



A Test Lab Techno Corp.  
Tel: +886-3-271-0188 Fax: +886-3-271-0190  
NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

### Radiated Emission Measurement

File :M619(CH06)

Data :#11

Date: 2007/03/06

Time: 下午 06:36:24

95.0 dBuV



Site site #1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: PDA

Distance: 1m

M/N: M619

Mode: 11g

Note: CH06(2437MHz)(154cm) Tx Rate:bpsk ; Tx Power:13

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 14300.00     | 38.56                    | 18.61                   | 57.17                    | 74.00         | -16.83     | peak     |         |
| 2   |     | 14300.00     | 27.19                    | 18.61                   | 45.80                    | 54.00         | -8.20      | AVG      |         |
| 3   |     | 17800.00     | 37.06                    | 23.55                   | 60.61                    | 74.00         | -13.39     | peak     |         |
| 4   | *   | 17800.00     | 22.71                    | 23.55                   | 46.26                    | 54.00         | -7.74      | AVG      |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(CH06)\Data :#11

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Engineer Signature:



### 3.6.6 Open Field Radiated Emissions (Subpart B&C)

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation, etc. are recorded on the following.

Applicant : Inventec Corporation  
Model No : Mercury 619  
EUT : PDA PHONE  
Test Mode : 802.11g CH11 2462.000 (Local Frequency: 2462.000 MHz)  
Test Date : 03/06/2007

Please refer to next pager of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Distance of Measurement: 3 Meter (30-1000MHz) & (1-10GHz), 1 Meter (10-26.5GHz)
3. Height of table for EUT placed: 0.8 Meter.
4. ANT= Antenna height.
5. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
6. The EUT was worst case on X axis after pretest on X & Y & Z axis setting.
7. The testing data only show below 18GHz's data because measure data above 18GHz was only ambit noise.
8. All frequencies from 30MHz to 26.5GHz have been tested



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### Radiated Emission Measurement

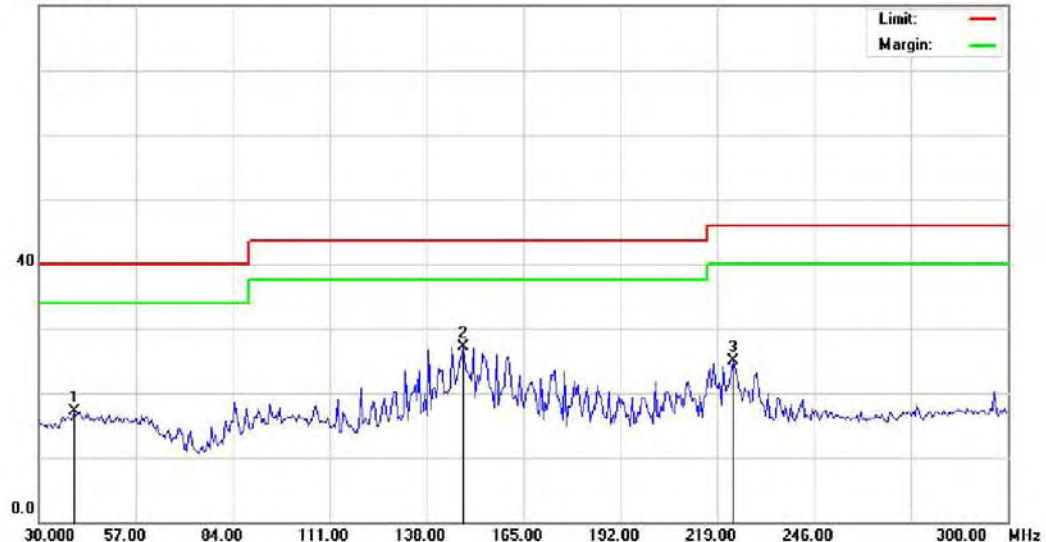
File :M619(EMI)

Data :#9

Date: 2007/03/06

Time: 下午 09:59:11

80.0 dBuV



Site site #1

Limit: FCC Class B 3M Radiation

EUT: PDA

M/N: M619

Mode: 11g

Note: CH11(2462MHz) Tx Rate:bpsk ; Tx Power:13

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

Polarization: Vertical

Power:

Distance: 3m

Temperature: 22 °C

Humidity: 60 %

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 39.7199      | 29.07                    | -11.96                  | 17.11                    | 40.00         | -22.89     | peak     |         |
| 2   | *   | 148.2598     | 43.22                    | -16.07                  | 27.15                    | 43.50         | -16.35     | peak     |         |
| 3   |     | 223.3198     | 37.12                    | -12.22                  | 24.90                    | 46.00         | -21.10     | peak     |         |

\*:Maximum data x:Over limit !:over margin

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File :M619(EMI)\Data :#9

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### Radiated Emission Measurement

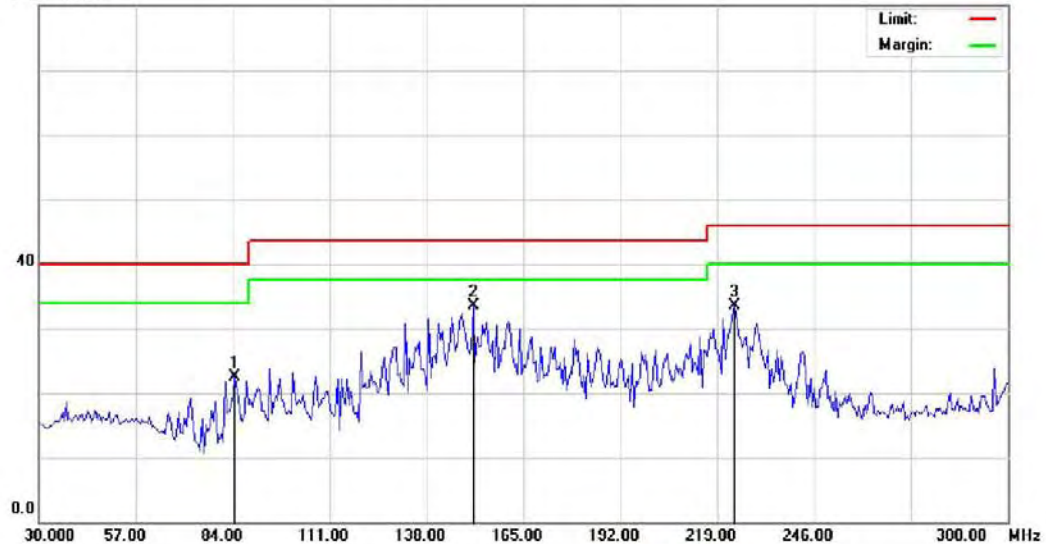
File :M619(EMI)

Data :#11

Date: 2007/03/06

Time: 下午 10:07:42

80.0 dBuV



Site site #1

Limit: FCC Class B 3M Radiation

EUT: PDA

M/N: M619

Mode: 11g

Note: CH11(2462MHz) Tx Rate:bpsk ; Tx Power:13

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

Polarization: **Horizontal**

Power:

Distance: 3m

Temperature: 22 °C

Humidity: 60 %

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 84.5400      | 37.35                    | -14.90                  | 22.45                    | 40.00         | -17.55     | peak     |         |
| 2   | *   | 150.9600     | 49.58                    | -15.99                  | 33.59                    | 43.50         | -9.91      | peak     |         |
| 3   |     | 223.8600     | 45.67                    | -12.19                  | 33.48                    | 46.00         | -12.52     | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(EMI)\Data :#11

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### Radiated Emission Measurement

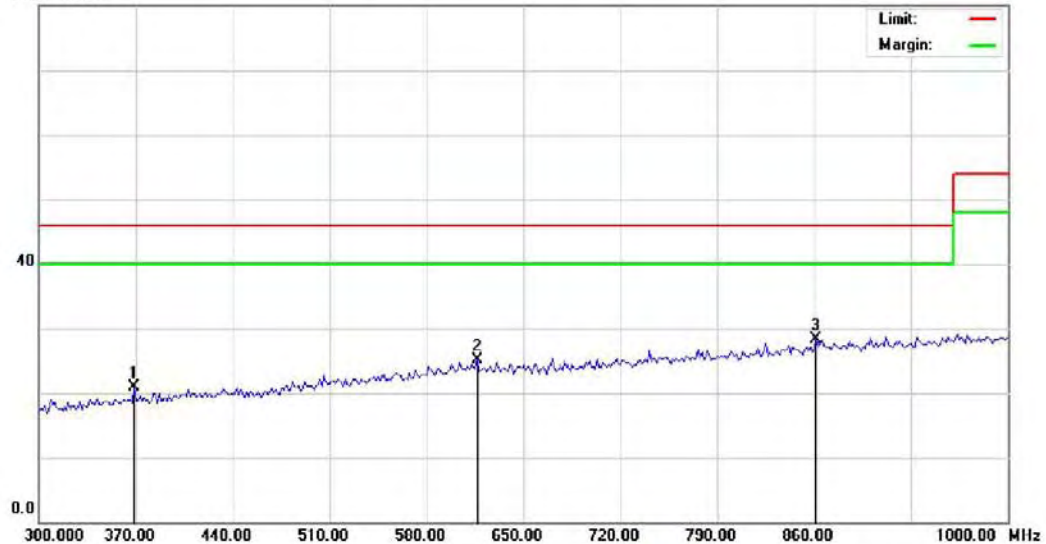
File :M619(EMI)

Data :#10

Date: 2007/03/06

Time: 下午 10:03:26

80.0 dBuV



Site site #1

Limit: FCC Class B 3M Radiation

EUT: PDA

M/N: M619

Mode: 11g

Note: CH11(2462MHz) Tx Rate:bpsk ; Tx Power:13

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

Polarization: **Vertical**

Power:

Distance: 3m

Temperature: 22 °C

Humidity: 60 %

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 368.6000     | 29.61                    | -8.70                   | 20.91                    | 46.00         | -25.09     | peak     |         |
| 2   |     | 616.3999     | 29.59                    | -4.39                   | 25.20                    | 46.00         | -20.80     | peak     |         |
| 3   | *   | 861.3999     | 29.27                    | -0.89                   | 28.38                    | 46.00         | -17.62     | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(EMI)\Data :#10

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Engineer Signature:





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### Radiated Emission Measurement

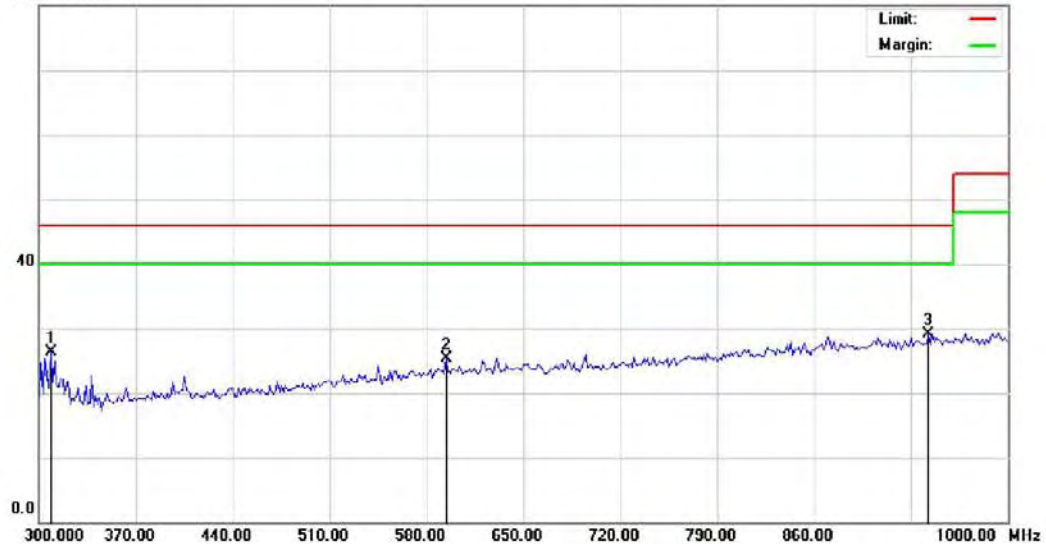
File :M619(EMI)

Data :#12

Date: 2007/03/06

Time: 下午 10:11:58

80.0 dBuV



Site site #1

Limit: FCC Class B 3M Radiation

EUT: PDA

M/N: M619

Mode: 11g

Note: CH11(2462MHz) Tx Rate:bpsk ; Tx Power:13

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

Polarization: **Horizontal**

Power:

Distance: 3m

Temperature: 22 °C

Humidity: 60 %

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 308.3999     | 36.18                    | -9.93                   | 26.25                    | 46.00         | -19.75     | peak     |         |
| 2   |     | 594.0000     | 30.32                    | -4.93                   | 25.39                    | 46.00         | -20.61     | peak     |         |
| 3   | *   | 942.6000     | 28.83                    | 0.27                    | 29.10                    | 46.00         | -16.90     | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(EMI)\Data :#12

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### Radiated Emission Measurement

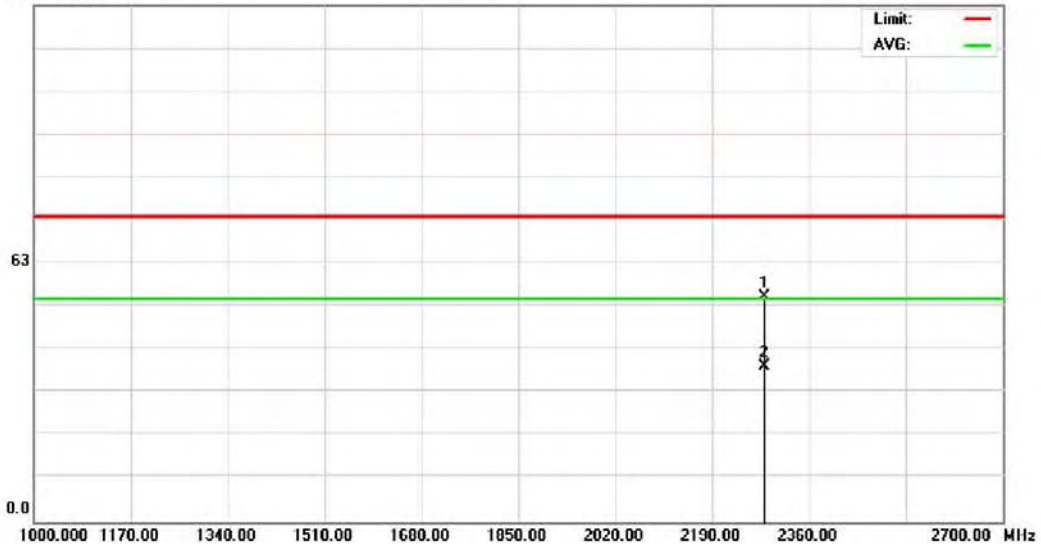
File :M619(CH11)

Data :#3

Date: 2007/03/06

Time: 上午 11:42:00

125.0 dBuV



Site site #1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11g

Note: CH11(2462MHz)(104cm) Tx Rate:bpsk ; Tx Power:13

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 2281.800     | 54.03                    | 0.45                    | 54.48                    | 74.00         | -19.52     | peak     |         |
| 2   | *   | 2281.800     | 37.12                    | 0.45                    | 37.57                    | 54.00         | -16.43     | AVG      |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(CH11)\Data :#3

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### Radiated Emission Measurement

