# FCC TEST REPORT

**for**

## 47 CFR Part 15 Subpart C

| | | |
|---|---|---|
| **Equipment** | : | **Quad-band Smart Phone (GSM850/GSM900/DCS1800/PCS1900/Bluetooth/WLAN)** |
| **Trade Name** | : | **ASUS** |
| **Model No.** | : | **P525** |
| **FCC ID** | : | **MSQP525** |
| **Filing Type** | : | **Certification** |
| **Applicant** | : | **ASUSTeK COMPUTER INC.**<br>No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C. |

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- **Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.**
- The data shown in this test report were carried out on July 27, 2006 at **Sporton International Inc. LAB.**
- Report No.: FR632820-02, Report Version: Rev. 01

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***SPORTON International Inc.***

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# History of this test report

Report Issue Date: Aug. 03, 2006

| Report No. | Description |
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# 1. General Description of Equipment under Test

## 1.1 Applicant

**ASUSTeK COMPUTER INC.**
No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

## 1.2 Manufacturer

**ASUSTeK COMPUTER INC.**
No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

## 1.3 Basic Description of Equipment under Test

| | |
|---|---|
| Equipment | : Quad-band Smart Phone (GSM850/GSM900/DCS1800/PCS1900/Bluetooth/WLAN) |
| Trade Name | : ASUS |
| Model No. | : P525 |
| FCC ID | : MSQP525 |
| Power Supply Type | : Switching |
| AC Power Cord | : AC 120V, Non-shielded, Wall-mount, 1.8 meter, 2 pin |
| Adapter | : PI, P005WA05OW |
| Battery | : ASUS, SBP-06 |
| Earphone | : Cotron, CHM-201STV01017G |
| USB Cable | : Foxlink, FY663084-A |

## 1.4 Feature of Equipment under Test

| | |
|---|---|
| **DUT Type :** | Quad-band Smart Phone<br>(GSM850/GSM900/DCS1800/PCS1900/Bluetooth/WLAN) |
| **Trade Name :** | ASUS |
| **Model Name :** | P525 |
| **FCC ID :** | MSQP525 |
| **Tx Frequency :** | GSM850 : 824 ~ 849 MHz<br>PCS1900 : 1850 ~1910 MHz<br>Bluetooth : 2400~2483.5 MHz<br>802.11b : 2400 ~ 2483.5 MHz |
| **Rx Frequency :** | GSM850 : 869 ~ 894 MHz<br>PCS1900 : 1930 ~ 1990 MHz<br>Bluetooth : 2400~2483.5 MHz<br>802.11b : 2400 ~ 2483.5 MHz |
| **Number of Channels :** | Bluetooth : 79<br>802.11b : 11 |
| **Carrier Frequency of Each Channel :** | Bluetooth : 2402+n*1 MHz; n=0~78<br>802.11b : 2412+(n-1)*5 MHz; n=1~11 |
| **Antenna Connector :** | N/A |
| **Antenna Type :** | GSM850/PCS1900 : Fixed Internal<br>Bluetooth : Chip Antenna<br>802.11b : PIFA Antenna |
| **Antenna Gain :** | Bluetooth : 0 dBi<br>802.11b : 0 dBi |
| **Maximum Output Power to Antenna :** | GSM850 : 31.72 dBm<br>PCS1900 : 28.75 dBm<br>Bluetooth : 3.54 dBm<br>802.11b : 16.08 dBm |
| **HW Version :** | Rev. 1.2 |
| **SW Version :** | V3.1.0 CHT |
| **Power Rating (DC/AC , Voltage and Current of RF element or PA) :** | 3.7V / 1300mA |
| **Digital Modulation Emission :** | GSM850/PCS1900 : GMSK<br>Bluetooth : GFSK<br>802.11b : DSSS (DBPSK,DQPSK,CCK) |
| **DUT Stage :** | Identical Prototype |

# 2 Test Configuration of Equipment under Test

## 2.1 Test Manner

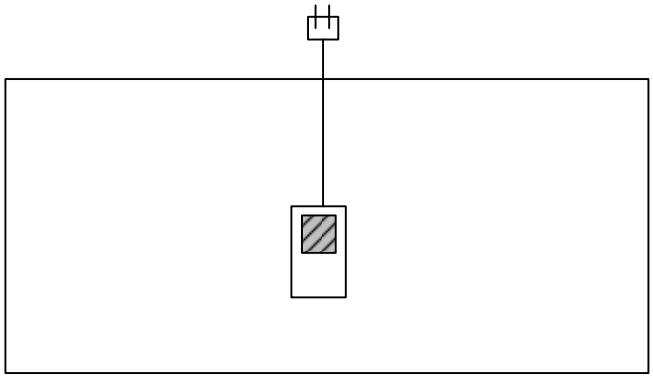
a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
b. For spurious emission below 1GHz, only one channel of each application was tested because it is not related to channel selection.
c. The EUT is programmed to transmit signal continuously for all testings.
d. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000MHz.

## 2.2 Test Mode

| **Application** | | |
|---|---|---|
| Radiated Emission | **802.11b** | **BT** |
| | Mode 1: Tx_CH01_2412 MHz | Mode 4: Tx_CH00_2402 MHz |
| | Mode 2: Tx_CH06_2437 MHz | Mode 5: Tx_CH39_2441 MHz |
| | Mode 3: Tx_CH11_2462 MHz | Mode 6: Tx_CH78_2480 MHz |
| Conducted Emission | Mode 1: PCS1900 Idle Mode + Earphone + BT Link + WLAN Link + MPEG4 + USB Link | |
| | Mode 2: PCS1900 Idle Mode + Earphone + BT Link + WLAN Link + MPEG4 + Adapter | |
| | Mode 3: PCS1900 Idle Mode + Earphone + BT Link + WLAN Link + Camera + Adapter | |

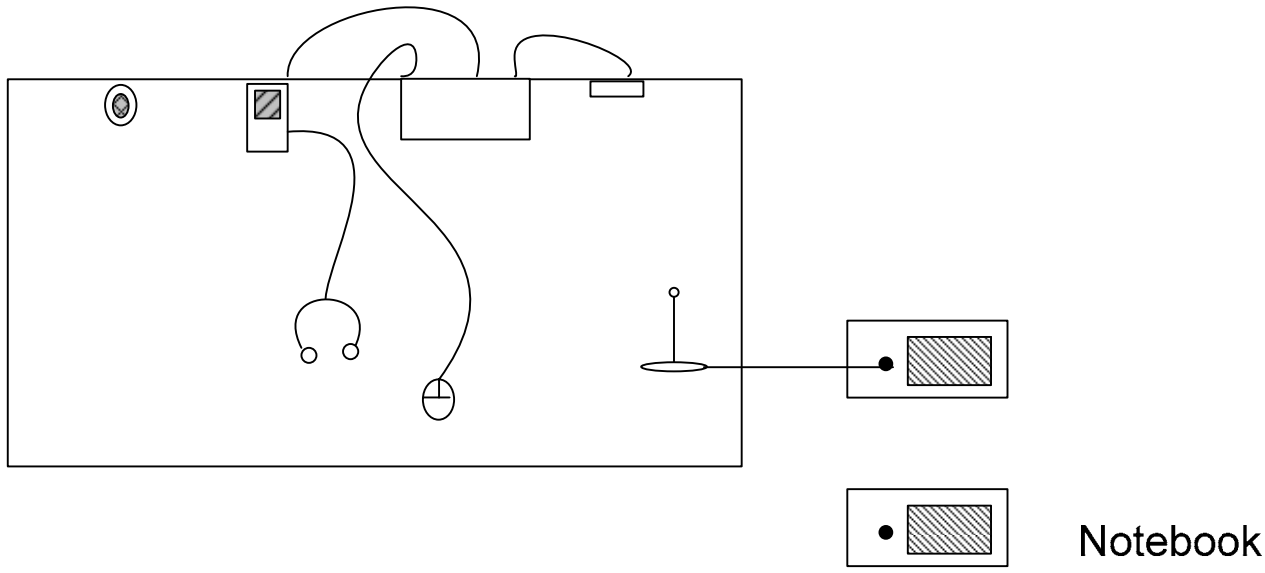
## 2.3 Connection Diagram of Test System

**<Radiated Emission>**

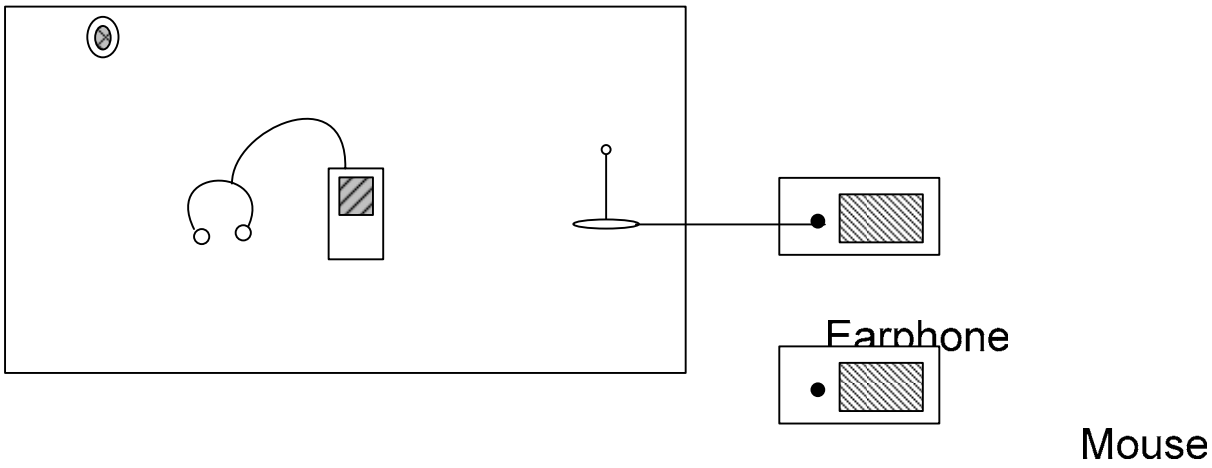


**<Conducted Emission>**

**Mode 1**




**Mode 2-3**




## 2.4 Ancillary Equipment List

| Item | Asset | Model Name | Power Cord |
|---|---|---|---|
| 1. | Base Station (R&S) | CMU 200 | AC 100-240V |
| 2. | Notebook (DELL) | D400 | AC 100-240V |
| 3. | USB Mouse (Microsoft) | B75-00093 | Non-shielded, 1.8 m |
| 4. | Bluetooth Earphone (Free Style) | JD-100 | N/A |
| 5. | WLAN AP (SMC) | SMC-100 | AC 100-240V |
| 6. | Adapter (PI) | P005WA05OW | AC 100-240V |
| 7. | Earphone (Cotron) | CHM-201STV01017G | N/A |
| 8. | USB Cable (Foxlink) | FY663084-A | Weave-shielded, 1.2 m |

# 3. RF Utility

The executive program, EMCTEST.EXE and Activesync.exe under WIN XP installed in notebook, which generates a complete line of continuously repeating " H" pattern were used as the test software.

The programmed RF Utility “AlpsRF Toolp” and “BT_Test Mode” 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,<br>Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.<br>TEL : 886-3-327-3456<br>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 |
| 15.247(a) (1) | Hopping Channel Bandwidth | Pass |
| 15.247(a)(1) | Hopping Channel Separation | Pass |
| 15.247(a)(1)(iii) | Number of Hopping Frequency Used | Pass |
| 15.247(a)(1)(iii) | Dwell Time of Each Frequency | Pass |
| 15.247(b) | Output Power | Pass |
| 15.247(c) | 100kHz Bandwidth of Frequency Band Edges | Pass |
| 15.209(a) | Radiated Emission | Pass |
| 15.203<br>15.247(b)(4) | Antenna Requirement | Pass |

## 5.2 6dB Bandwidth Measurement

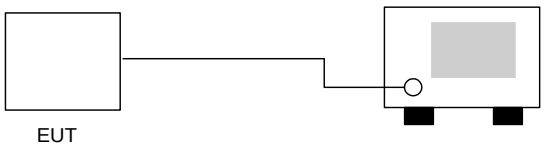
5.2.1 Measuring Instruments：

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：

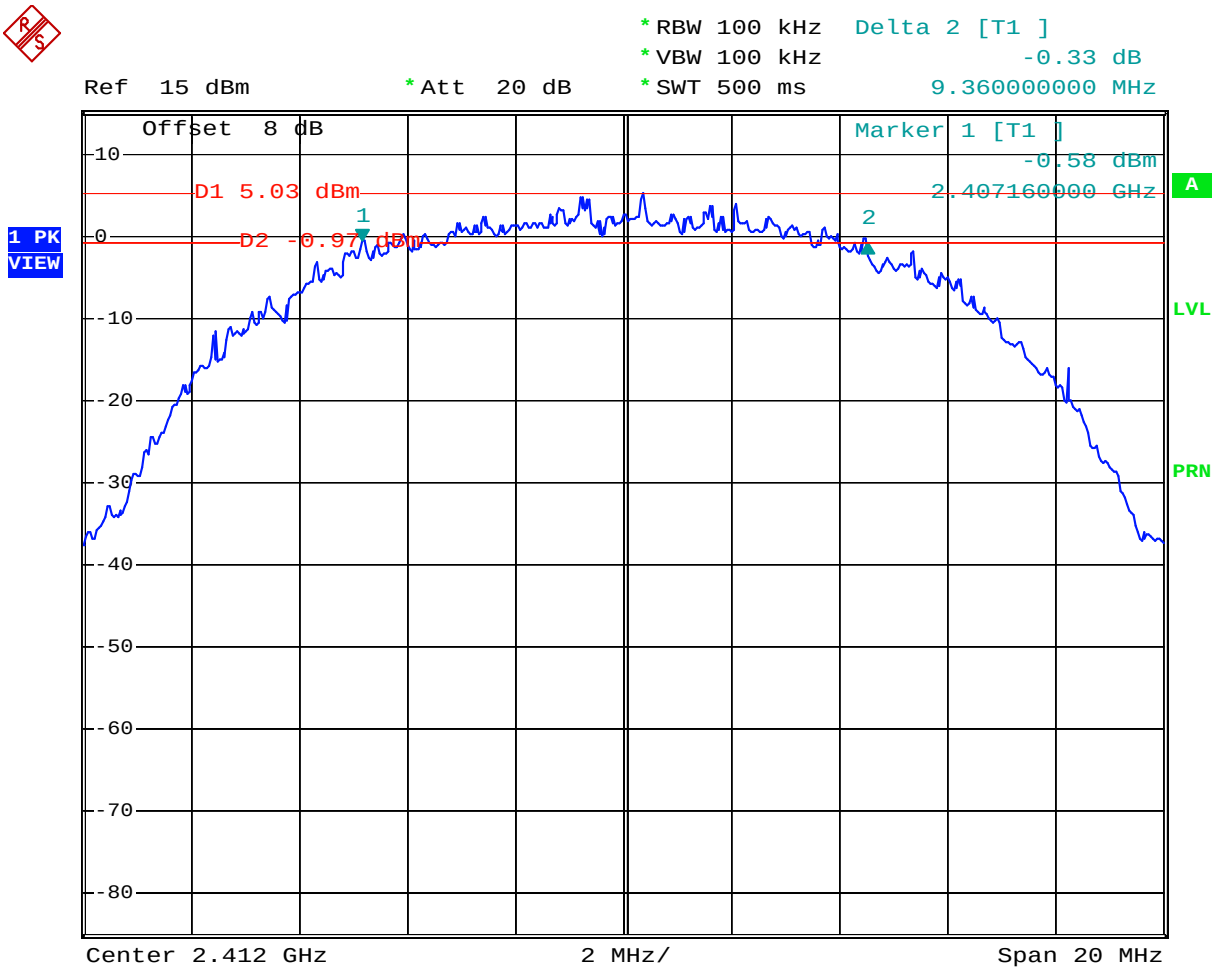
- Application Type : WLAN 802.11b
- Temperature : 24°C
- Relative Humidity : 51%
- Test Enginner : James

**802.11b**

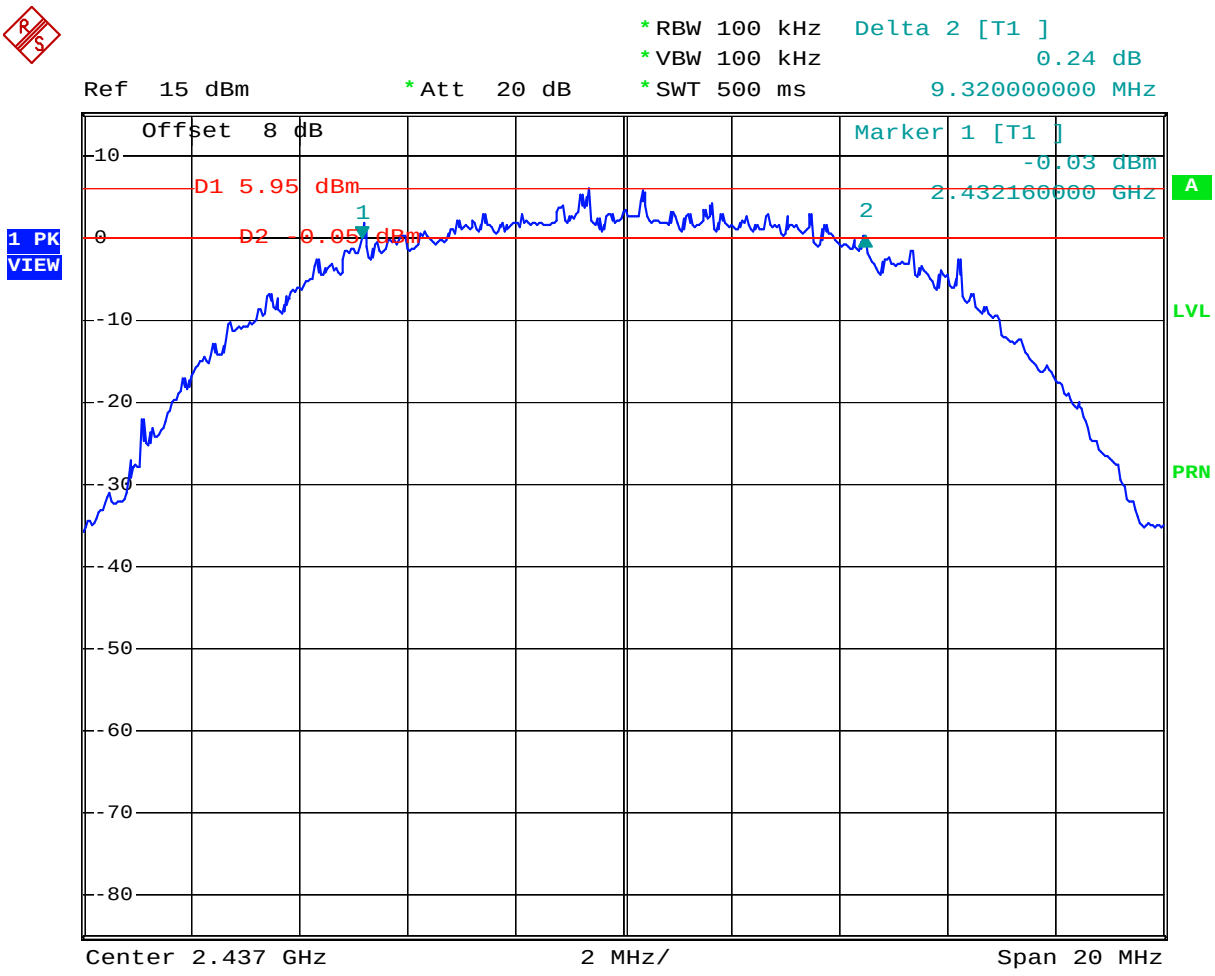
| Channel | Frequency ( MHz ) | 6dB Emission bandwidth ( MHz ) | Limits ( MHz ) | Plot Ref. No. |
|---|---|---|---|---|
| 01 | 2412 | 9.36 | > 0.5MHz | Mode 1 |
| 06 | 2437 | 9.32 | > 0.5MHz | Mode 2 |
| 11 | 2462 | 9.32 | > 0.5MHz | Mode 3 |

5.2.5 6dB Bandwidth

Mode 1



Mode 2

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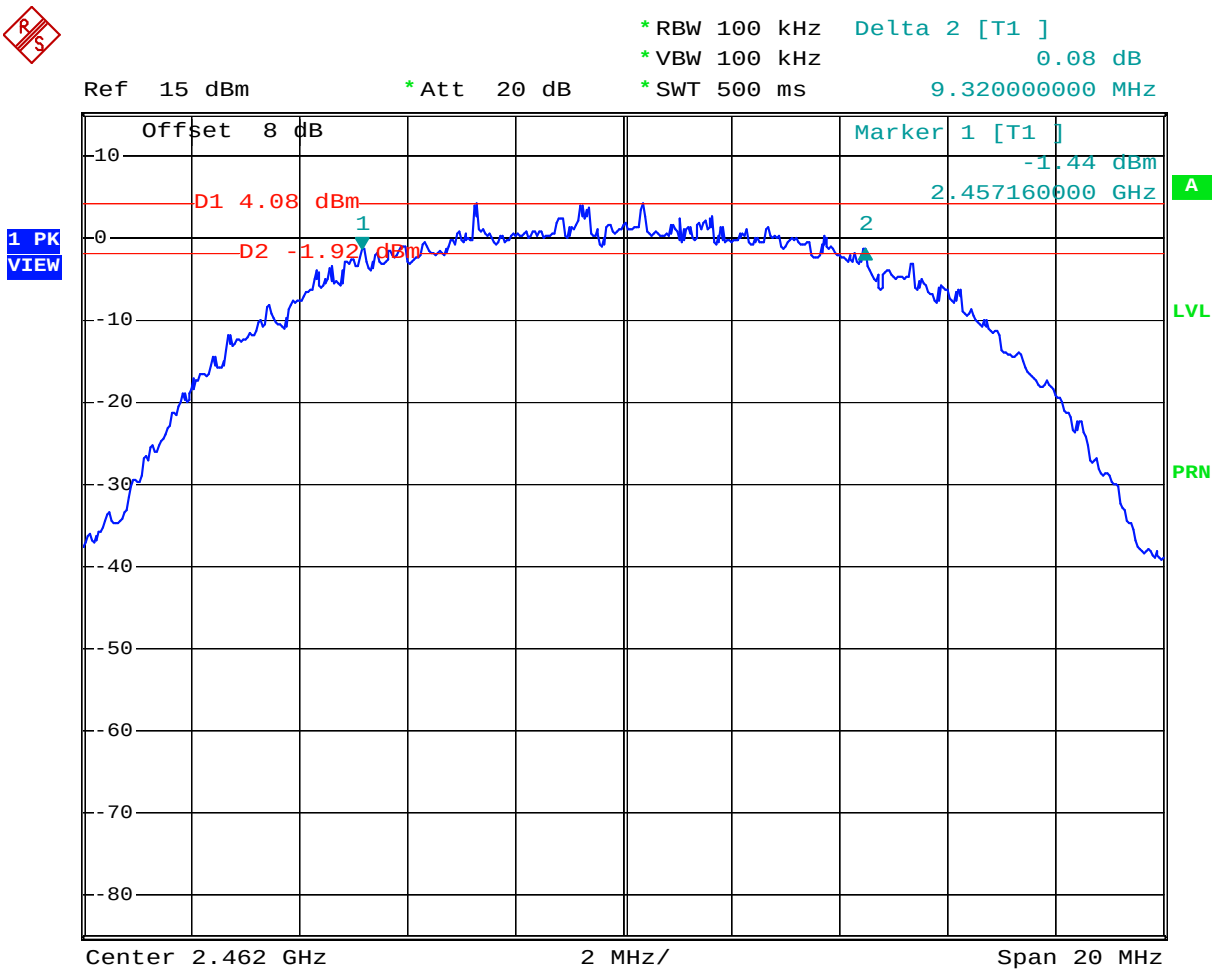
Mode 3

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## 5.3 Power Spectral Density Measurement

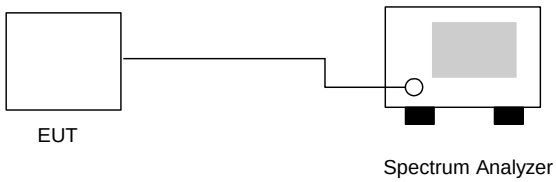
5.3.1 Measuring Instruments：

As described in chapter 6 of this test report.

5.3.2 Test Procedure：

1. The transmitter output was connected to spectrum analyzer directly.
2. The spectrum analyzer's resolution bandwidth was set at 3kHz RBW and 30kHz VBW as that of the fundamental frequency. Set the sweep time=span/3kHz.
3. The power spectral density was measured and recorded.
4. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

5.3.3 Test Setup Layout：




5.3.4 Test Result：

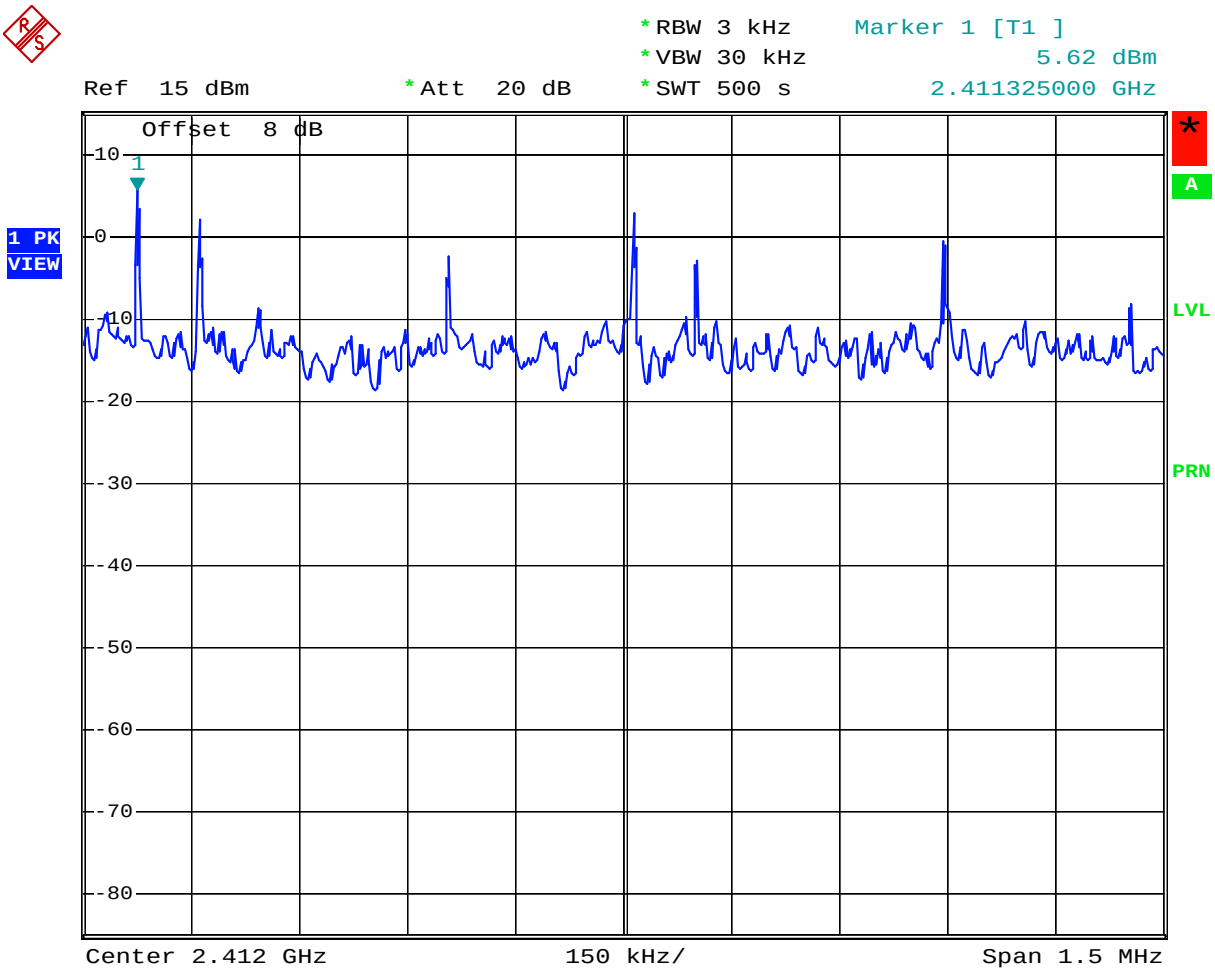
- Application Type : 802.11b
- Temperature : 24°C
- Relative Humidity : 51%
- Test Enginner : James

**802.11b**

| Channel | Frequency (MHz) | Power Spectral Density (dBm) | Limits (dBm ) | Plot Ref. No. |
|---|---|---|---|---|
| 01 | 2412 | 5.62 | 8 | Mode 1 |
| 06 | 2437 | 5.27 | 8 | Mode 2 |
| 11 | 2462 | -3.77 | 8 | Mode 3 |

5.3.5 Power Spectral Density

Mode 1

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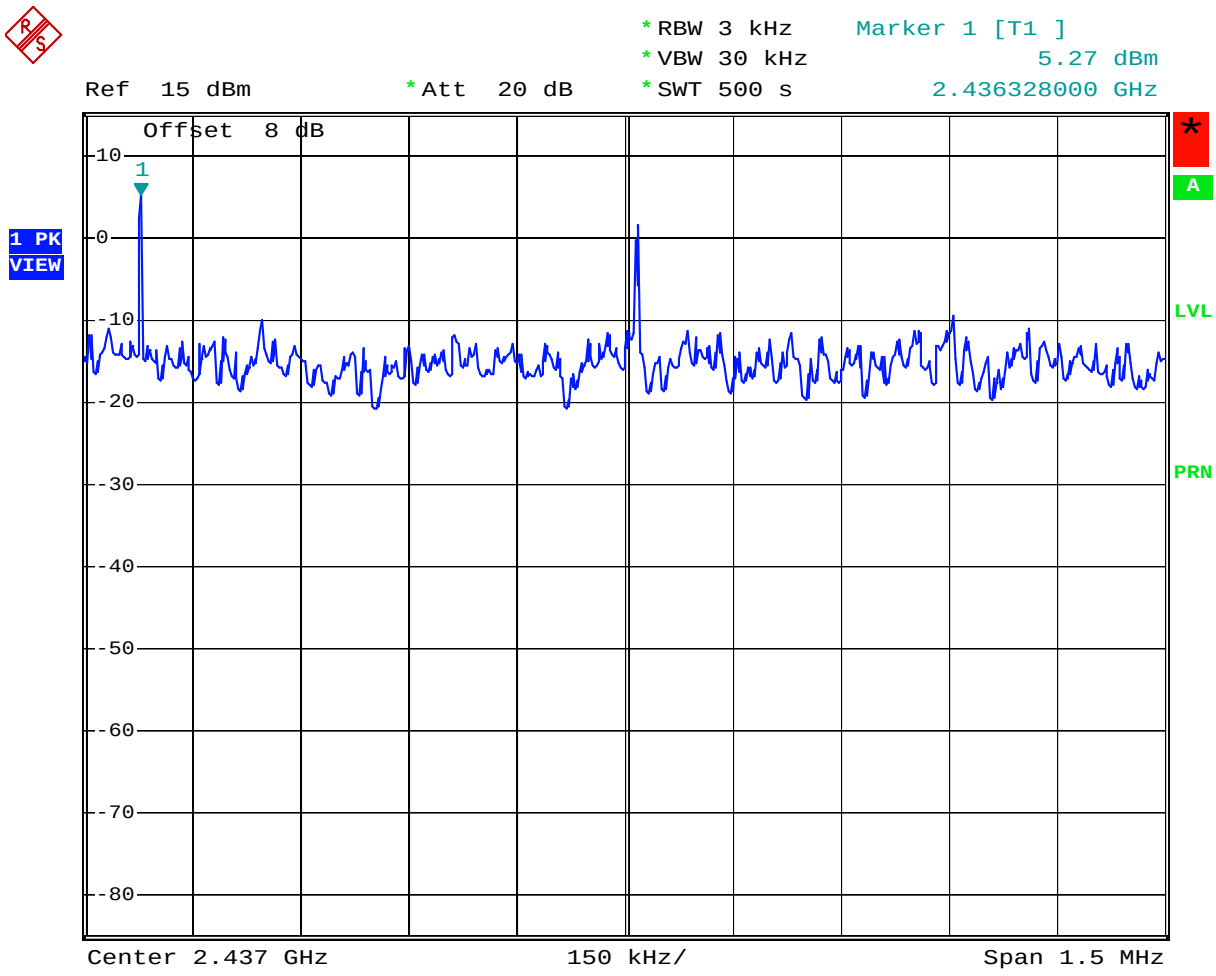
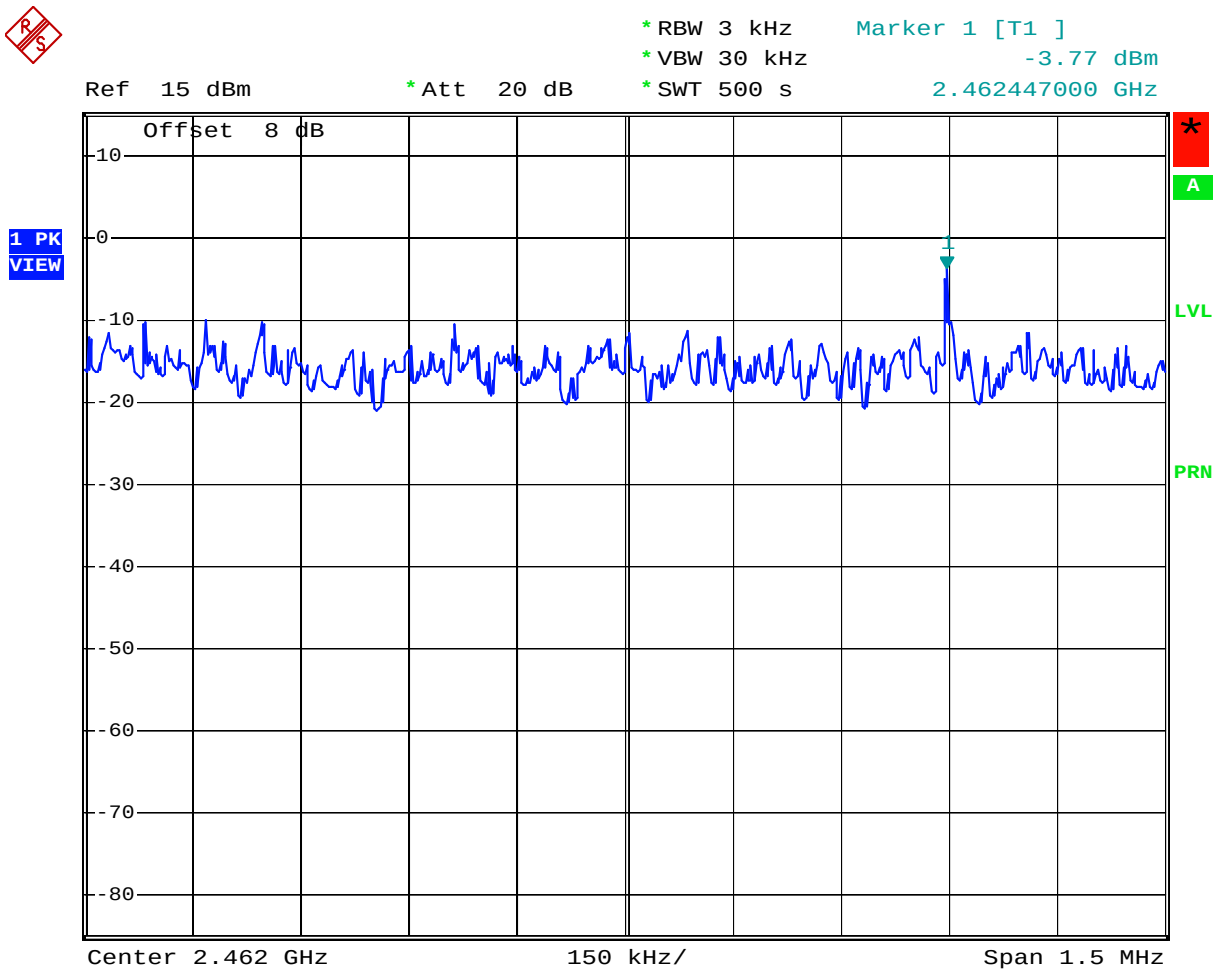
Mode 2


