



# FCC TEST REPORT

for

## 47 CFR Part 15 Subpart C

**Equipment** : **Mobile Phone**  
**Trade Name** : **BenQ-Siemens**  
**Model No.** : **P51**  
**Marketing Name** : **P50B2A**  
**FCC ID** : **JVPP51**  
**BenQ Ref. No.** : **BW-6427**  
**Filing Type** : **Certification**  
**Applicant** : **BenQ Corporation**  
157 Shan-Ying Road, Gueishan Taoyuan 333,  
Taiwan

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- The data shown in this test report were carried out on Jul. 01, 2006 at **Sporton International Inc. LAB.**
- Report No.: FR653101, Report Version: Rev. 01

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Report Version: Rev. 01



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## 1. General Description of Equipment under Test

### 1.1 Applicant

**BenQ Corporation**

157 Shan-Ying Road, Gueishan Taoyuan 333, Taiwan

### 1.2 Manufacturer

**1. BenQ Corporation**

157 Shan-Ying Road, Gueishan Taoyuan 333, Taiwan

**2. BenQ (IT) Co., Ltd.**

No. 169, Zhujiang Road, New District, Suzhou, Jiangsu, P.R., China

### 1.3 Basic Description of Equipment under Test

Equipment	: Mobile Phone
Trade Name	: BenQ-Siemens
Model No.	: P51
Marketing Name	: P50B2A
FCC ID	: JVPP51
Power Supply Type	: Switching
AC Power Cord	: AC 120V, Non-shielded, Wall-mount, 1.2 meter, 2 pin
Holster	: BenQ-SIEMENS, 47.G7223.002
Adapter	: BenQ-SIEMENS, JSP050100UU
Battery	: BenQ-SIEMENS, 2C.2G3D0.101
Earphone	: 2C.43054.021
Data Cable	: 5K.G4702.001



**1.4 Feature of Equipment under Test**

Product Feature & Specification			
1. Support Band	GSM 850/900/1800/1900 with Bluetooth and WLAN		
2. Type of Modulation	GSM/PCS : GMSK WLAN : DSSS / OFDM BT : GFSK		
3. Number of Channels	WLAN : 11 Channels BT : 79 Channels		
4. Frequency Band	GSM : 824-849 MHz (Tx), 869-894 MHz (Rx) PCS : 1850.2-1909.8 MHz(Tx), 1930.2-1989.8 MHz(Rx) WLAN/BT : 2.4GHz~2.4835GHz		
5. Carrier Frequency of each channel	WLAN : 2412MHz+(n-1)*5MHz, n=1~11 BT : 2402MHz+n*1MHz, n=0~78		
6. Channel Spacing	WLAN : 5MHz BT : 1MHz		
7. HW Version	LPR4-6		
8. SW Version	V0.05.02		
9. Maximum Output Power to Antenna (Normal Condition)	GSM : 32.39 dBm PCS1900 : 29.32 dBm 802.11b : 19.35 dBm / 802.11g: 21.23 dBm BT : 0.64 dBm		
10. Type of Antenna Connector	N/A		
11. Antenna Type	GSM / PCS : Fixed Internal WLAN / BT : Patch Antenna		
12. Antenna Gain	WLAN : -3 dBi BT : -1 dBi		
13. Function Type	Transmitter		Transceiver V
14. Power Rating (DC/AC Voltage) :	GSM850 : 3.8V / 230mA PCS1900 : 3.8V / 200mA		

## 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.

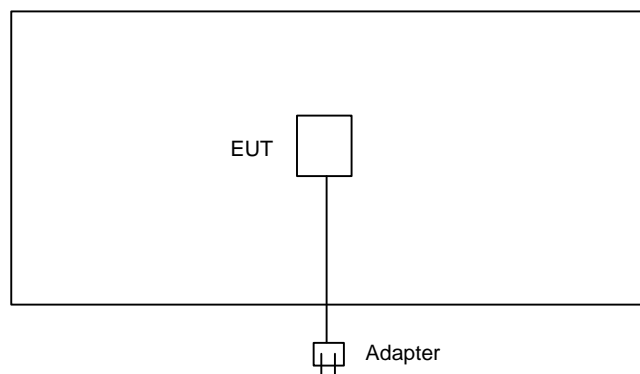
### 2.2 Test Mode

Application			
	<b>802.11b</b>	<b>802.11g</b>	<b>BT</b>
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 + USB Link + GPS Rx + Earphone + Camera + MPEG 4 + Adapter		

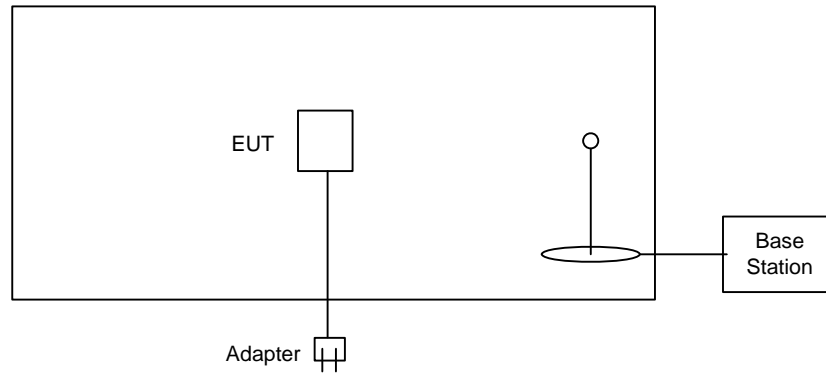
### 2.3 Connection Diagram of Test System

<Radiated Emission>

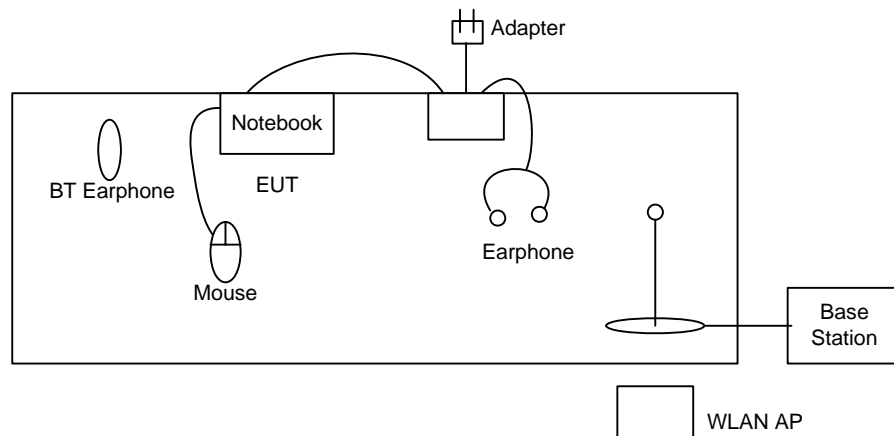
<WLAN>



**<Bluetooth>**



**<Conducted Emission>**



**2.4 Ancillary Equipment List**

Item	Asset	Model Name	Power Cord
1.	Base Station (R&S)	CMU 200	N/A
2.	Notebook (DELL)	D400	N/A
3.	USB Mouse (Microsoft)	B75-00093	Non-shielded, 1.8 m
4.	BT Earphone (Free Style)	JD-100	N/A
5.	WLAN AP (SMC)	SMC-100	N/A
6.	USB Cable		Weave-shielded, 1 m



### **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 & 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

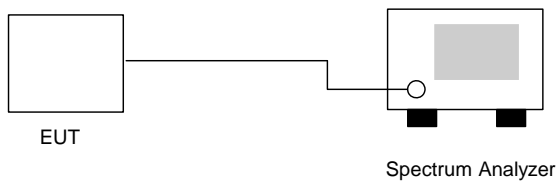
### 5.2.1 Measuring Instruments :

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 : 24°C
- Relative Humidity : 59%
- Test Enginner : James

#### **802.11b**

Channel	Frequency ( MHz )	6dB Emission bandwidth ( MHz )	Limits ( MHz )	Plot Ref. No.
01	2412	10.00	> 0.5MHz	Mode 1
06	2437	10.00	> 0.5MHz	Mode 2
11	2462	10.24	> 0.5MHz	Mode 3

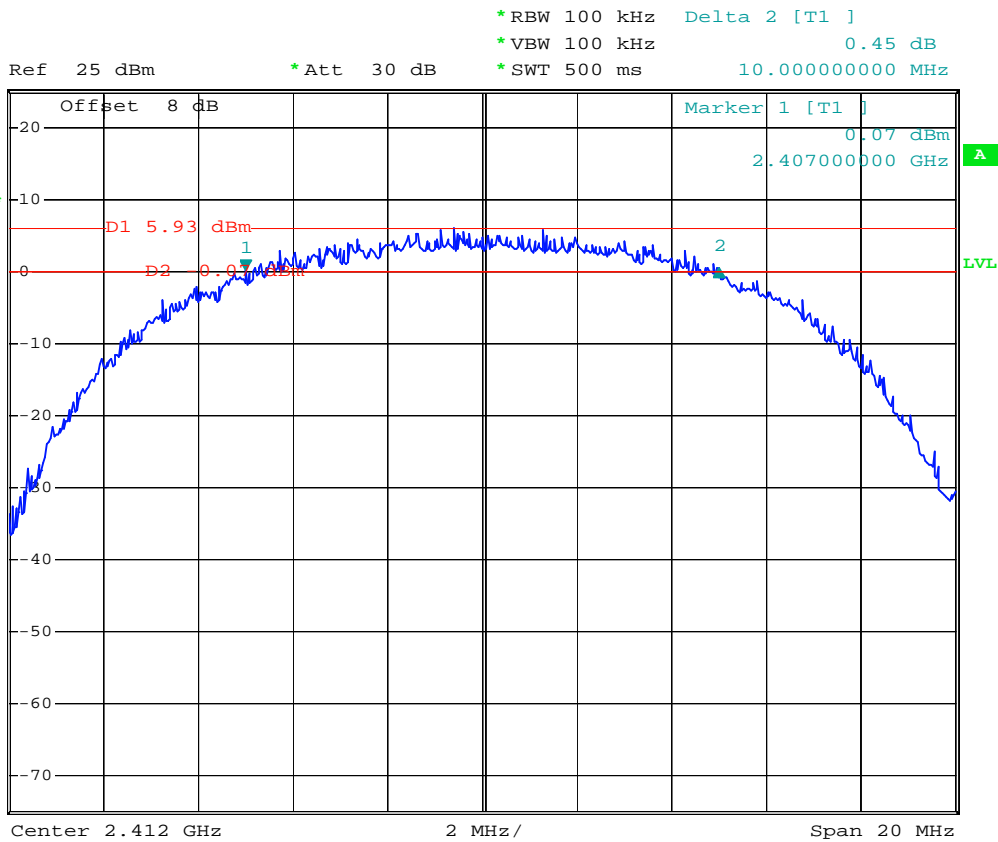
#### **802.11g**

Channel	Frequency ( MHz )	6dB Emission bandwidth ( MHz )	Limits ( MHz )	Plot Ref. No.
01	2412	16.40	> 0.5MHz	Mode 4
06	2437	16.44	> 0.5MHz	Mode 5
11	2462	16.44	> 0.5MHz	Mode 6



5.2.5 6dB Bandwidth

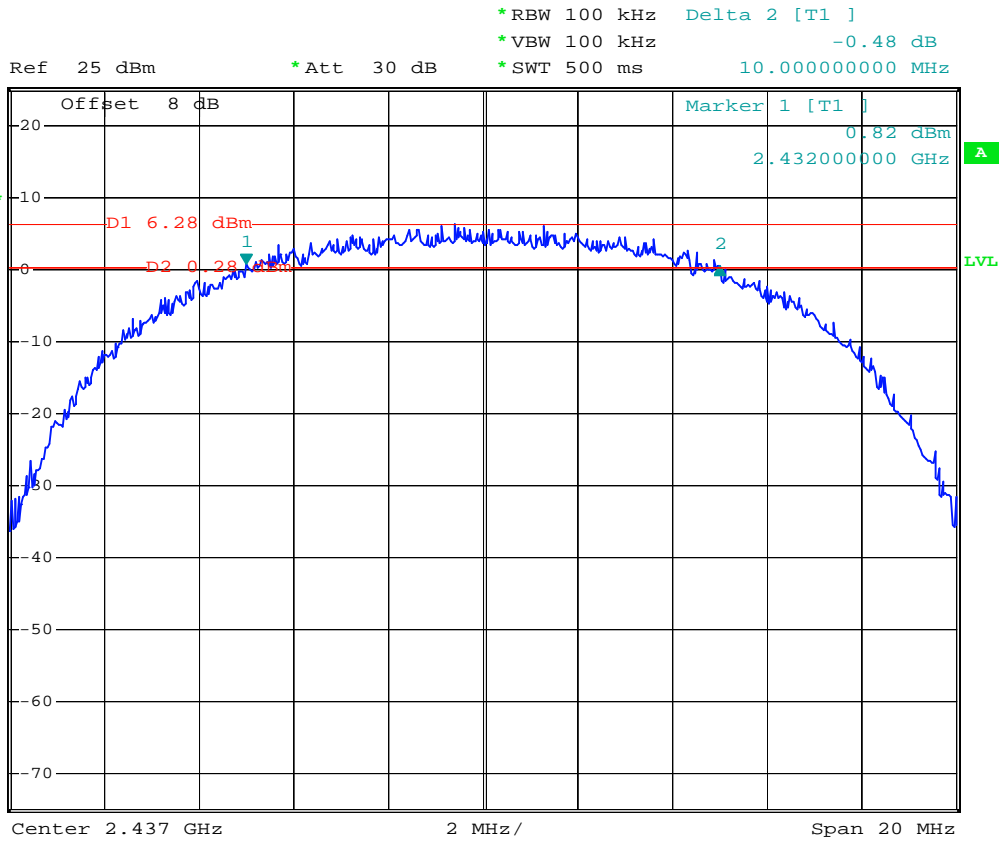
Mode 1



Date: 16.JUN.2006 21:27:53



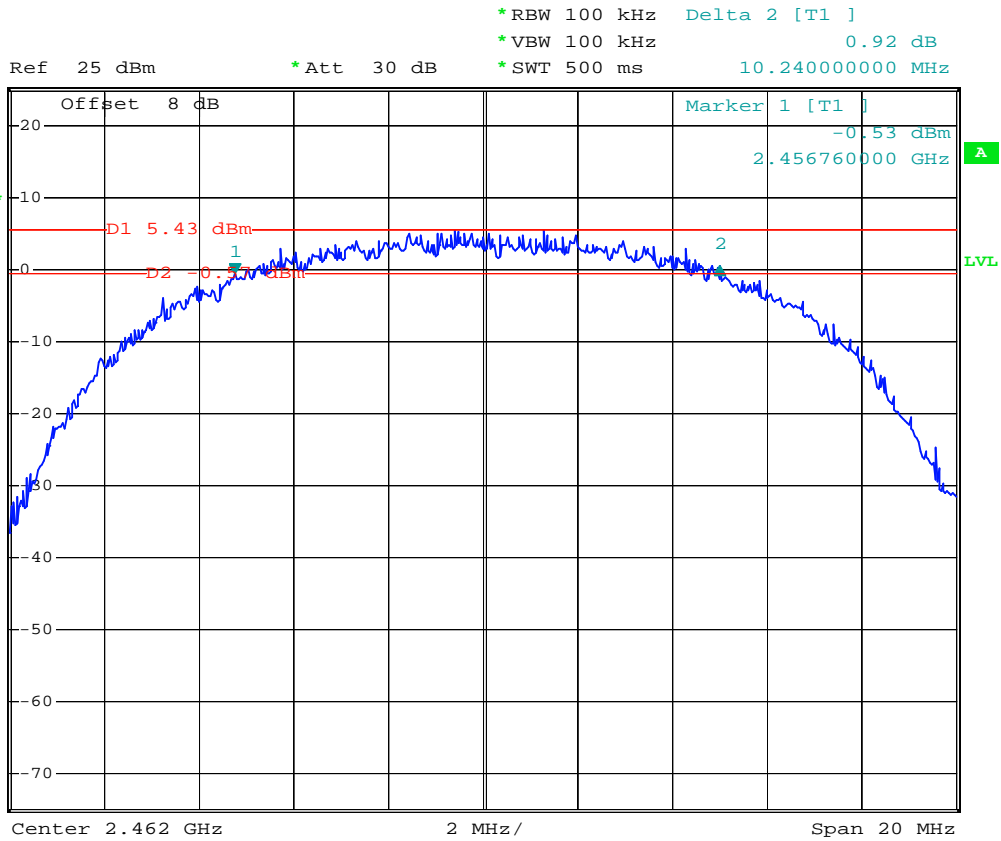
Mode 2



Date: 16.JUN.2006 21:52:21



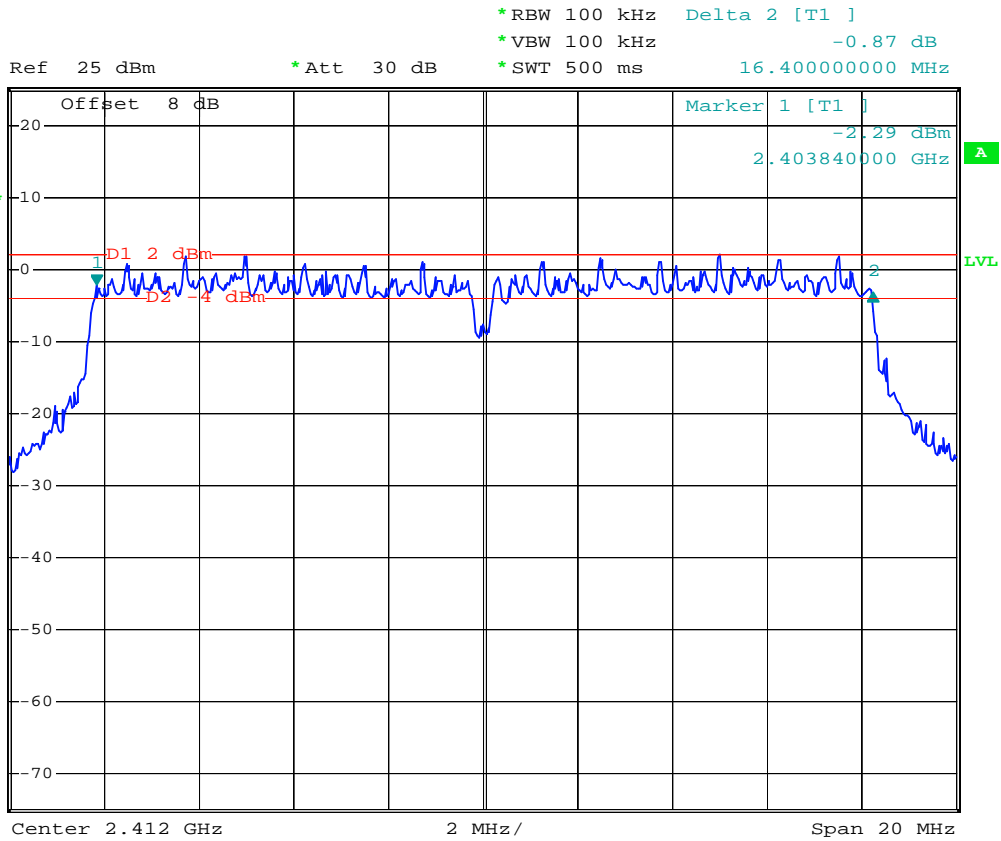
Mode 3



Date: 16.JUN.2006 21:53:46



Mode 4

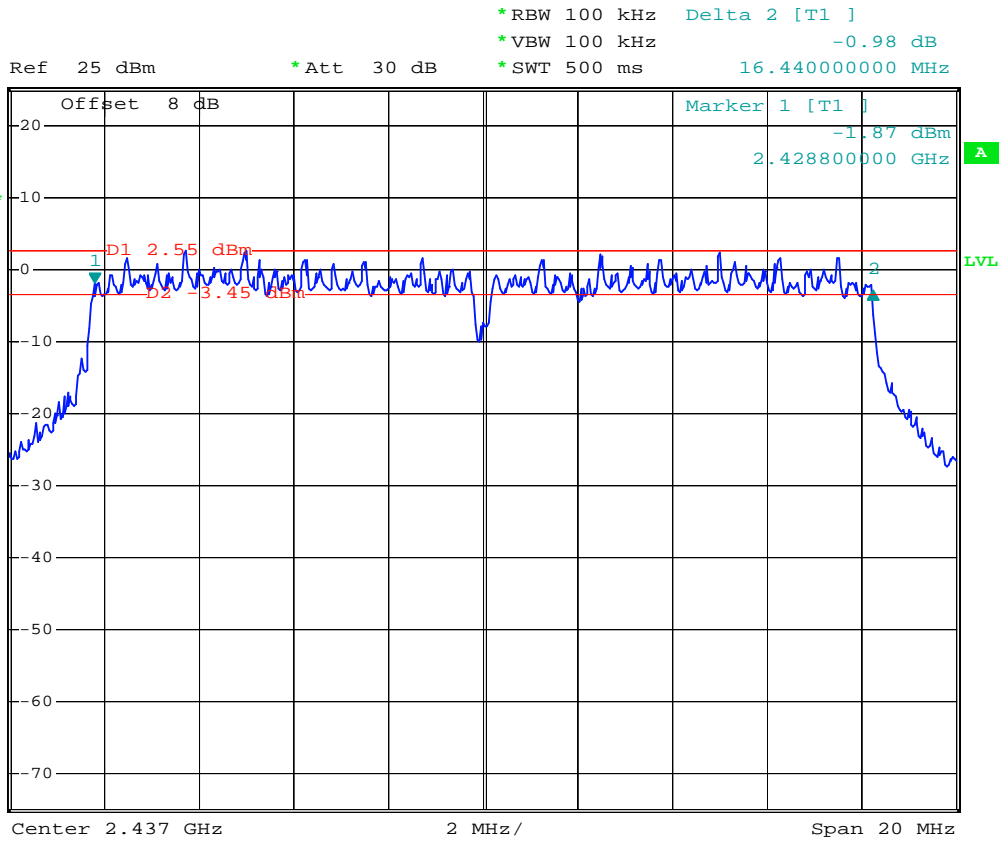


Date: 16.JUN.2006 22:07:25





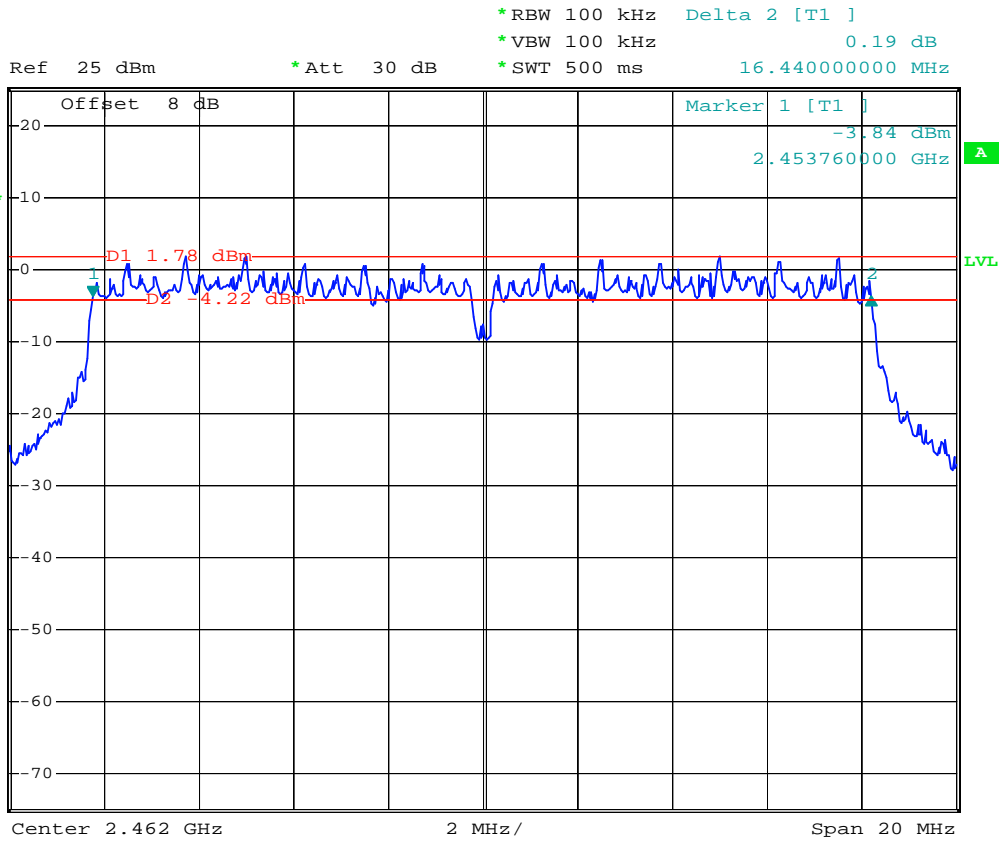
Mode 5



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Mode 6



Date: 16.JUN.2006 22:05:22

### 5.3 Power Spectral Density Measurement

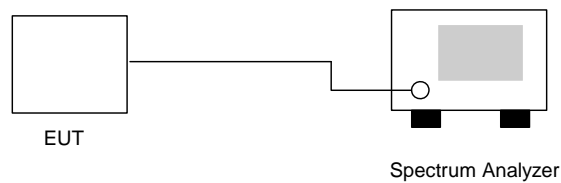
#### 5.3.1 Measuring Instruments :

