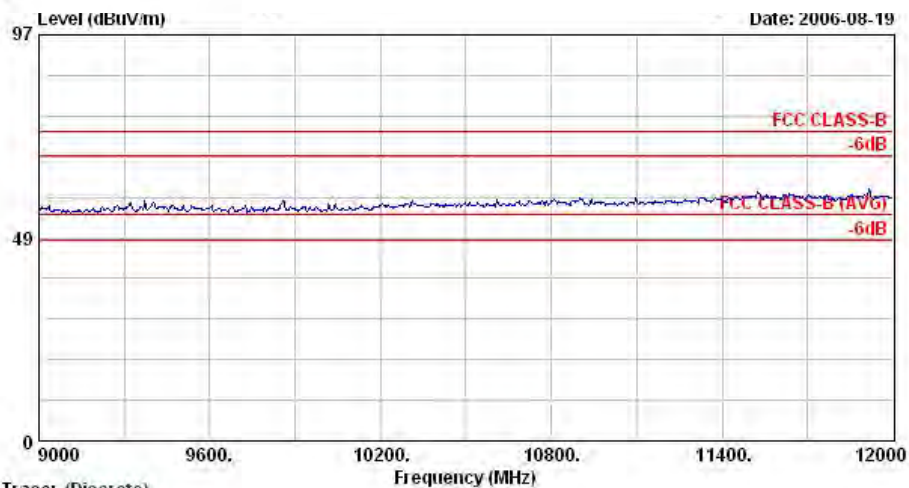
Trace: (Discrete)
Site : 03CH06-HY
Condition : HP-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06:2437MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	4872.0	55.34	-18.66	74.00	52.06	33.14	6.30	36.16	200	360 Peak
2 @	4872.0	44.70	-9.30	54.00	41.42	33.14	6.30	36.16	100	182 Average



Trace: (Discrete)

Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E2
Data Rate : 11



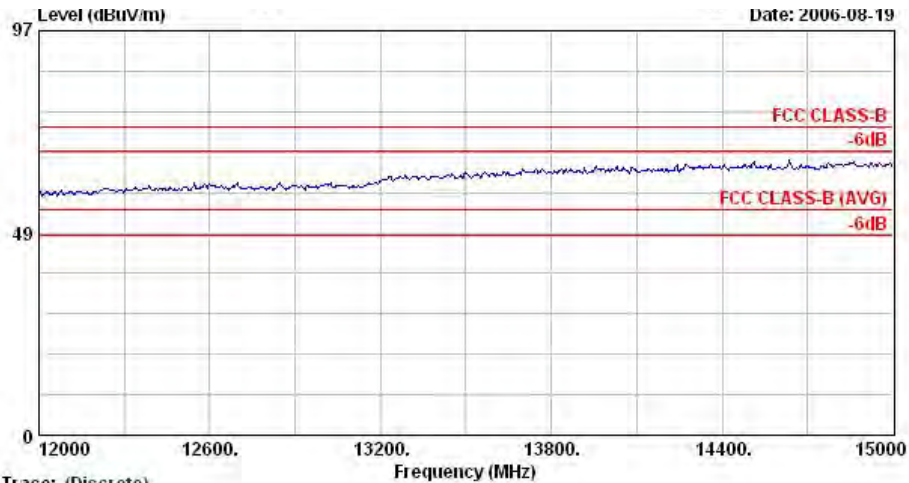
Trace: (Discrete)

Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E2
Data Rate : 11

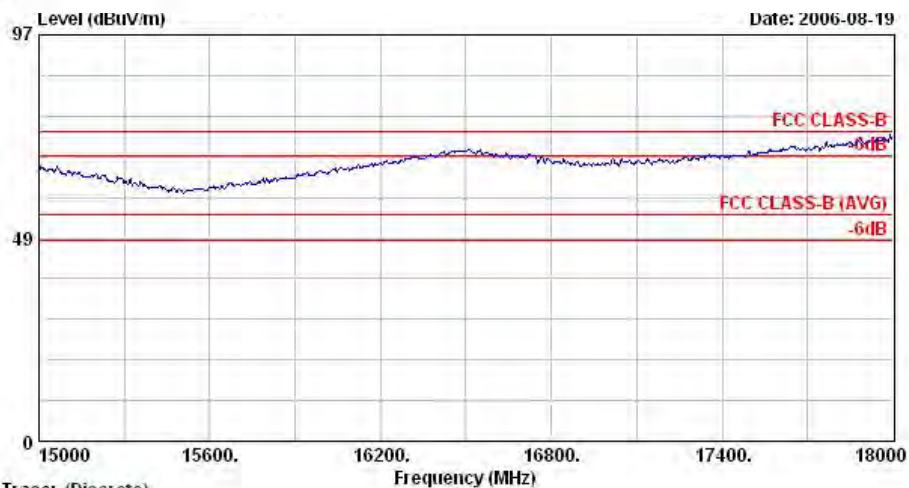


FCC TEST REPORT

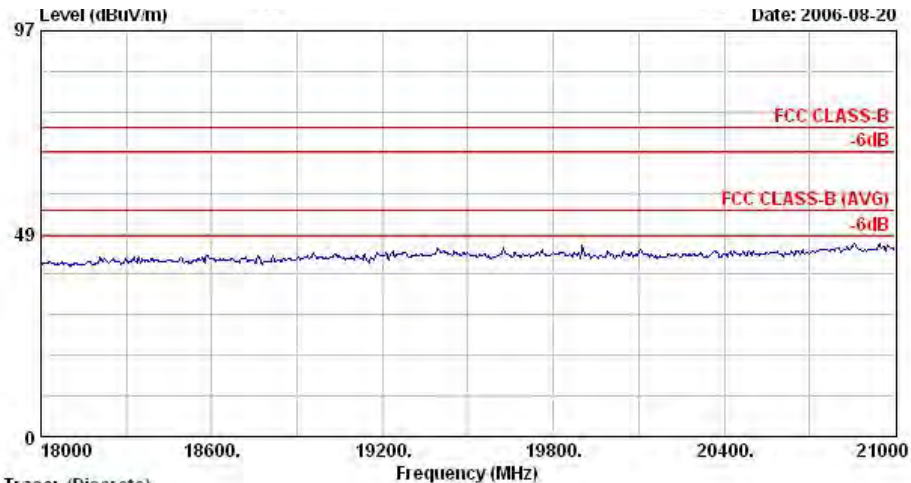
Report No. : FR6D0809



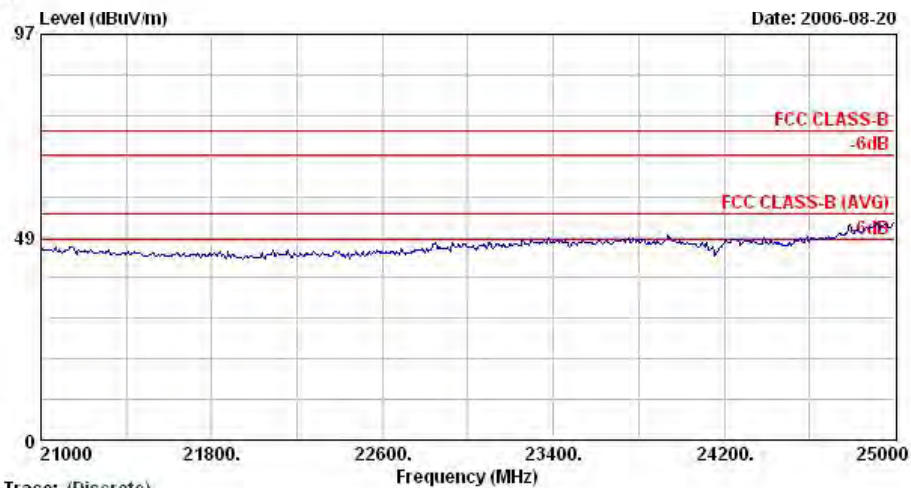
Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E2
Data Rate : 11



Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E2
Data Rate : 11



Trace: (Discrete)
Site : 08CH06-HY
Condition : SHF-EHF HORN VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E2
Data Rate : 11



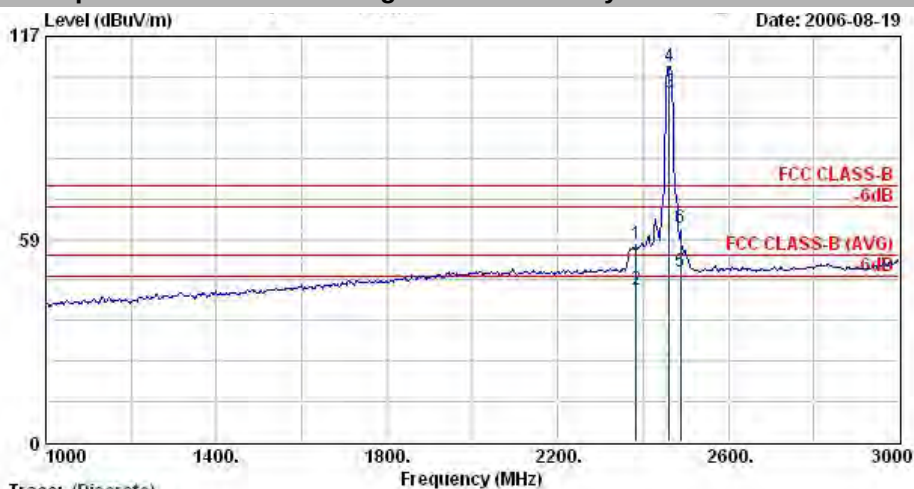
Trace: (Discrete)
Site : 08CH06-HY
Condition : SHF-EHF HORN VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E2
Data Rate : 11

Remark: There is no more obvious spurious emission except the listings above.



- Test Mode : Mode 3
- Polarization : Horizontal

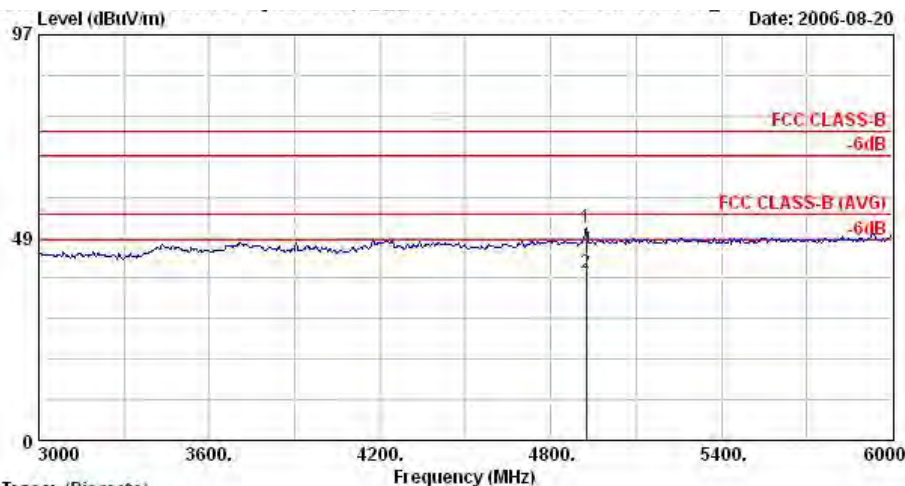
■ The test that passed at minimum margin was marked by the frame in the following table.



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					dBuV	dB/m	dB		deg	
1	2384.0	57.07	-16.93	74.00	58.03	30.25	4.23	35.44	100	360 Peak
2	2384.0	43.76	-10.24	54.00	44.72	30.25	4.23	35.44	100	194 Average
3 @	2462.0	101.02			101.90	30.29	4.33	35.49	100	194 Average
4 @	2462.0	108.49			109.37	30.29	4.33	35.49	100	360 Peak
5 @	2487.0	49.35	-4.65	54.00	50.21	30.29	4.36	35.51	100	194 Average
6	2487.0	61.65	-12.35	74.00	62.51	30.29	4.36	35.51	100	360 Peak

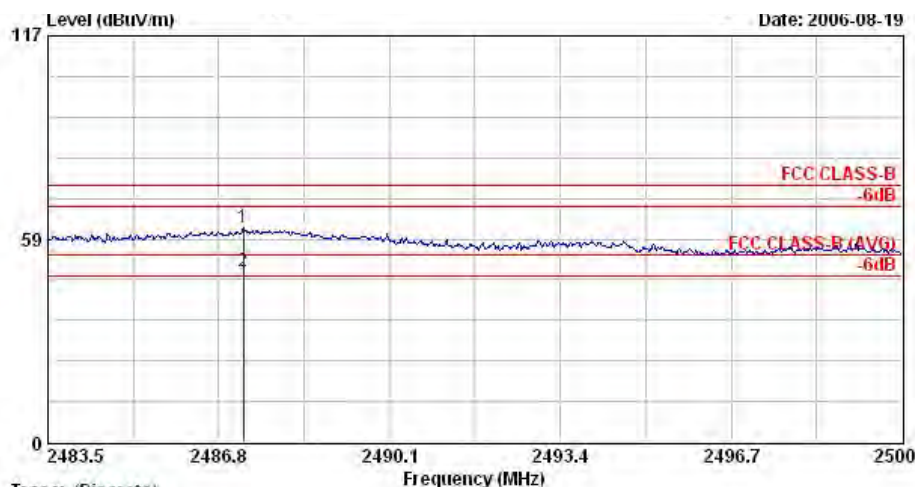
Remark:

- #3 Fundamental Signal
- #4 Fundamental Signal



Trace: (Discrete)
Site : 08CHD6-HY
Condition : HP-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11,2462MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	4924.0	50.93	-23.07	74.00	47.43	33.34	6.36	36.21	200	0 Peak
2	4924.0	39.99	-14.01	54.00	36.50	33.34	6.36	36.21	100	166 Average



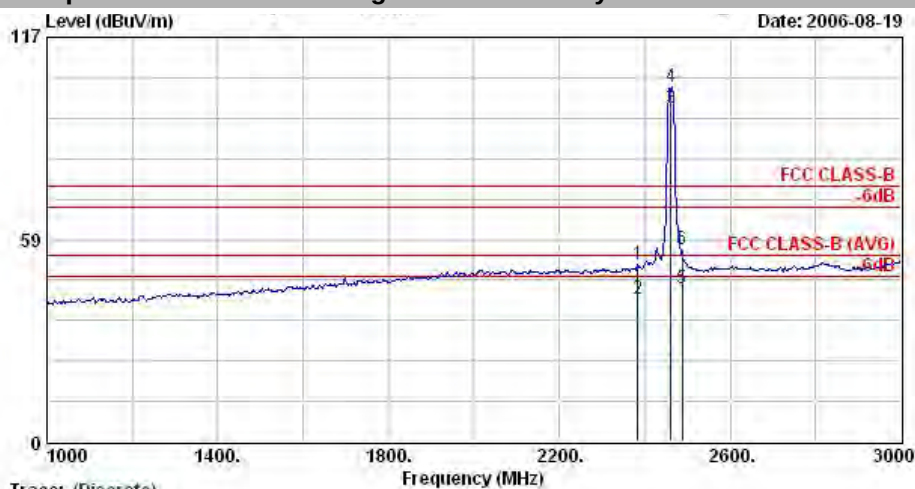
Trace: (Discrete)
Site : 08CHD6-HY
Condition : HP-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11,2462MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2487.3	61.65	-12.35	74.00	62.51	30.29	4.36	35.51	100	0 Peak
2 @	2487.3	49.35	-4.65	54.00	50.21	30.29	4.36	35.51	100	194 Average



- Polarization : Vertical

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

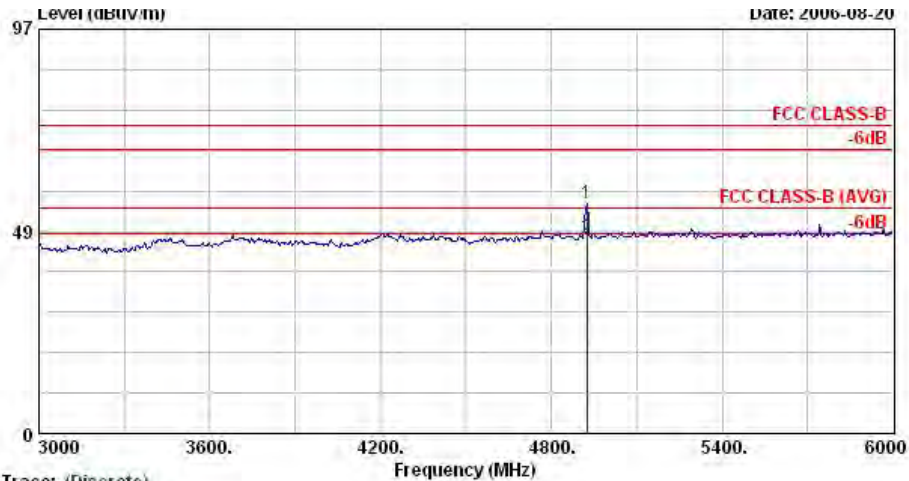


Trace: (Discrete)
Site : 08CH06-HY
Condition : HP-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2384.0	51.38	-22.62	74.00	52.33	30.25	4.23	35.44	100	360
2	2384.0	41.49	-12.51	54.00	42.45	30.25	4.23	35.44	108	271
3 @	2462.0	96.53			97.41	30.29	4.33	35.49	108	271
4 @	2462.0	102.52			103.40	30.29	4.33	35.49	100	360
5	2487.0	44.34	-9.66	54.00	45.20	30.29	4.36	35.51	108	271
6	2487.0	55.87	-18.13	74.00	56.73	30.29	4.36	35.51	100	360