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1 ]
5.27 dBm
2.436328000 GHz
Ref 15 dBm
*Att 20 dB
Offset 8 dB
1 PK
VIEW
LVL
PRN
Center 2.437 GHz
150 kHz/
Span 1.5 MHz
Date: 20.APR.2006 23:37:39

Mode 3

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## 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 and BT
- Temperature : 24°C
- Relative Humidity : 51%
- Test Enginner : James

- Test Result in WLAN lower band (Channel 1) : PASS
- Test Result in WLAN higher band (Channel 11) : PASS
- Test Result in BT lower band (Channel 00) : PASS
- Test Result in BT higher band (Channel 78) : PASS

5.4.4 Note on Band Edge Emission：

➢WLAN 802.11b

CH01 (Horizontal)

| Frequency ( MHz ) | Level ( dBuV/m ) | Over Limit ( dB ) | Limit Line ( dBuV/m ) | Read Level (dBuV) | Abtebba Factor (dB/m) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos (cm) | Table Pos (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 2390.00 | 54.91 | -19.09 | 74.00 | 55.63 | 30.48 | 35.46 | 4.26 | 100 | 0 | Peak |
| 2390.00 | 39.31 | -14.69 | 54.00 | 40.02 | 30.48 | 35.46 | 4.26 | 100 | 169 | Average |

CH01 (Vertical)

| Frequency ( MHz ) | Level ( dBuV/m ) | Over Limit ( dB ) | Limit Line ( dBuV/m ) | Read Level (dBuV) | Abtebba Factor (dB/m) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos (cm) | Table Pos (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 2390.00 | 55.49 | -18.51 | 74.00 | 56.20 | 30.48 | 35.46 | 4.26 | 8995 | 360 | Peak |
| 2390.00 | 41.45 | -12.55 | 54.00 | 42.16 | 30.48 | 35.46 | 4.26 | 100 | 280 | Average |

CH11 (Horizontal)

| Frequency ( MHz ) | Level ( dBuV/m ) | Over Limit ( dB ) | Limit Line ( dBuV/m ) | Read Level (dBuV) | Abtebba Factor (dB/m) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos (cm) | Table Pos (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 2500.00 | 39.78 | -14.22 | 54.00 | 40.52 | 30.40 | 35.53 | 4.39 | 100 | 33 | Average |
| 2500.00 | 49.96 | -24.04 | 74.00 | 50.70 | 30.40 | 35.53 | 4.39 | 100 | 360 | Peak |

CH11 (Vertical)

| Frequency ( MHz ) | Level ( dBuV/m ) | Over Limit ( dB ) | Limit Line ( dBuV/m ) | Read Level (dBuV) | Abtebba Factor (dB/m) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos (cm) | Table Pos (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 2494.00 | 39.99 | -14.01 | 54.00 | 40.73 | 30.40 | 35.53 | 4.39 | 100 | 36 | Average |
| 2494.00 | 59.79 | -14.21 | 74.00 | 60.53 | 30.40 | 35.53 | 4.39 | 100 | 360 | Peak |

➢BT

CH00 (Horizontal)

| Frequency ( MHz ) | Level ( dBuV/m ) | Over Limit ( dB ) | Limit Line ( dBuV/m ) | Read Level (dBuV) | Abtebba Factor (dB/m) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos (cm) | Table Pos (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 2324.00 | 50.62 | -23.38 | 74.00 | 51.63 | 30.23 | 4.17 | 35.40 | 100 | 360 | Peak |
| 2324.00 | 38.36 | -15.64 | 54.00 | 39.36 | 30.23 | 4.17 | 35.40 | 106 | 334 | Average |

CH00 (Vertical)

| Frequency ( MHz ) | Level ( dBuV/m ) | Over Limit ( dB ) | Limit Line ( dBuV/m ) | Read Level (dBuV) | Abtebba Factor (dB/m) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos (cm) | Table Pos (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 2318.00 | 50.94 | -23.06 | 74.00 | 51.94 | 30.23 | 4.17 | 35.40 | 100 | 0 | Peak |
| 2318.00 | 38.50 | -15.50 | 54.00 | 39.50 | 30.23 | 4.17 | 35.40 | 100 | 102 | Average |

CH78 (Horizontal)

| Frequency ( MHz ) | Level ( dBuV/m ) | Over Limit ( dB ) | Limit Line ( dBuV/m ) | Read Level (dBuV) | Abtebba Factor (dB/m) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos (cm) | Table Pos (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 2483.50 | 68.22 | -5.78 | 74.00 | 69.08 | 30.29 | 4.36 | 35.51 | 100 | 0 | Peak |
| 2483.50 | 51.18 | -2.92 | 54.00 | 52.04 | 30.29 | 4.36 | 35.51 | 100 | 335 | Average |

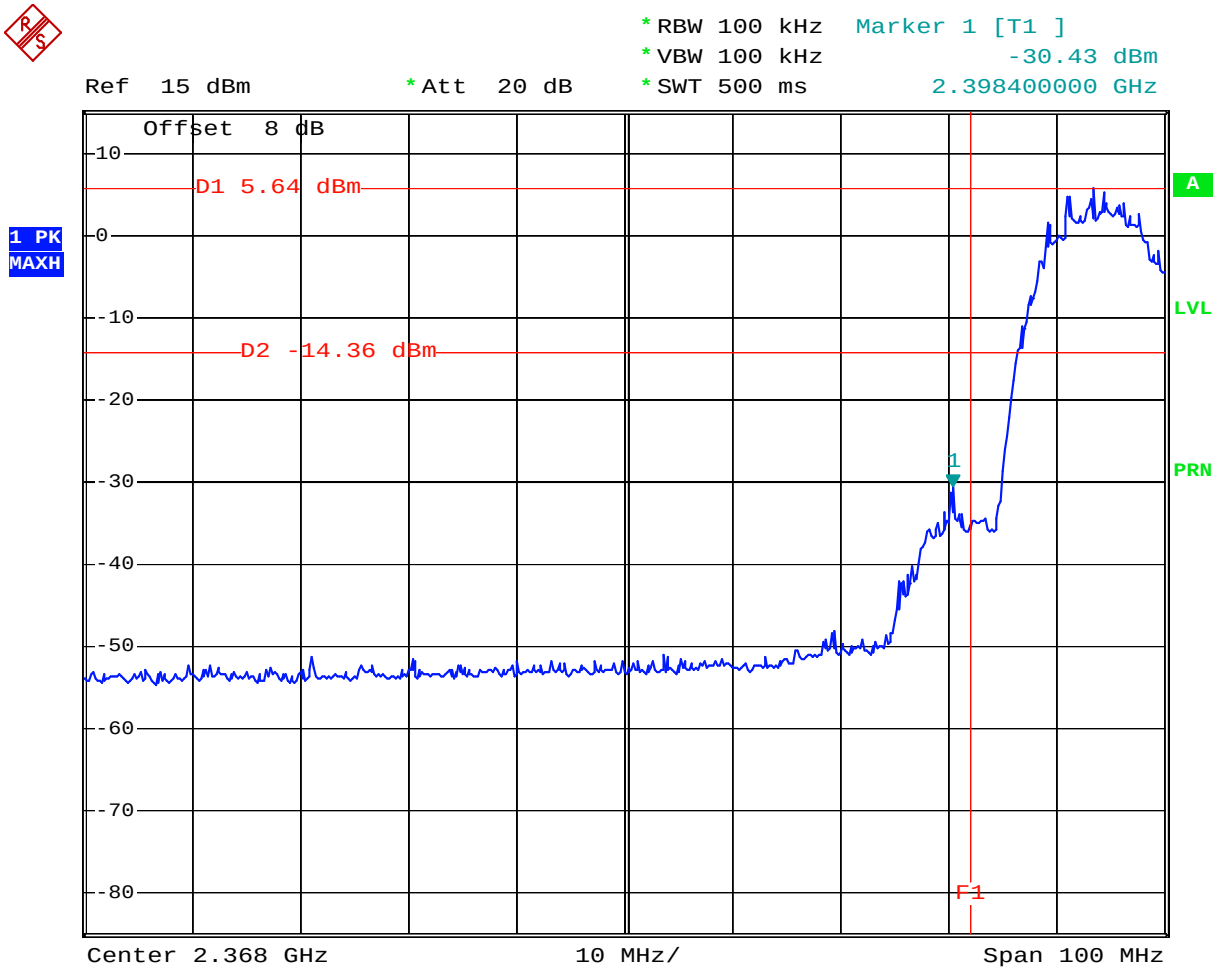
CH78 (Vertical)

| Frequency ( MHz ) | Level ( dBuV/m ) | Over Limit ( dB ) | Limit Line ( dBuV/m ) | Read Level (dBuV) | Abtebba Factor (dB/m) | Cable Loss ( dB ) | Preamp Factor ( dB ) | Ant Pos (cm) | Table Pos (deg) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 2483.50 | 66.25 | -7.75 | 74.00 | 67.11 | 30.29 | 4.36 | 35.51 | 100 | 360 | Peak |
| 2483.50 | 47.24 | -6.76 | 54.00 | 48.10 | 30.29 | 4.36 | 35.51 | 100 | 323 | Average |

5.4.5 20dB Band Edge

WLAN 802.11b

CH01

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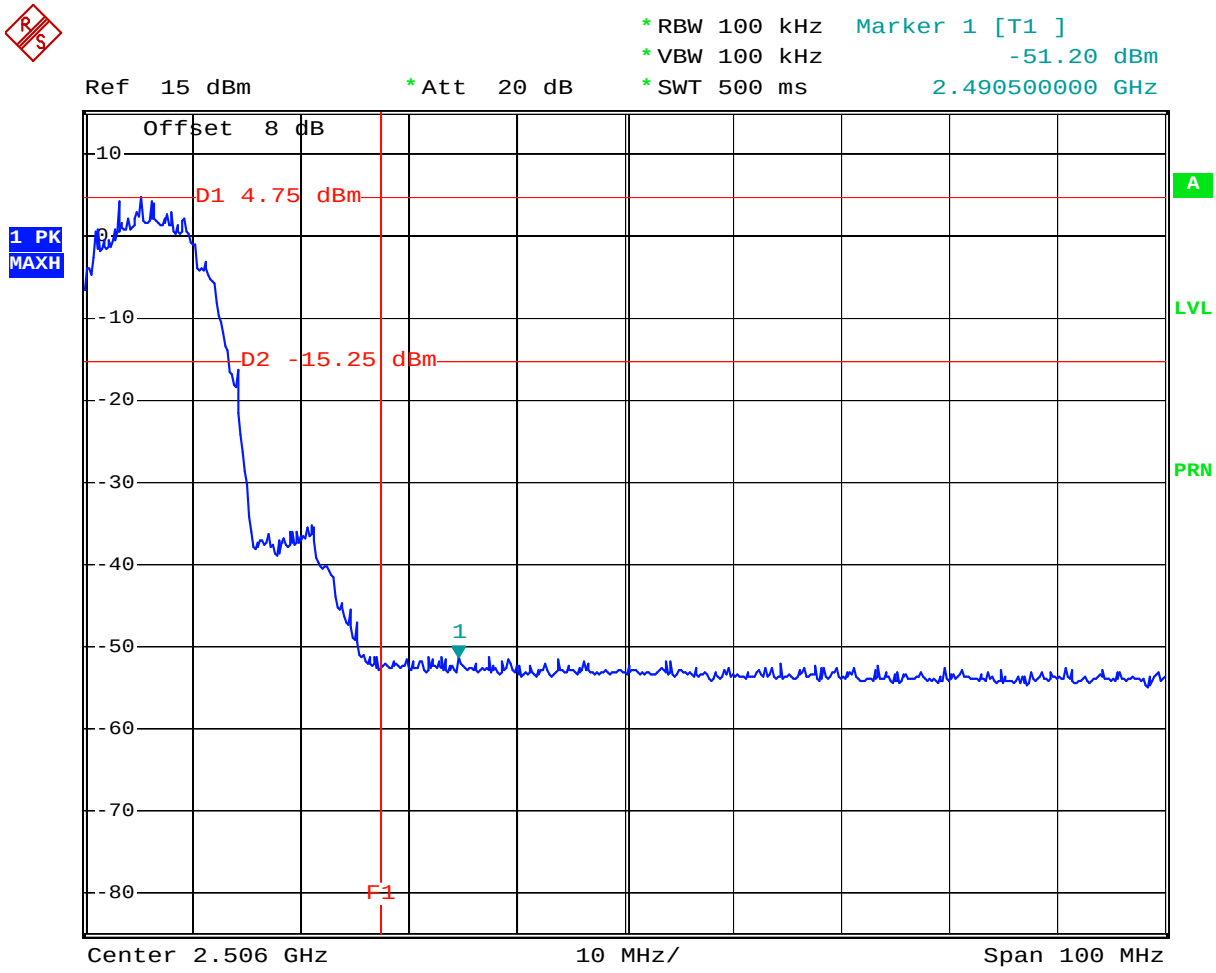
CH11

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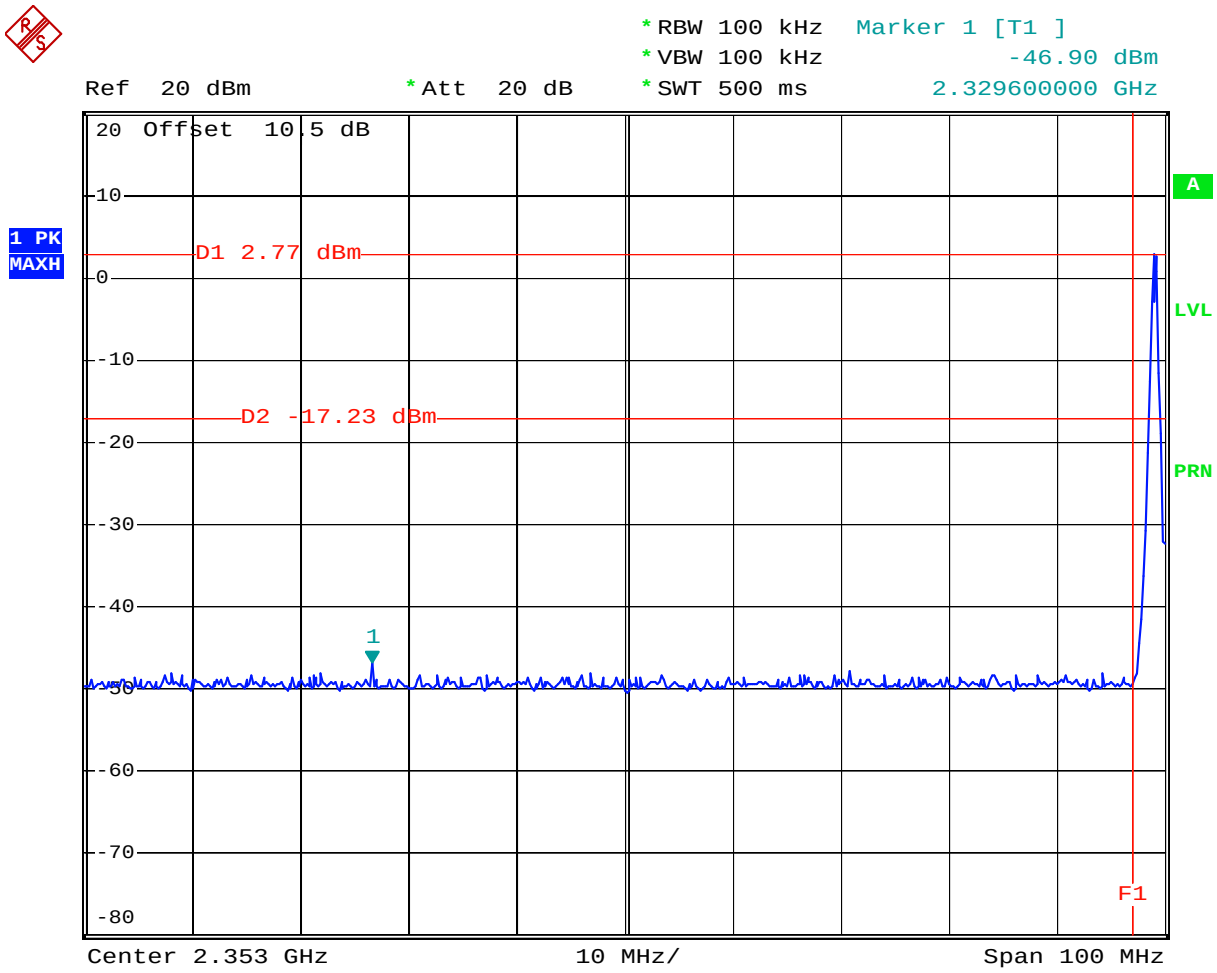
Bluetooth

CH00

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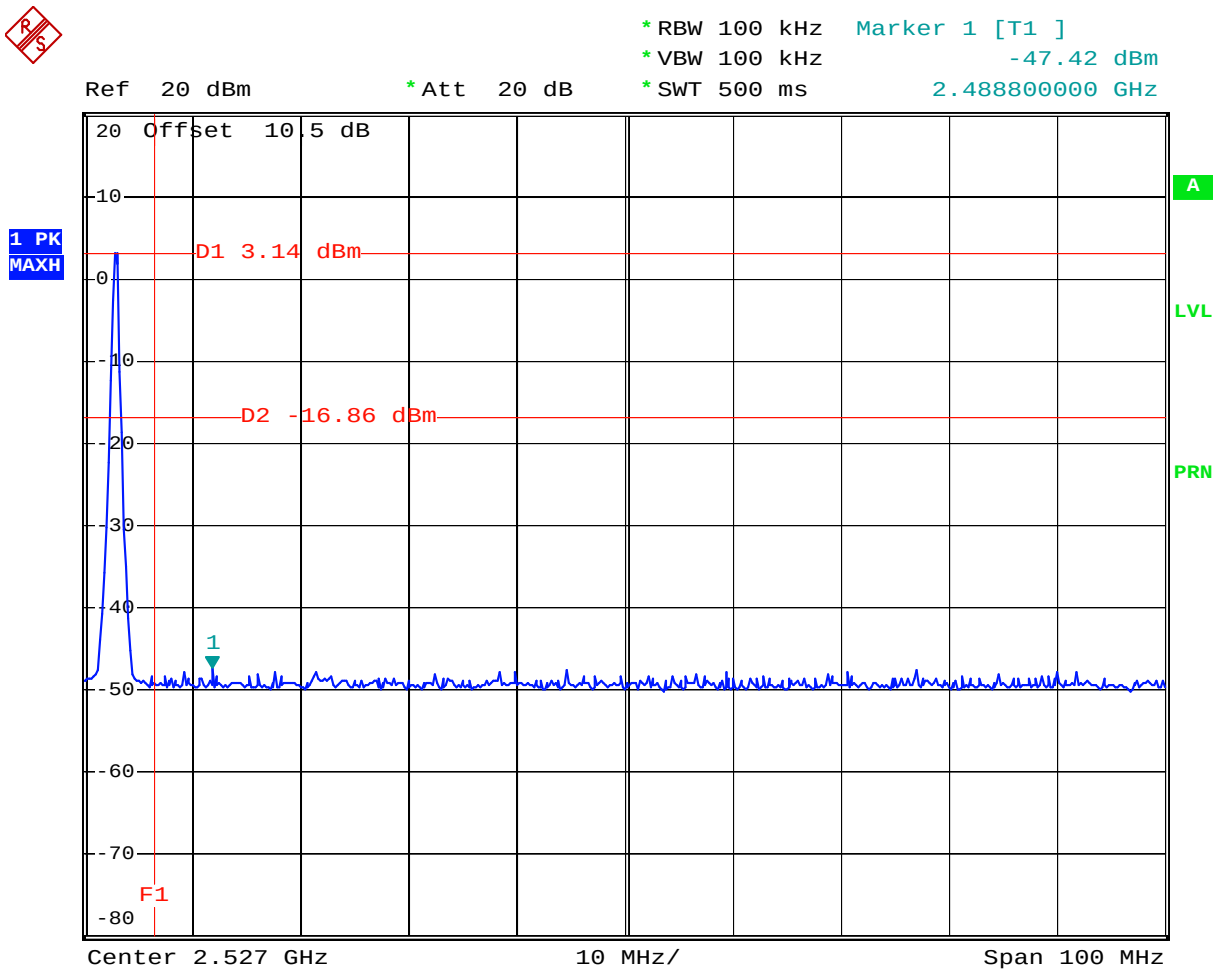
CH78

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## 5.5 Hopping Channel Separation

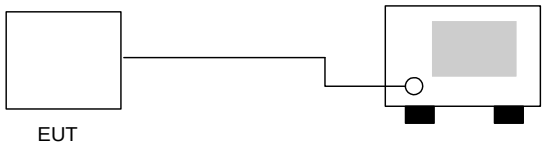
5.5.1 Measuring Instruments：

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

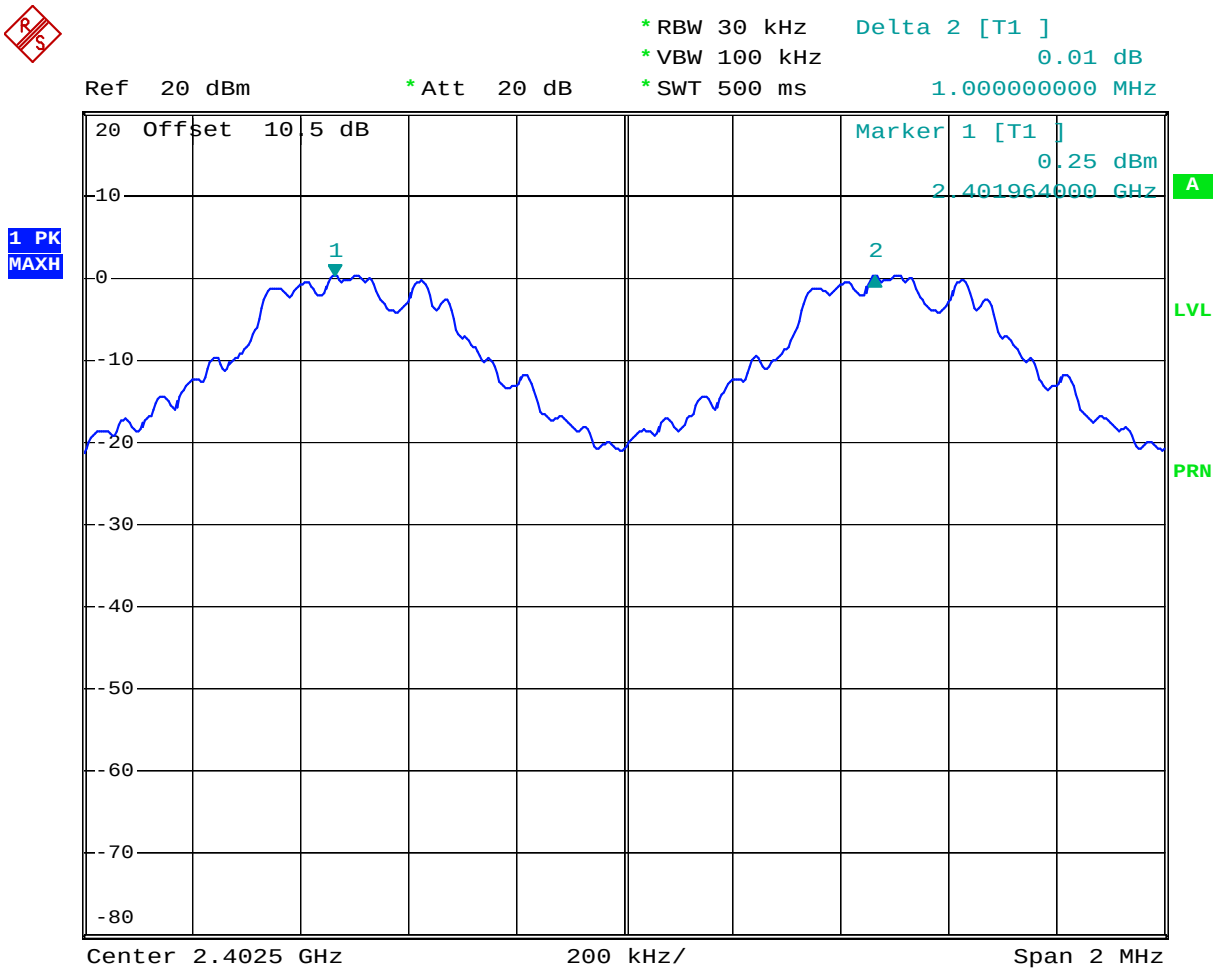
- Application Type : BT
- Temperature : 24°C
- Relative Humidity : 51%
- Test Enginner : James

| Channel | Frequency (MHz) | Carrier Frequency Separation ( MHz ) | Limits ( MHz ) | Plot Ref. No. |
|---|---|---|---|---|
| 00 | 2402 | 1.000 | 0.928 | Mode 1 |
| 39 | 2441 | 1.004 | 0.924 | Mode 2 |
| 78 | 2480 | 1.004 | 0.928 | Mode 3 |

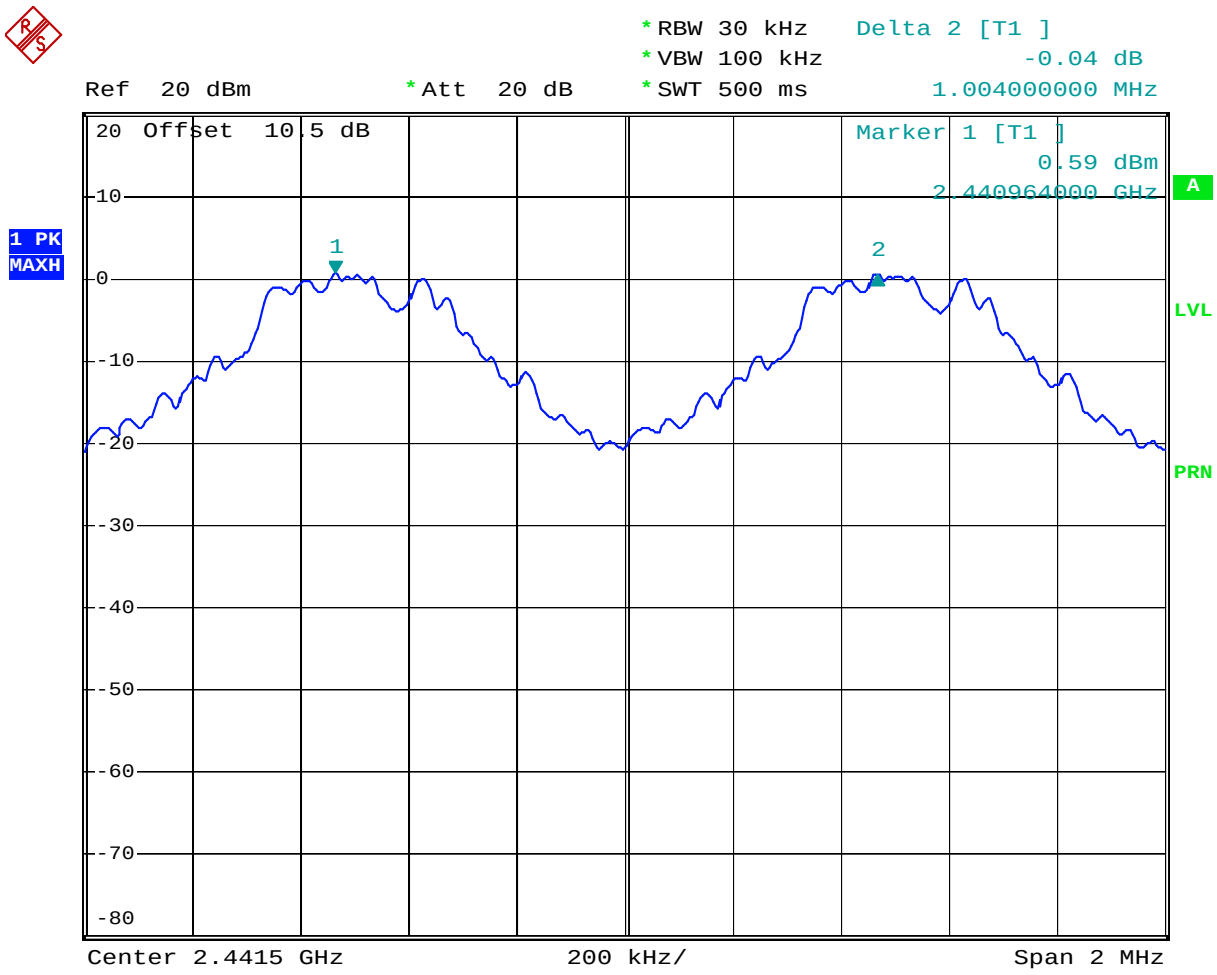
Note: Limits =25kHz or the 20dB bandwidth of the hopping channel, which ever is greater

5.5.5 Hopping Channel Seperation

Mode 1



Mode 2

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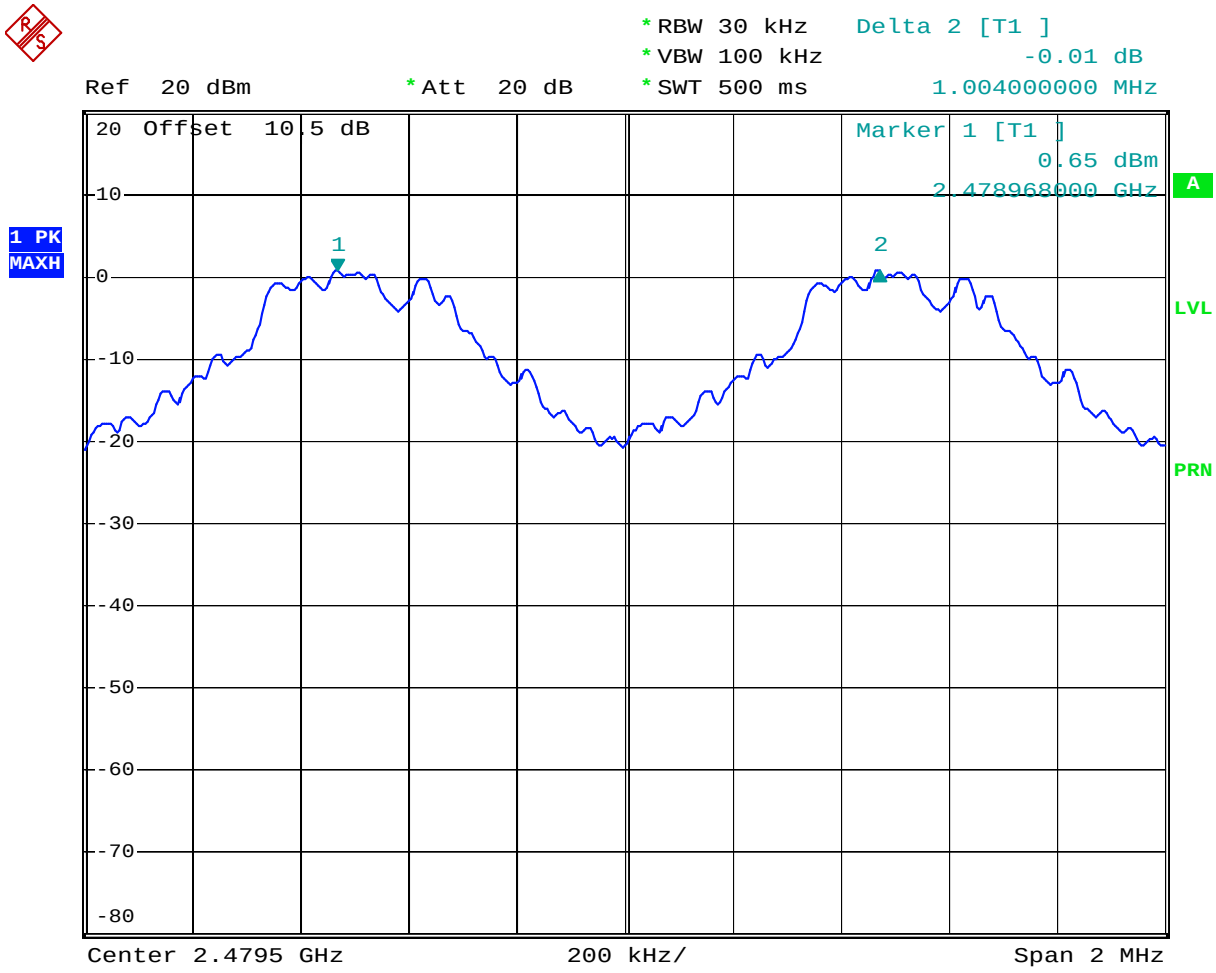
Mode 3