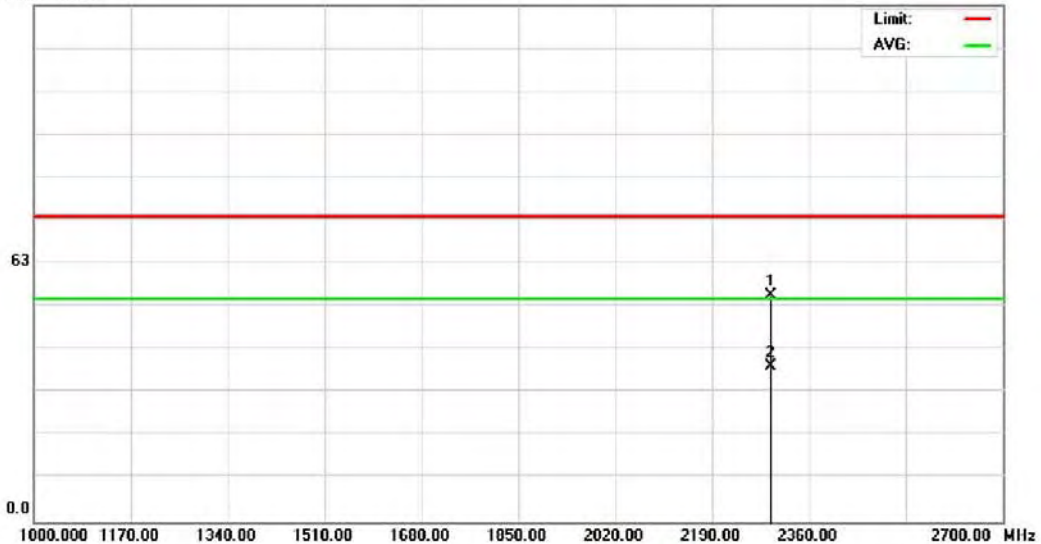
File :M619(CH11)

Data :#1

Date: 2007/03/06

Time: 上午 11:33:20

125.0 dBuV



Site site #1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11g

Note: CH11(2462MHz)(154cm) Tx Rate:bpsk ; Tx Power:13

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 2292.000     | 54.34                    | 0.43                    | 54.77                    | 74.00         | -19.23     | peak     |         |
| 2   | *   | 2292.000     | 37.15                    | 0.43                    | 37.58                    | 54.00         | -16.42     | AVG      |         |

\*:Maximum data x:Over limit !:over margin

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File :M619(CH11)\Data :#1

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### Radiated Emission Measurement

File :M619(CH11)

Data :#5

Date: 2007/03/06

Time: 下午 12:28:04



Site site #1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11g

Note: CH11(2462MHz)(104cm) Tx Rate:bpsk ; Tx Power:13

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 2700.000     | 39.08                    | 22.58                   | 61.66                    | 74.00         | -12.34     | peak     |         |
| 2   | *   | 2700.000     | 25.39                    | 22.58                   | 47.97                    | 54.00         | -6.03      | AVG      |         |
| 3   |     | 4926.500     | 41.12                    | 7.66                    | 48.78                    | 74.00         | -25.22     | peak     |         |
| 4   |     | 9689.750     | 38.75                    | 17.35                   | 56.10                    | 74.00         | -17.90     | peak     |         |
| 5   |     | 9689.750     | 27.79                    | 17.35                   | 45.14                    | 54.00         | -8.86      | AVG      |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(CH11)\Data :#5

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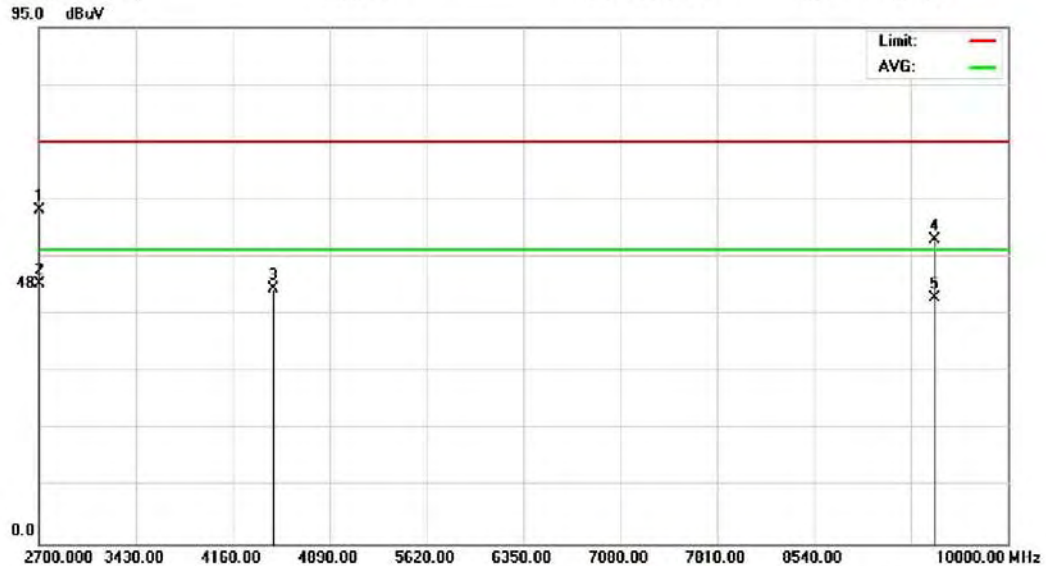
### Radiated Emission Measurement

File :M619(CH11)

Data :#7

Date: 2007/03/06

Time: 下午 12:31:34



Site site #1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11g

Note: CH11(2462MHz)(154cm) Tx Rate:bpsk ; Tx Power:13

2.7G-10G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 2700.000     | 38.86                    | 22.58                   | 61.44                    | 74.00         | -12.56     | peak     |         |
| 2   | *   | 2700.000     | 25.23                    | 22.58                   | 47.81                    | 54.00         | -6.19      | AVG      |         |
| 3   |     | 4470.250     | 40.80                    | 6.07                    | 46.87                    | 74.00         | -27.13     | peak     |         |
| 4   |     | 9452.500     | 39.01                    | 17.00                   | 56.01                    | 74.00         | -17.99     | peak     |         |
| 5   |     | 9452.500     | 28.35                    | 17.00                   | 45.35                    | 54.00         | -8.65      | AVG      |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(CH11)\Data :#7

Page: 1

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### Radiated Emission Measurement

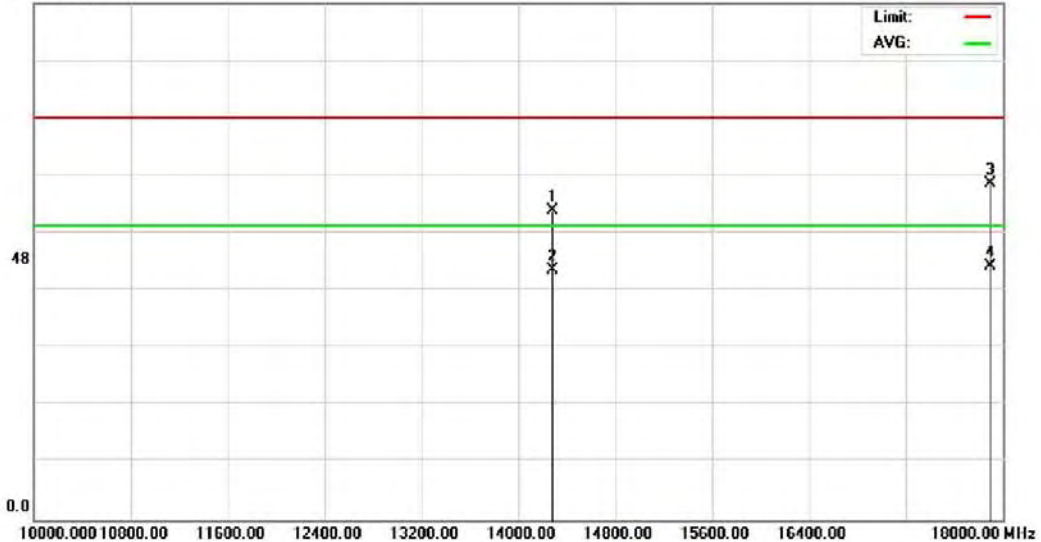
File :M619(CH11)

Data :#11

Date: 2007/03/06

Time: 下午 06:26:25

95.0 dBuV



Site site #1

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: PDA

Distance: 1m

M/N: M619

Mode: 11g

Note: CH11(2462MHz)(104cm) Tx Rate:bpsk ; Tx Power:13

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 14280.00     | 38.34                    | 18.63                   | 56.97                    | 74.00         | -17.03     | peak     |         |
| 2   |     | 14280.00     | 27.34                    | 18.63                   | 45.97                    | 54.00         | -8.03      | AVG      |         |
| 3   |     | 17900.00     | 36.88                    | 24.96                   | 61.84                    | 74.00         | -12.16     | peak     |         |
| 4   | *   | 17900.00     | 21.75                    | 24.96                   | 46.71                    | 54.00         | -7.29      | AVG      |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(CH11)\Data :#11

Page: 1

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### Radiated Emission Measurement

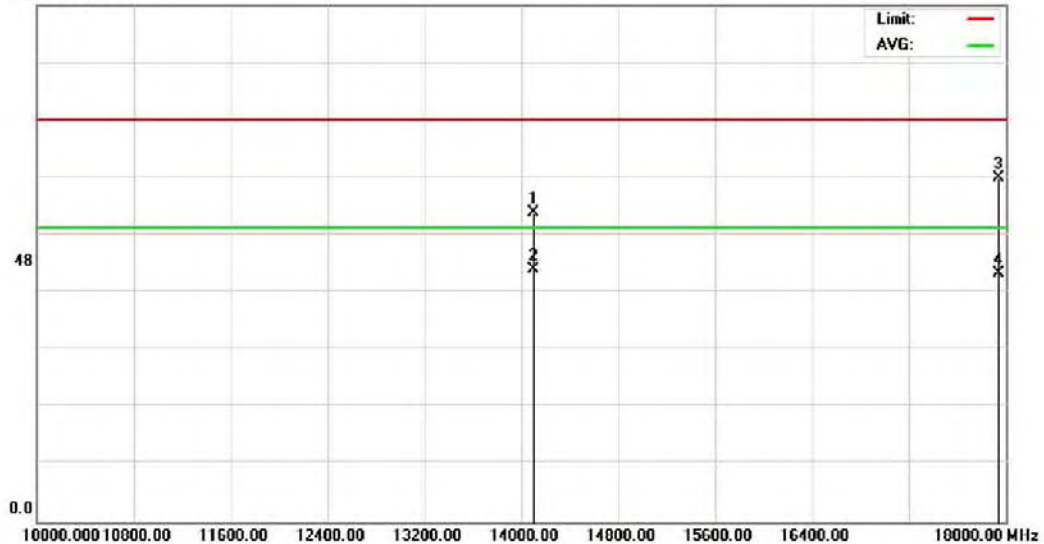
File :M619(CH11)

Data :#9

Date: 2007/03/06

Time: 下午 06:22:40

95.0 dBuV



Site site #1

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC part 15 (PK)

Power:

Humidity: 60 %

EUT: PDA

Distance: 1m

M/N: M619

Mode: 11g

Note: CH11(2462MHz)(154cm) Tx Rate:bpsk ; Tx Power:13

10G - 18G PK Scan Att:0 ; REF:95 ; Range:95(EUT Power Lever:255)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 14100.00     | 38.02                    | 18.90                   | 56.92                    | 74.00         | -17.08     | peak     |         |
| 2   | *   | 14100.00     | 27.54                    | 18.90                   | 46.44                    | 54.00         | -7.56      | AVG      |         |
| 3   |     | 17940.00     | 38.59                    | 24.71                   | 63.30                    | 74.00         | -10.70     | peak     |         |
| 4   |     | 17940.00     | 21.12                    | 24.71                   | 45.83                    | 54.00         | -8.17      | AVG      |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(CH11)\Data :#9

Page: 1

Engineer Signature:

## 4. Maximum Conducted Output Power Requirements

### 4.1 Test Condition & Setup:

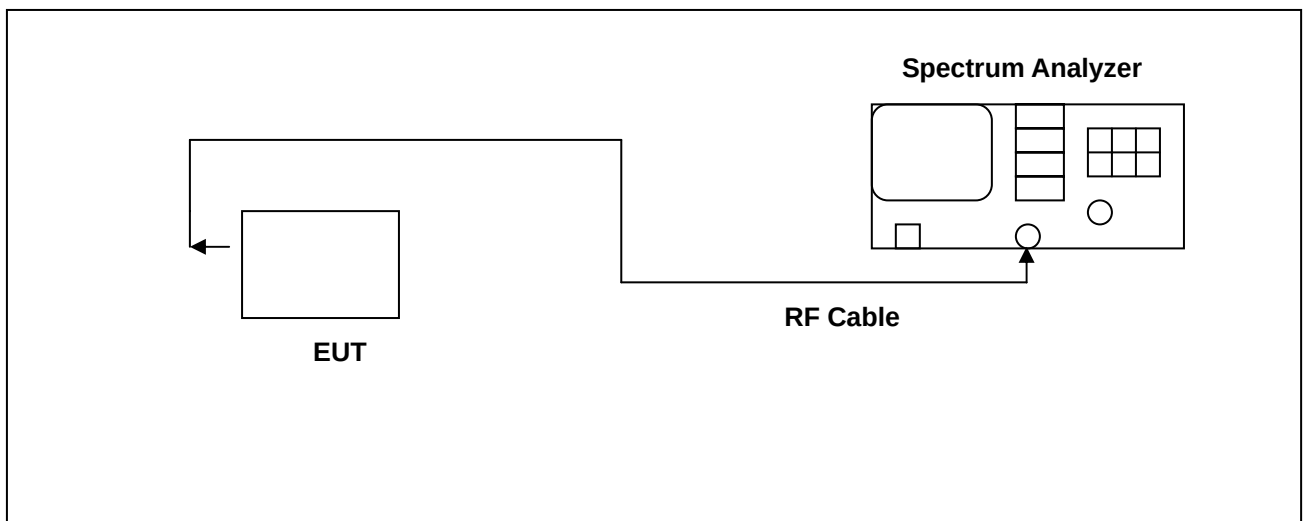
The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to spectrum analyzer. The maximum peak output power shall not exceed 1 watt.

Use a direct connection between the antenna port of transmitter and the spectrum Analyzer, for prevent the spectrum analyzer input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to  $(\text{GAIN} - 6)/3$  dBm.