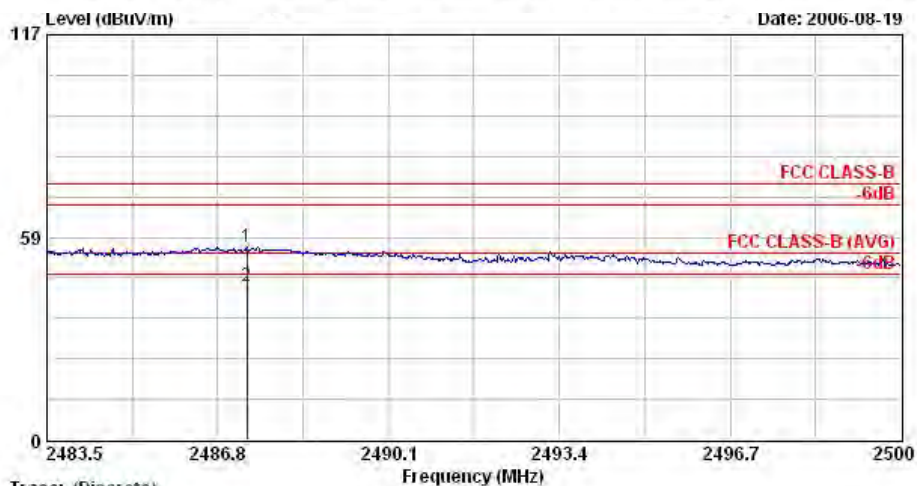
Remark:

1. #3 Fundamental Signal
2. #4 Fundamental Signal



Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E2
Data Rate : 11

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	Factor	Factor	dB	cm	deg	
1	4924.0	55.21	-18.79	74.00	51.72	6.36	36.21	200	360	Peak
2 @	4924.0	46.71	-7.29	54.00	43.22	6.36	36.21	100	197	Average



Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E2
Data Rate : 11

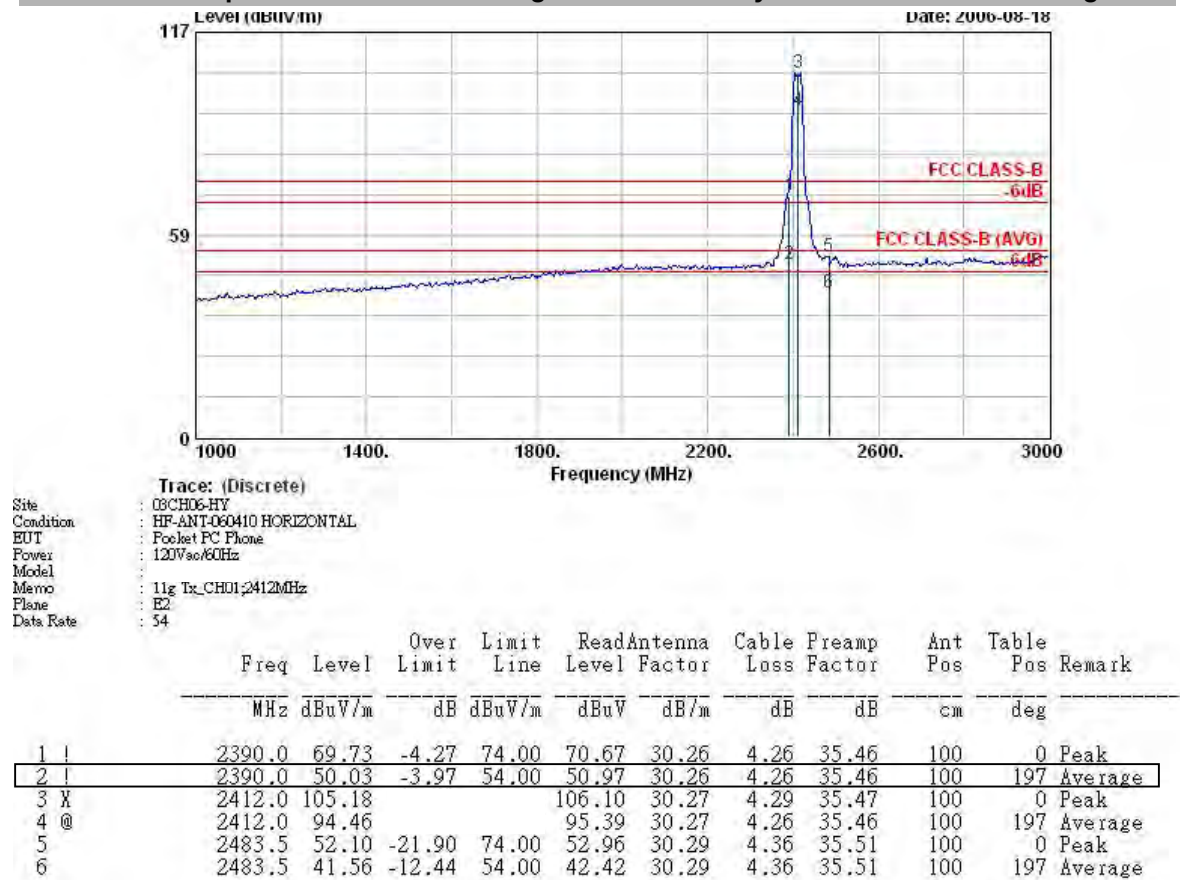
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	Factor	Factor	dB	cm	deg	
1	2487.4	55.87	-18.13	74.00	56.73	4.36	35.51	108	0	Peak
2 @	2487.4	44.34	-9.66	54.00	45.20	4.36	35.51	108	271	Average

Remark: There is no more obvious spurious emission except the listings above.



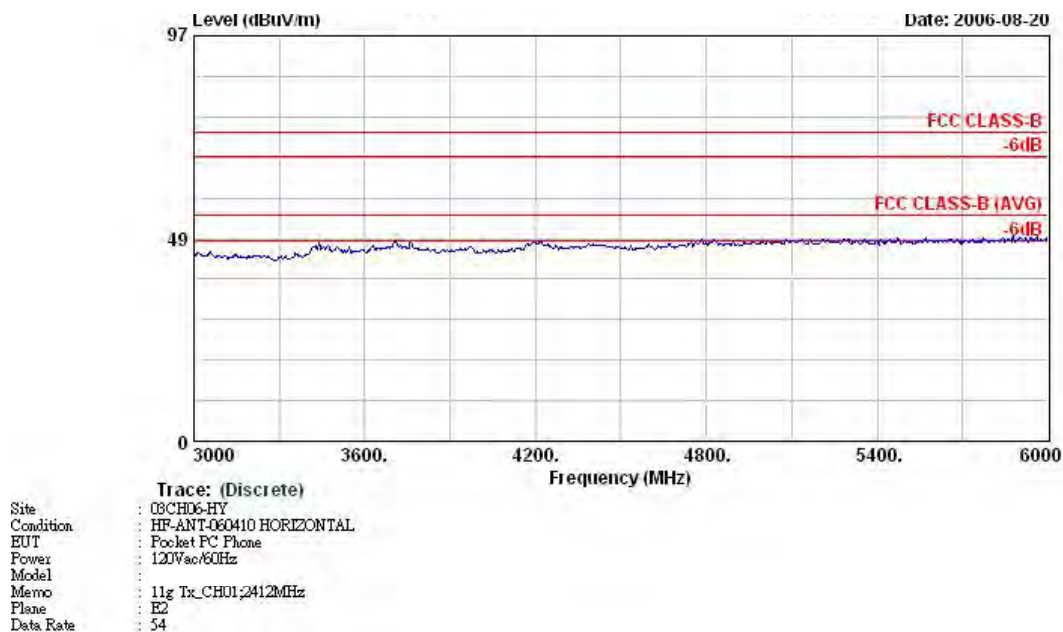
- Test Mode : Mode 4
- Polarization : Horizontal

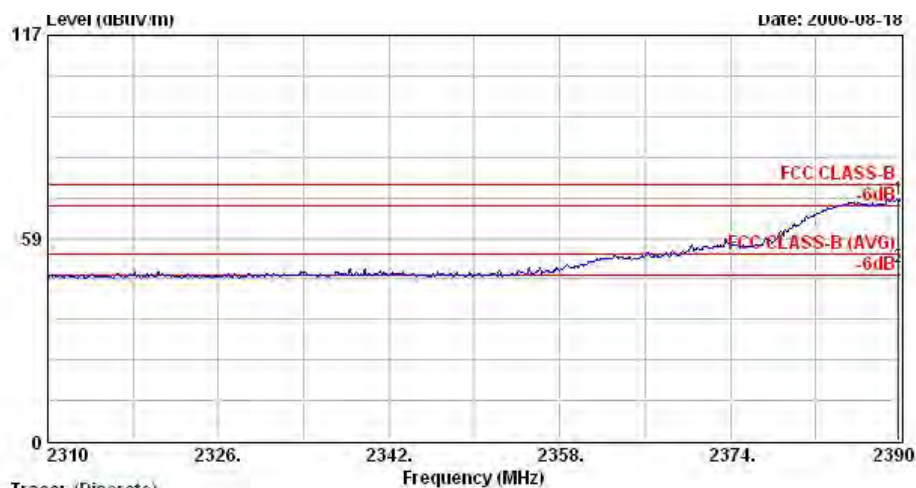
■ The test that passed at minimum margin was marked by the frame in the following table.



Remark:

- #3 Fundamental Signal
- #4 Fundamental Signal





Trace: (Discrete)

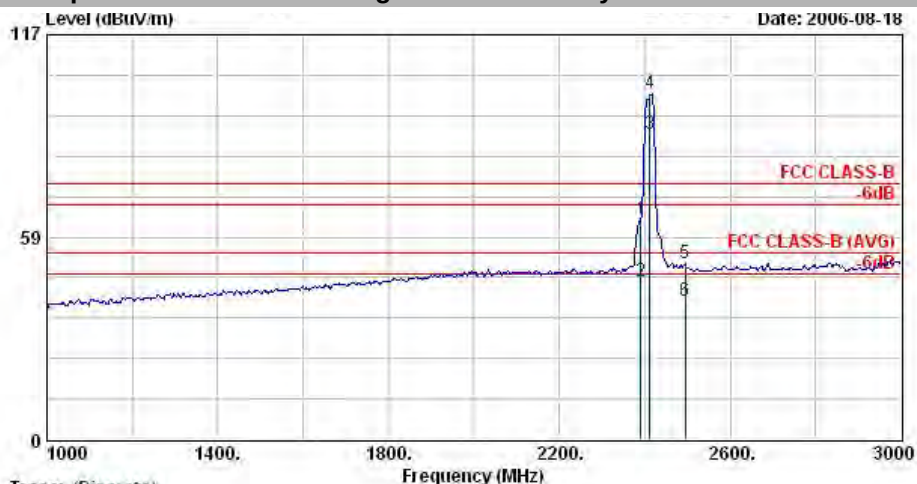
Site : 08CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g tx_CHUUP;412MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV		dB	cm	deg	
1	2389.8	69.73	-4.27	74.00	70.67	30.26	4.26	35.46	100	0 Peak
2	2389.8	50.03	-3.97	54.00	50.97	30.26	4.26	35.46	100	197 Average



Polarization : Vertical

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

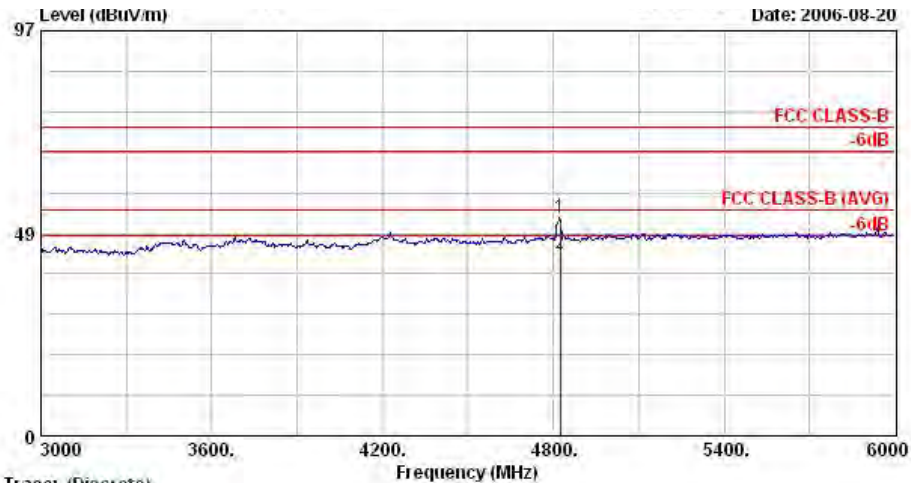


Trace: (Discrete)
Site : 08CH06-HY
Condition : HP-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH01;2412MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2390.0	63.40	-10.60	74.00	64.34	30.26	4.26	35.46	100	0 Peak
2	2390.0	45.70	-8.30	54.00	46.64	30.26	4.26	35.46	107	79 Average
3 X	2412.0	88.41			89.34	30.27	4.26	35.46	107	79 Average
4 X	2412.0	99.90			100.82	30.27	4.29	35.47	100	0 Peak
5	2494.0	50.84	-23.16	74.00	51.68	30.30	4.39	35.53	100	0 Peak
6	2494.0	39.93	-14.07	54.00	40.77	30.30	4.39	35.53	107	79 Average

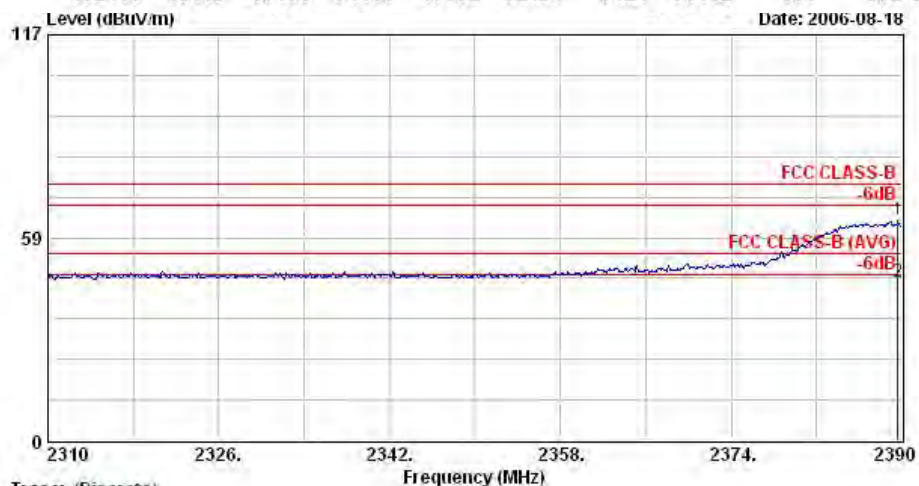
Remark:

1. #3 Fundamental Signal
2. #4 Fundamental Signal



Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH01,2412MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	4824.0	52.37	-21.63	74.00	49.30	32.94	6.24	36.12	200	360 Peak
2	4824.0	43.69	-10.31	54.00	40.62	32.94	6.24	36.12	100	182 Average



Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH01,2412MHz
Plane : E2
Data Rate : 54

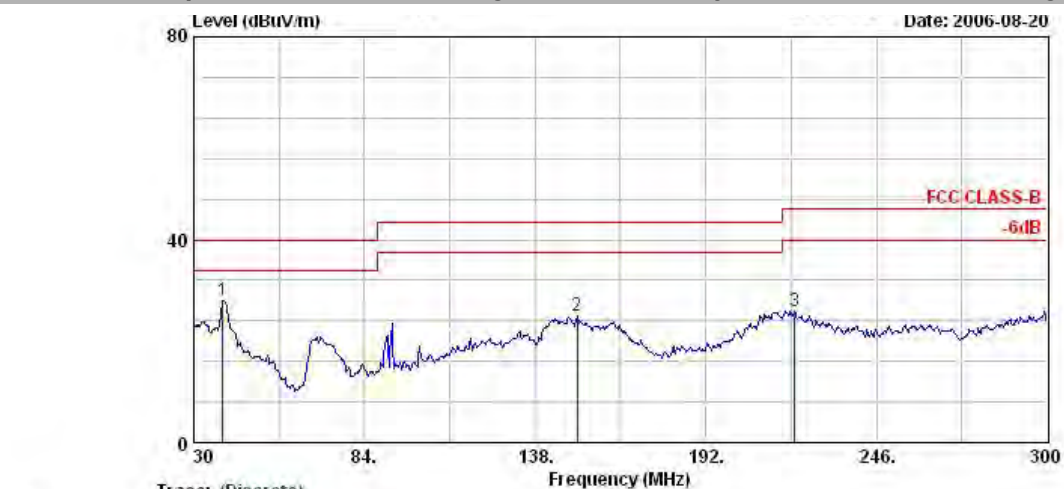
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	2389.6	63.40	-10.60	74.00	64.35	30.26	4.23	35.44	100	0 Peak
2	2389.6	45.70	-8.30	54.00	46.65	30.26	4.23	35.44	107	79 Average

Remark: There is no more obvious spurious emission except the listings above.