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## 5.6 Number of Hopping Frequency

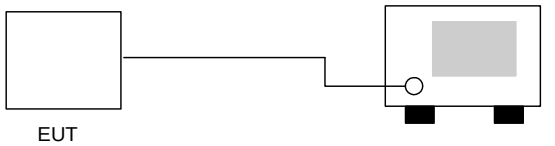
5.6.1 Measuring Instruments：

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：

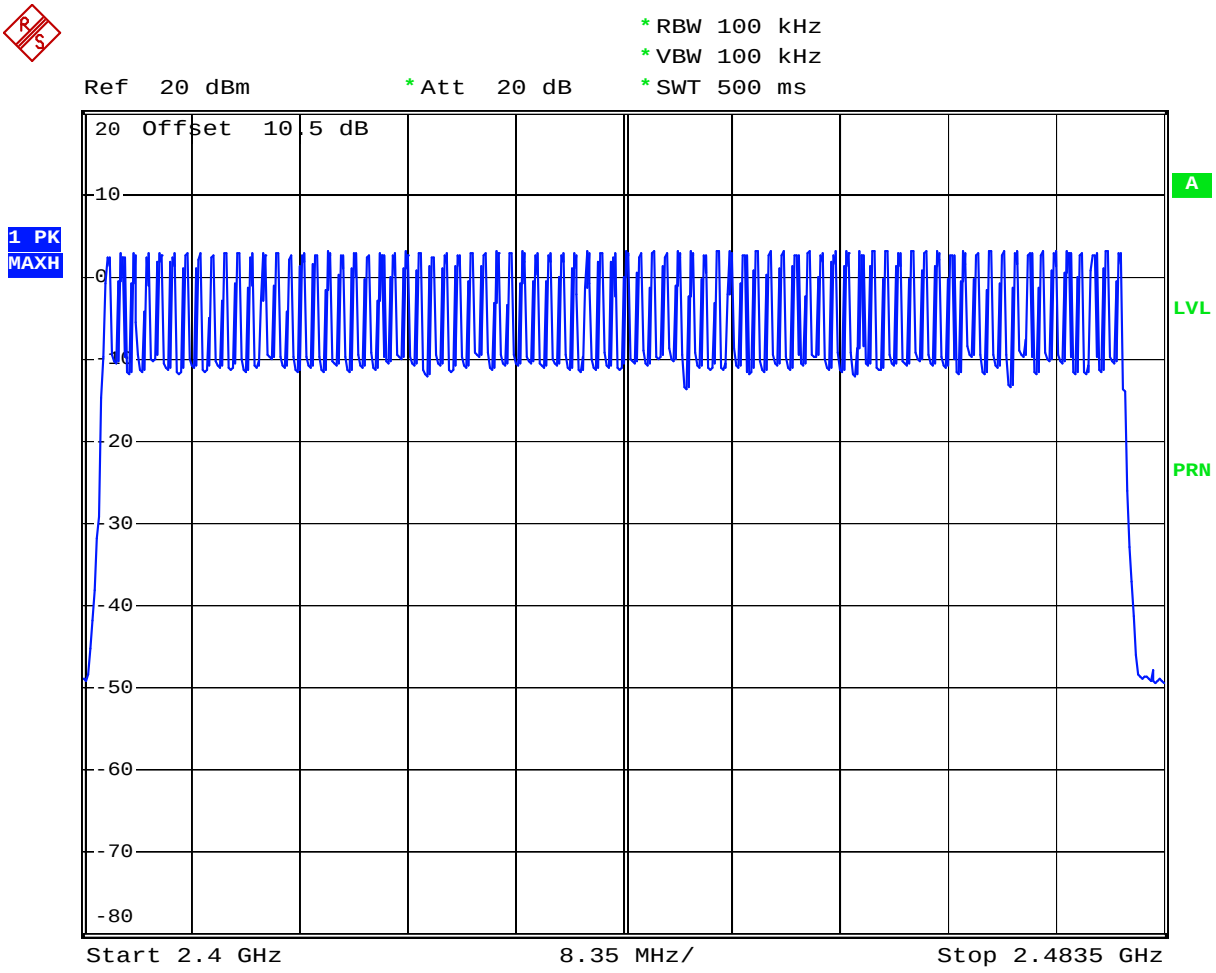



5.6.4 Test Result：See spectrum analyzer plots below

- Application Type : BT
- Temperature : 24°C
- Relative Humidity : 51%
- Test Enginner : James

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

5.6.5 Number of Hopping Frequency




Date: 20.APR.2006 17:24:48

## 5.7 Hopping Channel Bandwidth

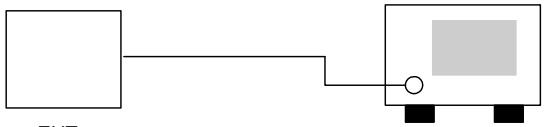
5.7.1 Measuring Instruments：

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：



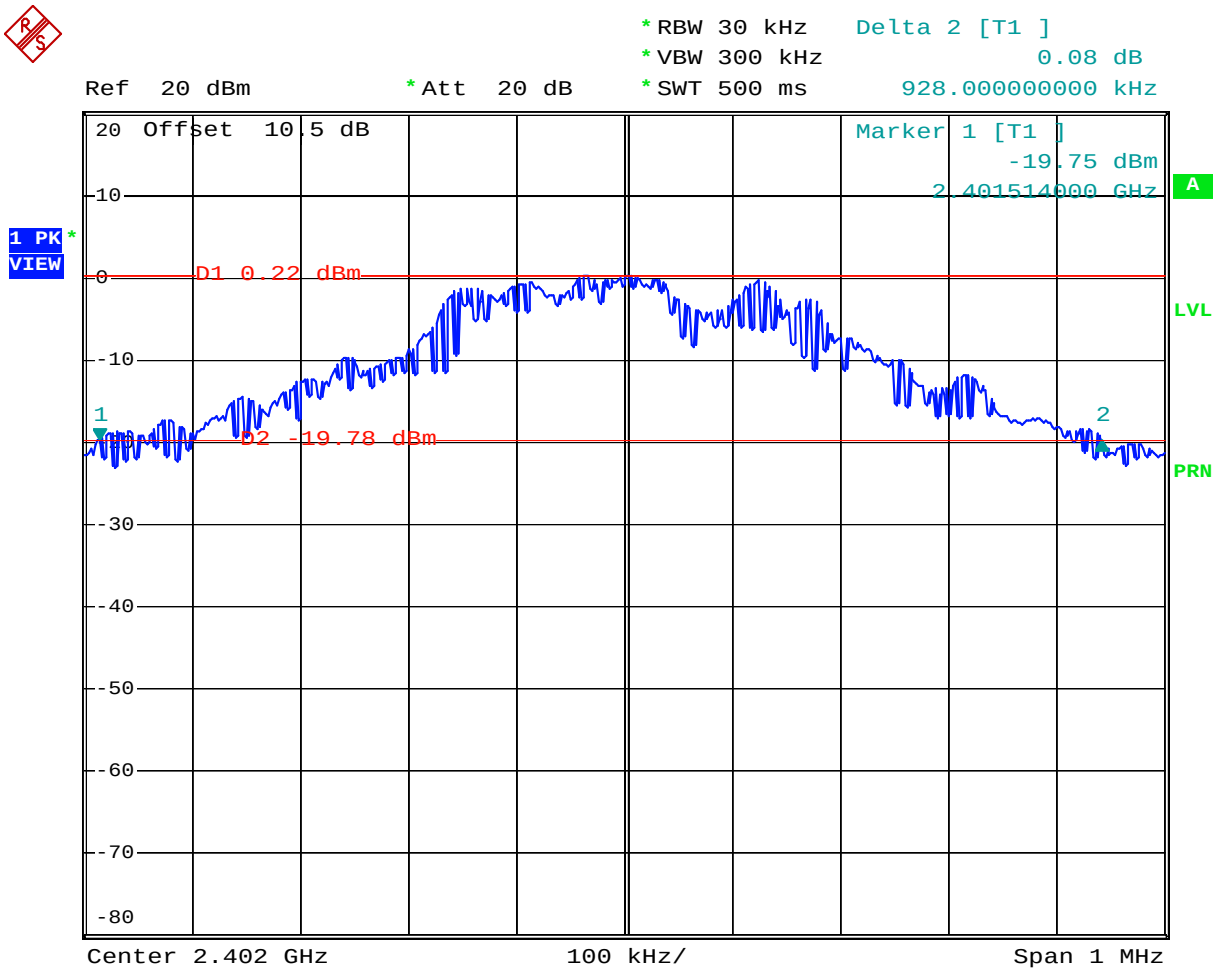

5.7.4 Test Result：See spectrum analyzer plots below

- Application Type : BT
- Temperature : 24°C
- Relative Humidity : 51%
- Test Enginner : James

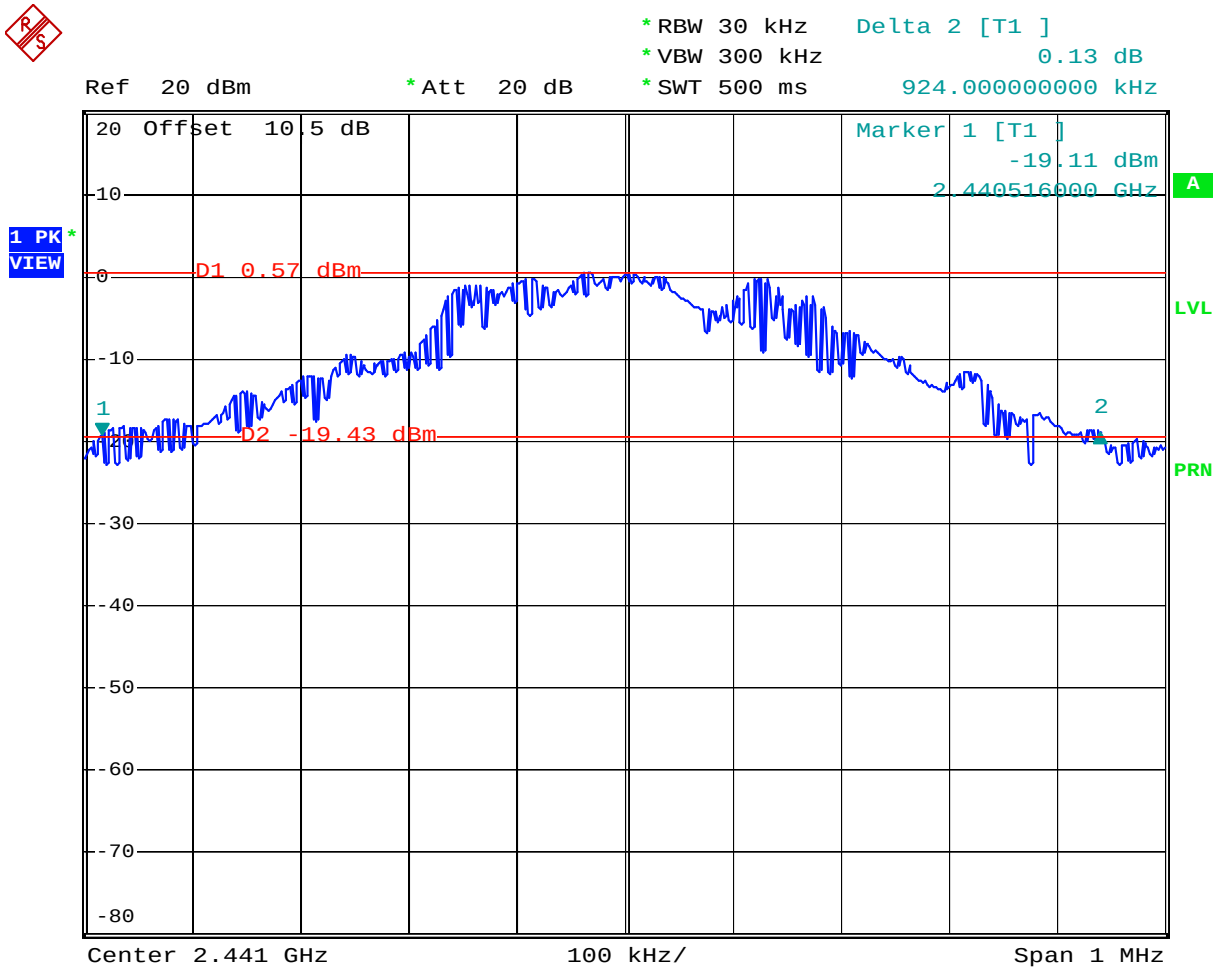
| Channel | Frequency (MHz) | Hopping Channel Bandwidth (MHz) | Limits (MHz) | Plot Ref. No. |
|---|---|---|---|---|
| 00 | 2402 | 0.928 | 1.000 | Mode 1 |
| 39 | 2441 | 0.924 | 1.000 | Mode 2 |
| 78 | 2480 | 0.928 | 1.000 | Mode 3 |

5.7.5 Hopping Channel Bandwidth

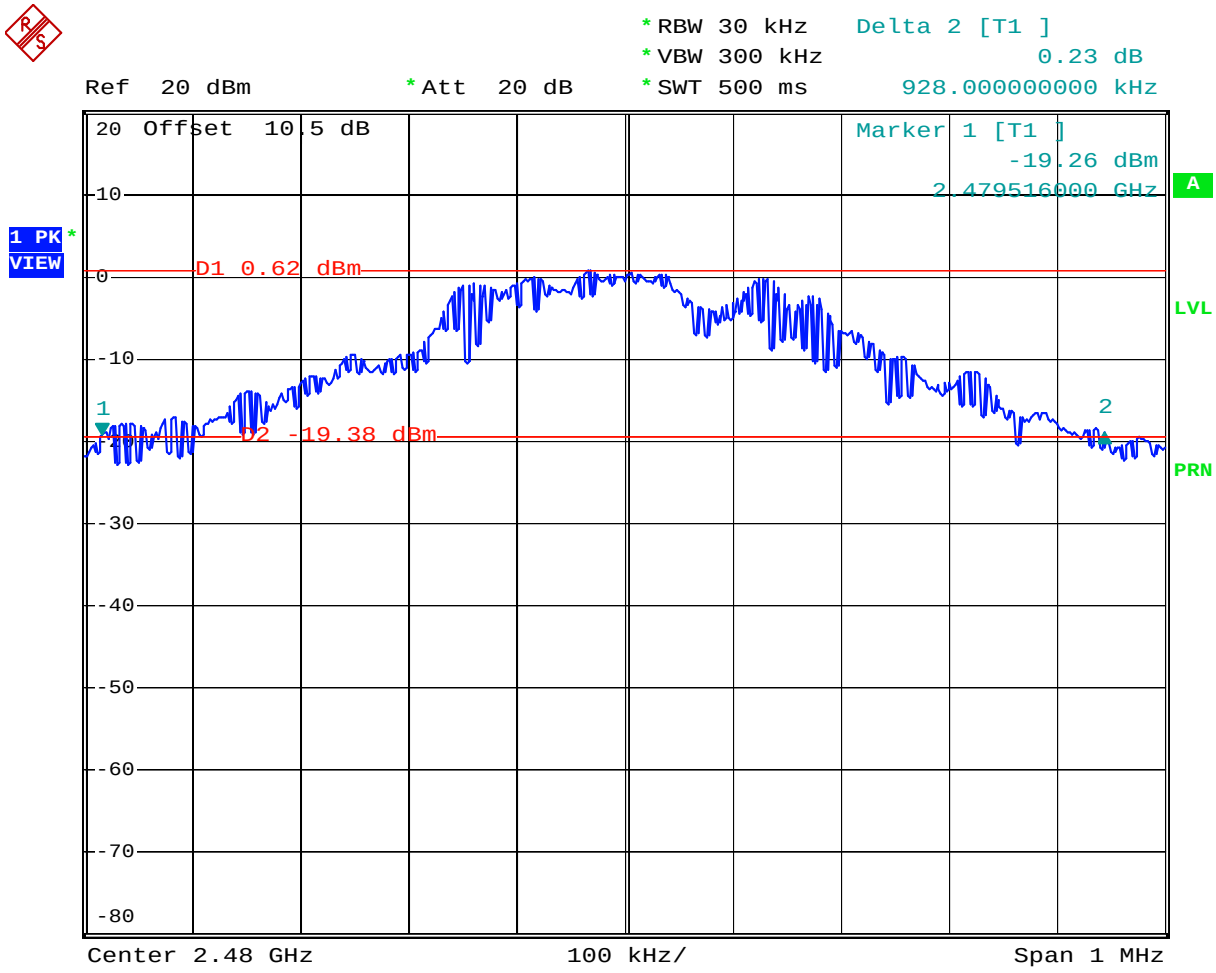
Mode 1



Mode 2


*RBW 30 kHz
*VBW 300 kHz
*SWT 500 ms
Delta 2 [T1 ]
0.13 dB
924.000000000 kHz
Ref 20 dBm
*Att 20 dB
20 Offset 10.5 dB
Marker 1 [T1 ]
-19.11 dBm
2.440516000 GHz
1 PK*
VIEW
D1 0.57 dBm
D2 -19.43 dBm
A
LVL
PRN
10
0
-10
-30
-40
-50
-60
-70
-80
Center 2.441 GHz
100 kHz/
Span 1 MHz
Date: 20.APR.2006 15:53:15

Mode 3




Date: 20.APR.2006 15:54:45

## 5.8 Dwell Time of Each Frequency

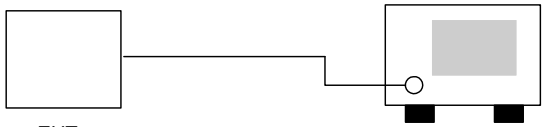
5.8.1 Measuring Instruments：

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 : 51%
- Test Enginner : James

Ch00

| Package Mode | Average Hopping Channel | Package Transfer Time (us) | Dwell Time (s) | Limit (s) |
|---|---|---|---|---|
| DH1 | 6.9 | 408 | 0.089 | 0.4 |
| DH3 | 4.3 | 1674 | 0.227 | 0.4 |
| DH5 | 2.9 | 2954 | 0.271 | 0.4 |

CH39

| Package Mode | Average Hopping Channel | Package Transfer Time (us) | Dwell Time (s) | Limit (s) |
|---|---|---|---|---|
| DH1 | 7.7 | 408 | 0.099 | 0.4 |
| DH3 | 5 | 1674 | 0.264 | 0.4 |
| DH5 | 3.1 | 2954 | 0.289 | 0.4 |

CH78

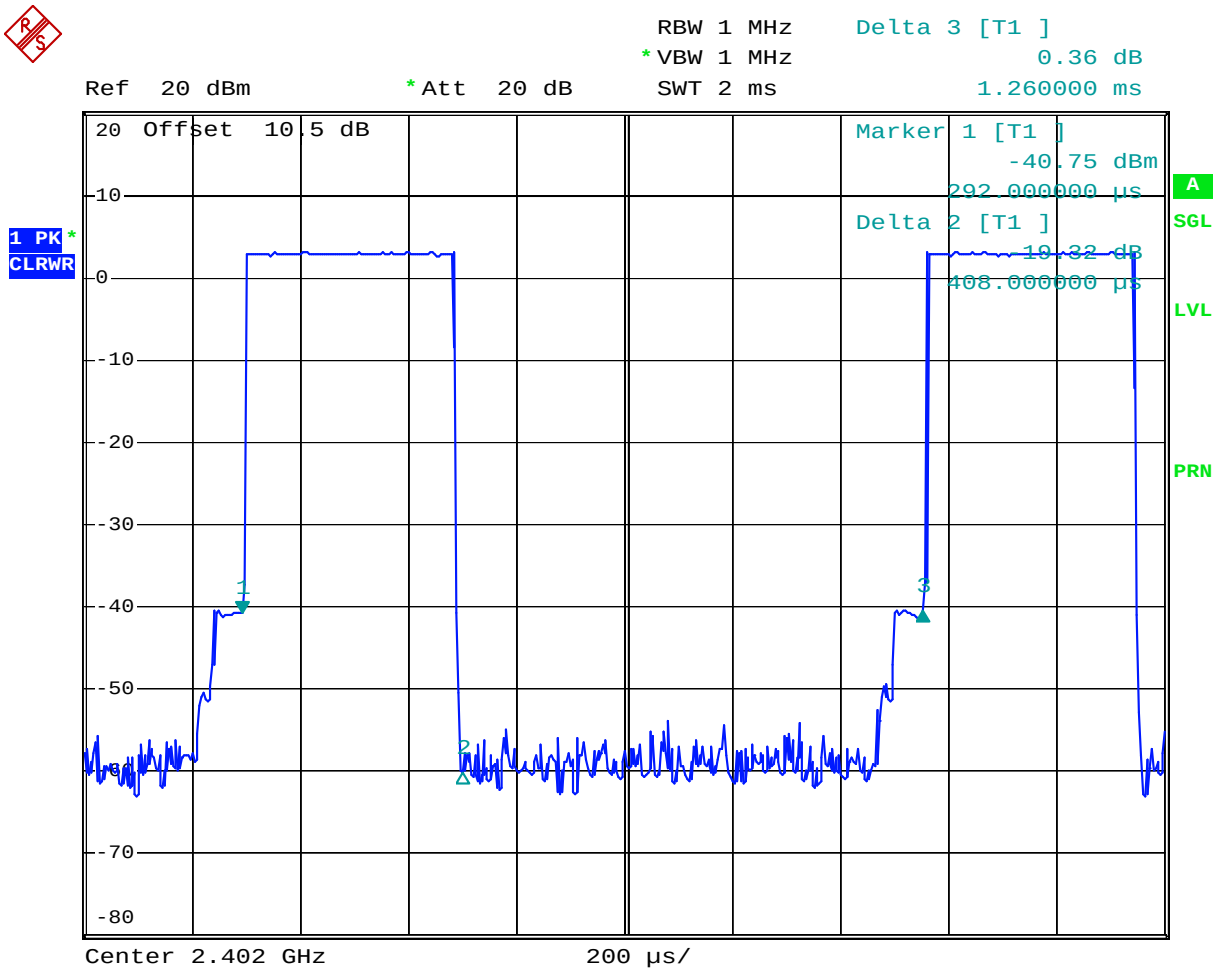
| Package Mode | Average Hopping Channel | Package Transfer Time (us) | Dwell Time (s) | Limit (s) |
|---|---|---|---|---|
| DH1 | 8.5 | 408 | 0.110 | 0.4 |
| DH3 | 4.1 | 1674 | 0.217 | 0.4 |
| DH5 | 3.1 | 2954 | 0.290 | 0.4 |

※ Remark:

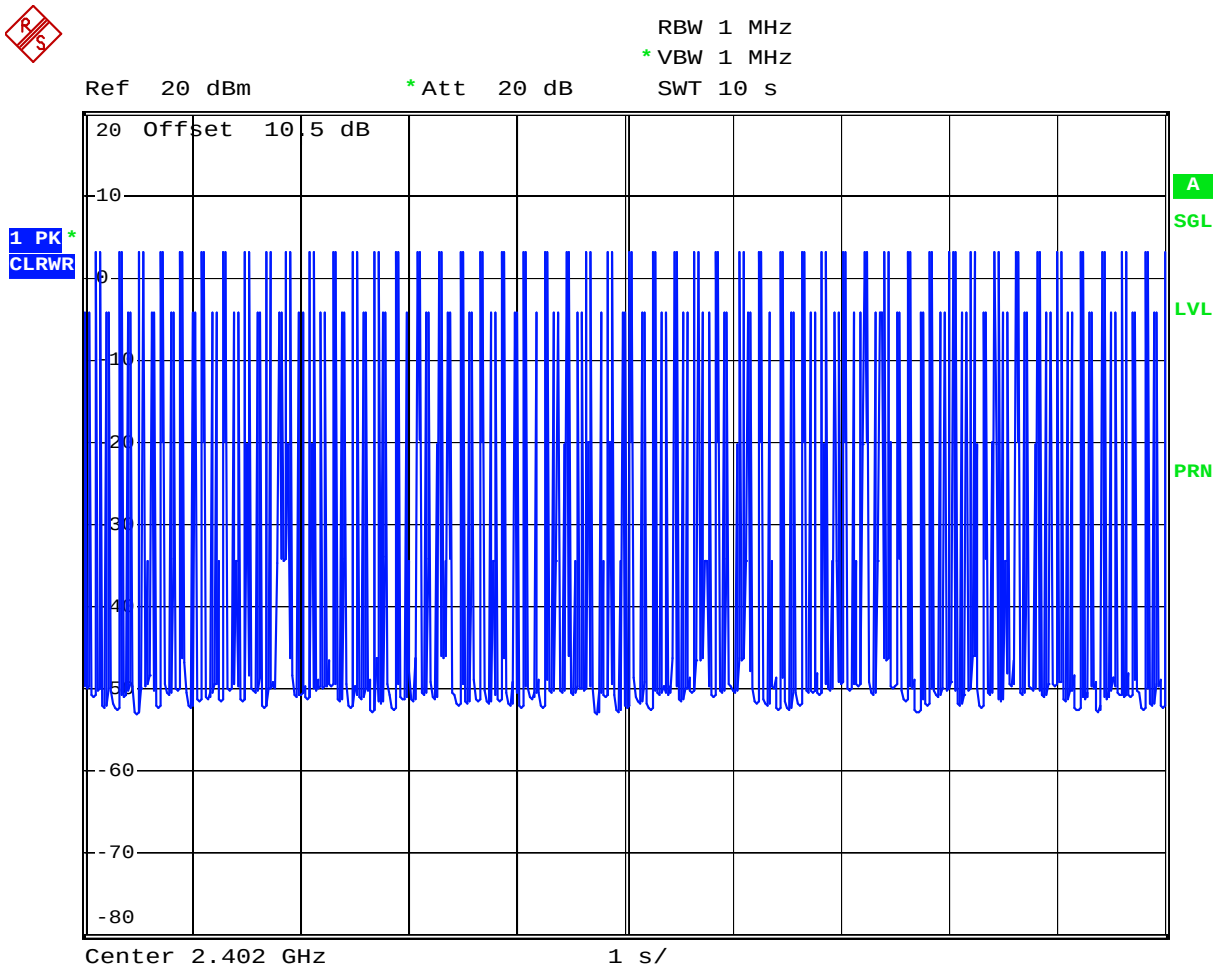
1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

5.8.5 Dwell Time

DH1 (CH00)

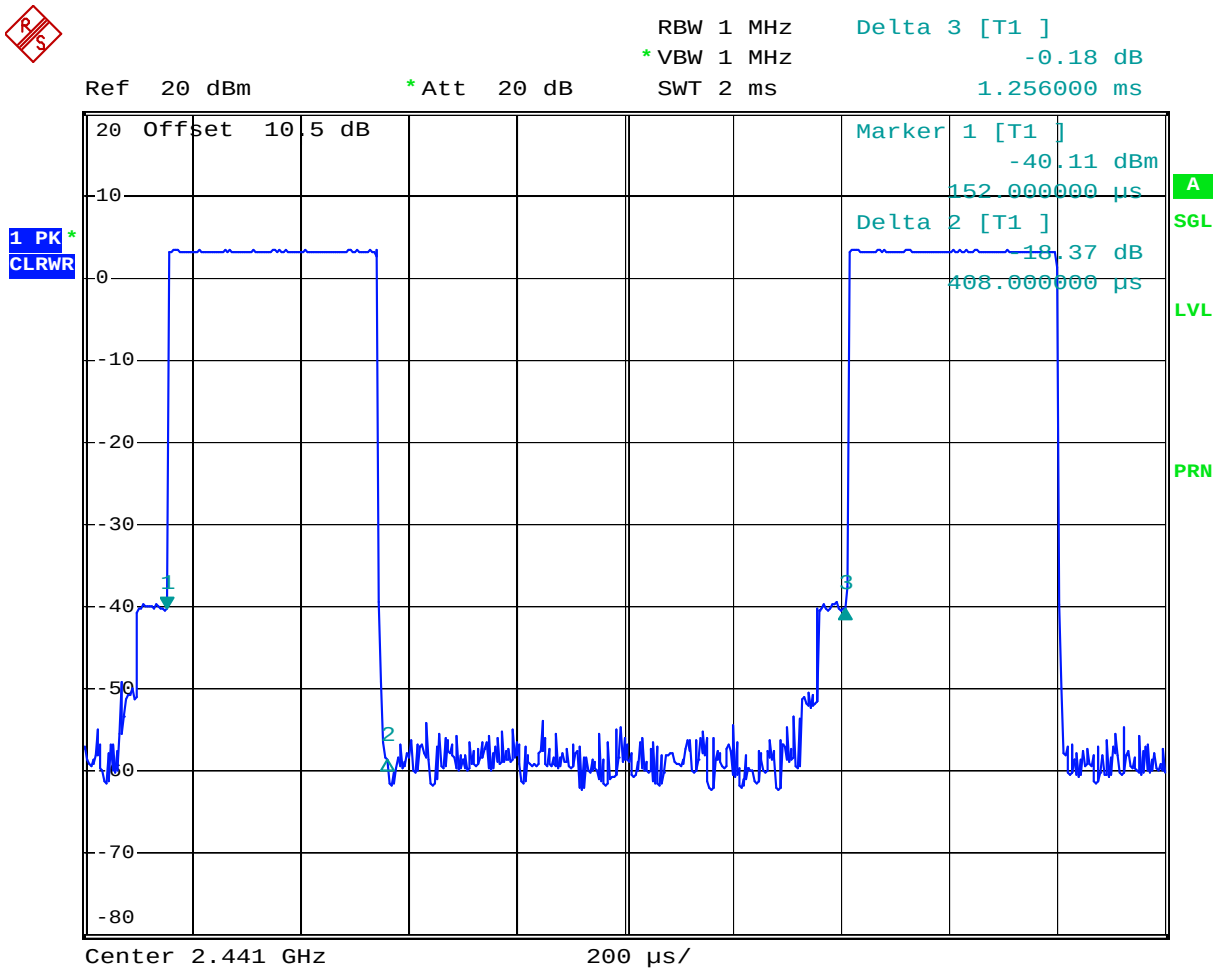



Date: 20.APR.2006 16:27:30

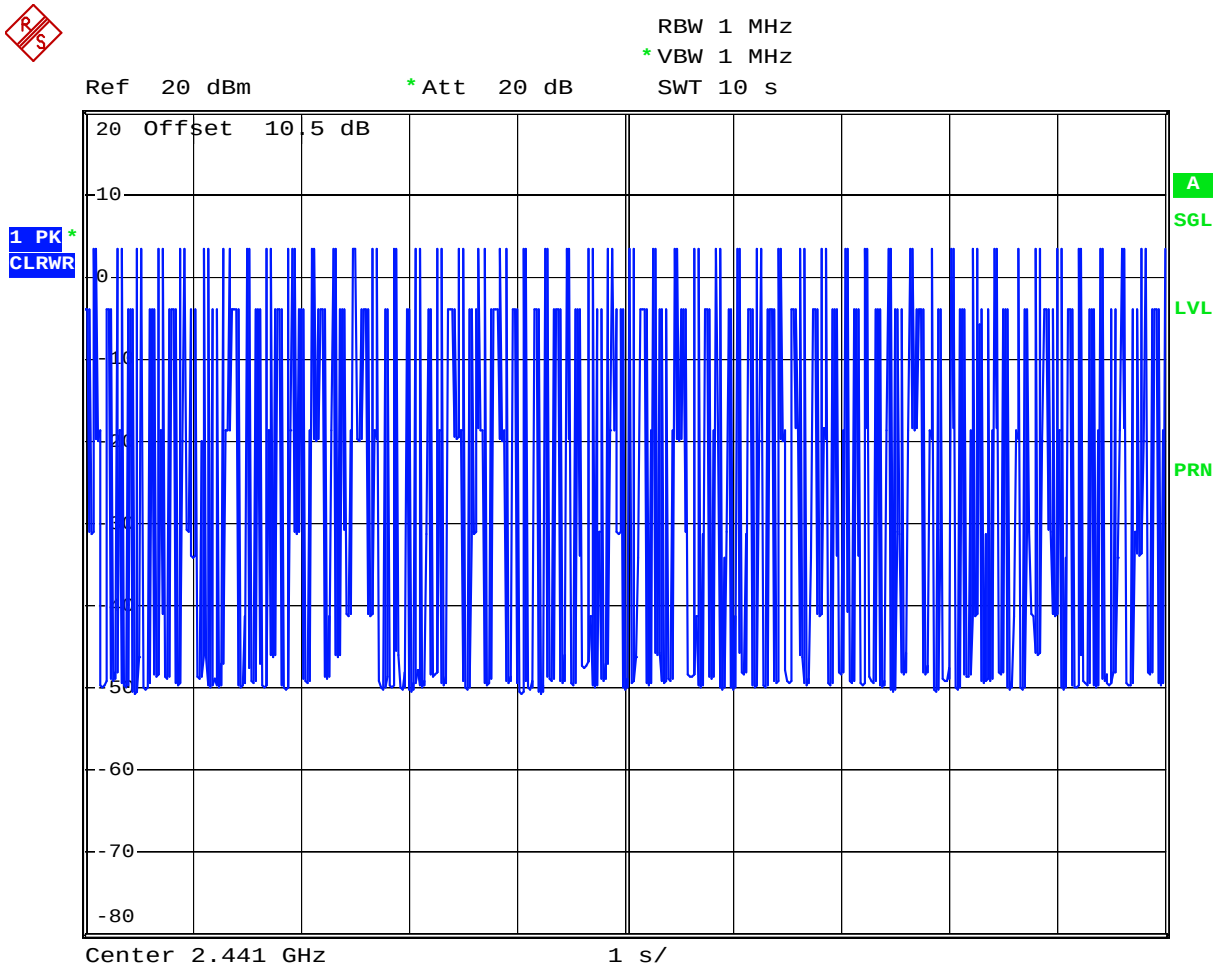



Date: 20.APR.2006 16:56:32

DH1 (CH39)