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 : 59%
- Test Enginner : James

**802.11b**

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm )	Plot Ref. No.
01	2412	-6.72	8	Mode 1
06	2437	-6.65	8	Mode 2
11	2462	-7.12	8	Mode 3

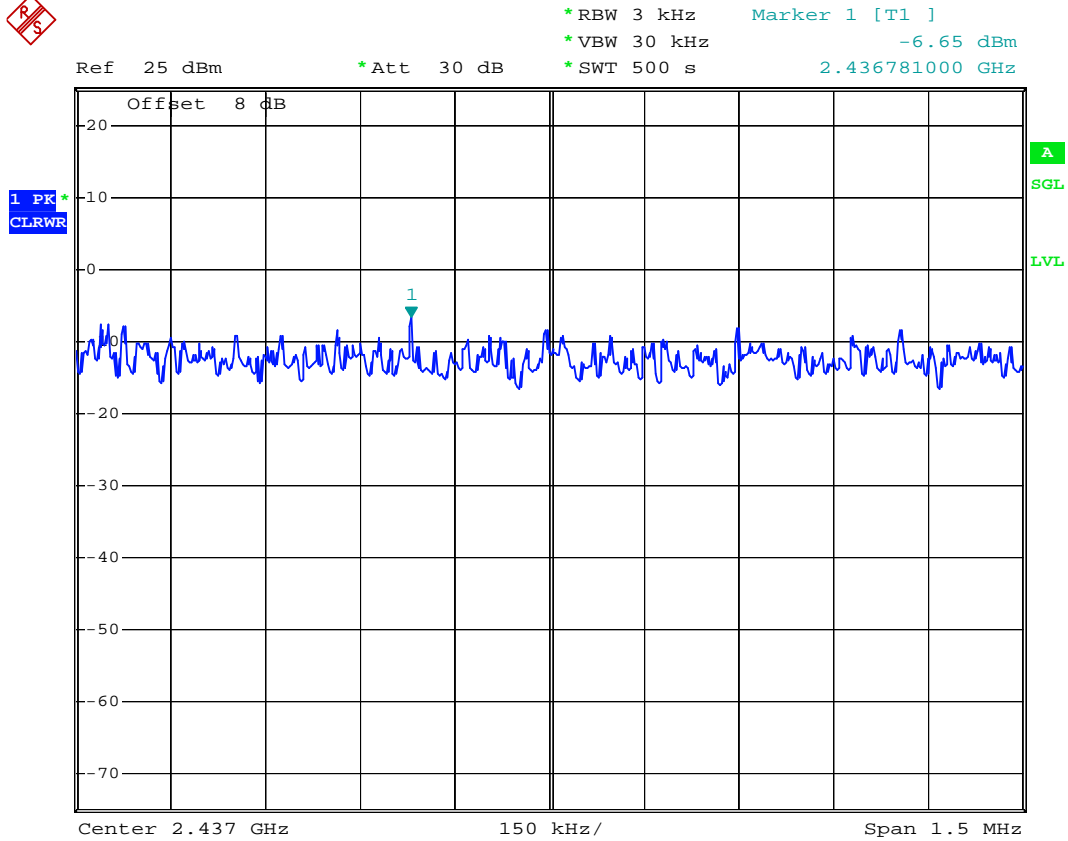
**802.11g**

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm )	Plot Ref. No.
01	2412	-11.86	8	Mode 4
06	2437	-11.18	8	Mode 5
11	2462	-11.99	8	Mode 6





Mode 2



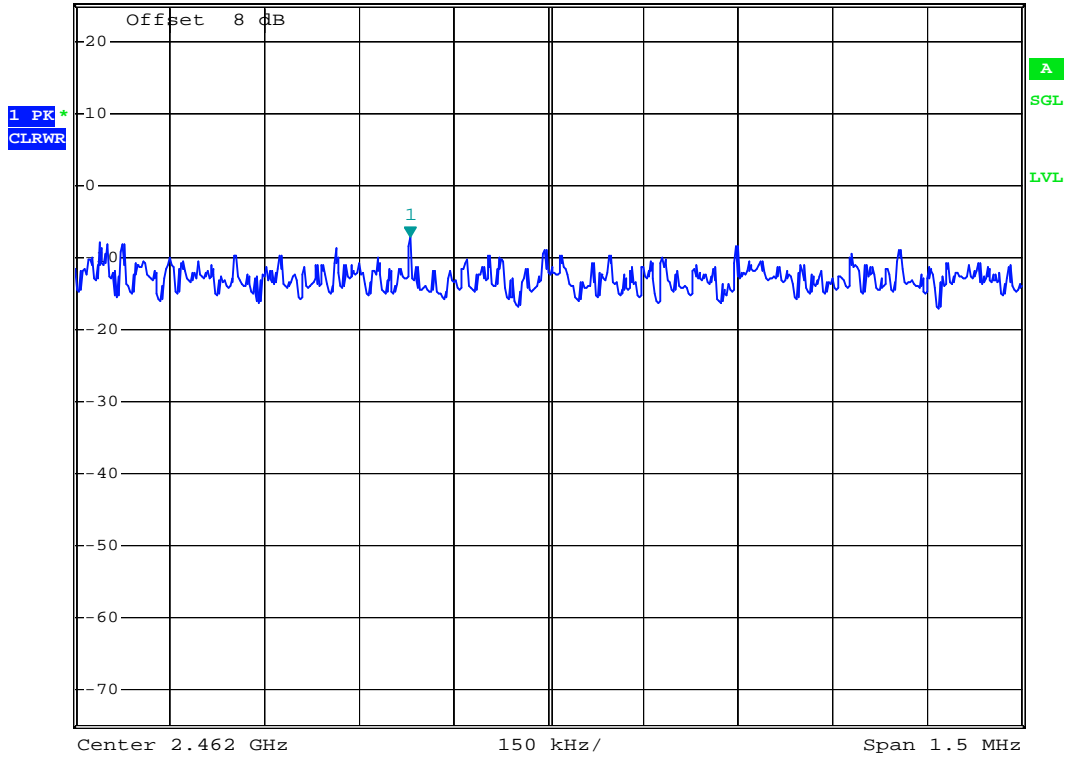
Date: 17.JUN.2006 04:43:10



Mode 3



Ref 25 dBm      \*Att 30 dB      \*RBW 3 kHz      Marker 1 [T1]      -7.12 dBm  
\*VBW 30 kHz      2.461781000 GHz  
\*SWT 500 s



Date: 17.JUN.2006 04:25:33











## 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 :

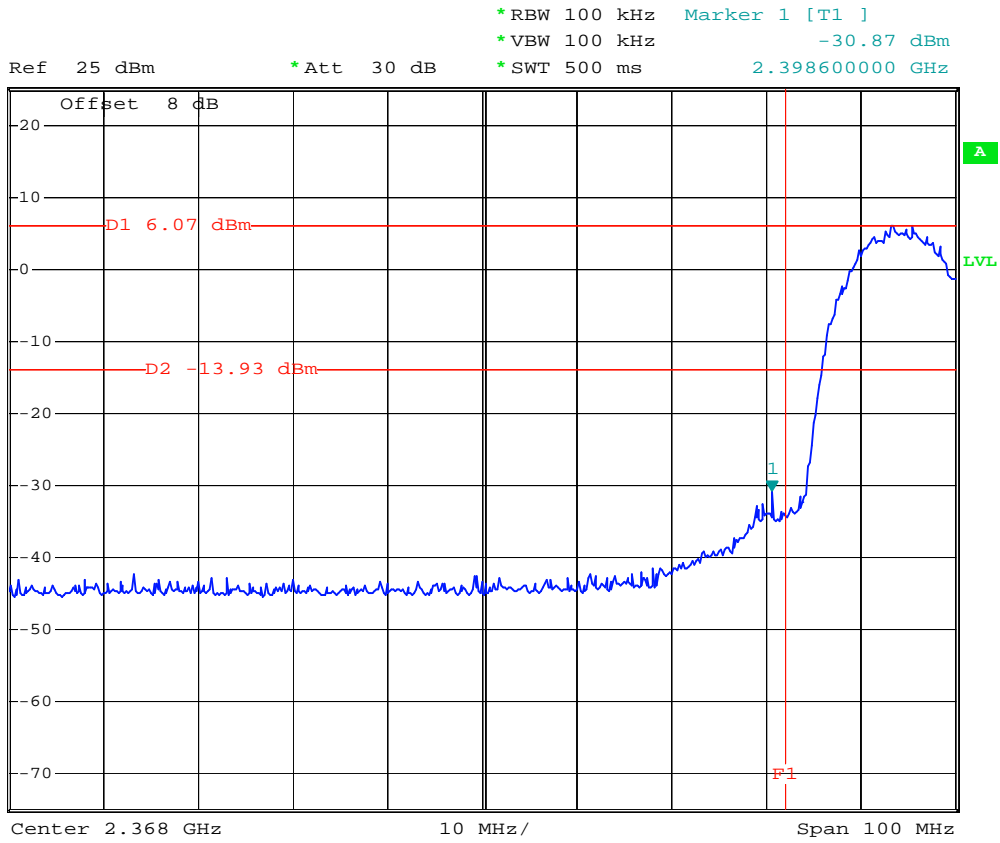
- Application Type : WLAN 802.11b/g and BT
- Temperature : 24°C
- Relative Humidity : 59%
- Test Enginner : James
  
- Test Result in WLAN lower band (Channel 1) : PASS
- Test Result in WLAN higher band (Channel 11) : PASS
- Test Result in BT lower band (Channel 00) : PASS
- Test Result in BT higher band (Channel 78) : PASS



5.4.4 20dB Band Edge

WLAN 802.11b

CH01



Date: 16.JUN.2006 21:56:55



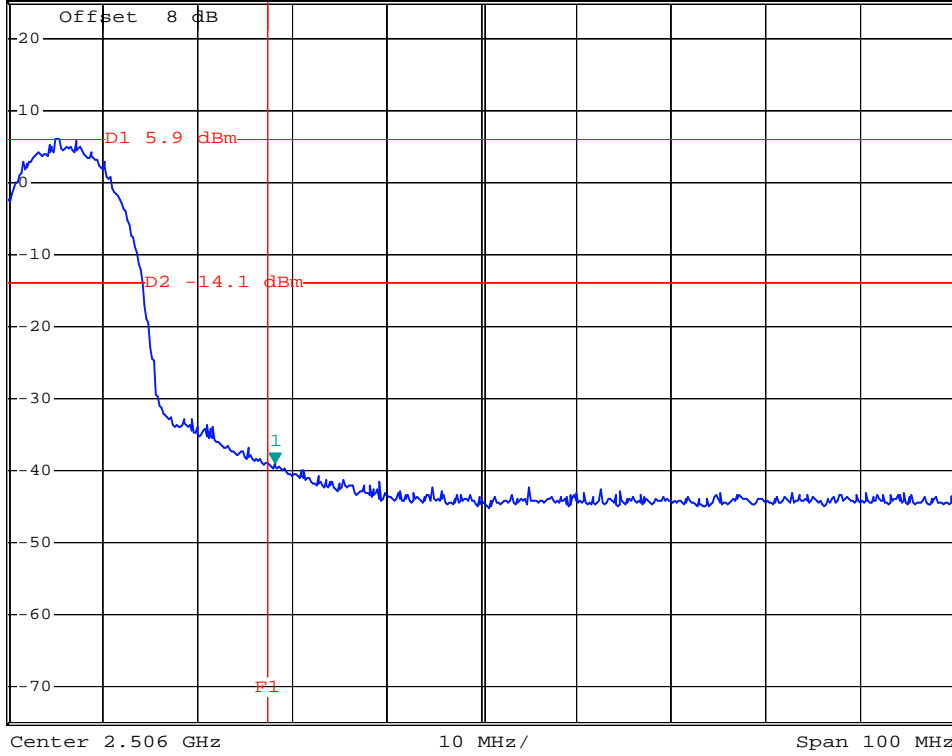
CH11



\*RBW 100 kHz    Marker 1 [T1 ]  
\*VBW 100 kHz                    -39.02 dBm  
\*SWT 500 ms                      2.48420000 GHz

Ref 25 dBm

\*Att 30 dB



Date: 16.JUN.2006 21:55:36





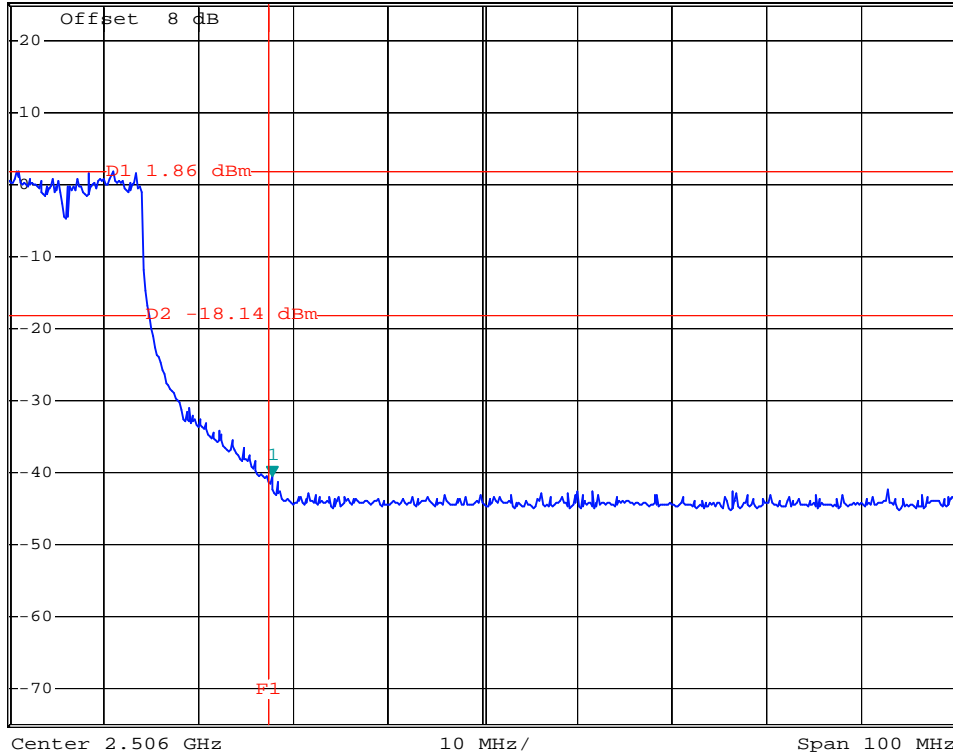
CH11



\*RBW 100 kHz    Marker 1 [T1 ]  
\*VBW 100 kHz                    -40.56 dBm  
\*SWT 500 ms                      2.48380000 GHz

Ref 25 dBm

\*Att 30 dB



Date: 16.JUN.2006 22:04:08

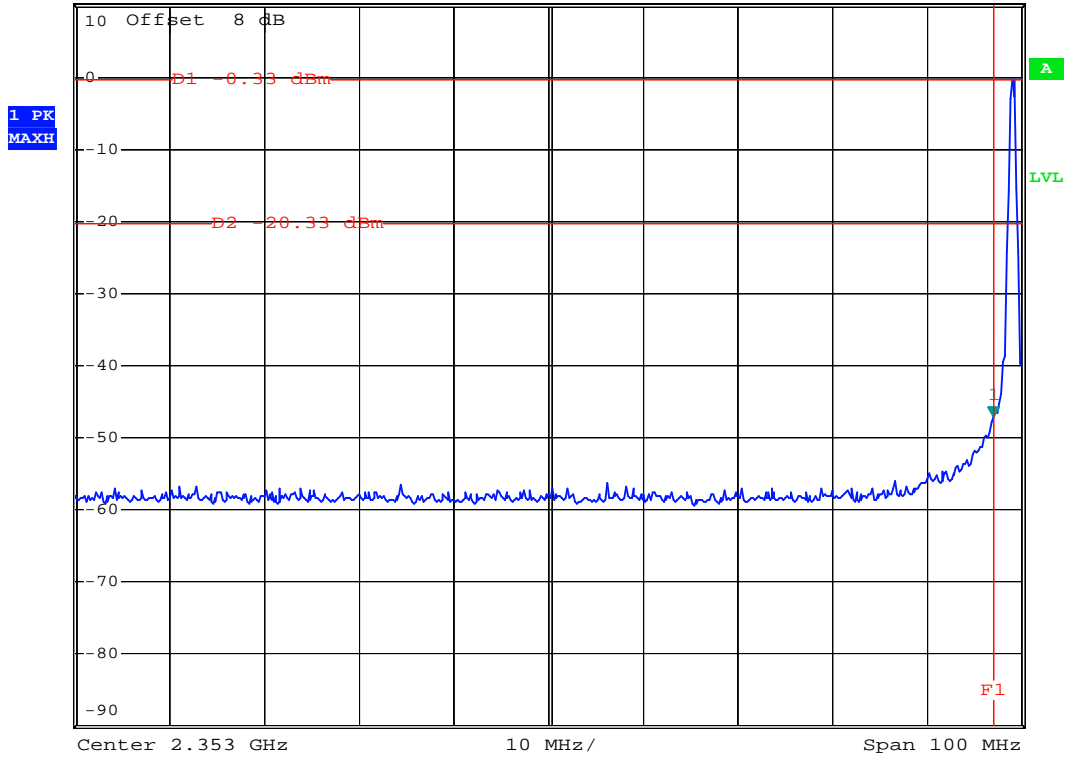


Bluetooth

CH00



Ref 10 dBm      \*Att 20 dB      \*RBW 100 kHz      Marker 1 [T1]      -47.11 dBm  
\*VBW 100 kHz      \*SWT 500 ms      2.40000000 GHz



Date: 16.JUN.2006 16:32:07

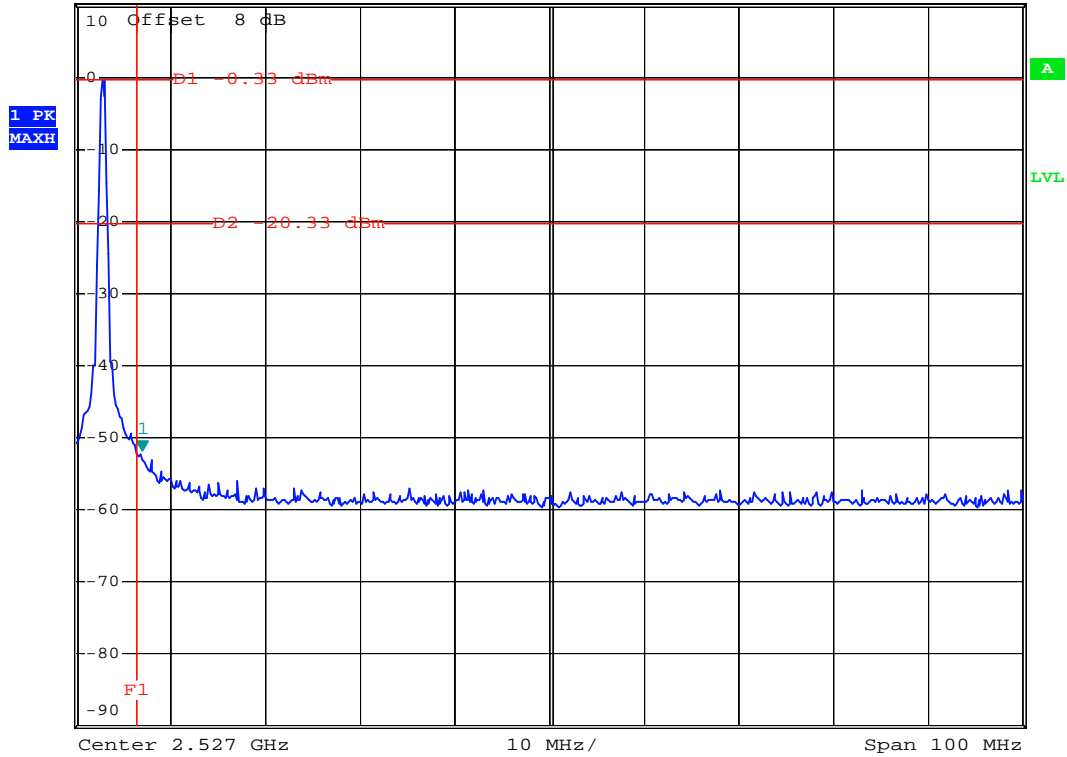




CH78



Ref 10 dBm      \*Att 20 dB      \*RBW 100 kHz      Marker 1 [T1]      -51.68 dBm  
\*VBW 100 kHz      \*SWT 500 ms      2.484000000 GHz



Date: 16.JUN.2006 16:33:14

## 5.5 Hopping Channel Separation

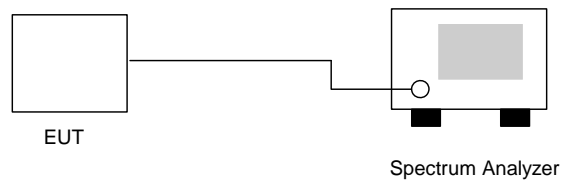
### 5.5.1 Measuring Instruments :

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 : 59%
- Test Enginner : James

Channel	Carrier Frequency		Limits ( MHz )	Plot Ref. No.
	Frequency (MHz)	Separation ( MHz )		
00	2402	1.000	0.828	Mode 1
39	2441	1.004	0.822	Mode 2
78	2480	1.008	0.826	Mode 3