The antenna port of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

### 4.2 Test Instruments Configuration:







#### 4.3 Test Equipment List:

| Describe          | Manufacturer | Model  | Serial Number | Calibration   |               |
|-------------------|--------------|--------|---------------|---------------|---------------|
|                   |              |        |               | Cal. Date     | Due Date      |
| Spectrum Analyzer | Agilent      | E4445A | MY45300744    | May. 09, 2006 | May. 09, 2007 |

#### 4.4 Test Result:

##### 802.11b \_ BPSK

| Frequency (MHz) | Output (dBm) | Required Limit |
|-----------------|--------------|----------------|
| 2412            | 14.14        | <30dBm         |
| 2437            | 15.01        | <30dBm         |
| 2462            | 15.14        | <30dBm         |

##### 802.11b \_ CCK

| Frequency (MHz) | Output (dBm) | Required Limit |
|-----------------|--------------|----------------|
| 2412            | 15.67        | <30dBm         |
| 2437            | 15.93        | <30dBm         |
| 2462            | 16.39        | <30dBm         |

##### 802.11g \_ BPSK

| Frequency (MHz) | Output (dBm) | Required Limit |
|-----------------|--------------|----------------|
| 2412            | 17.51        | <30dBm         |
| 2437            | 18.23        | <30dBm         |
| 2462            | 18.01        | <30dBm         |

##### 802.11g \_ CCK

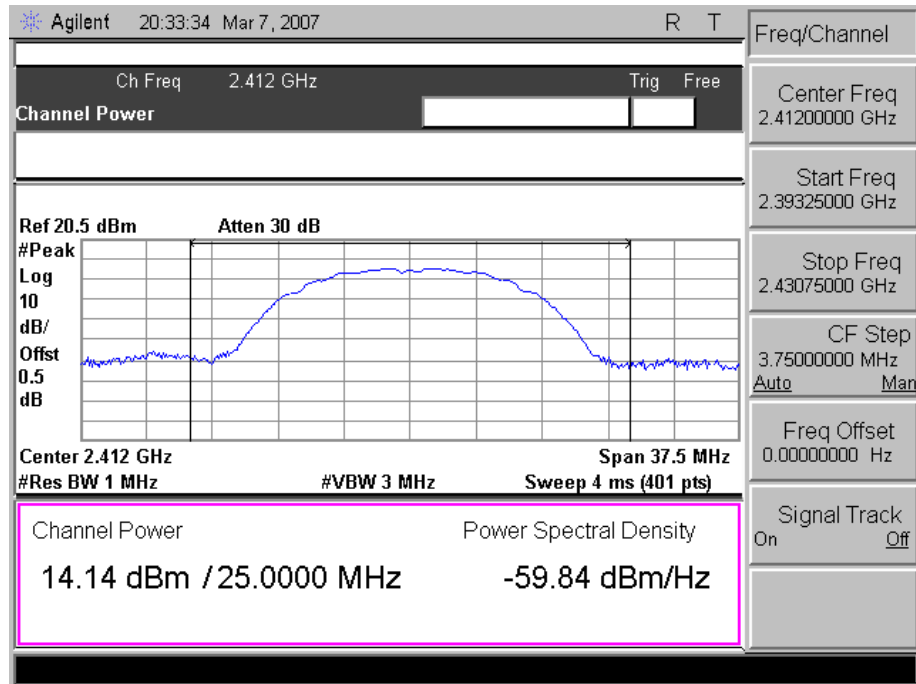
| Frequency (MHz) | Output (dBm) | Required Limit |
|-----------------|--------------|----------------|
| 2412            | 16.71        | <30dBm         |
| 2437            | 17.13        | <30dBm         |
| 2462            | 17.43        | <30dBm         |

Note: Test Graphs See next page.