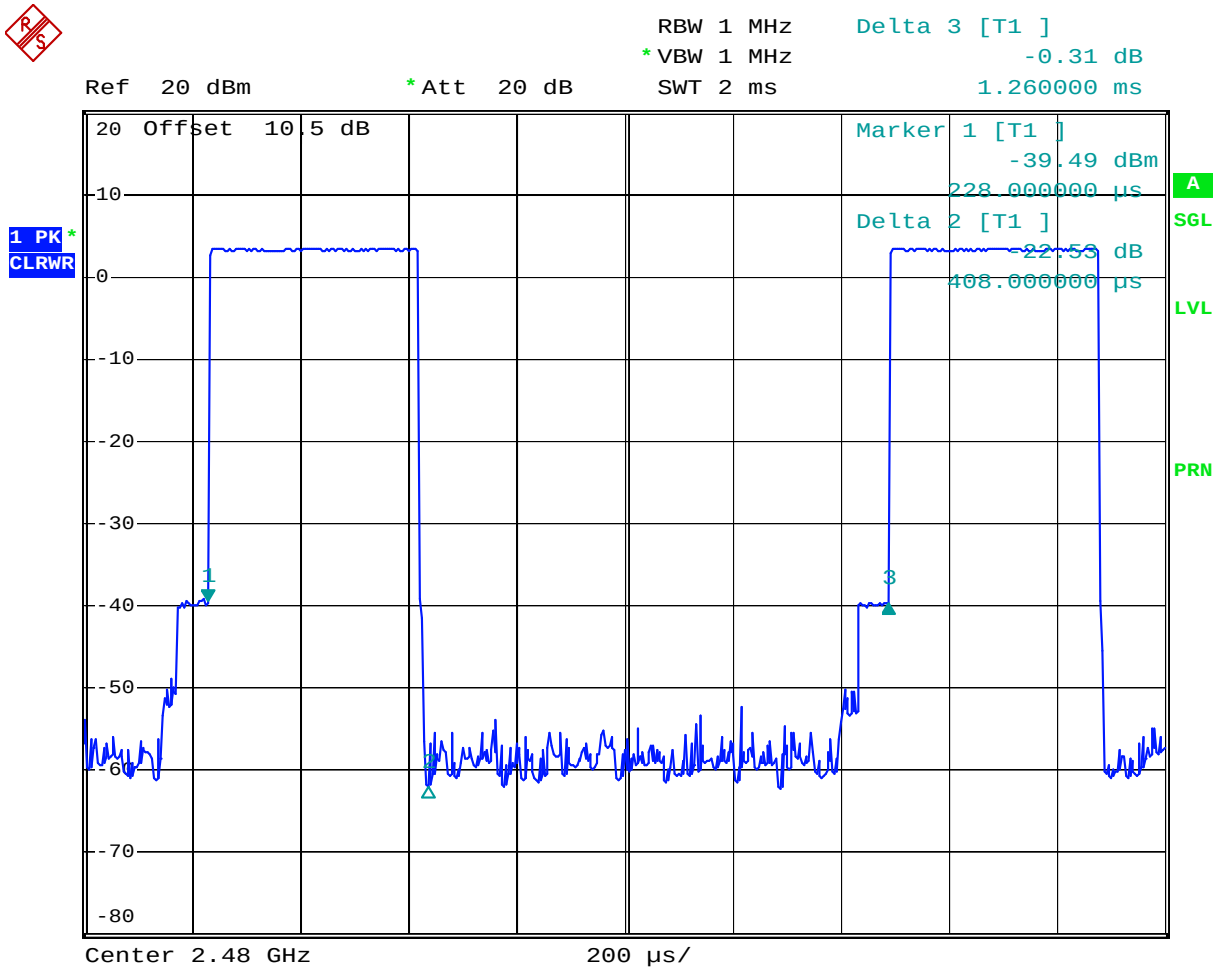



Date: 20.APR.2006 16:26:48

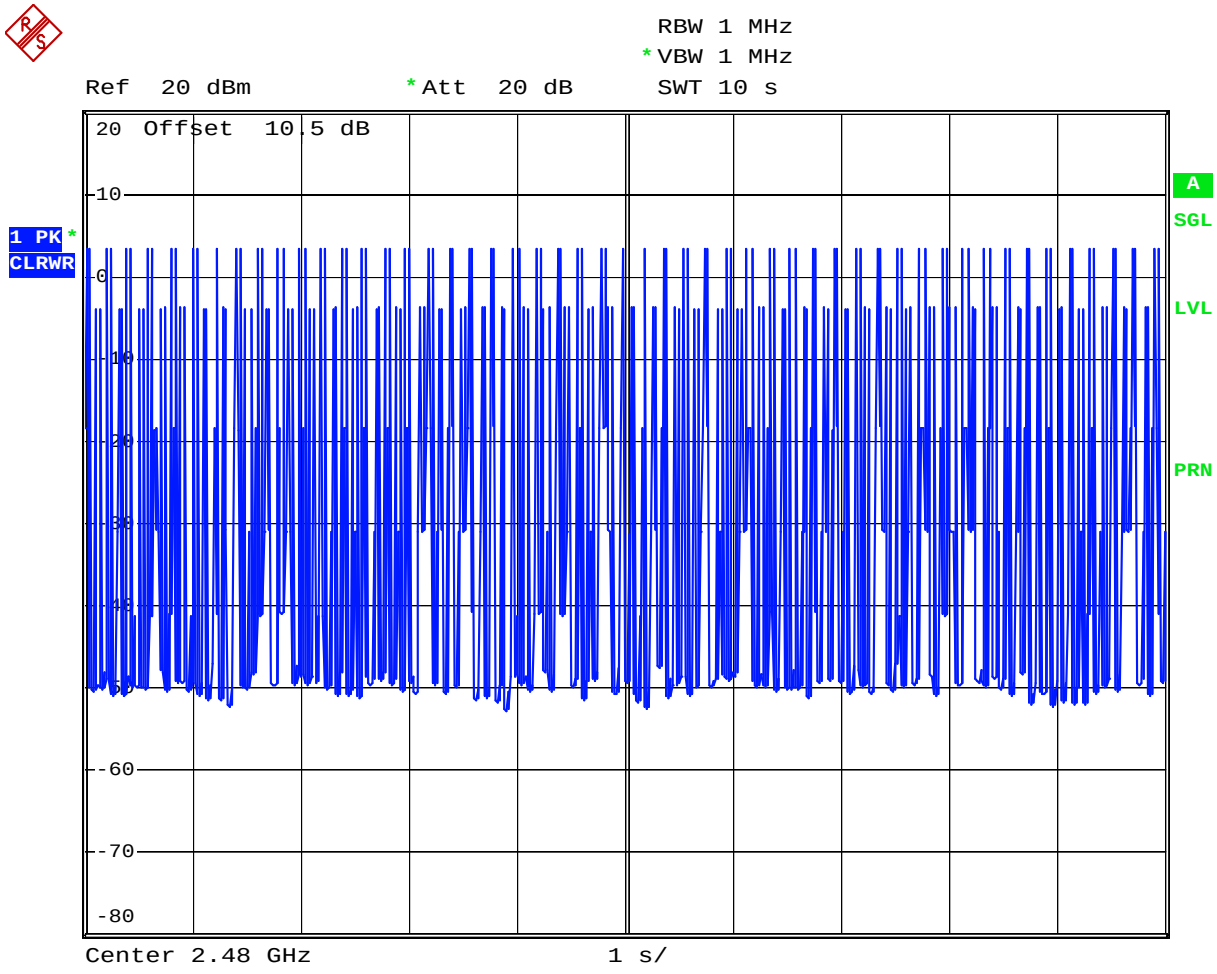



Date: 20.APR.2006 16:57:02

DH1 (CH78)

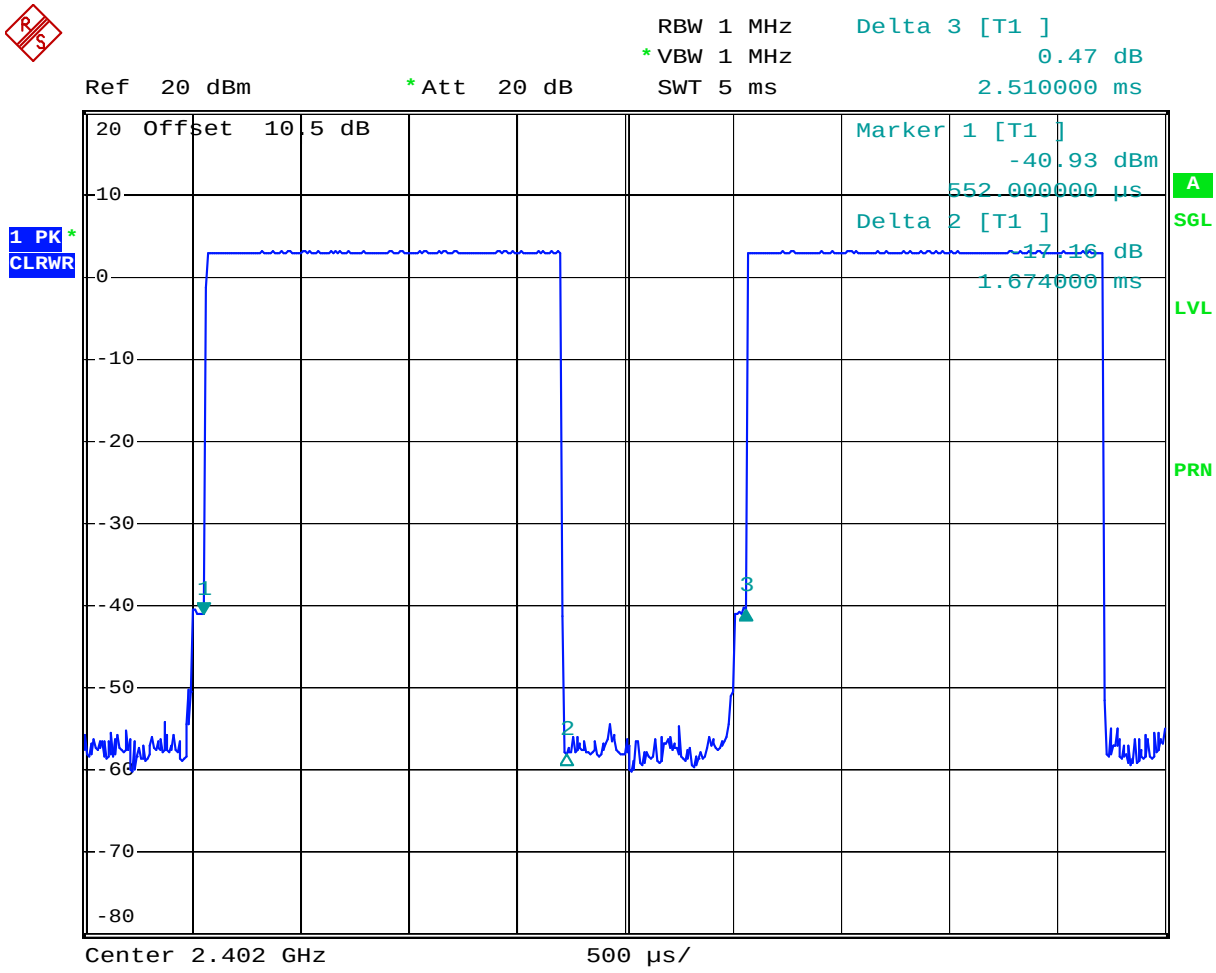



Date: 20.APR.2006 16:25:57

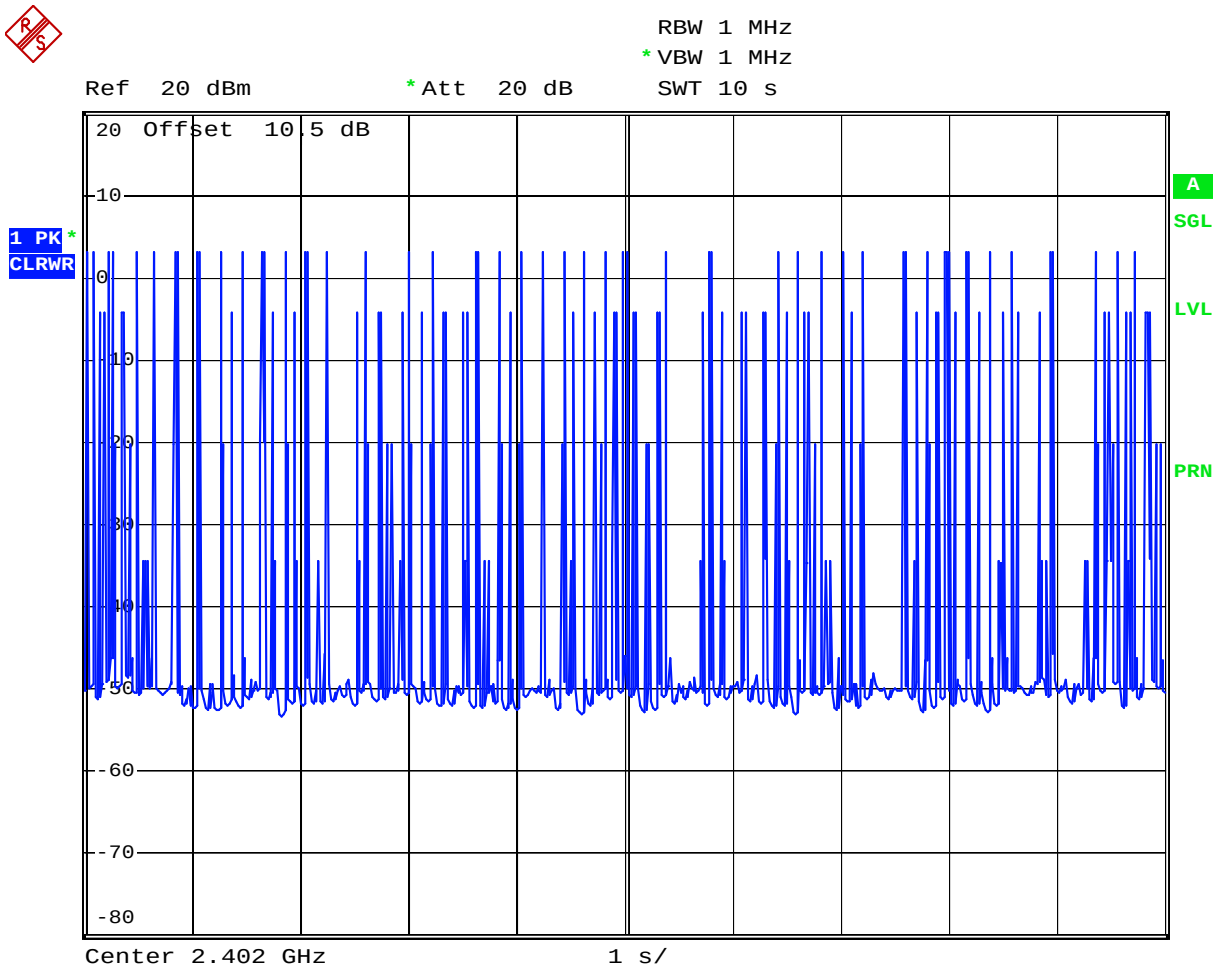



Date: 20.APR.2006 16:57:27

DH3 (CH00)

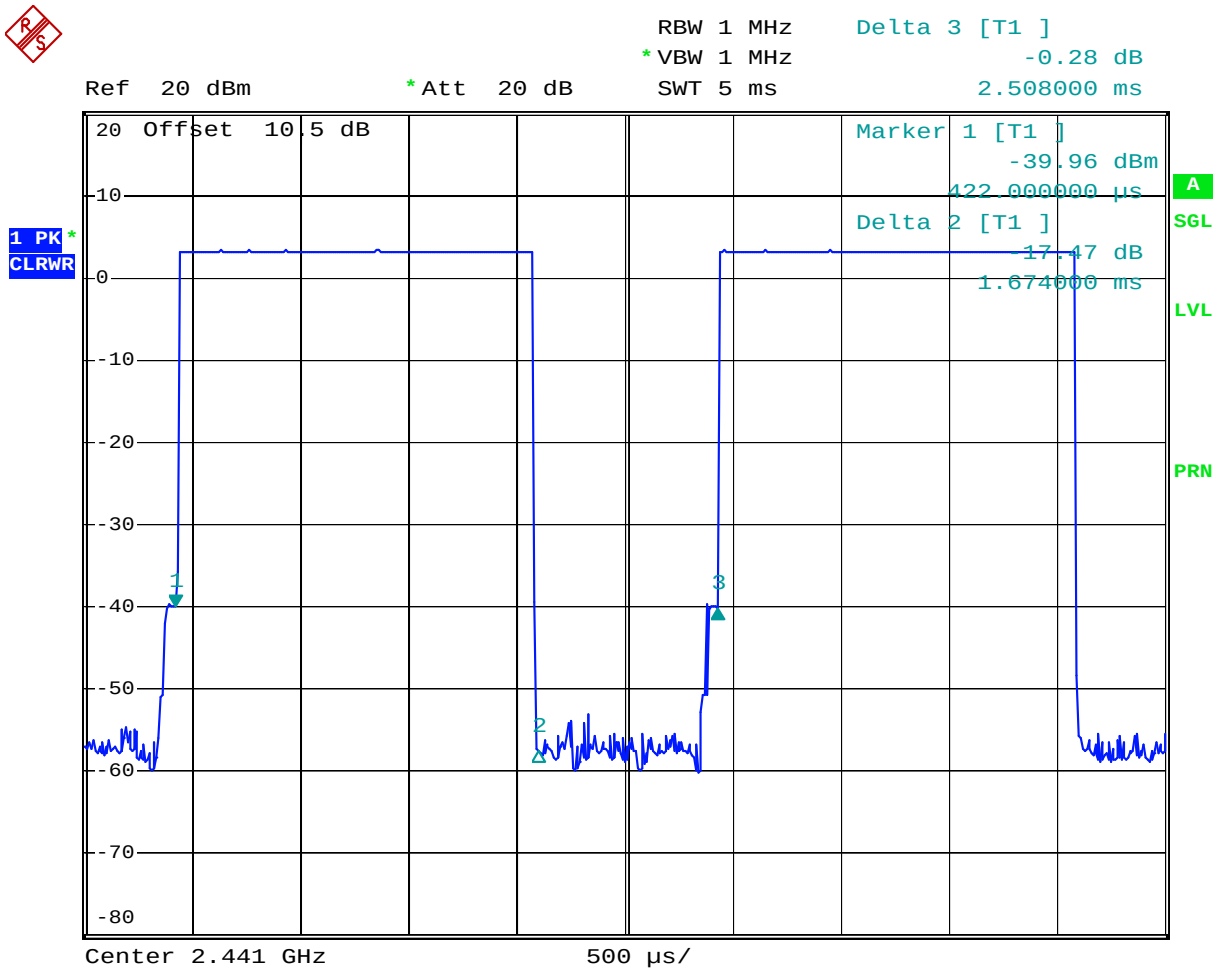



Date: 20.APR.2006 16:39:46

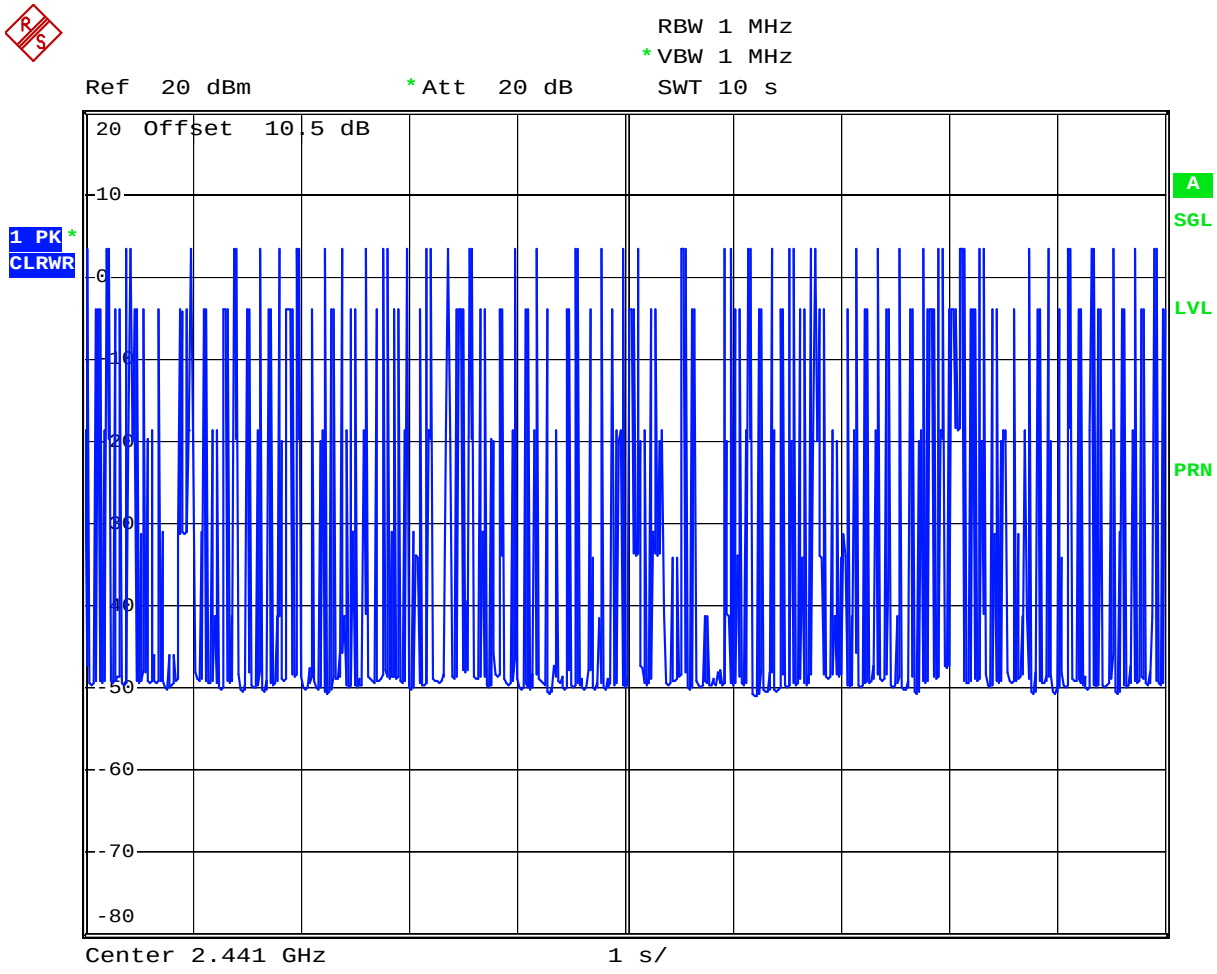



Date: 20.APR.2006 16:58:16

DH3 (CH39)

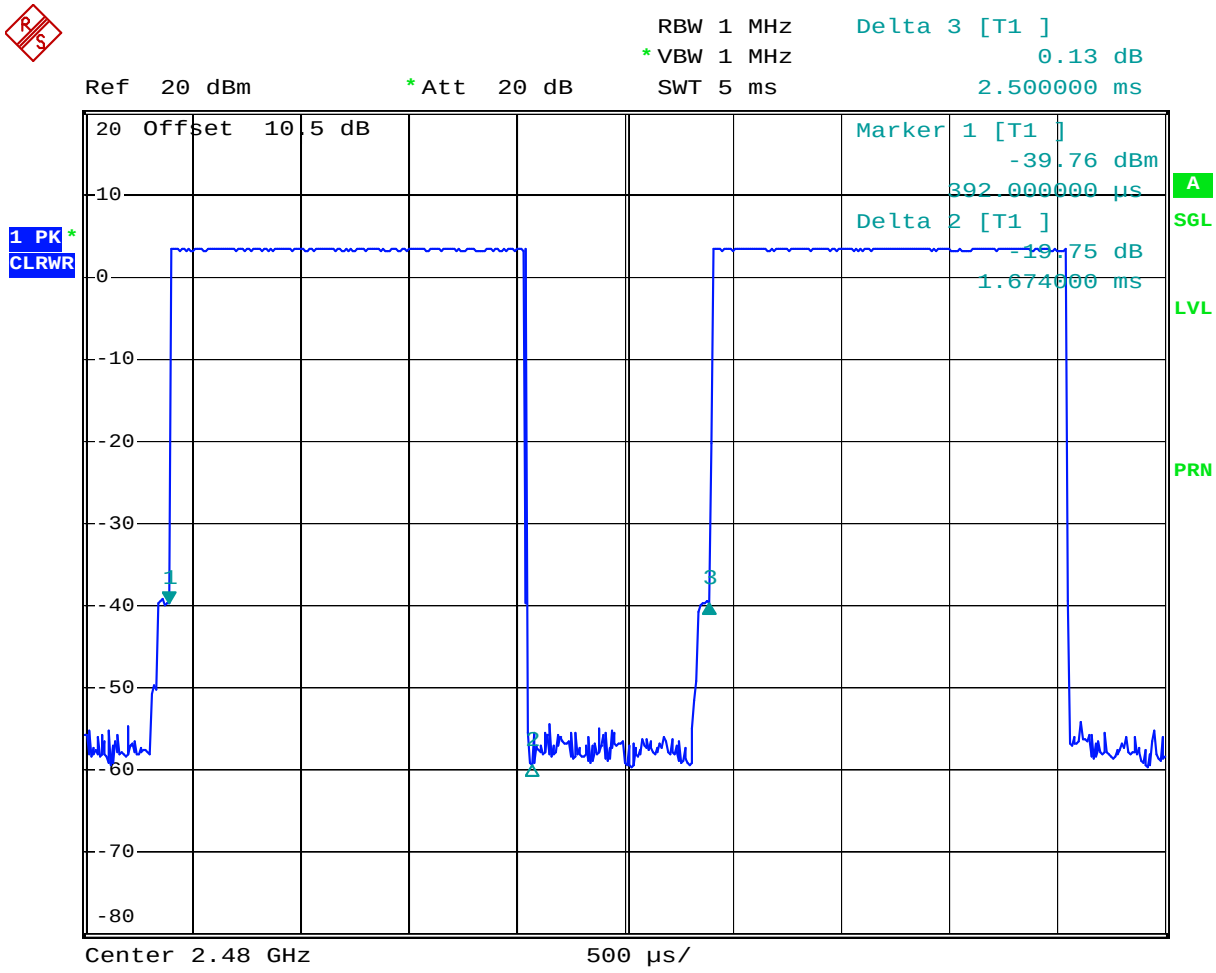



Date: 20.APR.2006 16:54:03

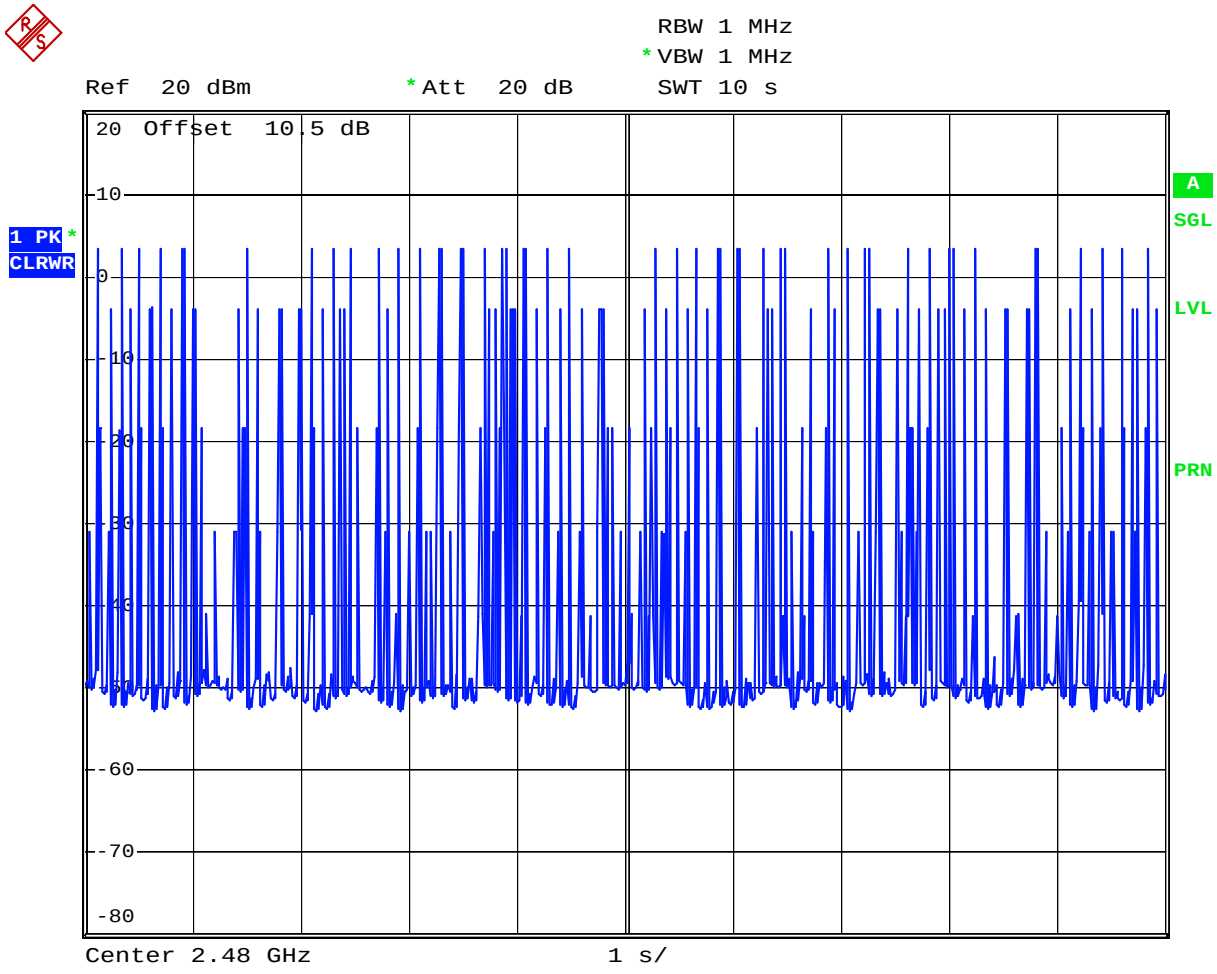



Date: 20.APR.2006 17:03:48

DH3 (CH78)

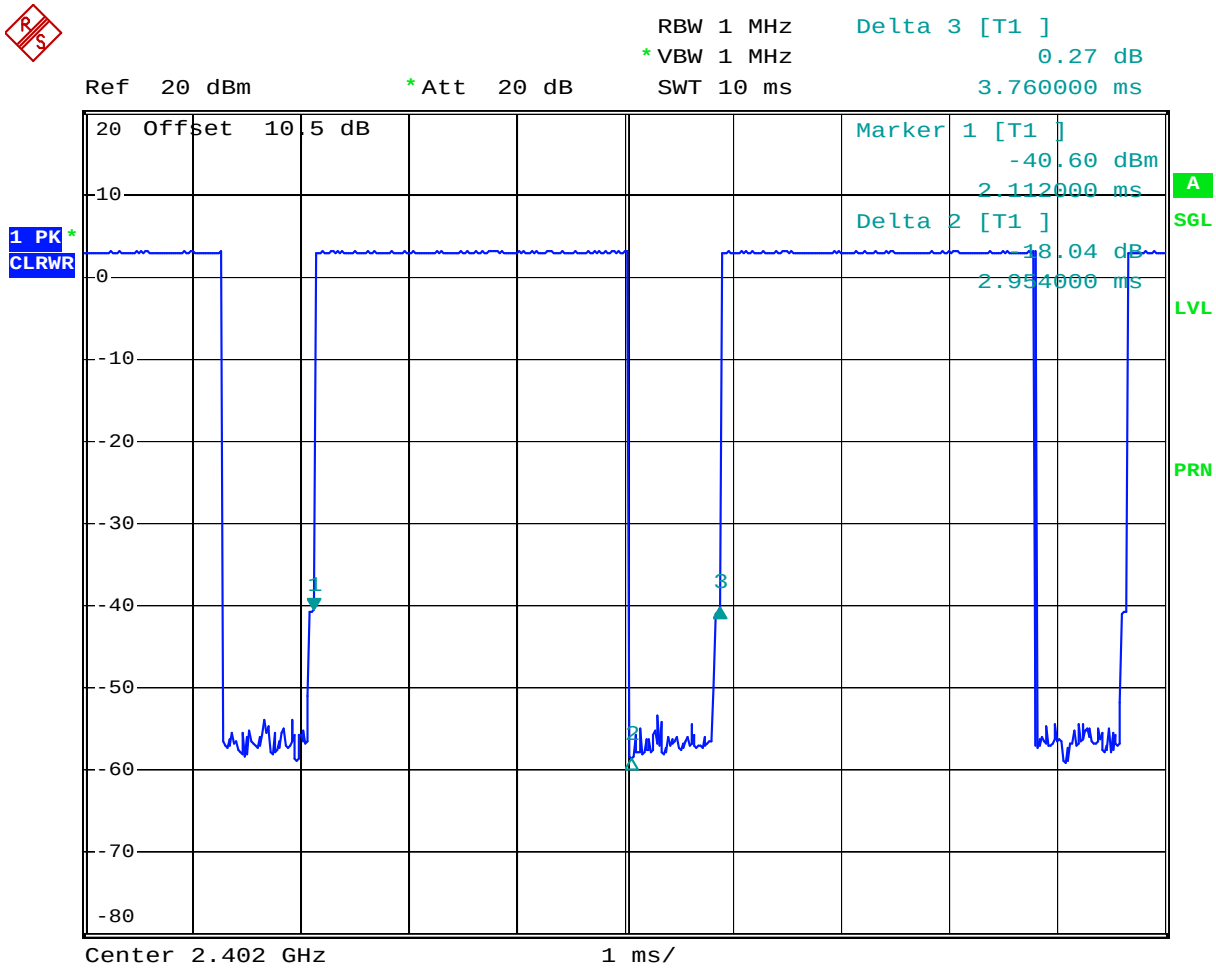



Date: 20.APR.2006 16:44:10

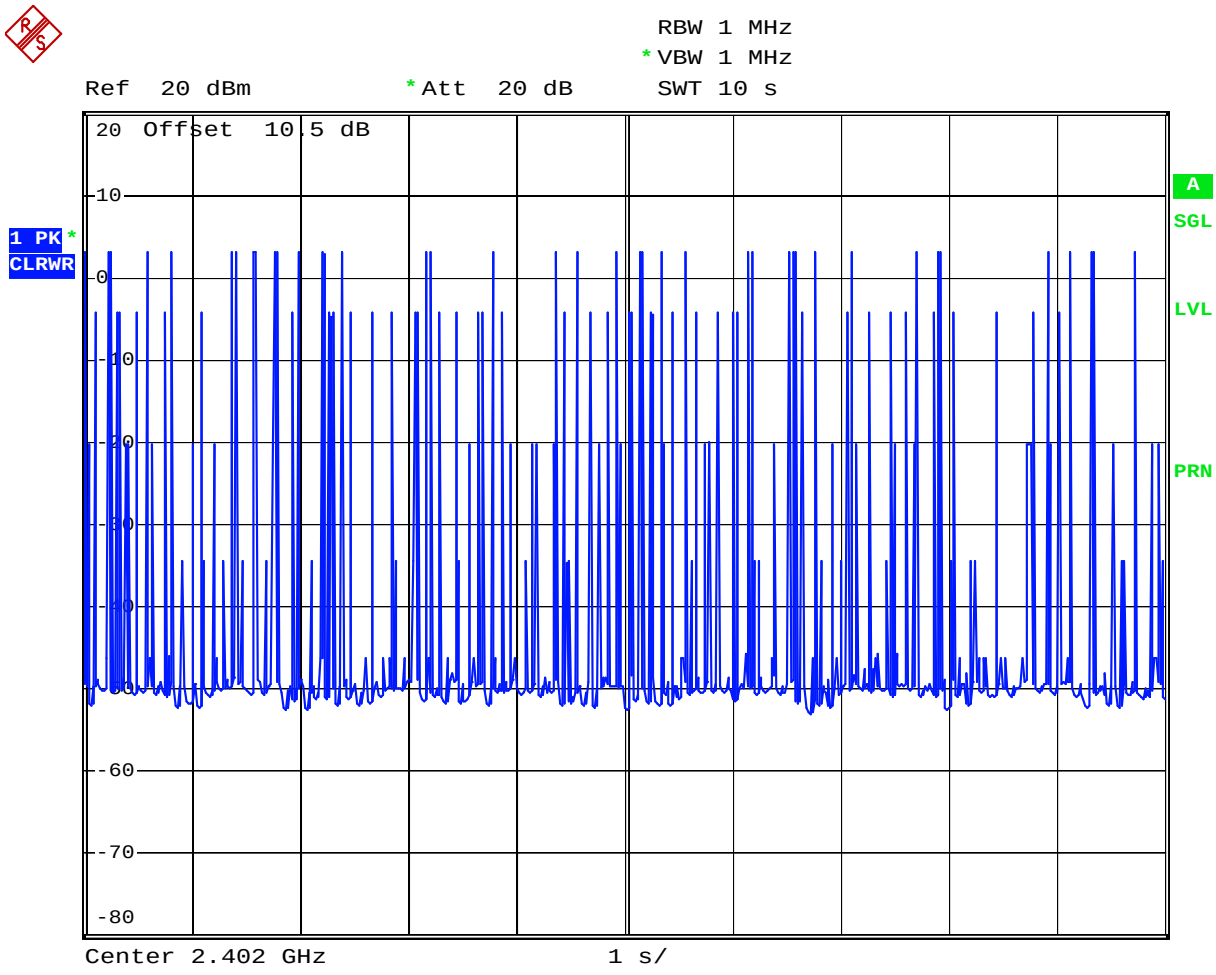



Date: 20.APR.2006 17:04:25

DH5 (CH00)