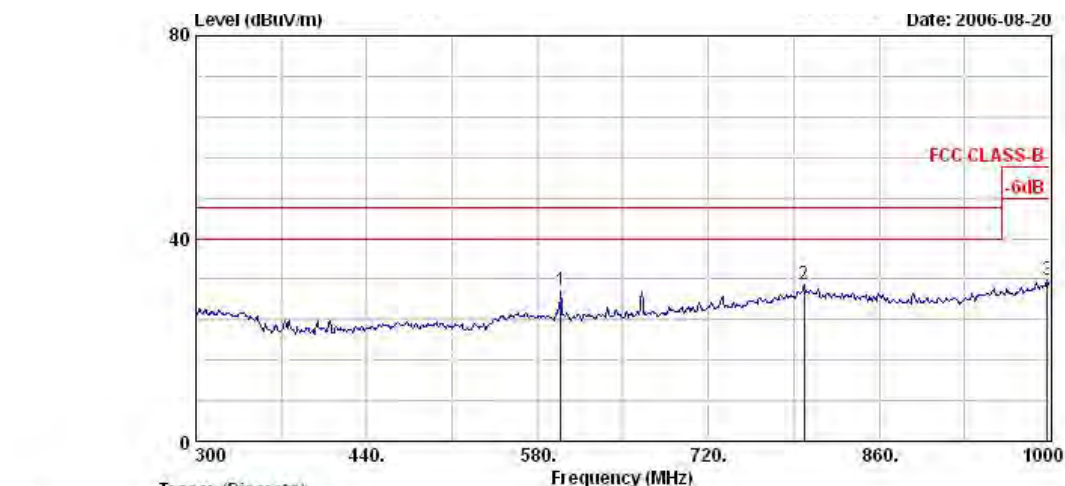


- Test Mode : Mode 5
- Polarization : Horizontal

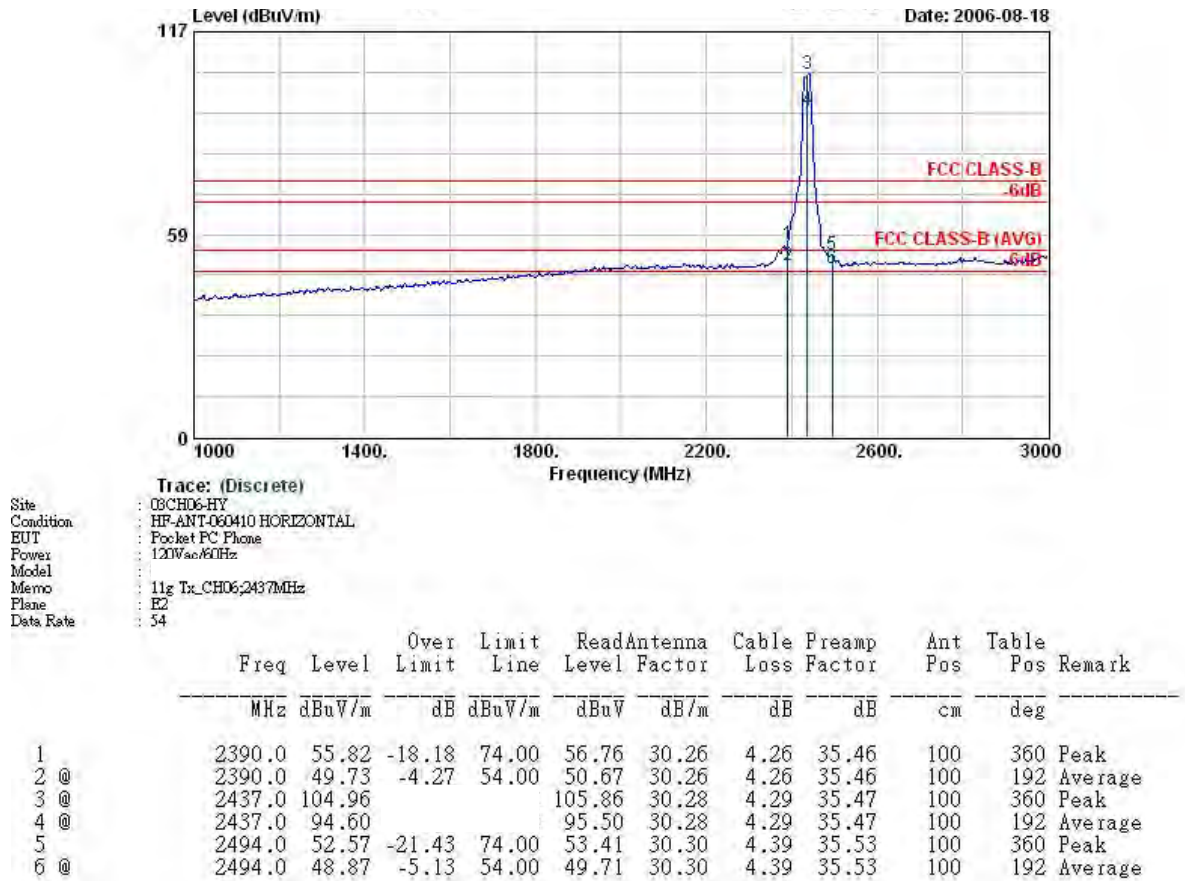
■ The test that passed at minimum margin was marked by the frame in the following table.



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					dBuV	dB/m	dB	cm	deg	
1 @	39.2	27.96	-12.04	40.00	40.11	15.28	1.23	28.66	105	225 QP
2	151.2	25.10	-18.40	43.50	42.67	9.05	2.19	28.81	400	0 QP
3	220.1	25.97	-20.03	46.00	42.58	9.50	2.69	28.81	400	0 QP

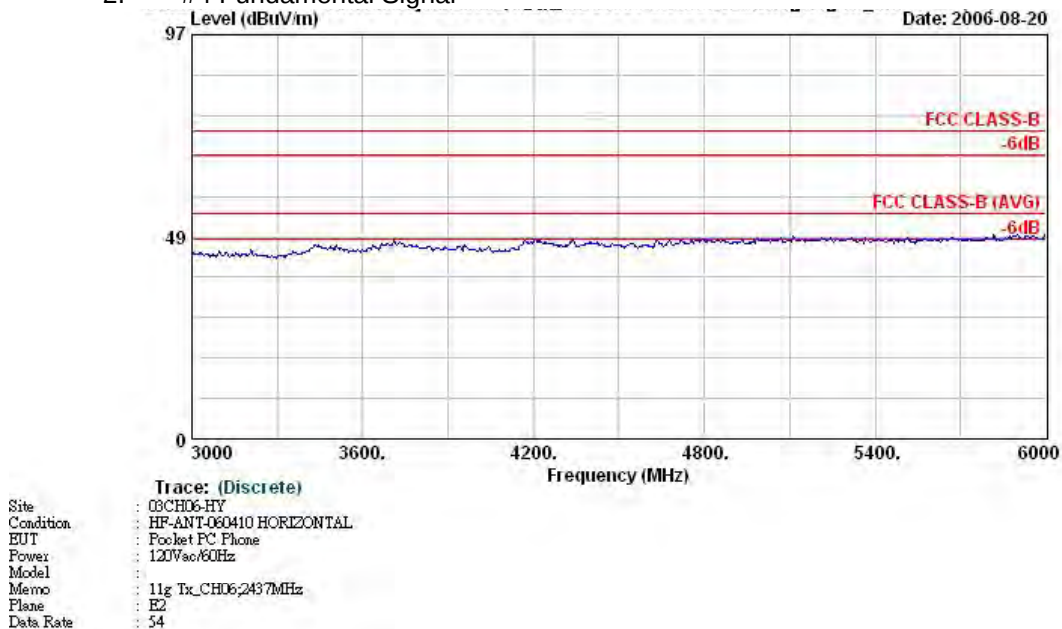


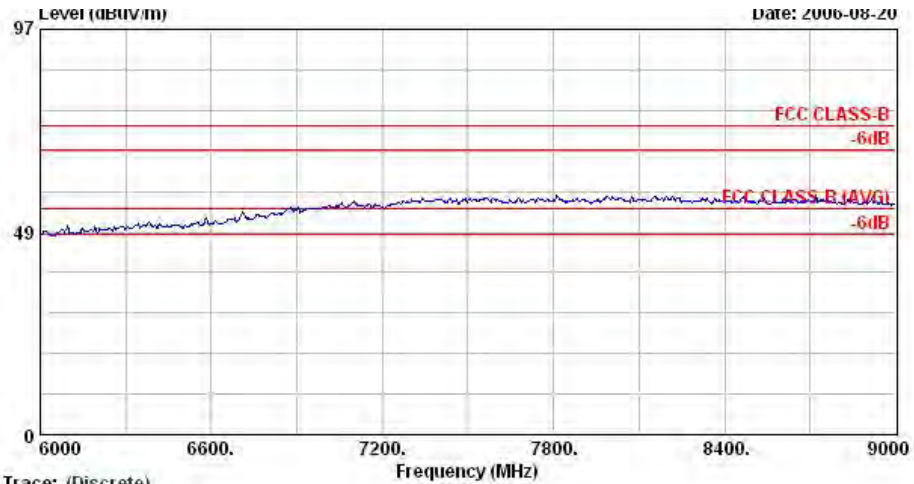
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					dBuV	dB/m	dB	cm	deg	
1	598.9	29.87	-16.13	46.00	36.01	17.97	4.66	28.77	100	0 QP
2	798.4	30.99	-15.01	46.00	32.42	21.84	5.60	28.87	100	0 QP
3	997.9	31.90	-22.10	54.00	31.55	22.91	6.22	28.79	100	0 QP



Remark:

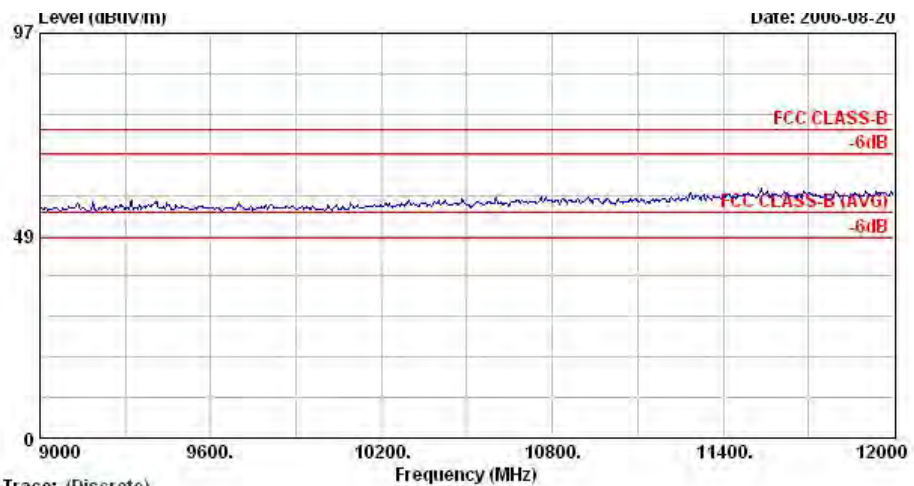
1. #3 Fundamental Signal
2. #4 Fundamental Signal





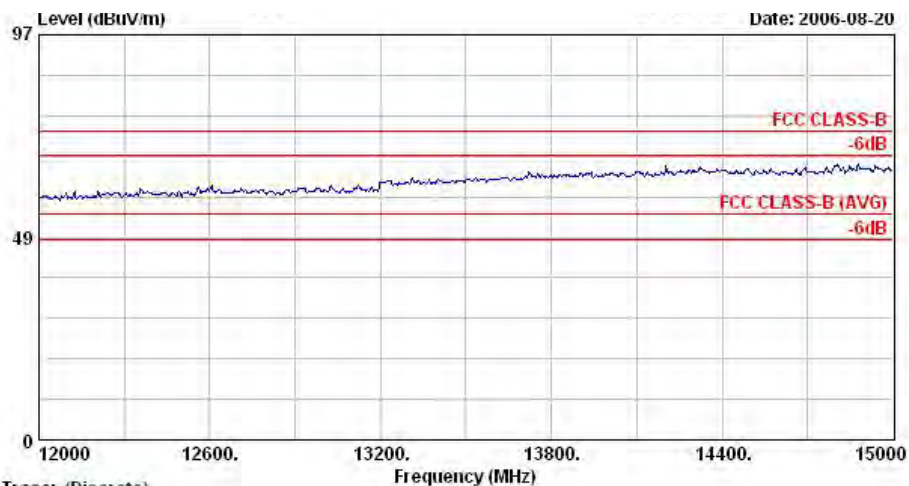
Trace: (Discrete)

Site : 03CHD6-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120V_{ac}/60Hz
Model :
Memo : 11g Tx_CHD6;2437MHz
Plane : E2
Data Rate : 54

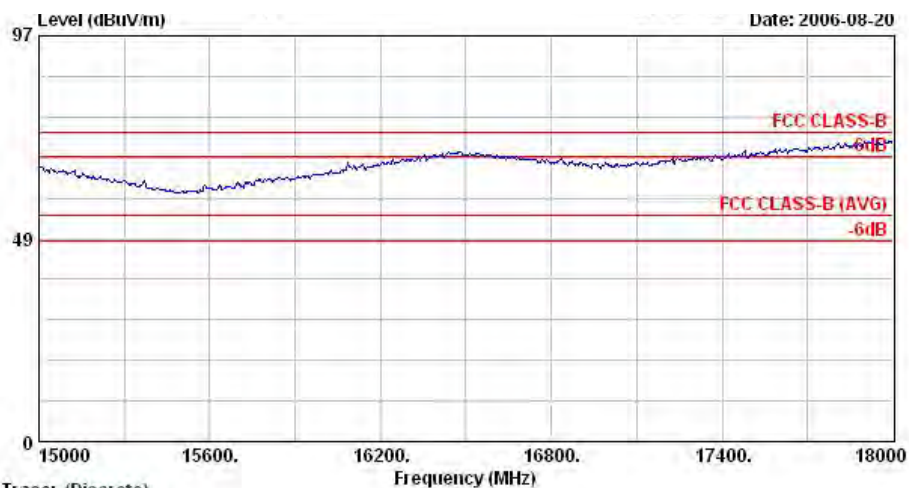


Trace: (Discrete)

Site : 03CHD6-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120V_{ac}/60Hz
Model :
Memo : 11g Tx_CHD6;2437MHz
Plane : E2
Data Rate : 54



Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11g Tx_CHD6;2437MHz
Plane : E2
Data Rate : 54

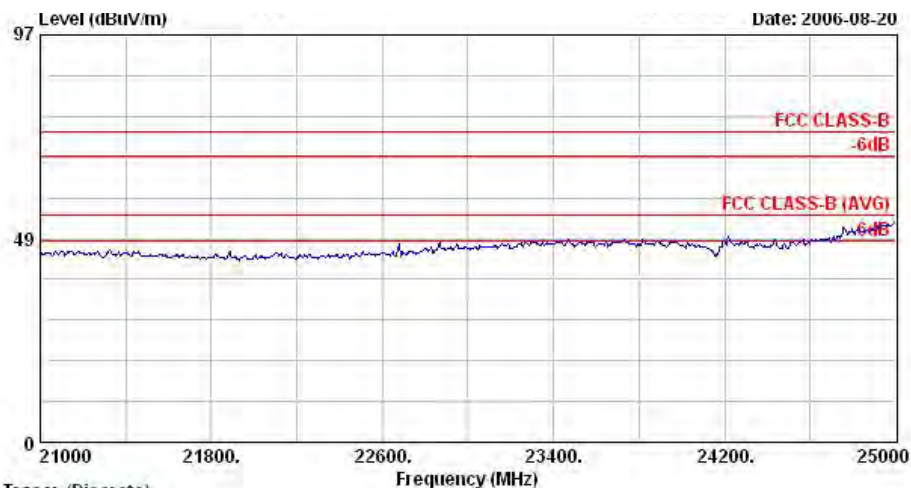
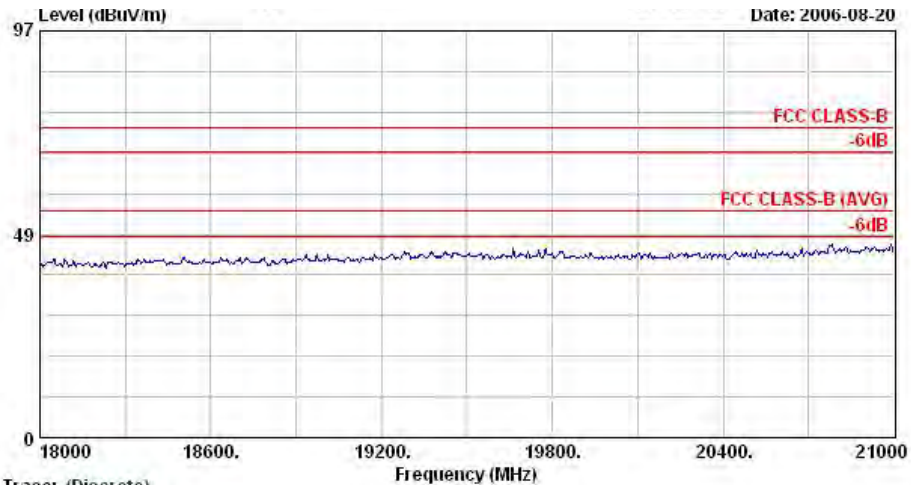


Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : 11g Tx_CHD6;2437MHz
Plane : E2
Data Rate : 54



FCC TEST REPORT

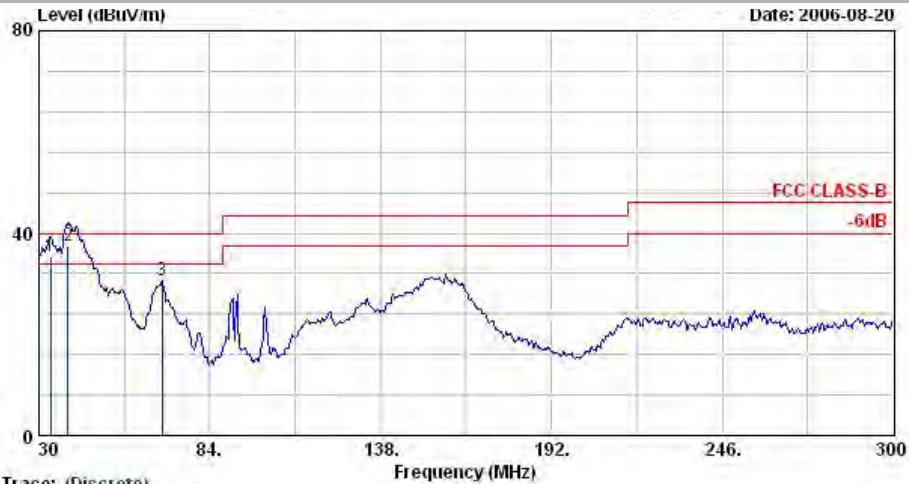
Report No. : FR6D0809





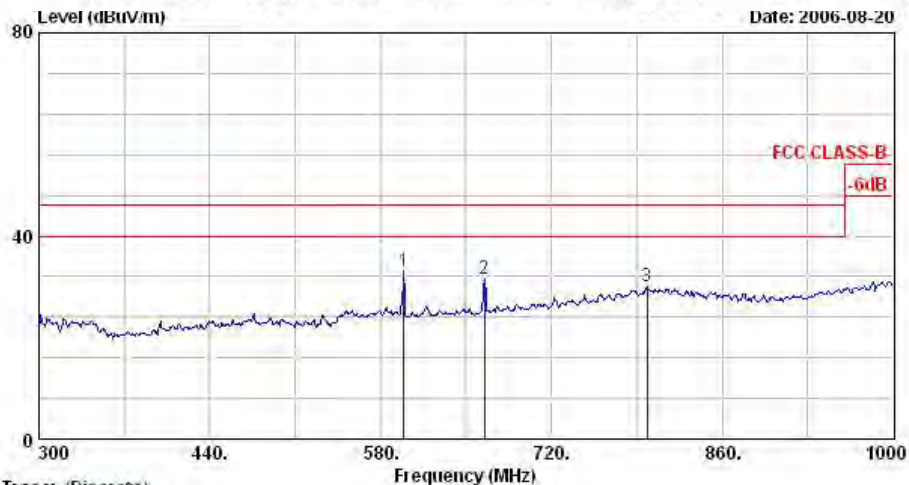
Polarization : Vertical

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



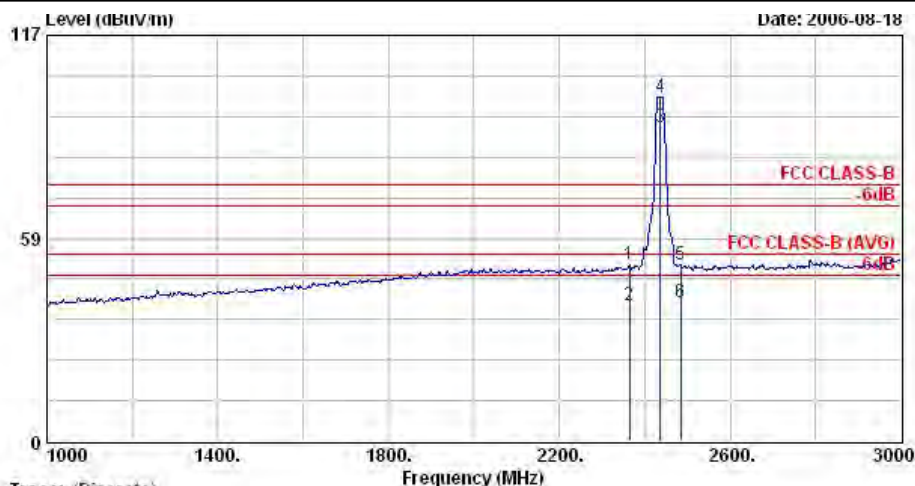
Trace: (Discrete)
Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06,2437MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	33.8	35.31	-4.69	40.00	45.50	17.40	1.04	28.64	100	116 QP
2 @	39.2	37.55	-2.45	40.00	49.70	15.28	1.23	28.66	100	255 QP
3 @	68.9	30.53	-9.47	40.00	51.58	6.29	1.34	28.68	400	0 QP