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

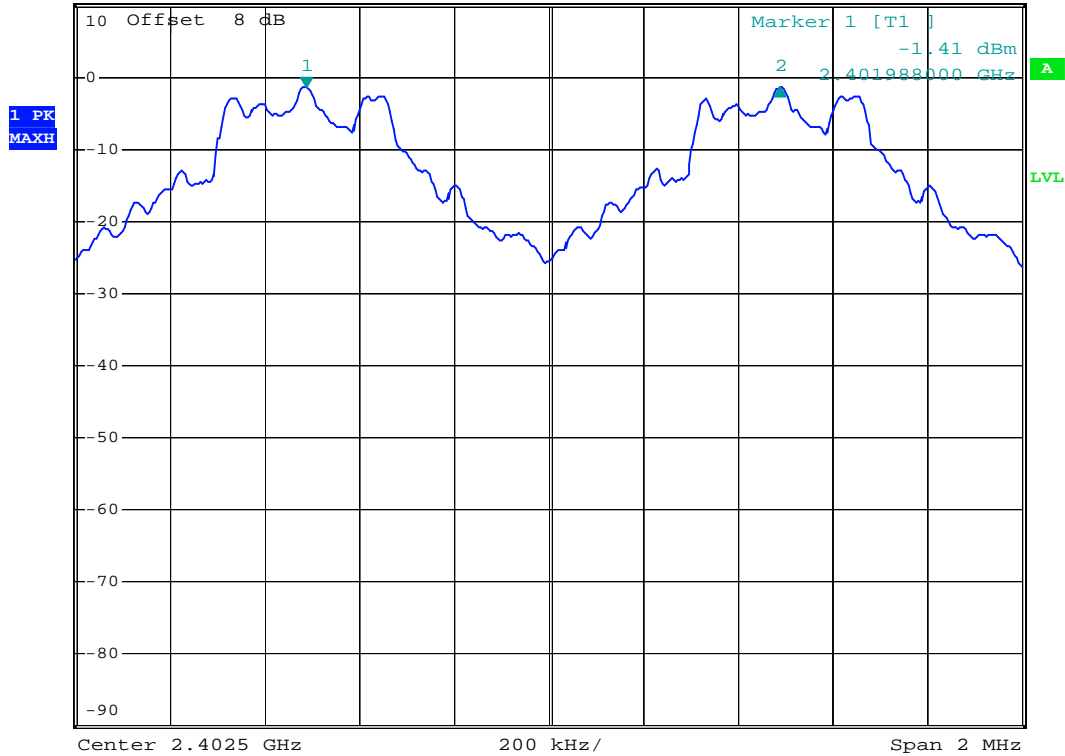


5.5.5 Hopping Channel Separation

Mode 1



Ref 10 dBm      \* Att 20 dB      \* RBW 30 kHz      Delta 2 [T1 ]  
\* VBW 100 kHz      -0.10 dB  
\* SWT 500 ms      1.000000000 MHz



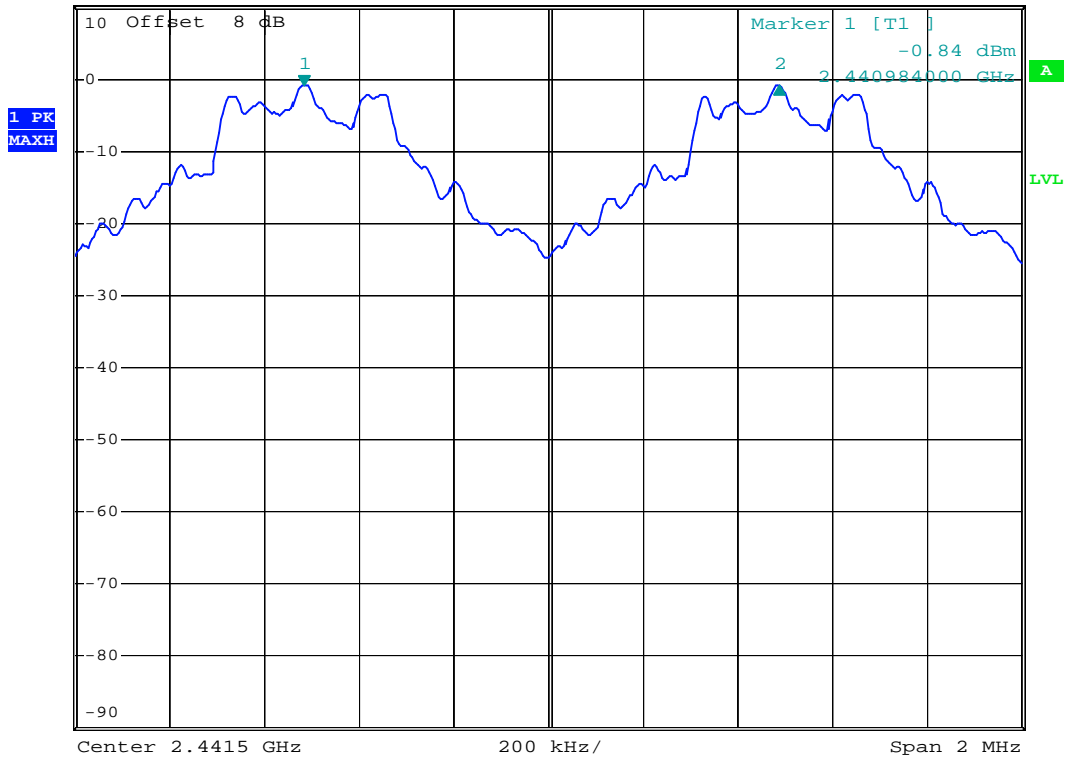
Date: 16.JUN.2006 16:38:25



Mode 2



Ref 10 dBm      \*Att 20 dB      \*RBW 30 kHz      Delta 2 [T1 ]  
\*VBW 100 kHz      -0.06 dB  
\*SWT 500 ms      1.004000000 MHz



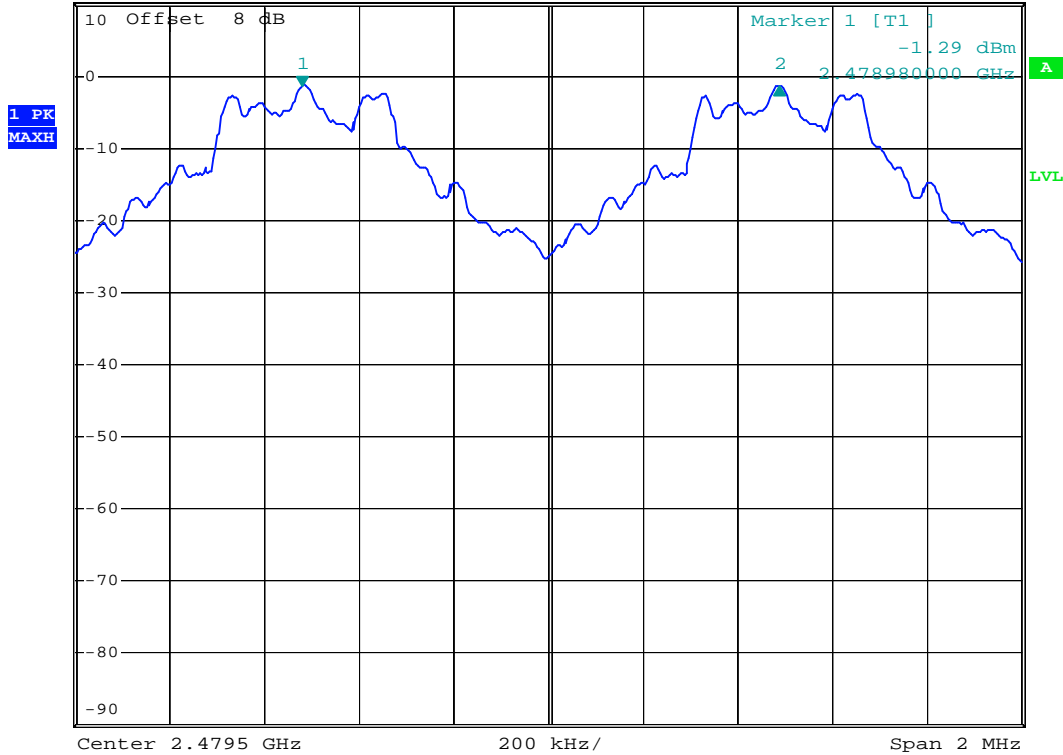
Date: 16.JUN.2006 16:39:22



Mode 3



Ref 10 dBm      \*Att 20 dB      \*RBW 30 kHz      Delta 2 [T1 ]  
\*VBW 100 kHz      -0.05 dB  
\*SWT 500 ms      1.008000000 MHz



Date: 16.JUN.2006 16:40:27

## 5.6 Number of Hopping Frequency

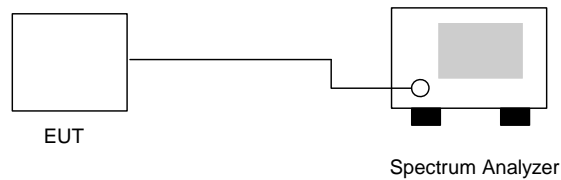
### 5.6.1 Measuring Instruments :

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 :



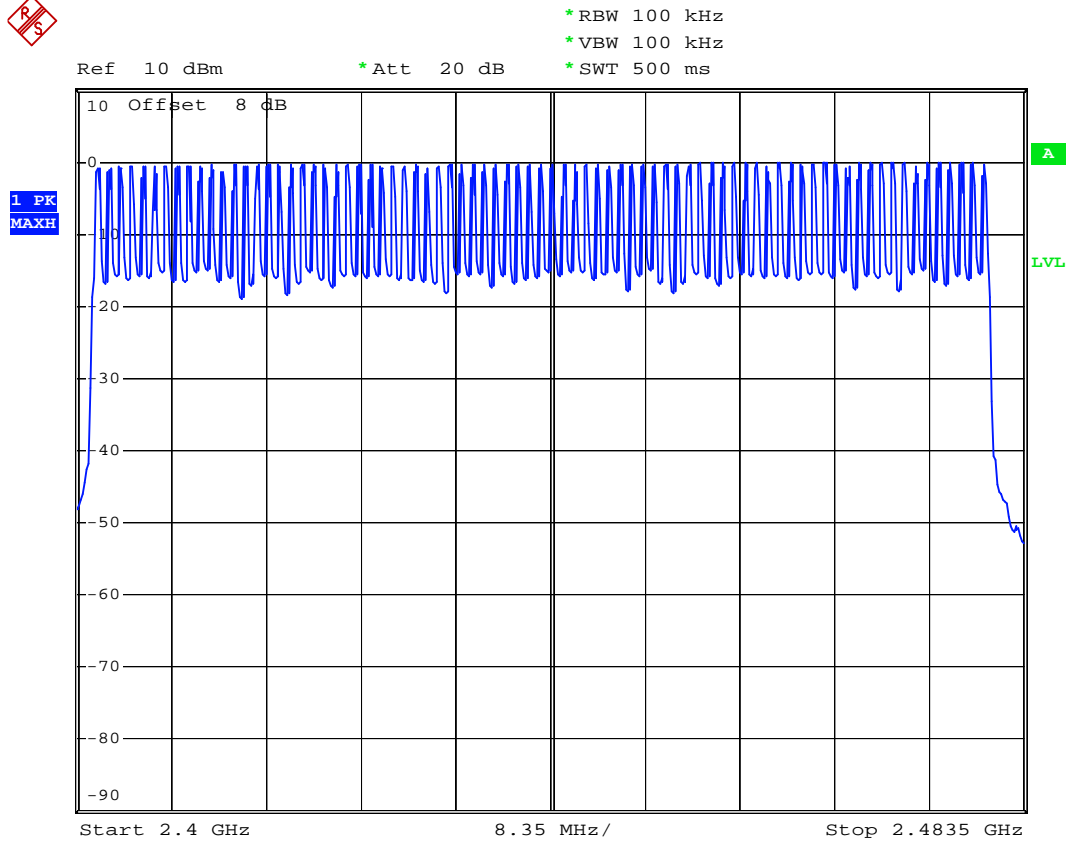
### 5.6.4 Test Result : See spectrum analyzer plots below

- Application Type : BT
- Temperature : 24°C
- Relative Humidity : 59%
- Test Enginner : James

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



5.6.5 Number of Hopping Frequency



Date: 16.JUN.2006 17:22:22

## 5.7 Hopping Channel Bandwidth

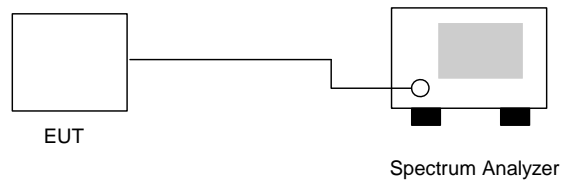
### 5.7.1 Measuring Instruments :

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 : 59%
- Test Enginner : James

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	0.828	1.000	Mode 1
39	2441	0.822	1.000	Mode 2
78	2480	0.826	1.000	Mode 3



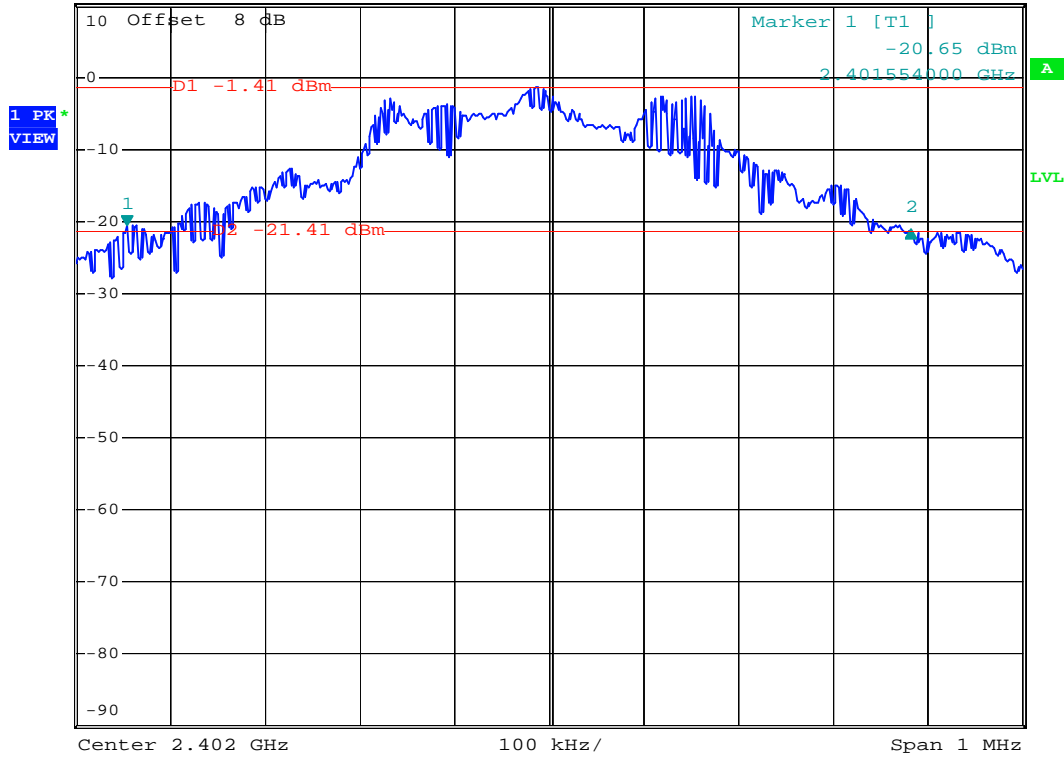


5.7.5 Hopping Channel Bandwidth

Mode 1



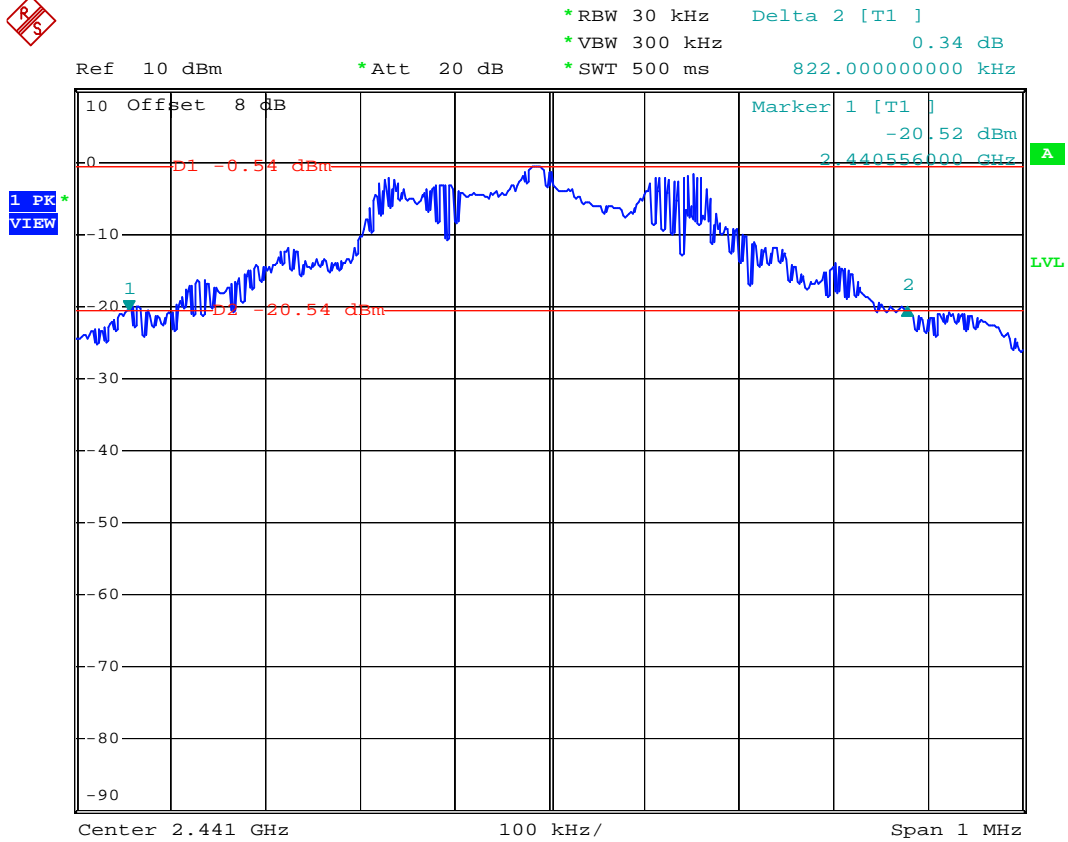
\*RBW 30 kHz    Delta 2 [T1 ]  
 \*VBW 300 kHz    -0.56 dB  
 \*SWT 500 ms    828.00000000 kHz  
 Ref 10 dBm    \*Att 20 dB



Date: 16.JUN.2006 16:29:50



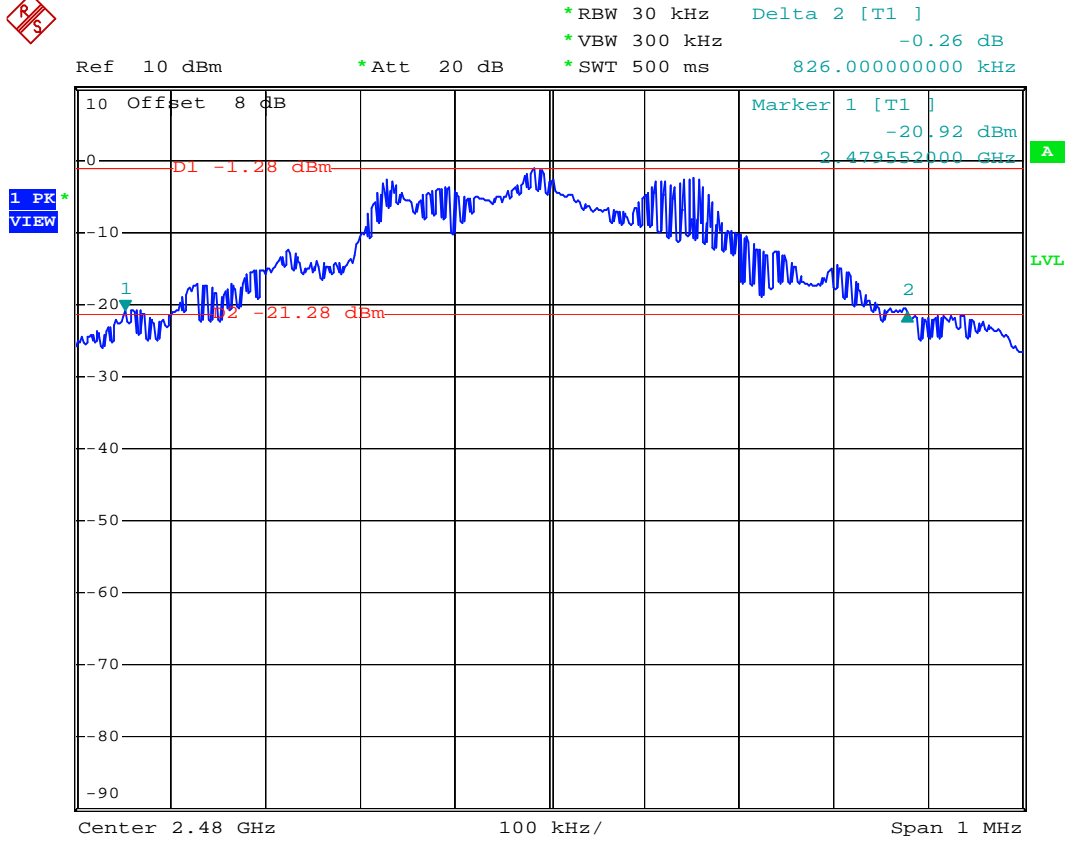
Mode 2



Date: 16.JUN.2006 16:28:26



Mode 3



Date: 16.JUN.2006 16:26:42

### 5.8 Dwell Time of Each Frequency

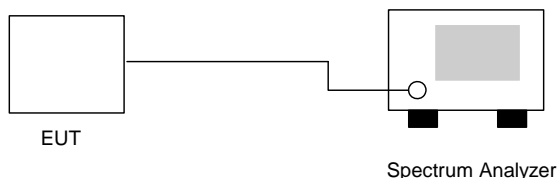
#### 5.8.1 Measuring Instruments :

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 : 59%
- Test Enginner : James

#### Ch00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.3	446	0.131	0.4
DH3	5.4	1706	0.291	0.4
DH5	3.6	2986	0.340	0.4



CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.4	450	0.134	0.4
DH3	4.4	1716	0.239	0.4
DH5	3.5	2966	0.328	0.4

CH78

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.6	446	0.135	0.4
DH3	4.8	1705	0.259	0.4
DH5	3.4	2966	0.319	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)