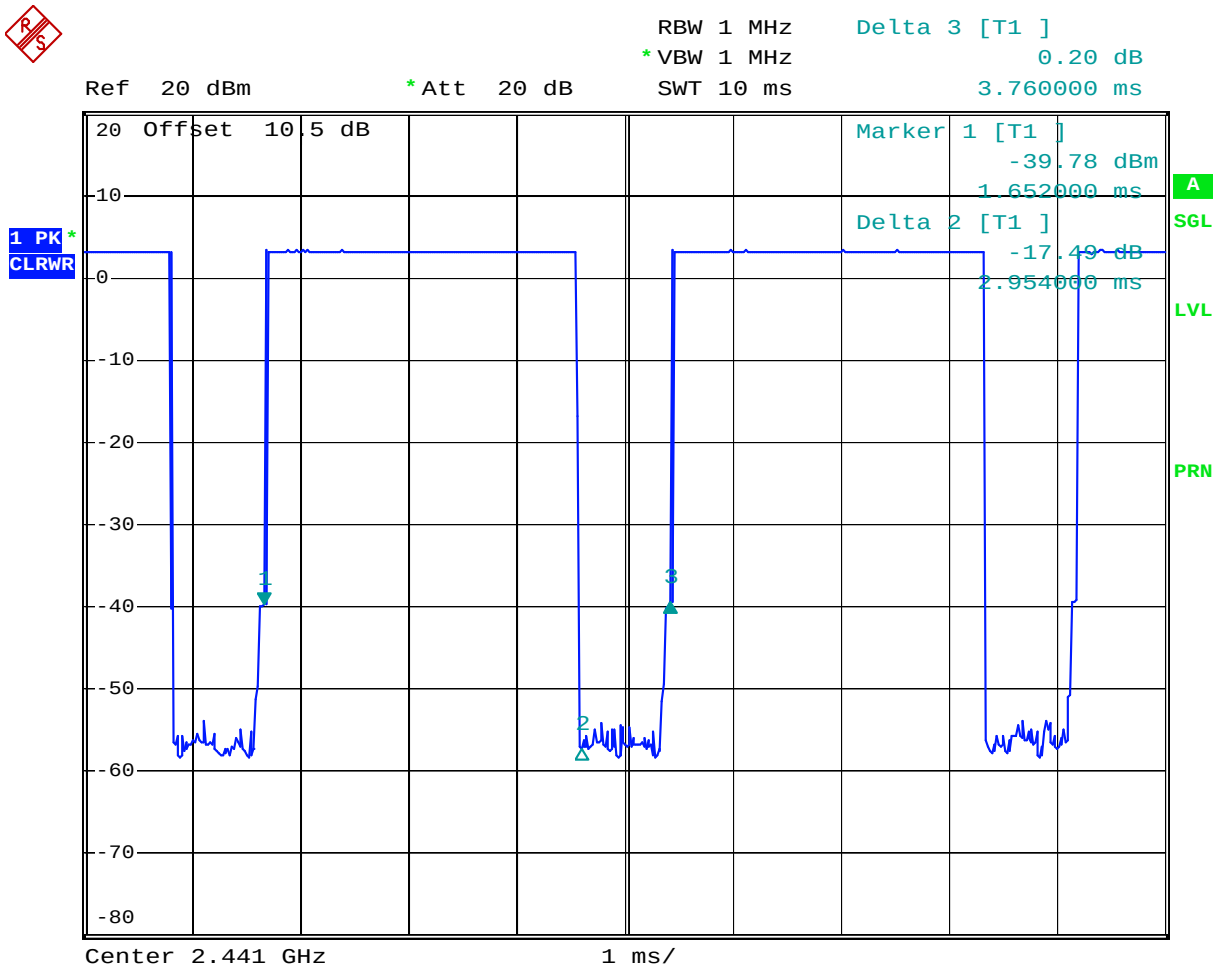



Date: 20.APR.2006 16:46:10

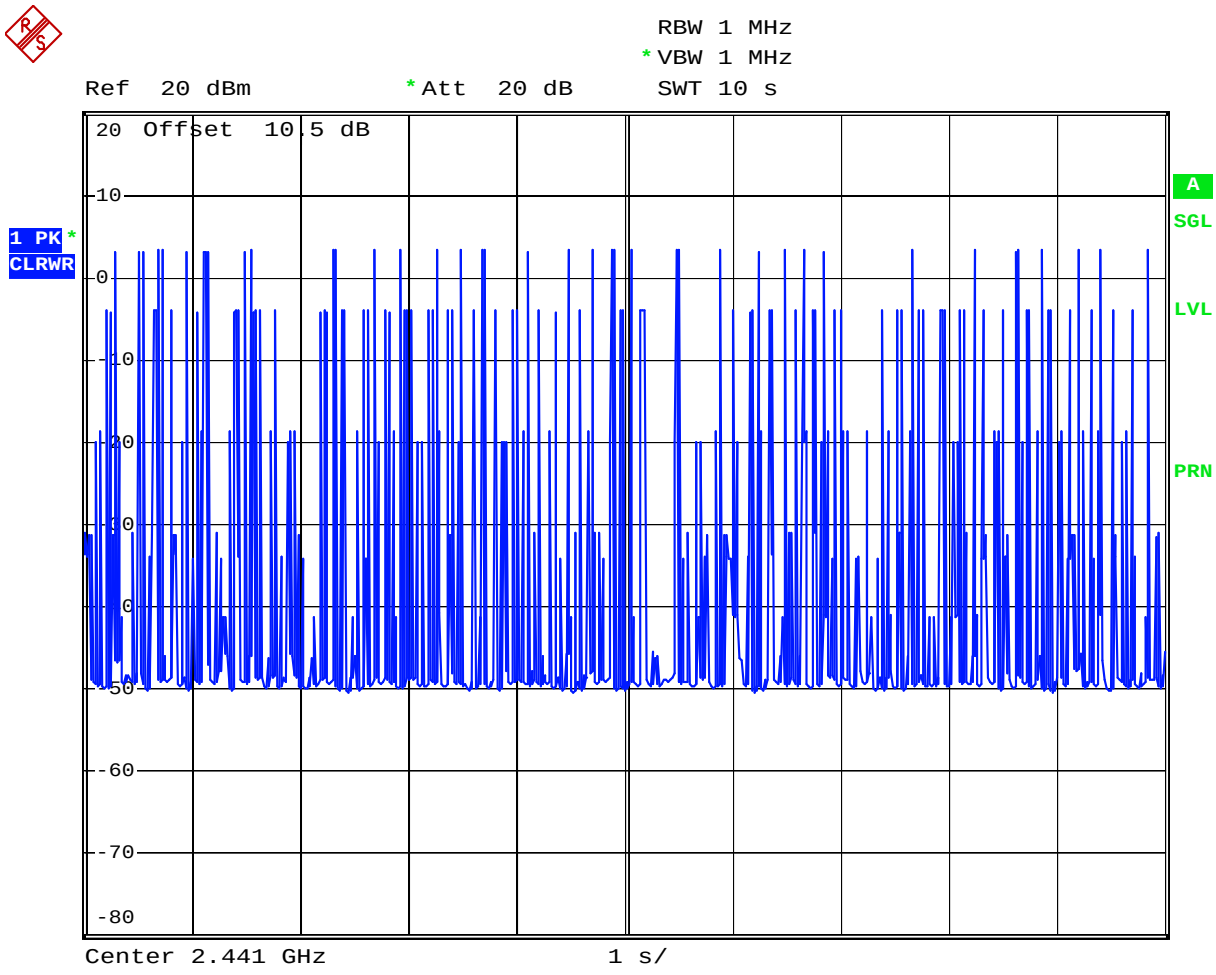



Date: 20.APR.2006 17:06:11

DH5 (CH39)

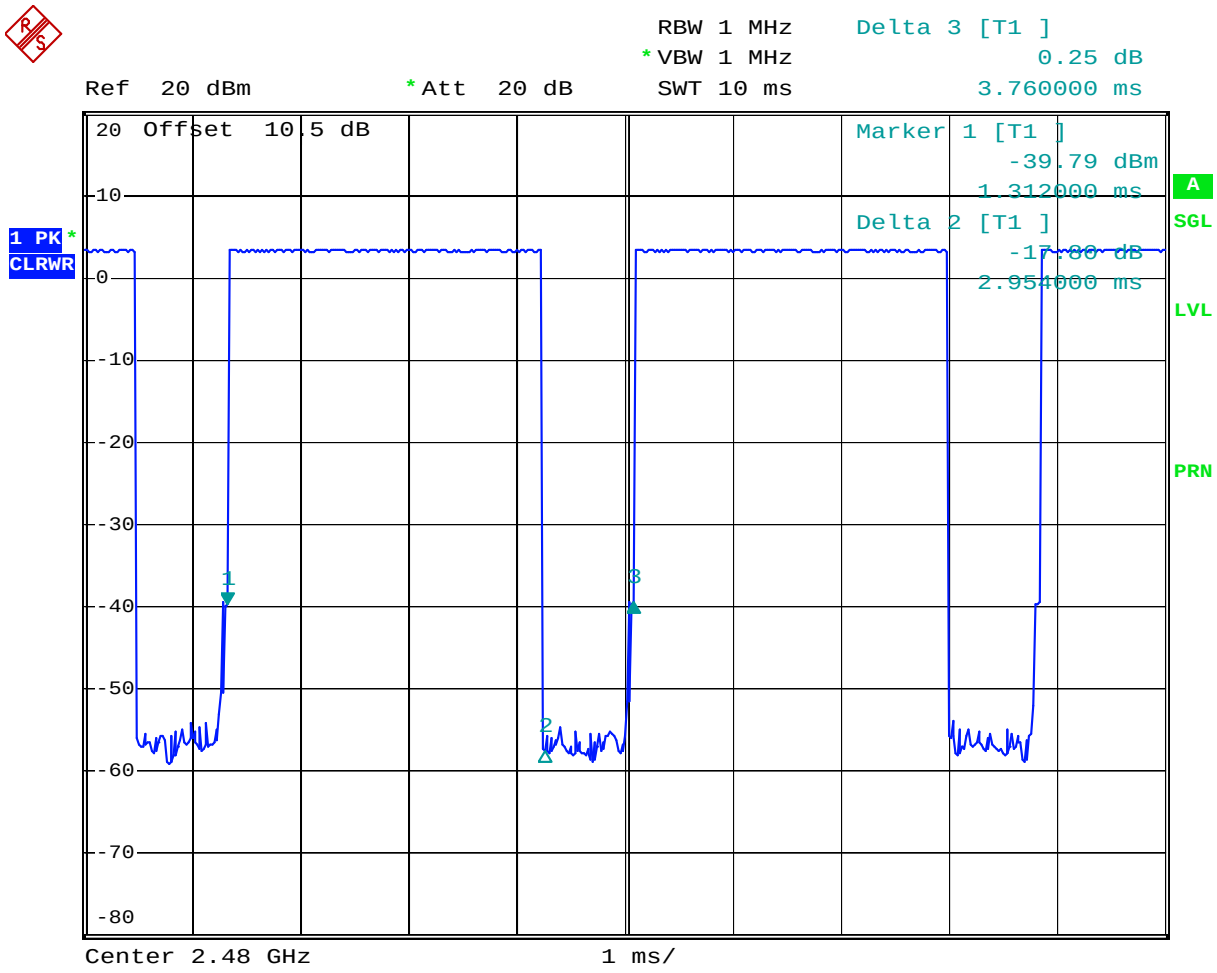



Date: 20.APR.2006 16:46:46

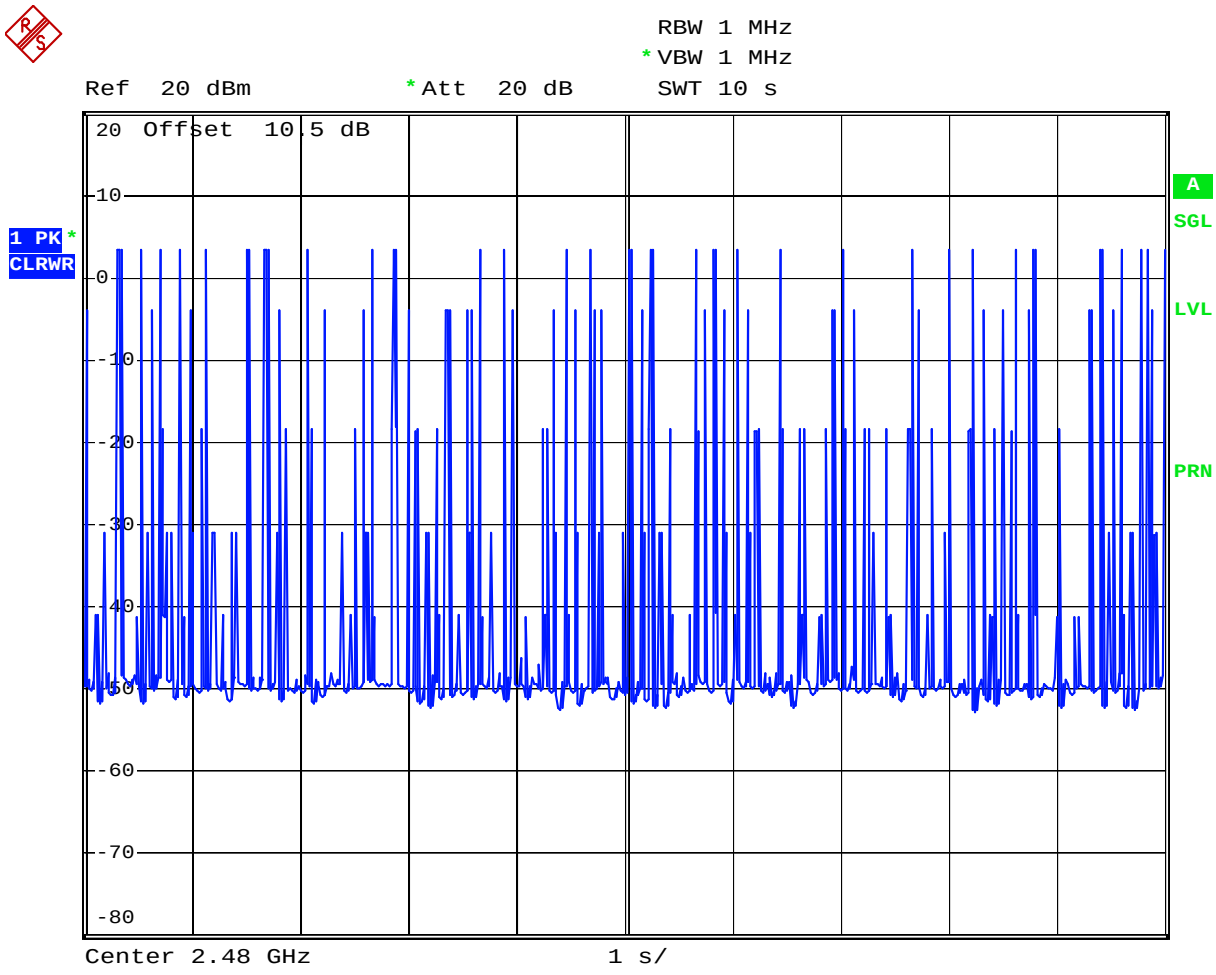



Date: 20.APR.2006 17:05:37

DH5 (CH78)




Date: 20.APR.2006 16:47:12




Date: 20.APR.2006 17:05:04

## 5.9 Peak Output Power Measurement

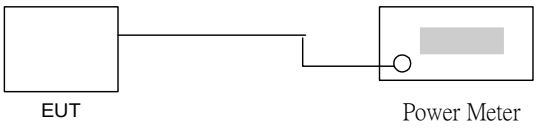
5.9.1 Measuring Instruments：

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 and BT
- Temperature : 24°C
- Relative Humidity : 51 %
- Test Enginner : James

**WLAN 802.11b**

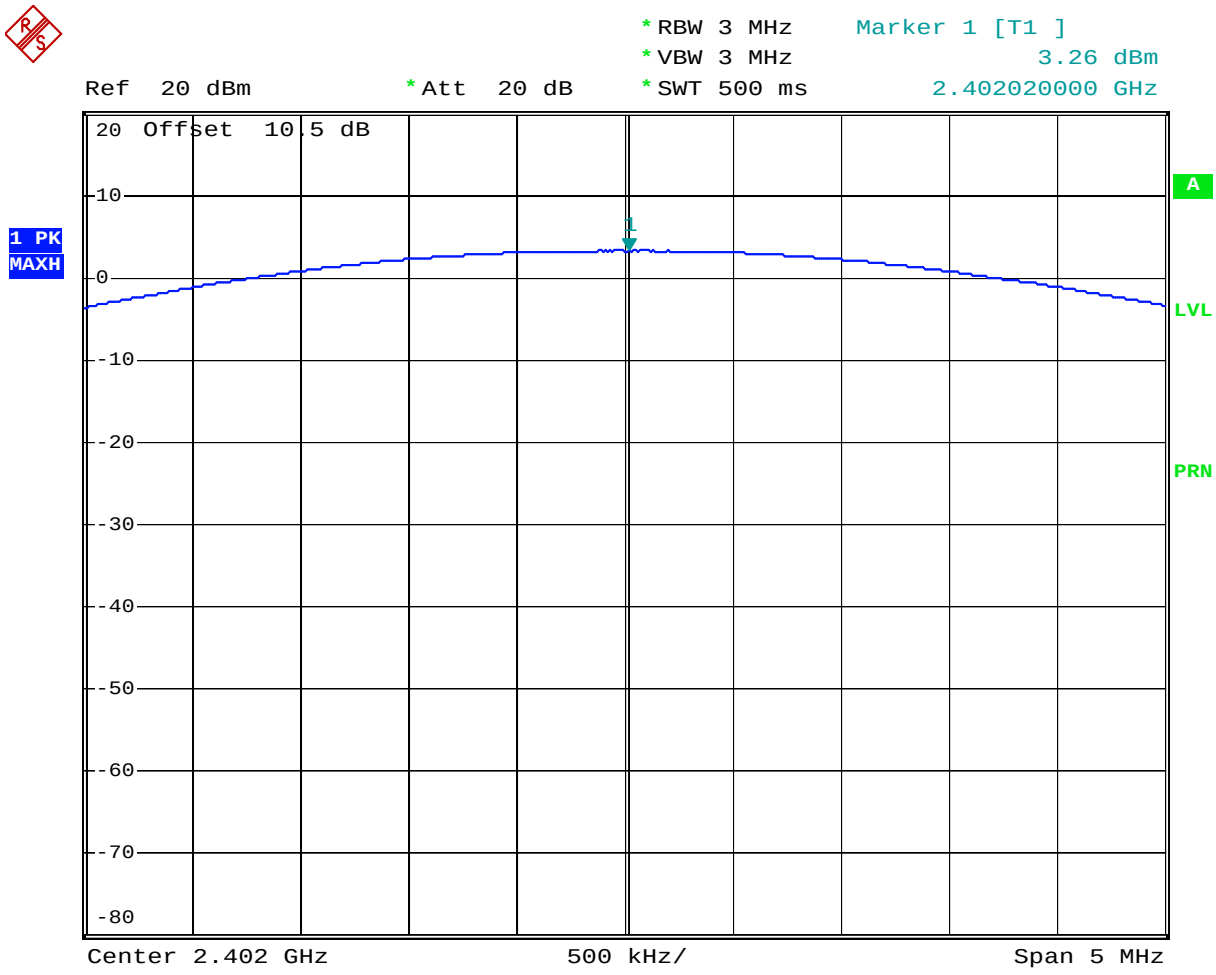
| Channel | Frequency (MHz) | Measured Output Power (dBm) | Limits (Watt/dBm ) |
|---|---|---|---|
| 01 | 2412 | 16.08 | 1W/30 dBm |
| 06 | 2437 | 15.58 | 1W/30 dBm |
| 11 | 2462 | 15.07 | 1W/30 dBm |

**Bluetooth**

| Channel | Frequency (MHz) | Measured Output Power (dBm) | Limits (Watt/dBm ) |
|---|---|---|---|
| 00 | 2402 | 3.26 | 1W/30 dBm |
| 39 | 2441 | 3.42 | 1W/30 dBm |
| 78 | 2480 | 3.54 | 1W/30 dBm |

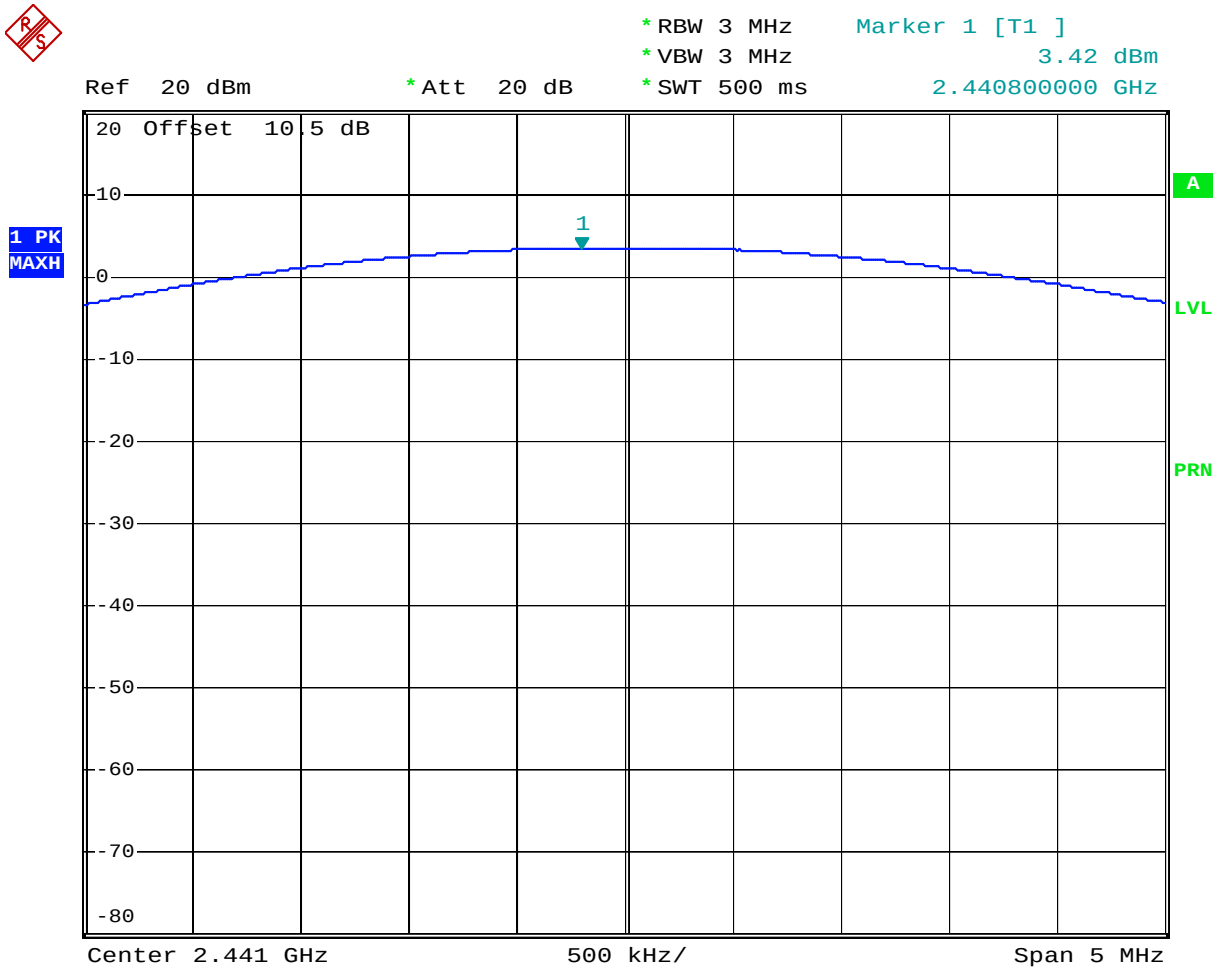
5.9.5 Output Power

BT Mode : CH00 (2402MHz)



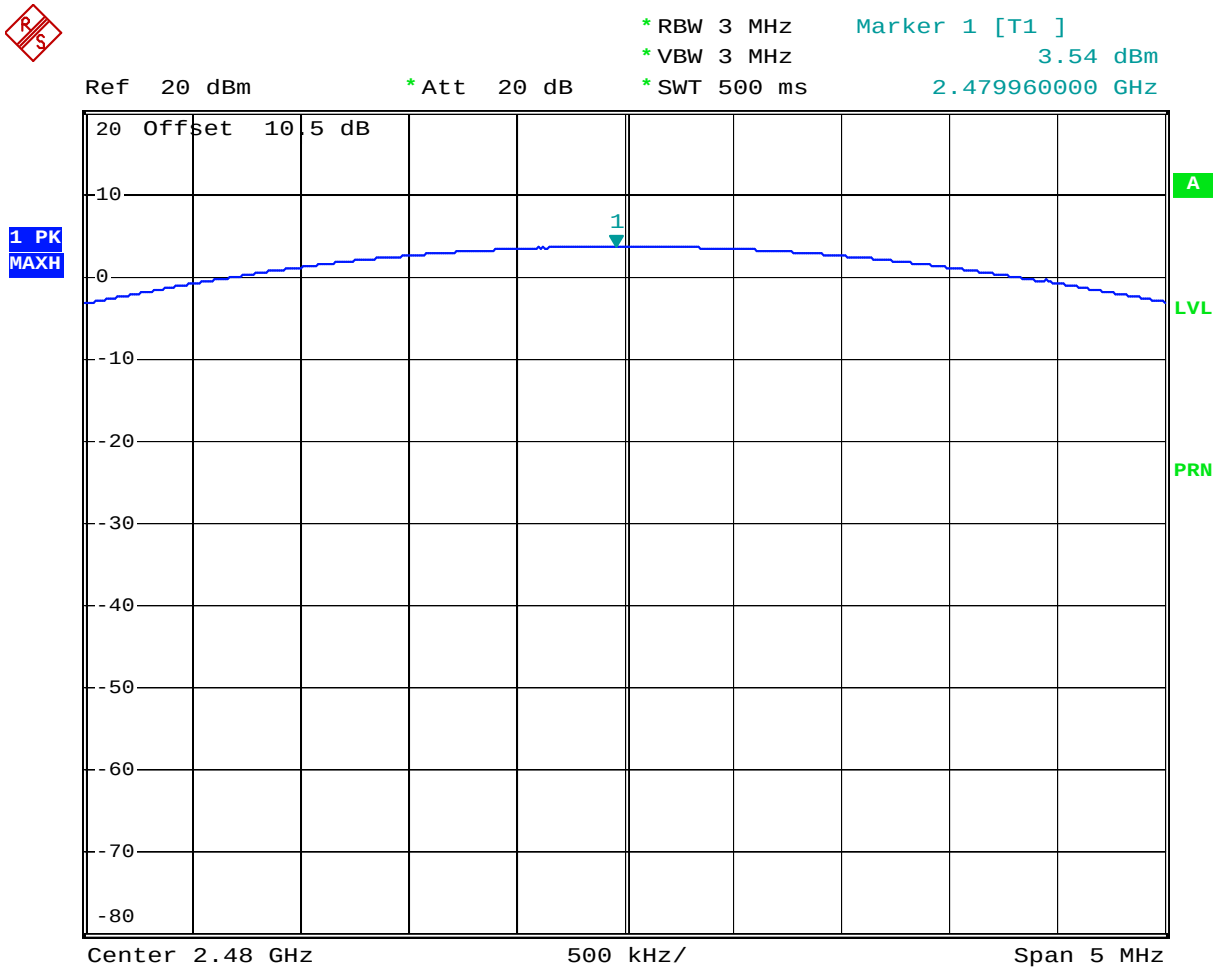

Date: 20.APR.2006 15:50:46

BT Mode : CH39 (2441MHz)




Date: 20.APR.2006 15:50:23

BT Mode : CH78 (2480MHz)




Date: 20.APR.2006 15:49:13

## 5.10 Conducted Emission

5.10.1 Measuring Instruments

As describ ed in chapter 6 of this test Report.