Trace: (Discrete)
Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06,2437MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	598.9	32.92	-13.08	46.00	39.06	17.97	4.66	28.77	100	0 QP
2	665.4	31.56	-14.44	46.00	36.98	18.66	4.93	29.01	100	0 QP
3	798.4	30.03	-15.97	46.00	31.45	21.84	5.60	28.87	100	0 QP



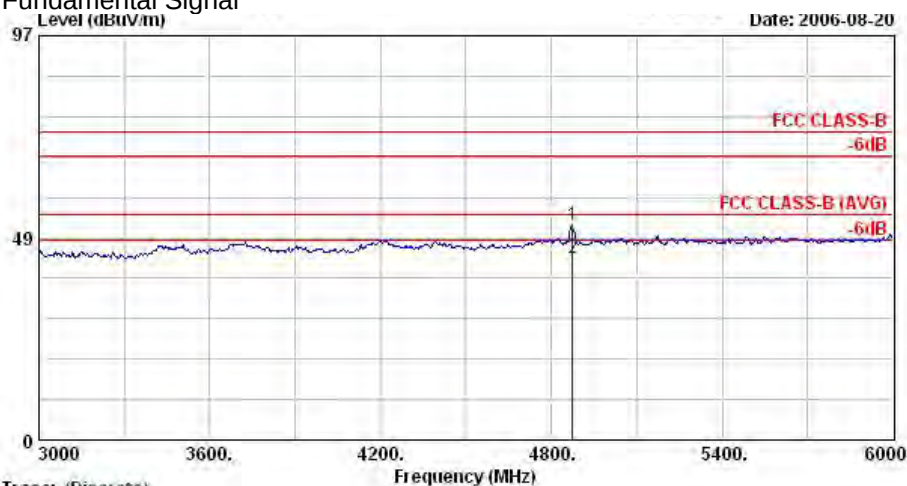
Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06:2437MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Ant Pos	Table Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2364.0	50.71	-23.29	74.00	51.68	30.24	4.20	35.42	100	360	Peak
2	2364.0	39.35	-14.65	54.00	40.33	30.24	4.20	35.42	104	236	Average
3 @	2437.0	90.35			91.25	30.28	4.29	35.47	104	236	Average
4 @	2437.0	99.35			100.25	30.28	4.29	35.47	100	360	Peak
5	2483.5	50.98	-23.02	74.00	51.84	30.29	4.36	35.51	100	360	Peak
6	2483.5	40.00	-14.00	54.00	40.86	30.29	4.36	35.51	104	236	Average

Remark:

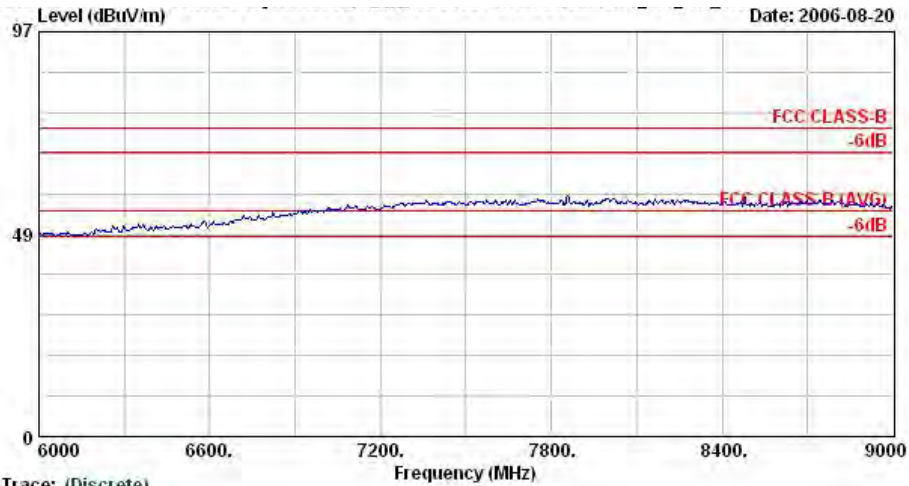
1. #3 Fundamental Signal
2. #4 Fundamental Signal



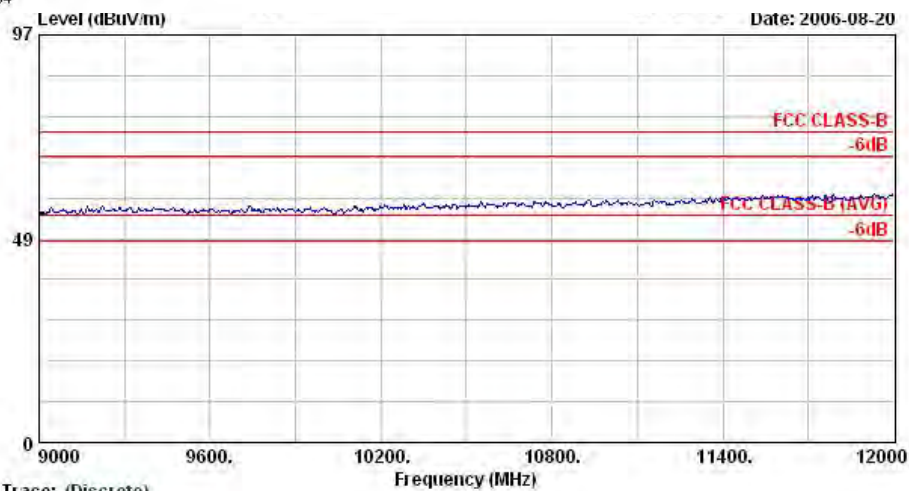
Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06:2437MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	4874.0	51.69	-22.31	74.00	48.41	33.14	6.30	36.16	200	360	Peak
2 @	4874.0	43.70	-10.30	54.00	40.42	33.14	6.30	36.16	100	187	Average



Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06,2437MHz
Plane : E2
Data Rate : 54

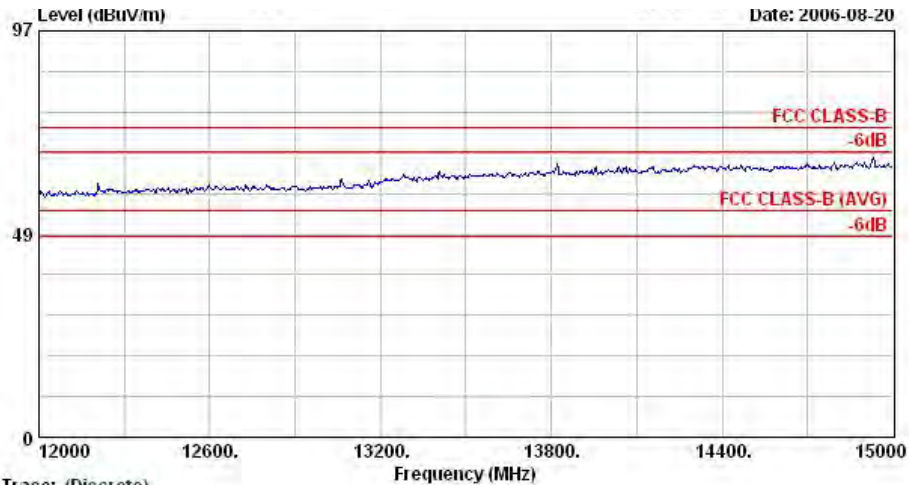


Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06,2437MHz
Plane : E2
Data Rate : 54

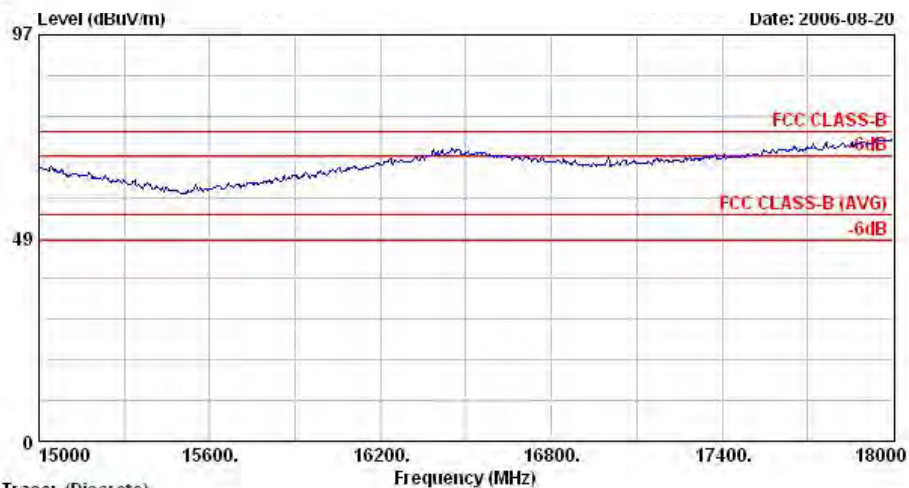


FCC TEST REPORT

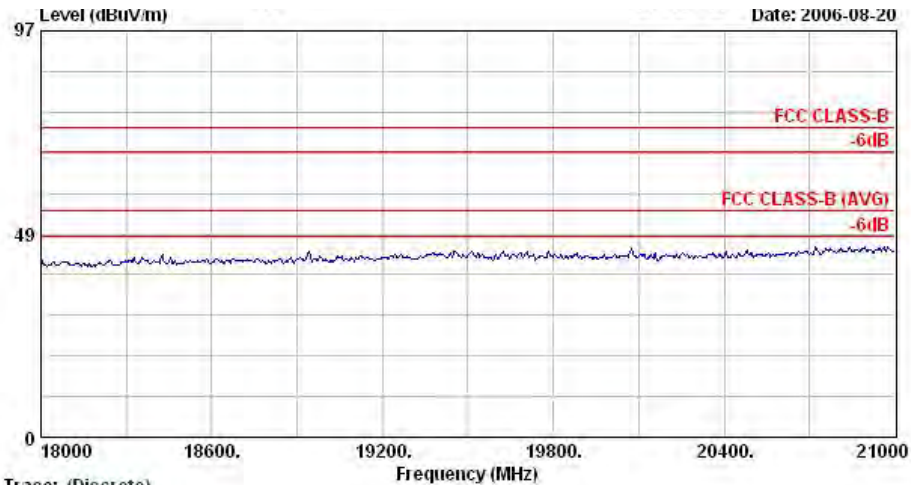
Report No. : FR6D0809



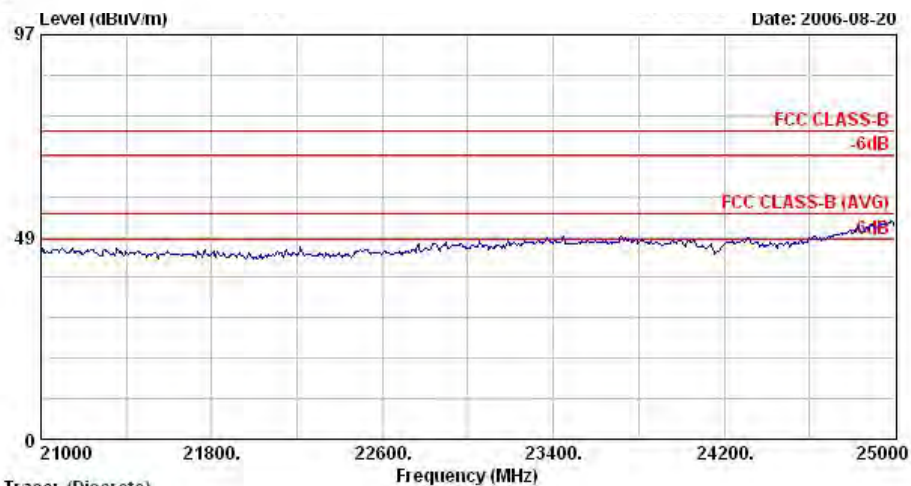
Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06;2437MHz
Plane : E2
Data Rate : 54



Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06;2437MHz
Plane : E2
Data Rate : 54



Trace: (Discrete)
Site : 08CH06-HY
Condition : SHF-EHF HORN VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06,2437MHz
Plane : E2
Data Rate : 54



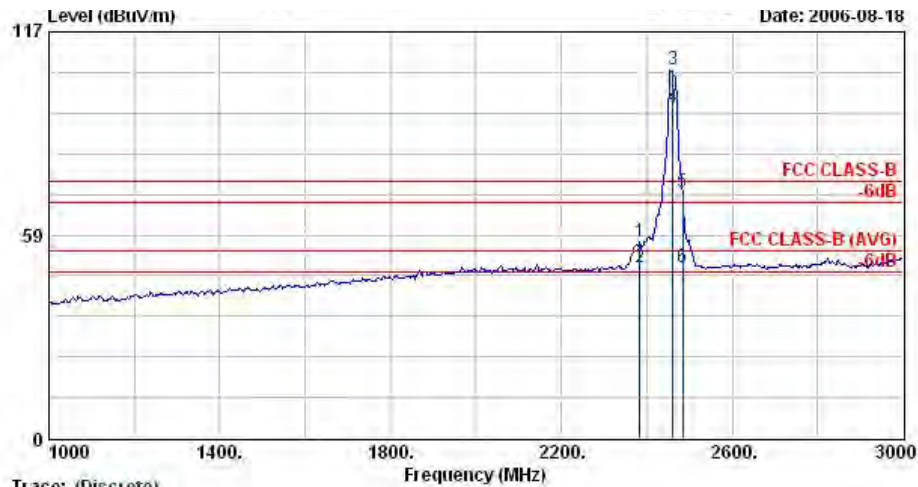
Trace: (Discrete)
Site : 08CH06-HY
Condition : SHF-EHF HORN VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH06,2437MHz
Plane : E2
Data Rate : 54

Remark: There is no more obvious spurious emission except the listings above.