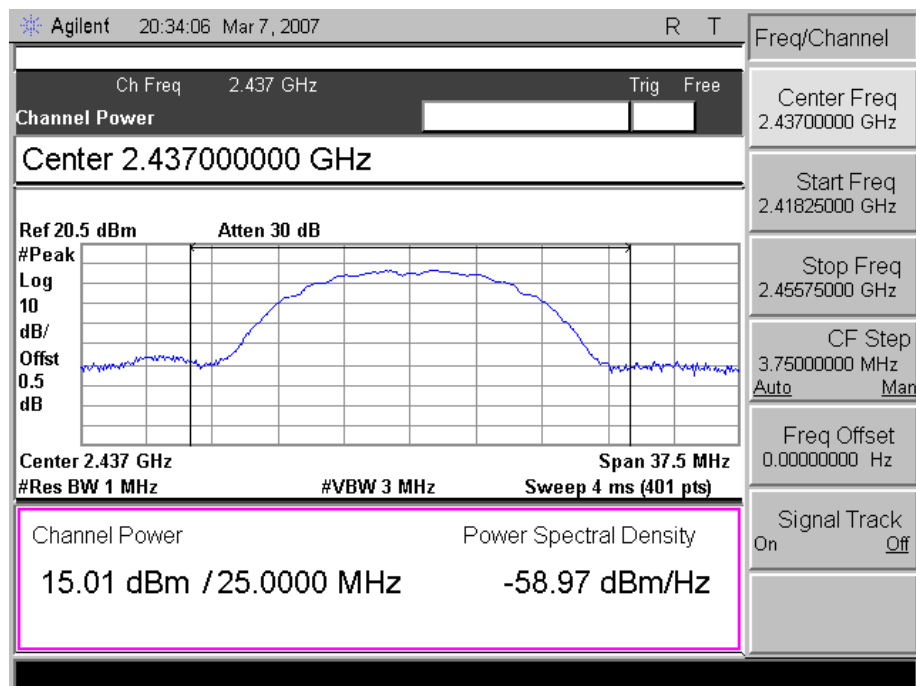


## 4.5 Test Graphs

### 802.11b CH1 (2412MHz) \_ BPSK

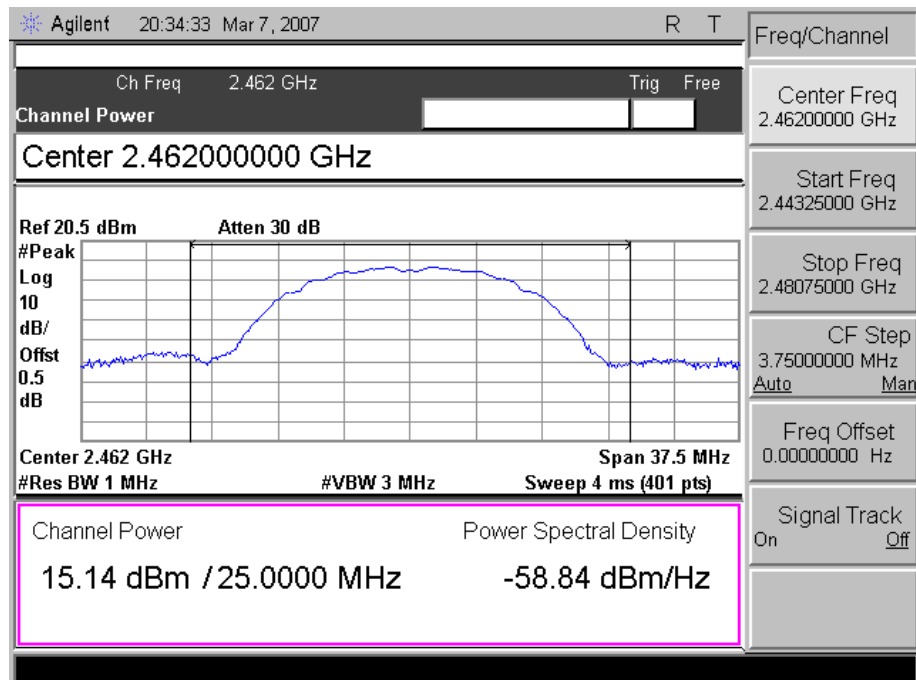


### 802.11b CH6 (2437MHz) \_ BPSK



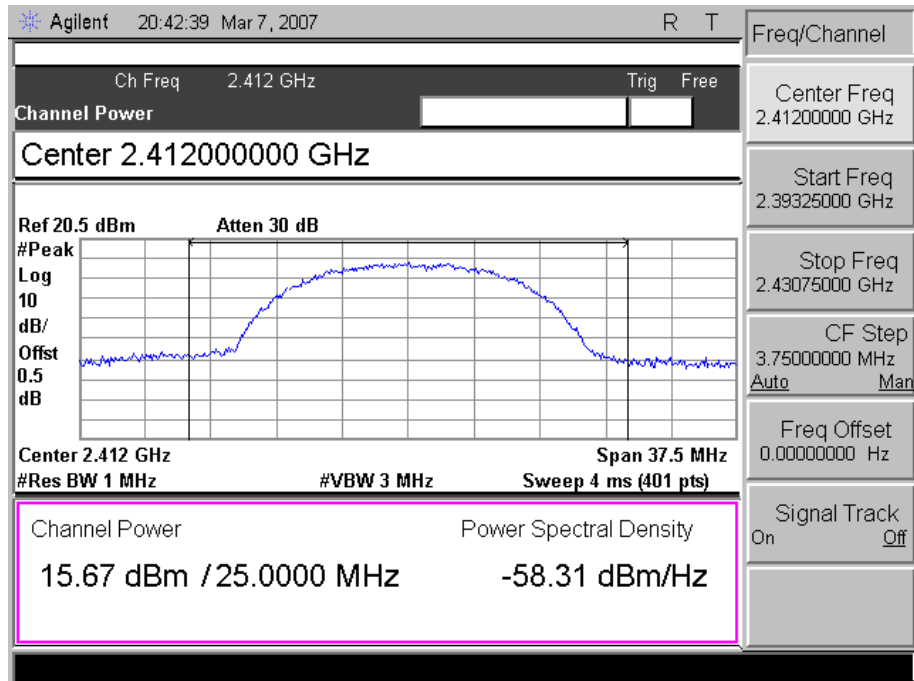


802.11b CH11 (2462MHz) \_ BPSK

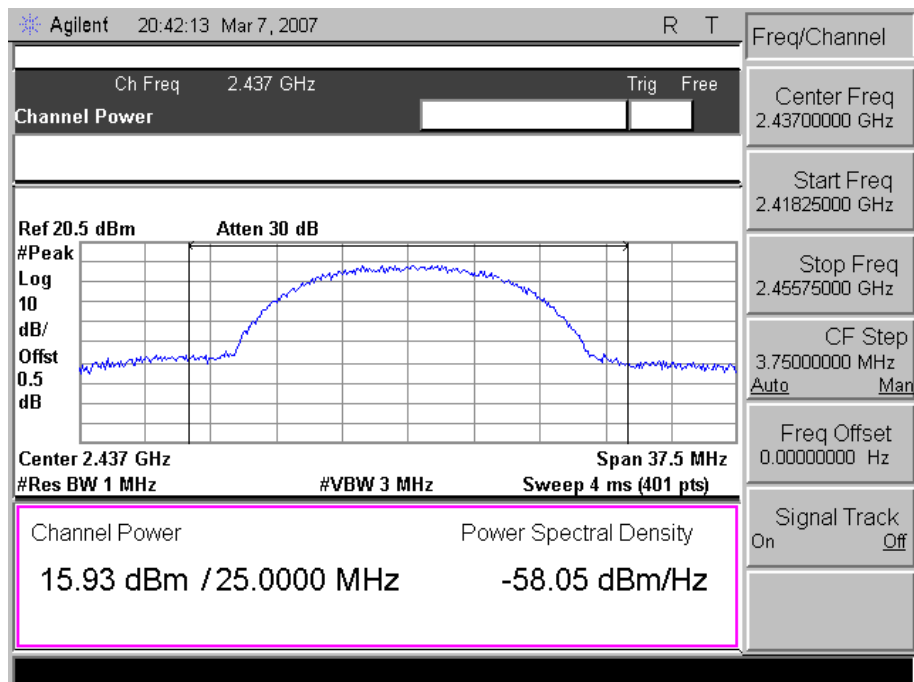




## 802.11b CH1 (2412MHz) \_ CCK

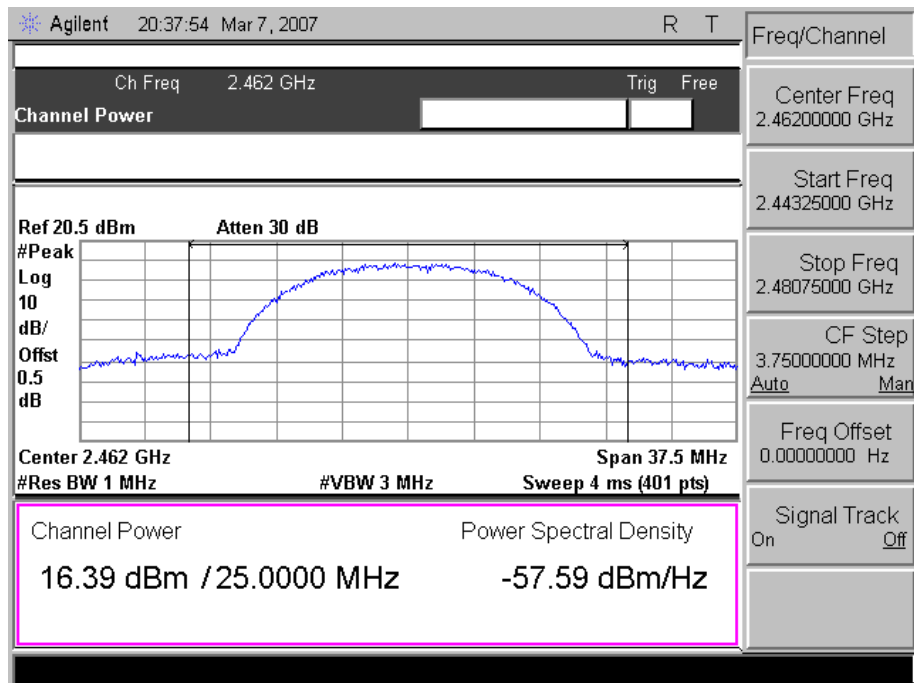


## 802.11b CH6 (2437MHz) \_ CCK





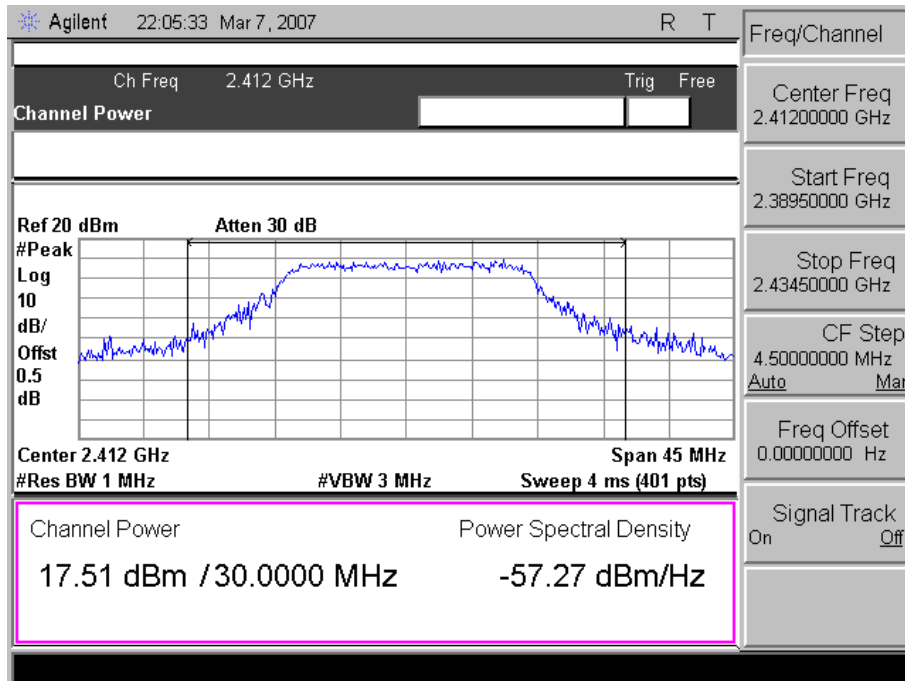
# 802.11b CH11 (2462MHz) \_ CCK



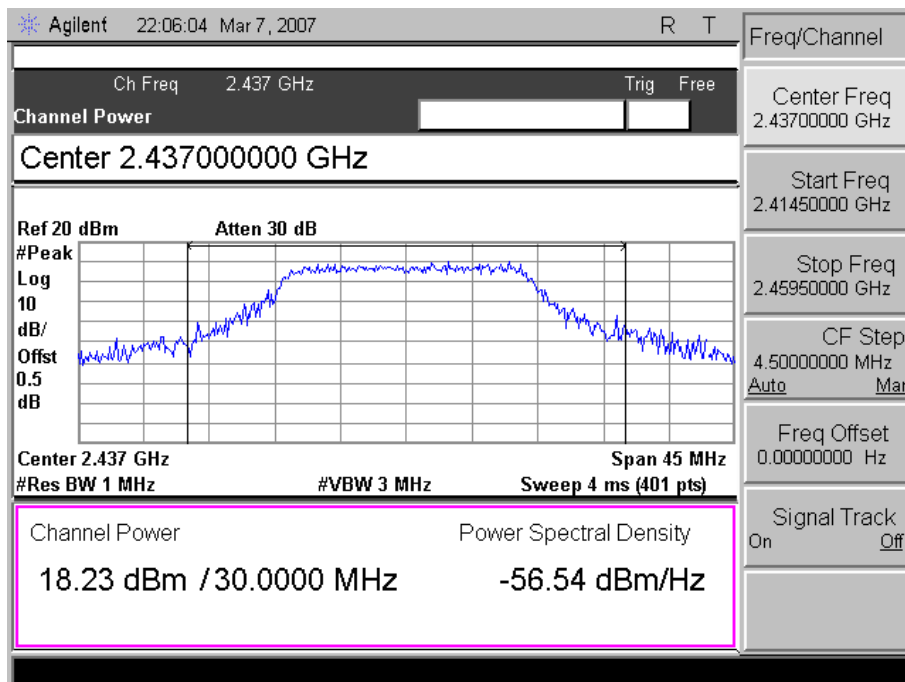




### 802.11g CH1 (2412MHz) \_ BPSK

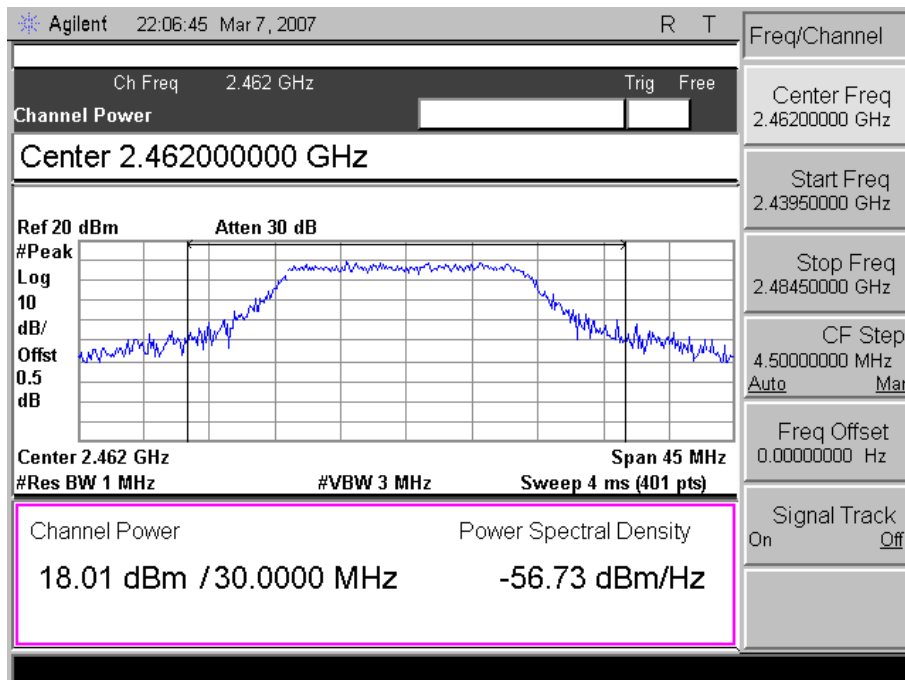


### 802.11g CH6 (2437MHz) \_ BPSK



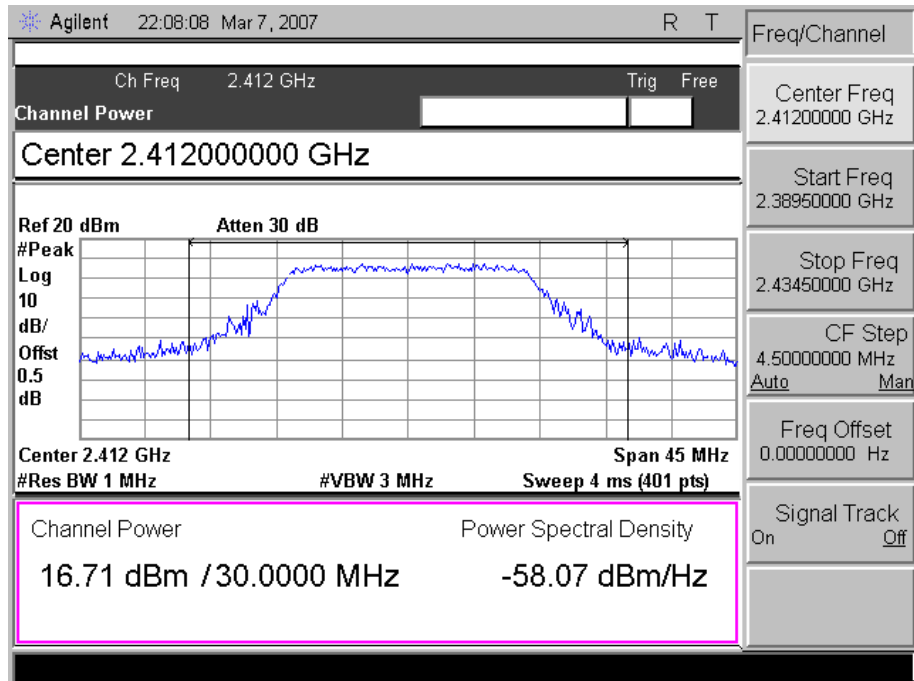


802.11g CH11 (2462MHz) \_ BPSK

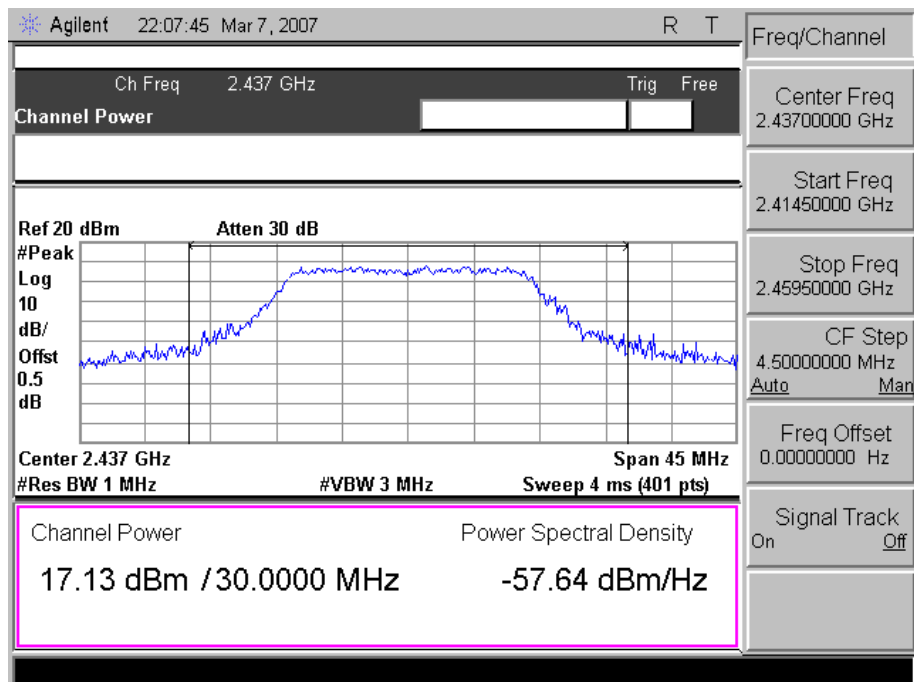




### 802.11g CH1 (2412MHz) \_ CCK

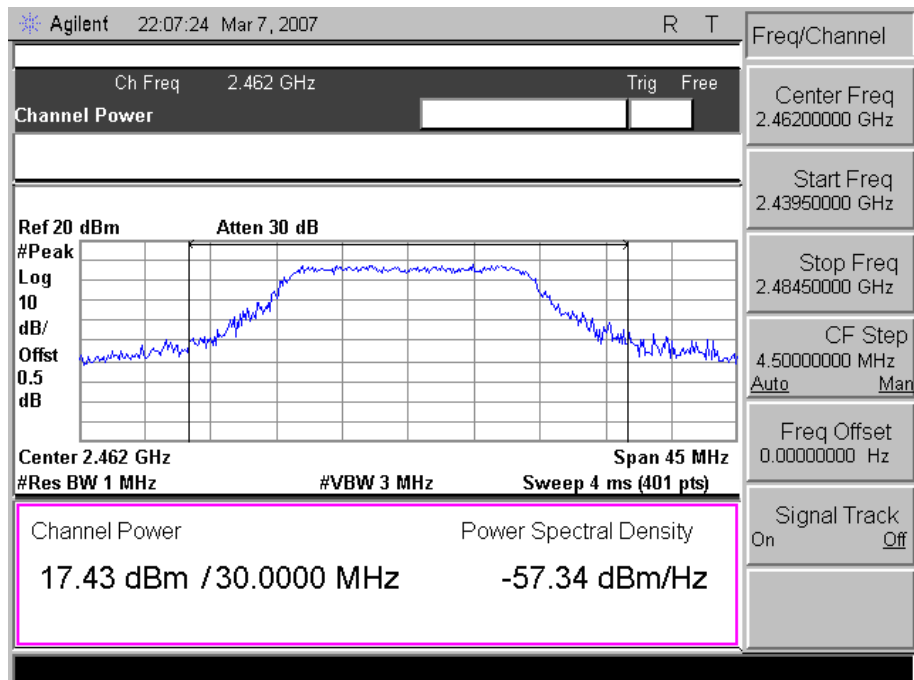


### 802.11g CH6 (2437MHz) \_ CCK





802.11g CH11 (2462MHz) \_ CCK



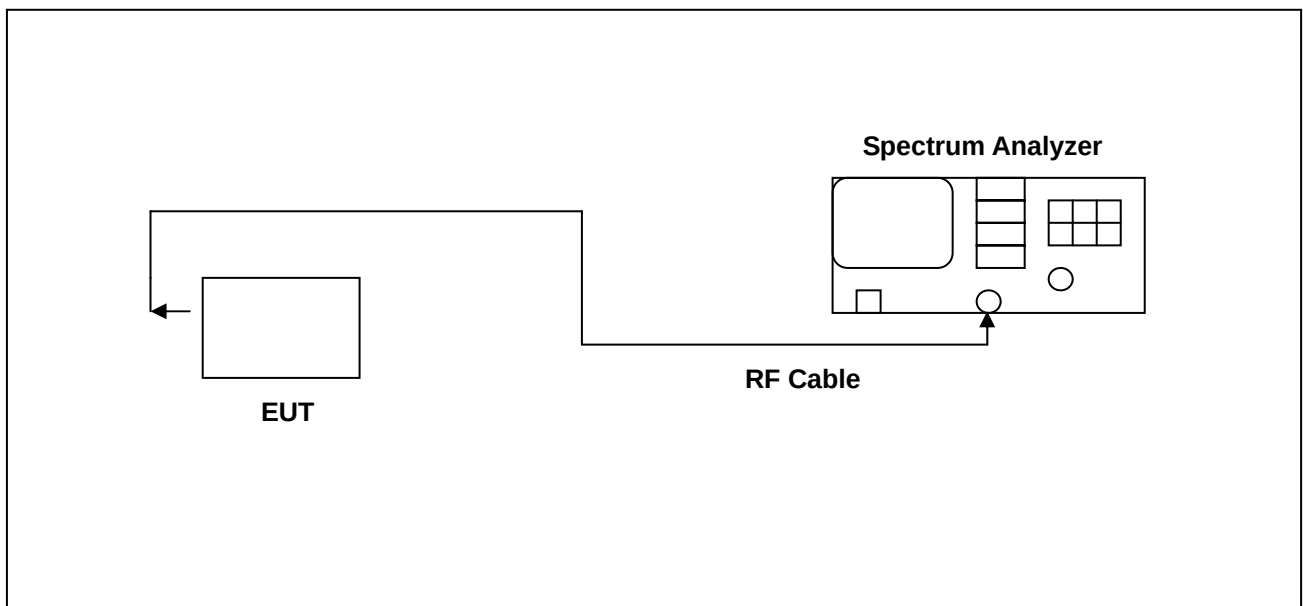


## 5. Minimum 6 dB RF Bandwidth Requirements

### 5.1 Test Condition & Setup:

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line. The test was performed at 3 channels (Channel 1, 6, 11)

### 5.2 Test Instruments Configuration:



### 5.3 Test Equipment List:

| Describe          | Manufacturer | Model  | Serial Number | Calibration   |               |
|-------------------|--------------|--------|---------------|---------------|---------------|
|                   |              |        |               | Cal. Date     | Due Date      |
| Spectrum Analyzer | Agilent      | E4445A | MY45300744    | May. 09, 2006 | May. 09, 2007 |



#### 5.4 Test Result:

##### 802.11b \_ BPSK

| Frequency (MHz) | Min. 6dB Bandwidth (MHz) | Required Limit |
|-----------------|--------------------------|----------------|
| 2412            | 9.875                    | > 500 KHz      |
| 2437            | 9.750                    | > 500 KHz      |
| 2462            | 9.750                    | > 500 KHz      |

##### 802.11b \_ CCK

| Frequency (MHz) | Min. 6dB Bandwidth (MHz) | Required Limit |
|-----------------|--------------------------|----------------|
| 2412            | 9.750                    | > 500 KHz      |
| 2437            | 10.375                   | > 500 KHz      |
| 2462            | 10.750                   | > 500 KHz      |

##### 802.11g \_ BPSK

| Frequency (MHz) | Min. 6dB Bandwidth (MHz) | Required Limit |
|-----------------|--------------------------|----------------|
| 2412            | 16.150                   | > 500 KHz      |
| 2437            | 16.710                   | > 500 KHz      |
| 2462            | 16.750                   | > 500 KHz      |

##### 802.11g \_ CCK

| Frequency (MHz) | Min. 6dB Bandwidth (MHz) | Required Limit |
|-----------------|--------------------------|----------------|
| 2412            | 16.570                   | > 500 KHz      |
| 2437            | 16.540                   | > 500 KHz      |
| 2462            | 16.500                   | > 500 KHz      |

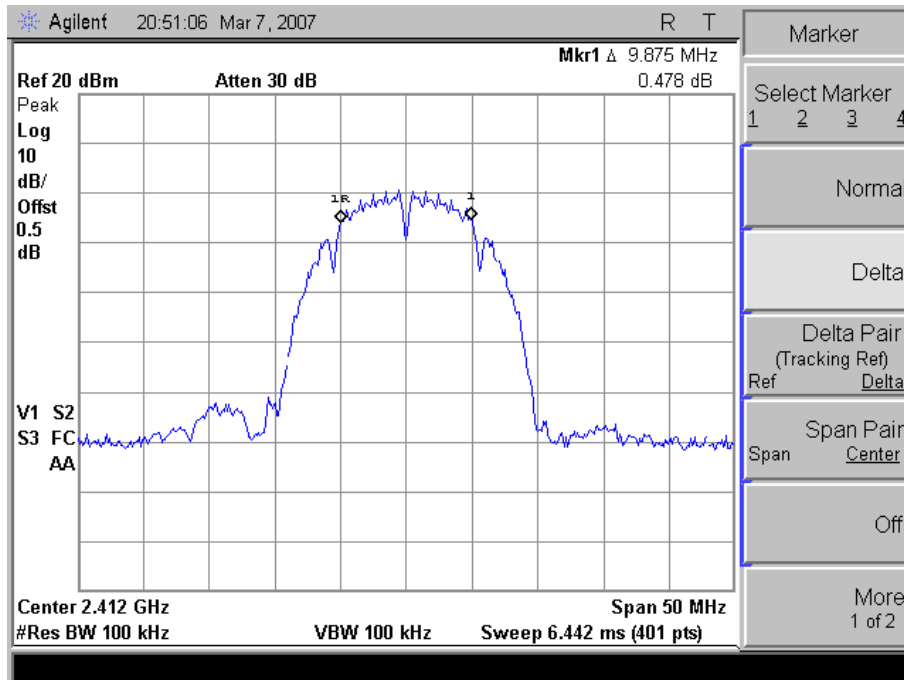
Note: Test Graphs See next page.