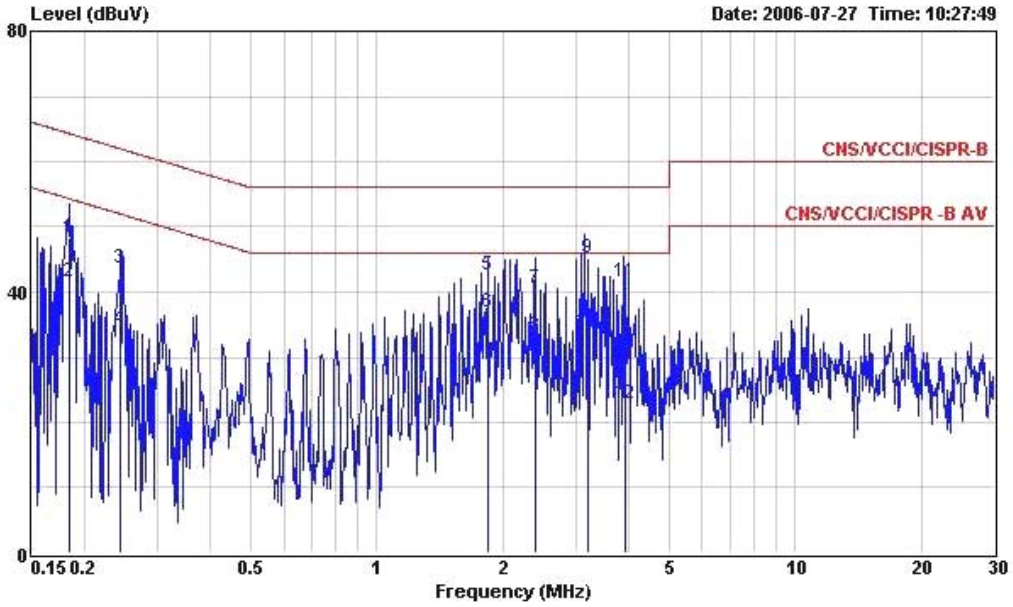
5.10.2 Test Procedures：

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

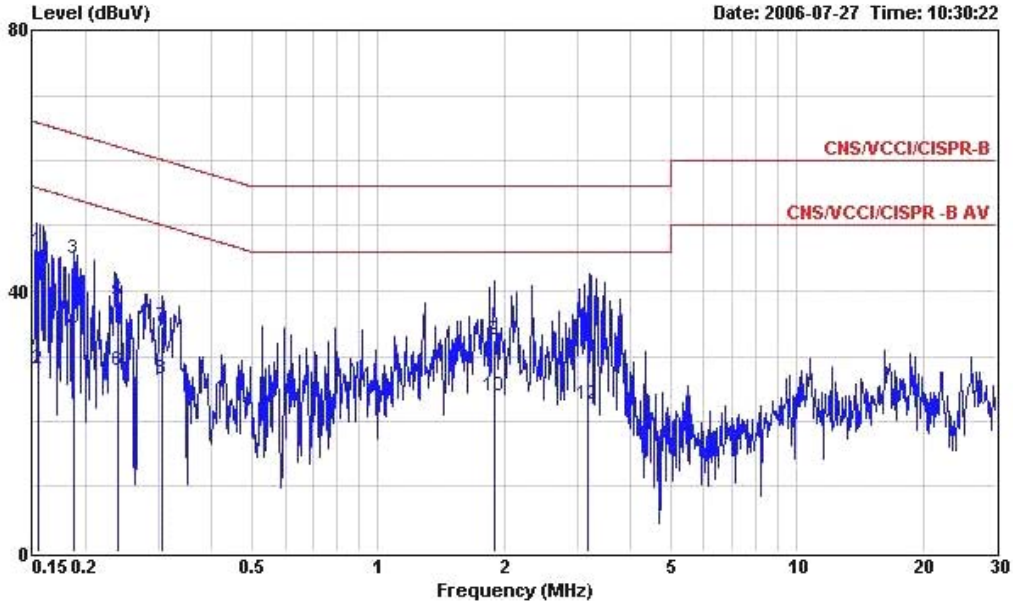
- Temperature : 24 °C
- Relating Humidity : 51 %
- Test Enginner : James
- Test Mode : Mode 1

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




Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : GSM850/GSM900/DCS1800/PCS1900/Bluetooth /WLAN
Power : 120V/60Hz
Model :
Memo : PCS1900 Idle Mode + Earphone + BT Link + WLAN
Memo : Link + MPEG4 + USB Link

| | Freq | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.184 | 48.33 | -15.97 | 64.30 | 48.17 | 0.10 | 0.06 | QP |
| 2 | 0.184 | 41.52 | -12.78 | 54.30 | 41.36 | 0.10 | 0.06 | Average |
| 3 | 0.244 | 43.62 | -18.34 | 61.96 | 43.45 | 0.10 | 0.07 | QP |
| 4 | 0.244 | 34.17 | -17.79 | 51.96 | 34.00 | 0.10 | 0.07 | Average |
| 5 | 1.839 | 42.67 | -13.33 | 56.00 | 42.46 | 0.10 | 0.11 | QP |
| 6 | 1.839 | 36.85 | -9.15 | 46.00 | 36.64 | 0.10 | 0.11 | Average |
| 7 | 2.391 | 40.44 | -15.56 | 56.00 | 40.19 | 0.13 | 0.12 | QP |
| 8 | 2.391 | 33.31 | -12.69 | 46.00 | 33.06 | 0.13 | 0.12 | Average |
| 9 | 3.186 | 45.30 | -10.70 | 56.00 | 45.01 | 0.17 | 0.12 | QP |
| 10 | 3.186 | 34.01 | -11.99 | 46.00 | 33.72 | 0.17 | 0.12 | Average |
| 11 | 3.916 | 41.55 | -14.45 | 56.00 | 41.23 | 0.20 | 0.12 | QP |
| 12 | 3.916 | 22.88 | -23.12 | 46.00 | 22.56 | 0.20 | 0.12 | Average |

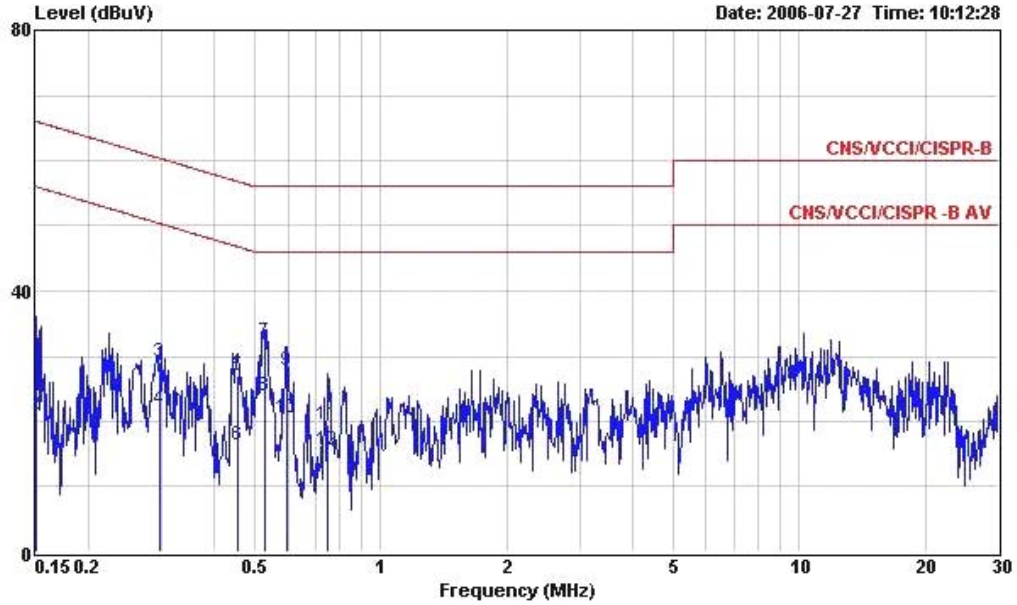



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : GSM850/GSM900/DCS1800/PCS1900/Bluetooth
: /WLAN
Power : 120V/60Hz
Model :
Memo : PCS1900 Idle Mode + Earphone + BT Link + WLAN
Memo : Link + MPEG4 + USB Link

| | Freq | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.155 | 46.26 | -19.49 | 65.75 | 46.11 | 0.10 | 0.05 | QP |
| 2 | 0.155 | 27.94 | -27.81 | 55.75 | 27.79 | 0.10 | 0.05 | Average |
| 3 | 0.187 | 44.94 | -19.23 | 64.17 | 44.78 | 0.10 | 0.06 | QP |
| 4 | 0.187 | 33.65 | -20.52 | 54.17 | 33.49 | 0.10 | 0.06 | Average |
| 5 | 0.239 | 38.53 | -23.61 | 62.14 | 38.36 | 0.10 | 0.07 | QP |
| 6 | 0.239 | 27.83 | -24.31 | 52.14 | 27.66 | 0.10 | 0.07 | Average |
| 7 | 0.304 | 34.63 | -25.51 | 60.14 | 34.46 | 0.10 | 0.07 | QP |
| 8 | 0.304 | 26.60 | -23.54 | 50.14 | 26.43 | 0.10 | 0.07 | Average |
| 9 | 1.900 | 32.35 | -23.65 | 56.00 | 32.14 | 0.10 | 0.11 | QP |
| 10 | 1.900 | 23.87 | -22.13 | 46.00 | 23.66 | 0.10 | 0.11 | Average |
| 11 | 3.161 | 34.32 | -21.68 | 56.00 | 34.10 | 0.10 | 0.12 | QP |
| 12 | 3.161 | 22.70 | -23.30 | 46.00 | 22.48 | 0.10 | 0.12 | Average |

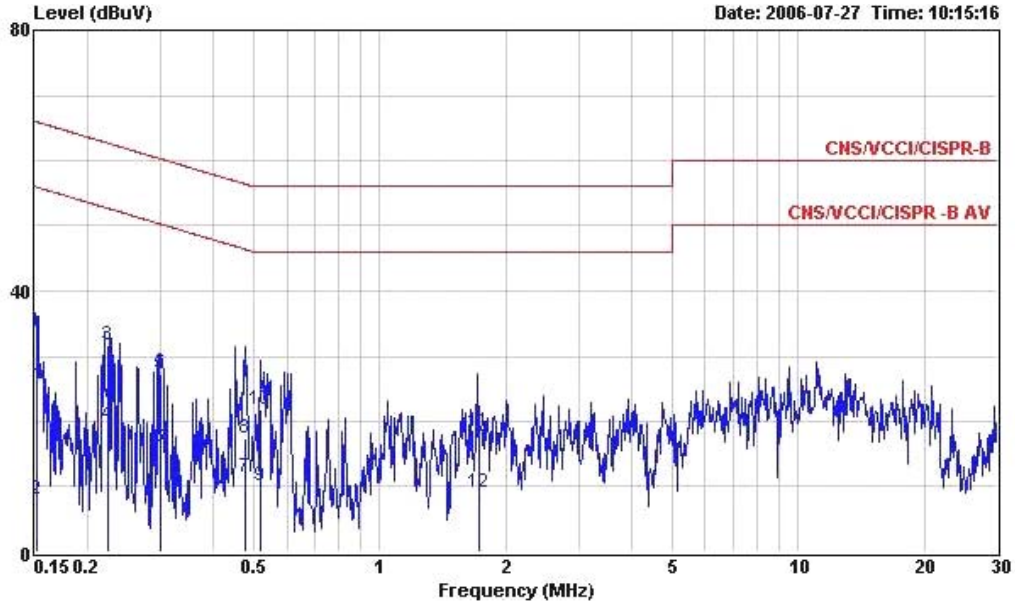
- Temperature : 24 °C
- Relating Humidity : 51 %
- Test Enginner : James
- Test Mode : Mode 2

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




Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : GSM850/GSM900/DCS1800/PCS1900/Bluetooth /WLAN
Power : 120V/60Hz
Model :
Memo : PCS1900 Idle Mode + Earphone + BT Link + WLAN
Memo : Link + MPEG4 + Adapter

| | Freq | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.150 | 33.74 | -32.26 | 66.00 | 33.59 | 0.10 | 0.05 | QP |
| 2 | 0.150 | 21.00 | -35.00 | 56.00 | 20.85 | 0.10 | 0.05 | Average |
| 3 | 0.298 | 29.07 | -31.24 | 60.31 | 28.90 | 0.10 | 0.07 | QP |
| 4 | 0.298 | 21.74 | -28.57 | 50.31 | 21.57 | 0.10 | 0.07 | Average |
| 5 | 0.454 | 26.96 | -29.84 | 56.80 | 26.79 | 0.10 | 0.07 | QP |
| 6 | 0.454 | 16.41 | -30.39 | 46.80 | 16.24 | 0.10 | 0.07 | Average |
| 7 | 0.530 | 32.18 | -23.82 | 56.00 | 32.01 | 0.10 | 0.07 | QP |
| 8 | 0.530 | 23.88 | -22.12 | 46.00 | 23.71 | 0.10 | 0.07 | Average |
| 9 | 0.595 | 27.81 | -28.19 | 56.00 | 27.65 | 0.10 | 0.06 | QP |
| 10 | 0.595 | 20.51 | -25.49 | 46.00 | 20.35 | 0.10 | 0.06 | Average |
| 11 | 0.748 | 19.55 | -36.45 | 56.00 | 19.40 | 0.10 | 0.05 | QP |
| 12 | 0.748 | 15.53 | -30.47 | 46.00 | 15.38 | 0.10 | 0.05 | Average |

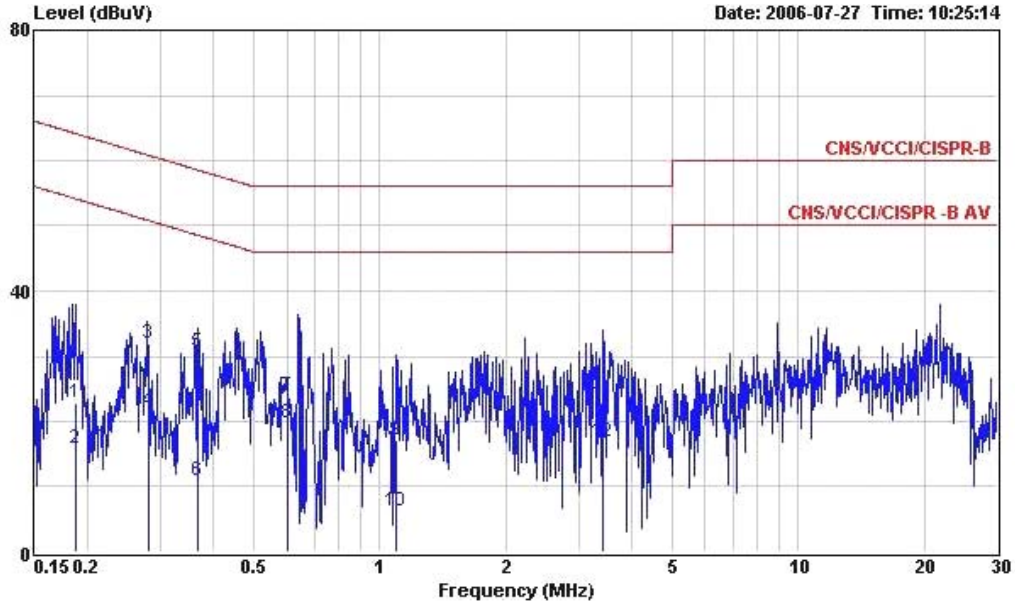



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : GSM850/GSM900/DCS1800/PCS1900/Bluetooth
: /WLAN
Power : 120V/60Hz
Model :
Memo : PCS1900 Idle Mode + Earphone + BT Link + WLAN
Memo : Link + MPEG4 + Adapter

| | Freq | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.152 | 33.68 | -32.21 | 65.89 | 33.53 | 0.10 | 0.05 | QP |
| 2 | 0.152 | 8.14 | -47.75 | 55.89 | 7.99 | 0.10 | 0.05 | Average |
| 3 | 0.224 | 31.60 | -31.08 | 62.68 | 31.44 | 0.10 | 0.06 | QP |
| 4 | 0.224 | 19.57 | -33.11 | 52.68 | 19.41 | 0.10 | 0.06 | Average |
| 5 | 0.298 | 27.37 | -32.92 | 60.29 | 27.20 | 0.10 | 0.07 | QP |
| 6 | 0.298 | 16.07 | -34.22 | 50.29 | 15.90 | 0.10 | 0.07 | Average |
| 7 | 0.479 | 11.36 | -35.00 | 46.36 | 11.19 | 0.10 | 0.07 | Average |
| 8 | 0.479 | 17.41 | -38.95 | 56.36 | 17.24 | 0.10 | 0.07 | QP |
| 9 | 0.518 | 10.16 | -35.84 | 46.00 | 9.99 | 0.10 | 0.07 | Average |
| 10 | 0.518 | 21.93 | -34.07 | 56.00 | 21.76 | 0.10 | 0.07 | QP |
| 11 | 1.720 | 18.31 | -37.69 | 56.00 | 18.11 | 0.10 | 0.10 | QP |
| 12 | 1.720 | 9.21 | -36.79 | 46.00 | 9.01 | 0.10 | 0.10 | Average |

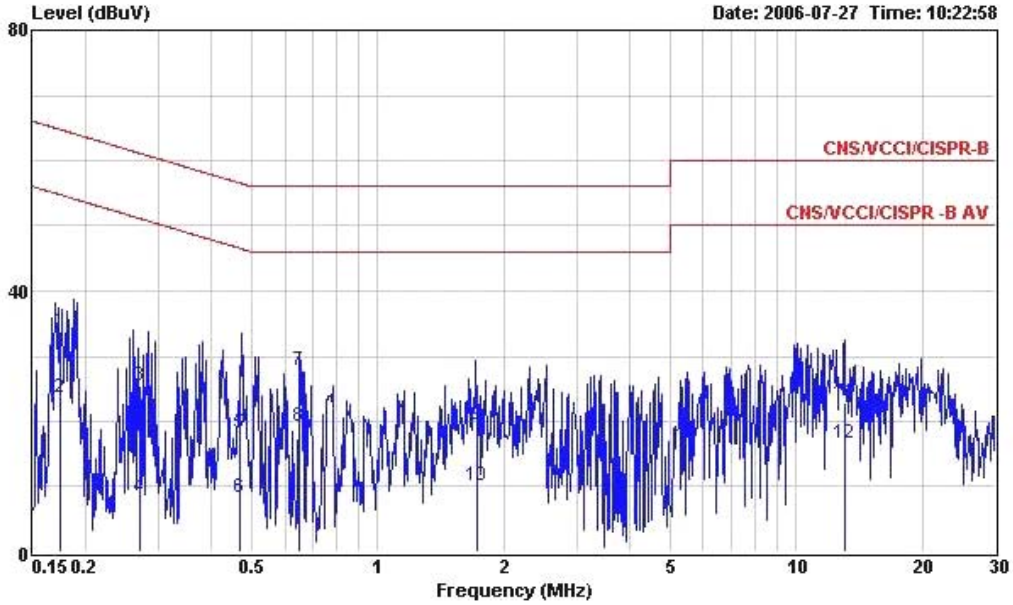
- Temperature : 24 °C
- Relating Humidity : 51 %
- Test Enginner : James
- Test Mode : Mode 3

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




Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
EUT : GSM850/GSM900/DCS1800/PCS1900/Bluetooth /WLAN
Power : 120V/60Hz
Model :
Memo : PCS1900 Idle Mode + Earphone + BT Link + WLAN
Memo : Link + Camera + Adapter

| | Freq | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.187 | 22.97 | -41.20 | 64.17 | 22.81 | 0.10 | 0.06 | QP |
| 2 | 0.187 | 15.80 | -38.37 | 54.17 | 15.64 | 0.10 | 0.06 | Average |
| 3 | 0.279 | 32.04 | -28.81 | 60.85 | 31.87 | 0.10 | 0.07 | QP |
| 4 | 0.279 | 21.63 | -29.22 | 50.85 | 21.46 | 0.10 | 0.07 | Average |
| 5 | 0.367 | 30.59 | -27.98 | 58.57 | 30.41 | 0.10 | 0.08 | QP |
| 6 | 0.367 | 11.03 | -37.54 | 48.57 | 10.85 | 0.10 | 0.08 | Average |
| 7 | 0.602 | 23.78 | -32.22 | 56.00 | 23.62 | 0.10 | 0.06 | QP |
| 8 | 0.602 | 19.80 | -26.20 | 46.00 | 19.64 | 0.10 | 0.06 | Average |
| 9 | 1.090 | 17.16 | -38.84 | 56.00 | 17.01 | 0.10 | 0.05 | QP |
| 10 | 1.090 | 6.33 | -39.67 | 46.00 | 6.18 | 0.10 | 0.05 | Average |
| 11 | 3.400 | 22.52 | -33.48 | 56.00 | 22.22 | 0.18 | 0.12 | QP |
| 12 | 3.400 | 16.87 | -29.13 | 46.00 | 16.57 | 0.18 | 0.12 | Average |




Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
EUT : GSM850/GSM900/DCS1800/PCS1900/Bluetooth
: /WLAN
Power : 120V/60Hz
Model :
Memo : PCS1900 Idle Mode + Earphone + BT Link + WLAN
Memo : Link + Camera + Adapter

| | Freq | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.174 | 33.81 | -30.94 | 64.75 | 33.65 | 0.10 | 0.06 | QP |
| 2 | 0.174 | 23.77 | -30.98 | 54.75 | 23.61 | 0.10 | 0.06 | Average |
| 3 | 0.269 | 25.35 | -35.79 | 61.14 | 25.18 | 0.10 | 0.07 | QP |
| 4 | 0.269 | 8.37 | -42.77 | 51.14 | 8.20 | 0.10 | 0.07 | Average |
| 5 | 0.467 | 18.21 | -38.35 | 56.56 | 18.04 | 0.10 | 0.07 | QP |
| 6 | 0.467 | 8.25 | -38.31 | 46.56 | 8.08 | 0.10 | 0.07 | Average |
| 7 | 0.650 | 27.73 | -28.27 | 56.00 | 27.57 | 0.10 | 0.06 | QP |
| 8 | 0.650 | 19.34 | -26.66 | 46.00 | 19.18 | 0.10 | 0.06 | Average |
| 9 | 1.720 | 19.38 | -36.62 | 56.00 | 19.18 | 0.10 | 0.10 | QP |
| 10 | 1.720 | 10.21 | -35.79 | 46.00 | 10.01 | 0.10 | 0.10 | Average |
| 11 | 13.060 | 22.94 | -37.06 | 60.00 | 22.53 | 0.26 | 0.15 | QP |
| 12 | 13.060 | 16.66 | -33.34 | 50.00 | 16.25 | 0.26 | 0.15 | Average |

## 5.11 Radiated Emission Measurement

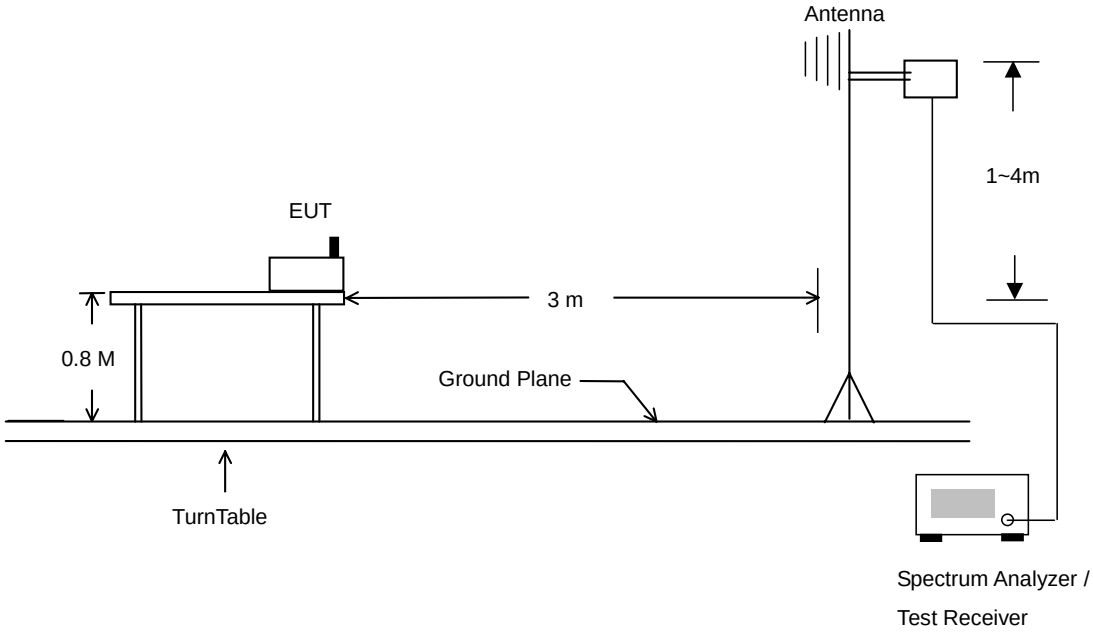
5.11.1 Measuring Instruments

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.

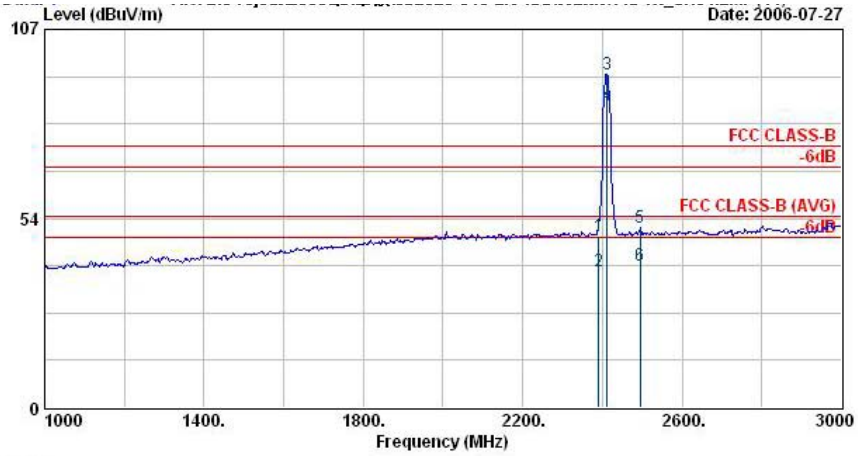
5.11.3 Typical Test Setup Layout of Radiated Emission



5.11.4 Test Data

- Temperature : 26°C
- Relating Humidity : 52%
- Test Enginner : Sam
- Test Mode : Mode 1
- Polarization : Horizontal

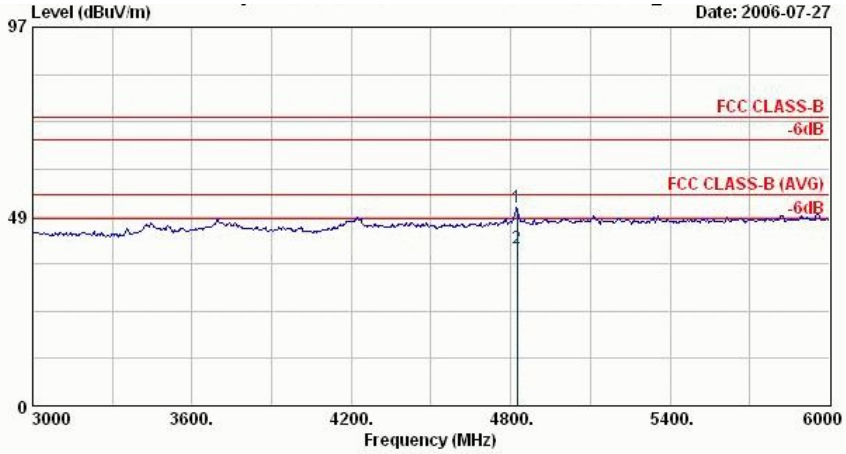
**■ The test that passed at minimum margin was marked by the frame in the following table.**




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH01;2412MHz
Plane : E1

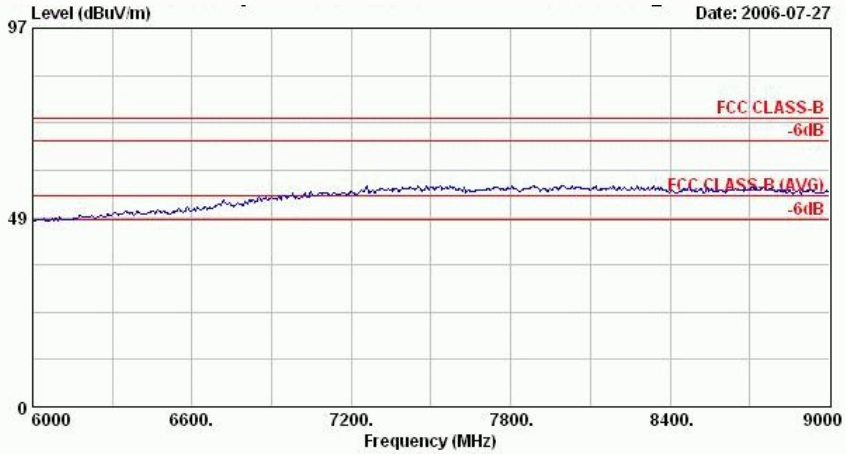
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 | 2390.00 | 48.39 | -25.61 | 74.00 | 49.33 | 30.26 | 4.26 | 35.46 | 100 | 0 | Peak |
| 2 | 2390.00 | 38.78 | -15.22 | 54.00 | 39.72 | 30.26 | 4.26 | 35.46 | 100 | 353 | Average |
| 3 @ | 2412.00 | 94.41 | | | 95.33 | 30.27 | 4.26 | 35.46 | 100 | 0 | Peak |
| 4 @ | 2412.00 | 85.46 | | | 86.39 | 30.27 | 4.26 | 35.46 | 100 | 353 | Average |
| 5 | 2494.00 | 50.79 | -23.21 | 74.00 | 51.63 | 30.30 | 4.39 | 35.53 | 100 | 0 | Peak |
| 6 @ | 2494.00 | 40.12 | -13.88 | 54.00 | 40.96 | 30.30 | 4.39 | 35.53 | 100 | 353 | Average |

Remark: #3 and #4 Fundamental Signal




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH01;2412MHz
Plane : E1

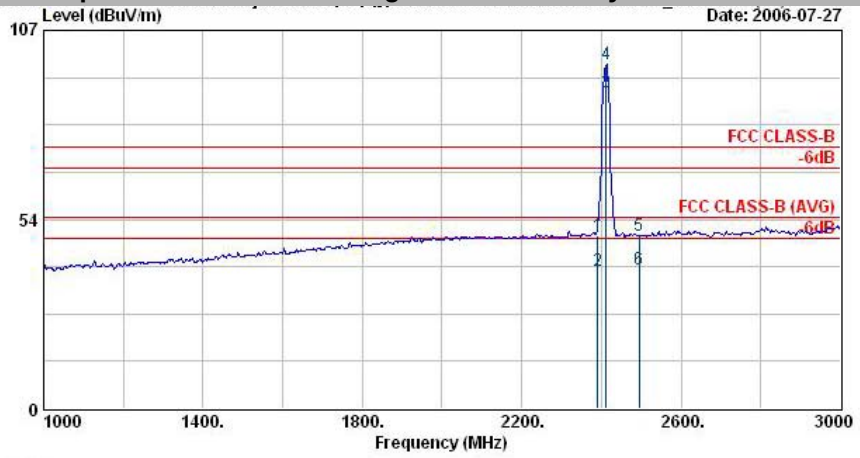
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 | 4824.00 | 50.88 | -23.12 | 74.00 | 47.81 | 32.94 | 6.24 | 36.12 | 200 | 0 | Peak |
| 2 @ | 4824.00 | 40.27 | -13.73 | 54.00 | 37.20 | 32.94 | 6.24 | 36.12 | 150 | 360 | Average |




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH01;2412MHz
Plane : E1

- Polarization : Vertical

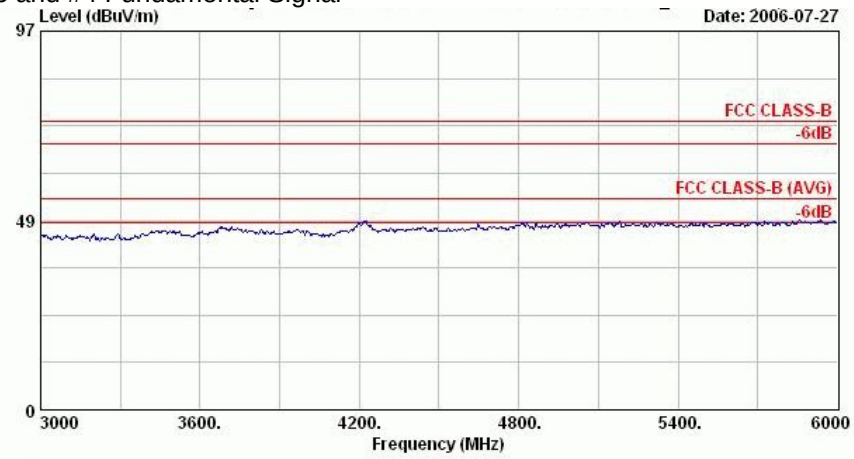
**■ The test that passed at minimum margin was marked by the frame in the following table.**



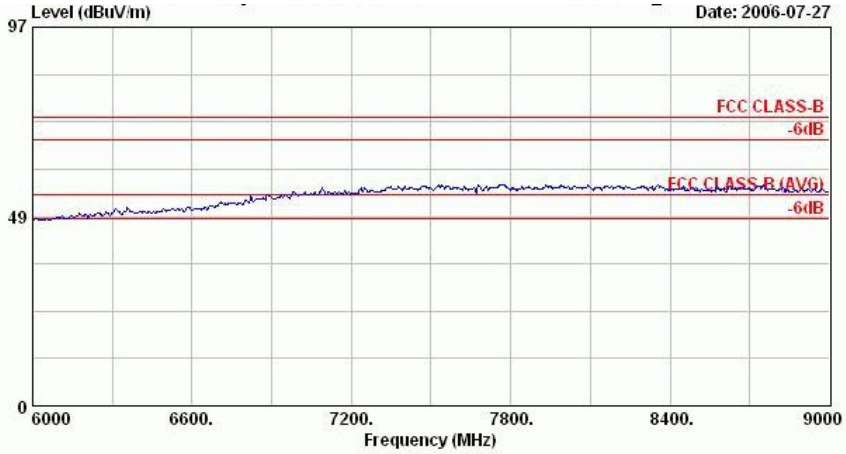

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH01;2412MHz
Plane : E1

| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 | 2390.00 | 48.81 | -25.19 | 74.00 | 49.75 | 30.26 | 4.26 | 35.46 | 100 | 360 | Peak |
| 2 | 2390.00 | 39.01 | -14.99 | 54.00 | 39.95 | 30.26 | 4.26 | 35.46 | 100 | 332 | Average |
| 3 @ | 2412.00 | 89.31 | | | 90.24 | 30.27 | 4.26 | 35.46 | 100 | 332 | Average |
| 4 @ | 2412.00 | 97.29 | | | 98.22 | 30.27 | 4.26 | 35.46 | 100 | 360 | Peak |
| 5 | 2494.00 | 48.92 | -25.08 | 74.00 | 49.76 | 30.30 | 4.39 | 35.53 | 100 | 360 | Peak |
| 6 @ | 2494.00 | 39.35 | -14.65 | 54.00 | 40.19 | 30.30 | 4.39 | 35.53 | 100 | 332 | Average |