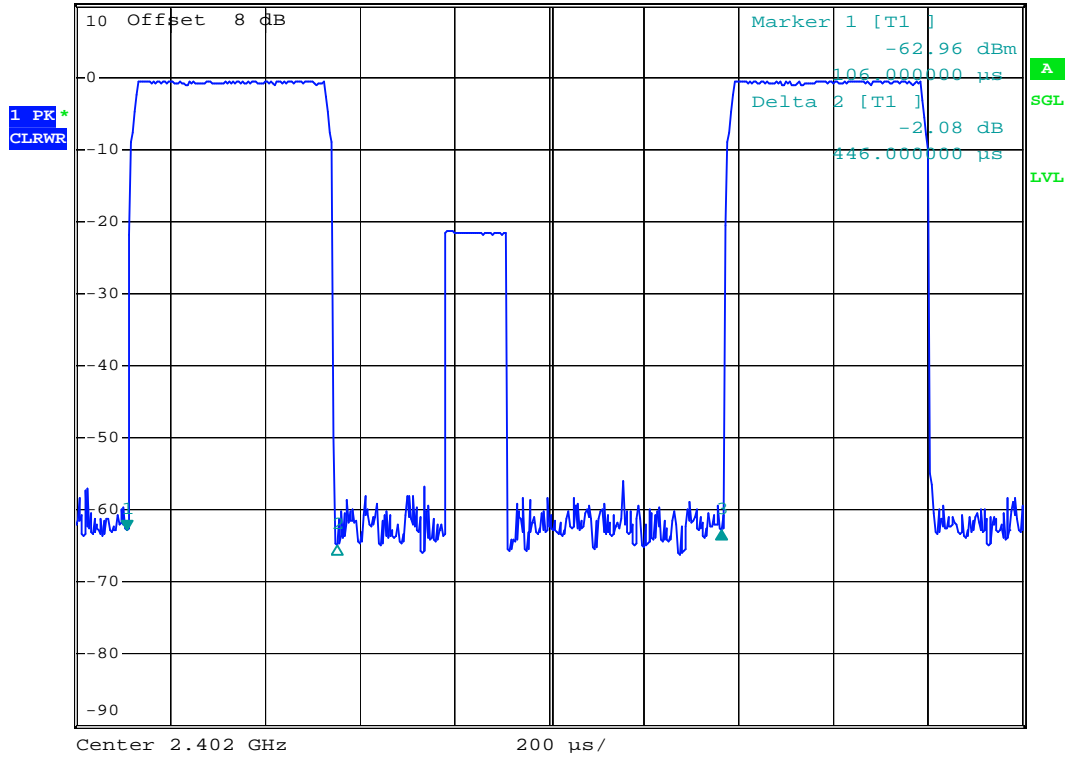


5.8.5 Dwell Time

DH1 (CH00)



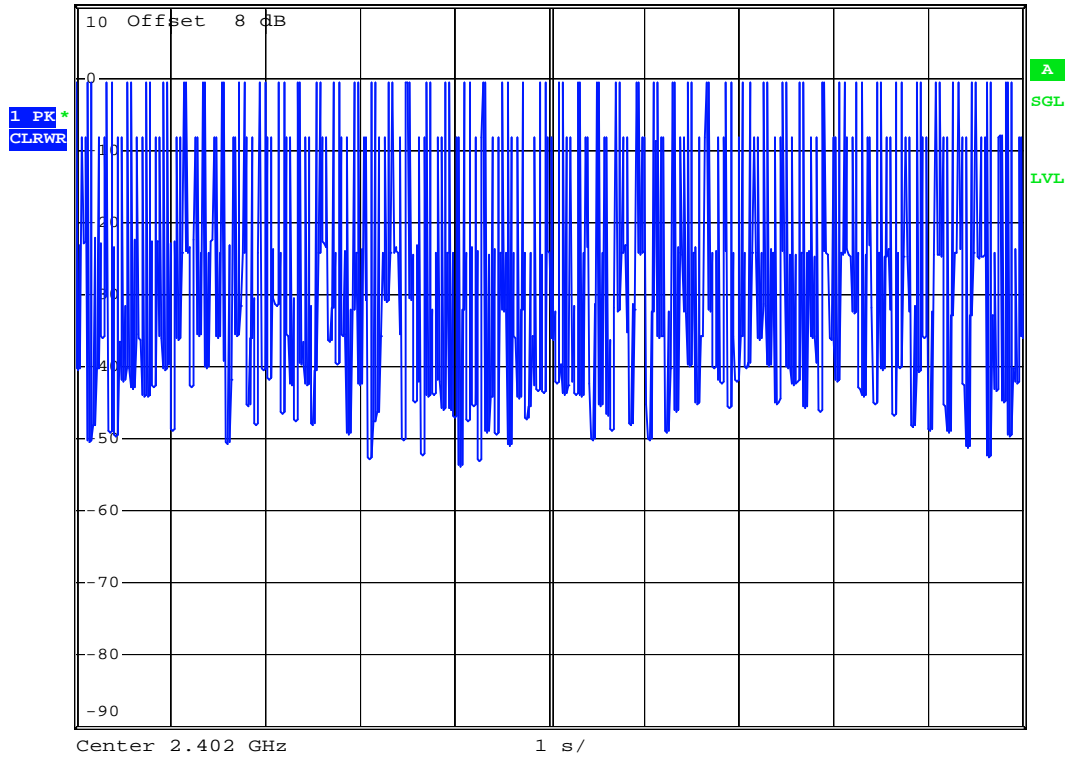
RBW 1 MHz    Delta 3 [T1 ]  
\*VBW 1 MHz                    0.18 dB  
Ref 10 dBm                    \*Att 20 dB                    SWT 2 ms                    1.258000 ms



Date: 16.JUN.2006 16:49:44



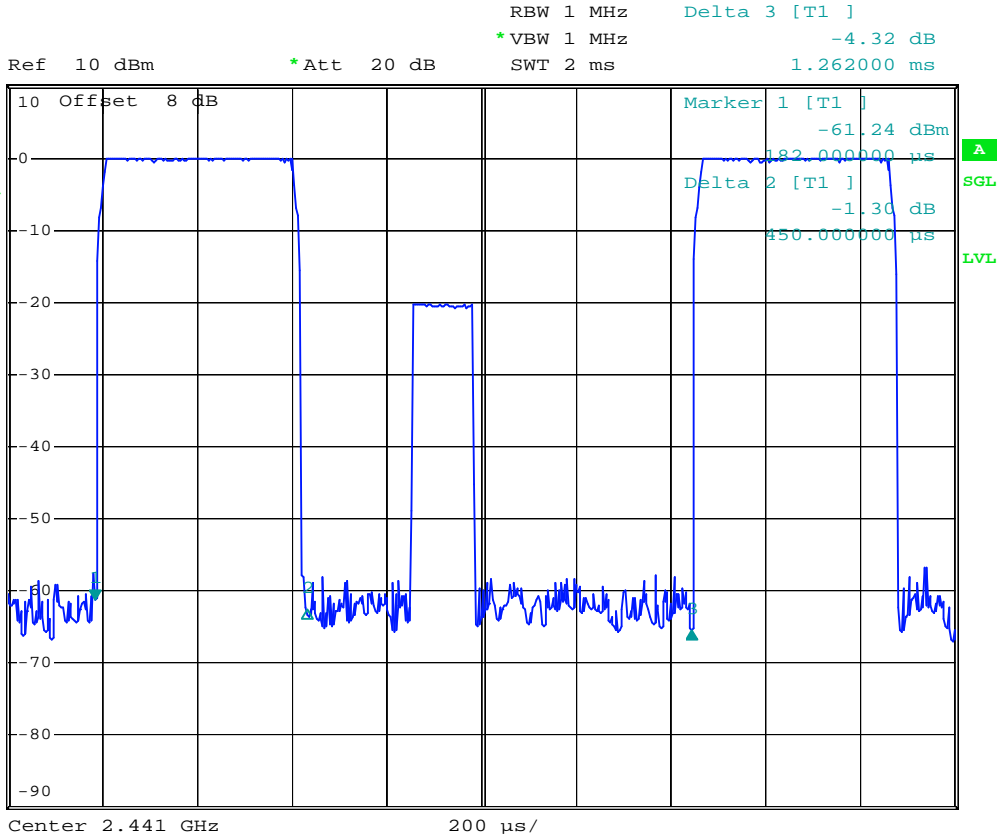
Ref 10 dBm      \*Att 20 dB      RBW 1 MHz  
\*VBW 1 MHz      SWT 10 s



Date: 16.JUN.2006 16:58:08

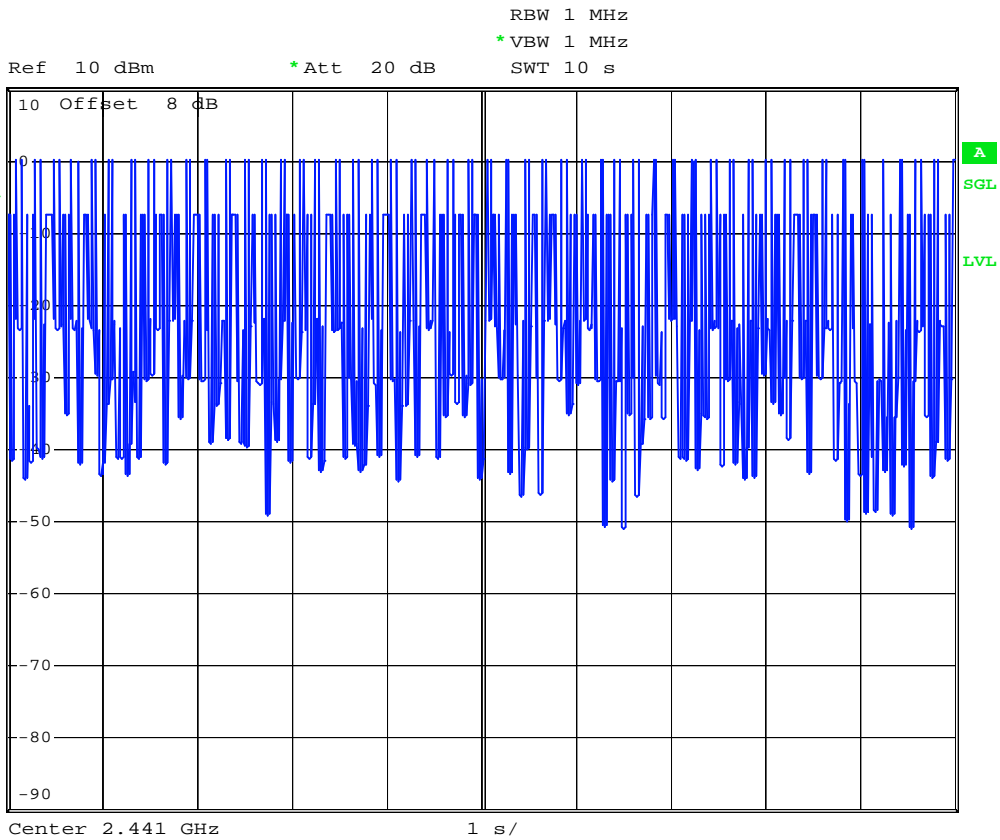


DH1 (CH39)



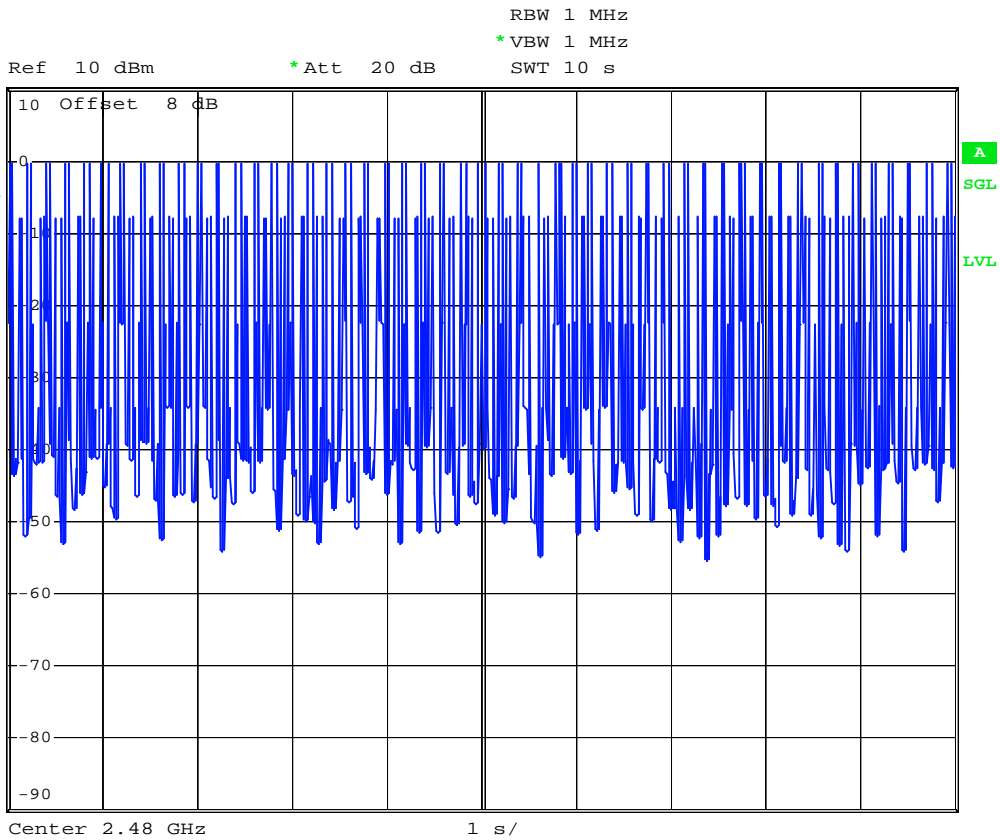
Date: 16.JUN.2006 16:50:21





Date: 16.JUN.2006 16:58:31





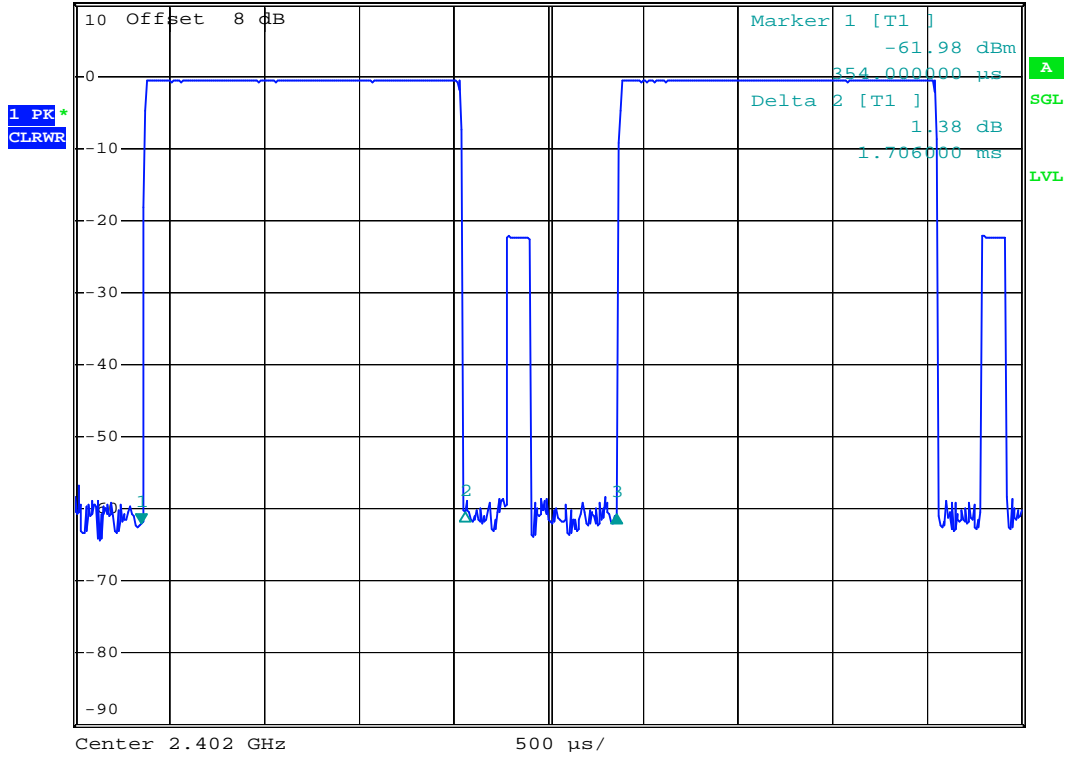
Date: 16.JUN.2006 16:58:54



DH3 (CH00)



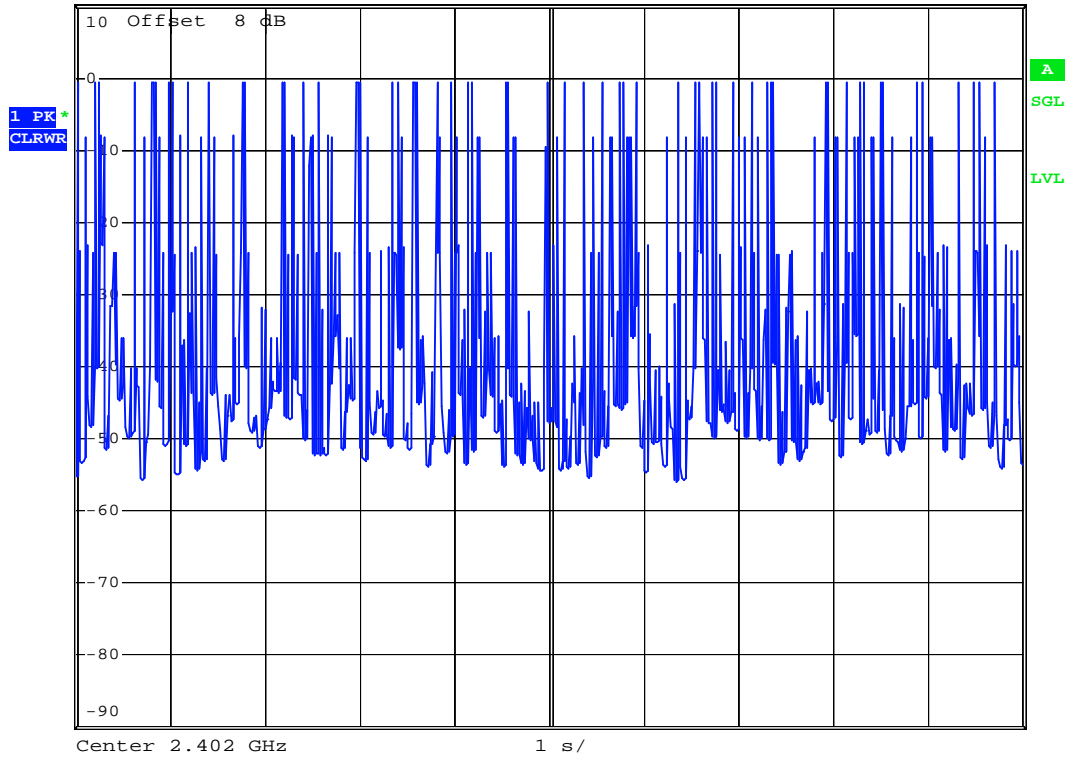
RBW 1 MHz      Delta 3 [T1 ]  
\*VBW 1 MHz      1.24 dB  
Ref 10 dBm      \*Att 20 dB      SWT 5 ms      2.502000 ms



Date: 16.JUN.2006 16:51:47



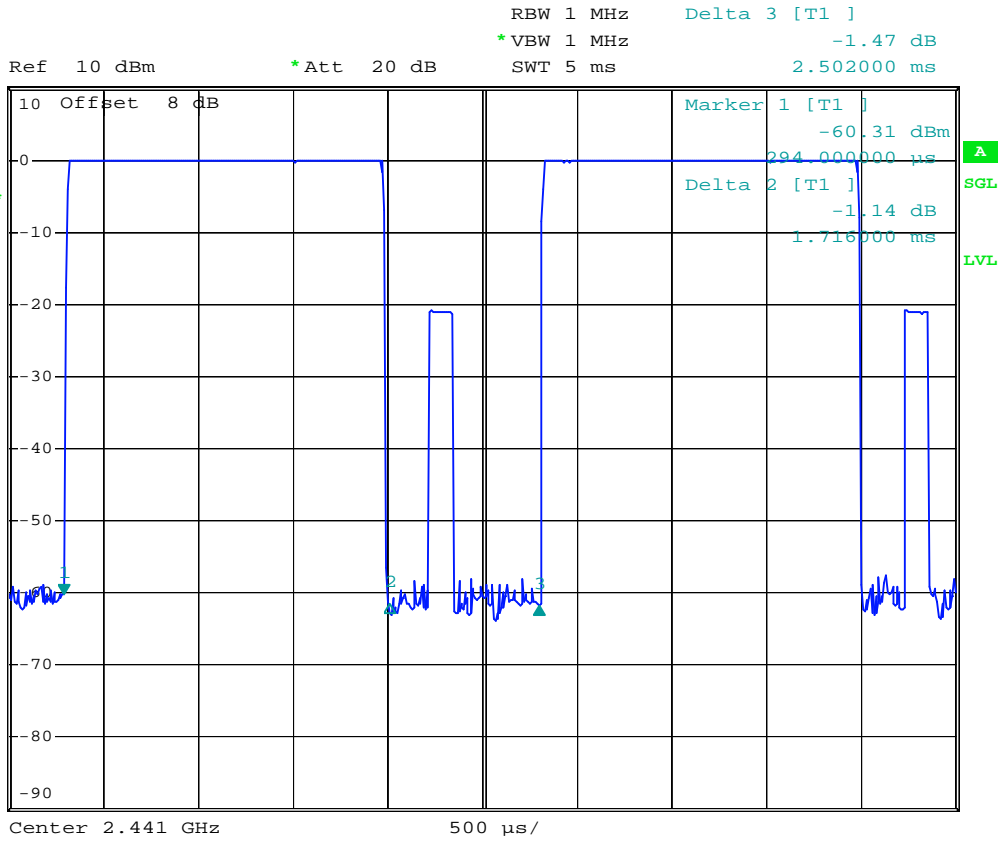
Ref 10 dBm      \*Att 20 dB      RBW 1 MHz  
\*VBW 1 MHz      SWT 10 s



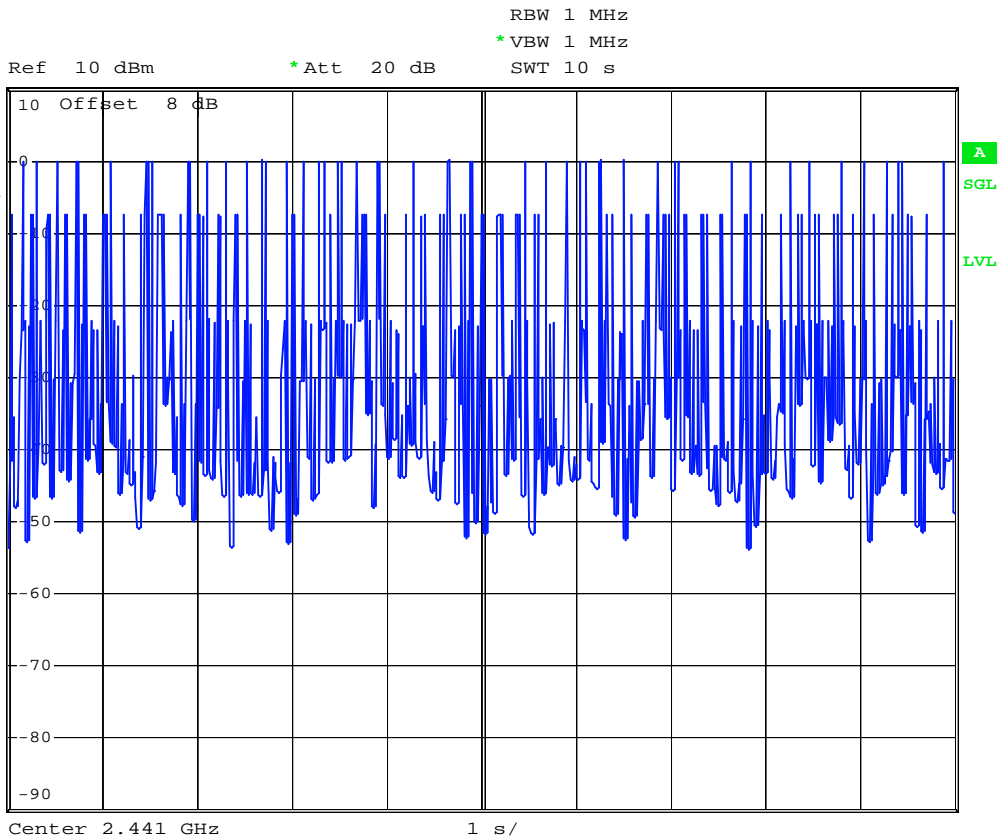
Date: 16.JUN.2006 17:00:23



DH3 (CH39)



