



# 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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### History of this test report

Report Issue Date: Jul. 21, 2006

| Report No. | Description |
|------------|-------------|
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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<br>WLAN : DSSS / OFDM<br>BT : GFSK                                                                            |  |             |   |
| 3. Number of Channels                                 | WLAN : 11 Channels<br>BT : 79 Channels                                                                                       |  |             |   |
| 4. Frequency Band                                     | GSM : 824-849 MHz (Tx), 869-894 MHz (Rx)<br>PCS : 1850.2-1909.8 MHz(Tx), 1930.2-1989.8 MHz(Rx)<br>WLAN/BT : 2.4GHz~2.4835GHz |  |             |   |
| 5. Carrier Frequency of each channel                  | WLAN : 2412MHz+(n-1)*5MHz, n=1~11<br>BT : 2402MHz+n*1MHz, n=0~78                                                             |  |             |   |
| 6. Channel Spacing                                    | WLAN : 5MHz<br>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<br>PCS1900 : 29.32 dBm<br>802.11b : 19.35 dBm / 802.11g: 21.23 dBm<br>BT : 0.64 dBm                          |  |             |   |
| 10. Type of Antenna Connector                         | N/A                                                                                                                          |  |             |   |
| 11. Antenna Type                                      | GSM / PCS : Fixed Internal<br>WLAN / BT : Patch Antenna                                                                      |  |             |   |
| 12. Antenna Gain                                      | WLAN : -3 dBi<br>BT : -1 dBi                                                                                                 |  |             |   |
| 13. Function Type                                     | Transmitter                                                                                                                  |  | Transceiver | V |
| 14. Power Rating (DC/AC Voltage) :                    | GSM850 : 3.8V / 230mA<br>PCS1900 : 3.8V / 200mA                                                                              |  |             |   |

## 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.

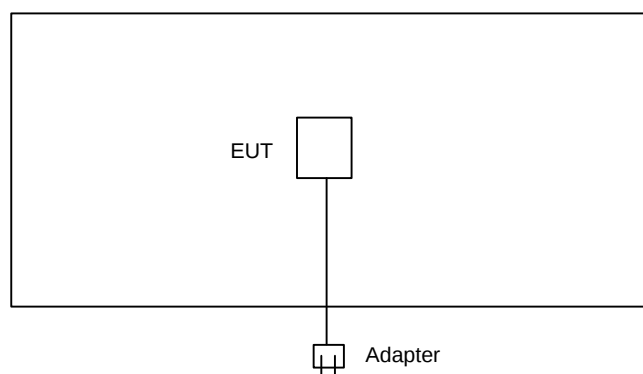
### 2.2 Test Mode

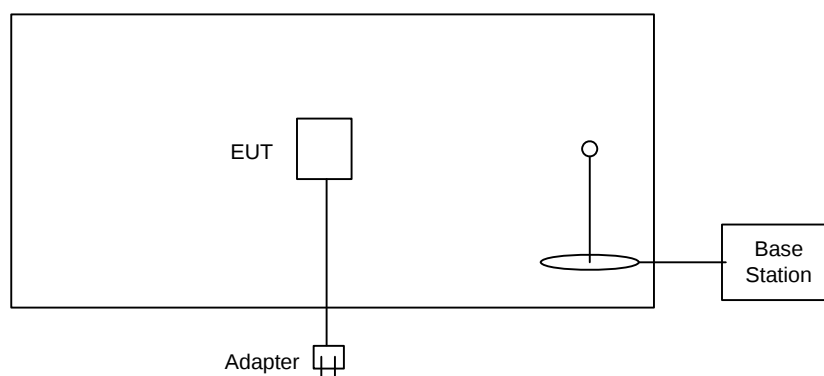
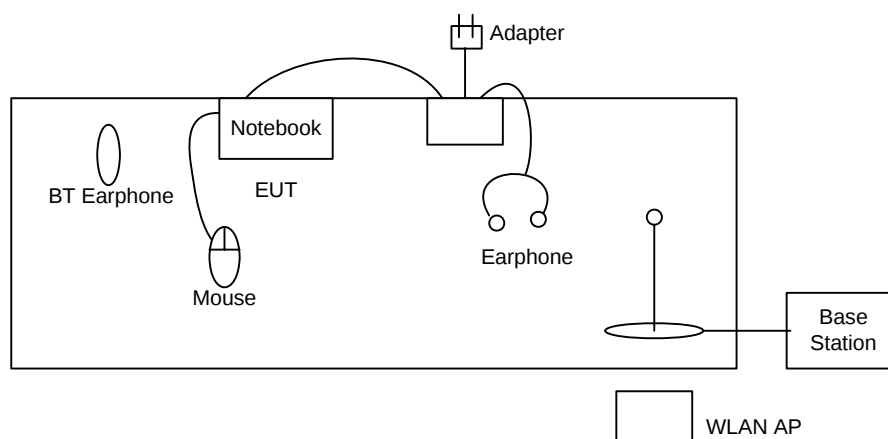
| Application        |                                                                                                        |                          |                          |
|--------------------|--------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
|                    | <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<br>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><br>15.247(b)(4) | Antenna Requirement                      | Pass   |

## 5.2 6dB Bandwidth Measurement

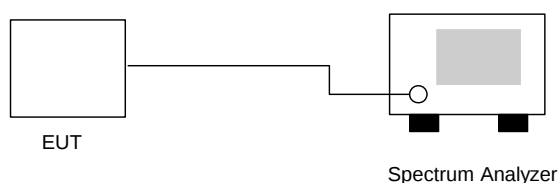
### 5.2.1 Measuring Instruments :

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<br>( MHz ) | 6dB Emission bandwidth<br>( MHz ) | Limits<br>( MHz ) | Plot<br>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           |

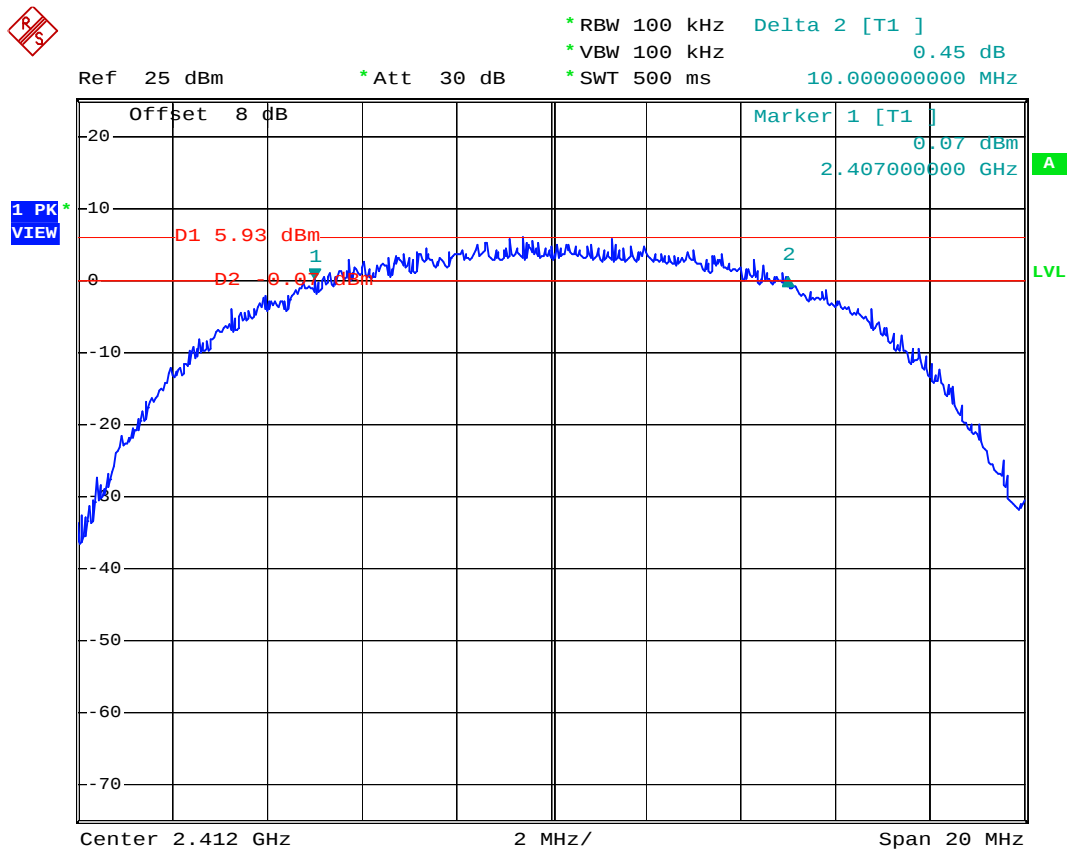
#### **802.11g**

| Channel | Frequency<br>( MHz ) | 6dB Emission bandwidth<br>( MHz ) | Limits<br>( MHz ) | Plot<br>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

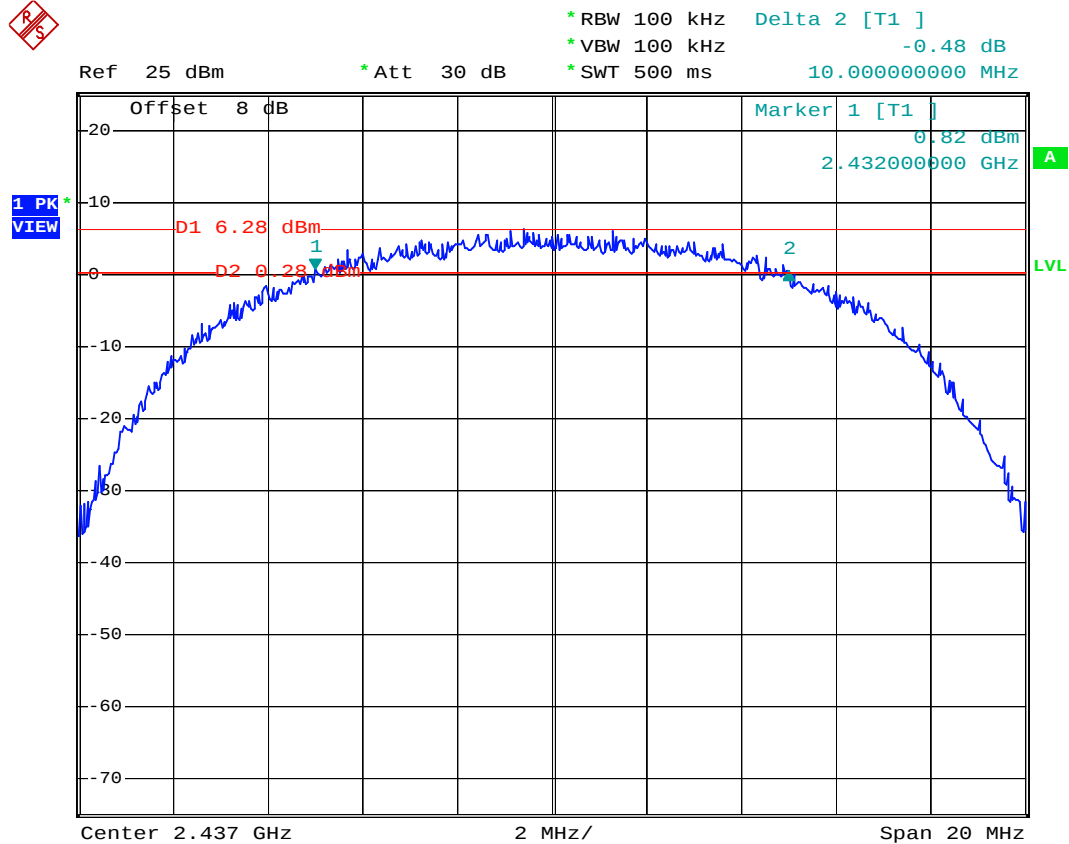
Mode 1



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



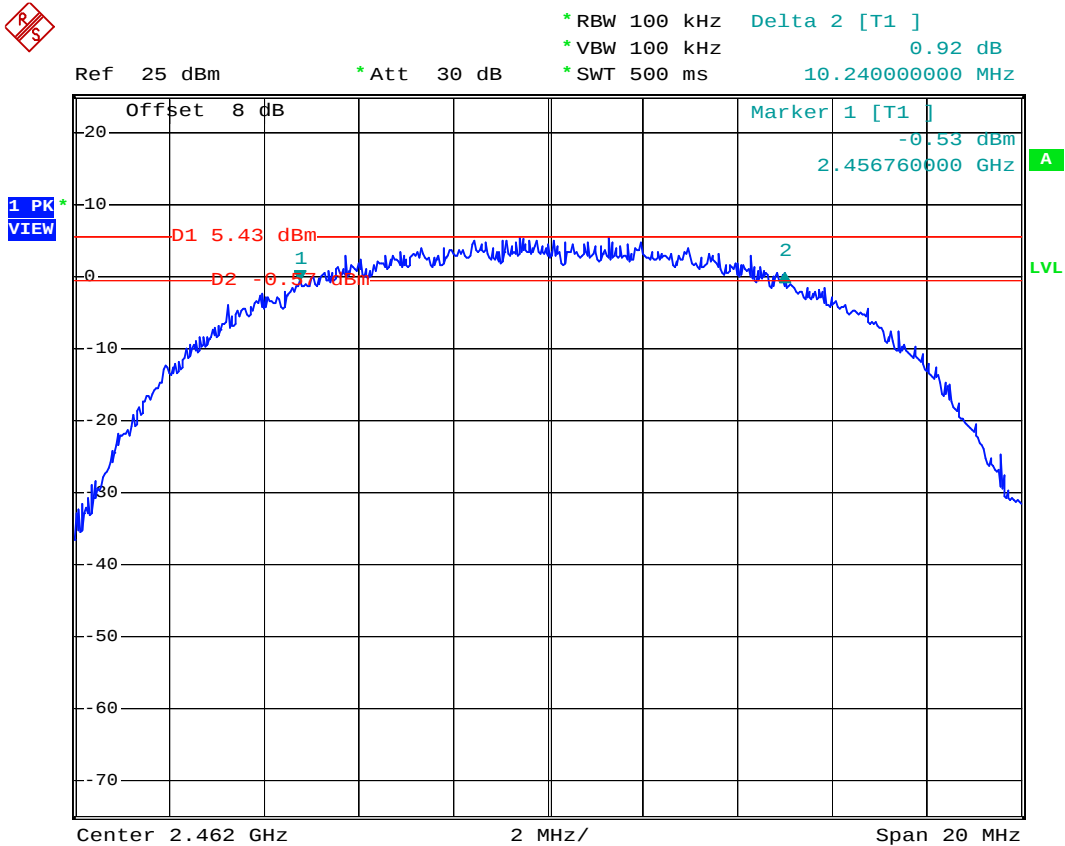
Mode 2



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



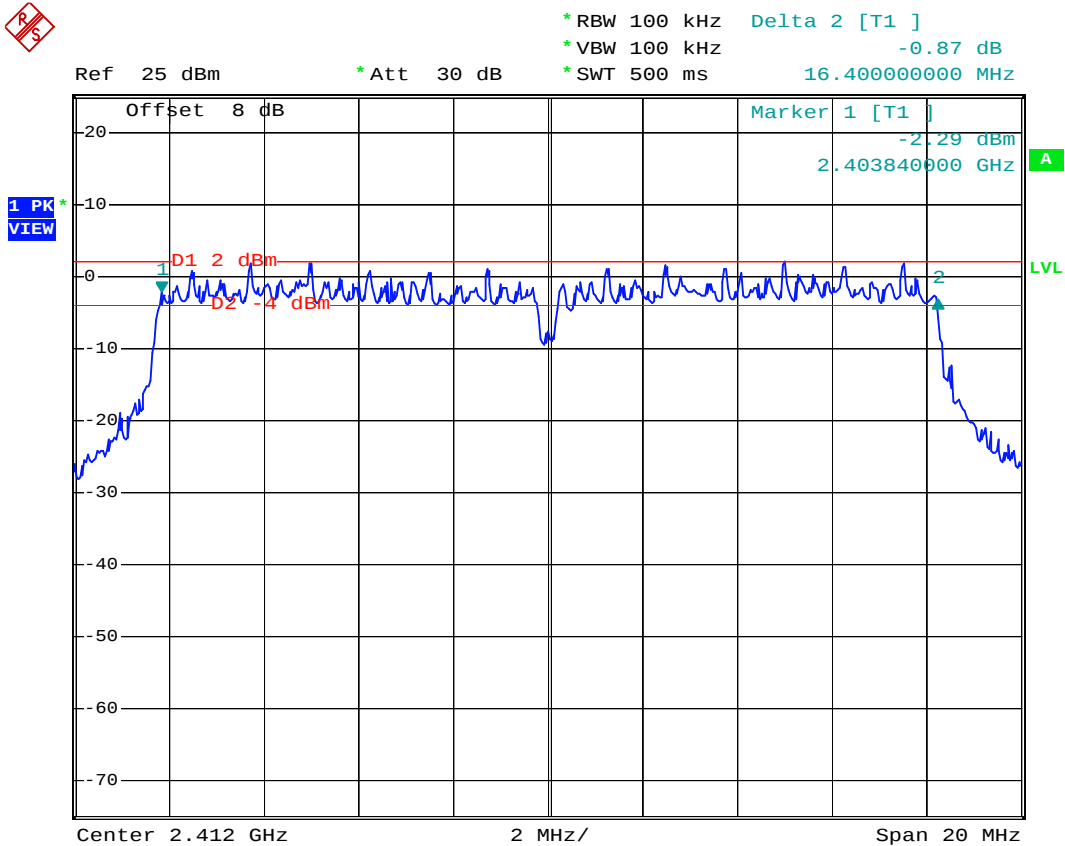
Mode 3



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



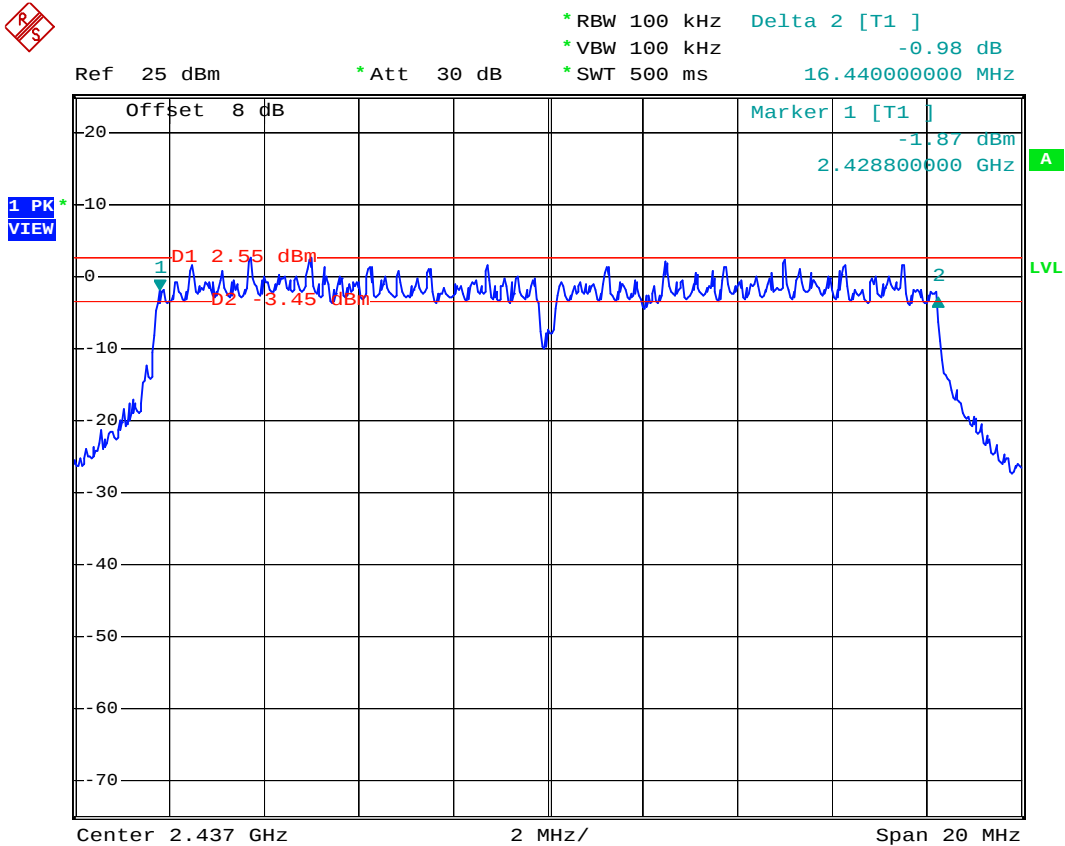
Mode 4



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



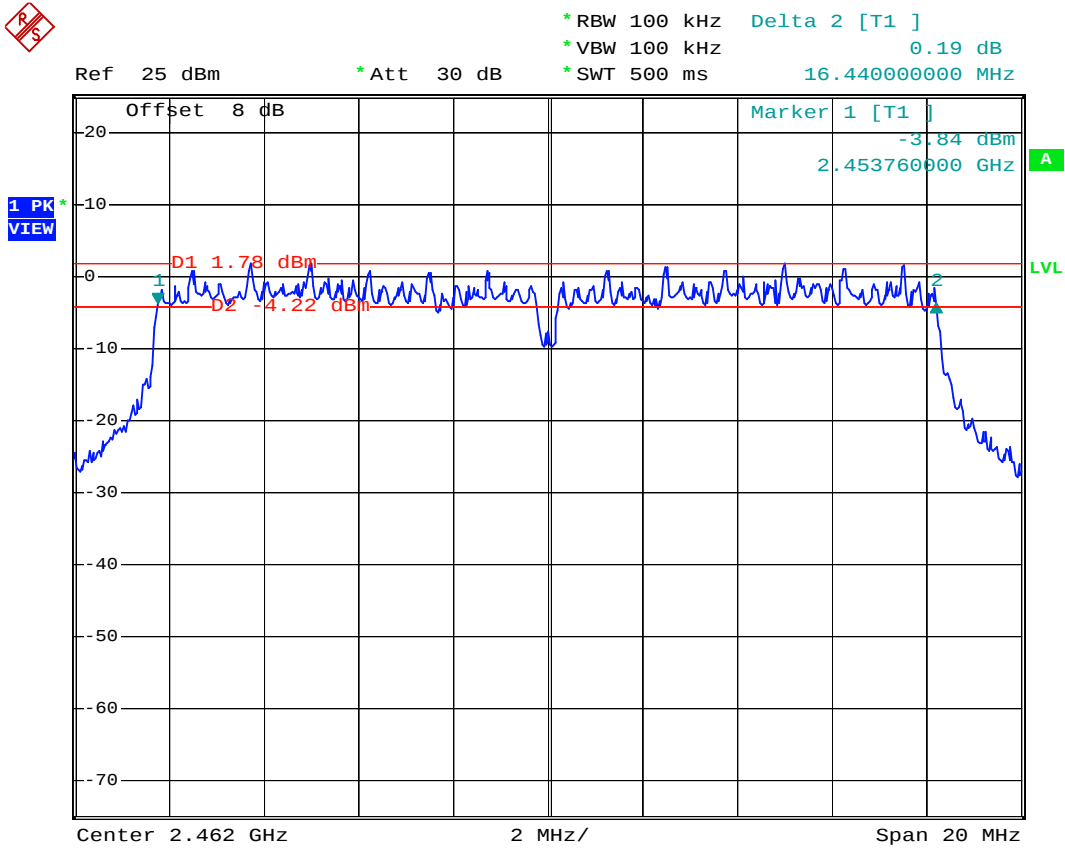
Mode 5



Date: 16.JUN.2006 22:06:32



Mode 6



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

### 5.3 Power Spectral Density Measurement

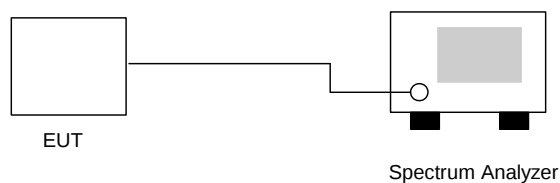
#### 5.3.1 Measuring Instruments :