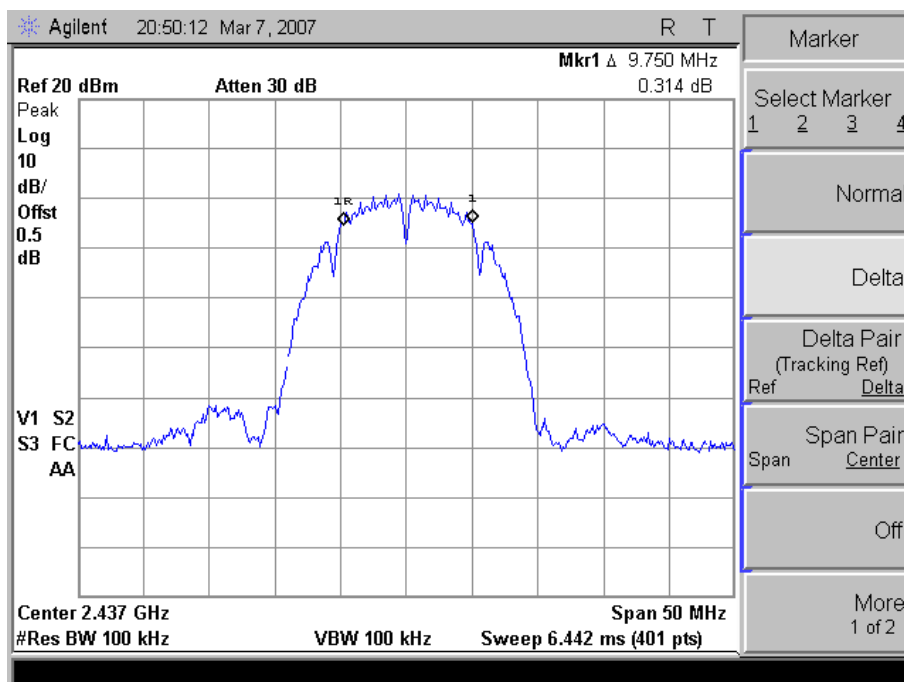


## 5.5 Test Graphs

### 802.11b (2412MHz) \_ BPSK

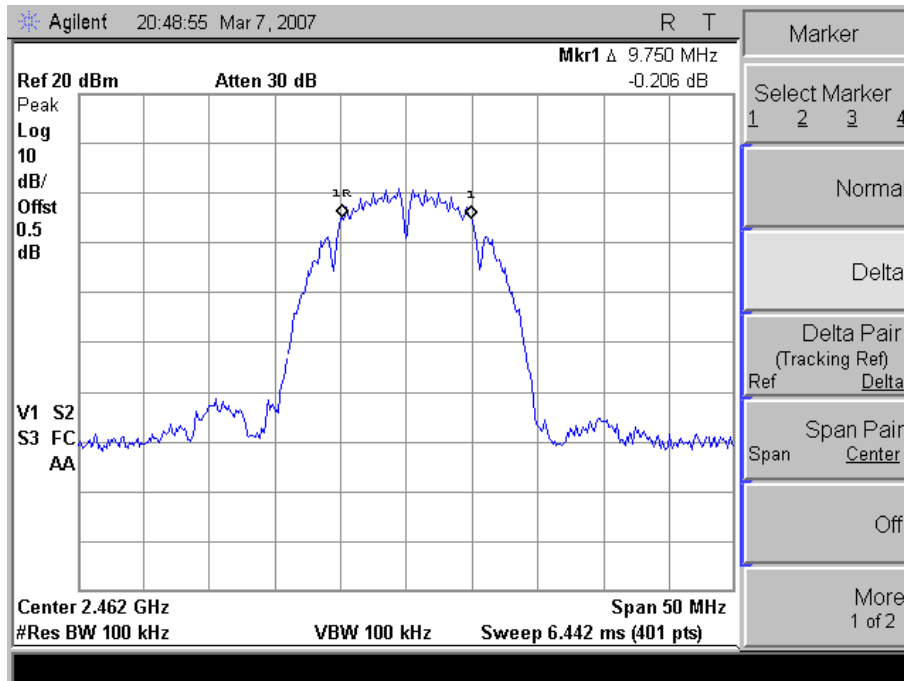


### 802.11b (2437MHz) \_ BPSK



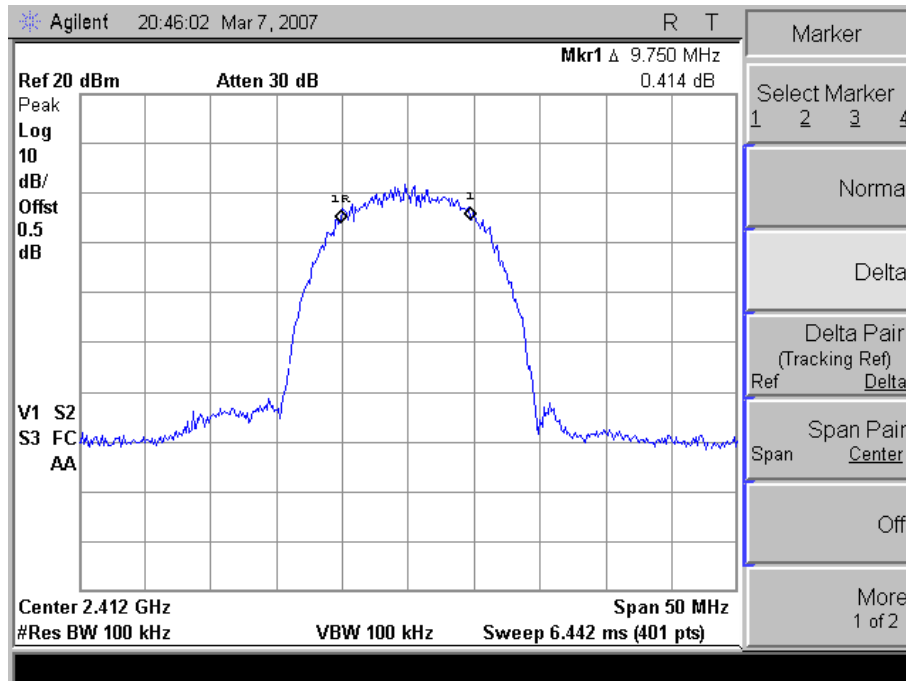


# 802.11b (2462MHz) \_ BPSK

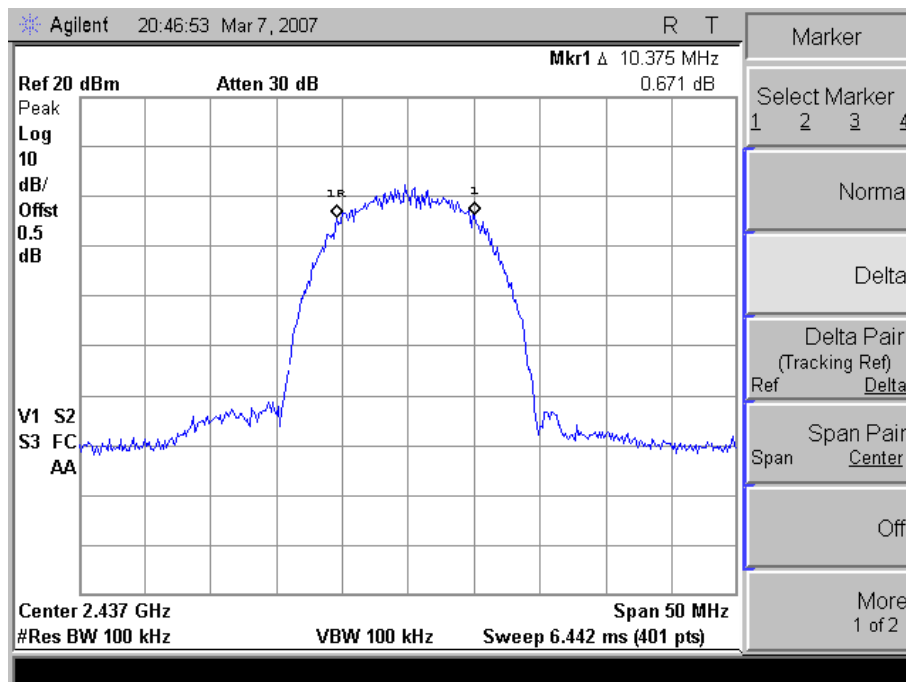




### 802.11b (2412MHz) \_ CCK

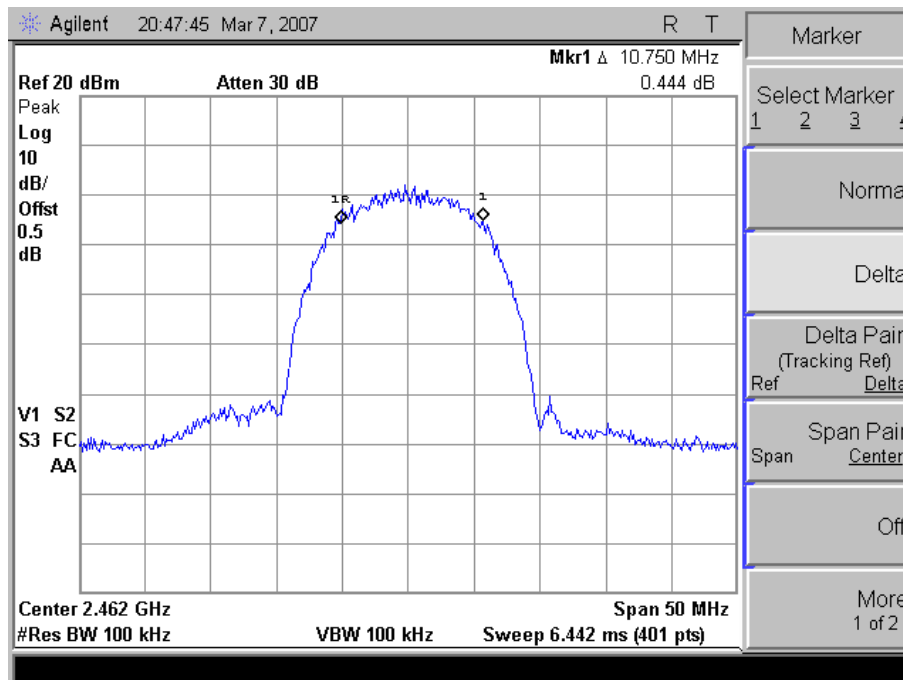


### 802.11b (2437MHz) \_ CCK



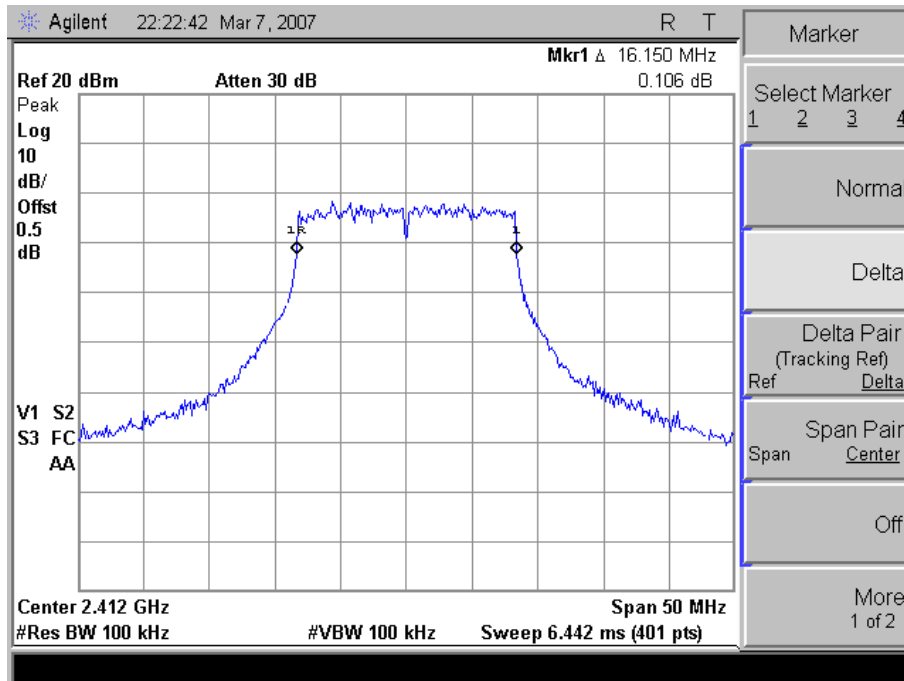


802.11b (2462MHz) \_ CCK

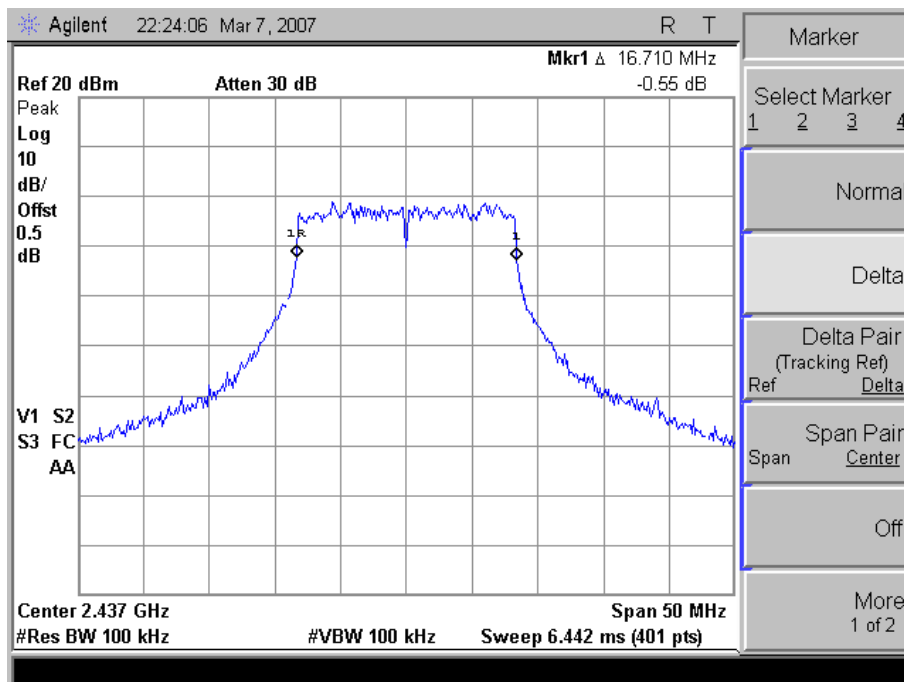




### 802.11g (2412MHz) \_ BPSK

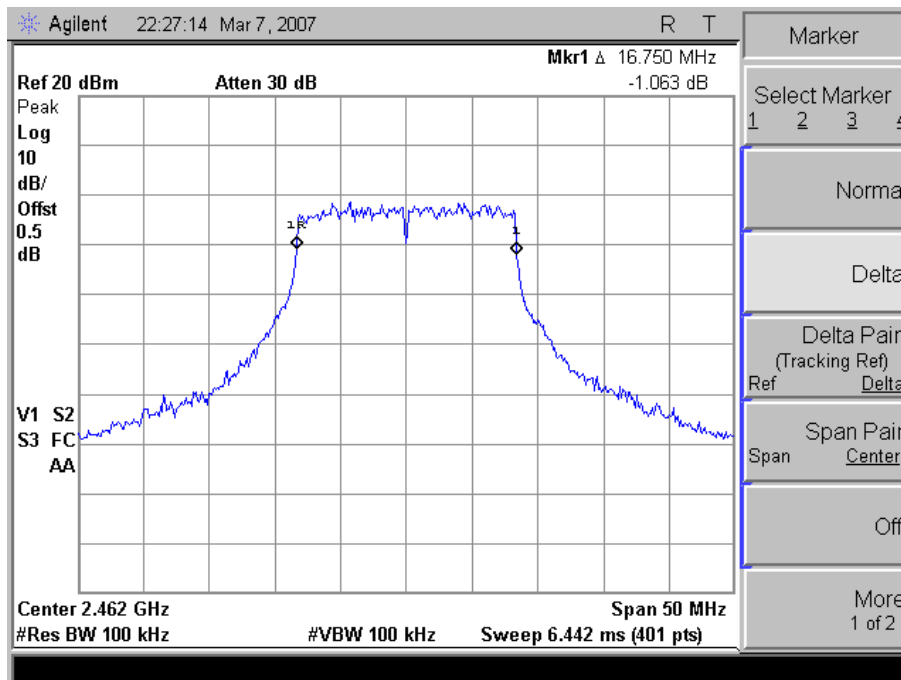


### 802.11g (2437MHz) \_ BPSK



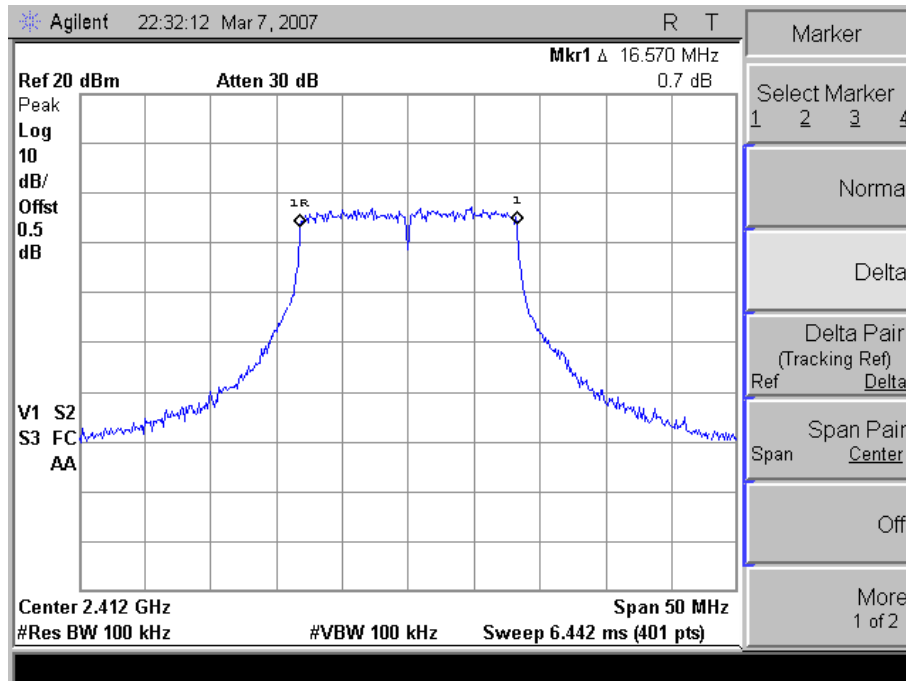


# 802.11g (2462MHz) \_ BPSK

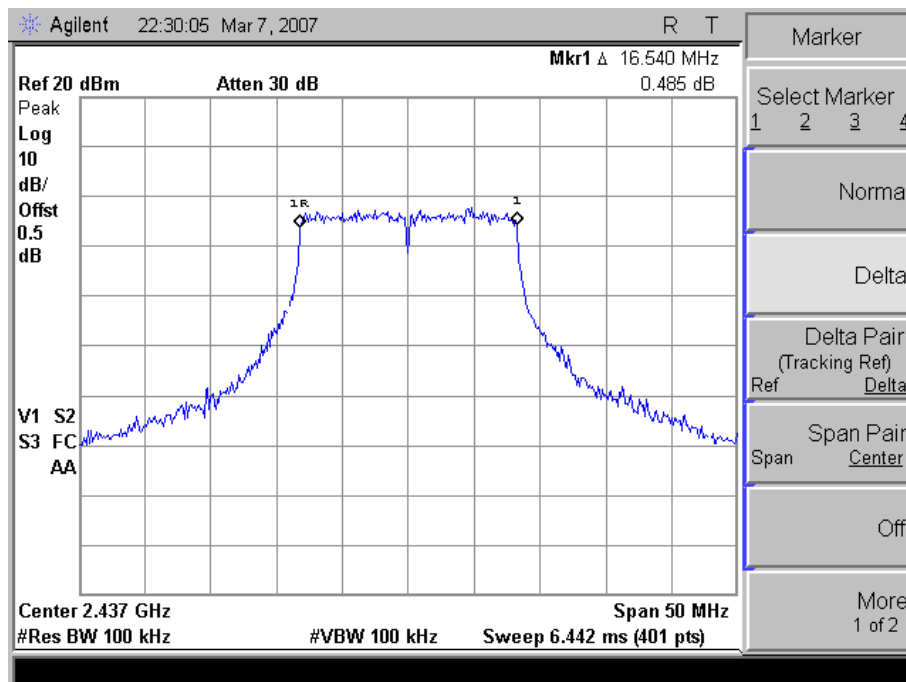




## 802.11g (2412MHz) \_ CCK



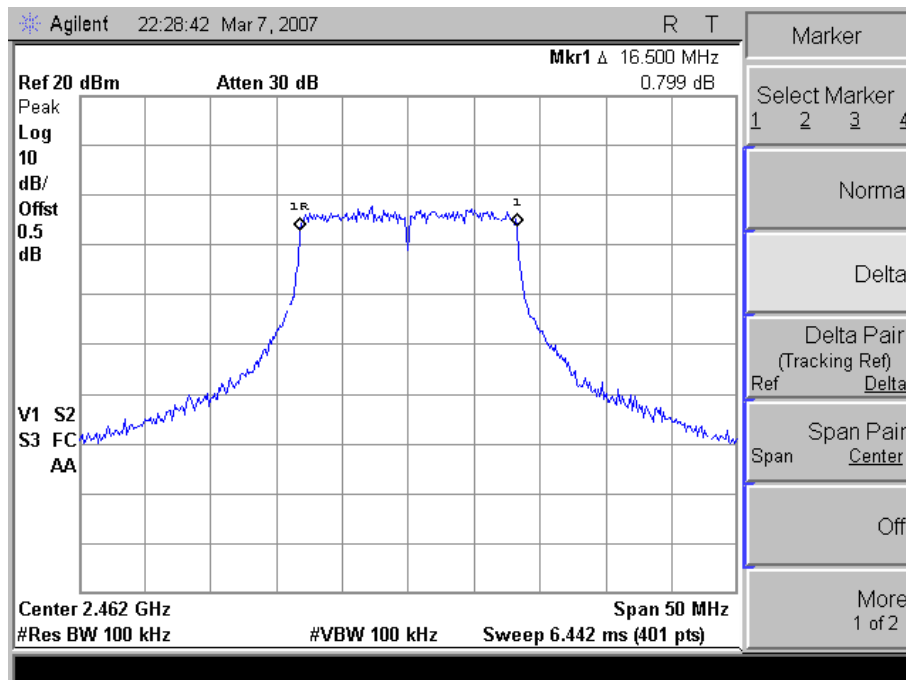
## 802.11g (2437MHz) \_ CCK







## 802.11g (2462MHz) \_ CCK



## 6. Maximum Power Density Requirements

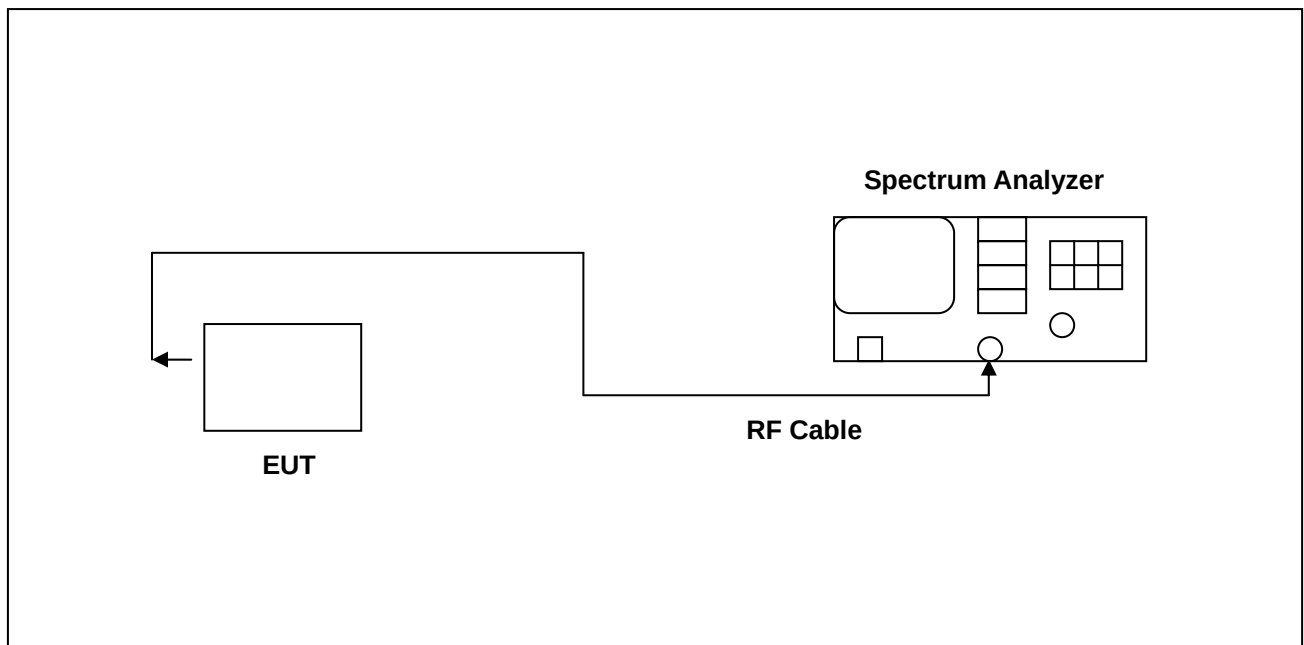
### 6.1 Test Condition & Setup:

The spectrum analyzer RES BW was set to 3 kHz. The START and STOP frequencies were set to the band edges of the maximum output pass band. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs. The specification calls for a 1 second interval at each 3 kHz bandwidth; total SWEEP TIME is calculated as follows:

$$\text{SWEEP TIME (SEC)} = (\text{Fstop, kHz} - \text{Fstart, kHz}) / 3 \text{ kHz}$$

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

### 6.2 Test Instruments Configuration:





### 6.3 Test Equipment List:

| Describe          | Manufacturer | Model  | Serial Number | Calibration   |               |