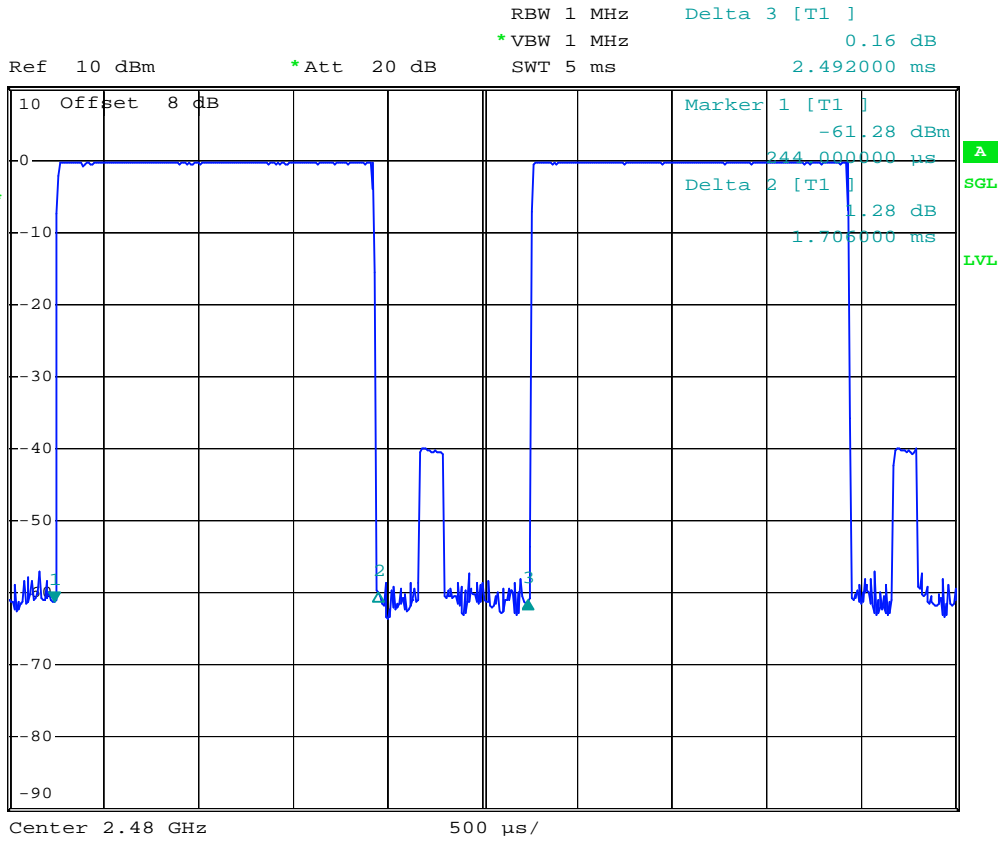
Date: 16.JUN.2006 16:52:06



Date: 16.JUN.2006 17:00:42

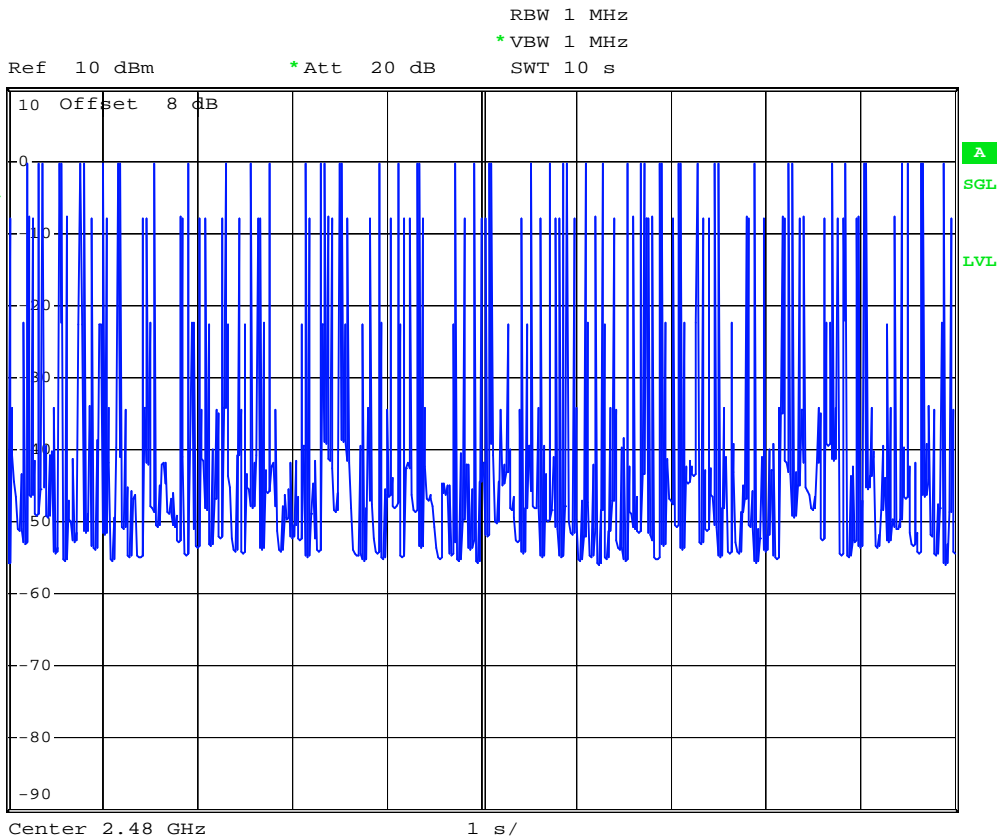


DH3 (CH78)



Date: 16.JUN.2006 16:52:37





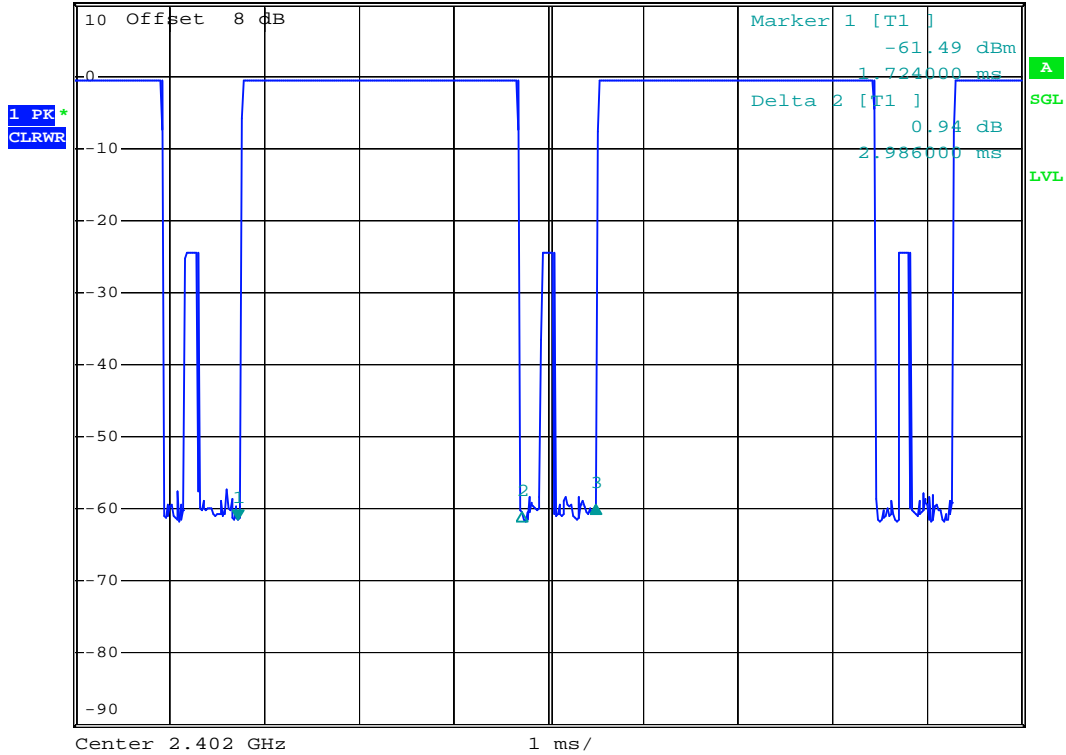
Date: 16.JUN.2006 17:01:00



DH5 (CH00)



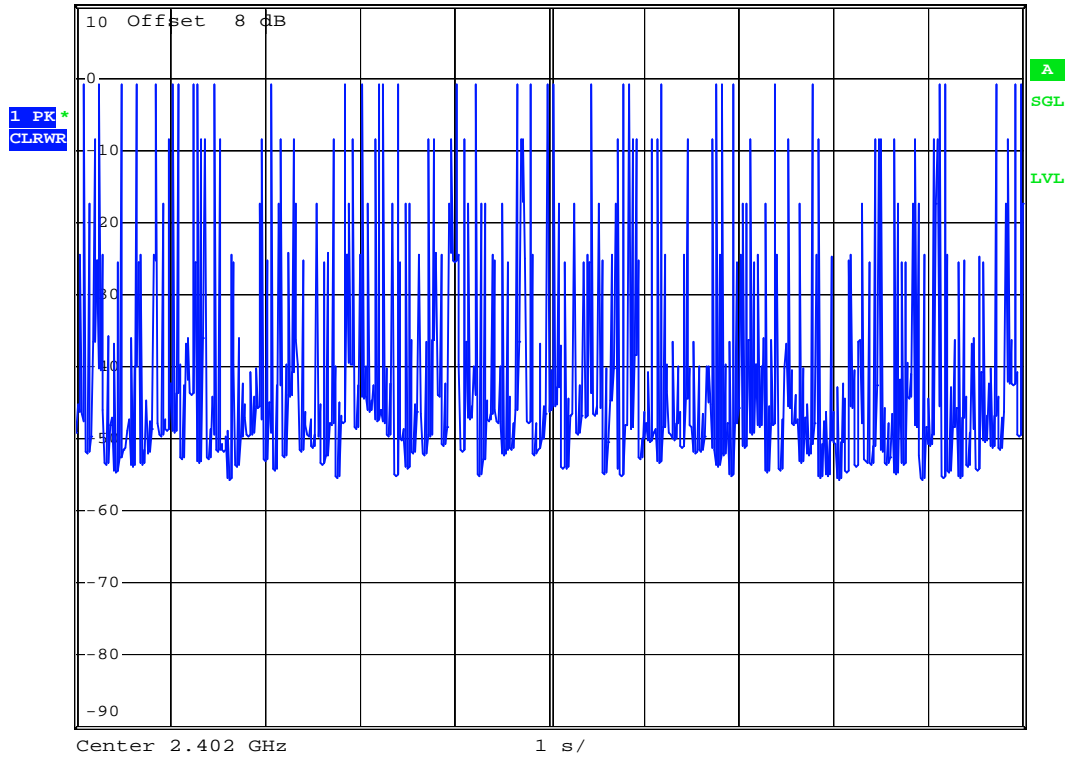
RBW 1 MHz      Delta 3 [T1 ]  
\*VBW 1 MHz      1.96 dB  
Ref 10 dBm      \*Att 20 dB      SWT 10 ms      3.772000 ms



Date: 16.JUN.2006 16:55:07



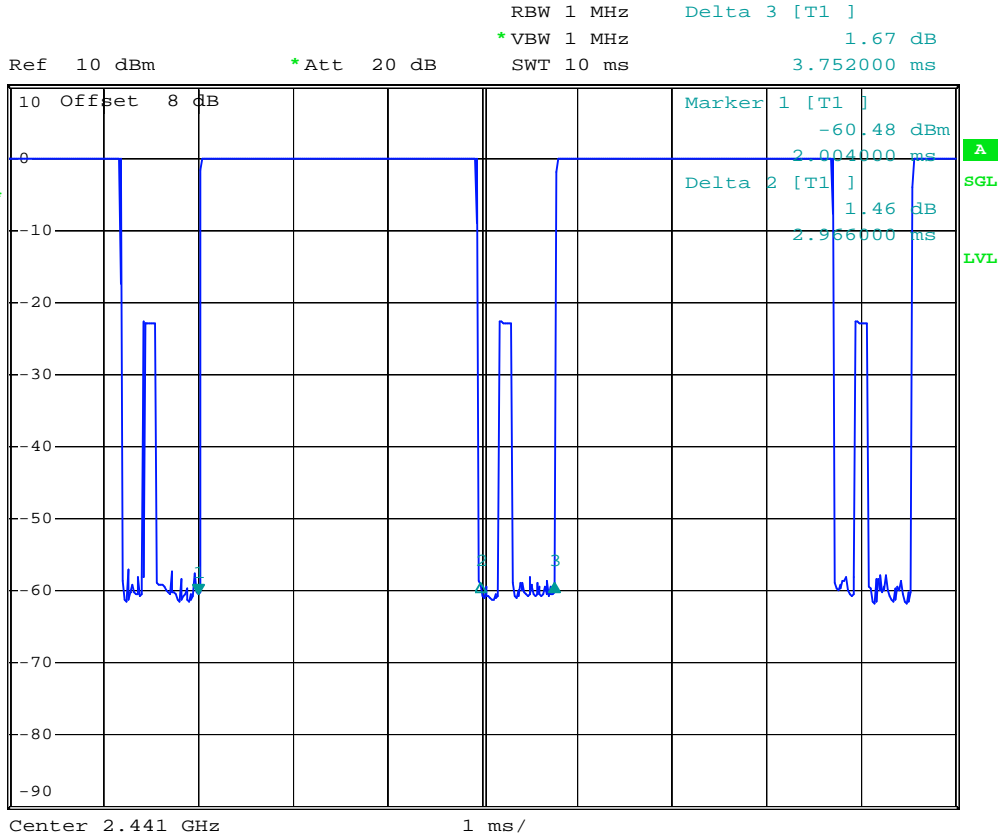
Ref 10 dBm      \*Att 20 dB      RBW 1 MHz  
\*VBW 1 MHz      SWT 10 s



Date: 16.JUN.2006 17:24:06



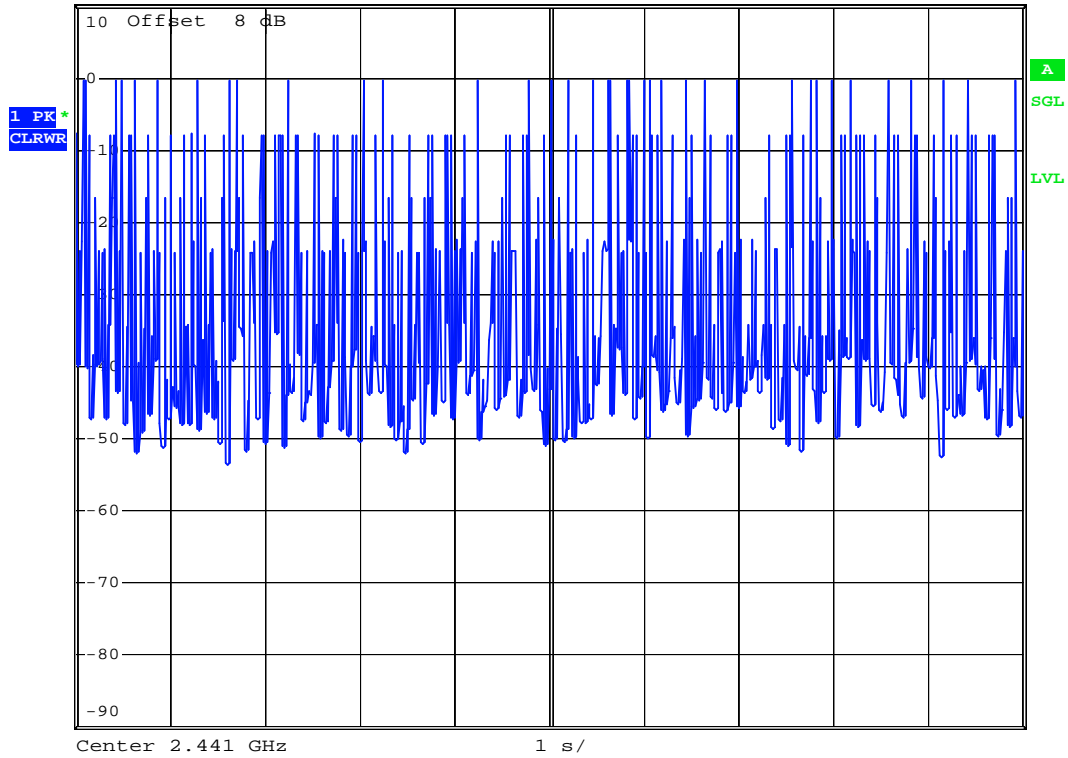
DH5 (CH39)



Date: 16.JUN.2006 16:55:33



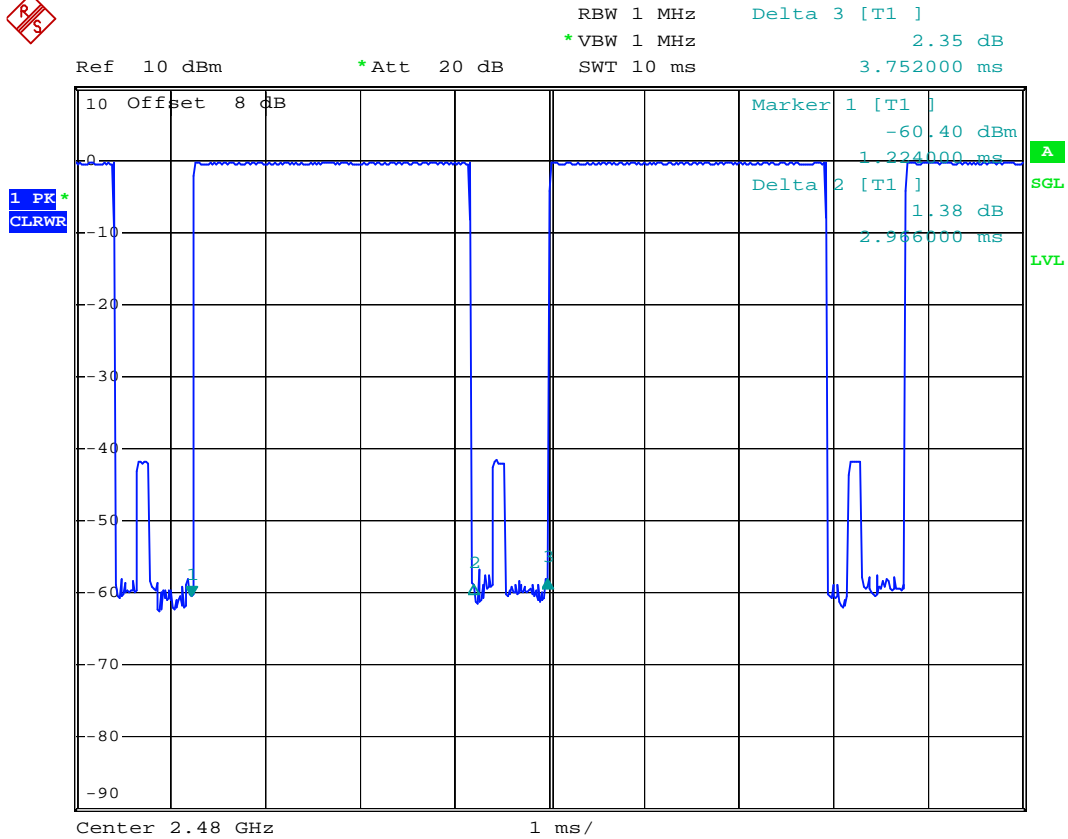
Ref 10 dBm      \*Att 20 dB      RBW 1 MHz  
\*VBW 1 MHz      SWT 10 s



Date: 16.JUN.2006 17:03:12



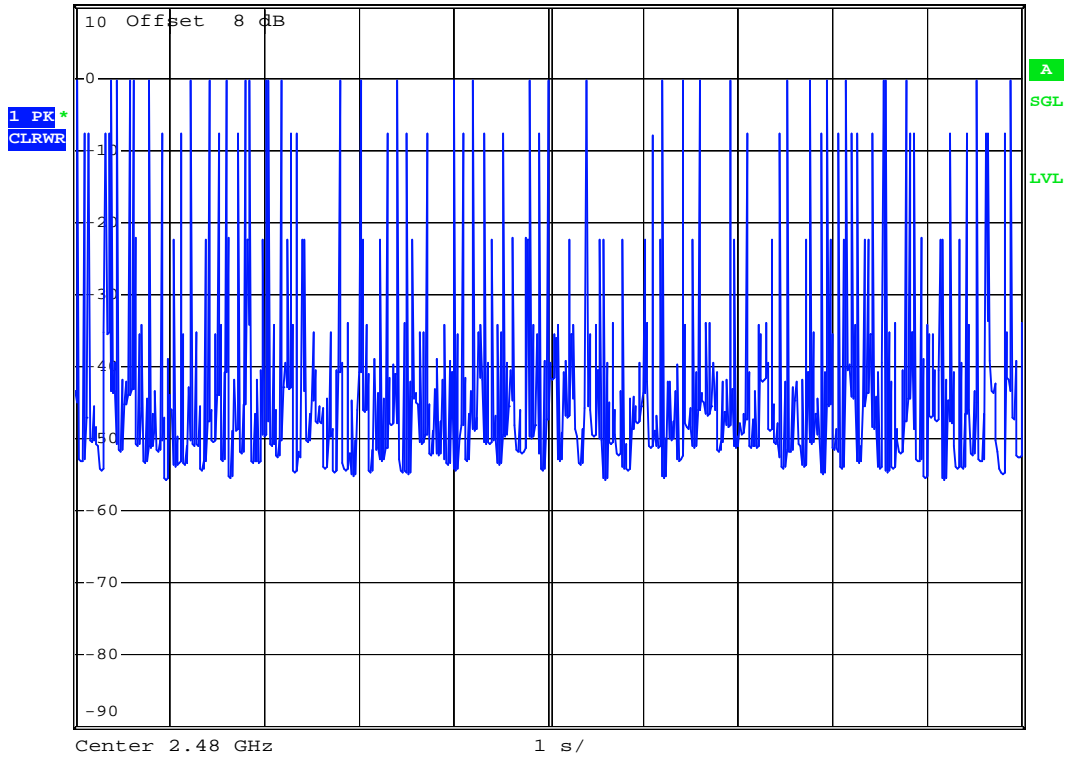
DH5 (CH78)