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

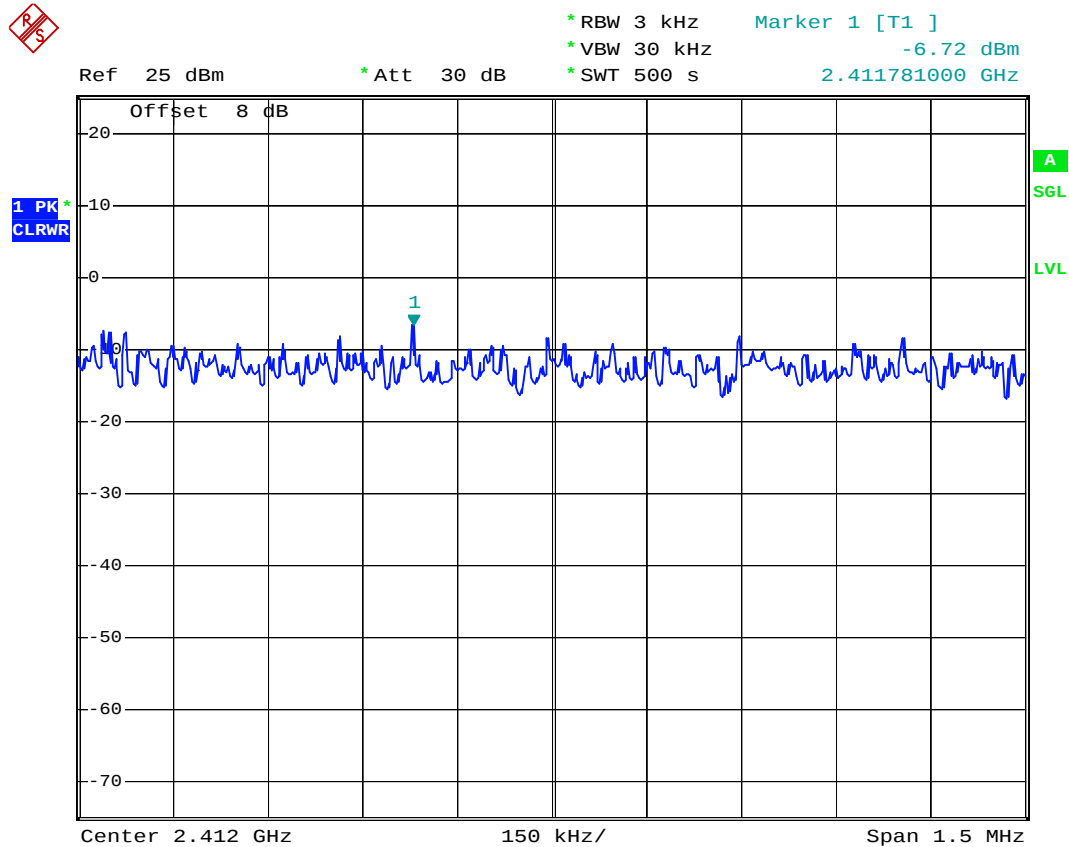
**802.11g**

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



5.3.5 Power Spectral Density

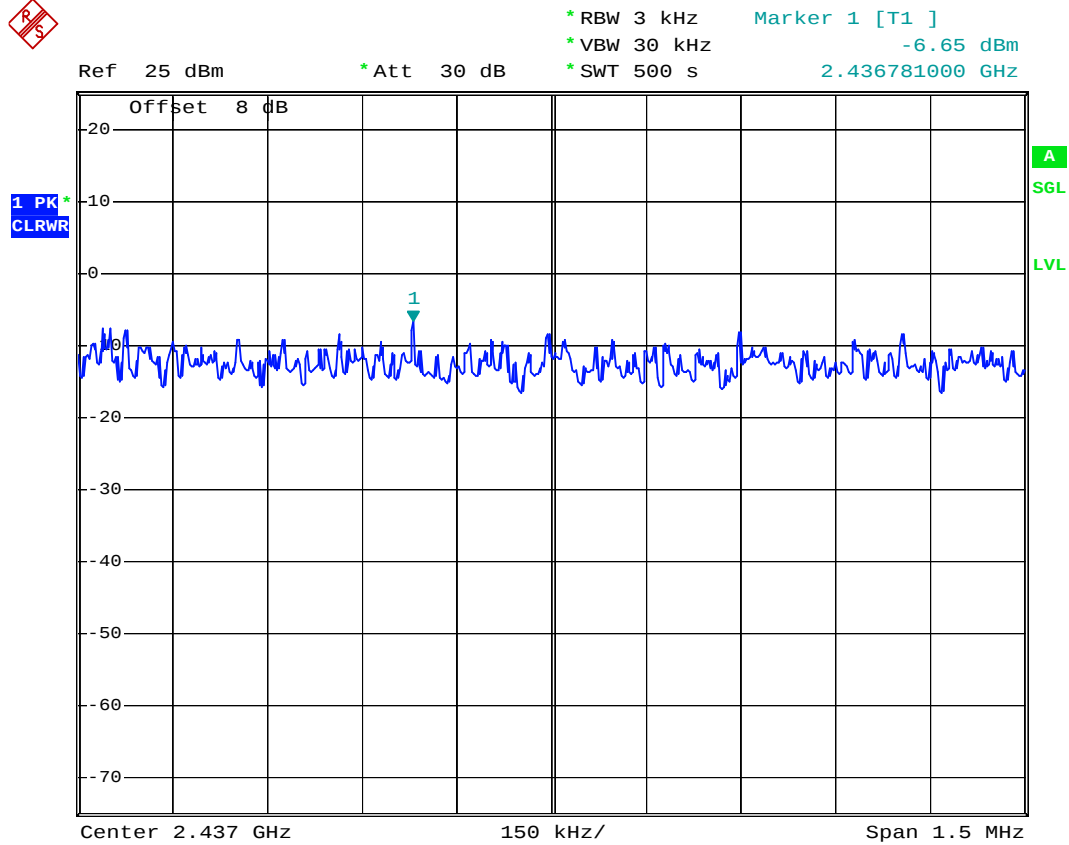
Mode 1



Date: 17.JUN.2006 06:45:36



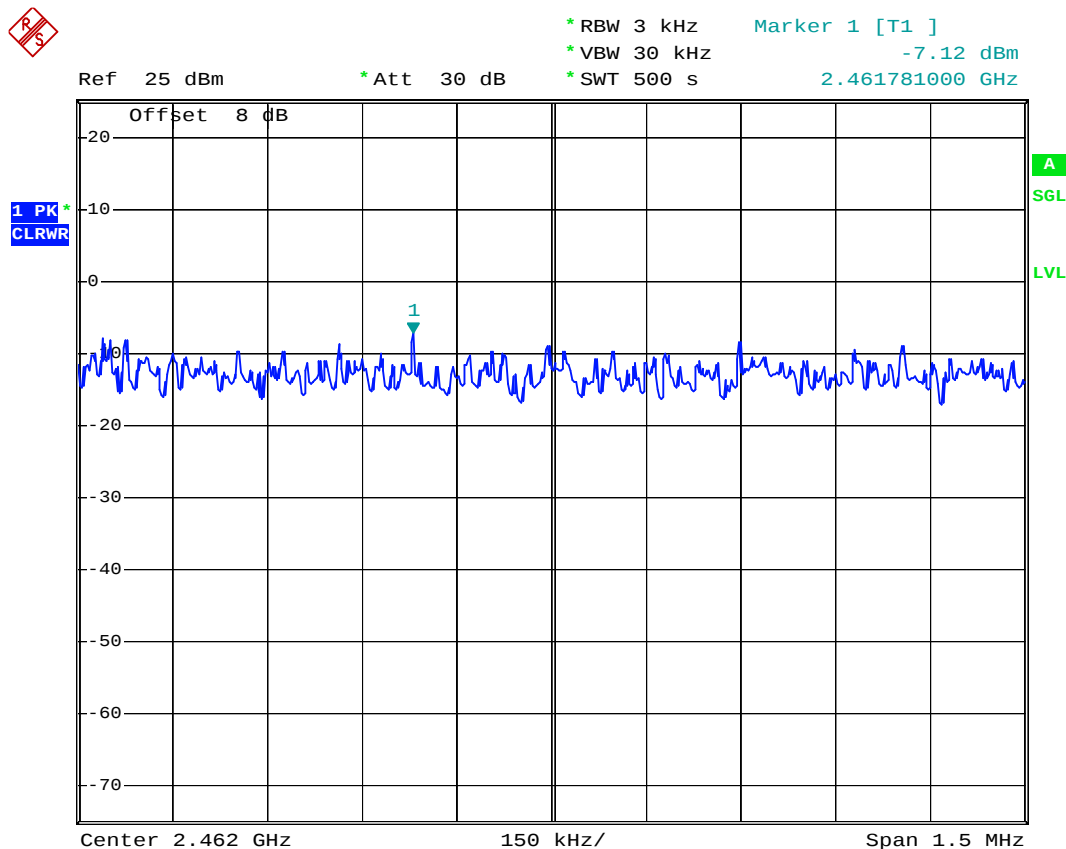
Mode 2



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



Mode 3



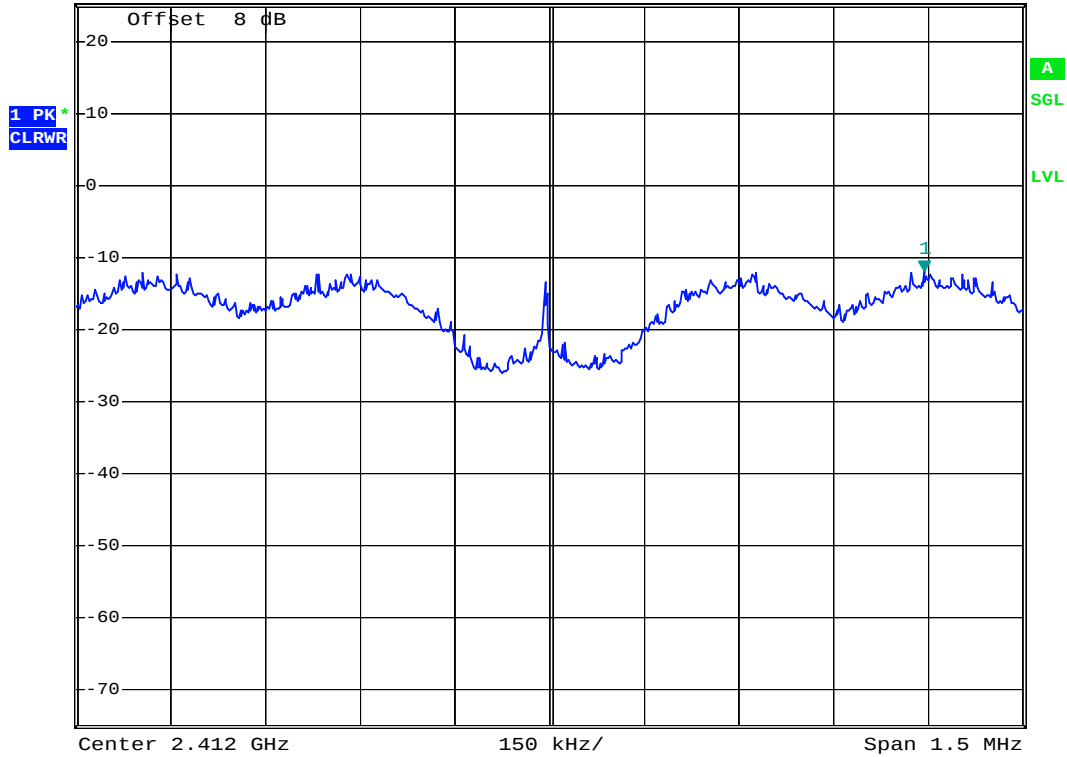
Date: 17.JUN.2006 04:25:33



Mode 4



Ref 25 dBm      \*Att 30 dB      \*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -11.86 dBm  
\*SWT 500 s      2.412594000 GHz



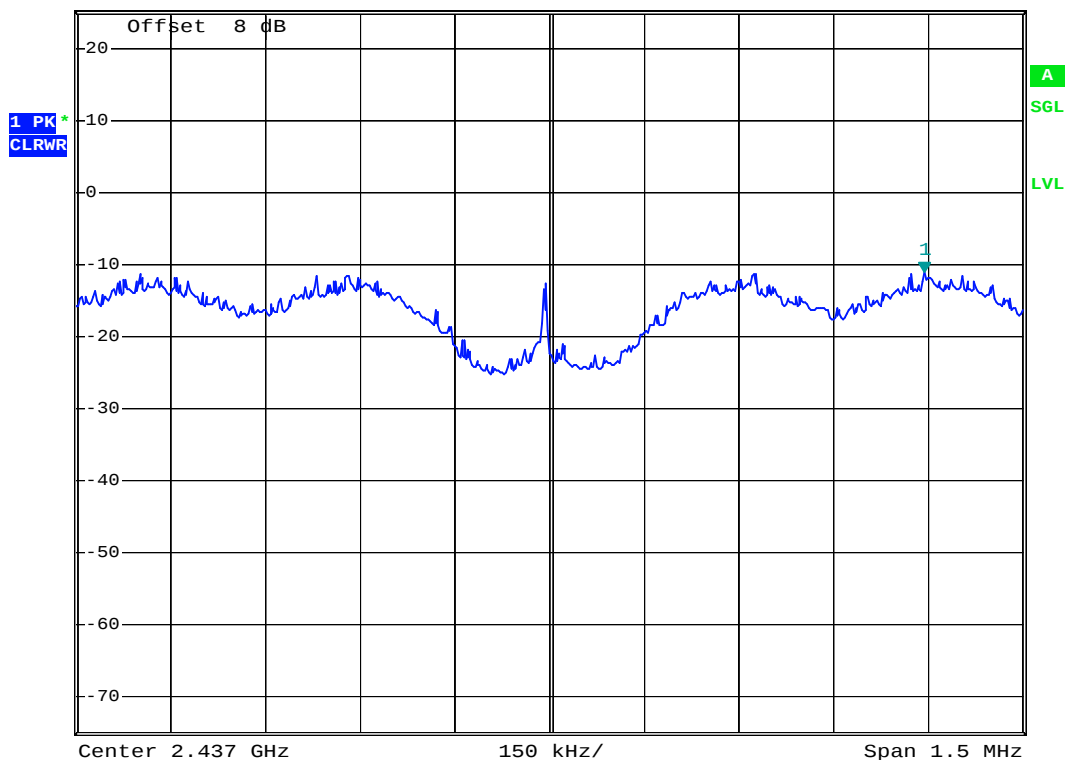
Date: 16.JUN.2006 22:17:53



Mode 5



Ref 25 dBm \*Att 30 dB \*RBW 3 kHz \*VBW 30 kHz \*SWT 500 s Marker 1 [T1 ]  
-11.18 dBm  
2.437594000 GHz



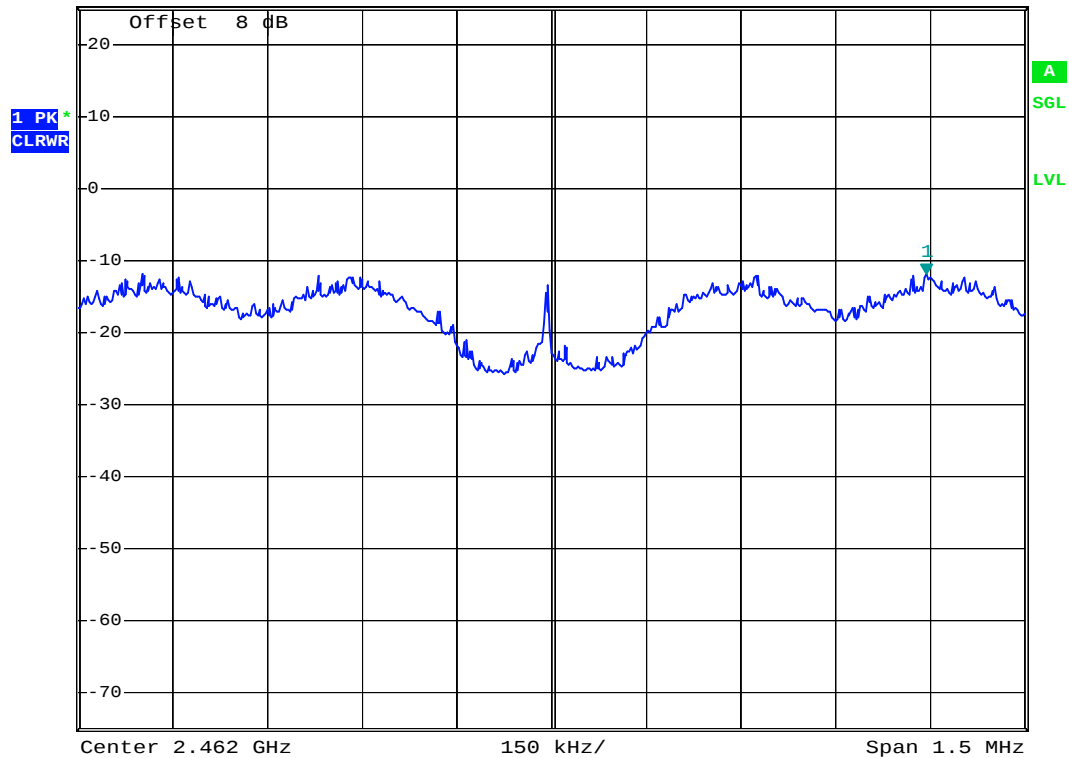
Date: 17.JUN.2006 04:07:35



Mode 6



Ref 25 dBm      \*Att 30 dB      \*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -11.99 dBm  
\*SWT 500 s      2.462594000 GHz



Date: 17.JUN.2006 04:16:40



## **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 :**

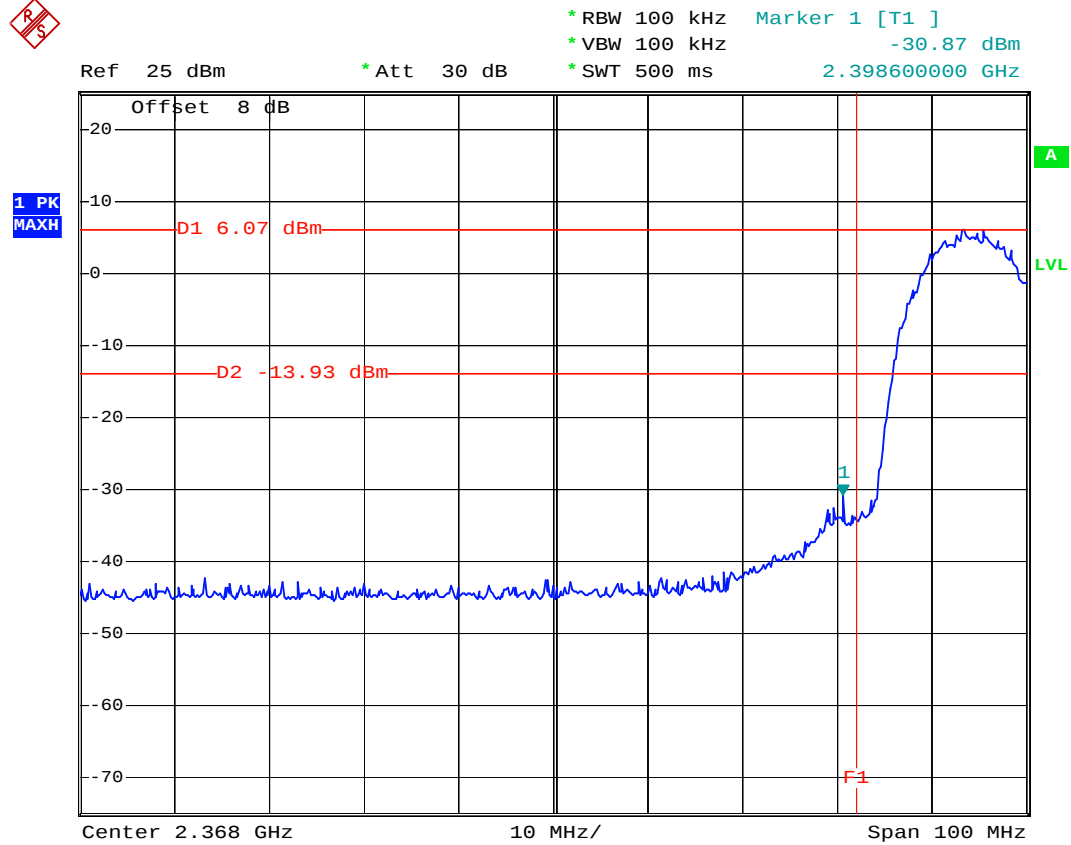
- Application Type : WLAN 802.11b/g and BT
- Temperature : 24°C
- Relative Humidity : 59%
- Test Enginner : James
  
- Test Result in WLAN lower band (Channel 1) : PASS
- Test Result in WLAN higher band (Channel 11) : PASS
- Test Result in BT lower band (Channel 00) : PASS
- Test Result in BT higher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