Remark: #3 and #4 Fundamental Signal



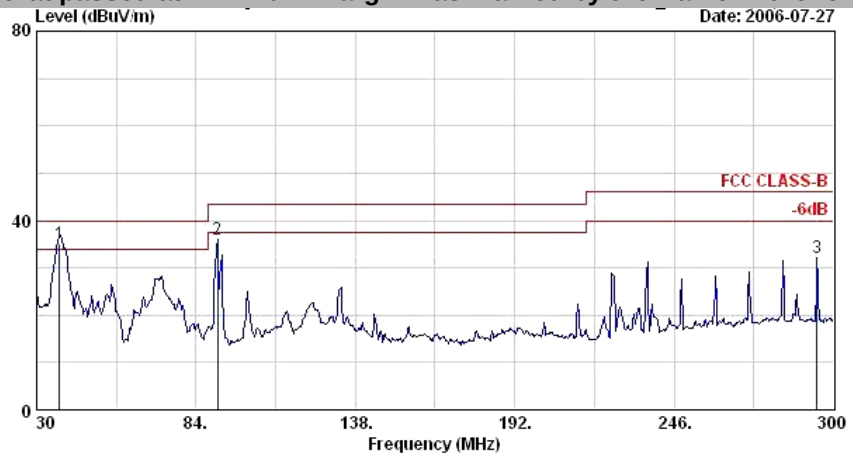

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH01;2412MHz
Plane : E1




Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH01;2412MHz
Plane : E1

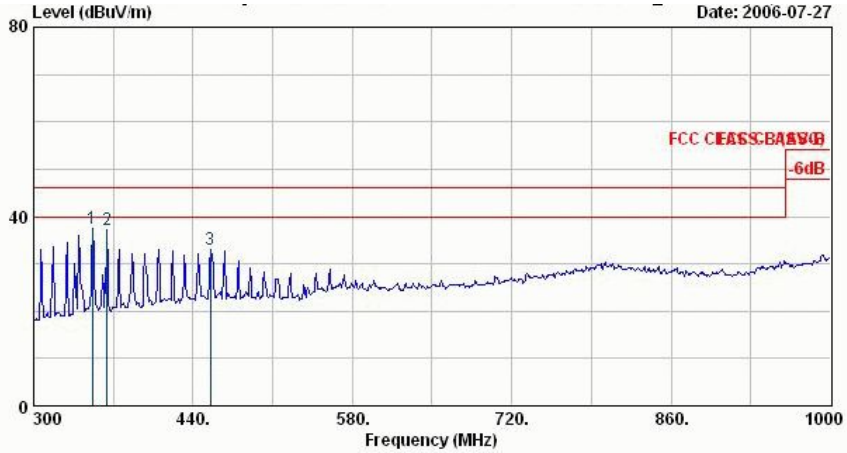
- Test Mode : Mode 2
- Polarization : Horizontal

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



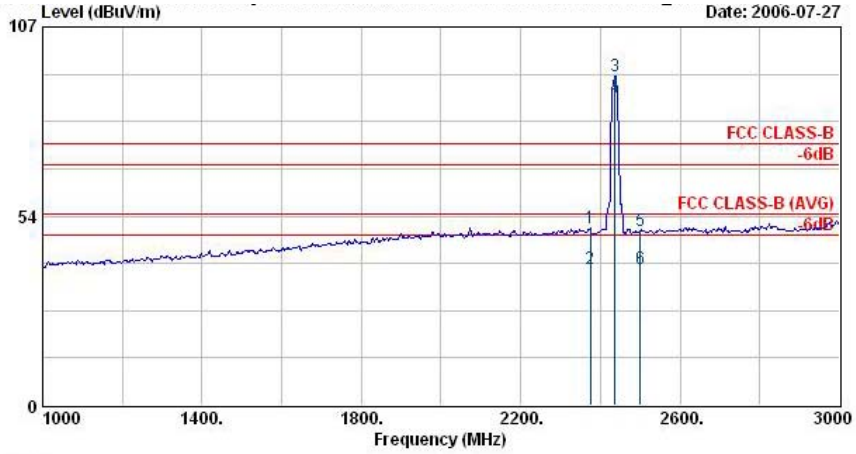

Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

| | 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 @ | 37.83 | 35.16 | -4.84 | 40.00 | 46.90 | 15.73 | 1.19 | 28.66 | 112 | 156 | QP |
| 2 @ | 91.29 | 35.87 | -7.63 | 43.50 | 53.81 | 9.18 | 1.68 | 28.81 | 400 | 0 | Peak |
| 3 @ | 294.33 | 32.24 | -13.76 | 46.00 | 44.97 | 12.94 | 3.24 | 28.90 | 400 | 0 | Peak |




Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

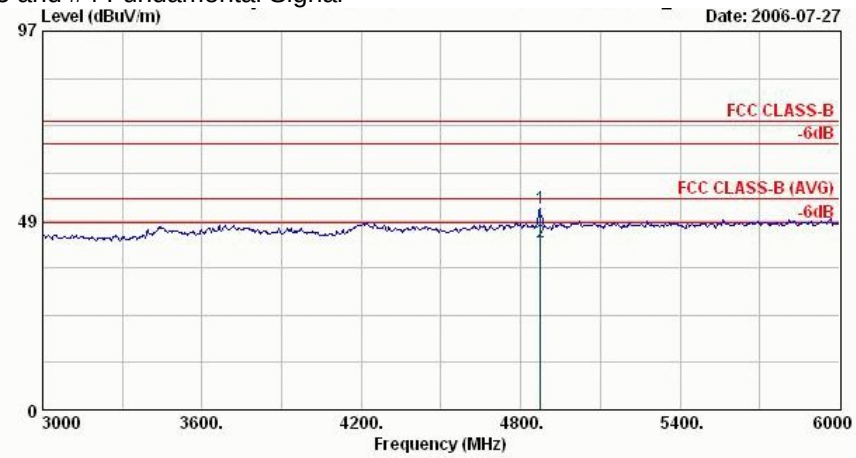
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 @ | 351.80 | 37.41 | -8.59 | 46.00 | 48.36 | 14.48 | 3.59 | 29.02 | 100 | 0 | Peak |
| 2 @ | 364.40 | 37.25 | -8.75 | 46.00 | 47.76 | 14.85 | 3.69 | 29.05 | 100 | 0 | Peak |
| 3 @ | 455.40 | 33.05 | -12.95 | 46.00 | 41.36 | 16.50 | 4.01 | 28.81 | 100 | 0 | Peak |




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

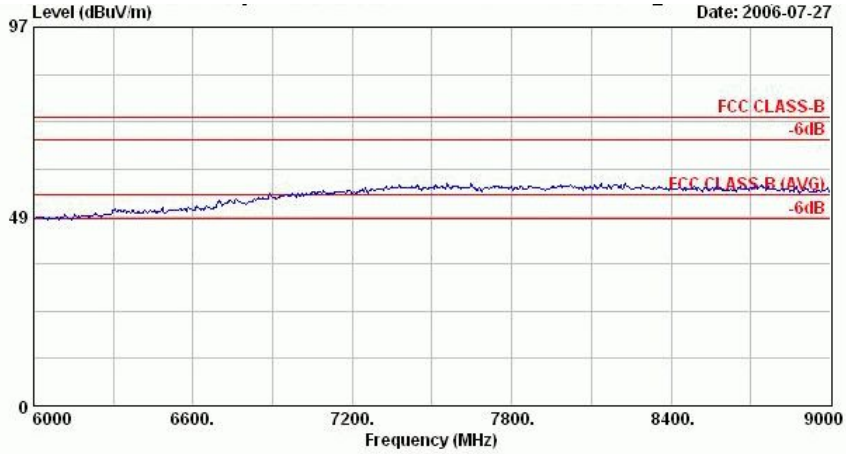
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 @ | 2374.00 | 50.20 | -23.80 | 74.00 | 51.15 | 30.25 | 4.23 | 35.44 | 100 | 0 | Peak |
| 2 @ | 2374.00 | 38.60 | -15.40 | 54.00 | 39.56 | 30.25 | 4.23 | 35.44 | 100 | 354 | Average |
| 3 @ | 2437.00 | 93.18 | | | 94.08 | 30.28 | 4.29 | 35.47 | 100 | 0 | Peak |
| 4 @ | 2437.00 | 87.24 | | | 88.14 | 30.28 | 4.29 | 35.47 | 100 | 354 | Average |
| 5 @ | 2500.00 | 49.26 | -24.74 | 74.00 | 50.10 | 30.30 | 4.39 | 35.53 | 100 | 0 | Peak |
| 6 @ | 2500.00 | 38.71 | -15.29 | 54.00 | 39.55 | 30.30 | 4.39 | 35.53 | 100 | 354 | Average |

Remark: #3 and #4 Fundamental Signal




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

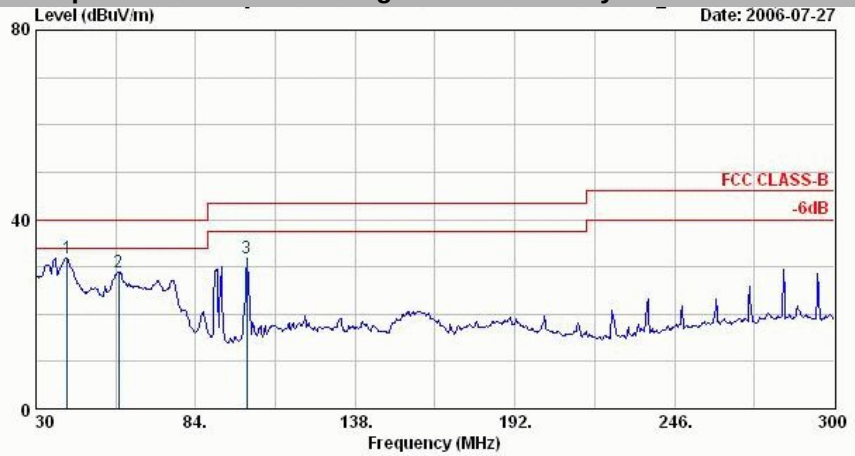
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 @ | 4874.00 | 51.64 | -22.36 | 74.00 | 48.36 | 33.14 | 6.30 | 36.16 | 200 | 0 | Peak |
| 2 @ | 4874.00 | 42.77 | -11.23 | 54.00 | 39.49 | 33.14 | 6.30 | 36.16 | 160 | 170 | Average |




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

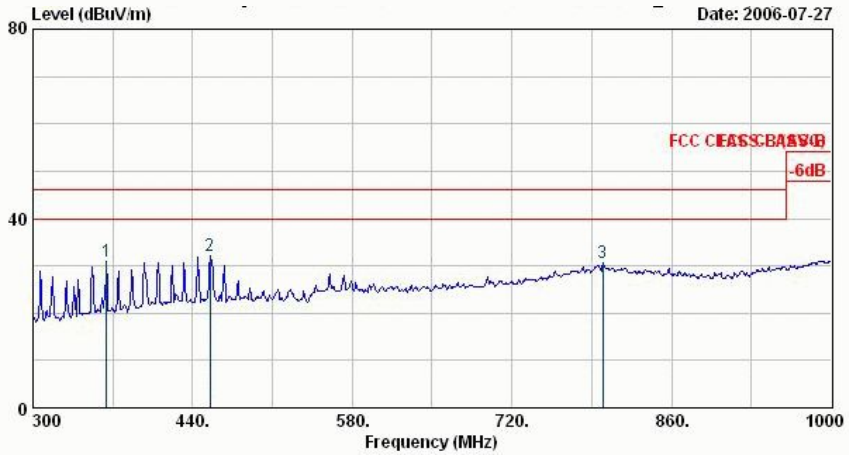
- Polarization : Vertical

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



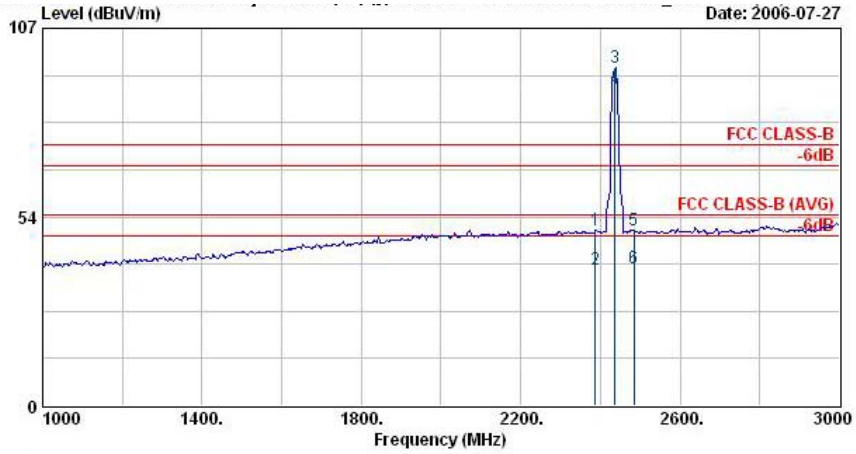

Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

| | 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 @ | 40.53 | 31.94 | -8.06 | 40.00 | 45.11 | 14.28 | 1.20 | 28.65 | 154 | 223 | Peak |
| 2 @ | 58.08 | 28.94 | -11.06 | 40.00 | 49.17 | 7.21 | 1.20 | 28.64 | 400 | 0 | Peak |
| 3 @ | 101.28 | 31.84 | -11.66 | 43.50 | 48.49 | 10.57 | 1.65 | 28.87 | 400 | 0 | Peak |




Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

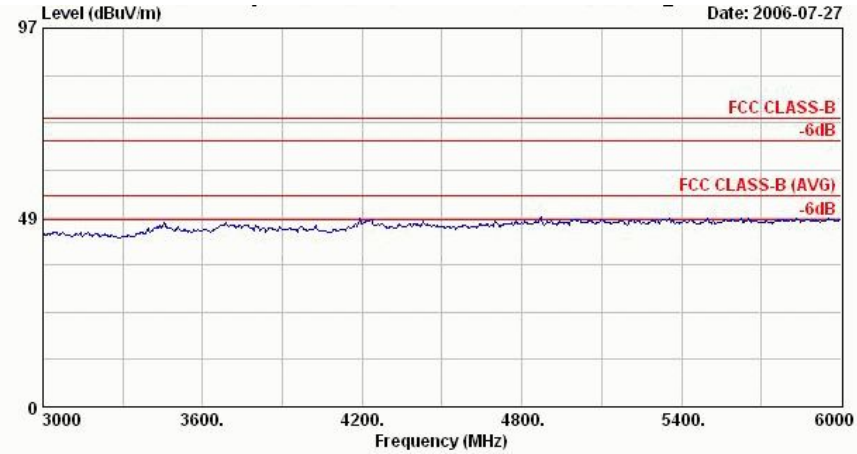
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 @ | 364.40 | 31.03 | -14.97 | 46.00 | 41.54 | 14.85 | 3.69 | 29.05 | 100 | 0 | Peak |
| 2 @ | 455.40 | 31.99 | -14.01 | 46.00 | 40.29 | 16.50 | 4.01 | 28.81 | 100 | 0 | Peak |
| 3 @ | 799.80 | 30.58 | -15.42 | 46.00 | 31.93 | 21.90 | 5.62 | 28.87 | 100 | 0 | Peak |



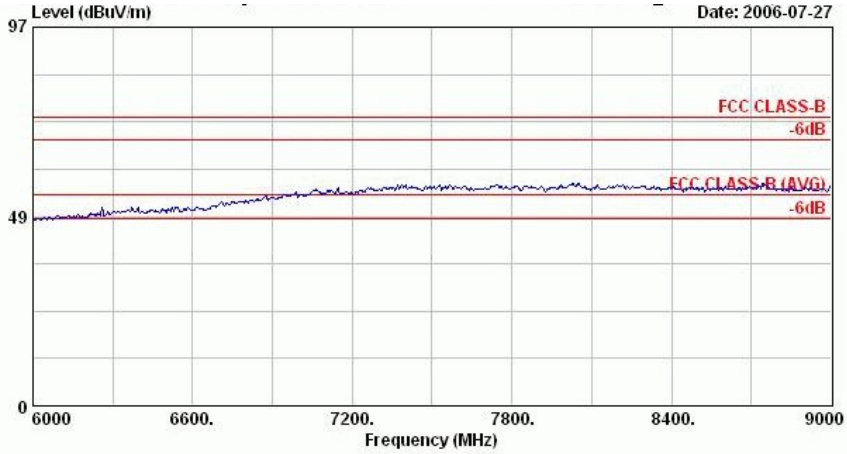

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

| | 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 @ | 2388.00 | 49.75 | -24.25 | 74.00 | 50.70 | 30.26 | 4.23 | 35.44 | 100 | 0 | Peak |
| 2 @ | 2388.00 | 38.57 | -15.43 | 54.00 | 39.52 | 30.26 | 4.23 | 35.44 | 100 | 267 | Average |
| 3 @ | 2437.00 | 95.76 | | | 96.66 | 30.28 | 4.29 | 35.47 | 100 | 0 | Peak |
| 4 @ | 2437.00 | 90.01 | | | 90.91 | 30.28 | 4.29 | 35.47 | 100 | 267 | Average |
| 5 @ | 2484.00 | 49.81 | -24.19 | 74.00 | 50.67 | 30.29 | 4.36 | 35.51 | 100 | 0 | Peak |
| 6 @ | 2484.00 | 38.93 | -15.07 | 54.00 | 39.79 | 30.29 | 4.36 | 35.51 | 100 | 267 | Average |

Remark: #3 and #4 Fundamental Signal



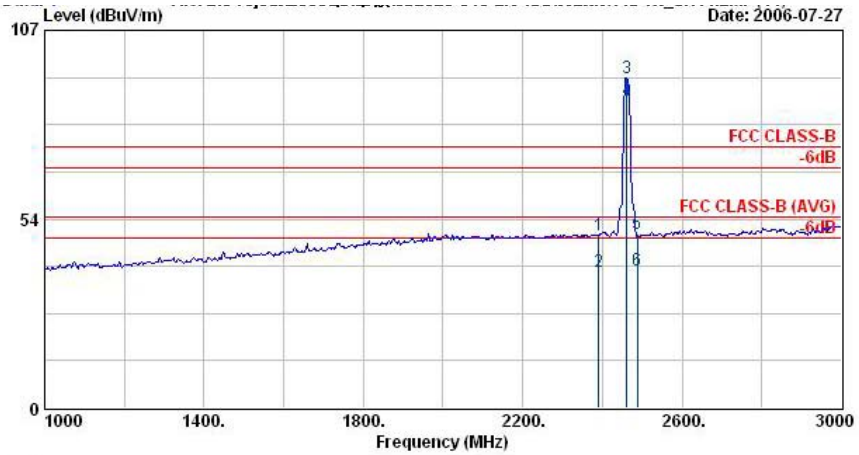

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1




Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH06;2437MHz
Plane : E1

- Test Mode : Mode 3
- Polarization : Horizontal

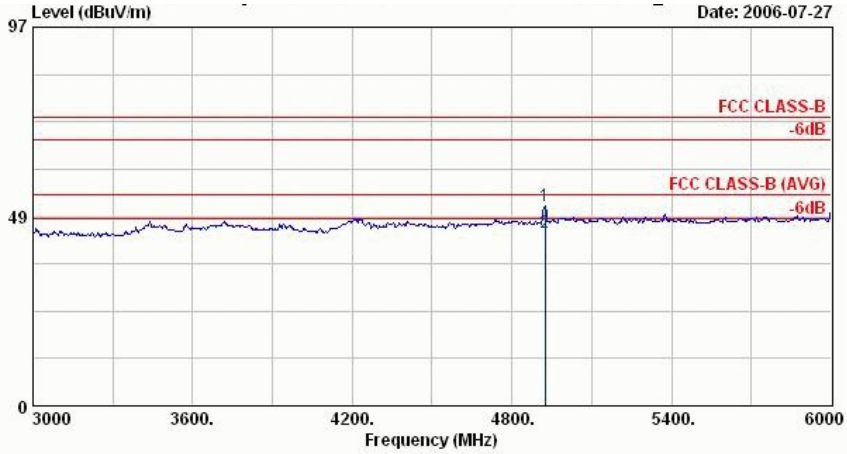
**■ The test that passed at minimum margin was marked by the frame in the following table.**




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E1

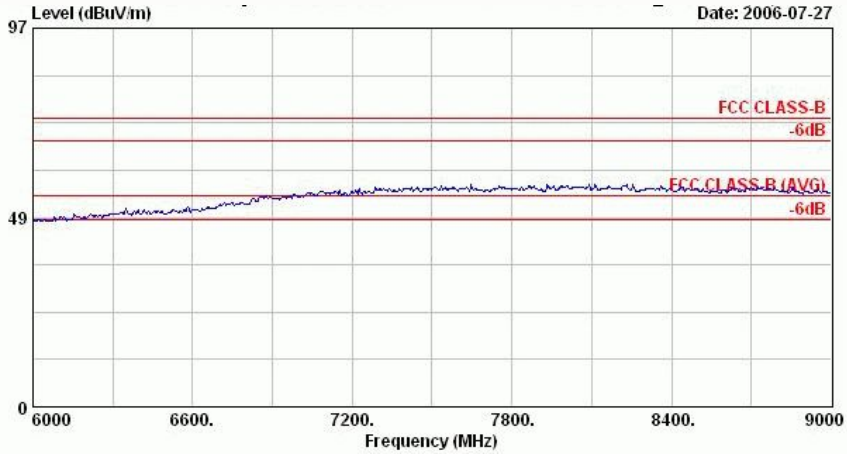
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 | 2390.00 | 49.11 | -24.89 | 74.00 | 50.05 | 30.26 | 4.26 | 35.46 | 100 | 0 | Peak |
| 2 | 2390.00 | 38.42 | -15.58 | 54.00 | 39.36 | 30.26 | 4.26 | 35.46 | 100 | 353 | Average |
| 3 @ | 2462.00 | 93.30 | | | 94.18 | 30.29 | 4.33 | 35.49 | 100 | 0 | Peak |
| 4 @ | 2462.00 | 86.96 | | | 87.84 | 30.29 | 4.33 | 35.49 | 100 | 353 | Average |
| 5 | 2488.00 | 49.15 | -24.85 | 74.00 | 50.00 | 30.30 | 4.36 | 35.51 | 100 | 0 | Peak |
| 6 | 2488.00 | 38.90 | -15.10 | 54.00 | 39.75 | 30.30 | 4.36 | 35.51 | 100 | 353 | Average |

Remark: #3 and #4 Fundamental Signal




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E1

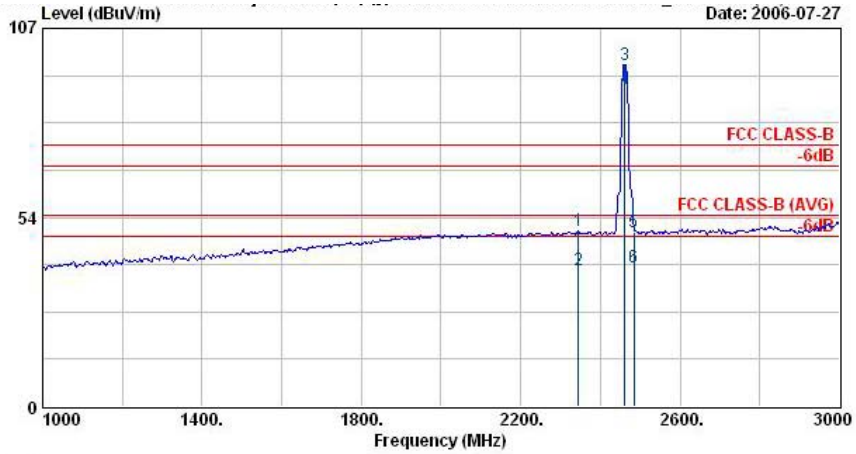
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 | 4924.00 | 51.38 | -22.62 | 74.00 | 47.89 | 33.34 | 6.36 | 36.21 | 200 | 0 | Peak |
| 2 @ | 4924.00 | 44.44 | -9.56 | 54.00 | 40.95 | 33.34 | 6.36 | 36.21 | 162 | 204 | Average |




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E1

- Polarization : Vertical

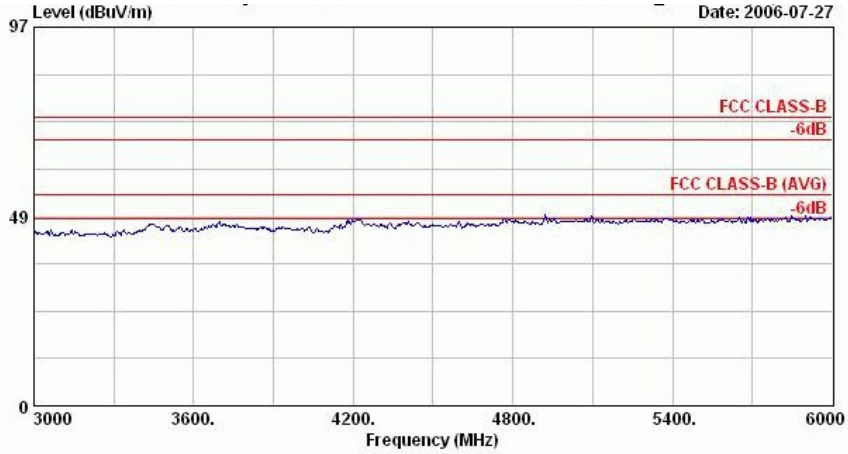
**The test that passed at minimum margin was marked by the frame in the following table.**



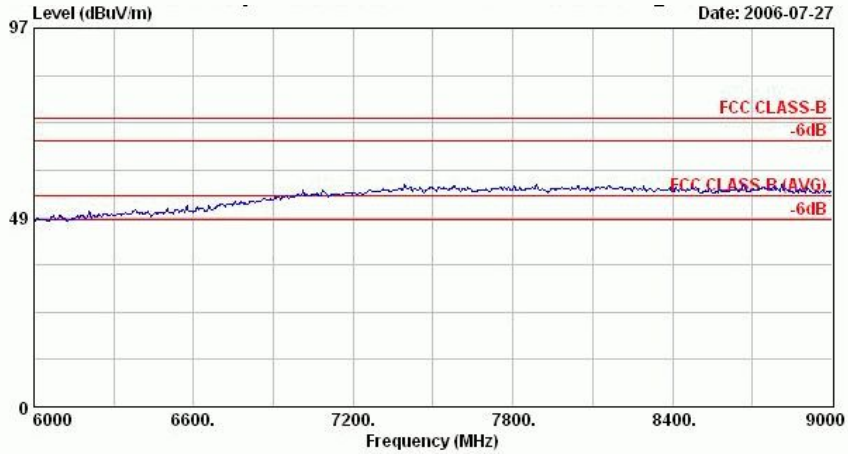

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E1

| | 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 | 2344.00 | 49.64 | -24.36 | 74.00 | 50.62 | 30.24 | 4.20 | 35.42 | 100 | 360 | Peak |
| 2 | 2344.00 | 38.51 | -15.49 | 54.00 | 39.49 | 30.24 | 4.20 | 35.42 | 100 | 266 | Average |
| 3 @ | 2462.00 | 96.62 | | | 97.50 | 30.29 | 4.33 | 35.49 | 100 | 360 | Peak |
| 4 @ | 2462.00 | 89.96 | | | 90.84 | 30.29 | 4.33 | 35.49 | 100 | 266 | Average |
| 5 | 2483.50 | 49.30 | -24.70 | 74.00 | 50.16 | 30.29 | 4.36 | 35.51 | 100 | 360 | Peak |
| 6 | 2483.50 | 39.22 | -14.78 | 54.00 | 40.08 | 30.29 | 4.36 | 35.51 | 100 | 266 | Average |

Remark: #3 and #4 Fundamental Signal



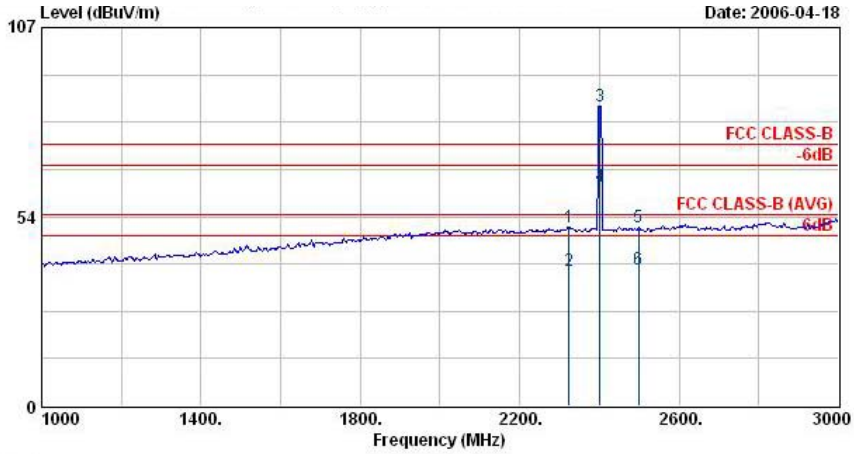

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E1




Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad band Mobile Phone
EUT : (11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : 11b Tx_CH11;2462MHz
Plane : E1

- Test Mode : Mode 4
- Polarization : Horizontal

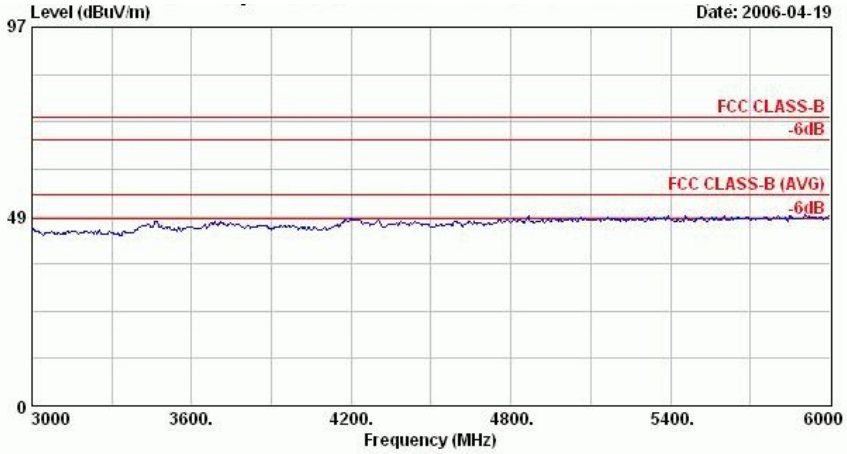
**■ The test that passed at minimum margin was marked by the frame in the following table.**



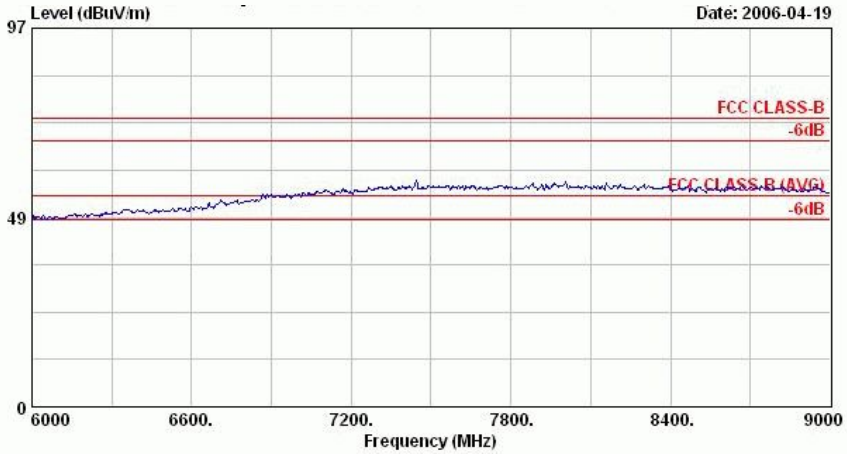

Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH00,2402MHz
Plane : E2

| | 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 @ | 2324.00 | 50.62 | -23.38 | 74.00 | 51.63 | 30.23 | 4.17 | 35.40 | 100 | 360 | Peak |
| 2 @ | 2324.00 | 38.36 | -15.64 | 54.00 | 39.36 | 30.23 | 4.17 | 35.40 | 106 | 334 | Average |
| 3 @ | 2402.00 | 84.87 | | | 85.81 | 30.26 | 4.26 | 35.46 | 100 | 360 | Peak |
| 4 @ | 2402.00 | 62.00 | | | 62.94 | 30.26 | 4.26 | 35.46 | 106 | 334 | Average |
| 5 @ | 2498.00 | 50.63 | -23.37 | 74.00 | 51.47 | 30.30 | 4.39 | 35.53 | 100 | 360 | Peak |
| 6 @ | 2498.00 | 38.50 | -15.50 | 54.00 | 39.34 | 30.30 | 4.39 | 35.53 | 106 | 334 | Average |

Remark: #3 and #4 Fundamental Signal



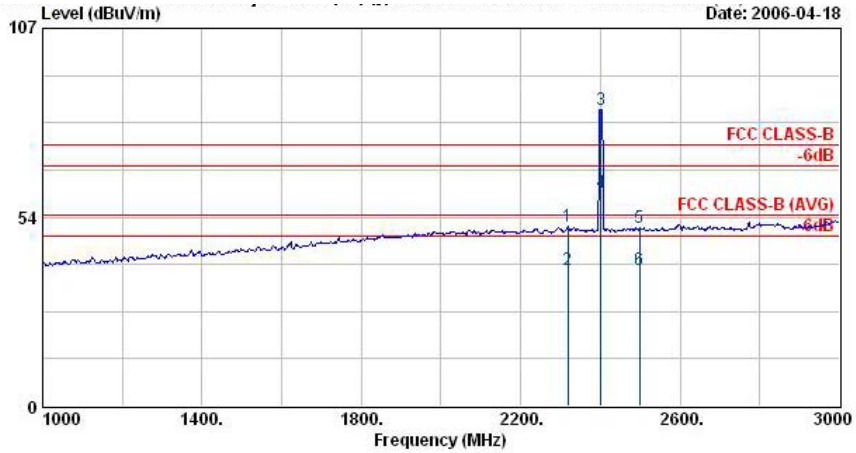

Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH00,2402MHz
Plane : E2




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH00,2402MHz
Plane : E2

- Polarization : Vertical

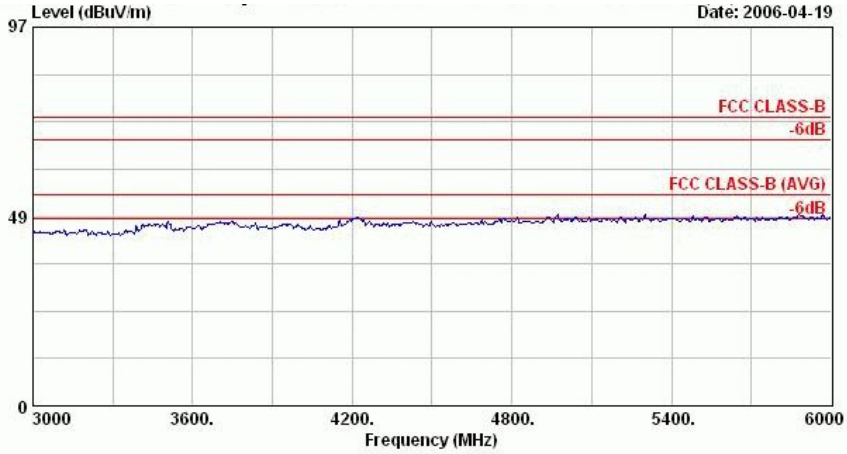
**■ The test that passed at minimum margin was marked by the frame in the following table.**