|-------------------|--------------|--------|---------------|---------------|---------------|
|                   |              |        |               | Cal. Date     | Due Date      |
| Spectrum Analyzer | Agilent      | E4445A | MY45300744    | May. 09, 2006 | May. 09, 2007 |

### 6.4 Test Result:

#### 802.11b \_ BPSK

| Frequency (MHz) | Power Density (dBm) | Required Limit |
|-----------------|---------------------|----------------|
| 2412            | -20.99              | <8dBm          |
| 2437            | -19.84              | <8dBm          |
| 2462            | -20.61              | <8dBm          |

#### 802.11b \_ CCK

| Frequency (MHz) | Power Density (dBm) | Required Limit |
|-----------------|---------------------|----------------|
| 2412            | -12.16              | <8dBm          |
| 2437            | -11.81              | <8dBm          |
| 2462            | -11.81              | <8dBm          |

#### 802.11g \_ BPSK

| Frequency (MHz) | Power Density (dBm) | Required Limit |
|-----------------|---------------------|----------------|
| 2412            | -17.17              | <8dBm          |
| 2437            | -16.57              | <8dBm          |
| 2462            | -16.73              | <8dBm          |

#### 802.11g \_ CCK

| Frequency (MHz) | Power Density (dBm) | Required Limit |
|-----------------|---------------------|----------------|
| 2412            | -17.04              | <8dBm          |
| 2437            | -16.47              | <8dBm          |
| 2462            | -16.89              | <8dBm          |

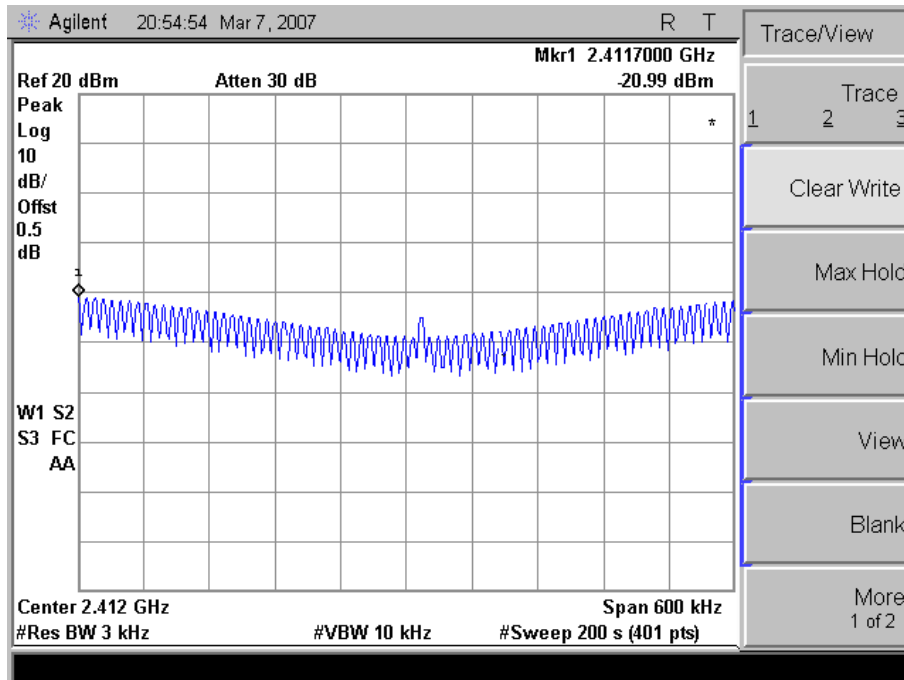
Note:

1. Frequency Span= 600 kHz
2. Sweep Time = Frequency Span/3 kHz=200secs
3. Test Graphs See next page.

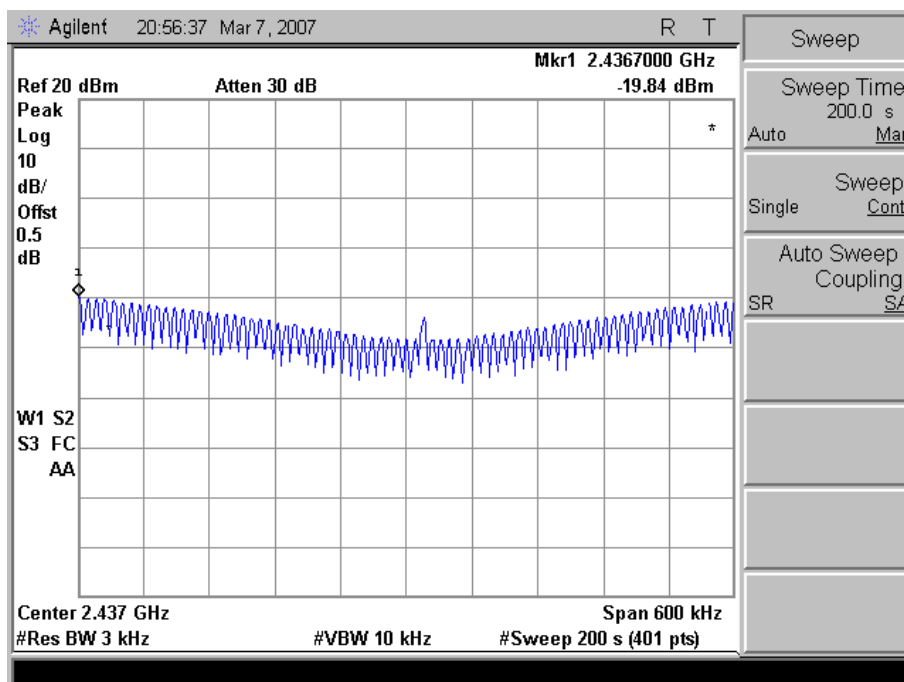


## 6.5 Test Graphs

### 802.11b (2412MHz) \_ BPSK



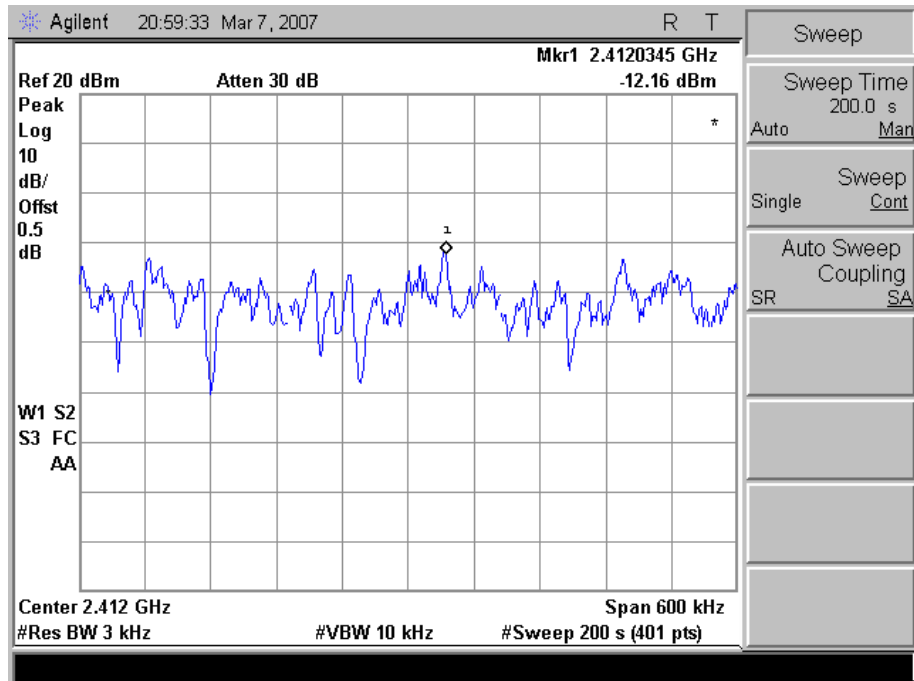
### 802.11b (2437MHz) \_ BPSK



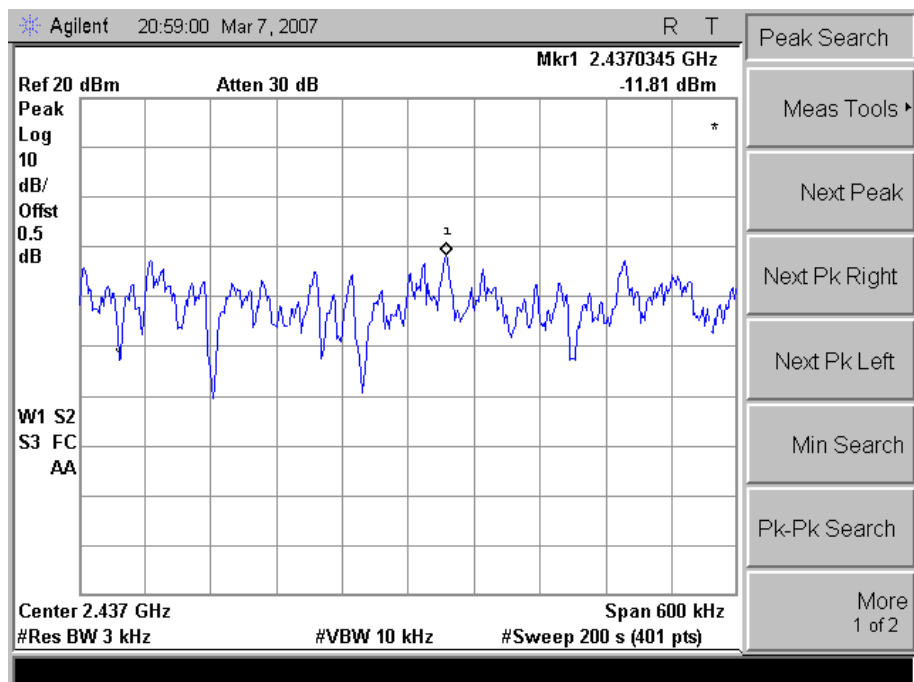




## 802.11b (2412MHz) \_ CCK

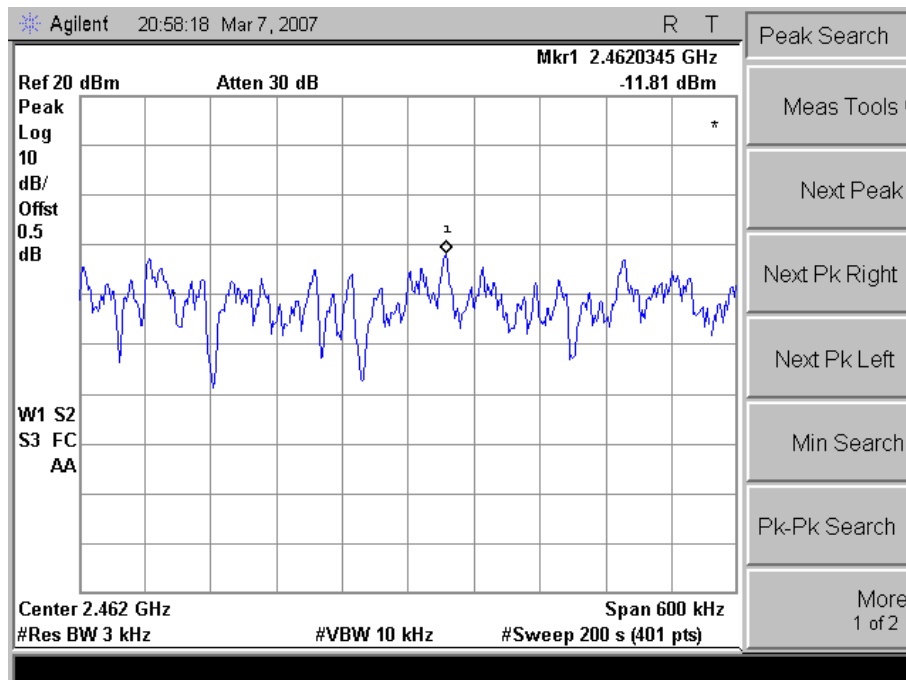


## 802.11b (2437MHz) \_ CCK



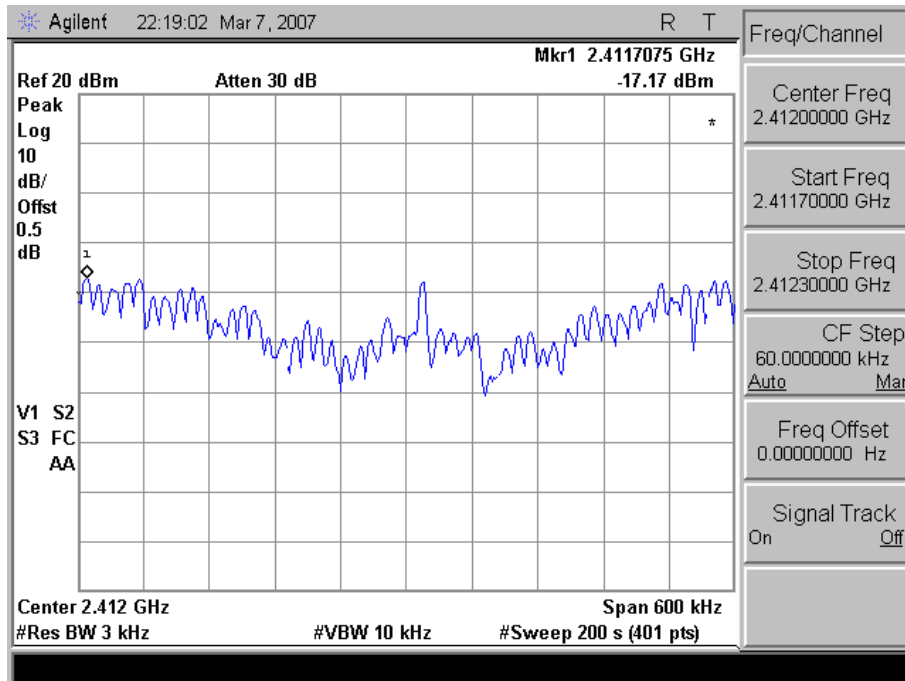


802.11b (2462MHz) \_ CCK

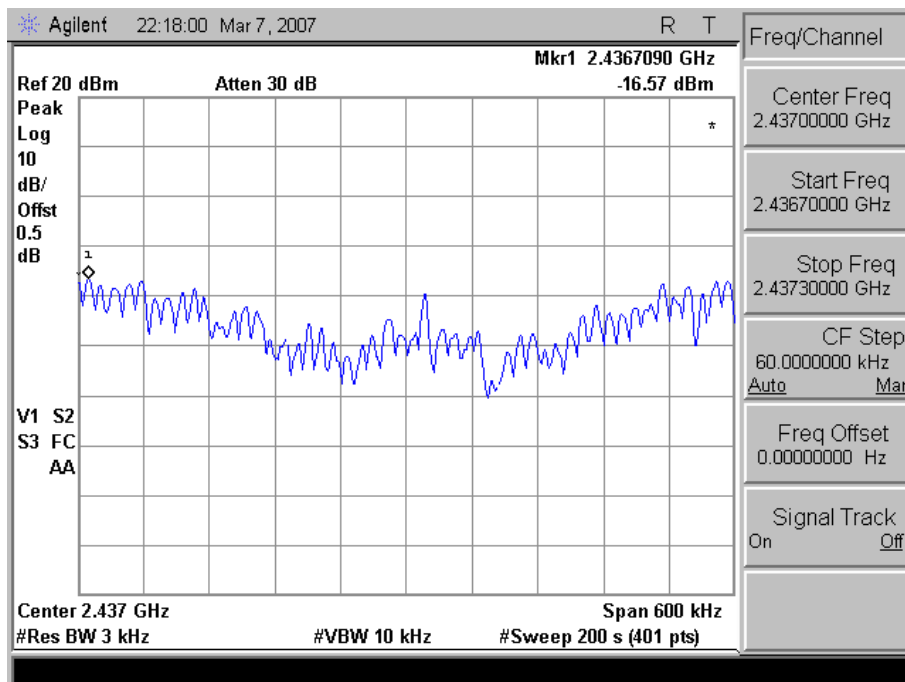




## 802.11g (2412MHz) \_ BPSK



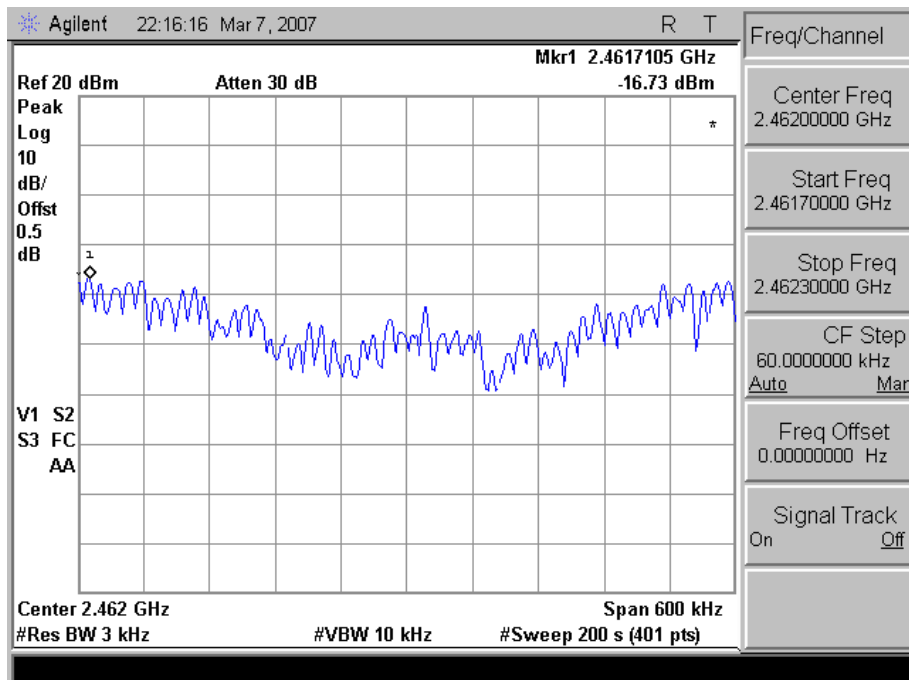
## 802.11g (2437MHz) \_ BPSK





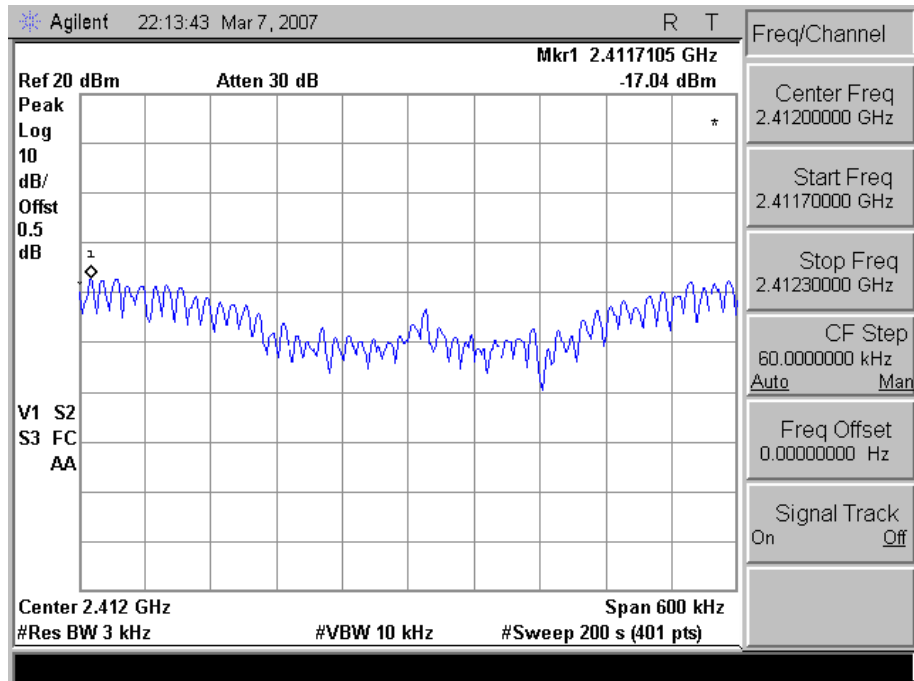


802.11g (2462MHz) \_ BPSK

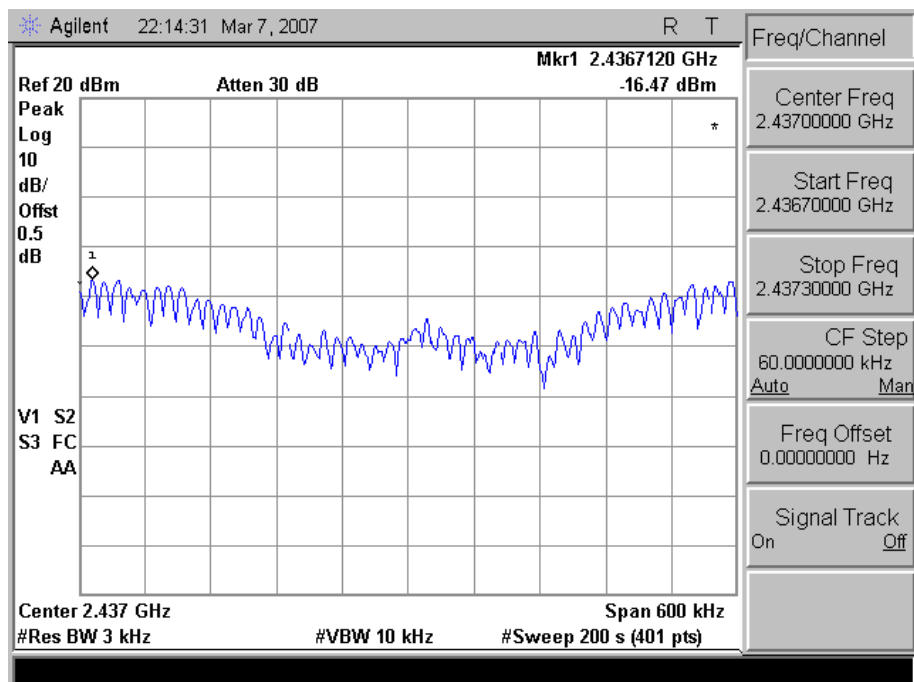




## 802.11g (2412MHz) \_ CCK

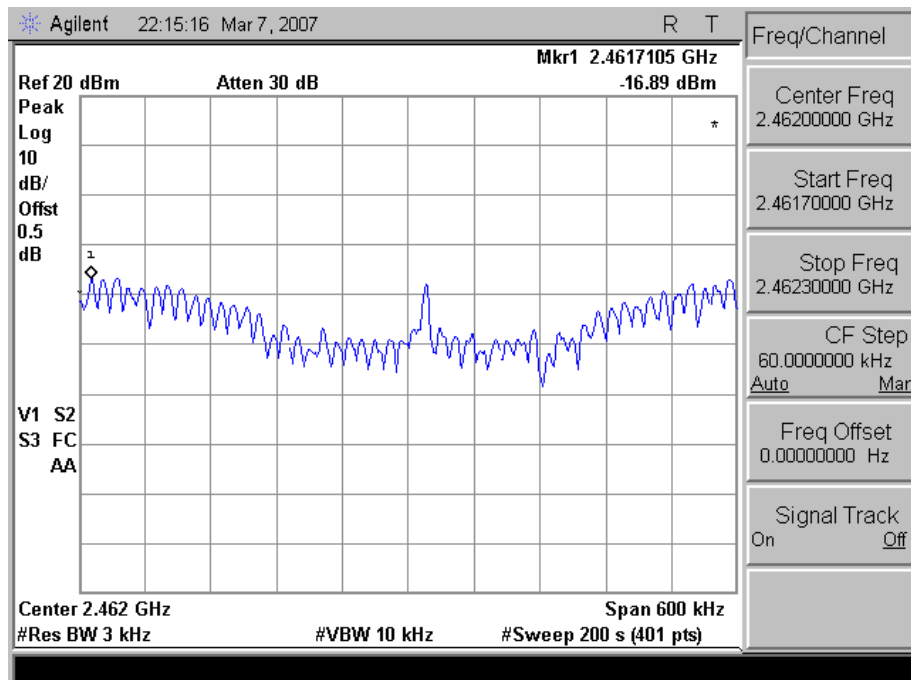


## 802.11g (2437MHz) \_ CCK





802.11g (2462MHz) \_ CCK



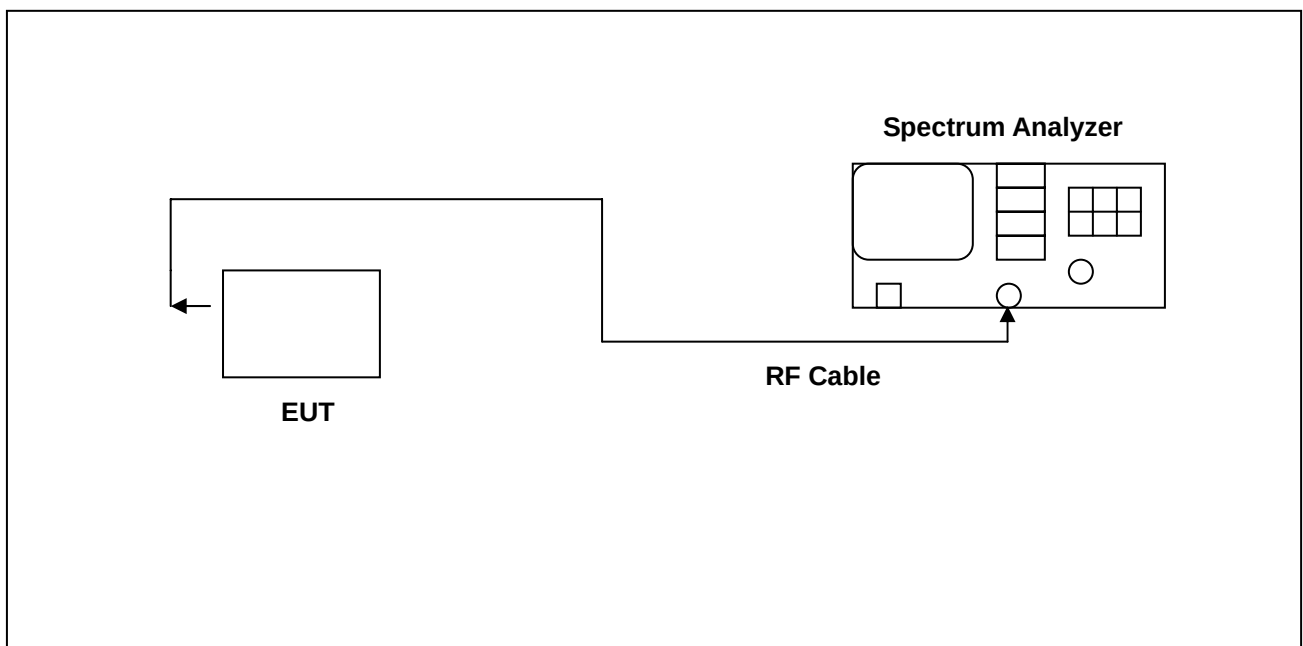
## 7. Out of Band Conducted Emissions Requirements

### 7.1 Test Condition & Setup:

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels (Channel 1, 6, 11)

### 7.2 Test Instruments Configuration:





### 7.3 Test Equipment List:

| Describe          | Manufacturer | Model  | Serial Number | Calibration   |               |
|-------------------|--------------|--------|---------------|---------------|---------------|
|                   |              |        |               | Cal. Date     | Due Date      |
| Spectrum Analyzer | Agilent      | E4445A | MY45300744    | May. 09, 2006 | May. 09, 2007 |

### 7.4 Test Result:

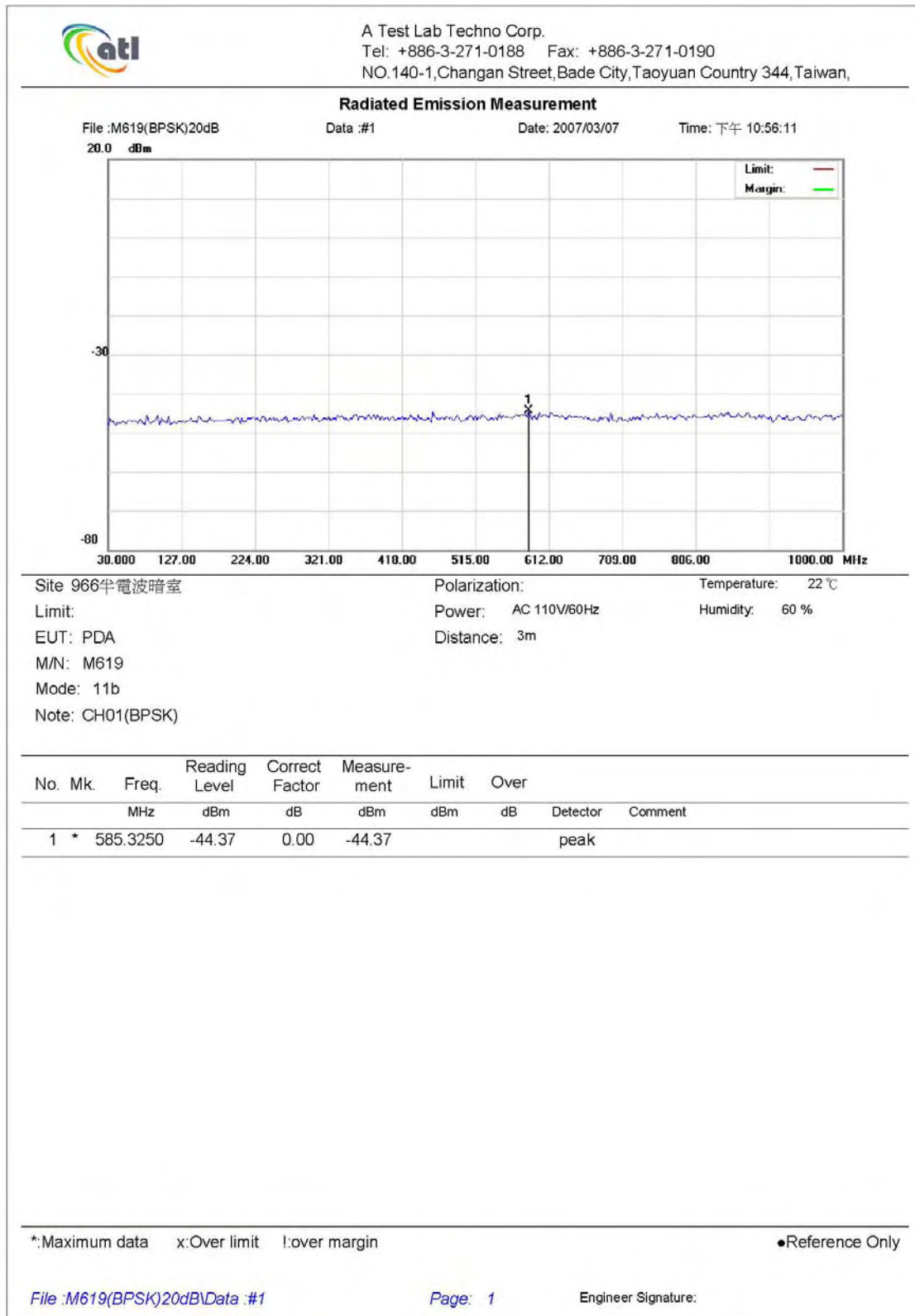
Refer to attached data sheets. Data shows out of band emissions are suppressed well below the -20 dBc minimum required by the Rules.