5.4.4 20dB Band Edge

WLAN 802.11b

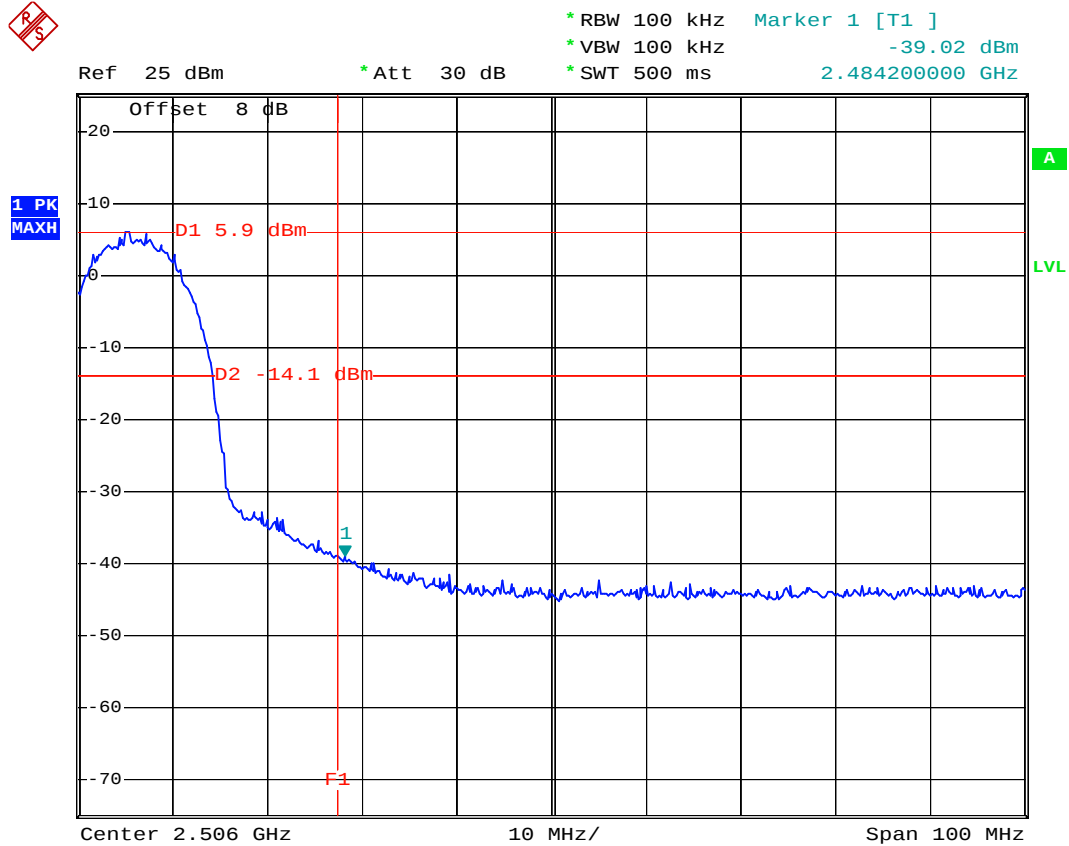
CH01



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



CH11

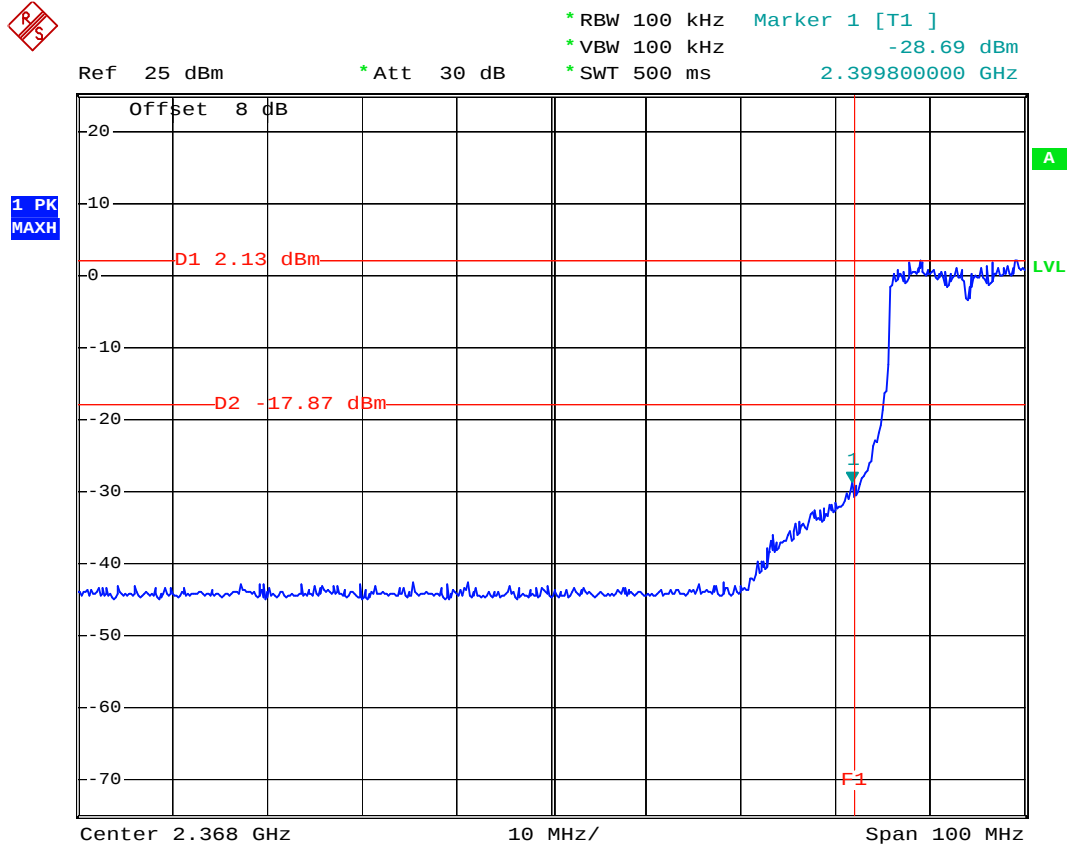


Date: 16.JUN.2006 21:55:36



WLAN 802.11g

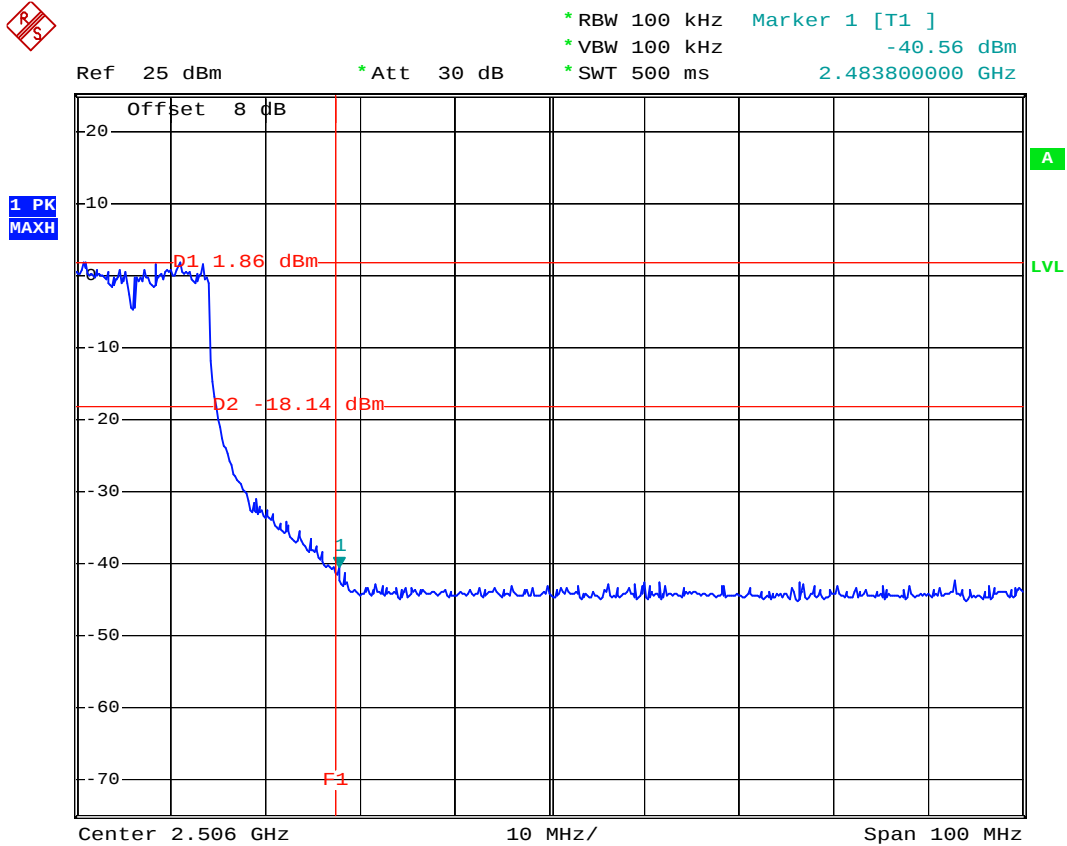
CH01



Date: 16.JUN.2006 21:59:07



CH11

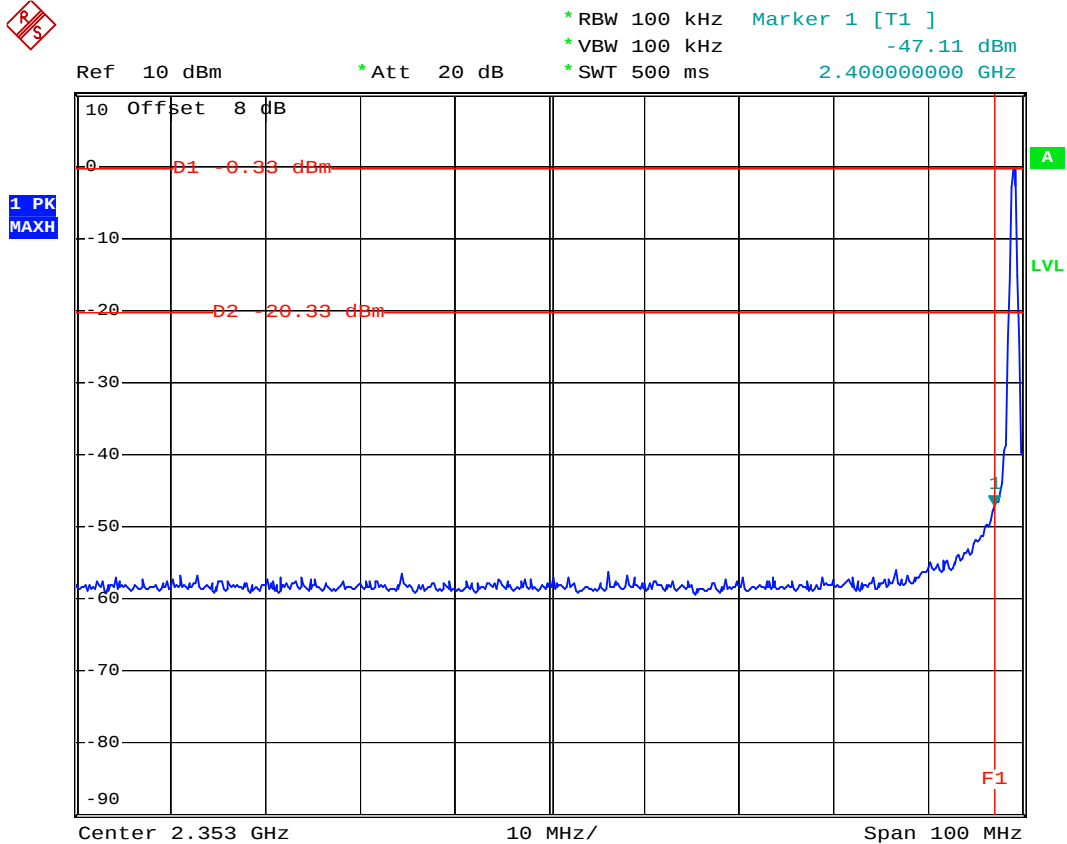


Date: 16.JUN.2006 22:04:08



Bluetooth

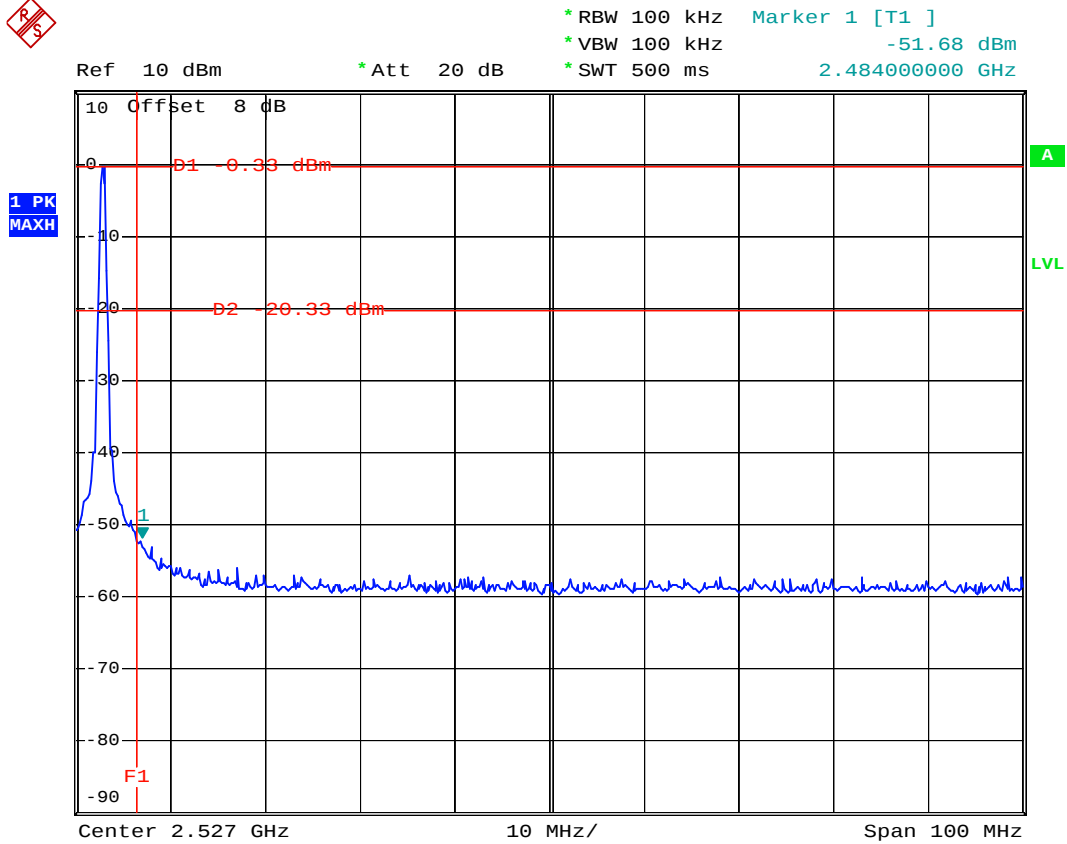
CH00



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



CH78



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

## 5.5 Hopping Channel Separation

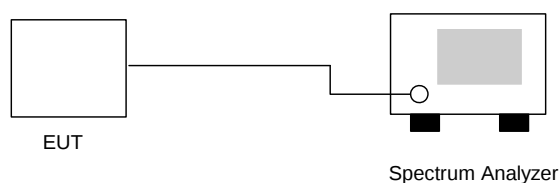
### 5.5.1 Measuring Instruments :

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

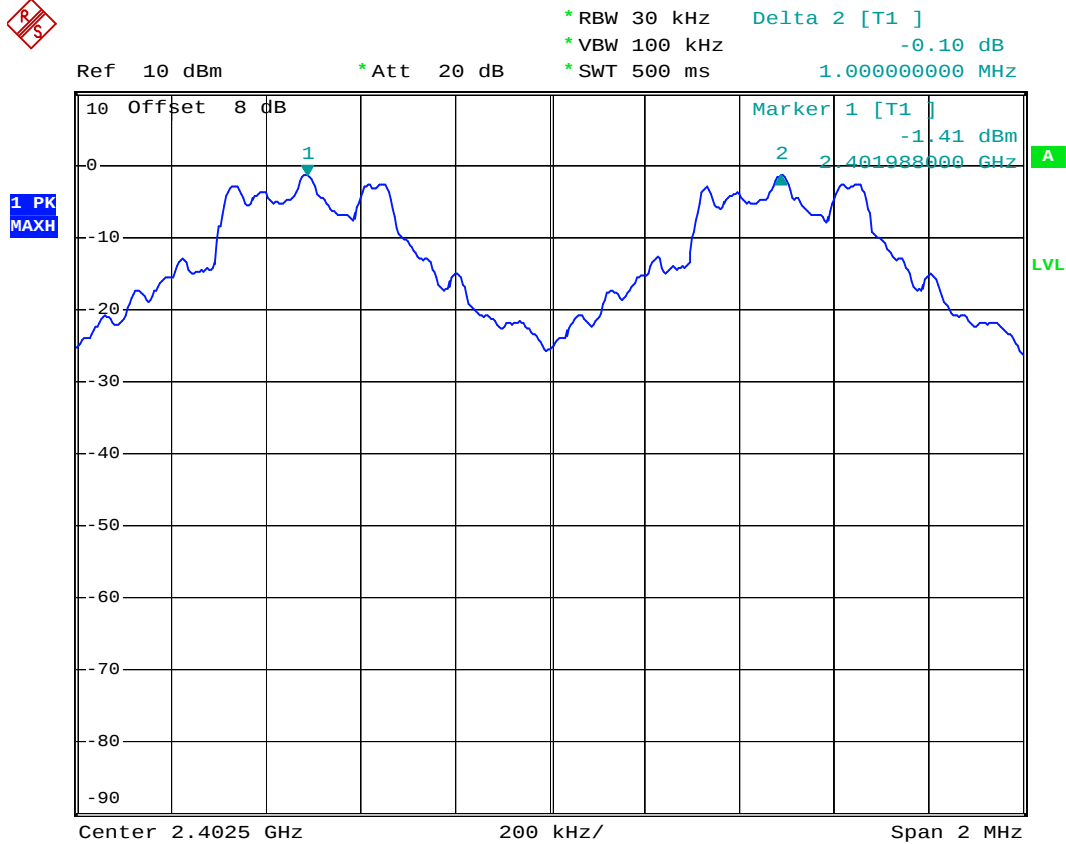
|         |                    | Carrier Frequency     |  | Limits  | Plot     |
|---------|--------------------|-----------------------|--|---------|----------|
| Channel | Frequency<br>(MHz) | Separation<br>( MHz ) |  | ( MHz ) | Ref. No. |
| 00      | 2402               | 1.000                 |  | 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

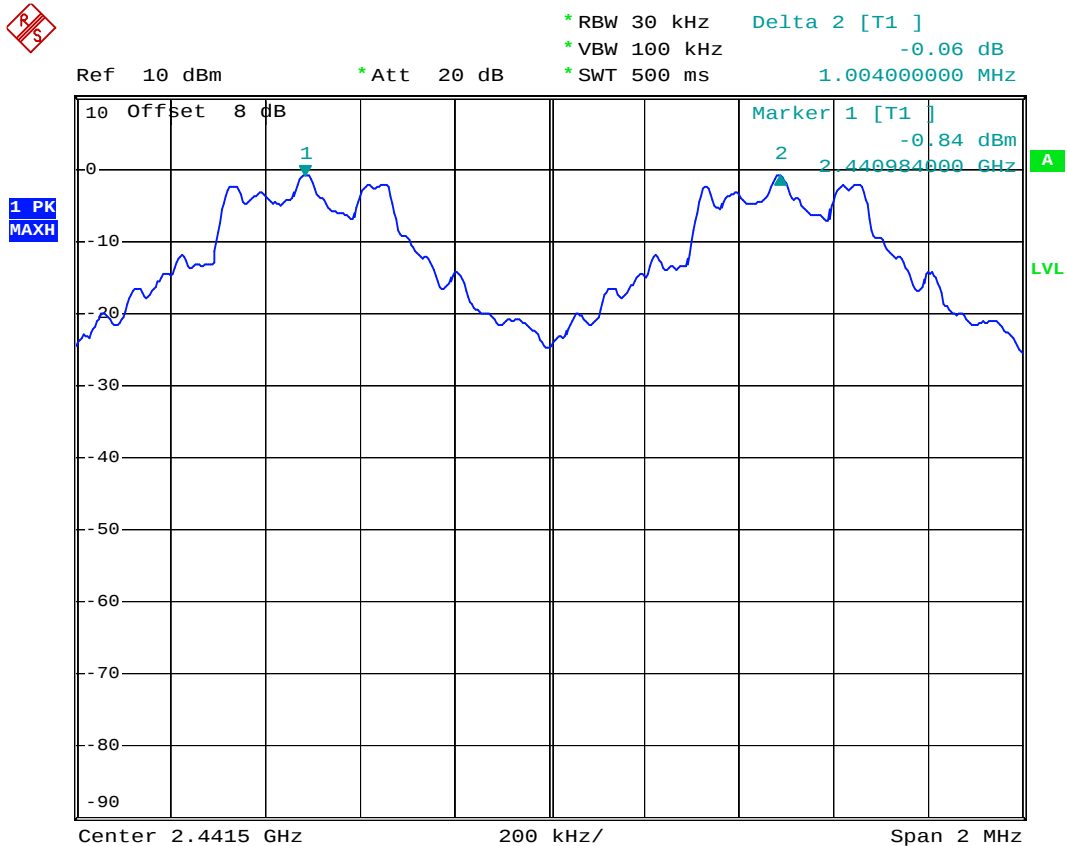
Mode 1



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



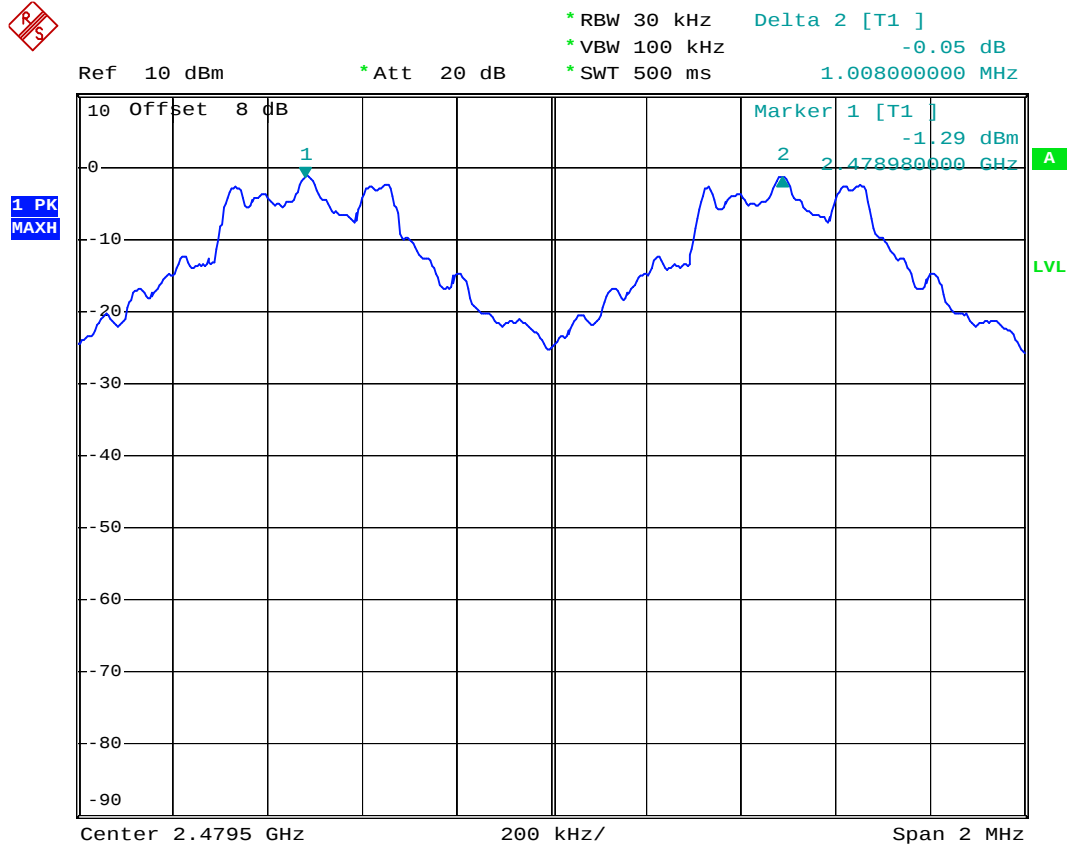
Mode 2



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



Mode 3



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

## 5.6 Number of Hopping Frequency

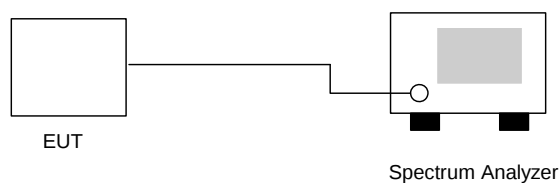
### 5.6.1 Measuring Instruments :

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 :



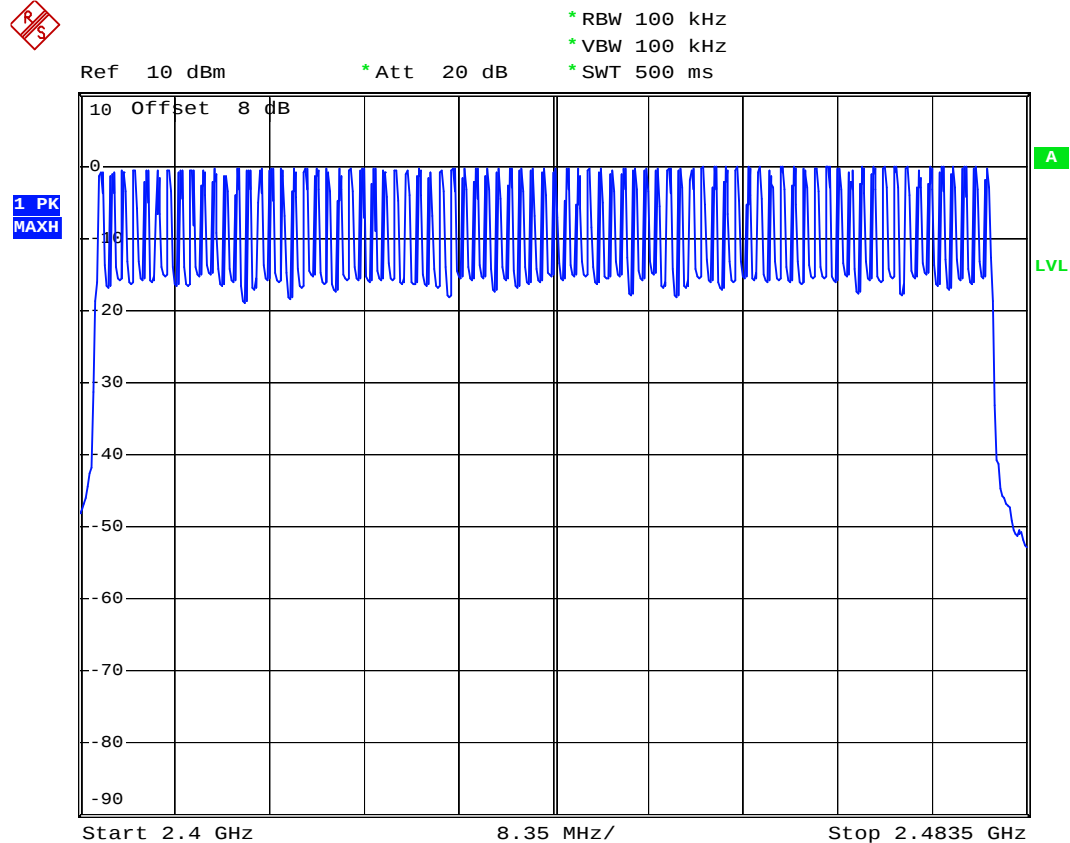
### 5.6.4 Test Result : See spectrum analyzer plots below

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

| Number of Hopping Frequency<br>(Channel) | Limits<br>(Channel) |
|------------------------------------------|---------------------|
| 79                                       | 15                  |



5.6.5 Number of Hopping Frequency



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

## 5.7 Hopping Channel Bandwidth

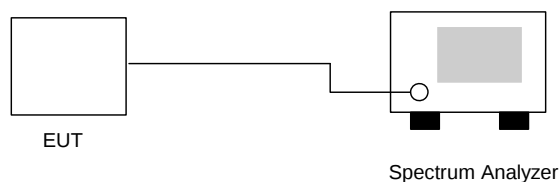
### 5.7.1 Measuring Instruments :

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<br>(MHz) | Hopping Channel Bandwidth<br>(MHz) | Limits<br>(MHz) | Plot<br>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