- Test Mode : Mode 6
- Polarization : Horizontal

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

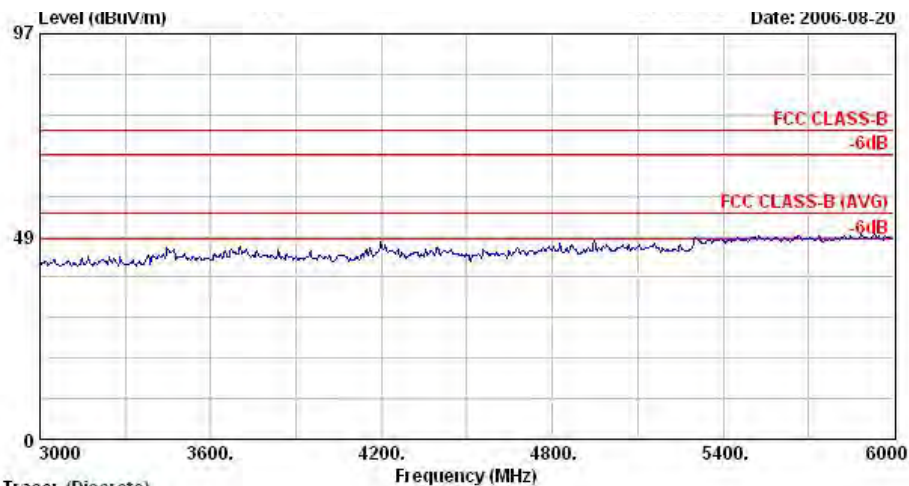


Trace: (Discrete)
Site : 03CH06-HY
Condition : HP-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH11:2462MHz
Plane : E2
Data Rate : 54

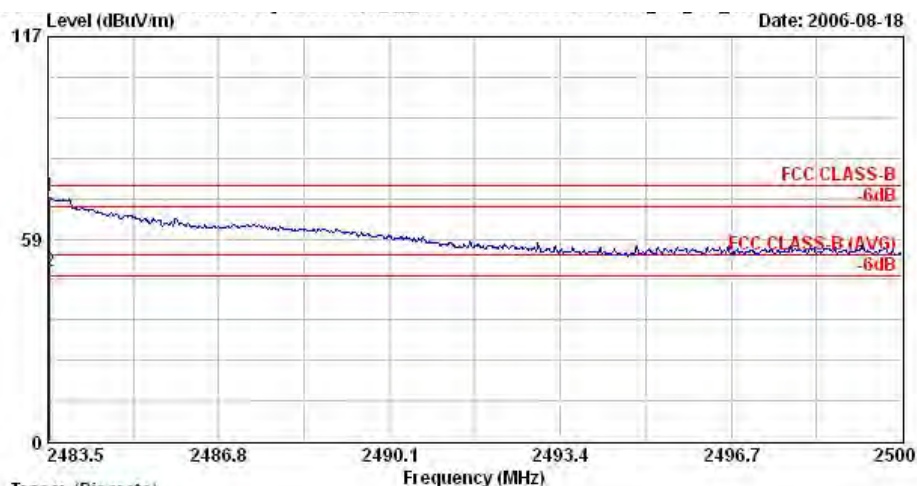
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					Factor			cm	deg	
1	2384.0	56.60	-17.40	74.00	57.56	30.25	4.23	35.44	100	0 Peak
2 !	2384.0	49.30	-4.70	54.00	50.24	30.26	4.26	35.46	100	193 Average
3 X	2462.0	106.03			106.91	30.29	4.33	35.49	100	0 Peak
4 @	2462.0	95.14			96.02	30.29	4.33	35.49	100	193 Average
5 !	2483.5	70.78	-3.22	74.00	71.64	30.29	4.36	35.51	100	0 Peak
6 !	2483.5	49.09	-4.91	54.00	49.95	30.29	4.36	35.51	100	193 Average

Remark:

- #3 Fundamental Signal
- #4 Fundamental Signal



Trace: (Discrete)
Site : 03CH06-HY
Condition : HP-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH11:2462MHz
Plane : E2
Data Rate : 54



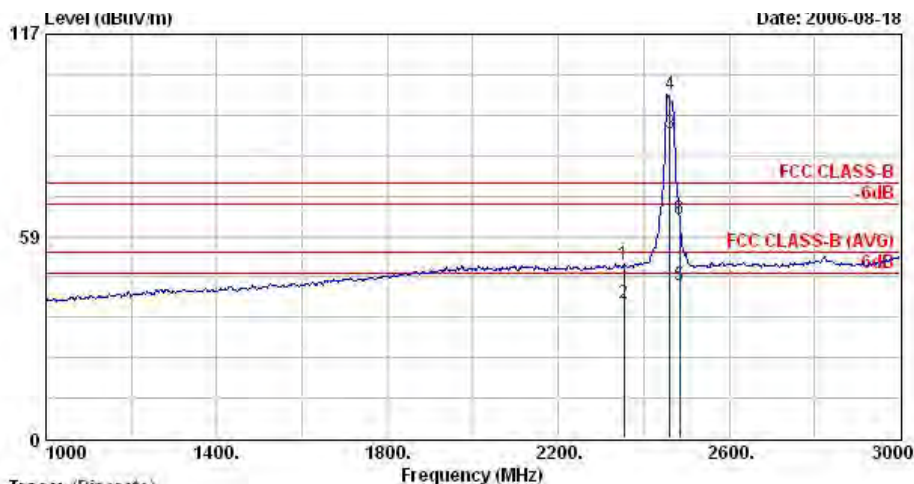
Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH11,2462MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2483.5	70.78	-3.22	74.00	71.64	30.29	4.36	35.51	100	0 Peak
2	2483.5	49.09	-4.91	54.00	49.95	30.29	4.36	35.51	100	193 Average



- Polarization : Vertical

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

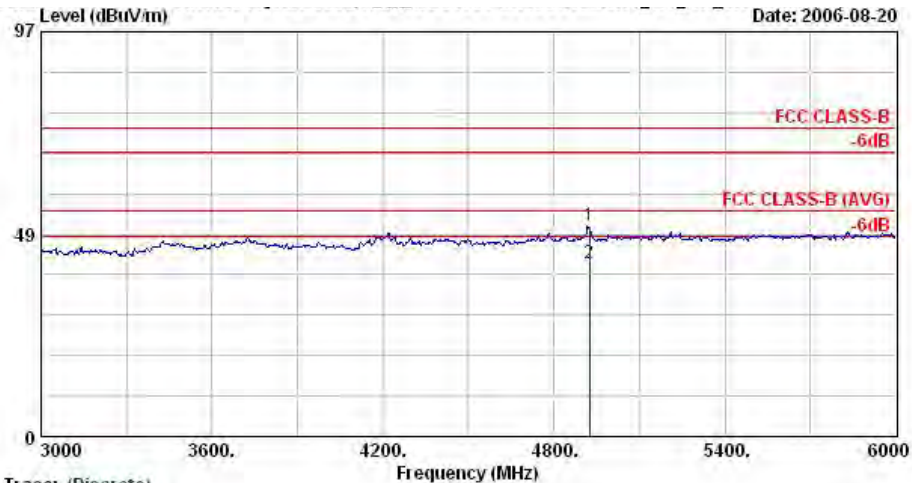


Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wsc/60Hz
Model :
Memo : 11g Tx_CH11:2462MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2354.0	50.56	-23.44	74.00	51.54	30.24	4.20	35.42	100	360 Peak
2	2354.0	39.07	-14.93	54.00	40.05	30.24	4.20	35.42	105	212 Average
3 X	2462.0	88.26			89.14	30.29	4.33	35.49	105	212 Average
4 X	2462.0	99.59			100.47	30.29	4.33	35.49	100	360 Peak
5	2483.5	44.15	-9.85	54.00	45.01	30.29	4.36	35.51	105	212 Average
6	2483.5	63.55	-10.45	74.00	64.41	30.29	4.36	35.51	100	360 Peak

Remark:

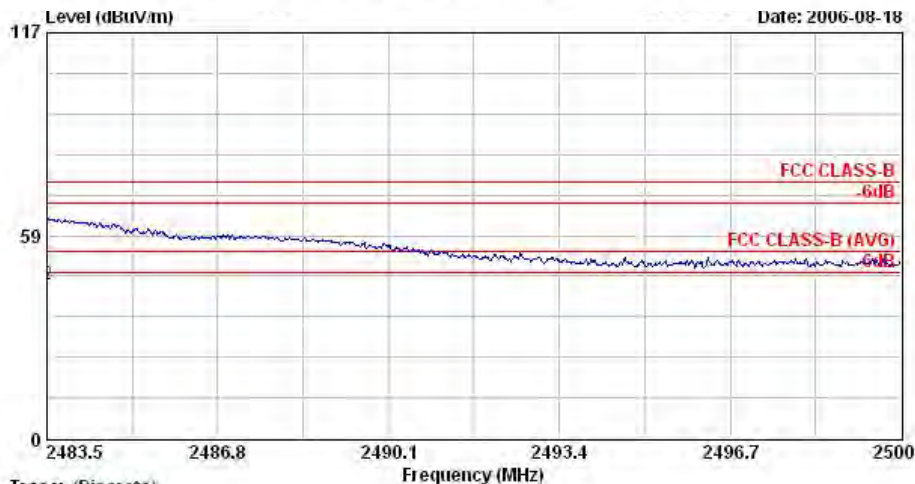
1. #3 Fundamental Signal
2. #4 Fundamental Signal



Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH11,2462MHz
Plane : E2
Data Rate : 54

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	4924.0	50.33	-23.67	74.00	46.90	33.27	6.36	36.21	200	360 Peak
2	4924.0	41.51	-12.49	54.00	38.02	33.34	6.36	36.21	100	185 Average



Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : 11g Tx_CH11,2462MHz
Plane : E2
Data Rate : 54

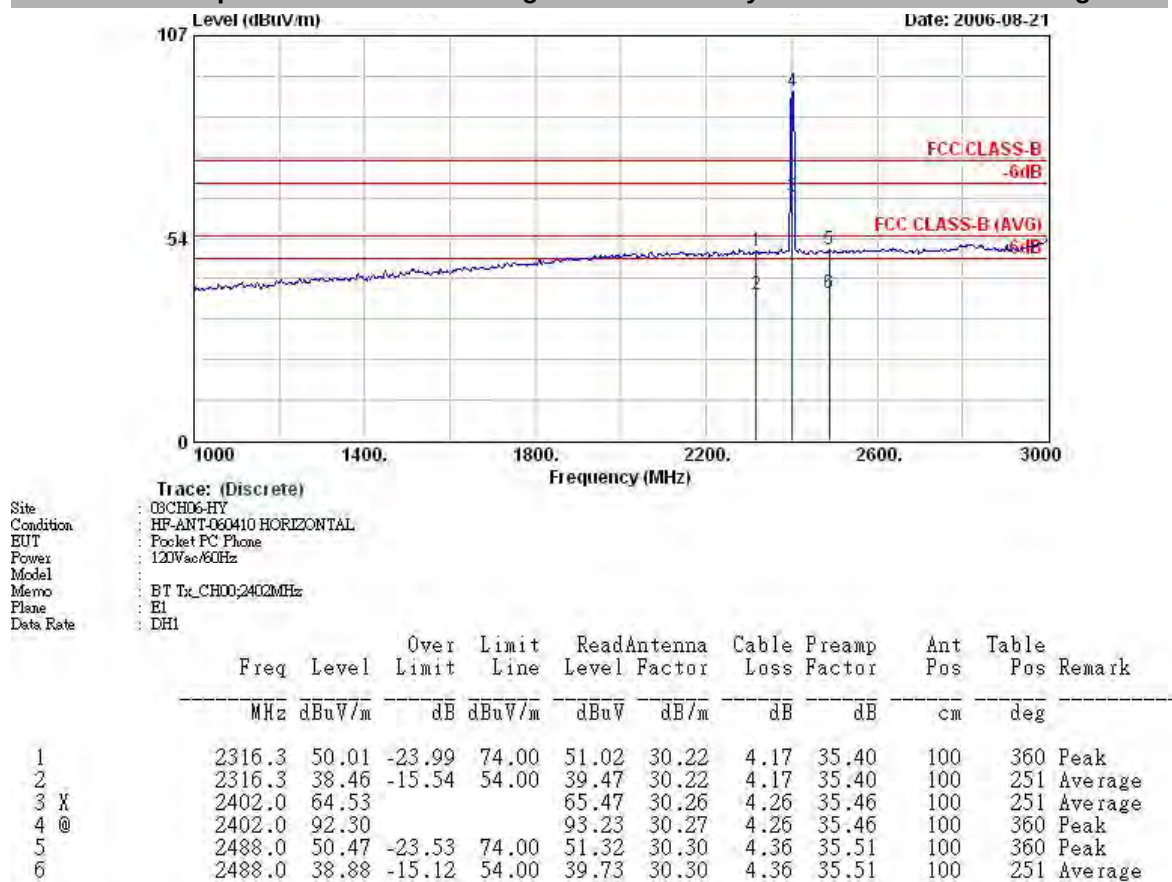
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2483.5	63.55	-10.45	74.00	64.41	30.29	4.36	35.51	100	0 Peak
2	2483.5	44.15	-9.85	54.00	45.01	30.29	4.36	35.51	105	212 Average

Remark: There is no more obvious spurious emission except the listings above.



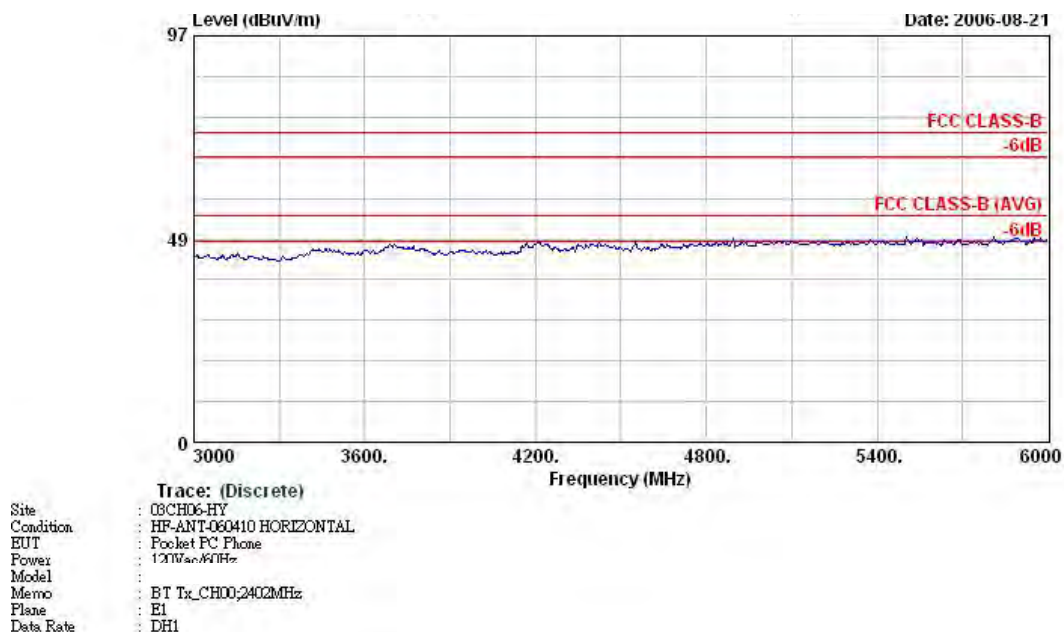
- Test Mode : Mode 7
- Polarization : Horizontal

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



Remark:

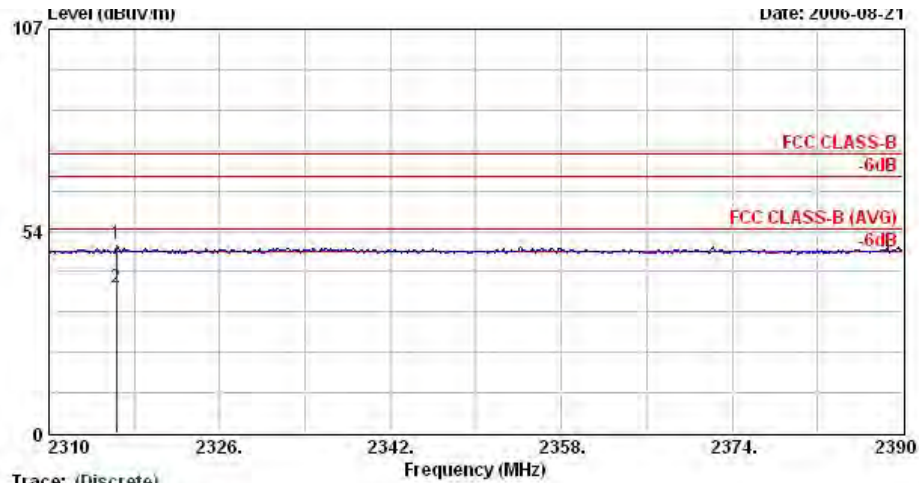
- #3 Fundamental Signal
- #4 Fundamental Signal





FCC TEST REPORT

Report No. : FR6D0809



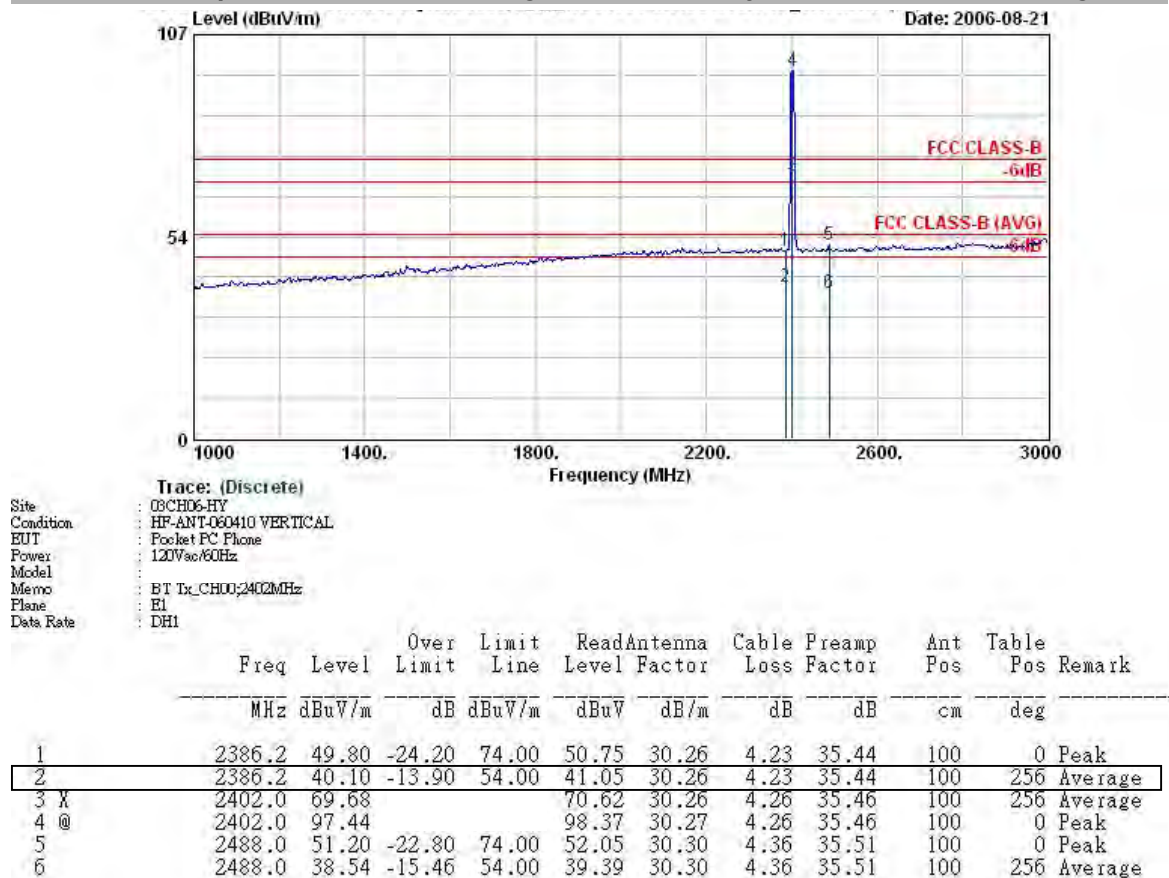
Site : 08CH06-HY
Condition : HF-ANT-080410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH00;2402MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	2316.3	50.01	-23.99	74.00	51.02	30.22	4.17	35.40	100	0 Peak
2	2316.3	38.46	-15.54	54.00	39.47	30.22	4.17	35.40	100	251 Average