Date: 16.JUN.2006 16:56:54



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



Date: 16.JUN.2006 17:02:34

**5.9 Peak Output Power Measurement**

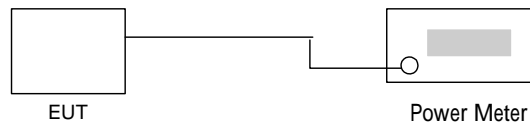
5.9.1 Measuring Instruments :

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 : 59 %
- Test Enginner : James

**WLAN 802.11b**

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm )
01	2412	18.69	1W/30 dBm
06	2437	19.35	1W/30 dBm
11	2462	18.6	1W/30 dBm

**WLAN 802.11g**

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm )
01	2412	20.87	1W/30 dBm
06	2437	21.23	1W/30 dBm
11	2462	20.93	1W/30 dBm





**Bluetooth**

---

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm )
00	2402	-0.04	1W/30 dBm
39	2441	0.64	1W/30 dBm
78	2480	-0.11	1W/30 dBm

---

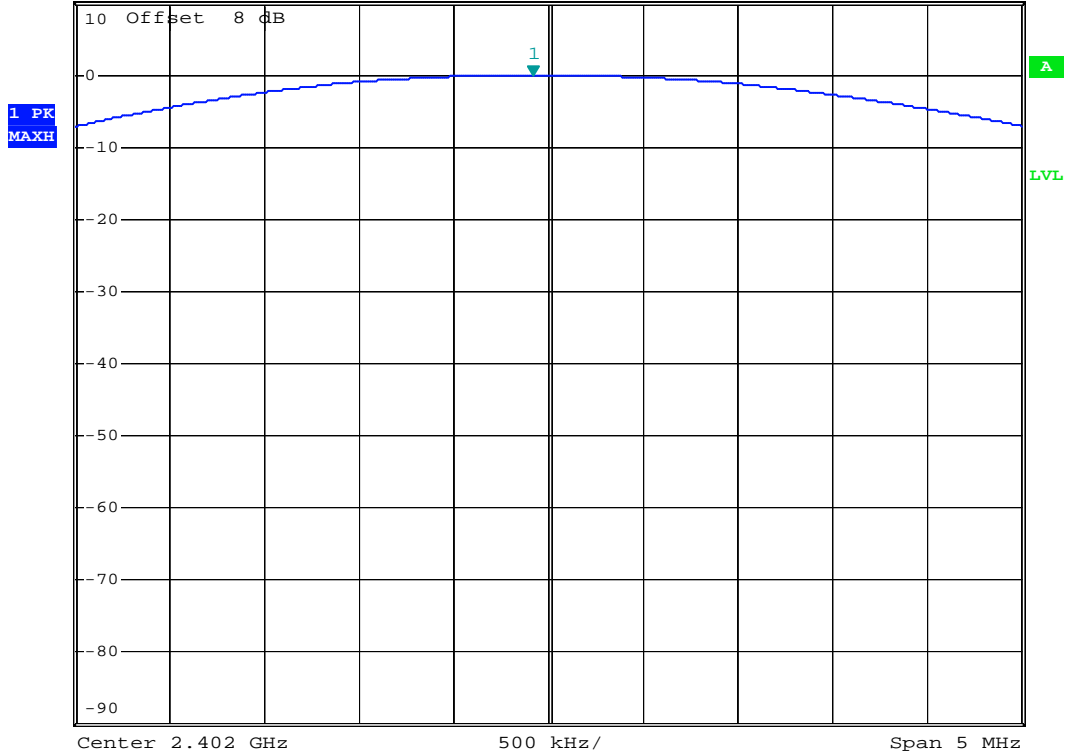


5.9.5 Output Power

BT Mode : CH00 (2402MHz)



Ref 10 dBm      \*Att 20 dB      \*RBW 3 MHz      Marker 1 [T1]      -0.04 dBm  
\*VBW 3 MHz      \*SWT 500 ms      2.401920000 GHz



Date: 16.JUN.2006 16:23:51

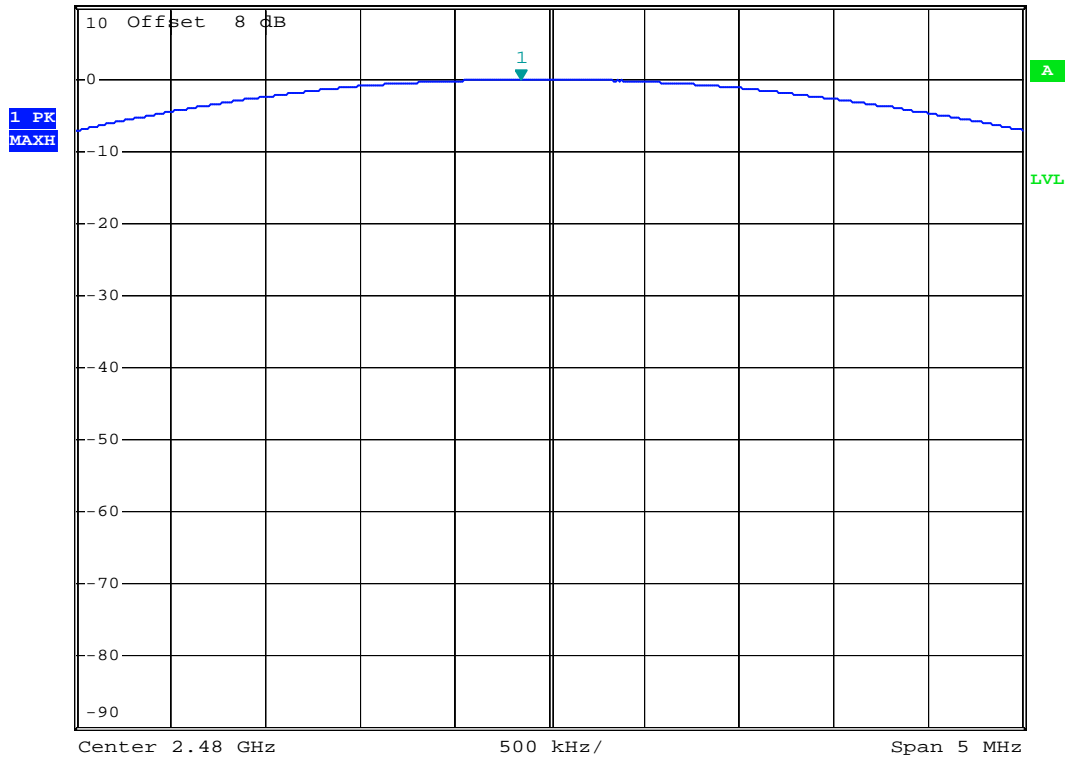




BT Mode : CH78 (2480MHz)



Ref 10 dBm      \*Att 20 dB      \*RBW 3 MHz      Marker 1 [T1]      -0.11 dBm  
\*VBW 3 MHz      \*SWT 500 ms      2.479850000 GHz



Date: 16.JUN.2006 16:24:30



## **5.10 Conducted Emission**

### **5.10.1 Measuring Instruments**

As described in chapter 6 of this test Report.

### **5.10.2 Test Procedures :**

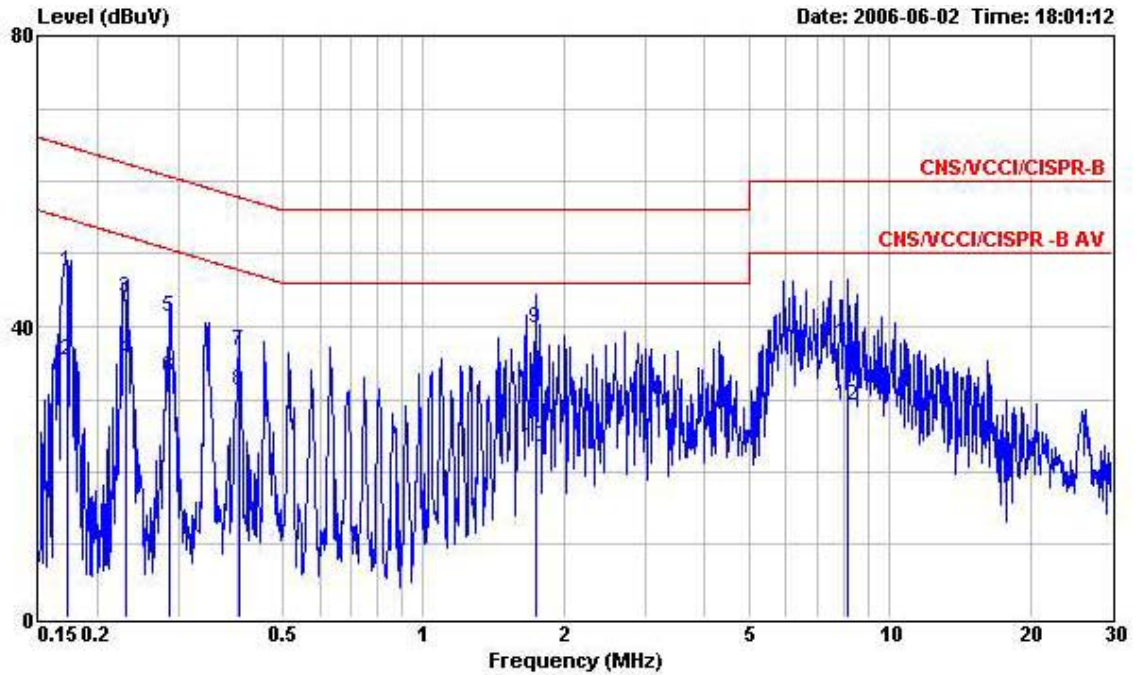
- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of a line impedance stabilization network (LISN).
- c. All the support units are connected to the other LISN.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

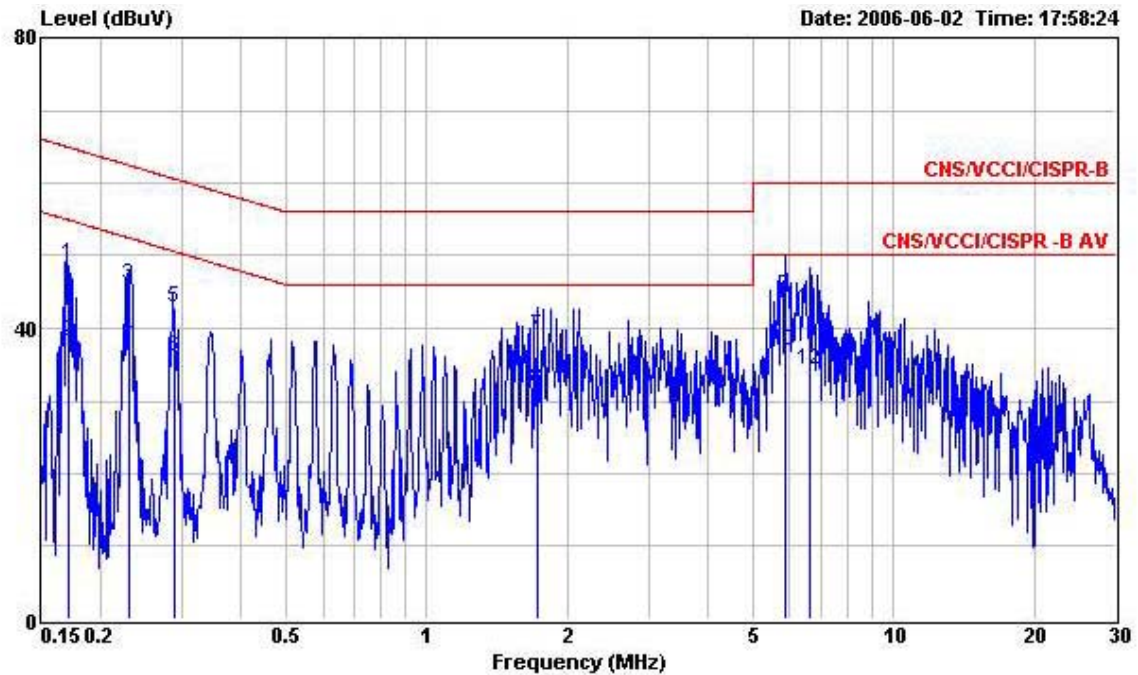
- Temperature : 24 °C
- Relating Humidity : 59 %
- Test Enginner : James
- Test Mode : Mode 1

**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 200505 LINE  
 EUT : GSM 850/900/1800/1900 Mobile Phone  
 : (802.11b AND Bluetooth AND GPS)  
 Power : 120V/60Hz  
 Model : FD653101  
 Memo : PCS1900 IDLE+BT Link+WLAN Link+GPS Rx  
 Memo : +Earphone+Adaptor+USB Link+Camera+MPEG 4

	Over	Limit	Read	Probe	Cable		
Freq	Level	Limit	Line	Level	Factor	Loss	Remark
MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.173	47.52	-17.32	64.84	47.44	0.00	0.08 QP
2	0.173	35.38	-19.46	54.84	35.30	0.00	0.08 Average
3	0.230	43.96	-18.49	62.45	43.88	0.00	0.08 QP
4	0.230	35.23	-17.22	52.45	35.15	0.00	0.08 Average
5	0.285	41.20	-19.47	60.67	41.14	0.00	0.06 QP
6	0.285	32.90	-17.77	50.67	32.84	0.00	0.06 Average
7	0.402	36.63	-21.18	57.81	36.59	0.00	0.04 QP
8	0.402	31.11	-16.70	47.81	31.07	0.00	0.04 Average
9	1.740	39.68	-16.32	56.00	39.58	0.00	0.10 QP
10	1.740	23.51	-22.49	46.00	23.41	0.00	0.10 Average
11	8.143	37.70	-22.30	60.00	37.46	0.00	0.24 QP
12	8.143	29.00	-21.00	50.00	28.76	0.00	0.24 Average



Site : CO01-HY  
 Condition : CNS/VCCI/CISPR-B 2001/004 200505 NEUTRAL  
 EUT : GSM 850/900/1800/1900 Mobile Phone  
 : (802.11b AND Bluetooth AND GPS)  
 Power : 120V/60Hz  
 Model : FD653101  
 Memo : PCS1900 IDLE+BT Link+WLAN Link+GPS Rx  
 Memo : +Earphone+Adaptor+USB Link+Camera+MPEG 4

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.172	48.92	-15.97	64.89	48.85	0.00	0.07	QP
2	0.172	38.10	-16.79	54.89	38.03	0.00	0.07	Average
3	0.229	45.94	-16.53	62.47	45.86	0.00	0.08	QP
4	0.229	38.83	-13.64	52.47	38.75	0.00	0.08	Average
5	0.288	42.82	-17.77	60.59	42.76	0.00	0.06	QP
6	0.288	36.09	-14.50	50.59	36.03	0.00	0.06	Average
7	1.721	39.08	-16.92	56.00	38.98	0.00	0.10	QP
8	1.721	31.61	-14.39	46.00	31.51	0.00	0.10	Average
9	5.866	44.45	-15.55	60.00	44.25	0.00	0.20	QP
10	5.866	36.94	-13.06	50.00	36.74	0.00	0.20	Average
11	6.624	42.58	-17.42	60.00	42.37	0.00	0.21	QP
12	6.624	34.41	-15.59	50.00	34.20	0.00	0.21	Average



## **5.11 Radiated Emission Measurement**

### **5.11.1 Measuring Instruments**

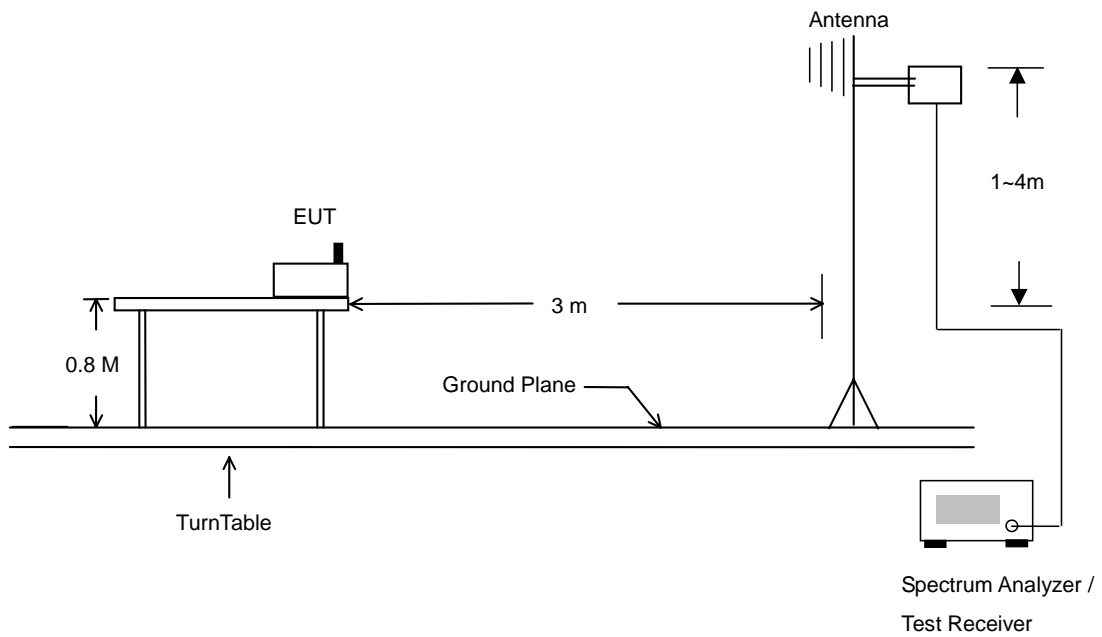
As described in chapter 6 of this Report.

### **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

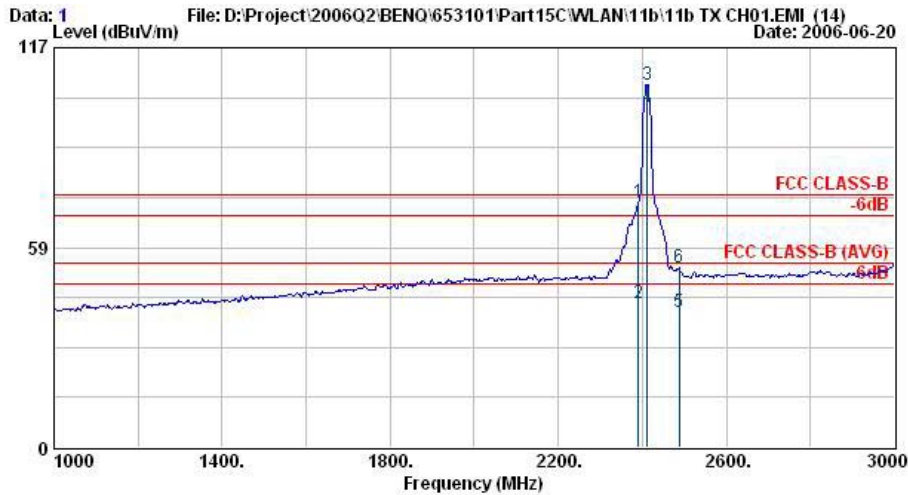




5.11.4 Test Data

- Temperature : 26°C
- Relating Humidity : 57%
- Test Enginner : Andrew
- Test Mode : Mode 1
- Polarization : Horizontal

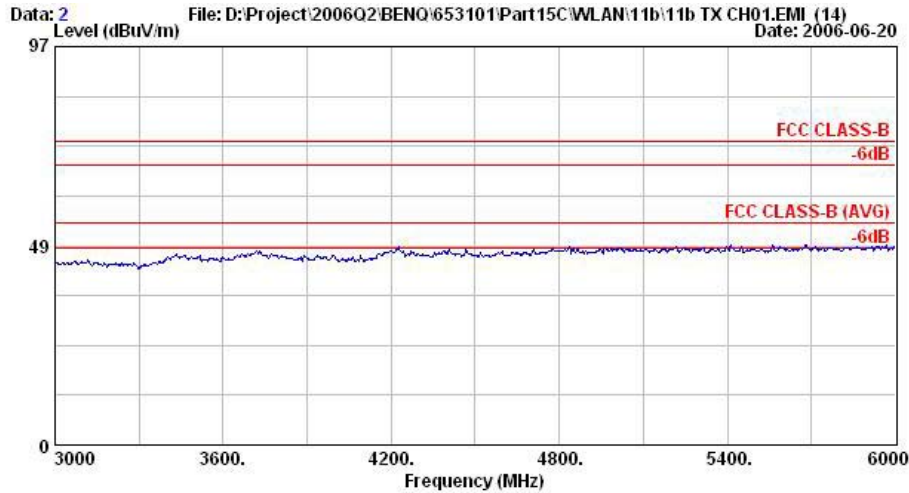
**The test that passed at minimum margin was marked by the frame in the following table.**



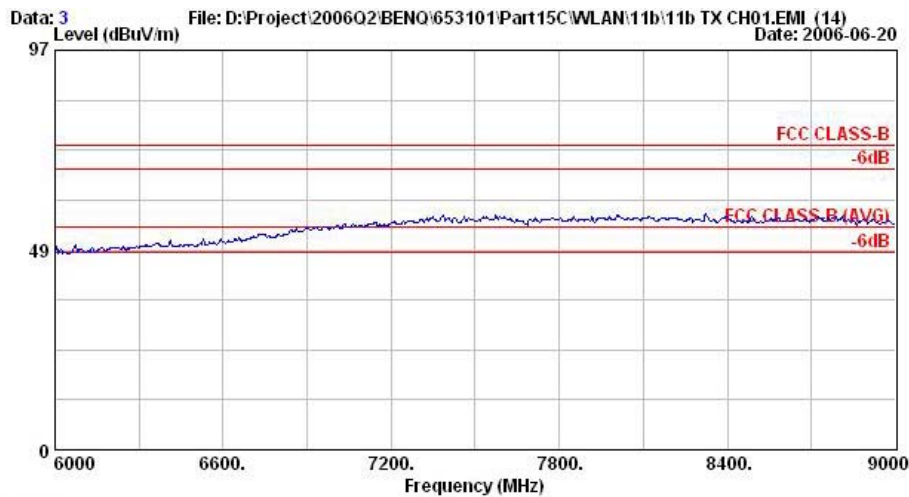
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH01\_2412MHz  
 Plane : E2

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	71.81	-2.19	74.00	72.75	30.26	4.26	35.46	100	360	Peak
2	2390.00	42.37	-11.63	54.00	43.31	30.26	4.26	35.46	100	341	Average
3	2412.00	106.28			107.21	30.27	4.26	35.46	100	360	Peak
4	2412.00	99.77			100.70	30.27	4.26	35.46	100	341	Average
5	2488.00	39.66	-14.34	54.00	40.51	30.30	4.36	35.51	100	341	Average
6	2488.00	52.45	-21.55	74.00	53.30	30.30	4.36	35.51	100	360	Peak