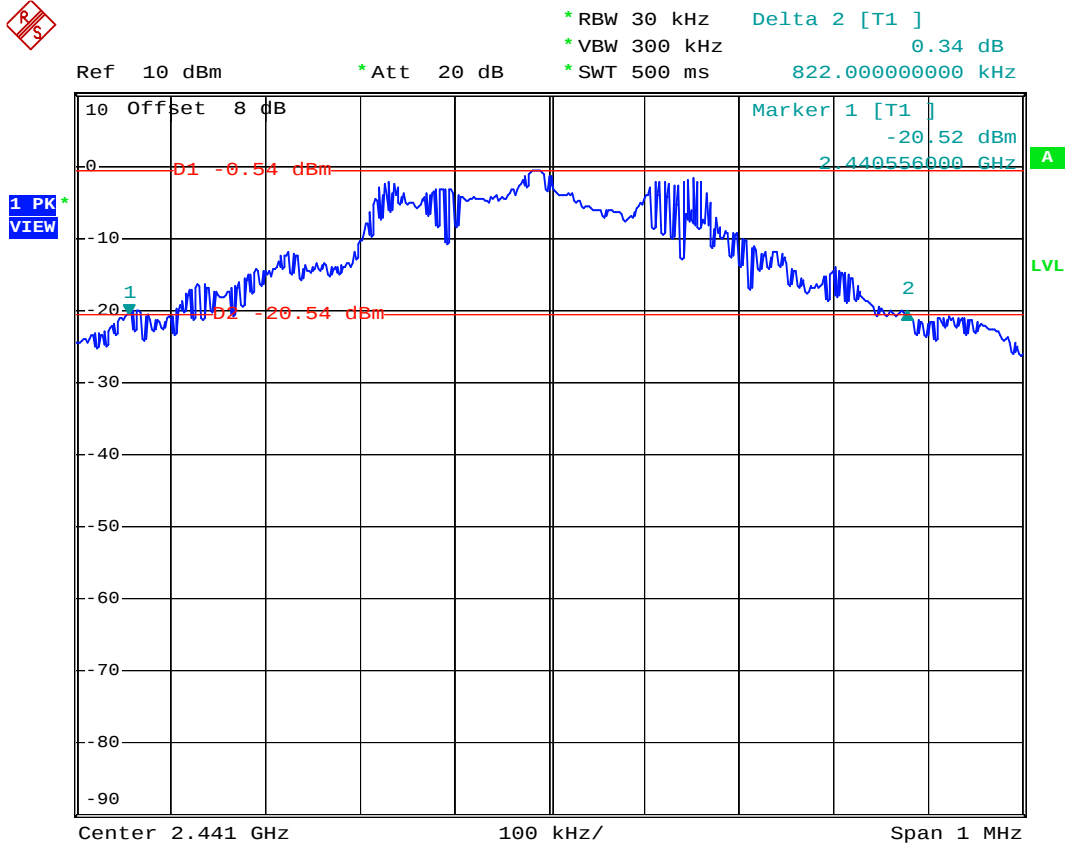
Mode 1



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



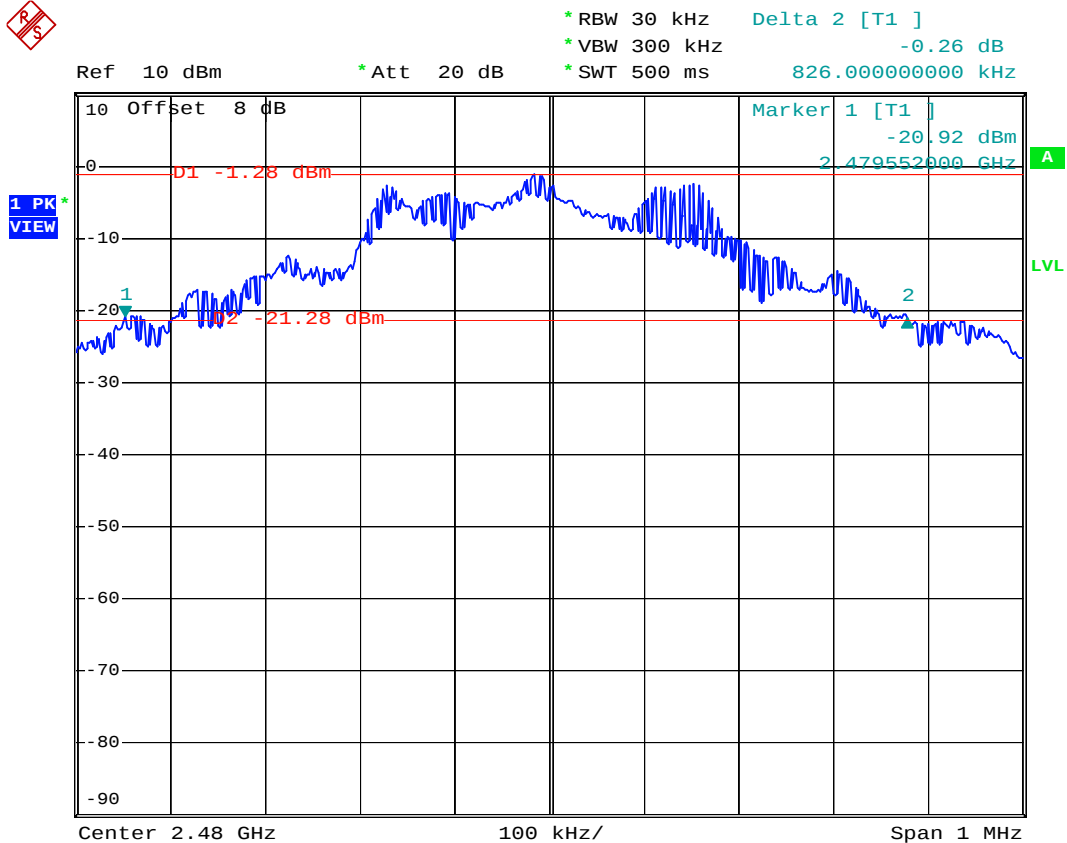
Mode 2



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



Mode 3



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

## 5.8 Dwell Time of Each Frequency

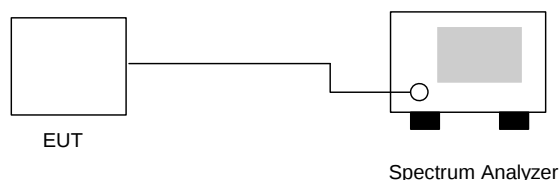
### 5.8.1 Measuring Instruments :

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<br>(us) | Dwell Time<br>(s) | Limit<br>(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**

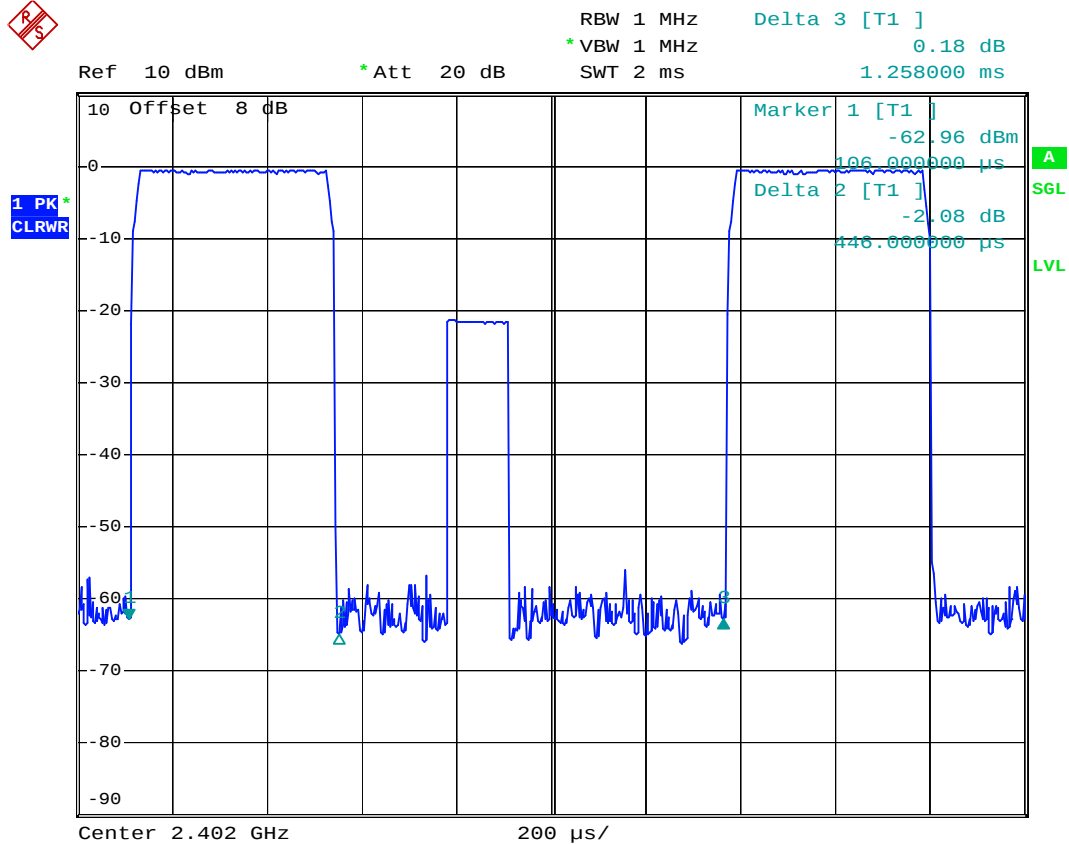
| Package Mode | Average Hopping Channel | Package Transfer Time<br>(us) | Dwell Time<br>(s) | Limit<br>(s) |
|--------------|-------------------------|-------------------------------|-------------------|--------------|
| DH1          | 9.6                     | 446                           | 0.135             | 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)

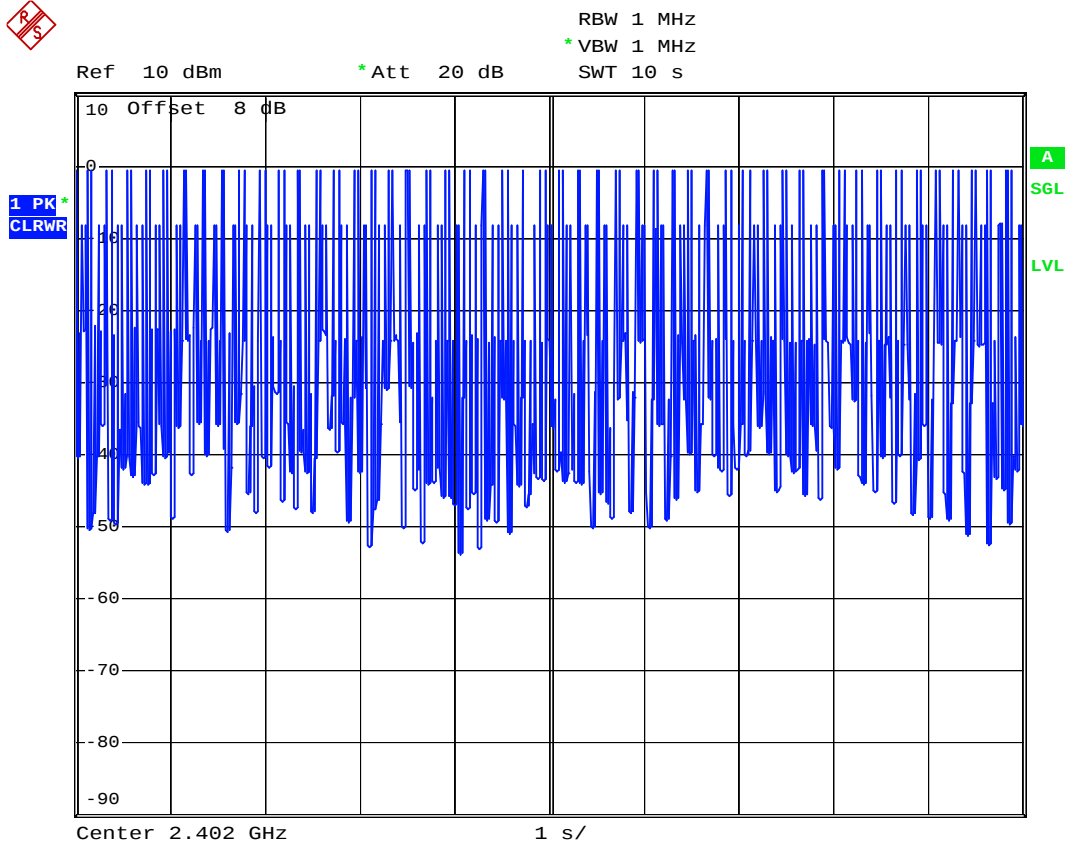


Date: 16.JUN.2006 16:49:44



# FCC TEST REPORT

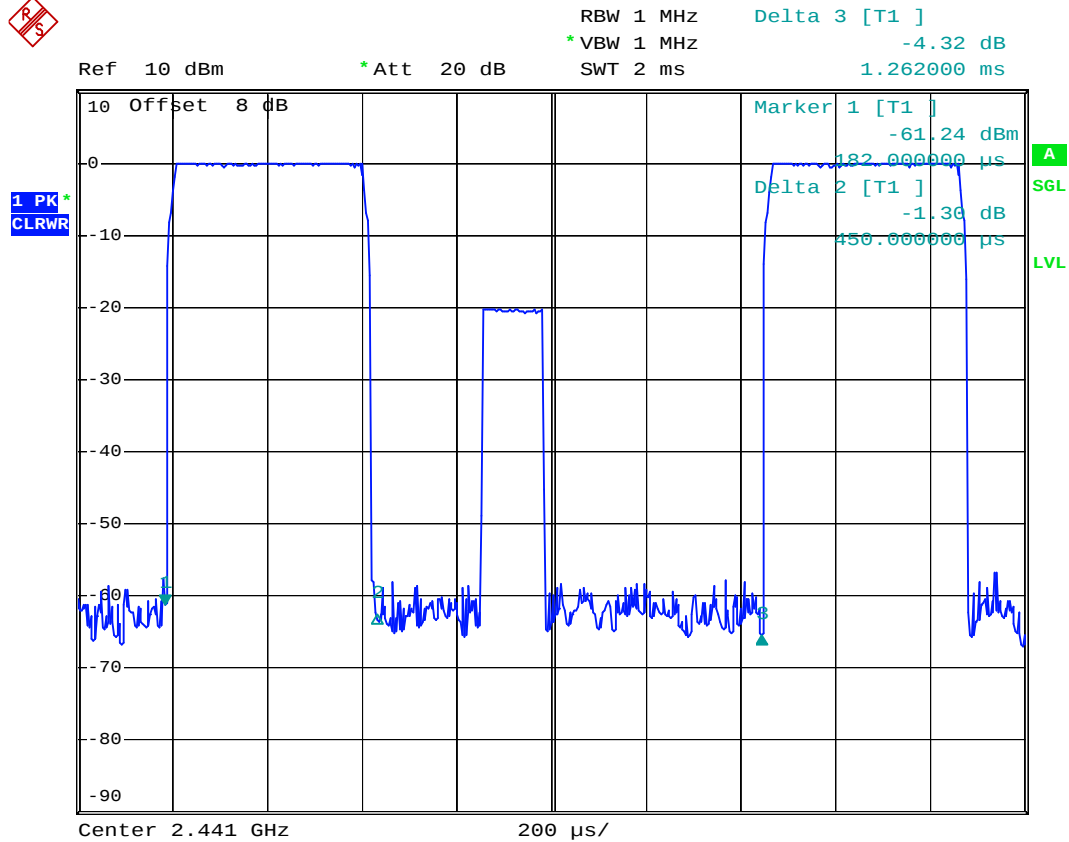
Report No. : FR653101



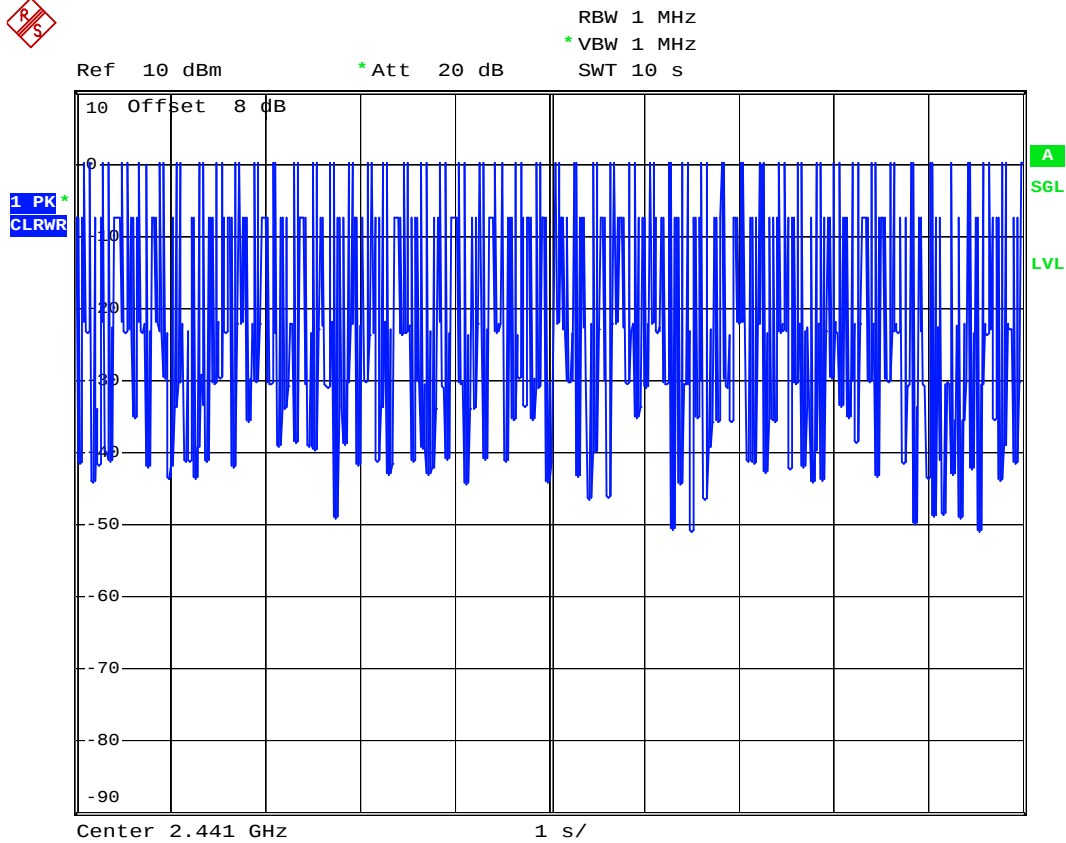
Date: 16.JUN.2006 16:58:08



DH1 (CH39)



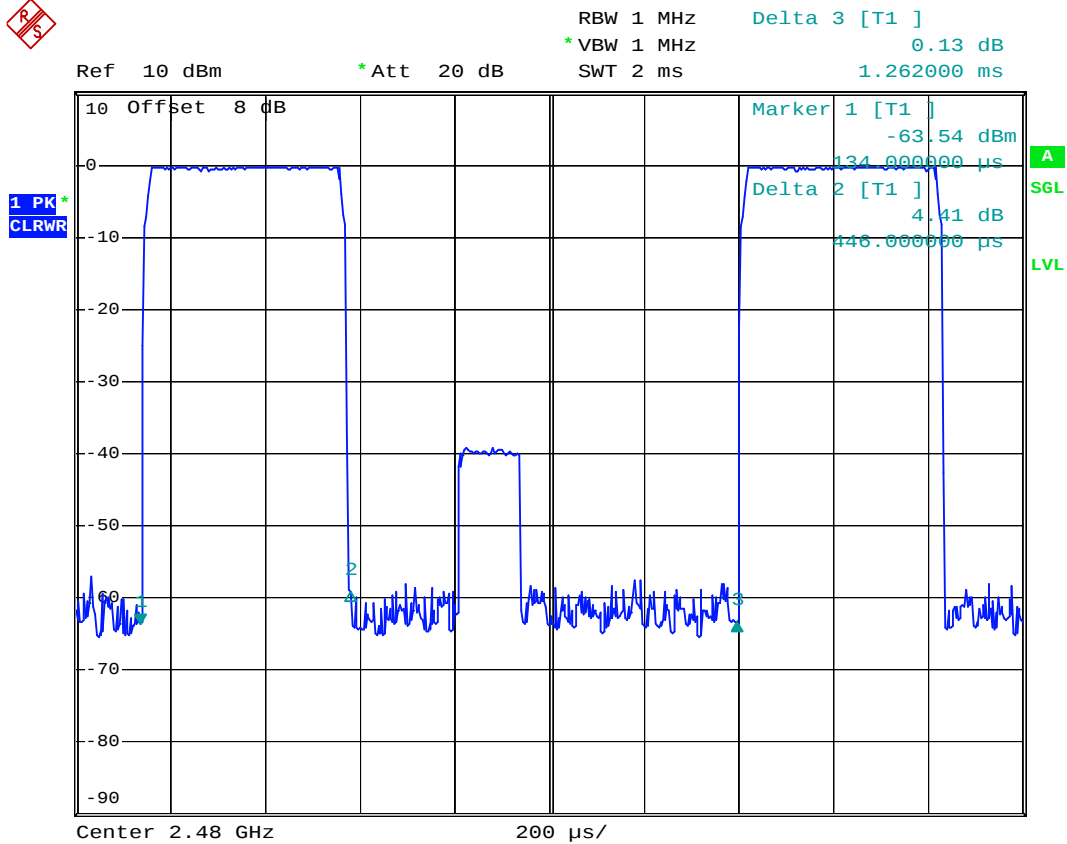
Date: 16.JUN.2006 16:50:21



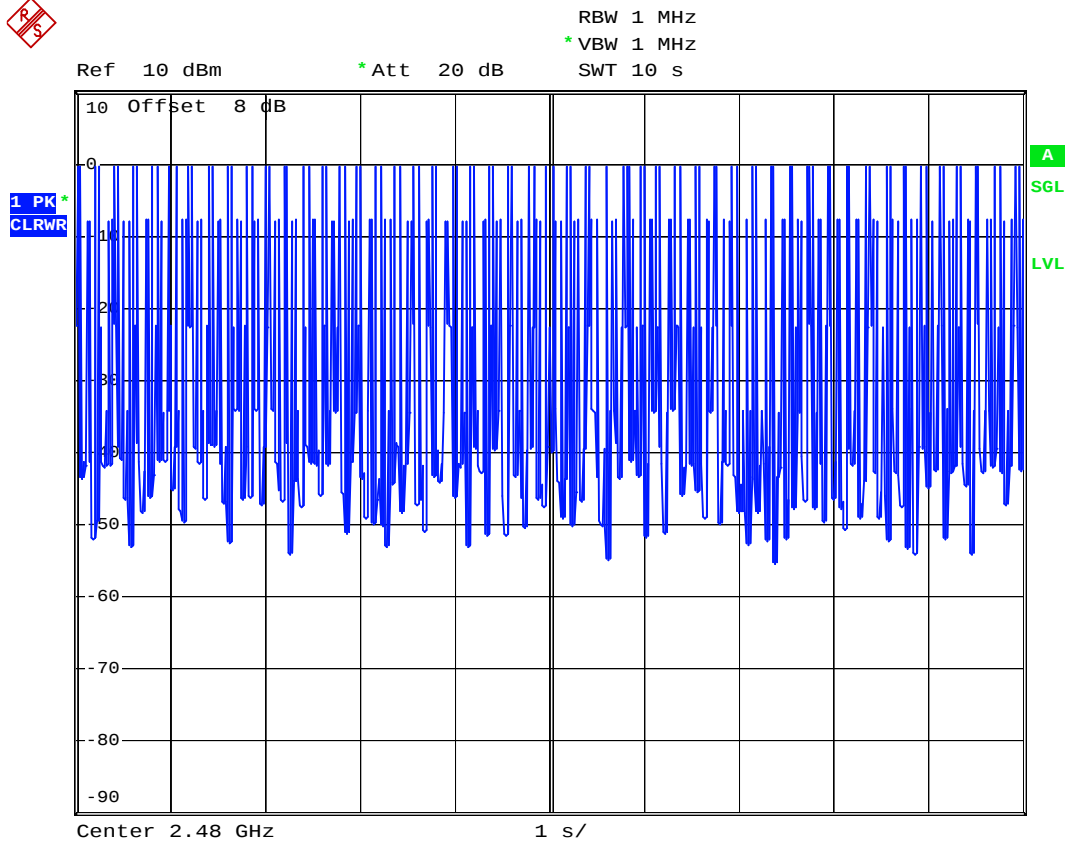
Date: 16.JUN.2006 16:58:31



DH1 (CH78)



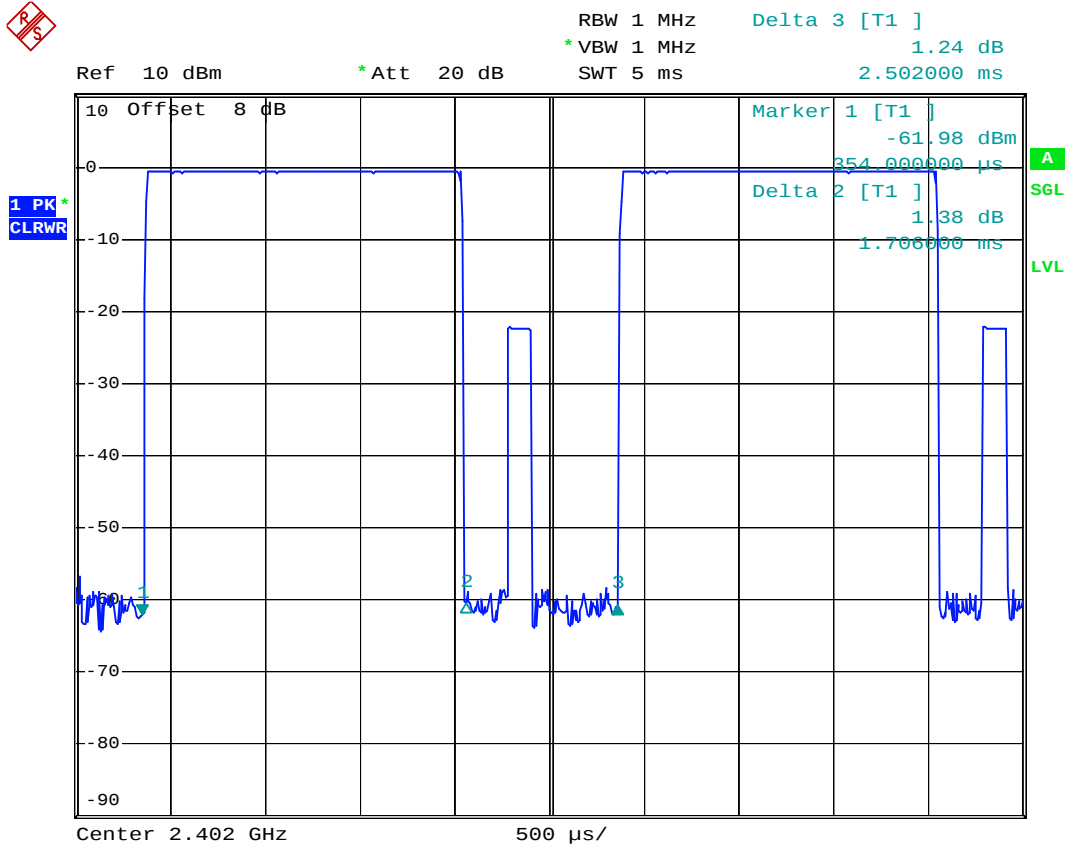
Date: 16.JUN.2006 16:50:59



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



DH3 (CH00)