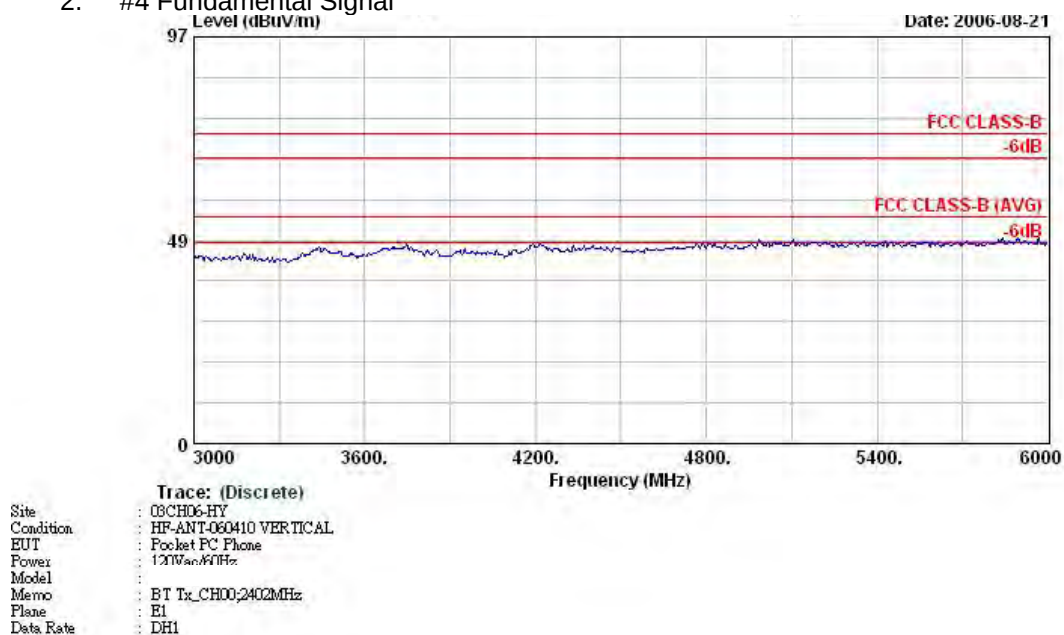
Polarization : Vertical

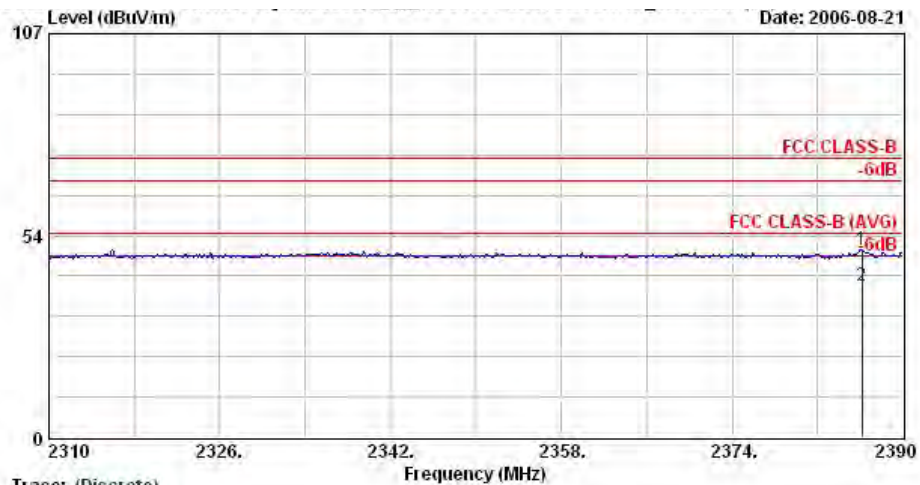
■ The test that passed at minimum margin was marked by the frame in the following table.



Remark:

1. #3 Fundamental Signal
2. #4 Fundamental Signal





Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx CH00,2402MHz
Plane : E1
Data Rate : DH1

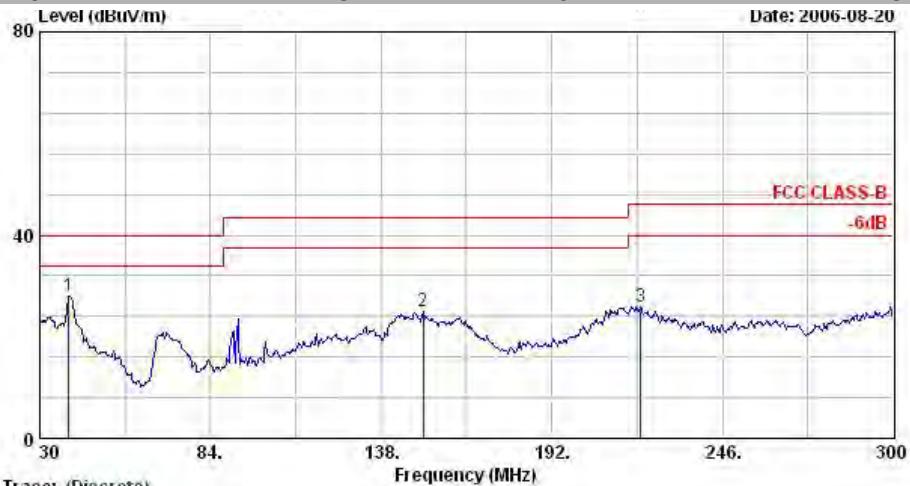
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2386.2	49.81	-24.19	74.00	50.75	30.26	4.23	35.44	100	360 Peak
2	2386.2	40.10	-13.90	54.00	41.05	30.26	4.23	35.44	100	256 Average

Remark: There is no more obvious spurious emission except the listings above.



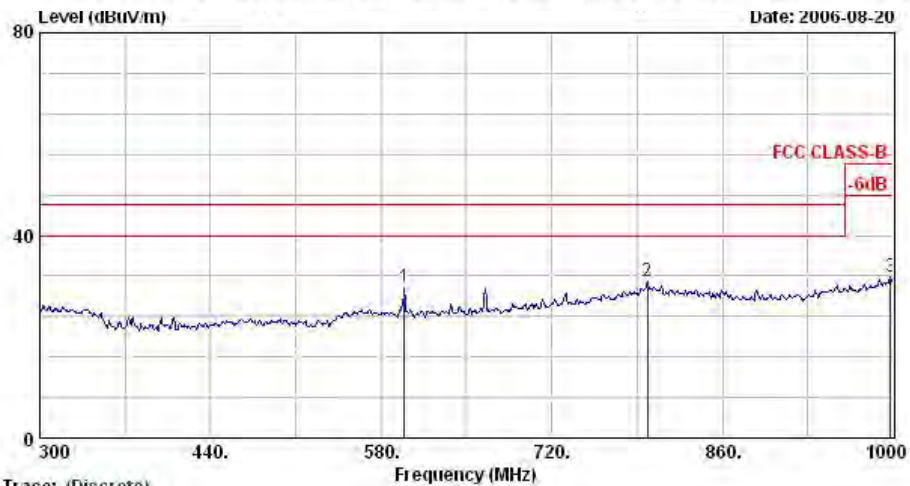
- Test Mode : Mode 8
- Polarization : Horizontal

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



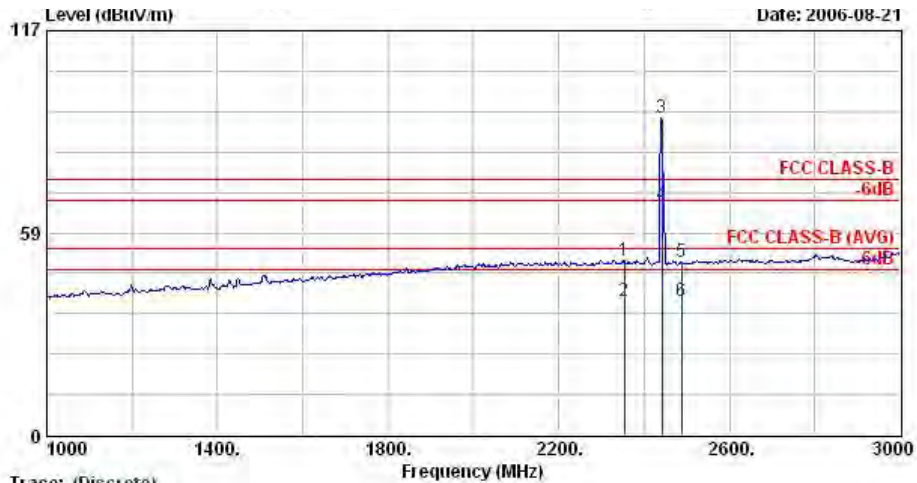
Trace: (Discrete)
Site : 08CH06-HY
Condition : BI-LOQ-2004-1122 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39:2441MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	39.2	27.96	-12.04	40.00	40.11	15.28	1.23	28.66	105	225 QP
2	151.2	25.10	-18.40	43.50	42.67	9.05	2.19	28.81	400	0 QP
3	220.1	25.97	-20.03	46.00	42.58	9.50	2.69	28.81	400	0 QP



Trace: (Discrete)
Site : 08CH06-HY
Condition : BI-LOQ-2004-1122 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39:2441MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	598.9	29.87	-16.13	46.00	36.01	17.97	4.66	28.77	100	0 QP
2	798.4	30.99	-15.01	46.00	32.42	21.84	5.60	28.87	100	0 QP
3	997.9	31.90	-22.10	54.00	31.55	22.91	6.22	28.79	100	0 QP

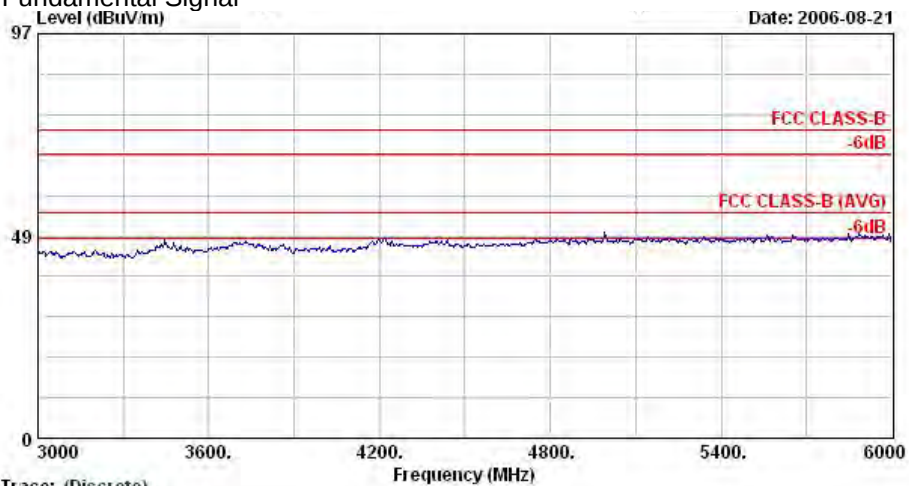


Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39;2441MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	2354.0	50.58	-23.42	74.00	51.55	30.24	4.20	35.42	100	0 Peak
2	2354.0	38.54	-15.46	54.00	39.52	30.24	4.20	35.42	100	298 Average
3 @	2441.0	91.98			92.89	30.28	4.29	35.47	100	0 Peak
4 @	2441.0	66.73			67.62	30.28	4.33	35.49	100	298 Average
5	2488.0	50.03	-23.97	74.00	50.88	30.30	4.36	35.51	100	0 Peak
6	2488.0	38.54	-15.46	54.00	39.39	30.30	4.36	35.51	100	298 Average

Remark:

1. #3 Fundamental Signal
2. #4 Fundamental Signal

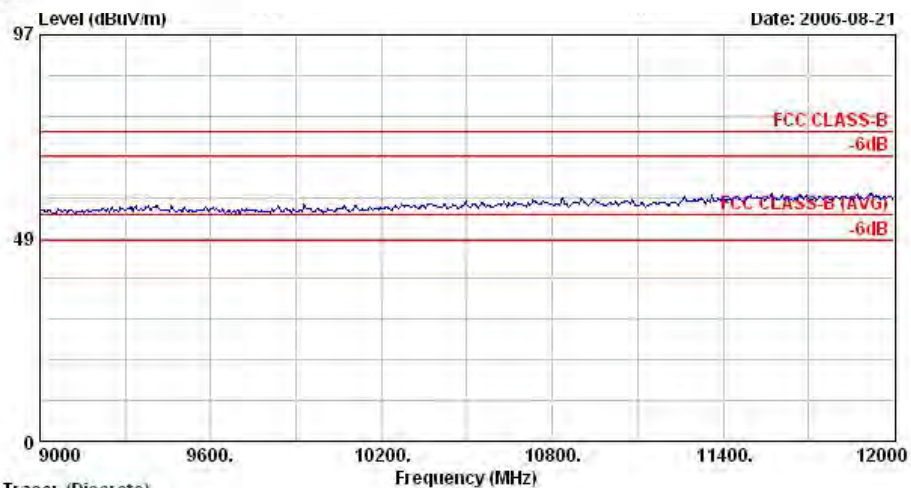
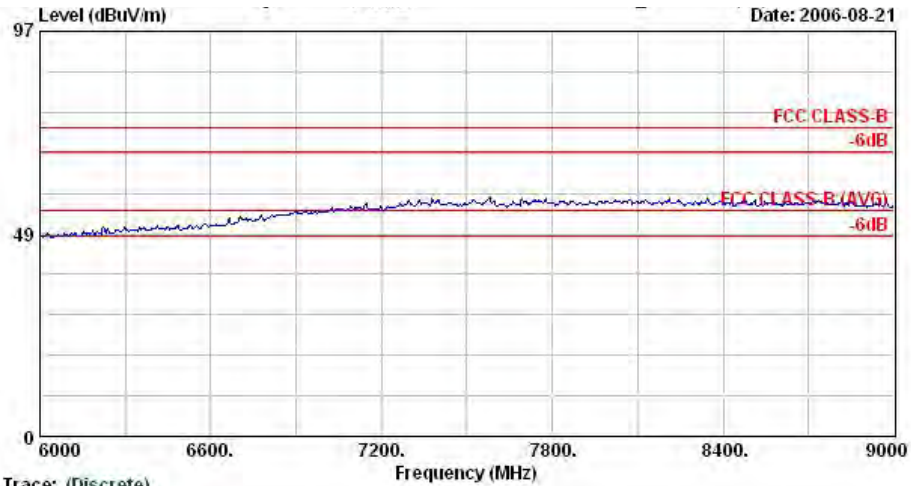


Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39;2441MHz
Plane : E1
Data Rate : DH1



FCC TEST REPORT

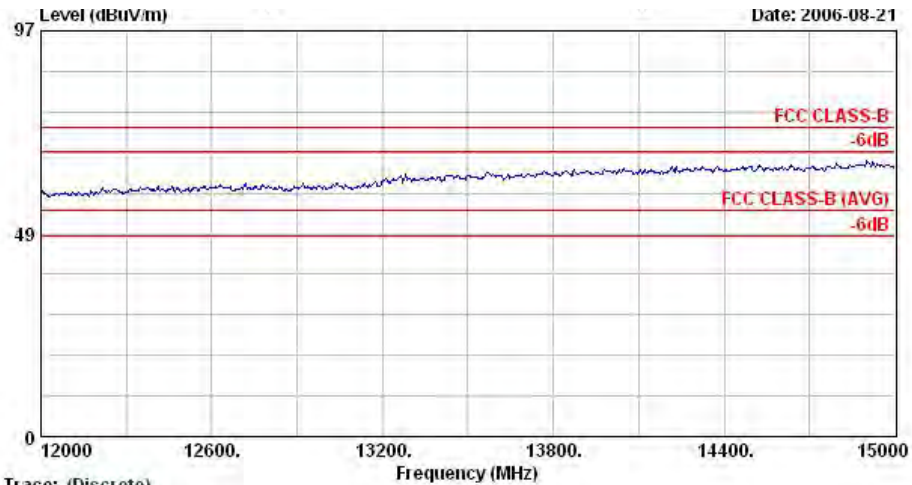
Report No. : FR6D0809





FCC TEST REPORT

Report No. : FR6D0809



Trace: (Discrete)

Site : 03CH06-HY

Condition : HF-ANT-060410 HORIZONTAL

EUT : Pocket PC Phone

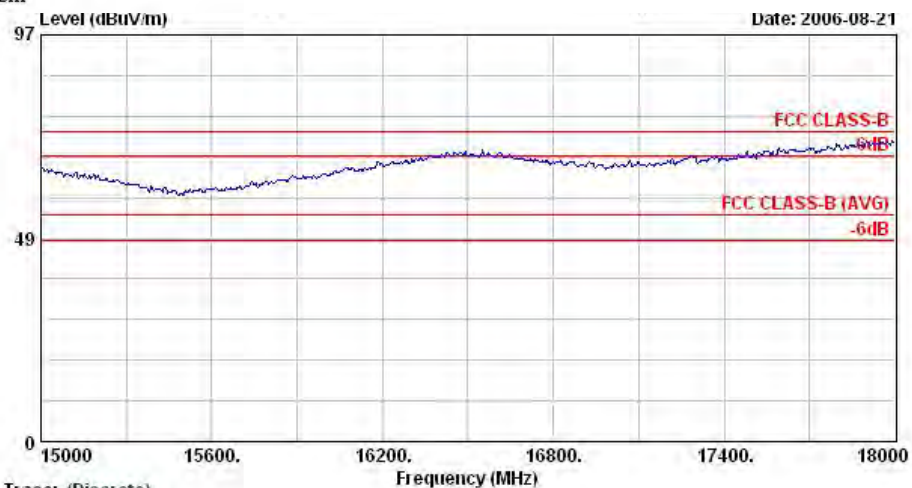
Power : 120Wac/60Hz

Model :

Memo : BT Tx_CH39/2441MHz

Plane : E1

Data Rate : DH1



Trace: (Discrete)

Site : 03CH06-HY

Condition : HF-ANT-060410 HORIZONTAL

EUT : Pocket PC Phone

Power : 120Wac/60Hz

Model :