Remark: #3 and #4 Fundamental Signal



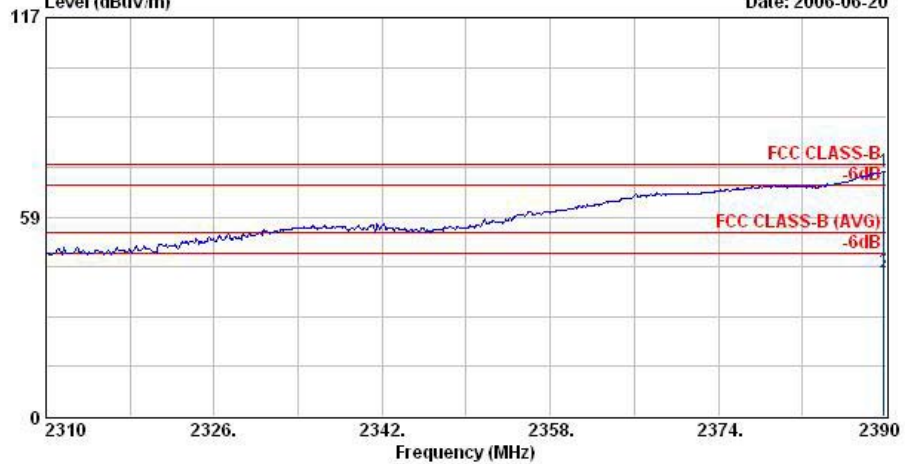
Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH01,2412MHz  
Plane : E2



Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH01,2412MHz  
Plane : E2



Data: 13 File: D:\Project\2006Q2\BENQ\653101\Part15C\WLAN\11b\11b TX CH01.EMI (14) Level (dBuV/m) Date: 2006-06-20



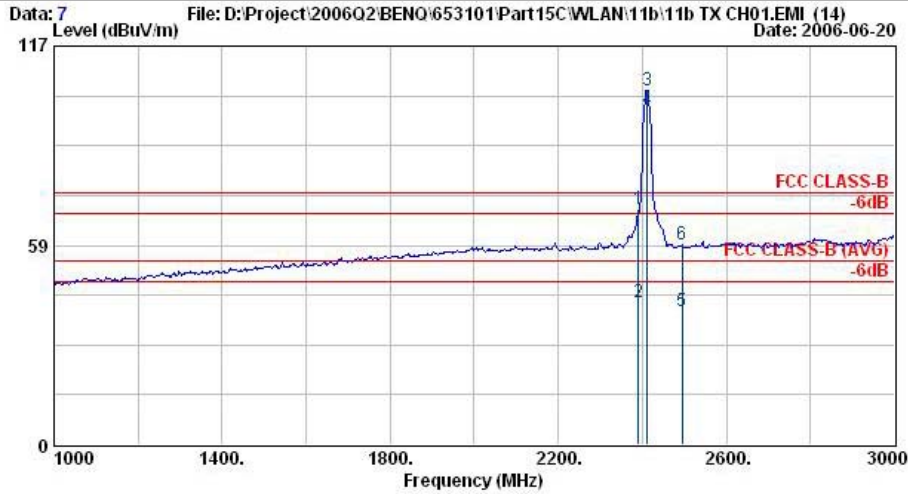
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH01,2412MHz  
 Plane : E2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.76	71.81	-2.19	74.00	72.75	30.26	4.26	35.46	100	0	Peak
2	2389.76	42.37	-11.63	54.00	43.31	30.26	4.26	35.46	100	341	Average



▪ Polarization : Vertical

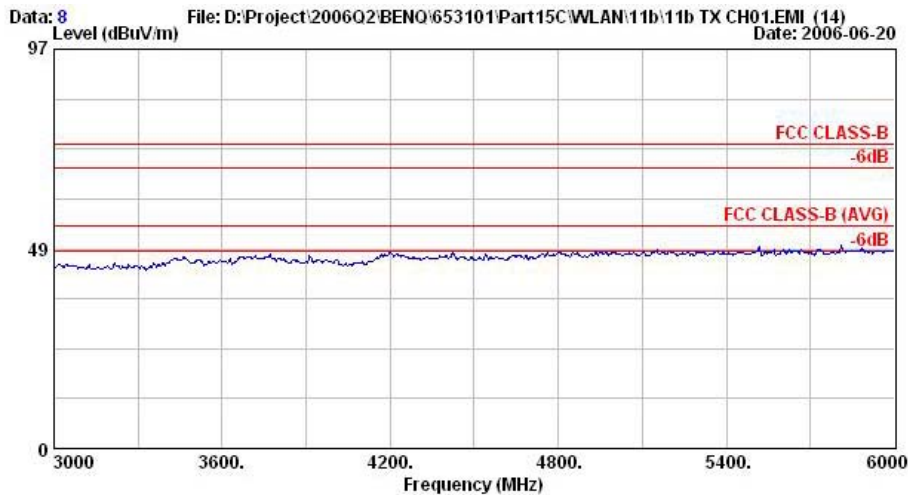
**The test that passed at minimum margin was marked by the frame in the following table.**



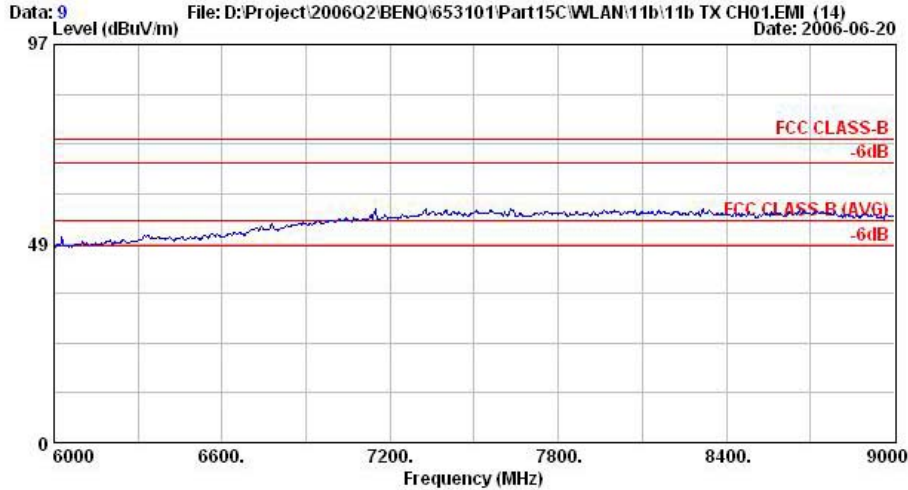
Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH01\_2412MHz  
 Plane : E2

	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	2390.00	69.21	-4.79	74.00	70.15	30.26	4.26	35.46	100	0 Peak
2	2390.00	41.69	-12.31	54.00	42.63	30.26	4.26	35.46	100	264 Average
3	2412.00	104.15			105.08	30.27	4.26	35.46	100	0 Peak
4	2412.00	98.35			99.28	30.27	4.26	35.46	100	264 Average
5	2494.00	39.10	-14.90	54.00	39.94	30.30	4.39	35.53	100	264 Average
6	2494.00	58.57	-15.43	74.00	59.41	30.30	4.39	35.53	100	0 Peak

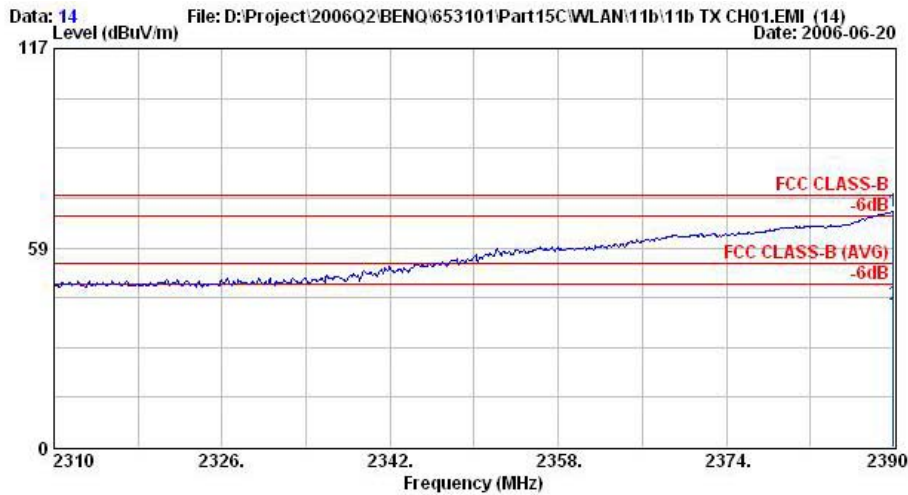
Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH01\_2412MHz  
 Plane : E2



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH01,2412MHz  
 Plane : E2



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH01,2412MHz  
 Plane : E2

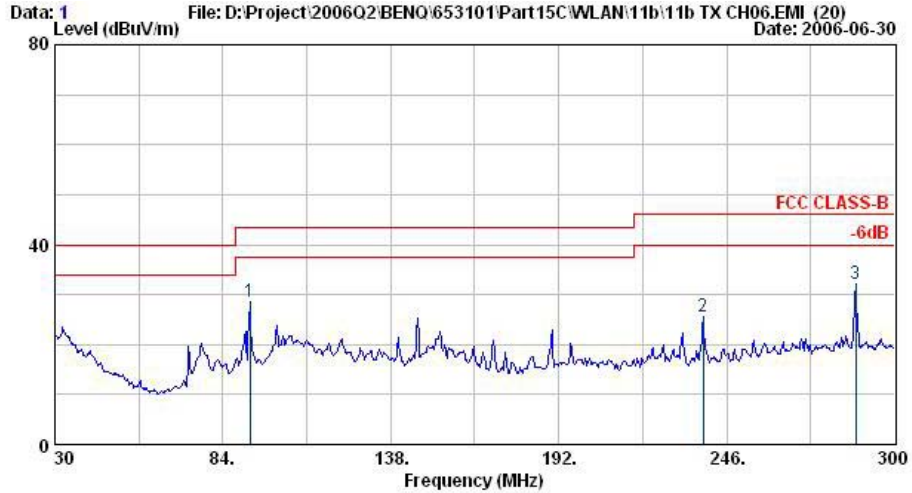
	Freq	Level	Over Limit	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2389.92	69.21	-4.79	74.00	70.14	30.26	4.26	35.46	100	0 Peak
2	2389.92	41.69	-32.31	74.00	42.63	30.26	4.26	35.46	100	264 Peak

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



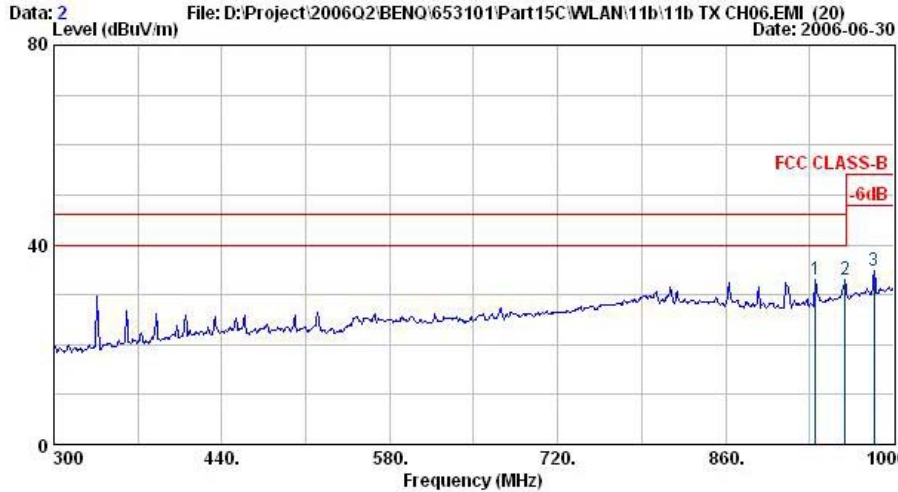
- Test Mode : Mode 2
- Polarization : Horizontal

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



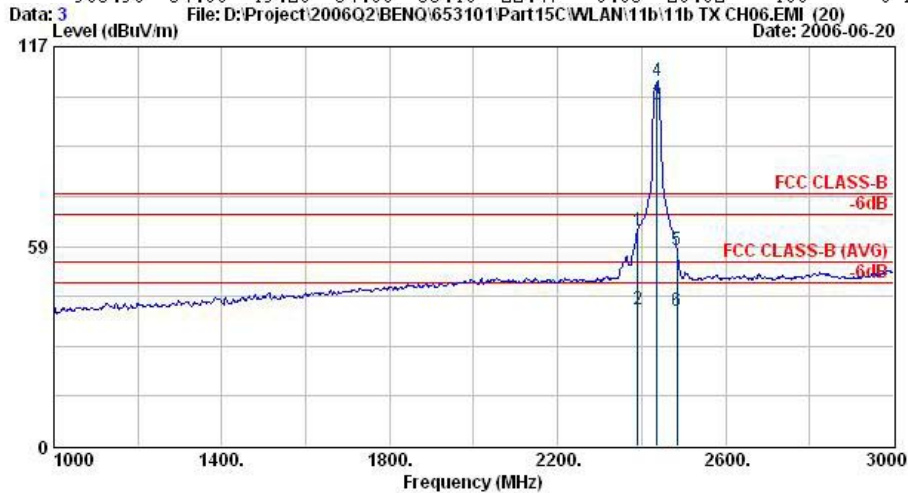
Site : 03CH06-HY  
 Condition : BI-LOG-2004-1122 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH06,2437MHz  
 Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	92.64	28.67	-14.83	43.50	46.35	9.47	1.67	28.82	400	0 Peak
2	238.44	25.65	-20.35	46.00	40.92	10.87	2.79	28.93	400	0 Peak
3 @	287.58	32.17	-13.83	46.00	45.04	12.93	3.11	28.92	400	0 Peak



Site : 03CH06-HY  
 Condition : BI-LOG-2004-1122 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH06:2437MHz  
 Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	934.90	32.96	-13.04	46.00	34.81	21.00	5.97	28.82	100	0 Peak
2 @	959.40	33.00	-13.00	46.00	34.08	21.73	6.05	28.87	113	98 Peak
3	983.90	34.80	-19.20	54.00	35.10	22.47	6.05	28.82	100	0 Peak



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH06:2437MHz  
 Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	2390.00	62.85	-11.15	74.00	63.79	30.26	4.26	35.46	199	0 Peak
2 @	2390.00	39.87	-14.13	54.00	40.81	30.26	4.26	35.46	100	333 Average
3 @	2437.00	100.10			101.00	30.28	4.29	35.47	100	333 Average
4 @	2437.00	106.81			107.71	30.28	4.29	35.47	199	0 Peak
5	2483.50	57.48	-16.52	74.00	58.34	30.29	4.36	35.51	199	0 Peak
6 @	2483.50	39.46	-14.54	54.00	40.32	30.29	4.36	35.51	100	333 Average

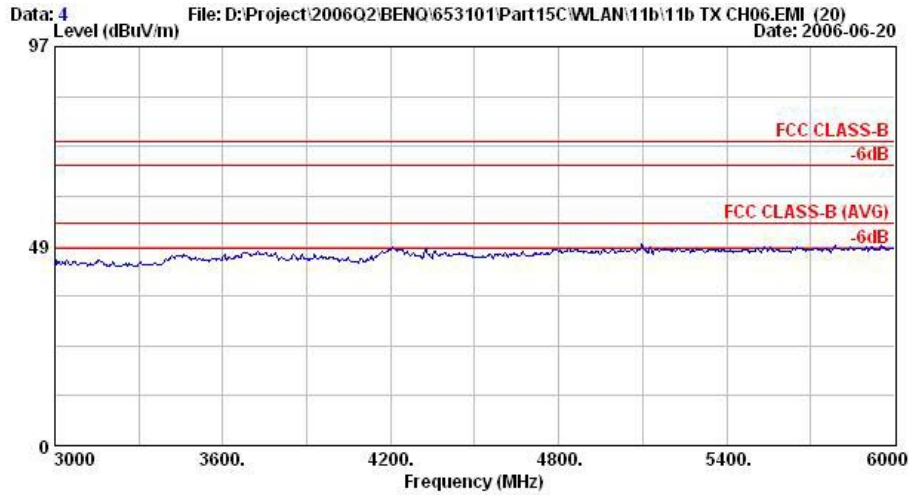
Remark: #3 and #4 Fundamental Signal





# FCC TEST REPORT

Report No. : FR653101



Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
: (802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH06,2437MHz  
Plane : E2

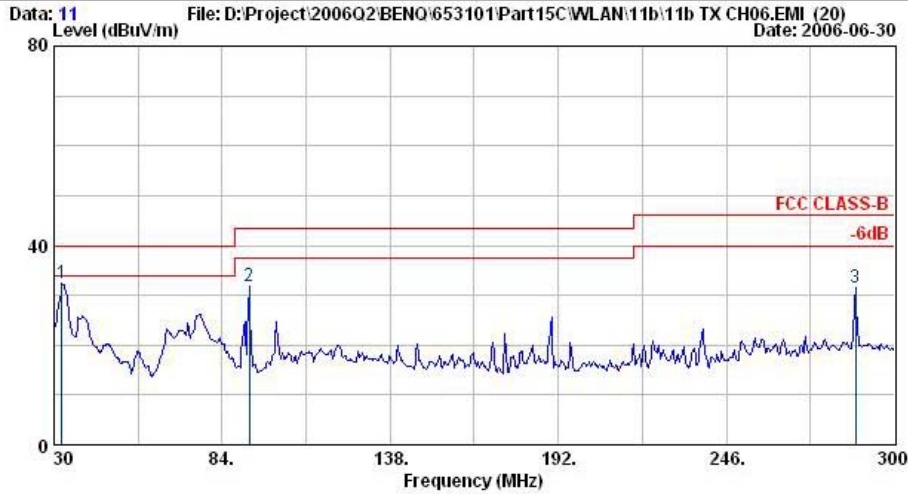


Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
: (802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH06,2437MHz  
Plane : E2



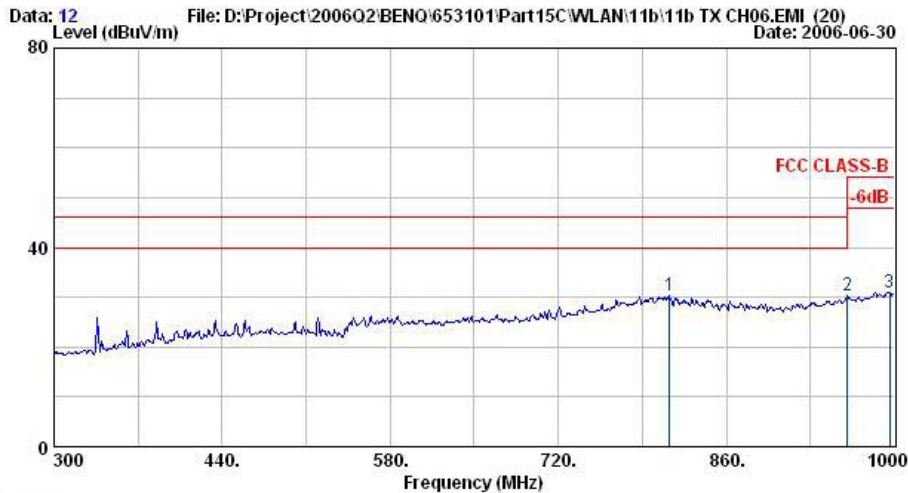
• Polarization : Vertical

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 : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH06,2437MHz  
 Plane : E2

	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 @	32.43	32.36	-7.64	40.00	42.25	17.73	1.01	28.63	156	221 Peak
2 @	92.64	31.77	-11.73	43.50	49.45	9.47	1.67	28.82	400	0 Peak
3 @	287.58	31.59	-14.41	46.00	44.46	12.93	3.11	28.92	400	0 Peak



Site : 03CH06-HY  
 Condition : BI-LOG-2004-1122 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH06,2437MHz  
 Plane : E2

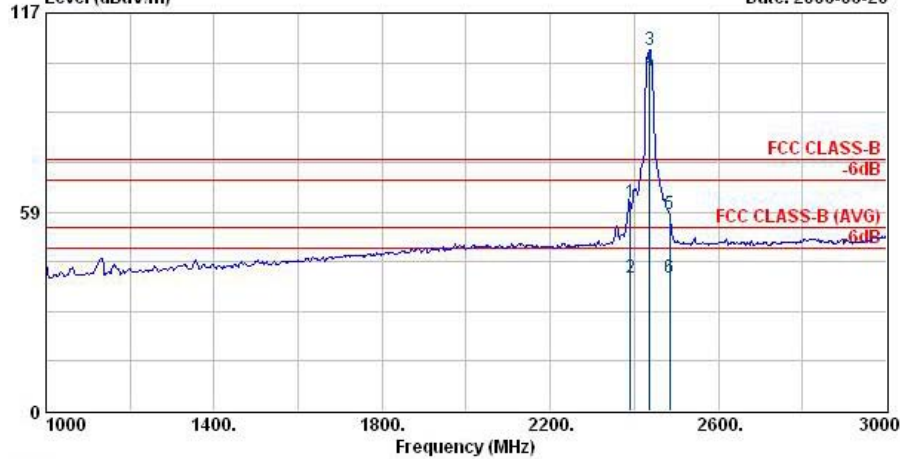
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	812.40	30.22	-15.78	46.00	31.94	21.65	5.57	28.94	100	0 Peak
2	960.80	30.34	-23.66	54.00	31.38	21.79	6.03	28.86	100	0 Peak
3	995.80	31.07	-22.93	54.00	30.81	22.85	6.20	28.79	100	0 Peak



# FCC TEST REPORT

Report No. : FR653101

Data: 13 File: D:\Project\2006Q2\BENO\653101\Part15C\WLAN\11b\11b TX CH06.EMI (20) Date: 2006-06-20  
 Level (dBuV/m)

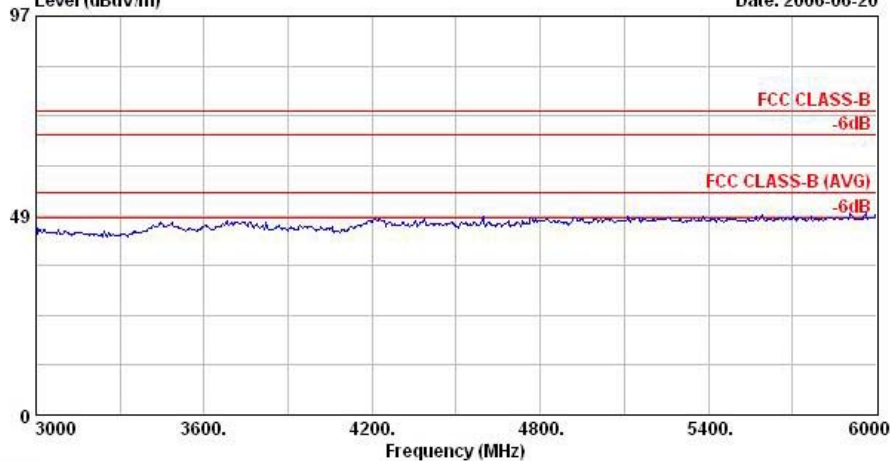


Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH06,2437MHz  
 Plane : E2

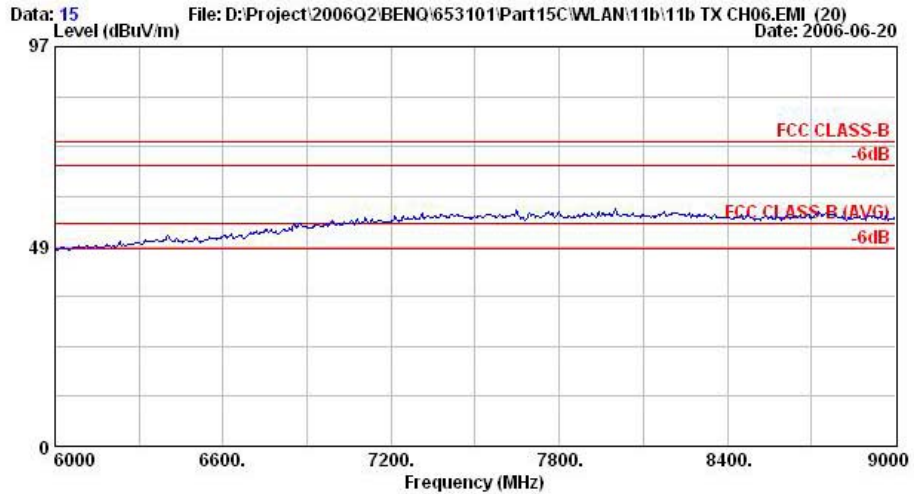
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2390.00	61.40	-12.60	74.00	62.33	30.26	4.26	35.46	200	360	Peak
2	2390.00	39.17	-34.83	74.00	40.11	30.26	4.26	35.46	111	18	Average
3 @	2437.00	106.25			107.15	30.27	4.29	35.47	200	360	Peak
4 @	2437.00	100.00			100.90	30.28	4.29	35.47	111	18	Average
5	2483.50	58.04	-15.96	74.00	58.90	30.29	4.36	35.51	200	360	Peak
6	2483.50	39.28	-34.72	74.00	40.14	30.29	4.36	35.51	111	18	Average