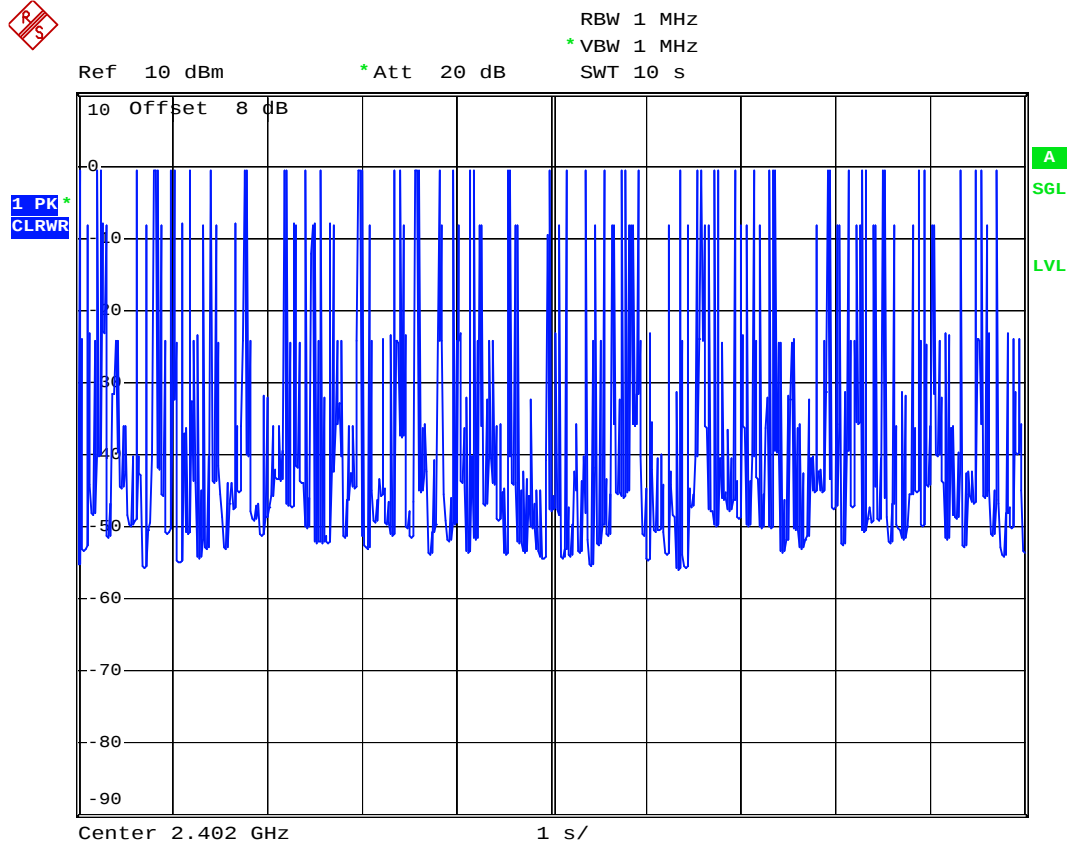


Date: 16.JUN.2006 16:51:47



# FCC TEST REPORT

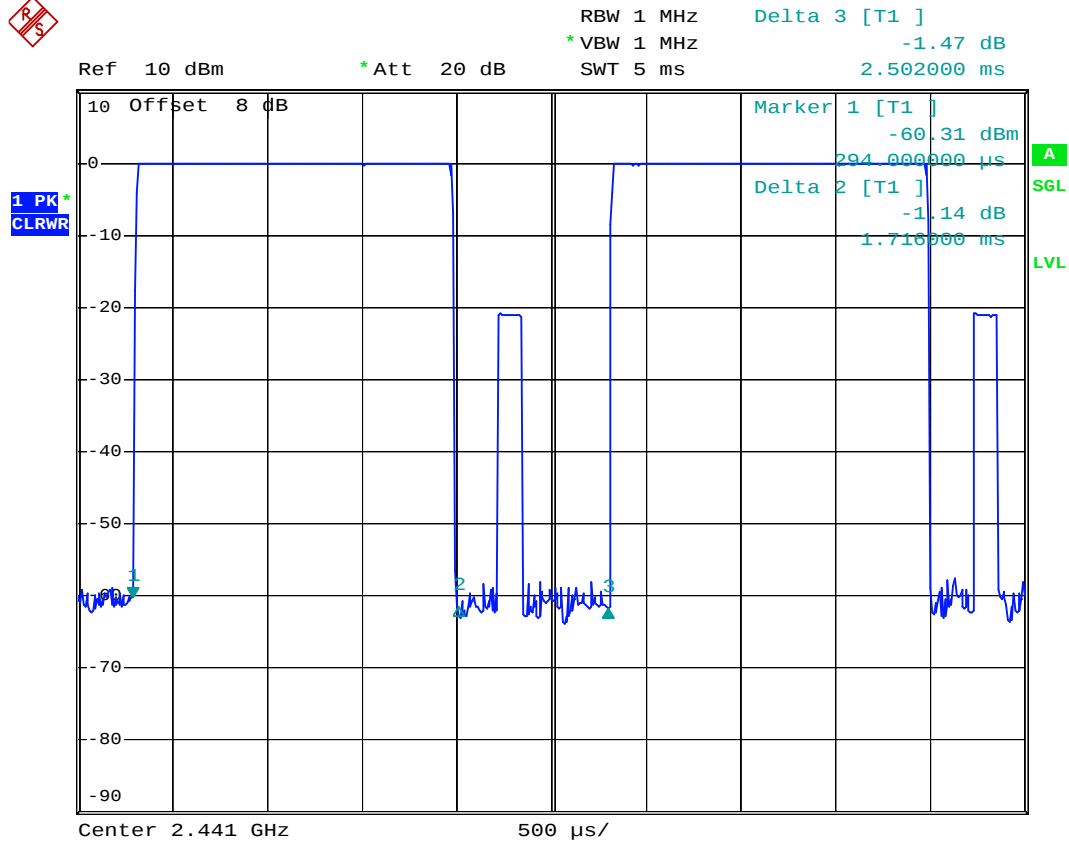
Report No. : FR653101



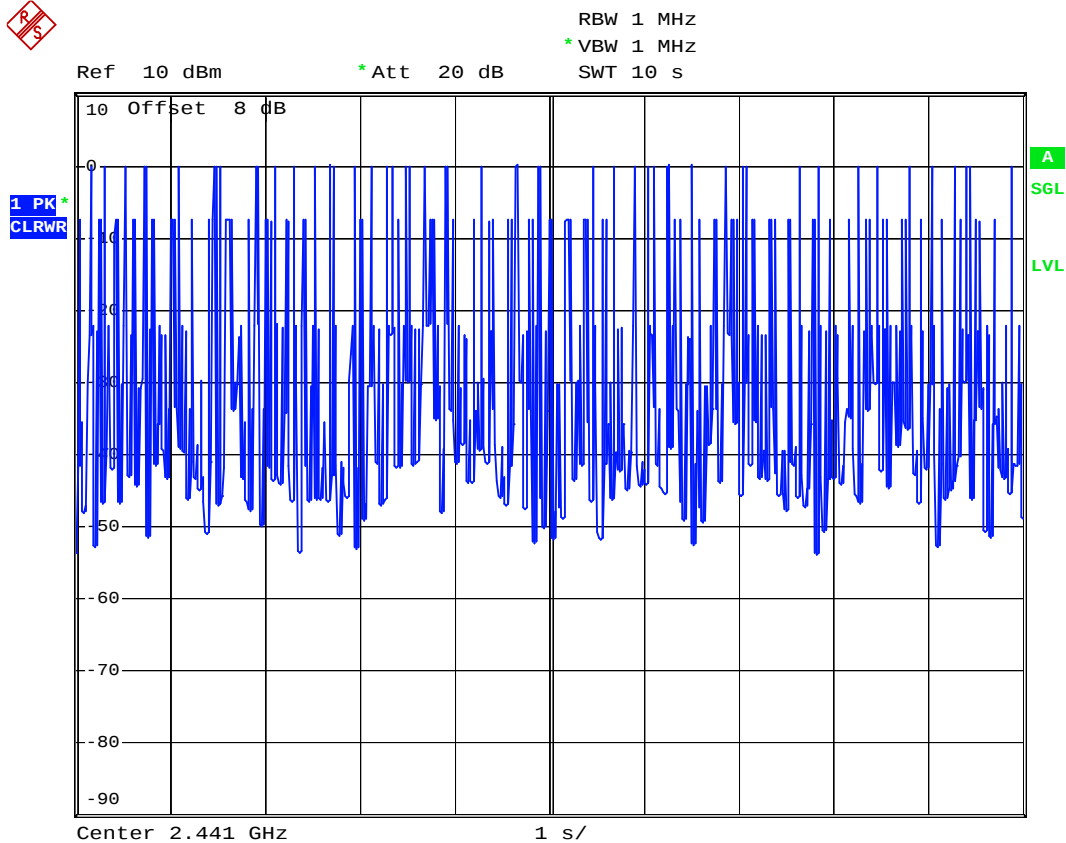
Date: 16.JUN.2006 17:00:23



DH3 (CH39)



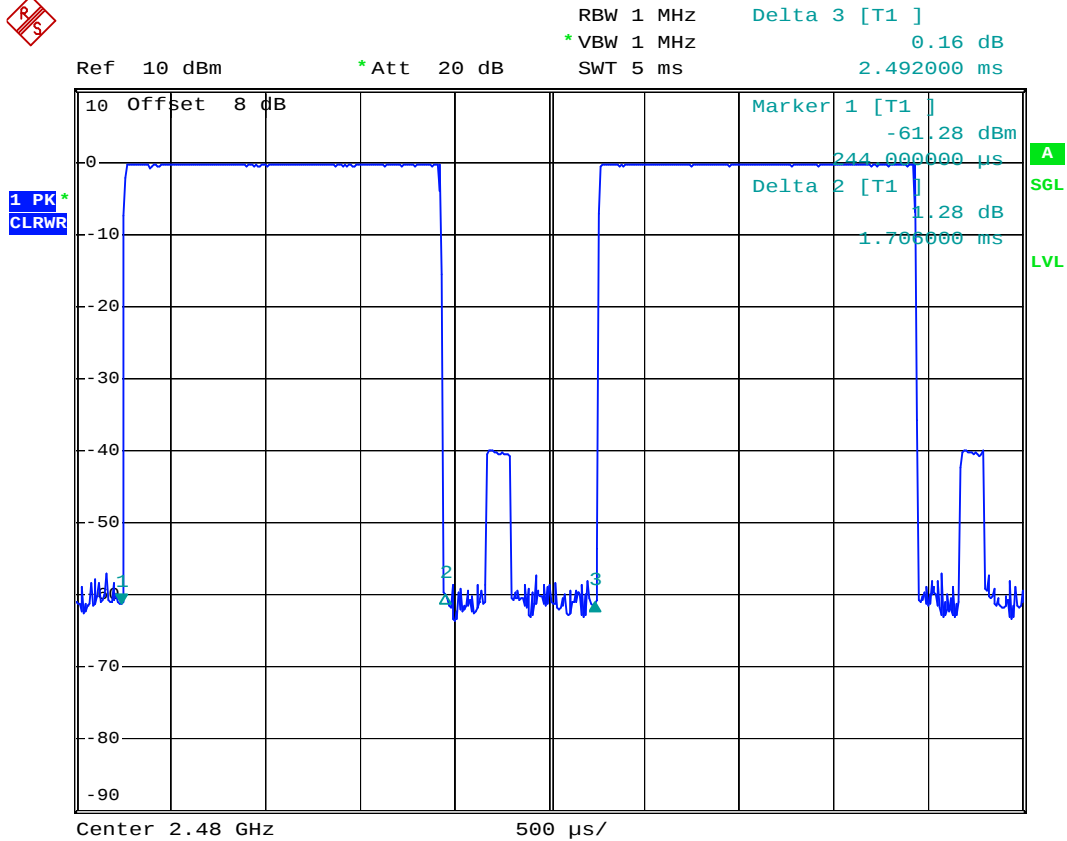
Date: 16.JUN.2006 16:52:06



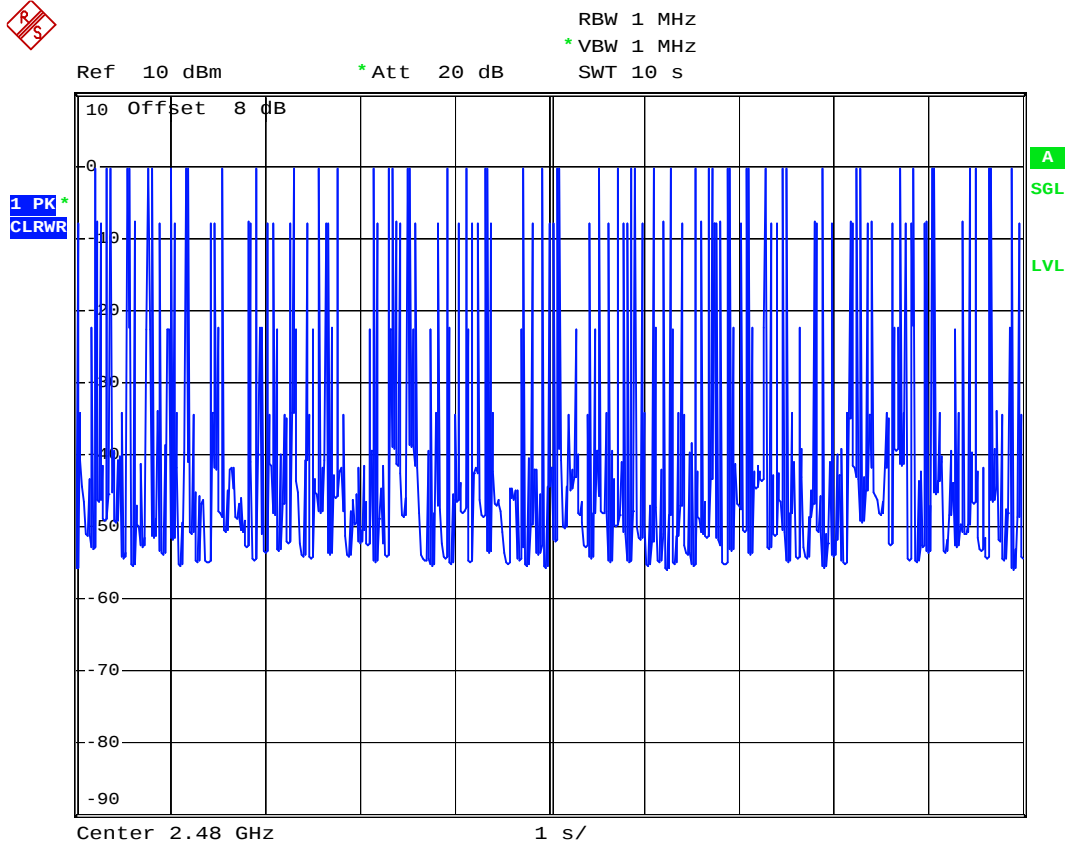
Date: 16.JUN.2006 17:00:42



DH3 (CH78)



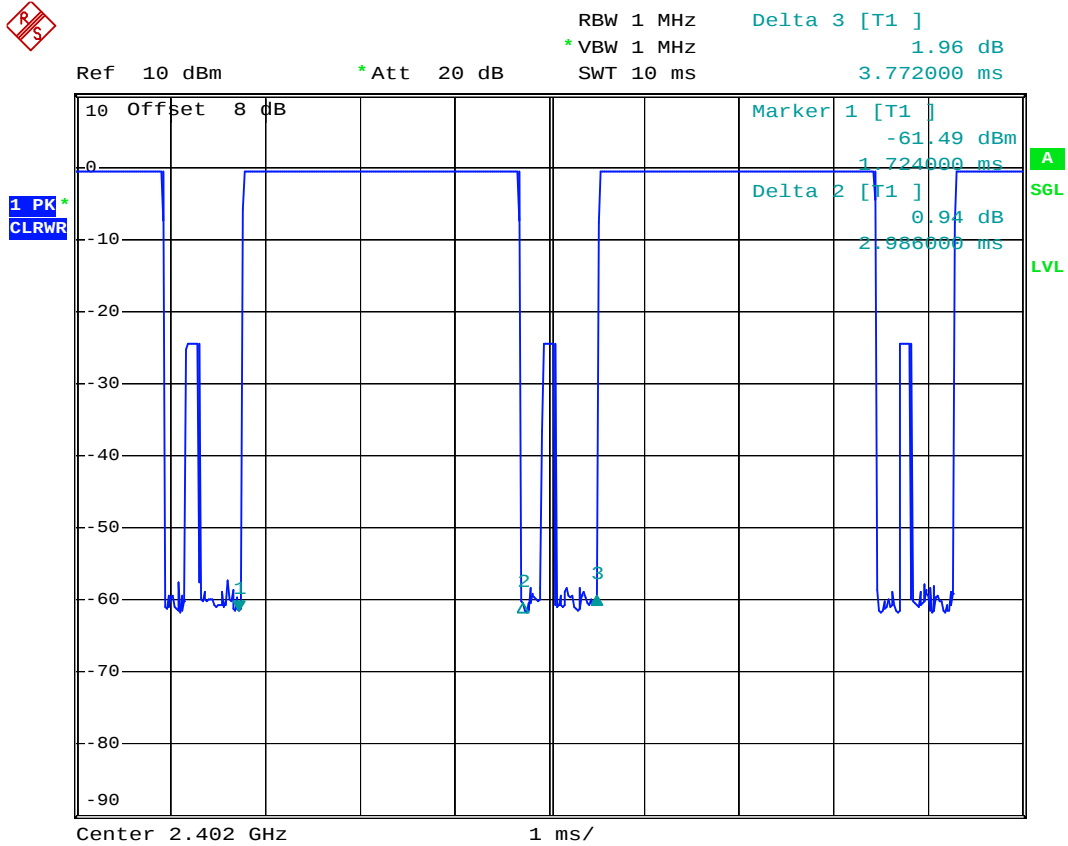
Date: 16.JUN.2006 16:52:37



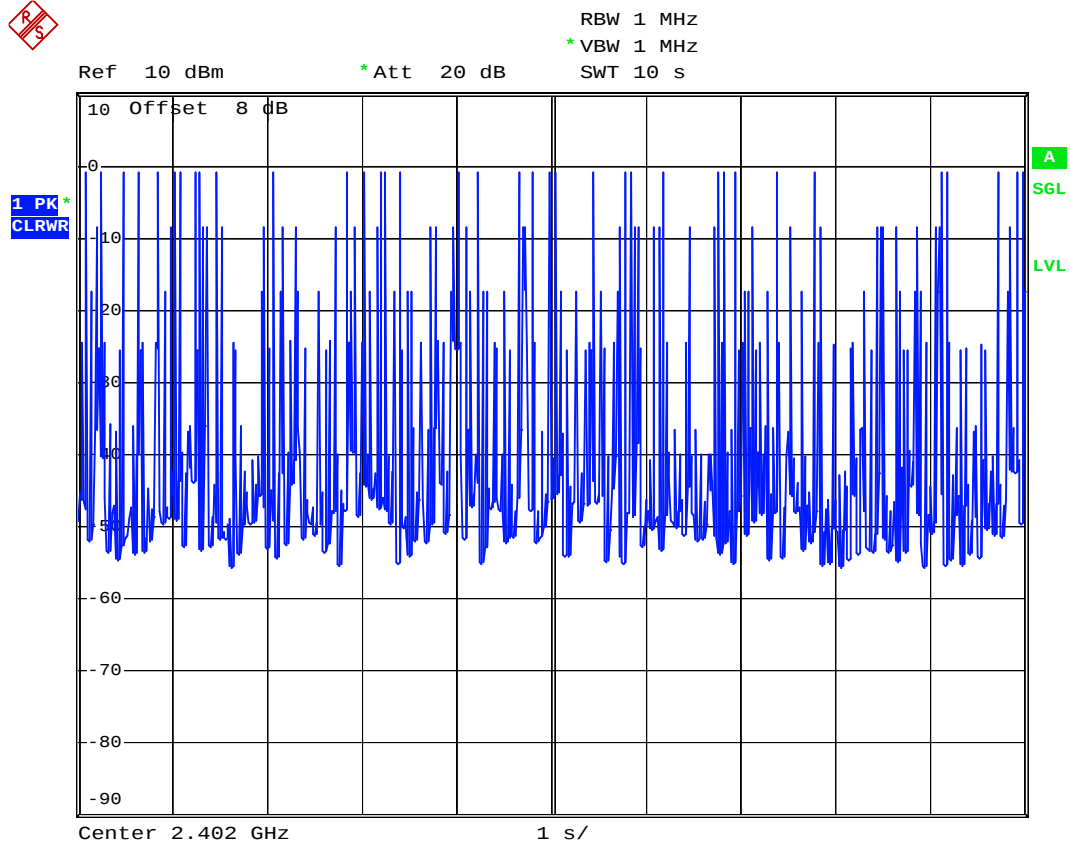
Date: 16.JUN.2006 17:01:00



DH5 (CH00)



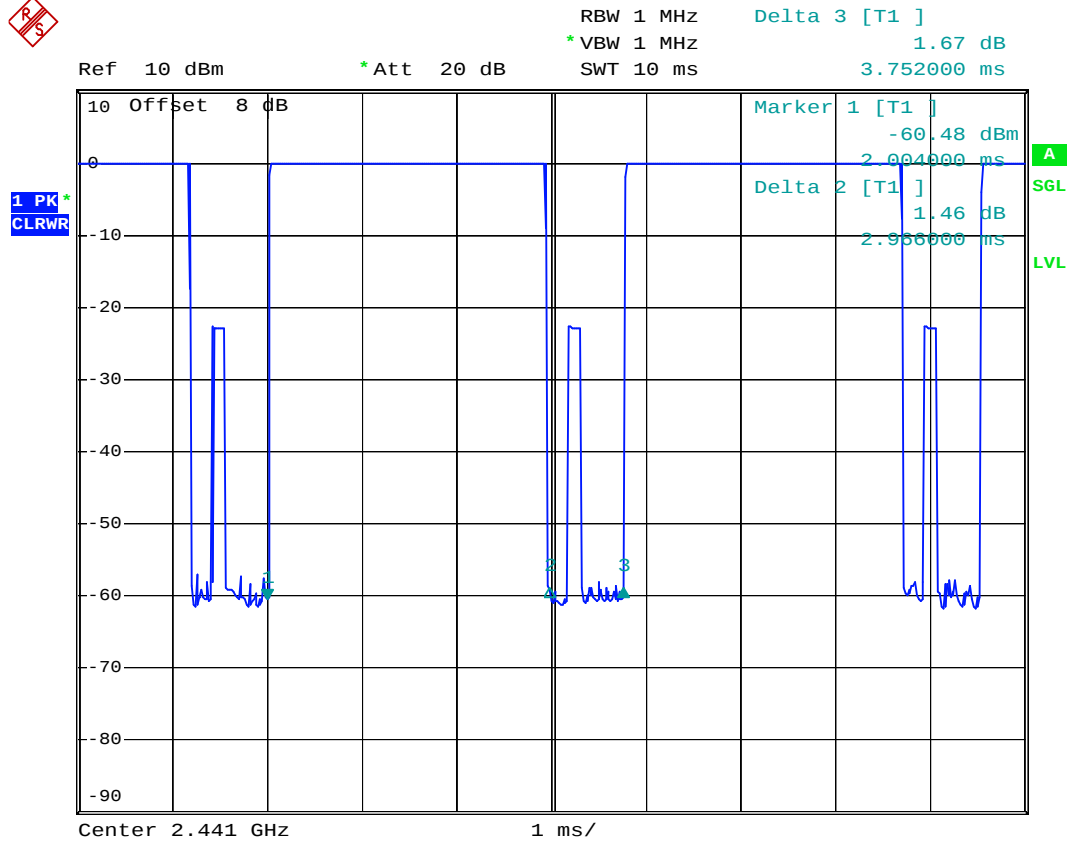
Date: 16.JUN.2006 16:55:07



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



DH5 (CH39)