Memo : BT Tx_CH39/2441MHz

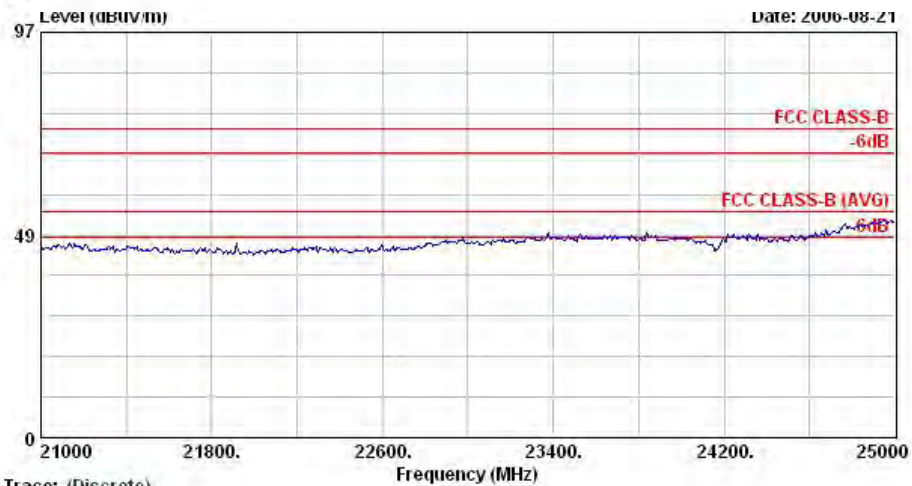
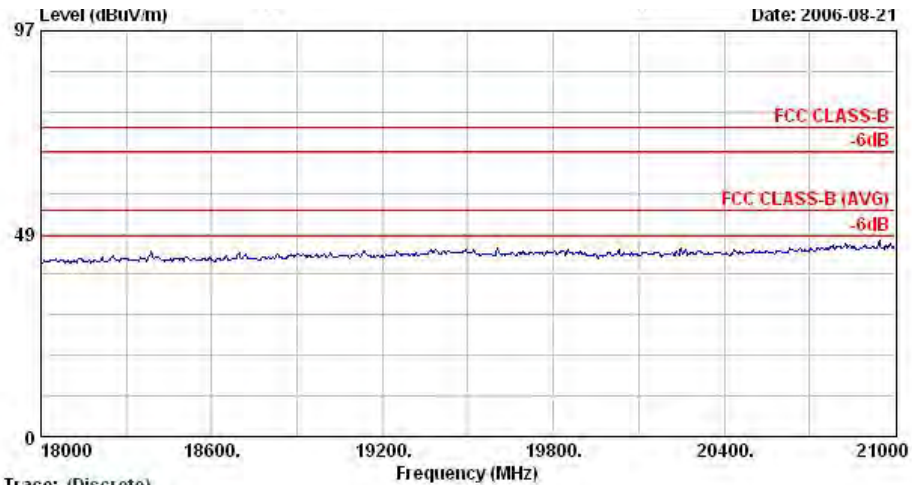
Plane : E1

Data Rate : DH1



FCC TEST REPORT

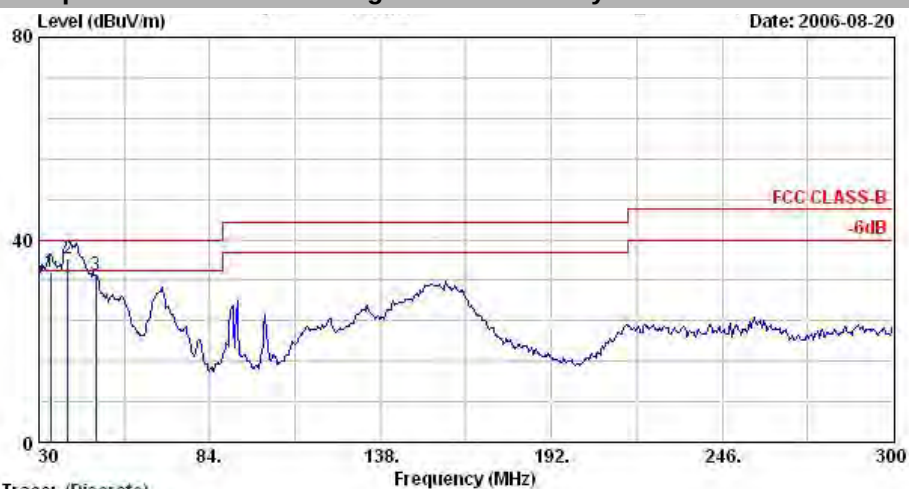
Report No. : FR6D0809





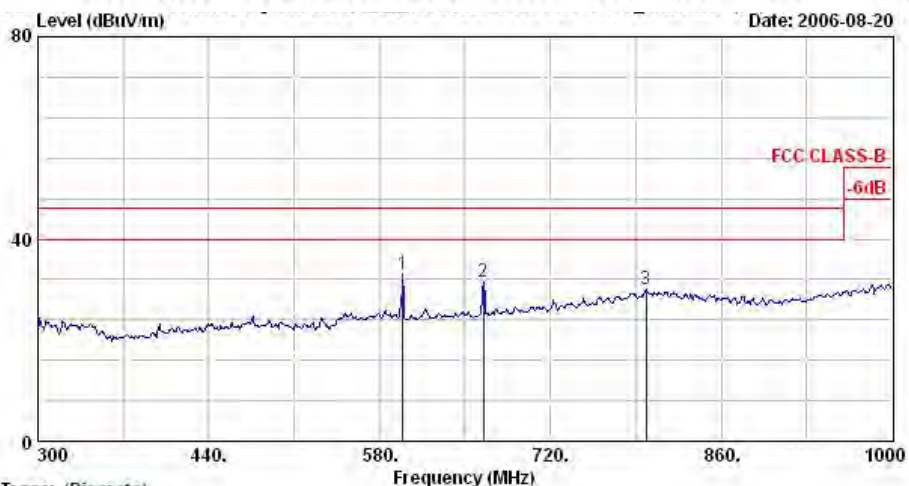
Polarization : Vertical

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



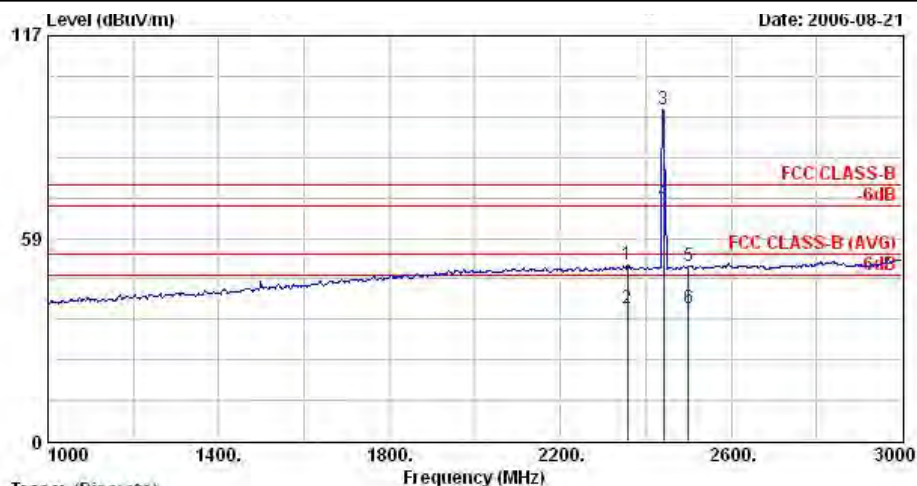
Trace: (Discrete)
Site : 08CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : BT Tx_CH39/2441MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	33.8	33.61	-6.39	40.00	43.80	17.40	1.04	28.64	100	201 QP
2 @	39.2	36.35	-3.65	40.00	48.50	15.28	1.23	28.66	100	302 QP
3 @	48.1	33.04	-6.96	40.00	49.93	10.66	1.06	28.61	400	0 QP



Trace: (Discrete)
Site : 08CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Pocket PC Phone
Power : 120Vac/60Hz
Model :
Memo : BT Tx_CH39/2441MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	598.9	32.92	-13.08	46.00	39.06	17.97	4.66	28.77	100	0 QP
2	665.4	31.56	-14.44	46.00	36.98	18.66	4.93	29.01	100	0 QP
3	798.4	30.03	-15.97	46.00	31.45	21.84	5.60	28.87	100	0 QP



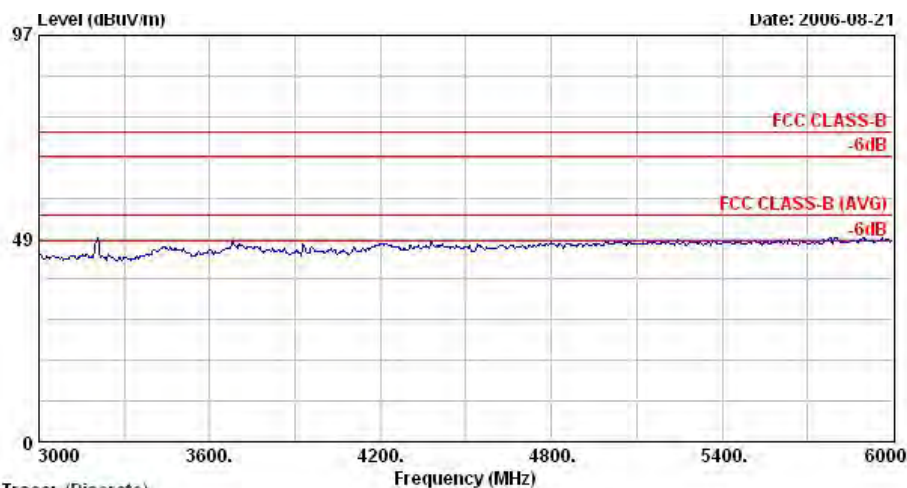
Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39/2441MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	2358.0	50.93	-23.07	74.00	51.91	30.24	4.20	35.42	100	0 Peak
2	2358.0	38.42	-15.58	54.00	39.40	30.24	4.20	35.42	100	271 Average
3 @	2441.0	95.64			96.54	30.28	4.29	35.47	100	0 Peak
4 @	2441.0	68.99			69.88	30.28	4.33	35.49	100	271 Average
5	2500.0	50.36	-23.64	74.00	51.20	30.30	4.39	35.53	100	0 Peak
6	2500.0	38.46	-15.54	54.00	39.30	30.30	4.39	35.53	100	271 Average

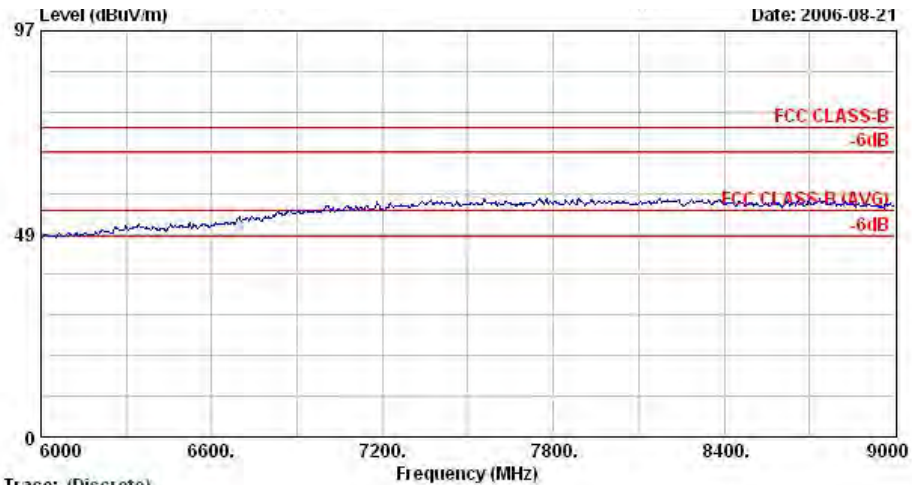
Remark:

1. #3 Fundamental Signal
2. #4 Fundamental Signal

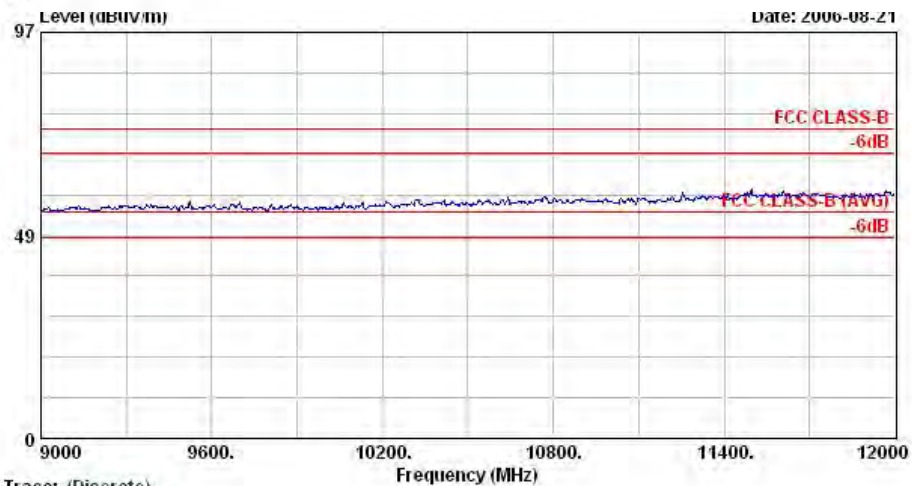


Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39/2441MHz
Plane : E1
Data Rate : DH1



Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39/2441MHz
Plane : E1
Data Rate : DH1

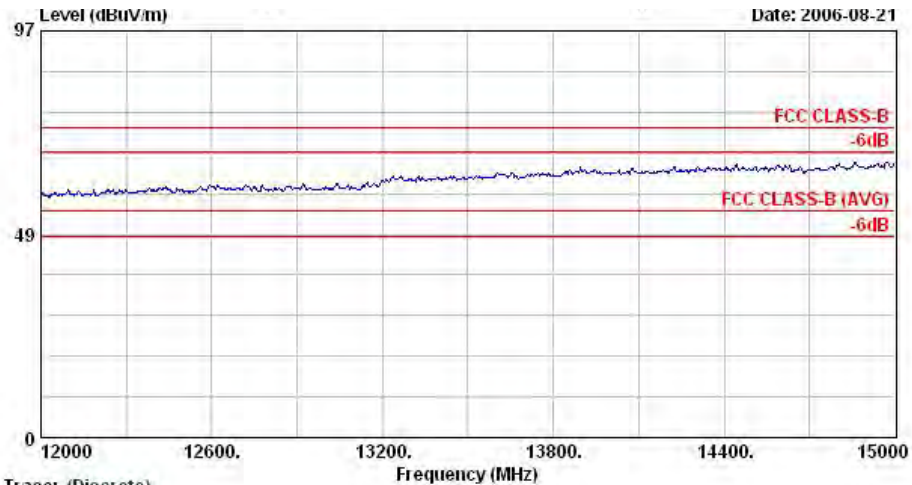


Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39/2441MHz
Plane : E1
Data Rate : DH1

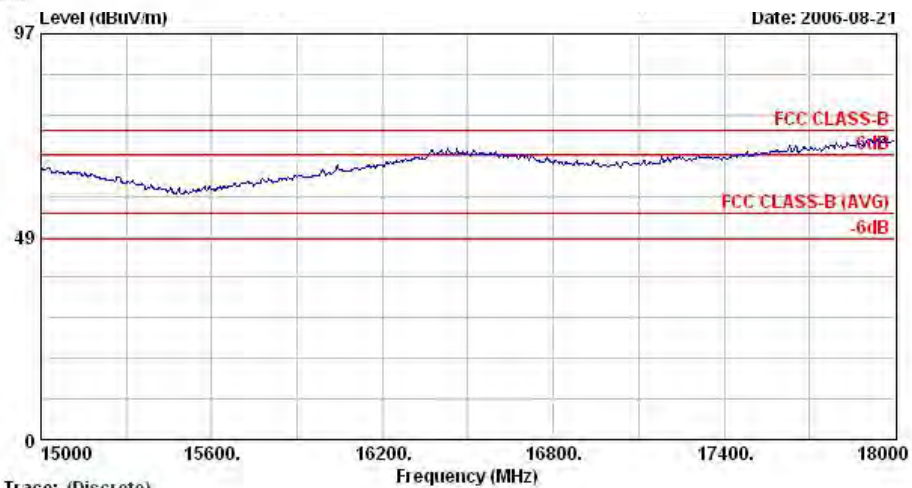


FCC TEST REPORT

Report No. : FR6D0809



Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39,2441MHz
Plane : E1
Data Rate : DH1

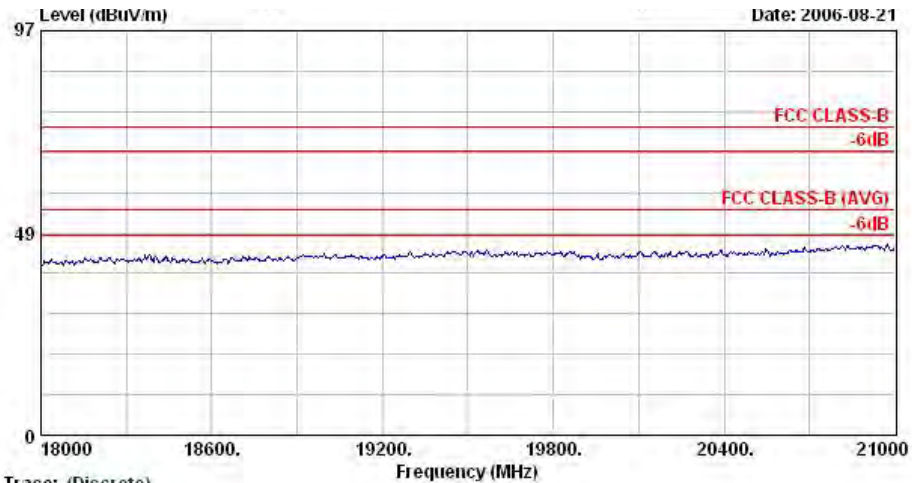


Trace: (Discrete)
Site : 08CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39,2441MHz
Plane : E1
Data Rate : DH1