Remark: #3 and #4 Fundamental Signal

Data: 14 File: D:\Project\2006Q2\BENO\653101\Part15C\WLAN\11b\11b TX CH06.EMI (20) Date: 2006-06-20  
 Level (dBuV/m)



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH06,2437MHz  
 Plane : E2



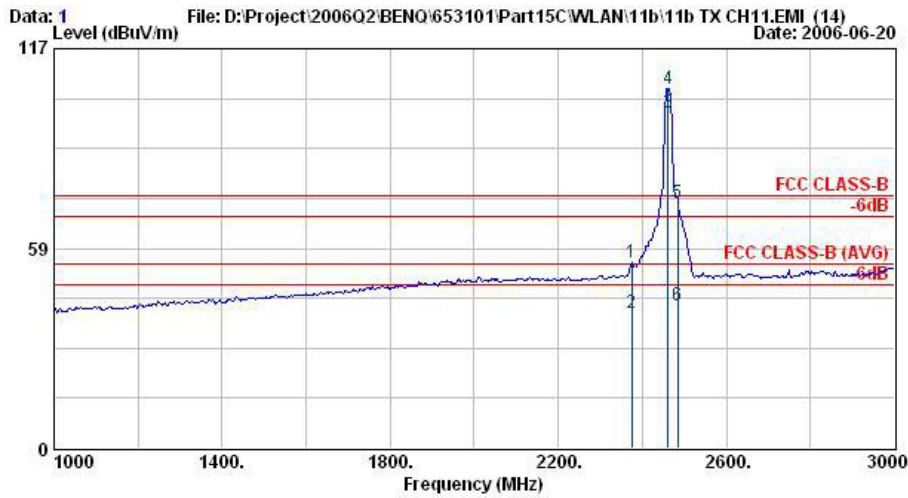
Site : 03CH06-HY  
Condition : HF-ANT-060410 VERTICAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
: (802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH06,2437MHz  
Plane : E2

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



- Test Mode : Mode 3
- Polarization : Horizontal

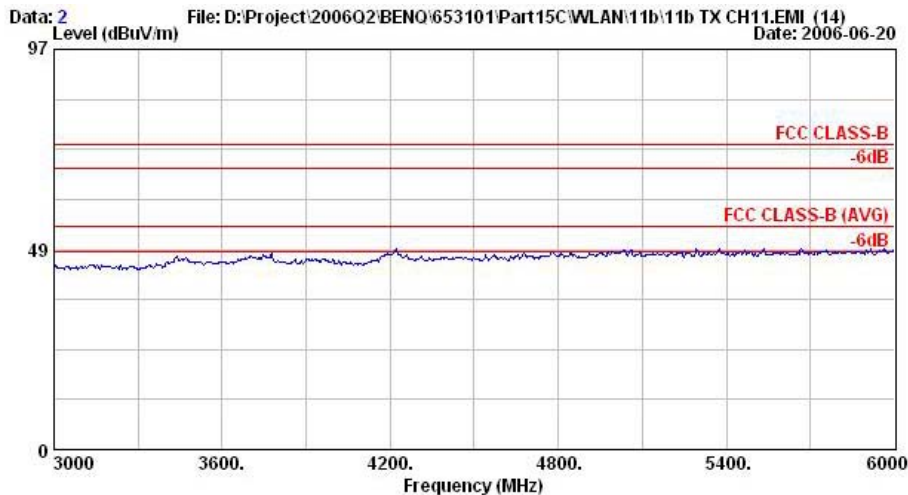
The test that passed at minimum margin is marked by the frame in the following table.



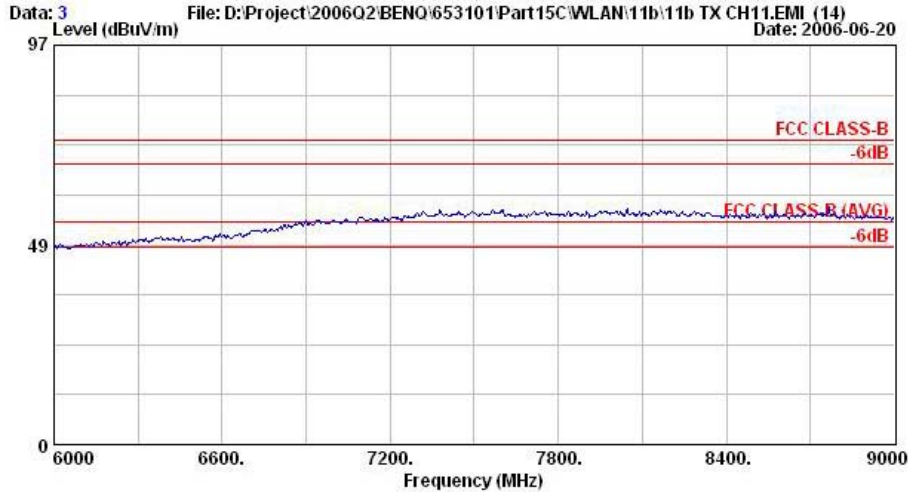
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH11,2462MHz  
 Plane : E2

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2374.00	54.58	-19.42	74.00	55.53	30.25	4.23	35.44	100	0 Peak
2 @	2374.00	39.73	-14.27	54.00	40.69	30.25	4.23	35.44	100	339 Average
3 @	2462.00	98.41			99.29	30.29	4.33	35.49	100	339 Average
4 @	2462.00	105.40			106.28	30.29	4.33	35.49	100	0 Peak
5 @	2483.50	71.86	-2.14	74.00	72.72	30.29	4.36	35.51	100	0 Peak
6 @	2483.50	41.76	-12.24	54.00	42.62	30.29	4.36	35.51	100	339 Average

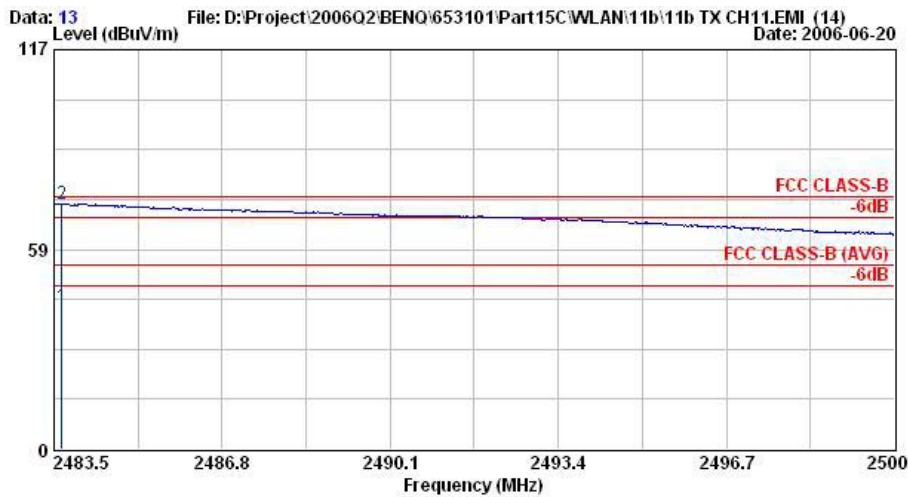
Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH11,2462MHz  
 Plane : E2



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH11;2462MHz  
 Plane : E2



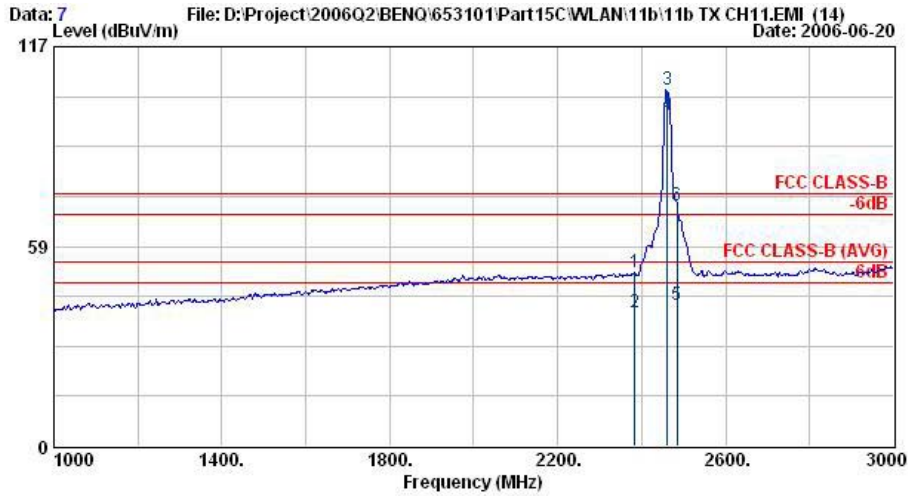
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH11;2462MHz  
 Plane : E2

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2483.65	41.76	-12.24	54.00	42.62	30.29	4.36	35.51	100	338	Average
2 @	2483.65	71.86	-2.14	74.00	72.72	30.29	4.36	35.51	100	0	Peak



- Polarization : Vertical

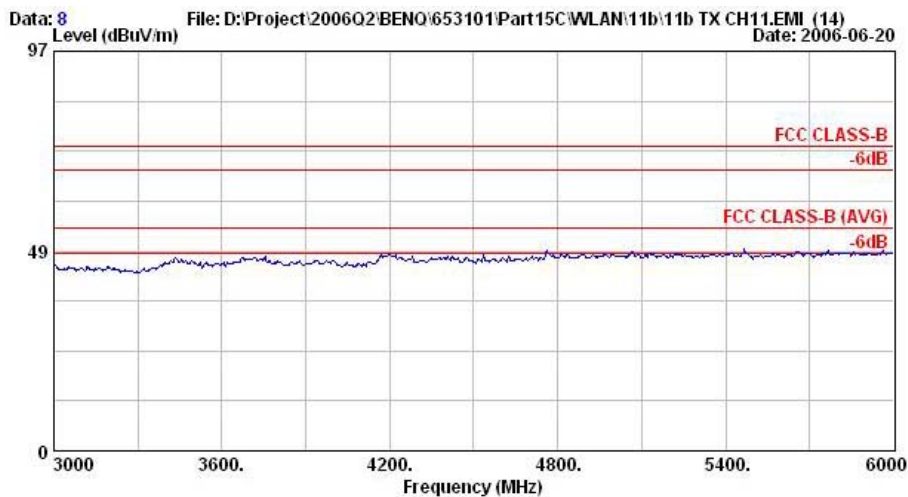
The test that passed at minimum margin was marked by the frame in the following table.



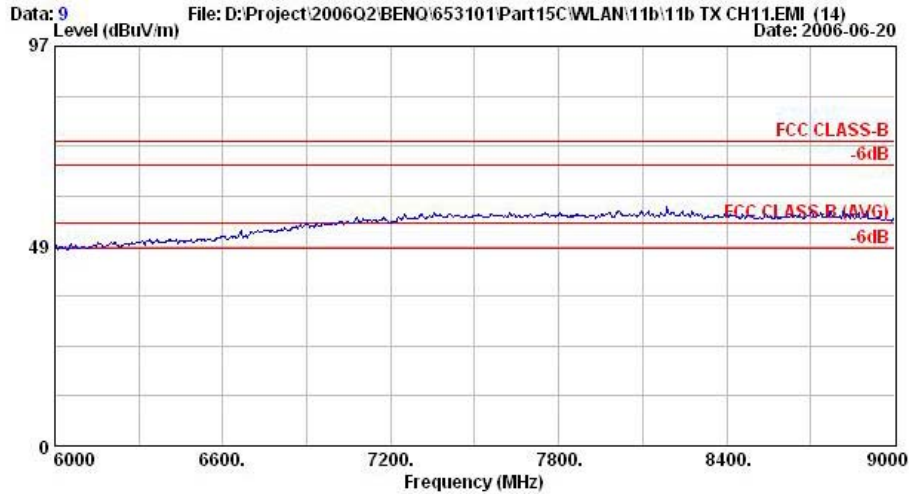
Site : 03CH06-HY  
Condition : HF-ANT-060410 VERTICAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
: (802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH11,2462MHz  
Plane : E2

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2384.00	50.84	-23.16	74.00	51.79	30.25	4.23	35.44	100	0	Peak
2 @	2384.00	39.12	-14.88	54.00	40.08	30.25	4.23	35.44	100	266	Average
3 @	2462.00	104.20			105.08	30.29	4.33	35.49	100	0	Peak
4 @	2462.00	97.14			98.02	30.29	4.33	35.49	100	266	Average
5 @	2483.50	41.15	-12.85	54.00	42.01	30.29	4.36	35.51	100	266	Average
6 @	2483.50	70.66	-3.34	74.00	71.52	30.29	4.36	35.51	100	0	Peak

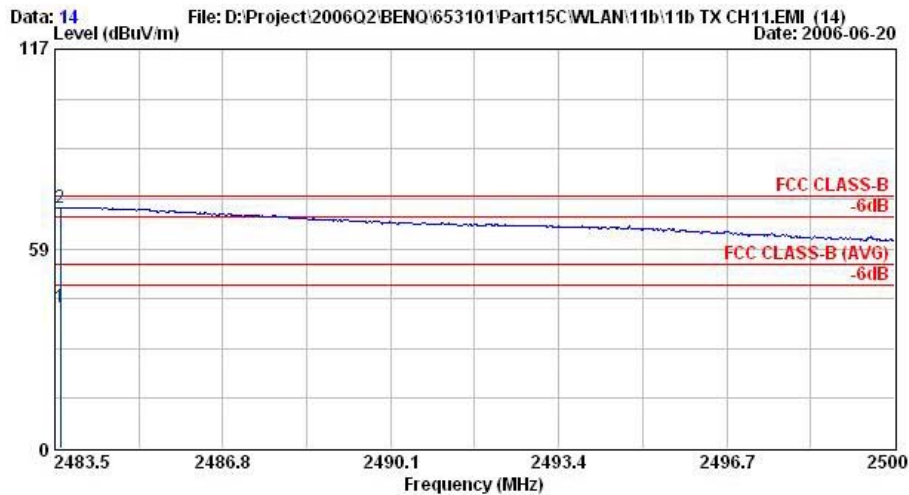
Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
Condition : HF-ANT-060410 VERTICAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
: (802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH11,2462MHz  
Plane : E2



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH11,2462MHz  
 Plane : E2



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11b TX CH11,2462MHz  
 Plane : E2

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2483.62	41.15	-12.85	54.00	42.01	30.29	4.36	35.51	100	266	Average
2 @	2483.62	70.66	-3.34	74.00	71.52	30.29	4.36	35.51	100	0	Peak

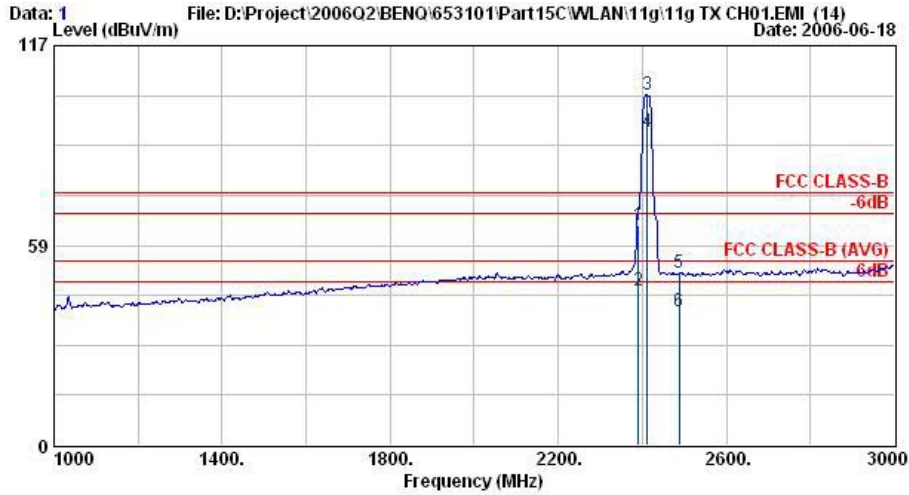
Remark: There is no more obvious spurious emission except the listings above.





- Test Mode : Mode 4
- Polarization : Horizontal

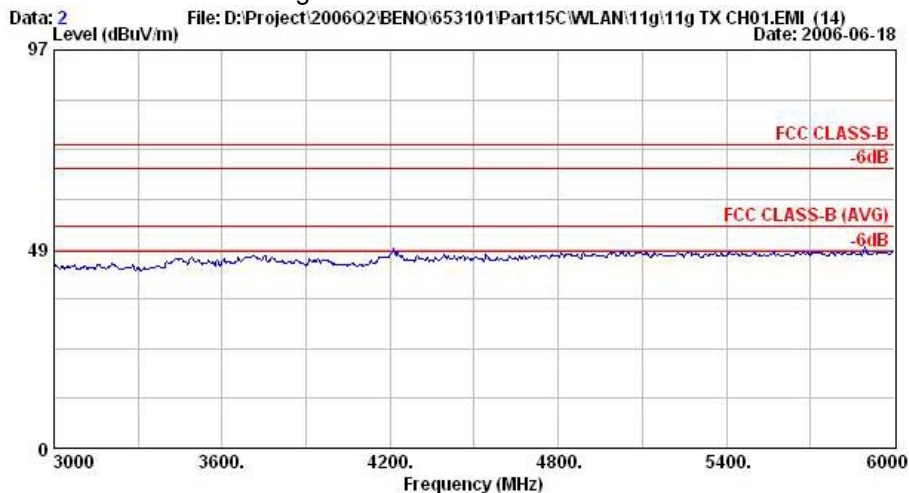
The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11g TX CH01 2412MHz  
 Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2390.00	64.28	-9.72	74.00	65.22	30.26	4.26	35.46	100	0 Peak
2	2390.00	45.03	-8.97	54.00	45.97	30.26	4.26	35.46	100	335 Average
3 X	2412.00	102.63			103.56	30.27	4.26	35.46	100	0 Peak
4 @	2412.00	91.94			92.87	30.27	4.26	35.46	100	335 Average
5	2488.00	50.39	-23.61	74.00	51.25	30.30	4.36	35.51	100	0 Peak
6	2488.00	39.17	-14.83	54.00	40.02	30.30	4.36	35.51	100	335 Average

Remark: #3 and #4 Fundamental Signal



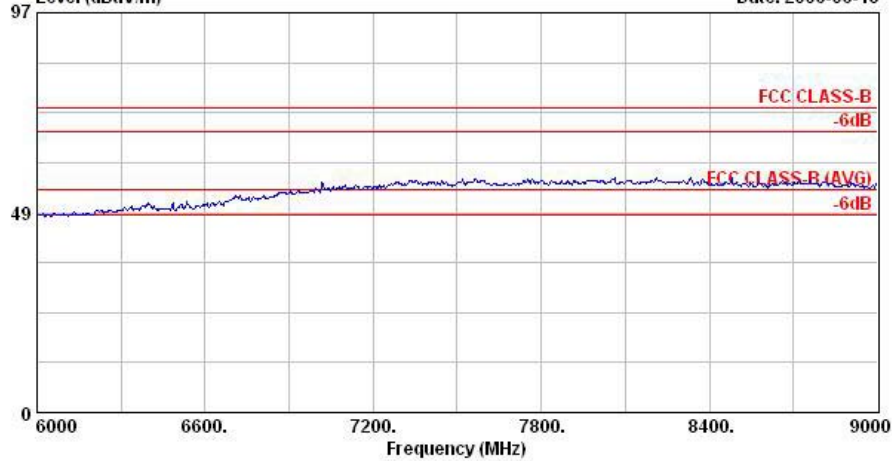
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11g TX CH01 2412MHz  
 Plane : E2



**FCC TEST REPORT**

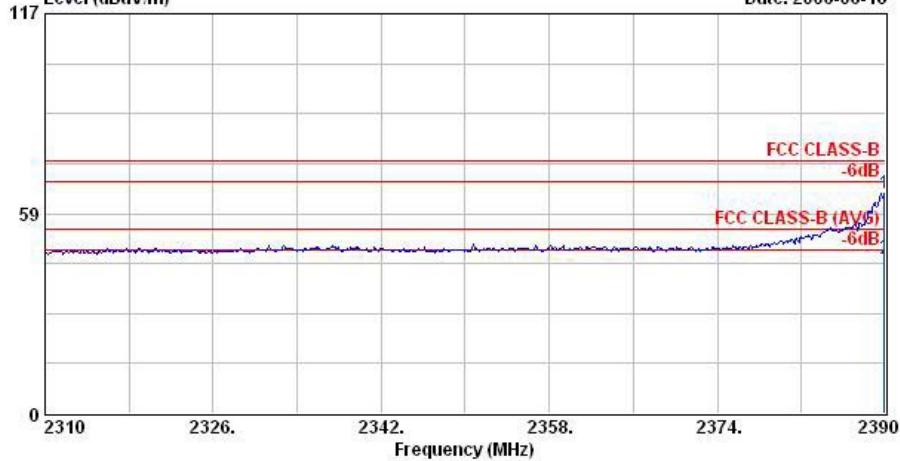
**Report No. : FR653101**

Data: 3 File: D:\Project\2006Q2\BENO\653101\Part15C\WLAN\11g\11g TX CH01.EMI (14) Date: 2006-06-18  
 Level (dBuV/m)



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11g TX CH01,2412MHz  
 Plane : E2

Data: 13 File: D:\Project\2006Q2\BENO\653101\Part15C\WLAN\11g\11g TX CH01.EMI (14) Date: 2006-06-18  
 Level (dBuV/m)



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : GSM850/900/1800/1900 Mobile Phone  
 : (802.11b and Bluetooth and GPS)  
 Power : 120Vac/60Hz  
 Model : FR653101  
 Memo : 11g TX CH01,2412MHz  
 Plane : E2

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2389.92	64.28	-9.72	74.00	65.21	30.26	4.26	35.46	100	0	Peak
2	2389.92	45.03	-8.97	54.00	45.97	30.26	4.26	35.46	100	335	Average