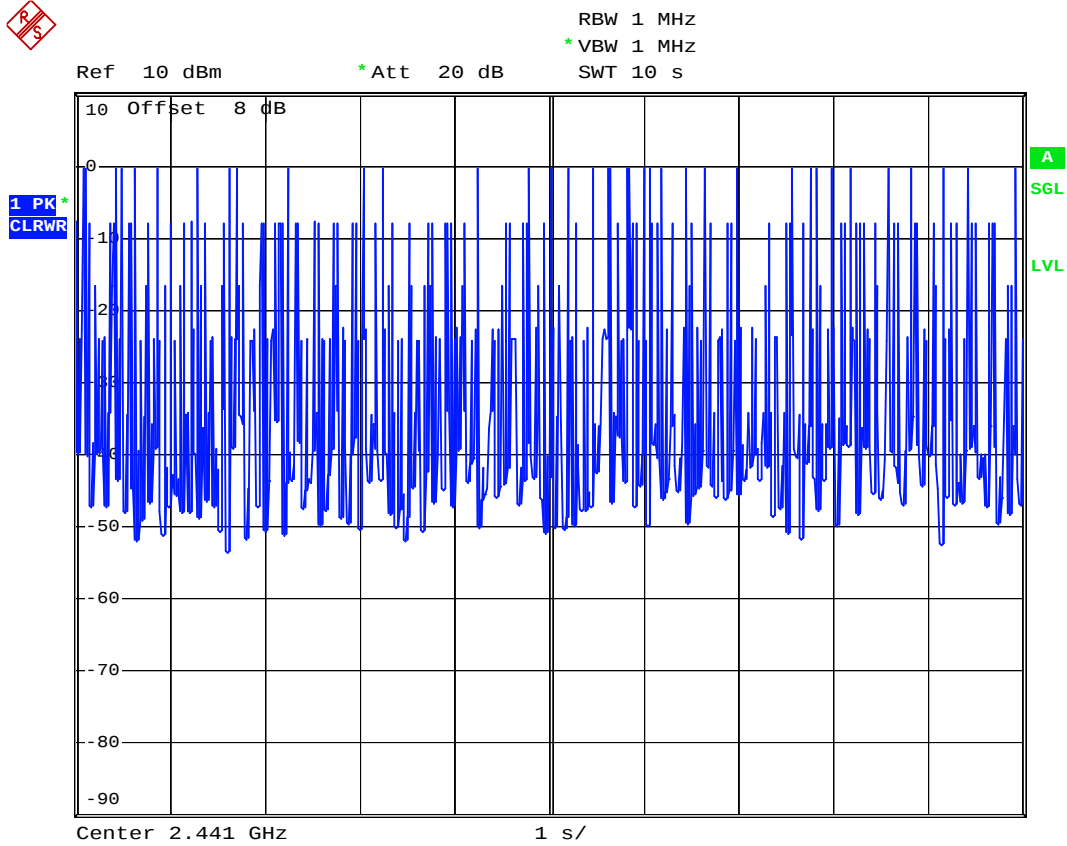


Date: 16.JUN.2006 16:55:33



# FCC TEST REPORT

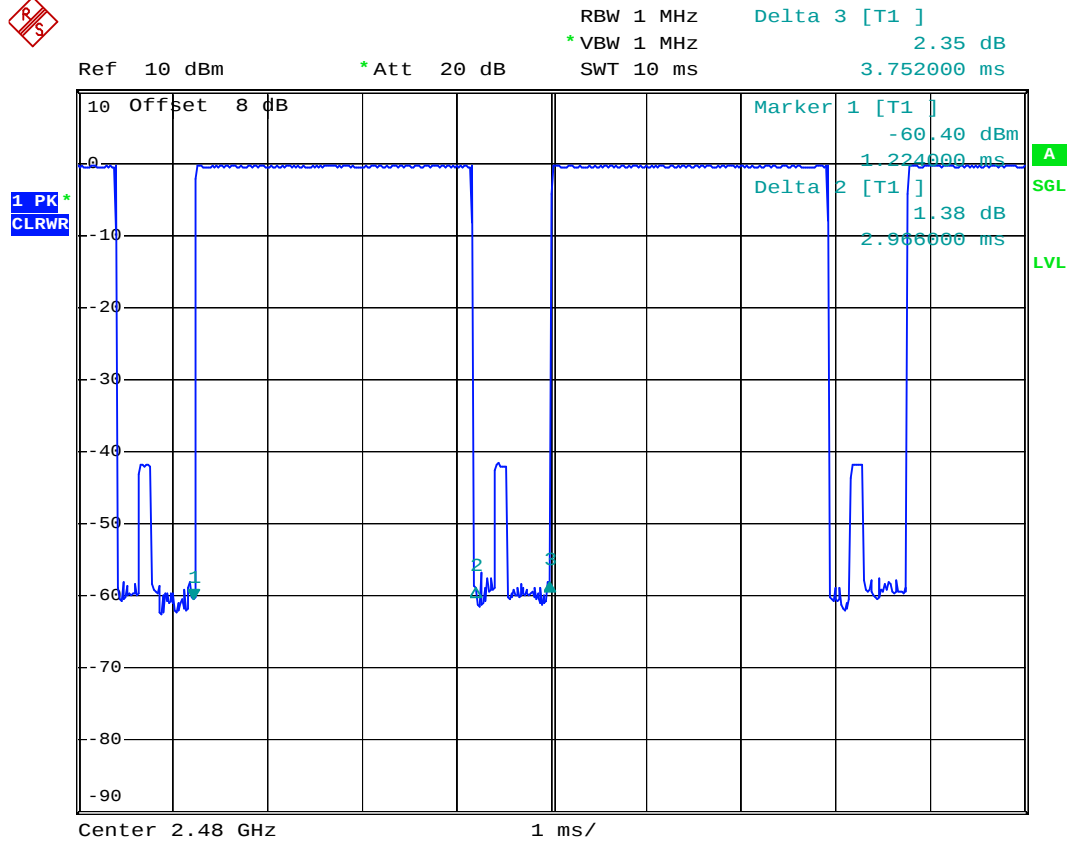
Report No. : FR653101



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



DH5 (CH78)

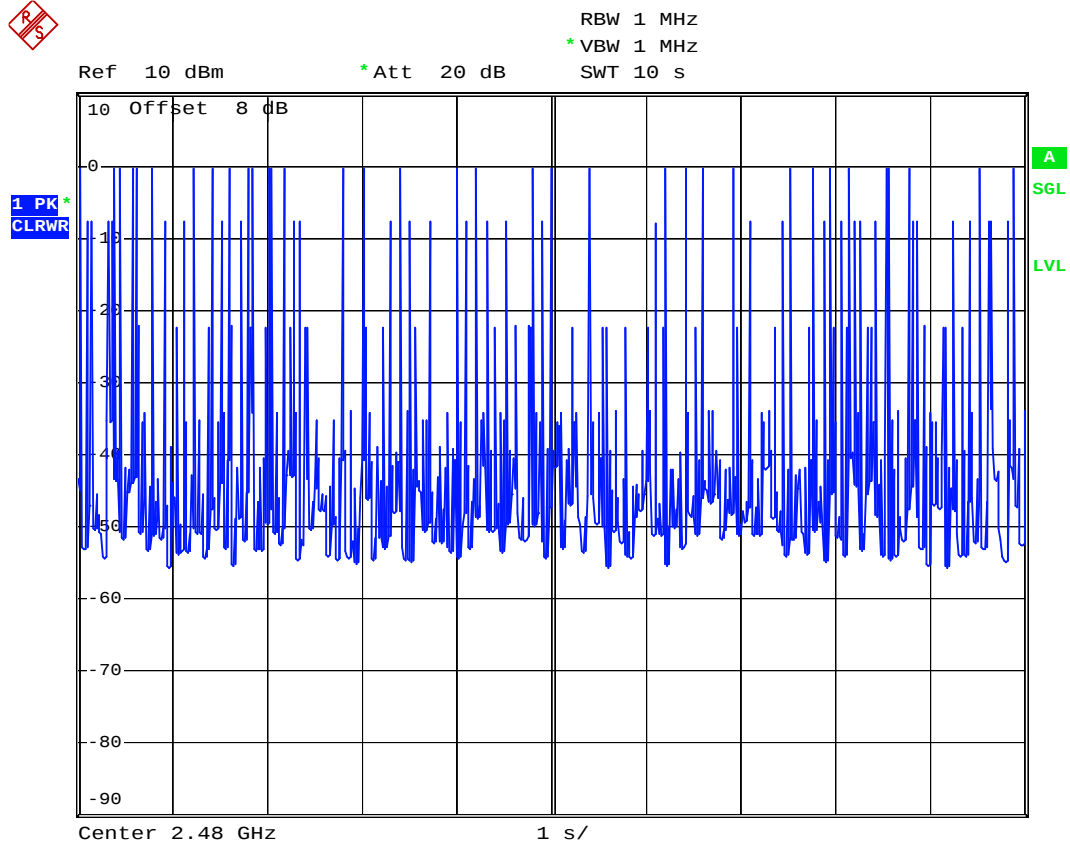


Date: 16.JUN.2006 16:56:54



# FCC TEST REPORT

Report No. : FR653101



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

## 5.9 Peak Output Power Measurement

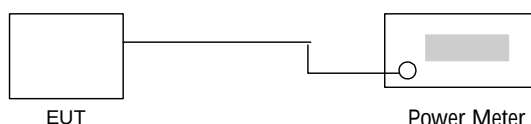
### 5.9.1 Measuring Instruments :

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<br>(MHz) | Measured Output Power<br>(dBm) | Limits<br>(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<br>(MHz) | Measured Output Power<br>(dBm) | Limits<br>(Watt/dBm ) |
|---------|--------------------|--------------------------------|-----------------------|
| 01      | 2412               | 20.87                          | 1W/30 dBm             |
| 06      | 2437               | 21.23                          | 1W/30 dBm             |
| 11      | 2462               | 20.93                          | 1W/30 dBm             |

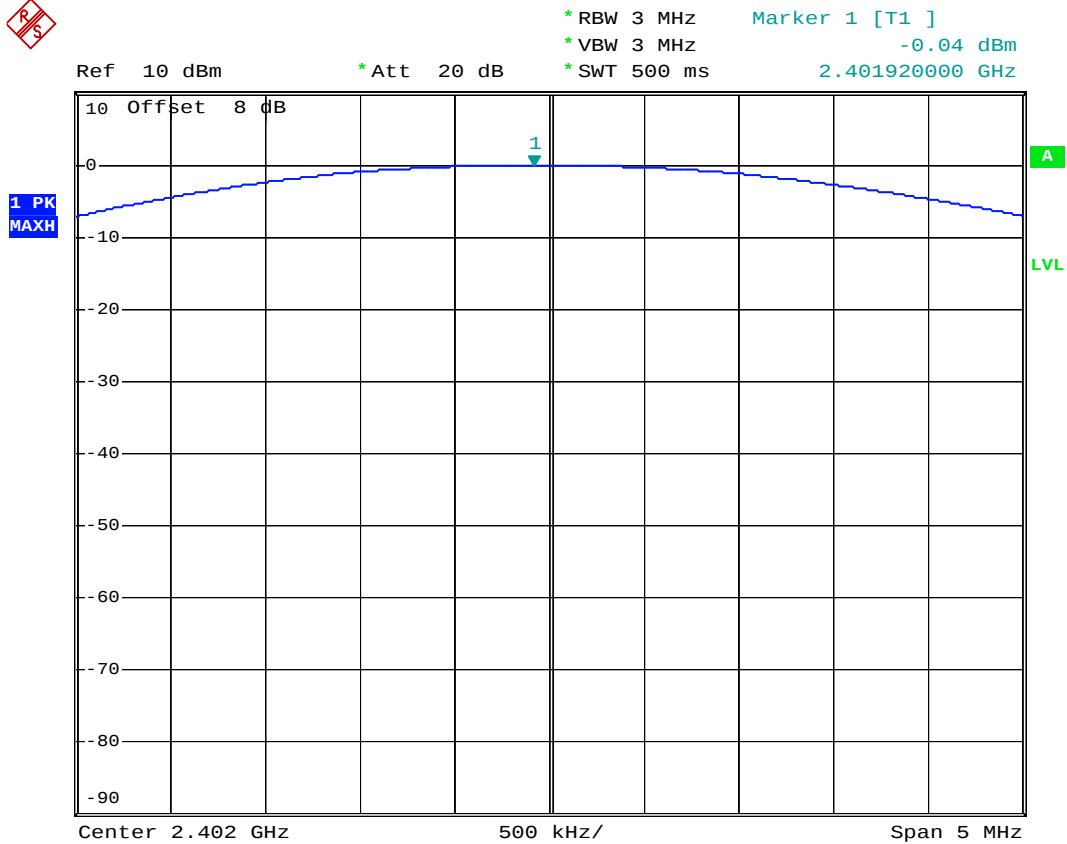
**Bluetooth**

| Channel | Frequency<br>(MHz) | Measured Output Power<br>(dBm) | Limits<br>(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

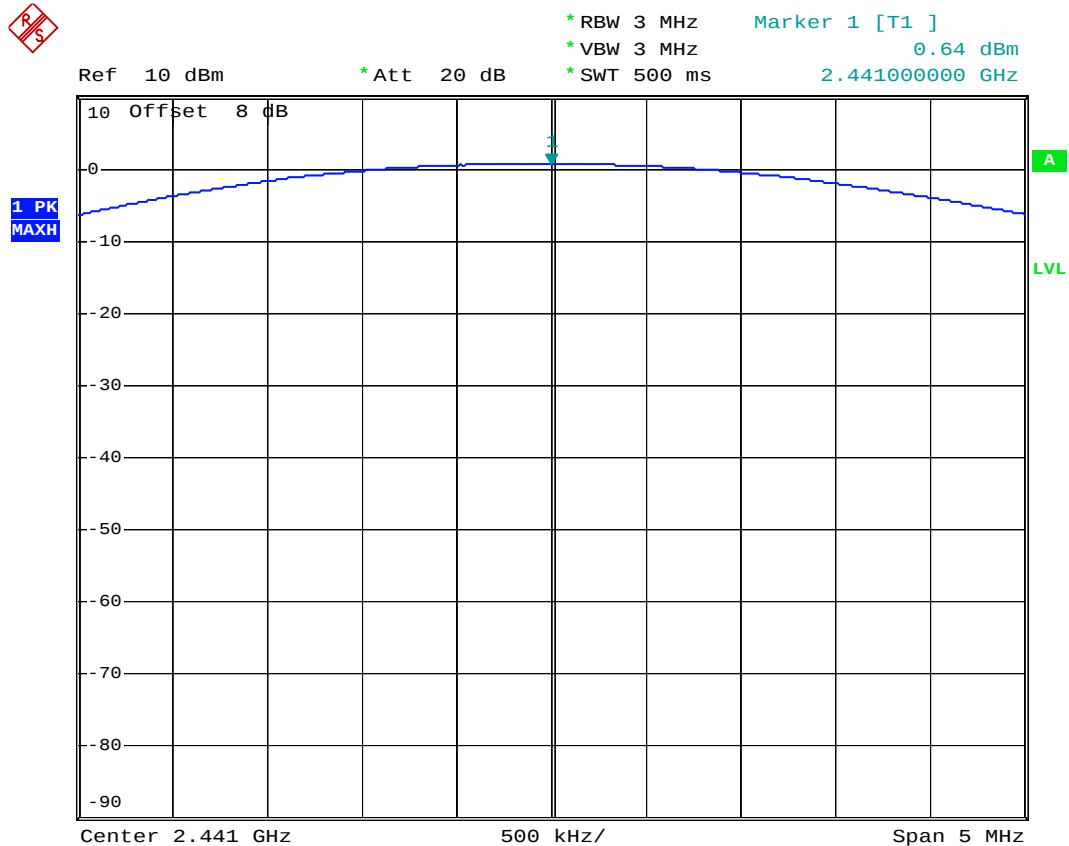
BT Mode : CH00 (2402MHz)



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



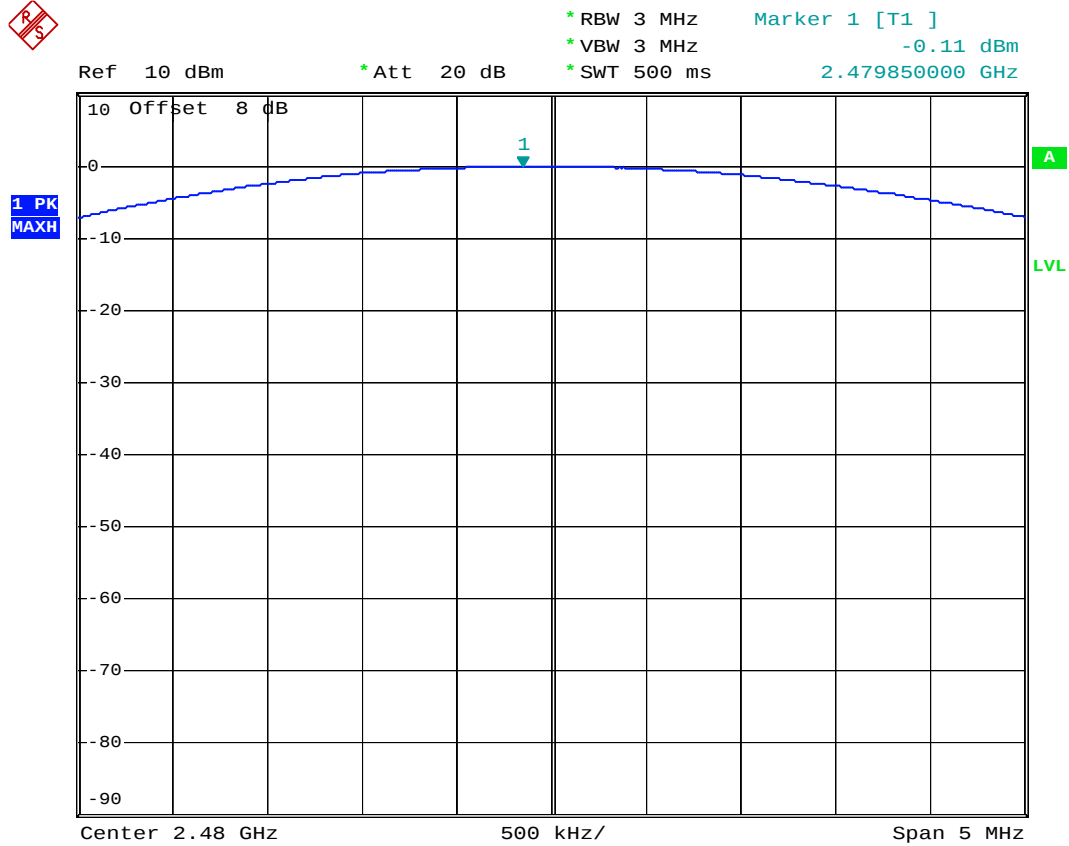
BT Mode : CH39 (2441MHz)



Date: 16.JUN.2006 16:24:15



BT Mode : CH78 (2480MHz)



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 :**

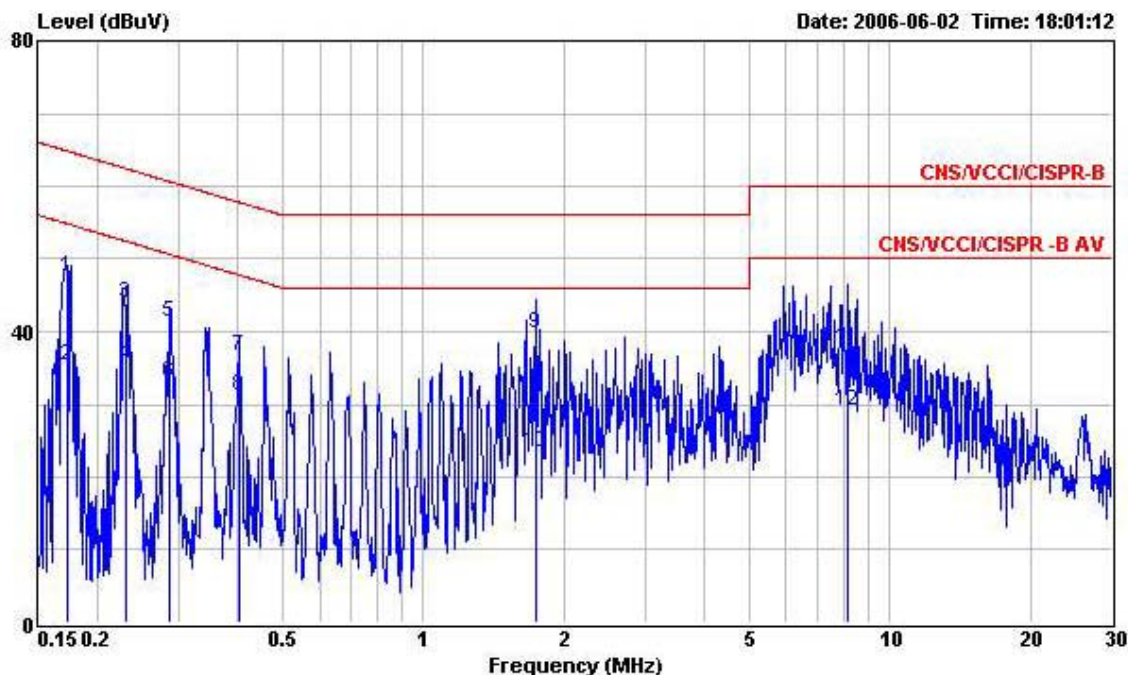
- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of a line impedance stabilization network (LISN).
- c. All the support units are connected to the other LISN.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

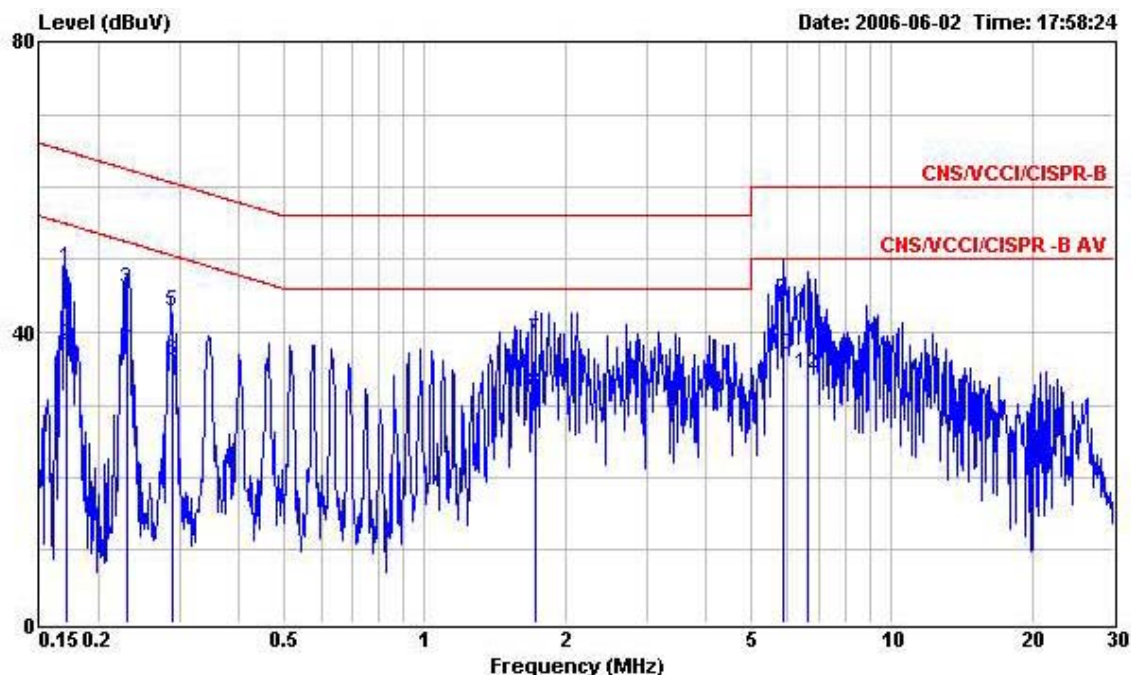
- Temperature : 24 °C
- Relating Humidity : 59 %
- Test Enginner : James
- Test Mode : Mode 1