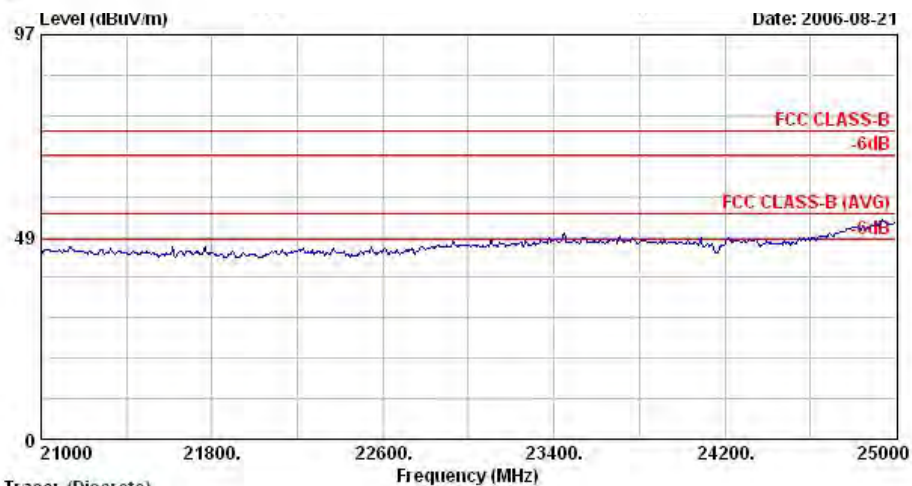


FCC TEST REPORT

Report No. : FR6D0809



Trace: (Discrete)
Site : 03CH06-HY
Condition : SHF-EHF HORN VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39/2441MHz
Plane : E1
Data Rate : DH1



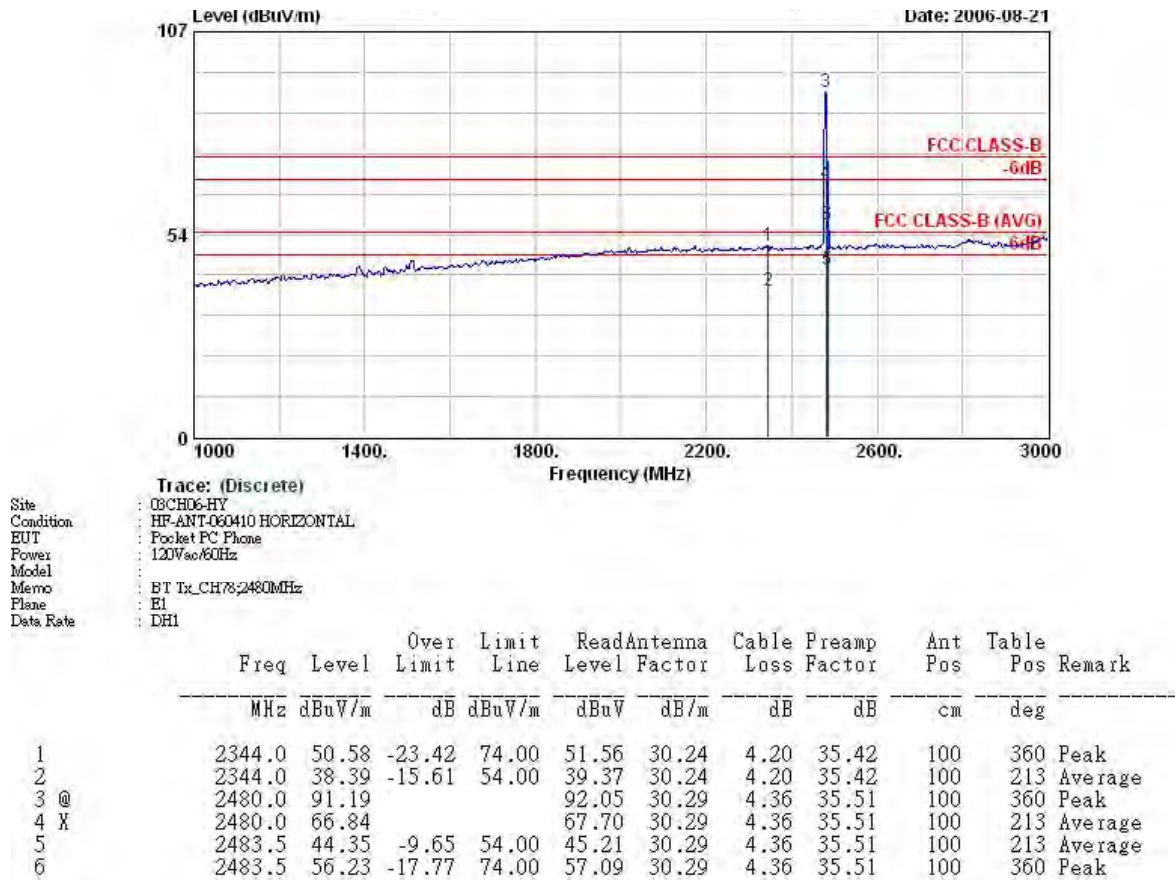
Trace: (Discrete)
Site : 03CH06-HY
Condition : SHF-EHF HORN VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH39/2441MHz
Plane : E1
Data Rate : DH1

Remark: There is no more obvious spurious emission except the listings above.



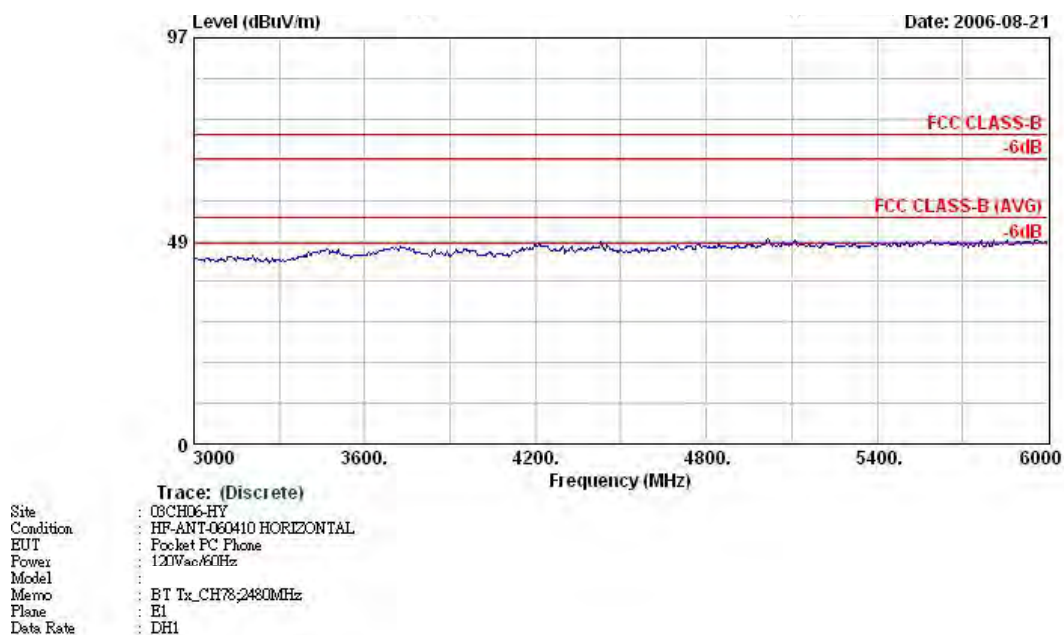
- Test Mode : Mode 9
- Polarization : Horizontal

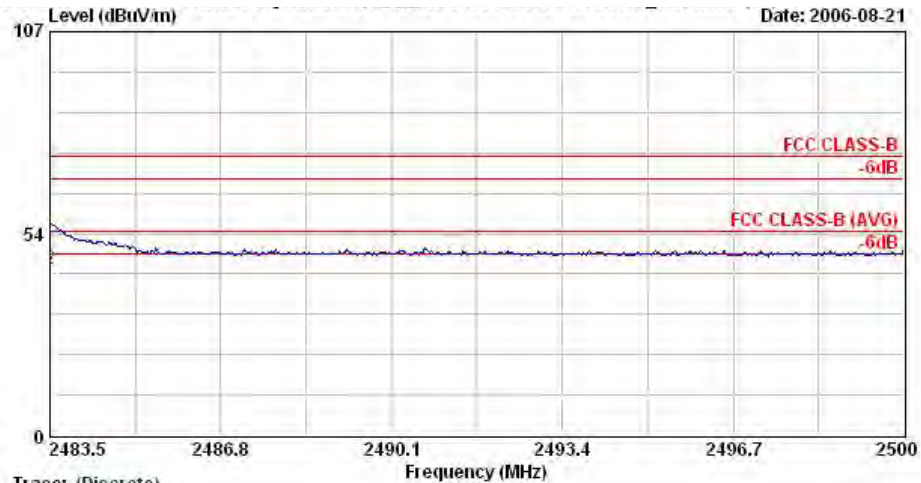
■ The test that passed at minimum margin was marked by the frame in the following table.



Remark:

- #3 Fundamental Signal
- #4 Fundamental Signal





Trace: (Discrete)

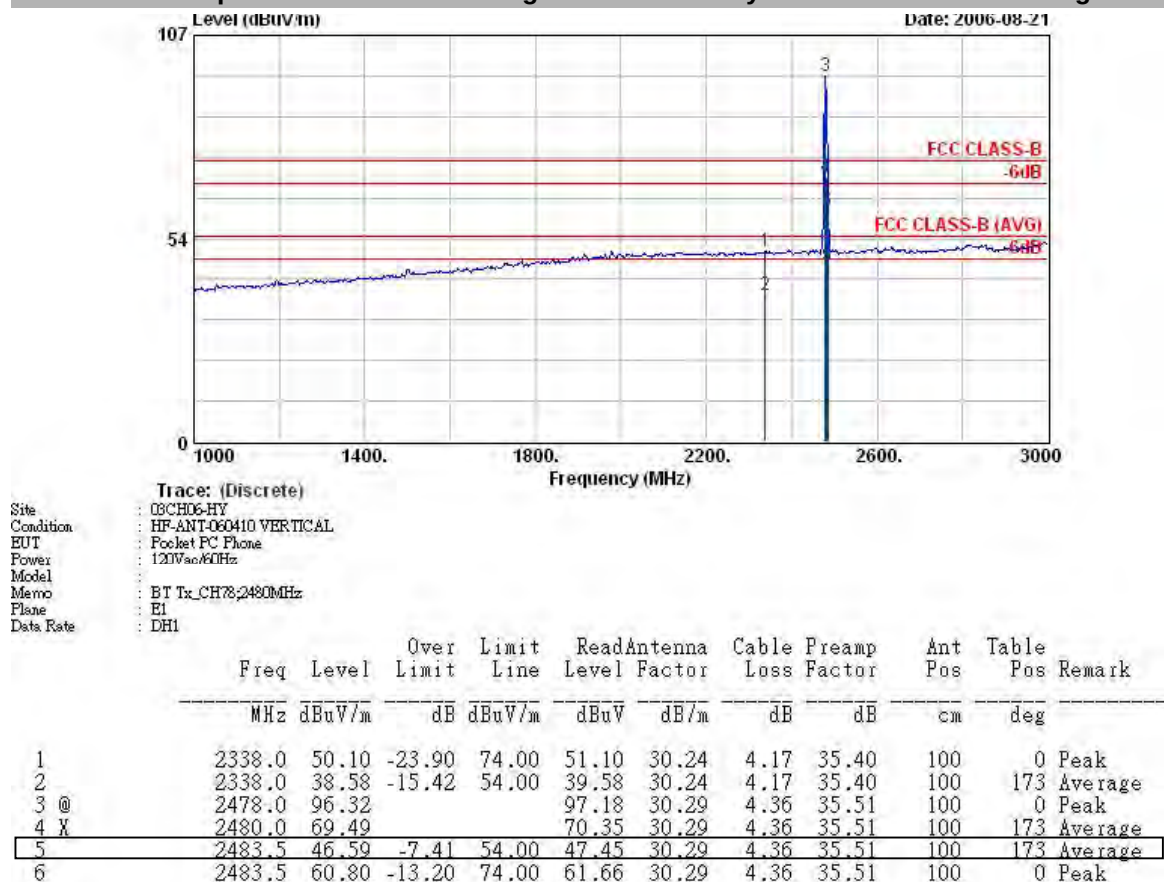
Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Pocket PC Phone
Power : 120V_{ac}/60Hz
Model :
Memo : BT Tx_CH78/2480MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2483.5	56.23	-17.77	74.00	57.09	30.29	4.36	35.51	100	0	Peak
2	2483.5	44.35	-9.65	54.00	45.21	30.29	4.36	35.51	100	212	Average



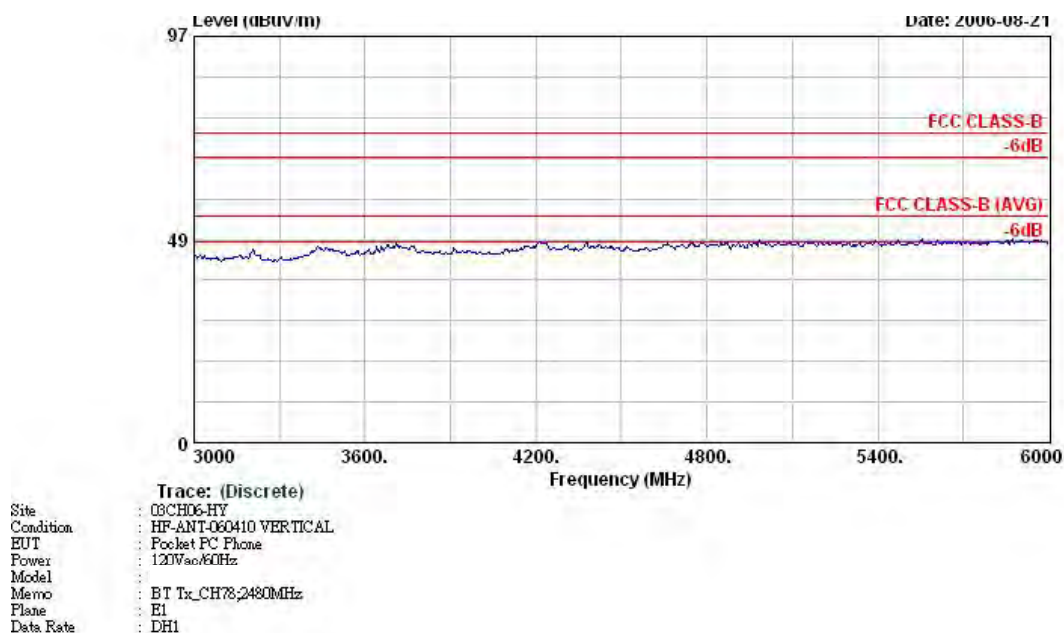
Polarization : Vertical

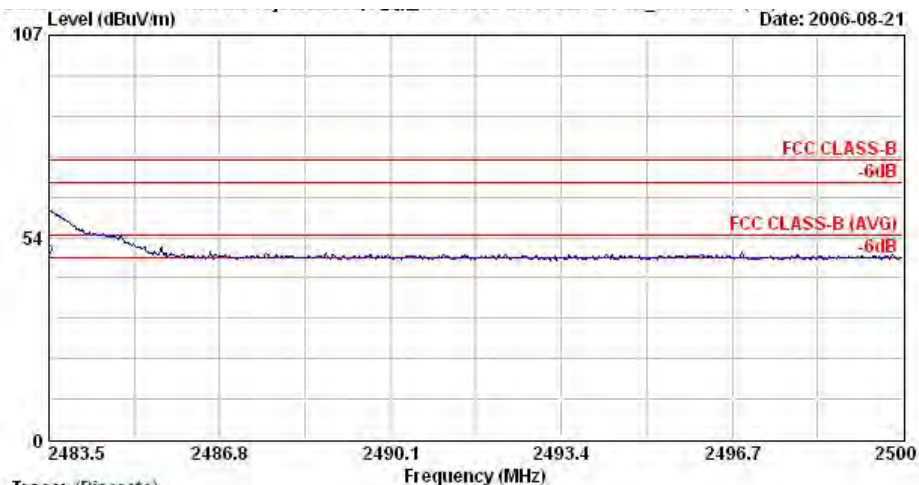
■ The test that passed at minimum margin was marked by the frame in the following table.



Remark:

1. #3 Fundamental Signal
2. #4 Fundamental Signal





Trace: (Discrete)
Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Pocket PC Phone
Power : 120Wac/60Hz
Model :
Memo : BT Tx_CH78.2480MHz
Plane : E1
Data Rate : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2483.5	60.80	-13.20	74.00	61.66	30.29	4.36	35.51	100	360 Peak
2	2483.5	46.56	-7.44	54.00	47.42	30.29	4.36	35.51	100	173 Average

Remark: There is no more obvious spurious emission except the listings above.



5.12 Antenna Requirements

5.12.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no other antenna except assembled by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

5.12.2 Antenna Connected Construction

The antennas used in this product are PIFA antenna for WLAN and Chip antenna for BT without antenna connector and it is considered to meet antenna requirement of FCC.

5.12.3 Antenna Gain

The antenna gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

6 List of Measuring Equipments Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Feb. 22, 2006	Feb. 22, 2007	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 29, 2006	Mar. 29, 2007	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Apr. 19, 2006	Apr. 19, 2007	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 22, 2005	Dec. 22, 2006	Conduction (CO01-HY)
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Jul. 25, 2006	Jul. 24, 2007	Radiation (03CH06-HY)
Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jun. 28, 2006	Jun. 27, 2007	Radiation (03CH06-HY)
Controller	CT	SC100	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 22, 2004	Nov. 22, 2006	Radiation (03CH06-HY)
Horn Antenna	Com-Power	AH118	071025	1G-18G	Feb. 1, 2005	Feb. 1, 2007	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-249	14G - 40G	Jul. 21, 2006	Jul. 20, 2007	Radiation (03CH06-HY)
Amplifier	MITEQ	AMF-6F	997165	26G - 40G	Jul. 21, 2006	Jul. 20, 2007	Radiation (03CH06-HY)
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	N/A	Radiation (03CH06-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	N/A	Radiation (03CH06-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Jan. 23, 2006	Jan. 22, 2008	Radiation (03CH06-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 06, 2006	Feb. 05, 2007	Radiation (03CH06-HY)



7 Uncertainty Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		

**Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)**

Contribution	Uncertainty of x_i		$u(x_i)$	C_i	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty $U_c(y)$	2.36				
Measuring uncertainty for a level of confidence of 95% $U = 2U_c(y)$	4.72				