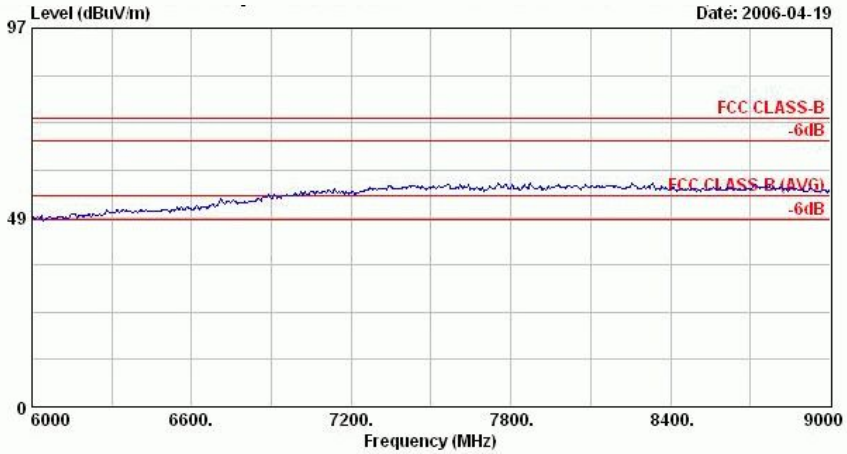

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH00,2402MHz
Plane : E2

| | 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 @ | 2318.00 | 50.94 | -23.06 | 74.00 | 51.94 | 30.23 | 4.17 | 35.40 | 100 | 0 | Peak |
| 2 @ | 2318.00 | 38.50 | -15.50 | 54.00 | 39.50 | 30.23 | 4.17 | 35.40 | 100 | 102 | Average |
| 3 @ | 2402.00 | 84.08 | | | 85.02 | 30.26 | 4.26 | 35.46 | 100 | 0 | Peak |
| 4 @ | 2402.00 | 60.65 | | | 61.59 | 30.26 | 4.26 | 35.46 | 100 | 102 | Average |
| 5 @ | 2498.00 | 50.61 | -23.39 | 74.00 | 51.45 | 30.30 | 4.39 | 35.53 | 100 | 0 | Peak |
| 6 @ | 2498.00 | 38.57 | -15.43 | 54.00 | 39.41 | 30.30 | 4.39 | 35.53 | 100 | 102 | Average |

Remark: #3 and #4 Fundamental Signal



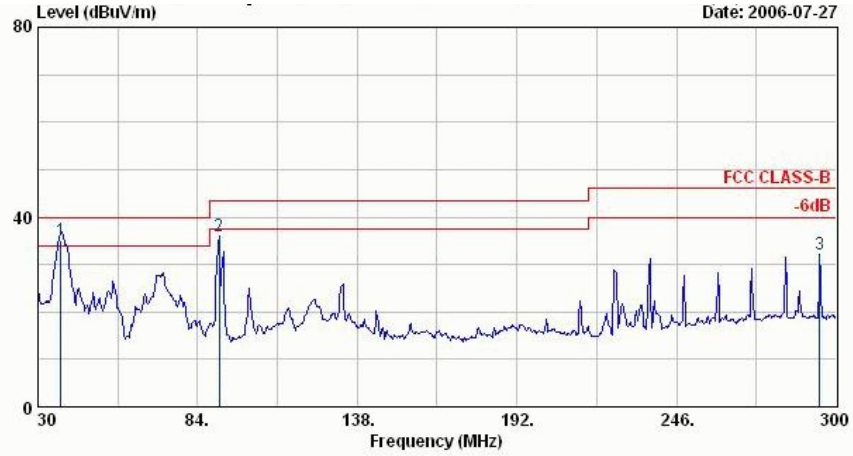

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH00,2402MHz
Plane : E2




Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH00,2402MHz
Plane : E2

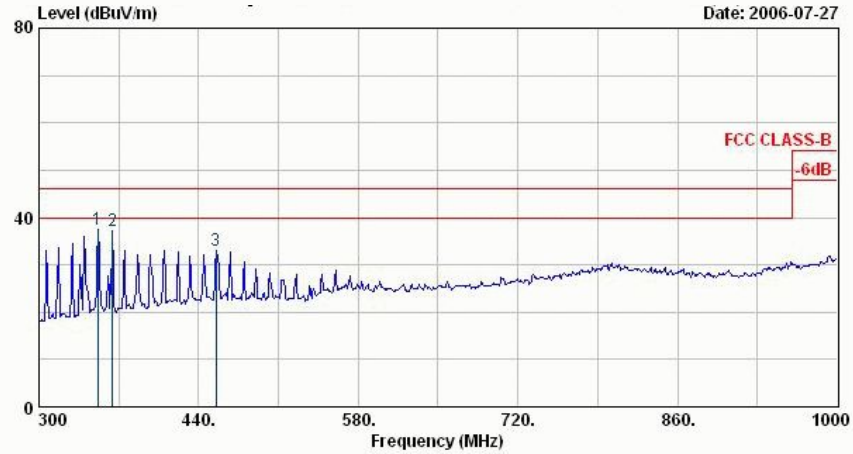
- Test Mode : Mode 5
- Polarization : Horizontal

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



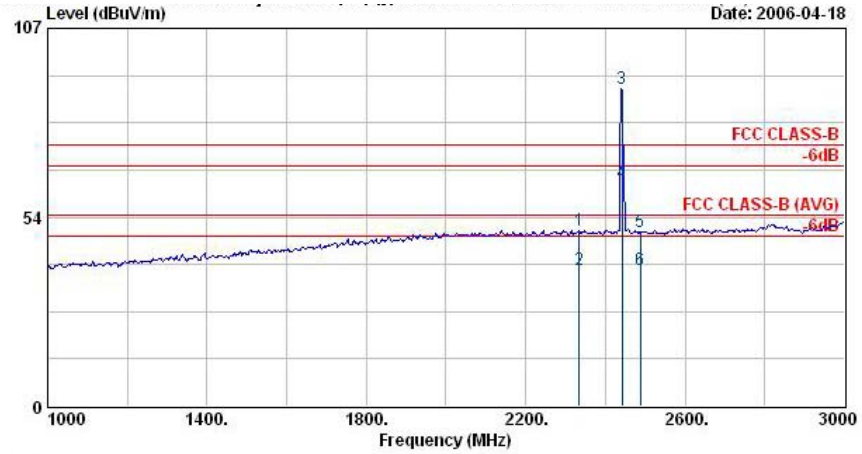

Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : Quad band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2

| | 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 @ | 37.83 | 35.16 | -4.84 | 40.00 | 46.90 | 15.73 | 1.19 | 28.66 | 112 | 156 | QP |
| 2 @ | 91.29 | 35.87 | -7.63 | 43.50 | 53.81 | 9.18 | 1.68 | 28.81 | 400 | 0 | Peak |
| 3 @ | 294.33 | 32.24 | -13.76 | 46.00 | 44.97 | 12.94 | 3.24 | 28.90 | 400 | 0 | Peak |




Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : Quad band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2

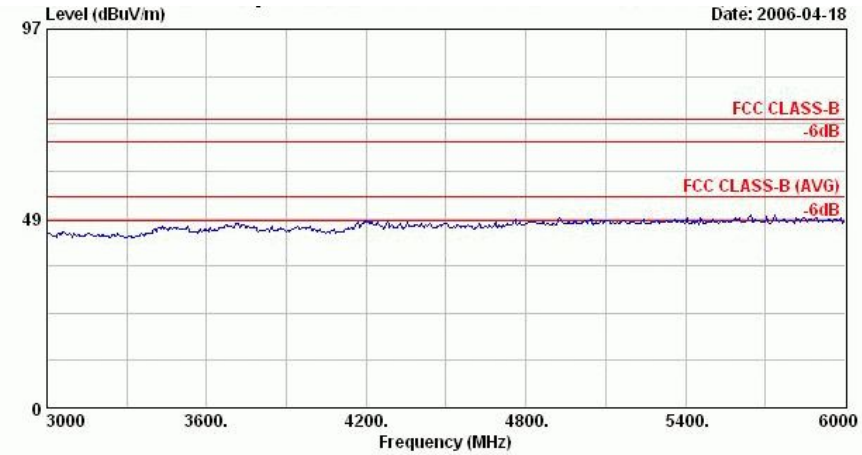
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 @ | 351.80 | 37.41 | -8.59 | 46.00 | 48.36 | 14.48 | 3.59 | 29.02 | 100 | 0 | Peak |
| 2 @ | 364.40 | 37.25 | -8.75 | 46.00 | 47.76 | 14.85 | 3.69 | 29.05 | 100 | 0 | Peak |
| 3 @ | 455.40 | 33.05 | -12.95 | 46.00 | 41.36 | 16.50 | 4.01 | 28.81 | 100 | 0 | Peak |



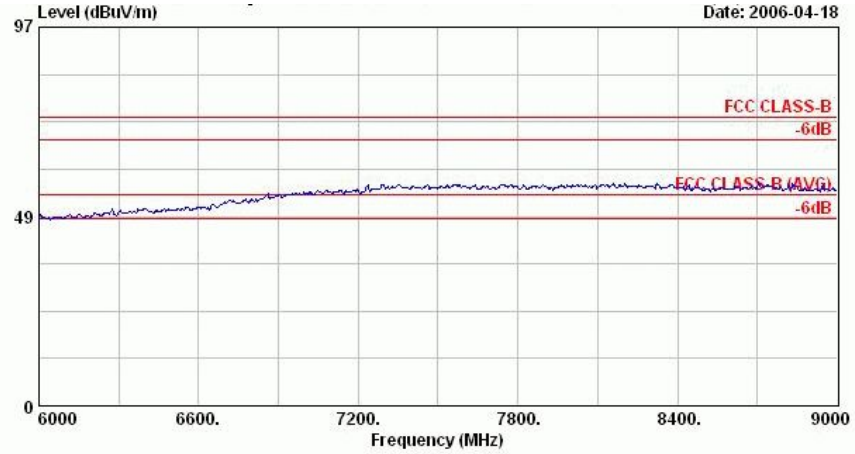

Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2

| | 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 @ | 2334.00 | 49.69 | -24.31 | 74.00 | 50.70 | 30.23 | 4.17 | 35.40 | 100 | 0 | Peak |
| 2 @ | 2334.00 | 38.61 | -15.39 | 54.00 | 39.61 | 30.23 | 4.17 | 35.40 | 100 | 332 | Average |
| 3 @ | 2441.00 | 89.93 | | | 90.83 | 30.28 | 4.29 | 35.47 | 100 | 0 | Peak |
| 4 @ | 2441.00 | 63.33 | | | 64.22 | 30.28 | 4.33 | 35.49 | 100 | 332 | Average |
| 5 @ | 2488.00 | 49.49 | -24.51 | 74.00 | 50.34 | 30.30 | 4.36 | 35.51 | 100 | 0 | Peak |
| 6 @ | 2488.00 | 38.59 | -15.41 | 54.00 | 39.44 | 30.30 | 4.36 | 35.51 | 100 | 332 | Average |

Remark: #3 and #4 Fundamental Signal



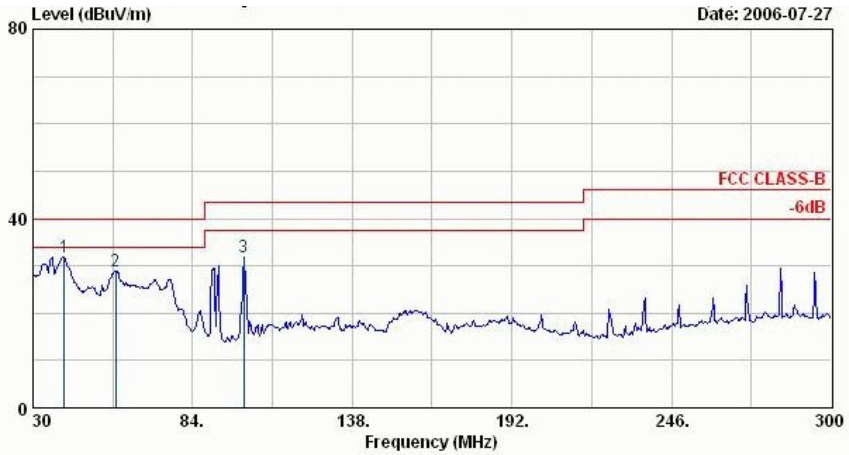

Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2

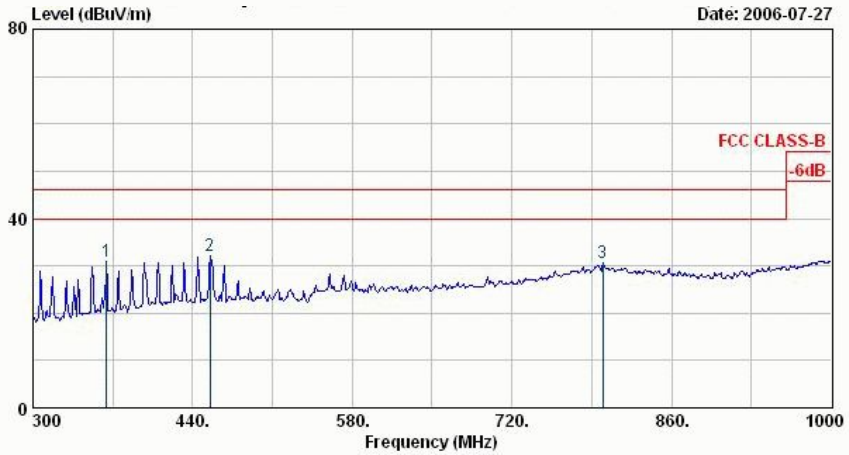
- Polarization : Vertical

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



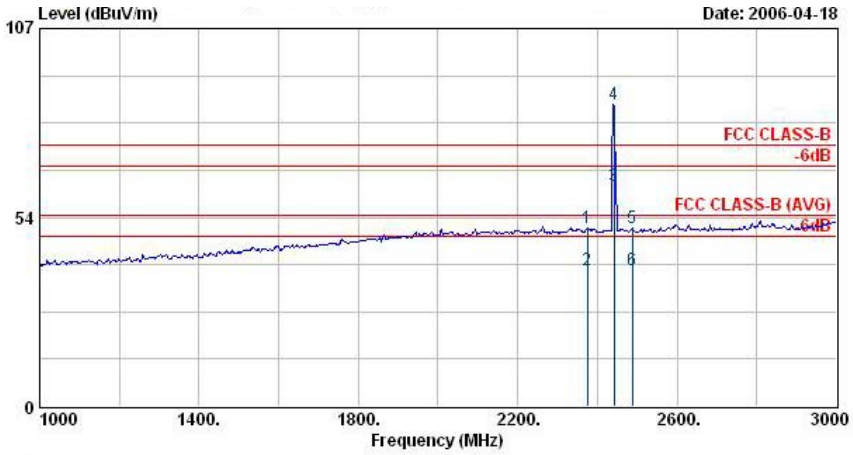

Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Quad band PDAPhone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2

| | 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 @ | 40.53 | 31.94 | -8.06 | 40.00 | 45.11 | 14.28 | 1.20 | 28.65 | 154 | 223 | Peak |
| 2 @ | 58.08 | 28.94 | -11.06 | 40.00 | 49.17 | 7.21 | 1.20 | 28.64 | 400 | 0 | Peak |
| 3 @ | 101.28 | 31.84 | -11.66 | 43.50 | 48.49 | 10.57 | 1.65 | 28.87 | 400 | 0 | Peak |




Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Quad band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2
: E1

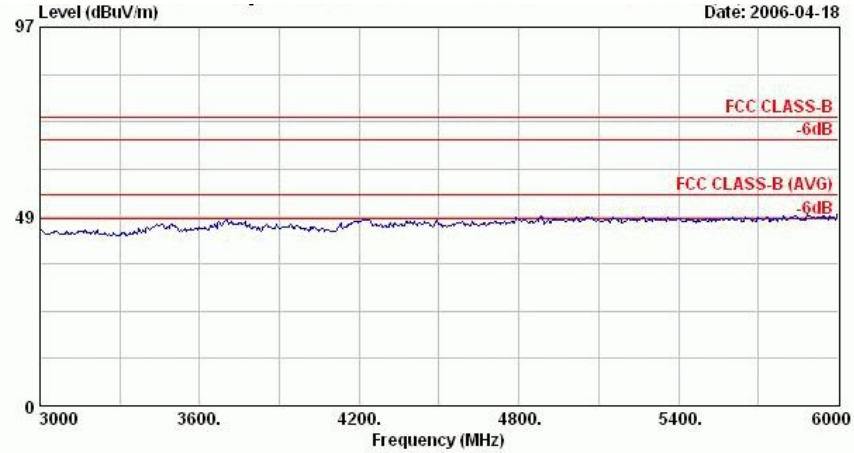
| | Freq | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg | |
| 1 @ | 364.40 | 31.03 | -14.97 | 46.00 | 41.54 | 14.85 | 3.69 | 29.05 | 100 | 0 | Peak |
| 2 @ | 455.40 | 31.99 | -14.01 | 46.00 | 40.29 | 16.50 | 4.01 | 28.81 | 100 | 0 | Peak |
| 3 @ | 799.80 | 30.58 | -15.42 | 46.00 | 31.93 | 21.90 | 5.62 | 28.87 | 100 | 0 | Peak |



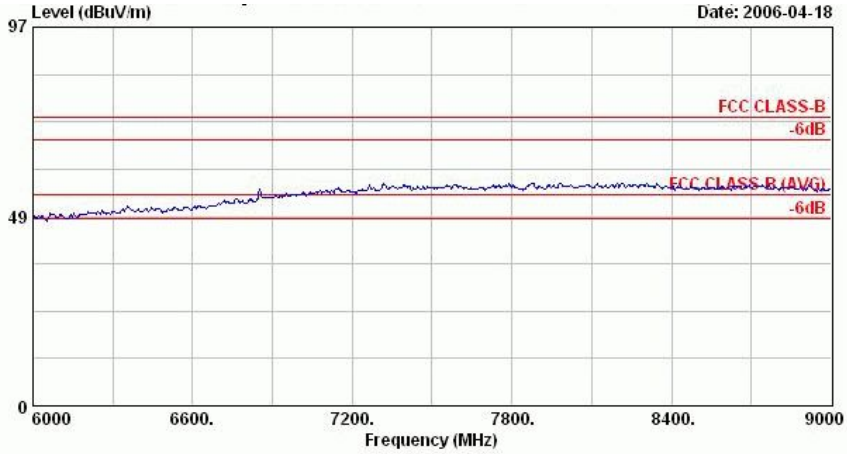

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2

| | 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 @ | 2374.00 | 50.52 | -23.48 | 74.00 | 51.48 | 30.25 | 4.23 | 35.44 | 100 | 0 | Peak |
| 2 @ | 2374.00 | 38.49 | -15.51 | 54.00 | 39.45 | 30.25 | 4.23 | 35.44 | 100 | 98 | Average |
| 3 @ | 2441.00 | 62.25 | | | 63.14 | 30.28 | 4.33 | 35.49 | 100 | 98 | Average |
| 4 @ | 2441.00 | 85.43 | | | 86.33 | 30.28 | 4.29 | 35.47 | 100 | 0 | Peak |
| 5 @ | 2488.00 | 50.35 | -23.65 | 74.00 | 51.20 | 30.30 | 4.36 | 35.51 | 100 | 0 | Peak |
| 6 @ | 2488.00 | 38.59 | -15.41 | 54.00 | 39.44 | 30.30 | 4.36 | 35.51 | 100 | 98 | Average |

Remark: #3 and #4 Fundamental Signal



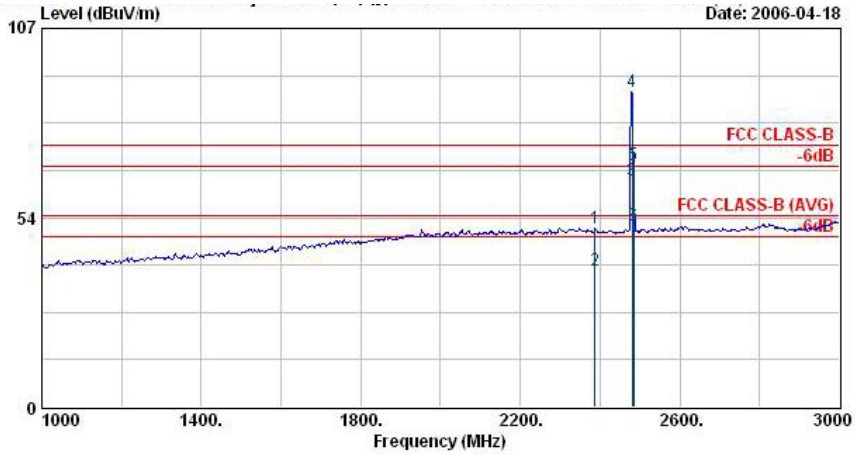

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2




Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH39,2441MHz
Plane : E2

- Test Mode : Mode 6
- Polarization : Horizontal

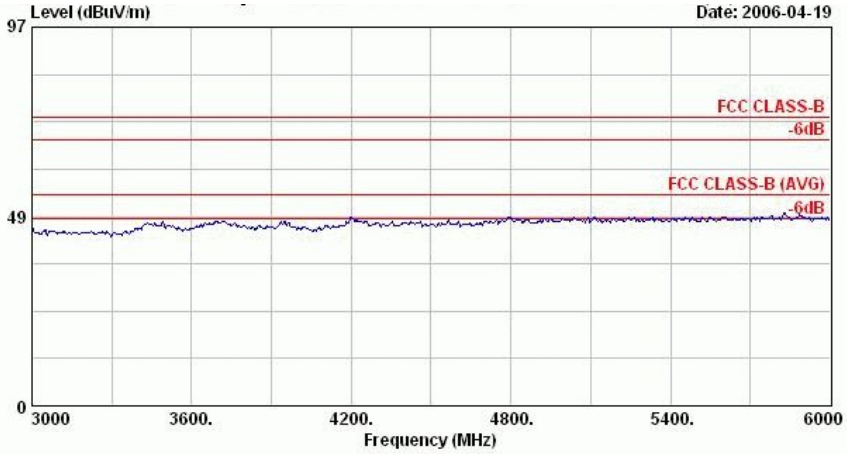
**■ The test that passed at minimum margin was marked by the frame in the following table.**



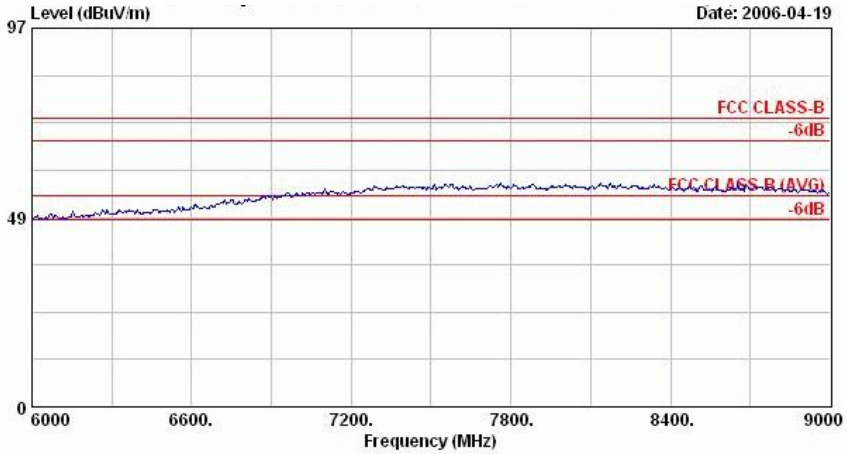

Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH78,2480MHz
Plane : E2

| | 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 @ | 2388.00 | 50.58 | -23.42 | 74.00 | 51.52 | 30.26 | 4.23 | 35.44 | 100 | 0 | Peak |
| 2 @ | 2388.00 | 38.42 | -15.58 | 54.00 | 39.37 | 30.26 | 4.23 | 35.44 | 100 | 335 | Average |
| 3 @ | 2480.00 | 63.87 | | | 64.73 | 30.29 | 4.36 | 35.51 | 100 | 335 | Average |
| 4 @ | 2480.00 | 89.26 | | | 90.12 | 30.29 | 4.36 | 35.51 | 100 | 0 | Peak |
| 5 @ | 2483.50 | 68.22 | -5.78 | 74.00 | 69.08 | 30.29 | 4.36 | 35.51 | 100 | 0 | Peak |
| 6 @ | 2483.50 | 51.18 | -2.82 | 54.00 | 52.04 | 30.29 | 4.36 | 35.51 | 100 | 335 | Average |

Remark: #3 and #4 Fundamental Signal



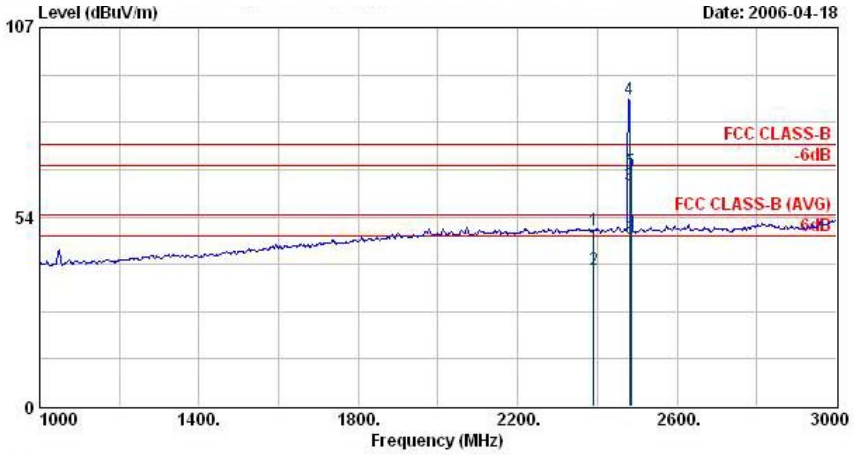

Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH78,2480MHz
Plane : E2




Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH78,2480MHz
Plane : E2

- Polarization : Vertical

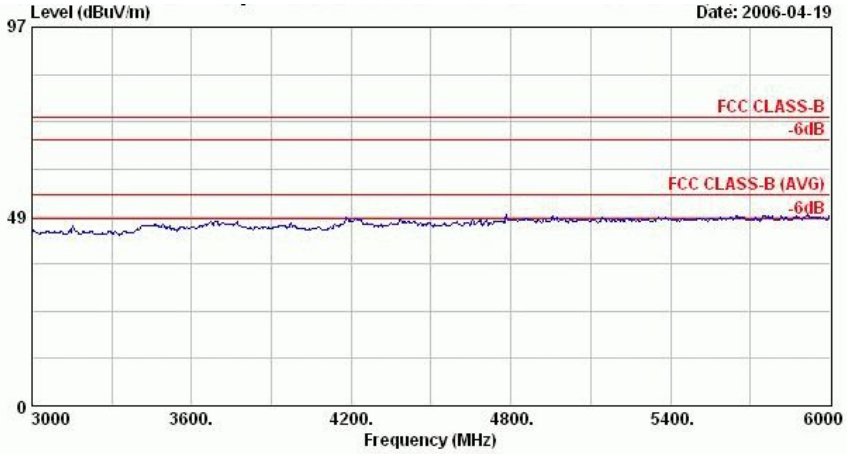
**The test that passed at minimum margin was marked by the frame in the following table.**



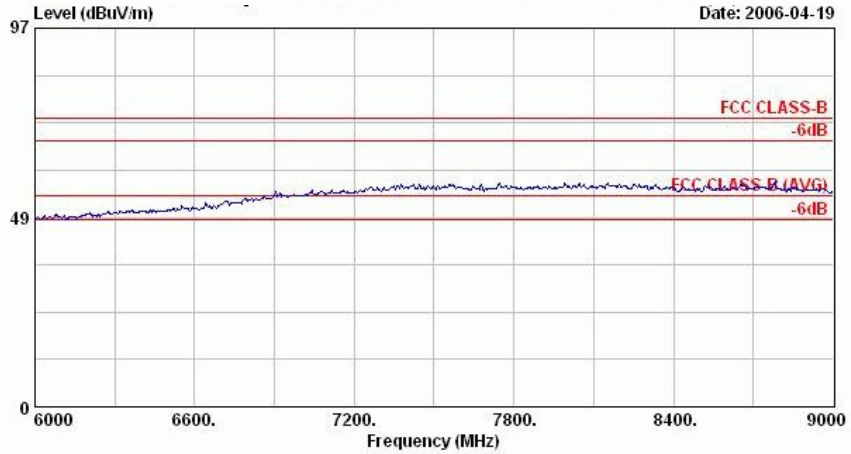

Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH78,2480MHz
Plane : E2

| | 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 @ | 2390.00 | 49.62 | -24.38 | 74.00 | 50.56 | 30.26 | 4.26 | 35.46 | 100 | 360 | Peak |
| 2 @ | 2390.00 | 38.49 | -15.51 | 54.00 | 39.43 | 30.26 | 4.26 | 35.46 | 100 | 323 | Average |
| 3 @ | 2480.00 | 62.46 | | | 63.32 | 30.29 | 4.36 | 35.51 | 100 | 323 | Average |
| 4 @ | 2480.00 | 86.79 | ----- | ----- | 87.65 | 30.29 | 4.36 | 35.51 | 100 | 360 | Peak |
| 5 @ | 2483.50 | 66.25 | -7.75 | 74.00 | 67.11 | 30.29 | 4.36 | 35.51 | 100 | 360 | Peak |
| 6 @ | 2483.50 | 47.24 | -6.76 | 54.00 | 48.10 | 30.29 | 4.36 | 35.51 | 100 | 323 | Average |

Remark: #3 and #4 Fundamental Signal




Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH78,2480MHz
Plane : E2




Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Quad-band PDA Phone(11G WLAN BT inside)
Power : 120Vac/60Hz
Model :
Memo : BT Tx CH78,2480MHz
Plane : E2

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

## 5.12 Antenna Requirements

5.12.1 Standard Applicable

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

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

5.12.2 Antenna Connected Construction

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

5.12.3 Antenna Gain

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

# 6. List of Measuring Equipments Used

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Due Date | Remark |
|---|---|---|---|---|---|---|---|
| EMC Receiver | R&S | ESCS 30 | 100174 | 9kHz – 2.75GHz | Feb. 22, 2006 | Feb. 22, 2007 | Conduction (CO01-HY) |
| LISN | MessTec | NNB-2/16Z | 2001/004 | 9kHz – 30MHz | Apr. 28, 2006 | Apr. 28, 2007 | Conduction (CO01-HY) |
| LISN (Support Unit) | MessTec | NNB-2/16Z | 2001/009 | 9kHz – 30MHz | Apr. 19, 2006 | Apr. 19, 2007 | Conduction (CO01-HY) |
| EMI Filter | LINDGREN | LRE-2060 | 1004 | < 450Hz | N/A | N/A | Conduction (CO01-HY) |
| EMI Filter | LINDGREN | N6006 | 201052 | 0 – 60Hz | N/A | N/A | Conduction (CO01-HY) |
| RF Cable-CON | Suhner Switzerland | RG223/U | CB029 | 9kHz – 30MHz | Dec. 22, 2005 | Dec. 22, 2006 | Conduction (CO01-HY) |
| Spectrum analyzer | Agilent | E4408B | MY44211030 | 9KHz-26.5GHz | Jul. 24, 2006 | Jul. 24, 2007 | Radiation (03CH06-HY) |
| Receiver | R&S | ESCS30 | 100356 | 9KHz-2.75GHz | Jun. 26, 2006 | Jun. 25, 2007 | Radiation (03CH06-HY) |
| Controller | CT | SC100 | N/A | N/A | N/A | N/A | Radiation (03CH06-HY) |
| Bilog Antenna | SCHAFFNER | CBL6112B | 2885 | 30MHz -2GHz | Nov. 21, 2004 | Nov. 20, 2006 | Radiation (03CH06-HY) |
| Horn Antenna | Com-Power | AH118 | 071025 | 1G-18G | Feb. 1, 2005 | Jan. 31, 2007 | Radiation (03CH06-HY) |
| SHF-EHF Horn | SCHWARZBECK | BBHA 9170 | 9170-249 | 14G - 40G | Jul. 20, 2006 | Jul. 20, 2007 | Radiation (03CH06-HY) |
| HF Amplifier | MITEQ | AFS44 | 973248 | 0.1G - 26.5G | Dec. 17, 2005 | Dec. 17, 2006 | Radiation (03CH06-HY) |
| Amplifier | MITEQ | AMF-6F | 997165 | 26G - 40G | Jul. 20, 2006 | Jul. 20, 2007 | Radiation (03CH06-HY) |
| Turn Table | HD | DS 420 | 420/650/00 | 0 ~ 360 degree | N/A | N/A | Radiation (03CH06-HY) |
| Antenna Mast | HD | MA 240 | 240/560/00 | 1 m - 4 m | N/A | N/A | Radiation (03CH06-HY) |

# 7. Uncertainty Evaluation

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

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

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

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

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

| Contribution | Uncertainty of $x_i$ | | $u(x_i)$ | $Ci$ | $Ci*u(x_i)$ |
|---|---|---|---|---|---|
| | dB | Probability Distribution | | | |
| Receiver reading | ±0.10 | Normal(k=1) | 0.10 | 1 | 0.10 |
| Antenna factor calibration | ±1.70 | Normal(k=2) | 0.85 | 1 | 0.85 |
| Cable loss calibration | ±0.50 | Normal(k=2) | 0.25 | 1 | 0.25 |
| Receiver Correction | ±2.00 | Rectangular | 1.15 | 1 | 1.15 |
| Antenna Factor Directional | ±1.50 | Rectangular | 0.87 | 1 | 0.87 |
| Site imperfection | ±2.80 | Triangular | 1.14 | 1 | 1.14 |
| Mismatch<br>Receiver VSWR Γ1= 0.197<br>Antenna VSWR Γ2= 0.194<br>Uncertainty=20log(1-Γ1*Γ2*Γ3) | +0.34/-0.35 | U-shaped | 0.244 | 1 | 0.244 |
| **Combined standard uncertainty Uc(y)** | **2.36** | | | | |
| **Measuring uncertainty for a level of confidence of 95% U=2Ue(y)** | **4.72** | | | | |