■ 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**

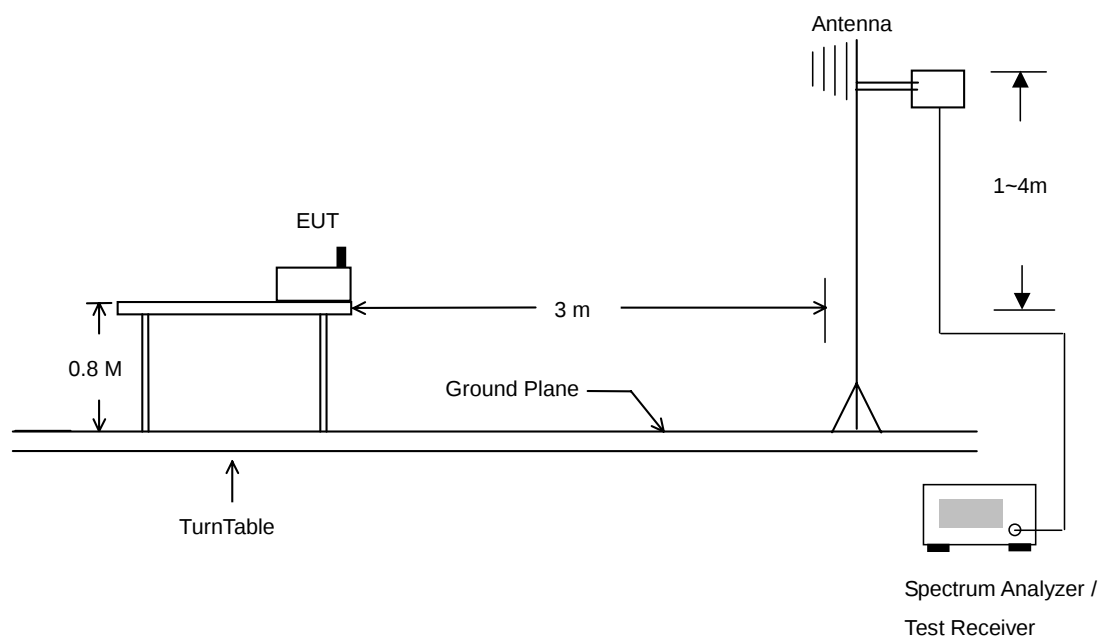
### **5.11.1 Measuring Instruments**

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

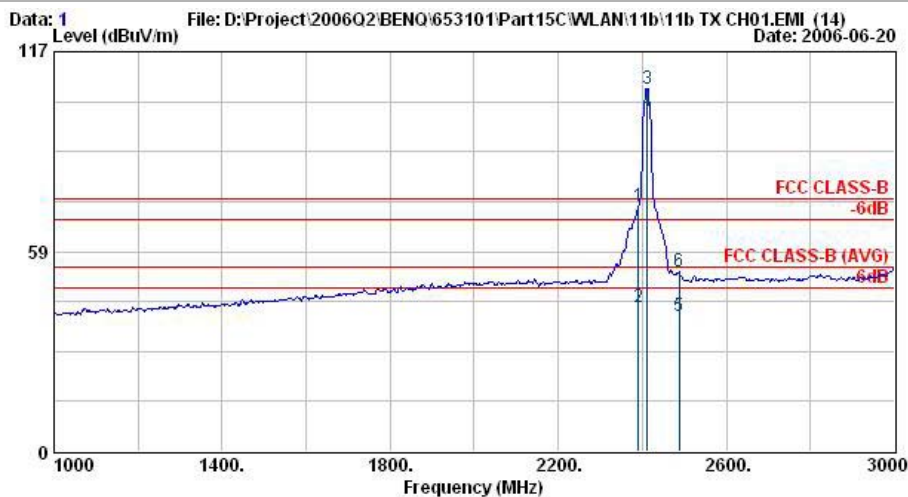




## 5.11.4 Test Data

- 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 |         |
|---|---------|--------|--------|--------|--------|---------|-------|--------|-----|-------|---------|
|   | MHz     | dBuV/m | Limit  | Line   | Level  | Factor  | Loss  | Factor | Pos | Pos   | Remark  |
|   |         |        | 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    |

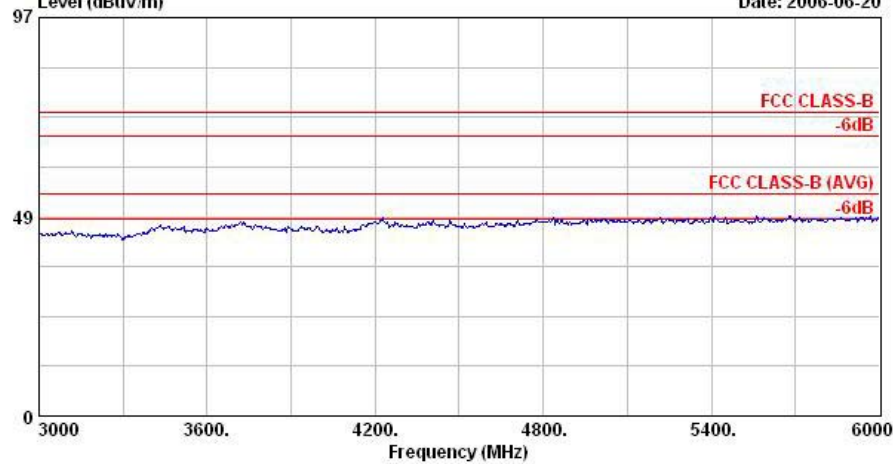
Remark: #3 and #4 Fundamental Signal



## FCC TEST REPORT

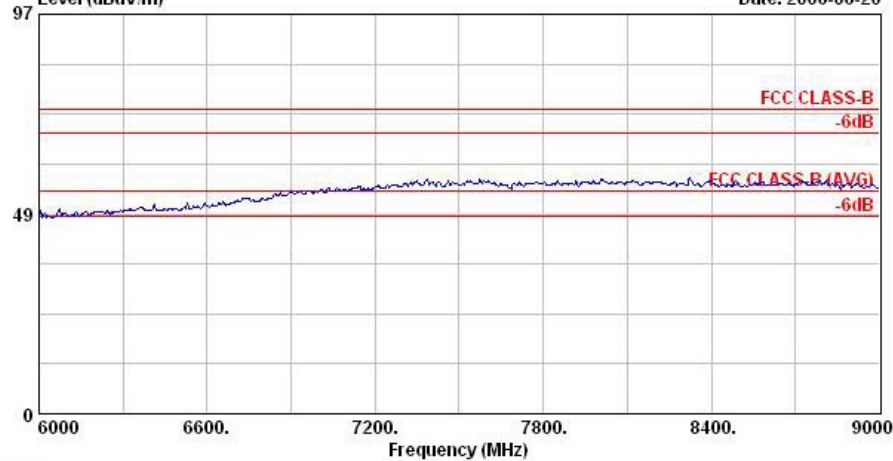
Report No. : FR653101

Data: 2 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

Data: 3 File: D:\Project\2006Q2\BENQ\653101\Part15C\WLAN\11b\11b TX CH01.EMI (14)  
Level (dBuV/m) Date: 2006-06-20



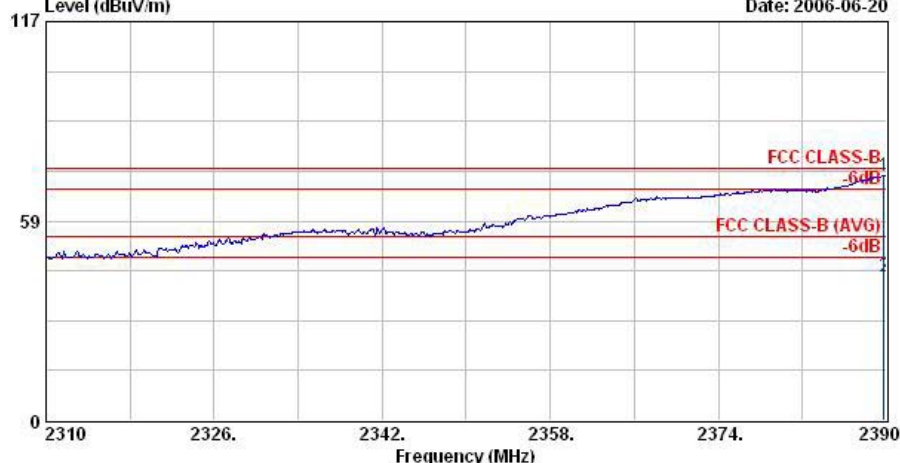
Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH01,2412MHz  
Plane : E2



# FCC TEST REPORT

Report No. : FR653101

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



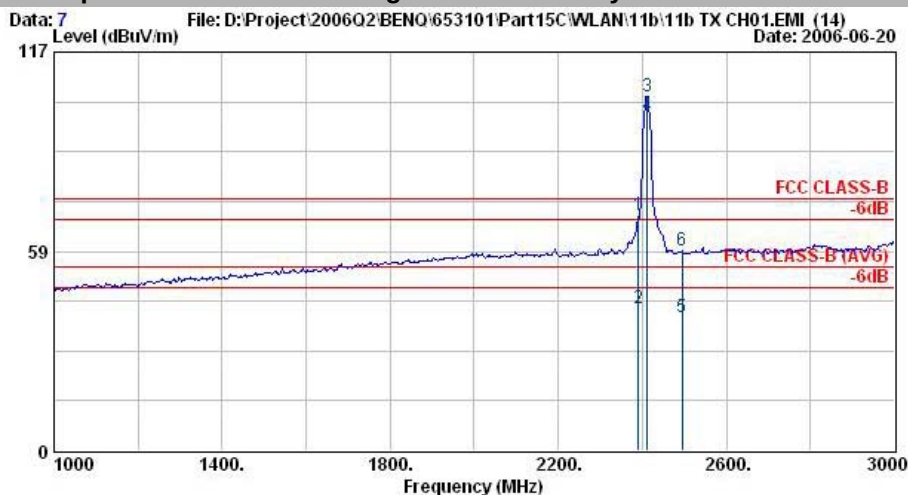
Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH01,2412MHz  
Plane : E2

|   | Freq    | Level  | Over   | Limit  | Read  | Antenna | Cable | Preamp | Ant | Table |         |
|---|---------|--------|--------|--------|-------|---------|-------|--------|-----|-------|---------|
|   | MHz     | dBuV/m | Limit  | Line   | Level | Factor  | Loss  | Factor | Pos | 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

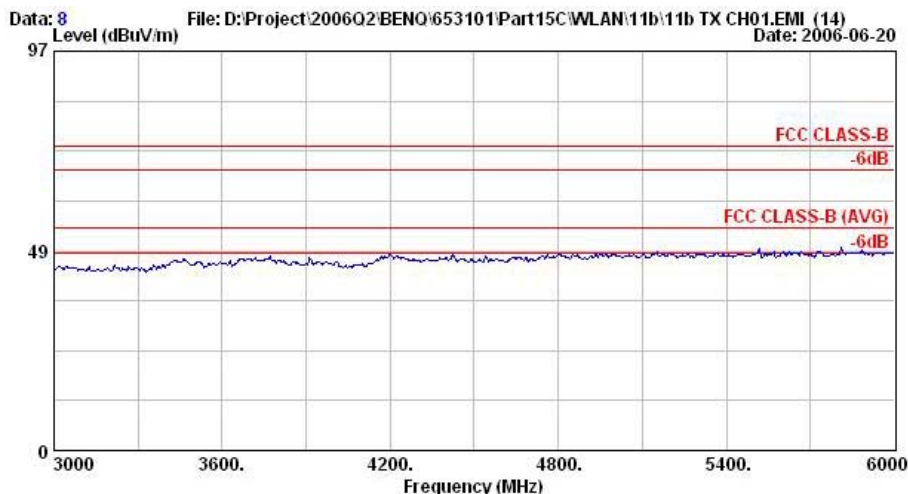
■ The test that passed at minimum margin was marked by the frame in the following table.



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  | Read   | Antenna | Cable | Preamp | Ant | Table |         |
|-----|---------|--------|--------|--------|--------|---------|-------|--------|-----|-------|---------|
|     | MHz     | dBuV/m | Limit  | Line   | Level  | Factor  | Loss  | Factor | Pos | Pos   | Remark  |
|     |         |        | dB     | dBuV/m | dBuV   | dB/m    | 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

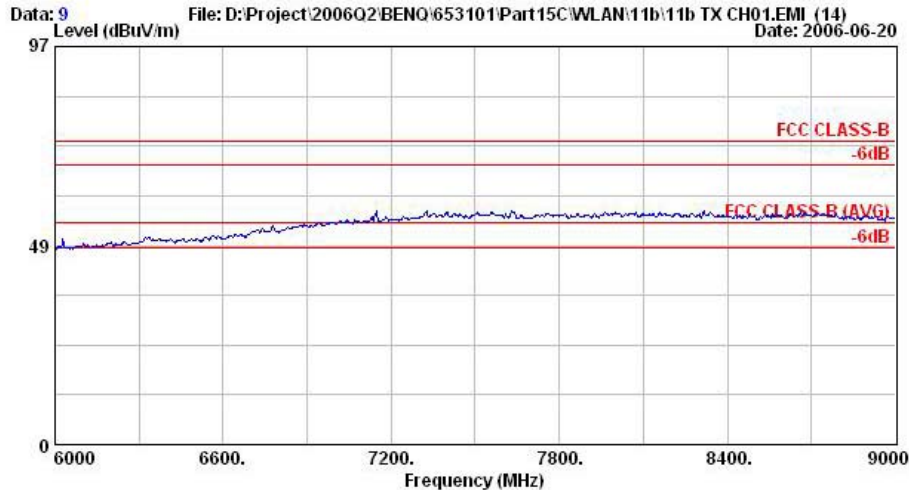


Site : 03CH06-HY  
Condition : HF-ANT-060410 VERTICAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH01, 2412MHz  
Plane : E2

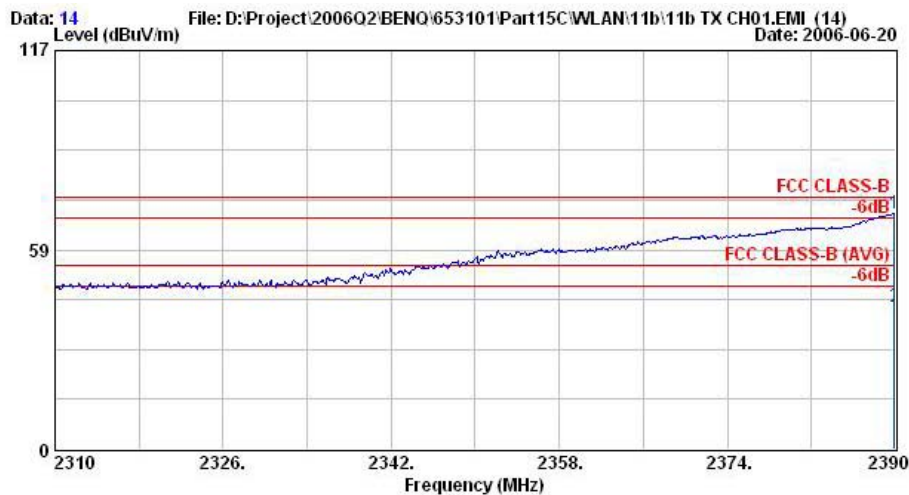


# FCC TEST REPORT

Report No. : FR653101



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

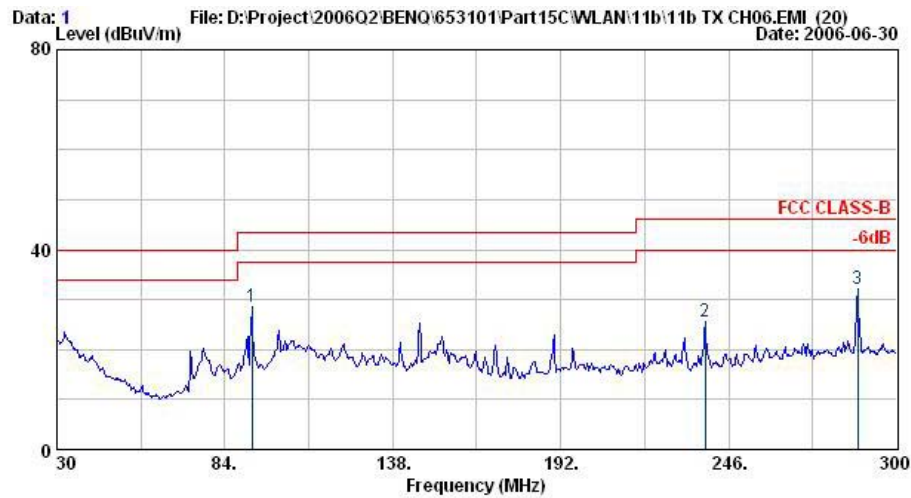
|   | Freq    | Level  | Over   | Limit  | Read  | Antenna | Cable | Preamp | Ant | Table |        |
|---|---------|--------|--------|--------|-------|---------|-------|--------|-----|-------|--------|
|   | MHz     | dBuV/m | Limit  | Line   | Level | Factor  | Loss  | Factor | Pos | Pos   | Remark |
|   |         |        | 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

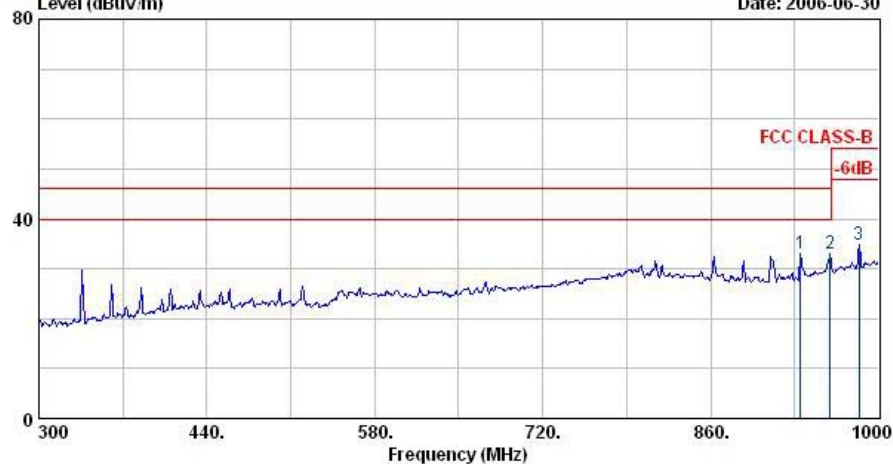
|     | Freq   | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | Ant   | Table |        |
|-----|--------|--------|--------|--------|-------------|-------|--------|-------|-------|--------|
|     | MHz    | dBuV/m | Limit  | Line   | Level       | Loss  | Factor | Pos   | Pos   | Remark |
|     |        |        | 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 |



# FCC TEST REPORT

Report No. : FR653101

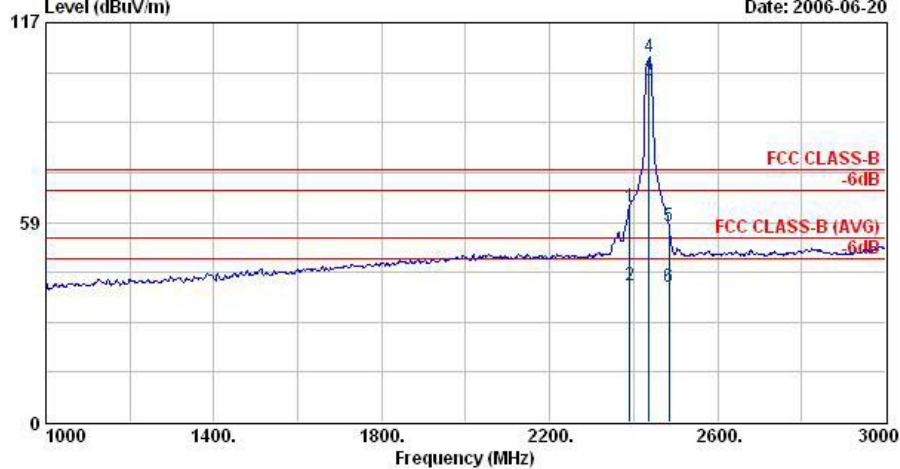
Data: 2 File: D:\Project\2006Q2\BENQ\653101\Part15C\WLAN\11b\11b TX CH06.EMI (20) Date: 2006-06-30



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  |

Data: 3 File: D:\Project\2006Q2\BENQ\653101\Part15C\WLAN\11b\11b TX CH06.EMI (20) 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 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

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

FCC ID : JVPP51

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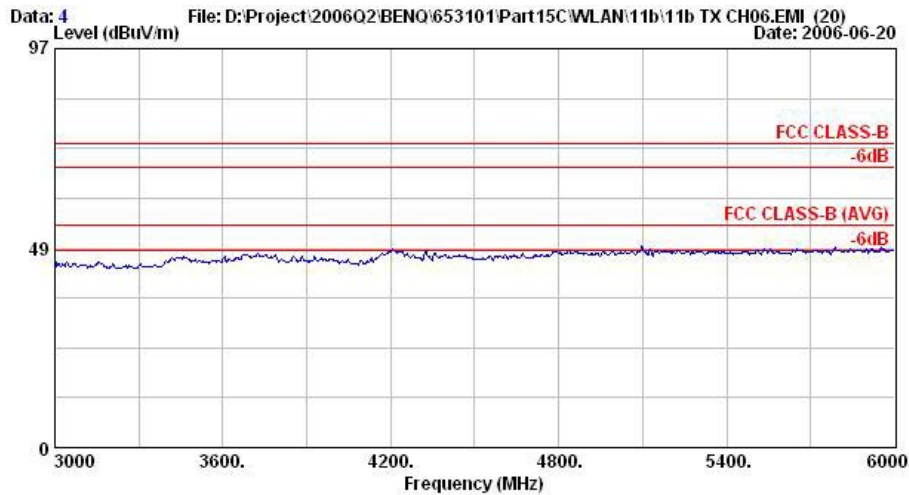
Report Issued Date : Jul. 21, 2006

Report Version : Rev. 01

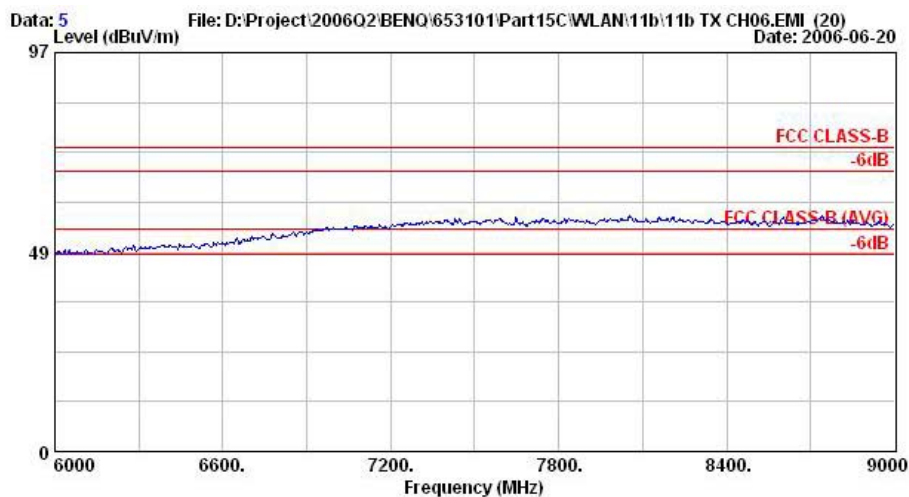


## FCC TEST REPORT

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

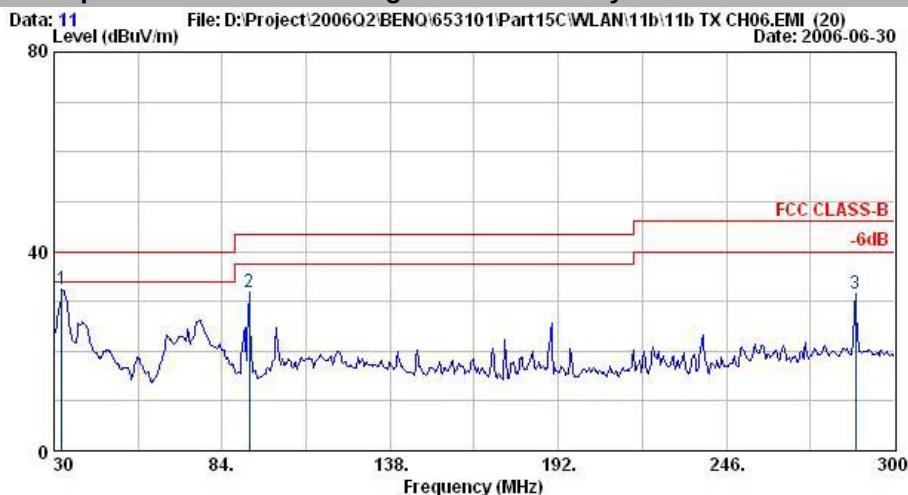


Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
: (802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH06,2437MHz  
Plane : E2



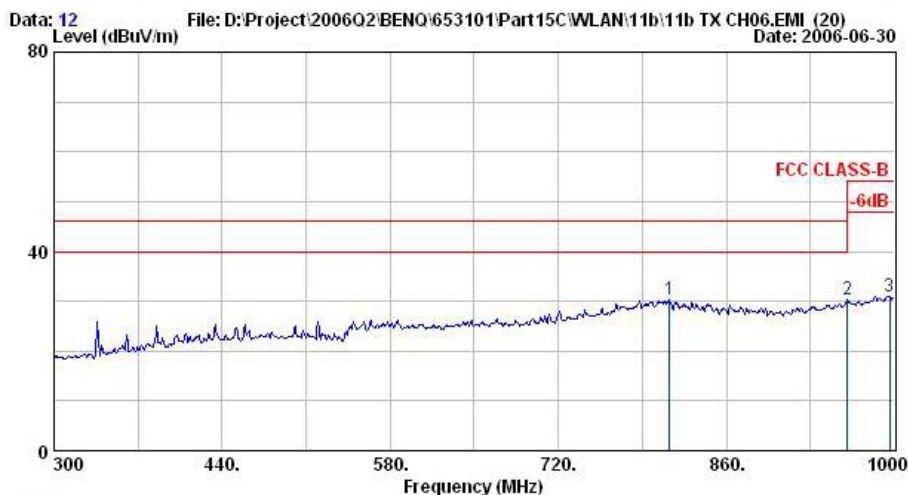
- Polarization : Vertical

■ 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/m  | 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

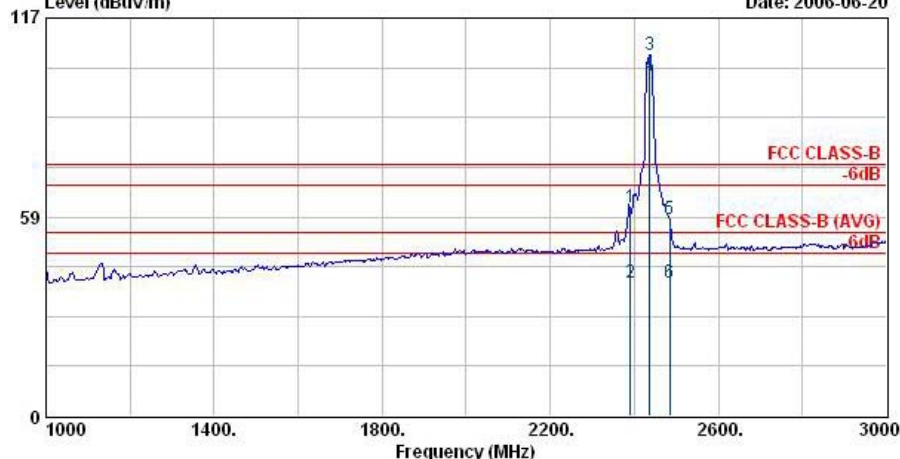
|     | Freq   | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | Ant   | Table |        |
|-----|--------|--------|--------|--------|-------------|-------|--------|-------|-------|--------|
|     | MHz    | dBuV/m | Limit  | Line   | Level       | Loss  | Factor | Pos   | Pos   | Remark |
|     |        |        | dB     | dBuV/m | dBuV        | dB/m  | 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\BENQ\653101\Part15C\WLAN\11b\11b TX CH06.EMI (20)  
Level (dBuV/m) Date: 2006-06-20

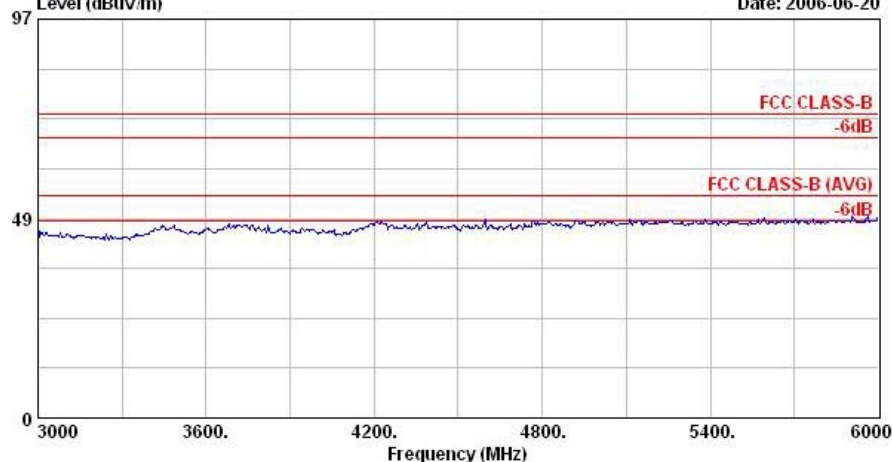


Site : 03CH06-HY  
Condition : HF-ANT-060410 VERTICAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH06,2437MHz  
Plane : E2

|     | 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\BENQ\653101\Part15C\WLAN\11b\11b TX CH06.EMI (20)  
Level (dBuV/m) Date: 2006-06-20

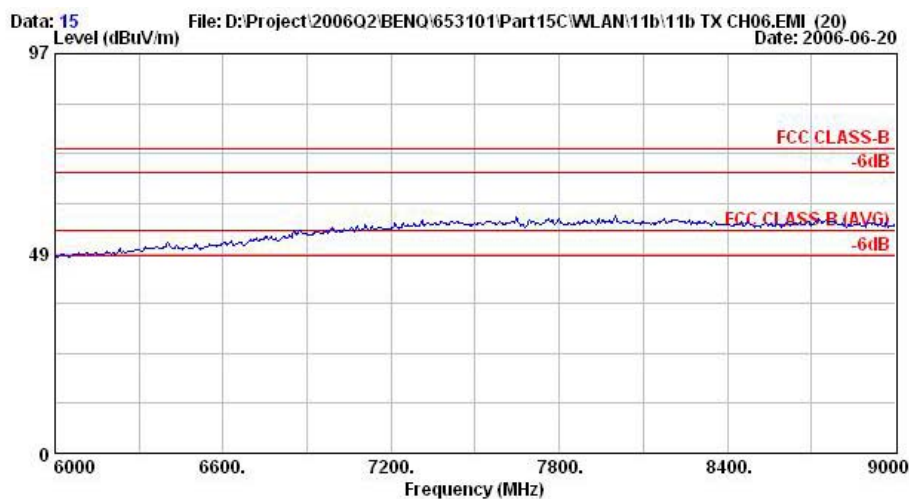


Site : 03CH06-HY  
Condition : HF-ANT-060410 VERTICAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH06,2437MHz  
Plane : E2



## FCC TEST REPORT

Report No. : FR653101



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.

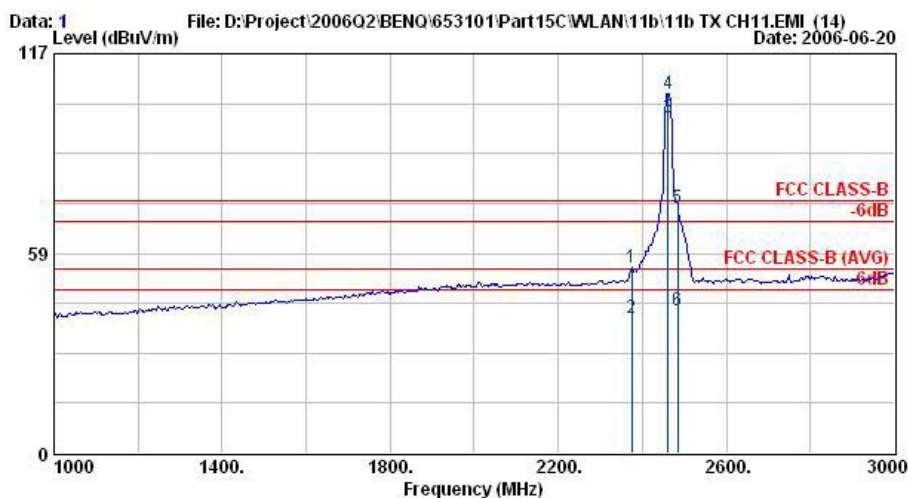


## FCC TEST REPORT

Report No. : FR653101

- Test Mode : Mode 3
- Polarization : Horizontal

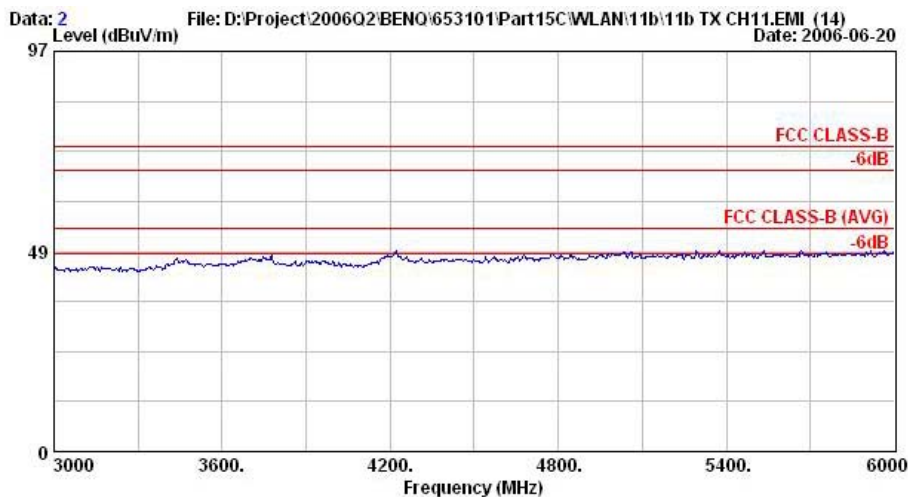
■ The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY  
Condition : HF-ANT-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  | 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

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

FCC ID : JVPP51

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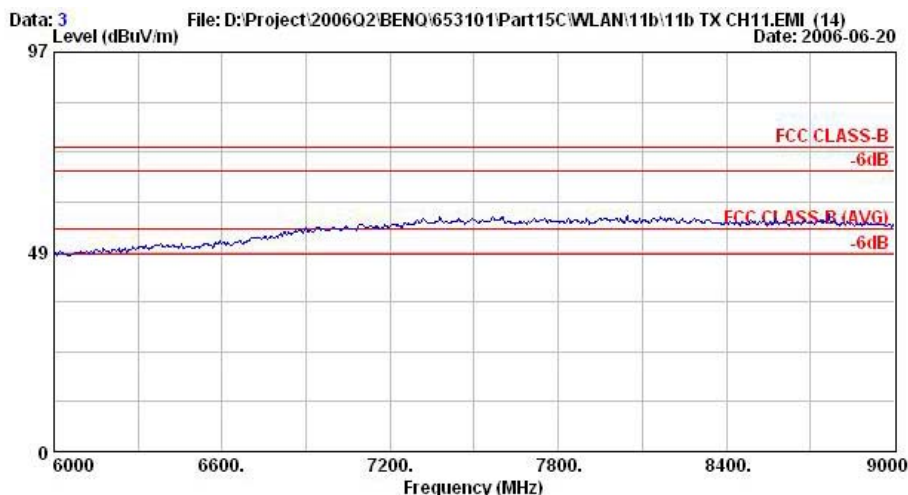
Report Issued Date : Jul. 21, 2006

Report Version : Rev. 01

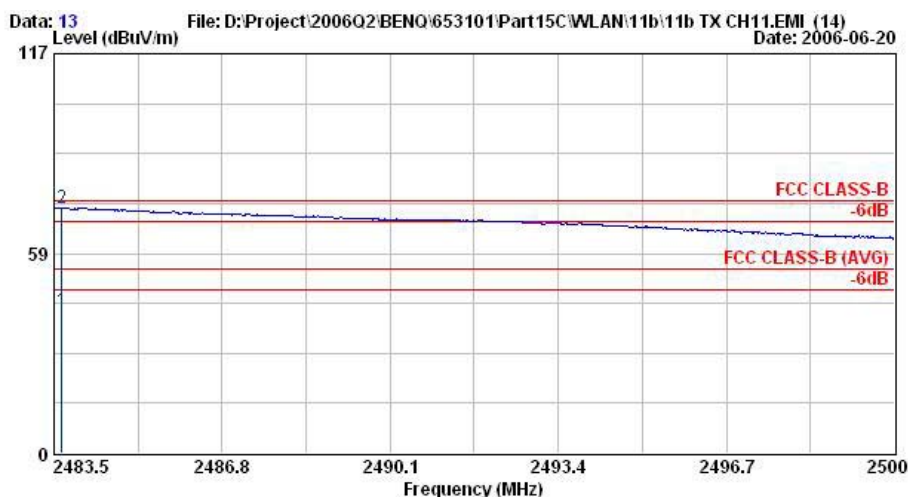


# FCC TEST REPORT

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 CH11,2462MHz  
Plane : E2



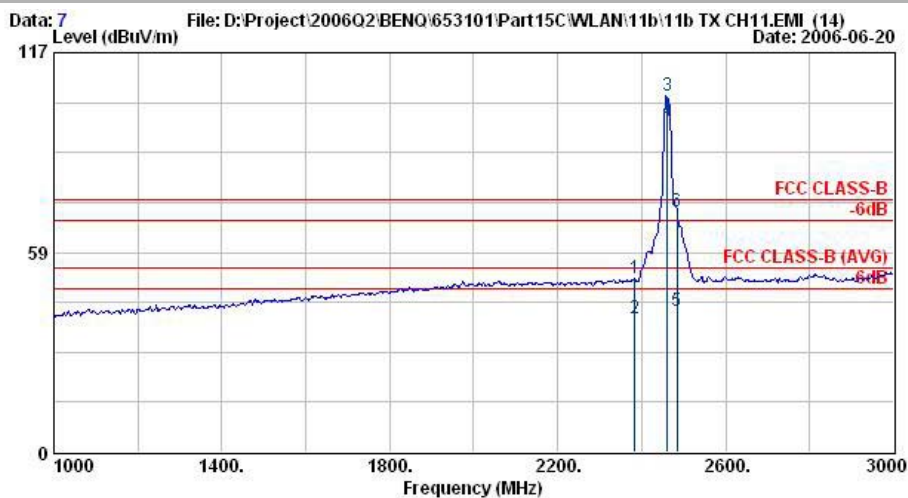
Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
: (802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH11,2462MHz  
Plane : E2

|     | Freq    | Level  | Over   | Limit  | Read  | Antenna | Cable | Preamp | Ant | Table |         |
|-----|---------|--------|--------|--------|-------|---------|-------|--------|-----|-------|---------|
|     | MHz     | dBuV/m | Limit  | Line   | Level | Factor  | Loss  | Factor | Pos | Pos   | Remark  |
|     |         |        | 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

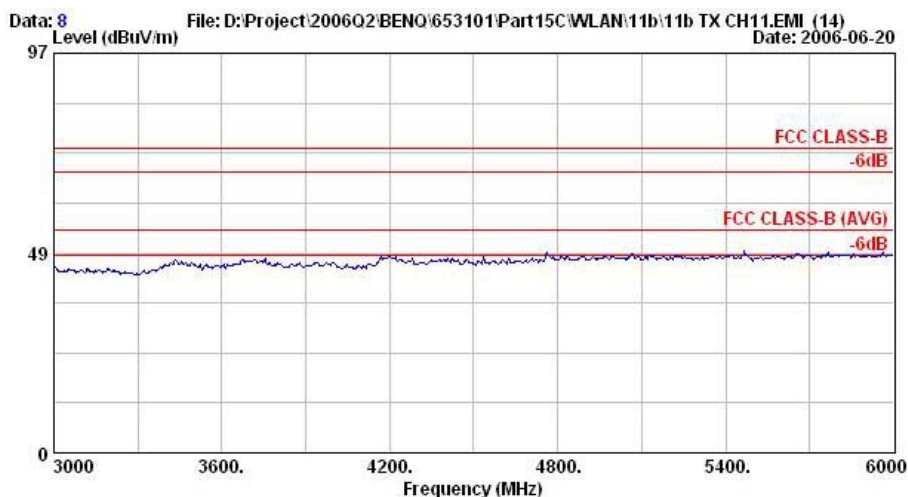
■ The test that passed at minimum margin was marked by the frame in the following table.



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  | 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   | 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

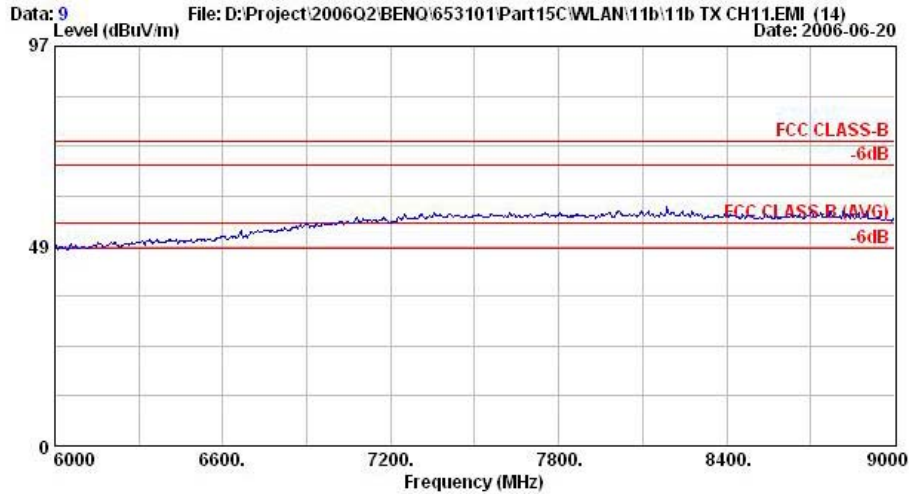


Site : 03CH06-HY  
Condition : HF-ANT-060410 VERTICAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11b TX CH11,2462MHz  
Plane : E2

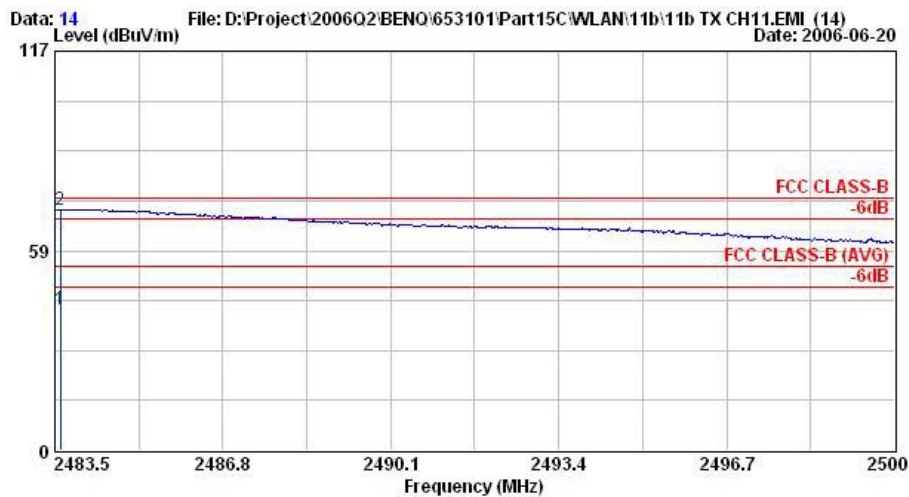


# FCC TEST REPORT

Report No. : FR653101



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

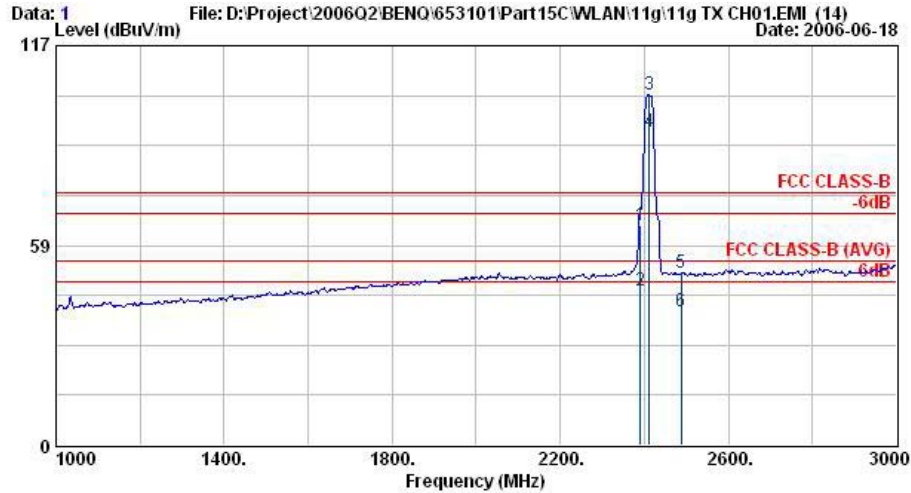
|     | Freq    | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | Ant   | Table | Remark      |
|-----|---------|--------|--------|--------|-------------|-------|--------|-------|-------|-------------|
|     | MHz     | dBuV/m | Limit  | Line   | Level       | Loss  | Factor | Pos   | Pos   |             |
|     |         |        | dB     | dBuV/m | dBuV        | dB    | dB     | cm    | deg   |             |
| 1 @ | 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

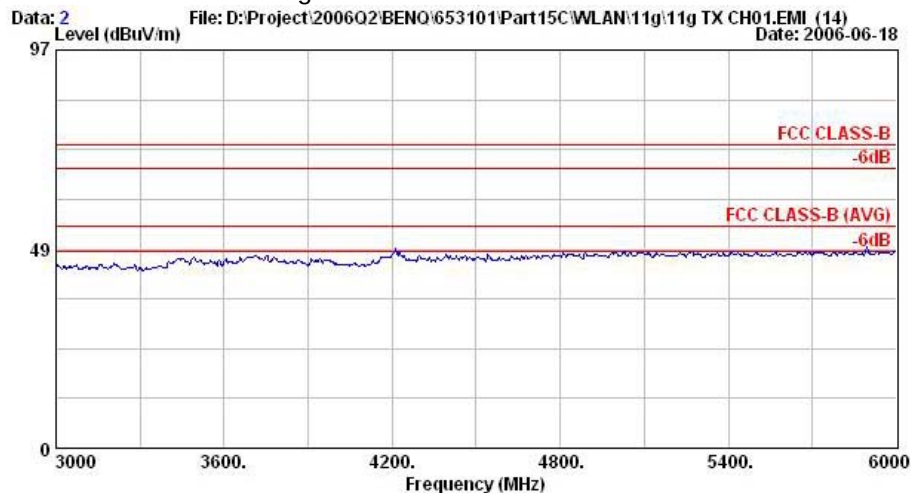
■ The test that passed at minimum margin was marked by the frame in the following table.



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



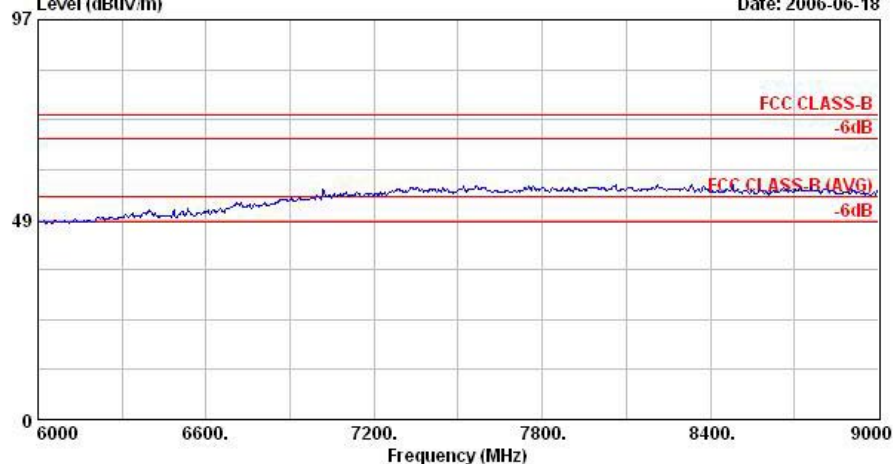
Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : GSM850/900/1800/1900 Mobile Phone  
(802.11b and Bluetooth and GPS)  
Power : 120Vac/60Hz  
Model : FR653101  
Memo : 11g TX CH01 2412MHz  
Plane : E2



# FCC TEST REPORT

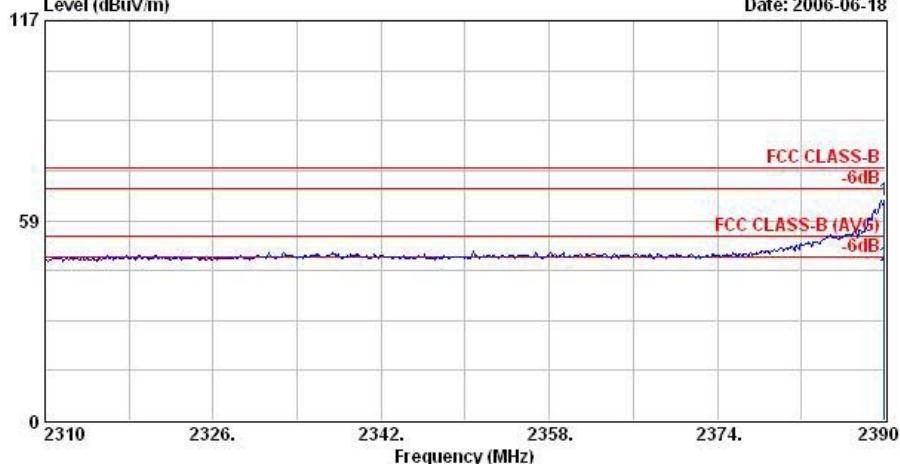
Report No. : FR653101

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



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\BENQ\653101\Part15C\WLAN\11g\11g TX CH01.EMI (14) Level (dBuV/m) Date: 2006-06-18



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 |             |
|---|---------|--------|-------|--------|-------------|-------|--------|-------|-------|-------------|
|   | MHz     | dBuV/m | Limit | Line   | Level       | Loss  | Factor | Pos   | Pos   | Remark      |
|   |         |        | 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 |