Note: Test Graphs See next page.



## 7.5 Test Graphs

### 7.5.1 802.11b Test Graphs \_ BPSK





A Test Lab Techno Corp.  
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NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

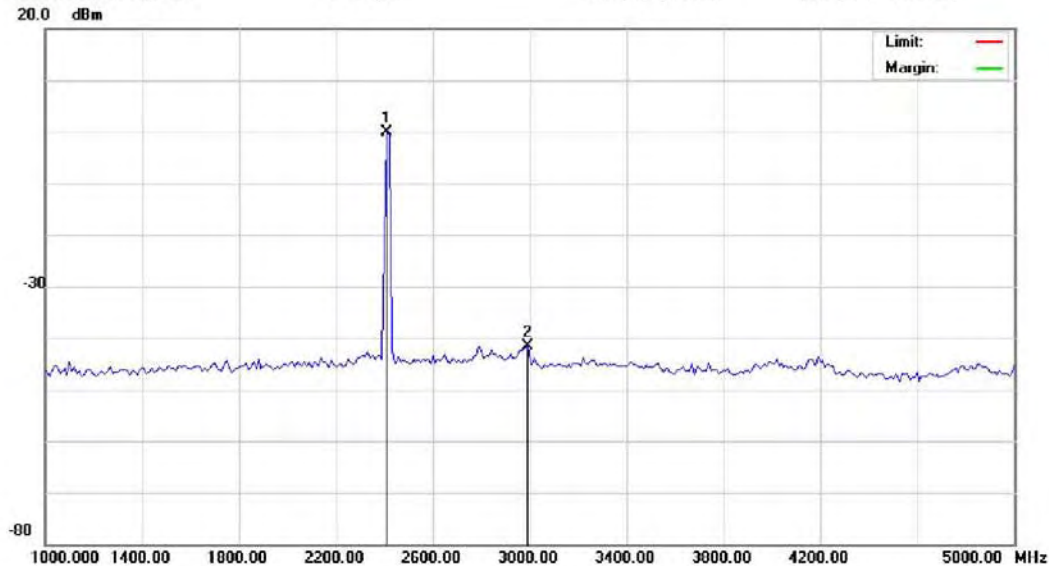
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#2

Date: 2007/03/07

Time: 下午 10:56:24



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH01(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 2410.000     | -0.24                   | 0.00                    | -0.24                   |              |            | peak     |         |
| 2   |     | 2990.000     | -41.65                  | 0.00                    | -41.65                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#2

Page: 1

Engineer Signature:



A Test Lab Techno Corp.  
Tel: +886-3-271-0188 Fax: +886-3-271-0190  
NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

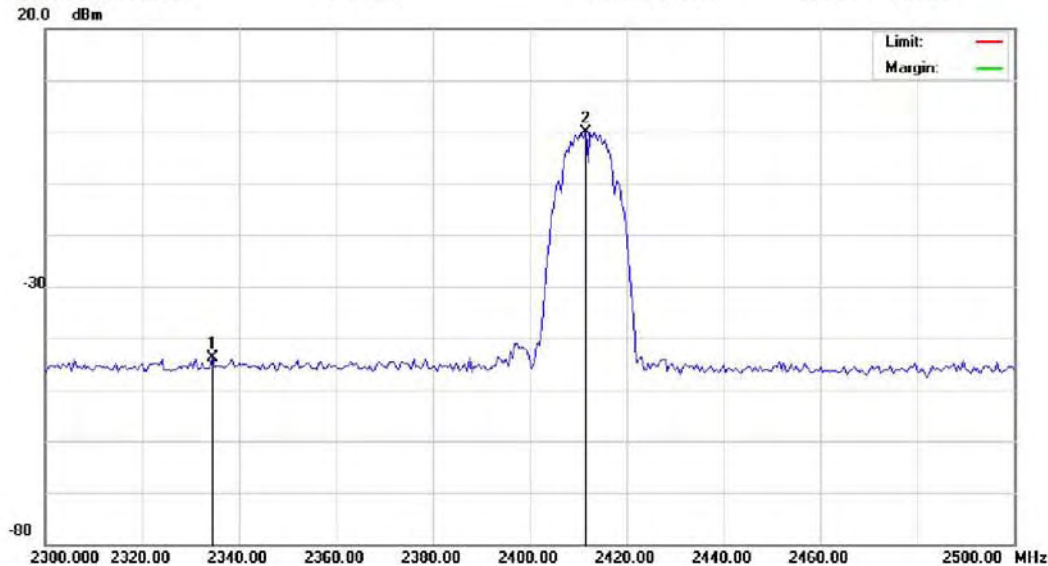
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#3

Date: 2007/03/07

Time: 下午 10:56:37



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH01(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   |     | 2334.500     | -43.92                  | 0.00                    | -43.92                  |              |            | peak     |         |
| 2   | *   | 2411.500     | -0.06                   | 0.00                    | -0.06                   |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#3

Page: 1

Engineer Signature:





A Test Lab Techno Corp.  
Tel: +886-3-271-0188 Fax: +886-3-271-0190  
NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

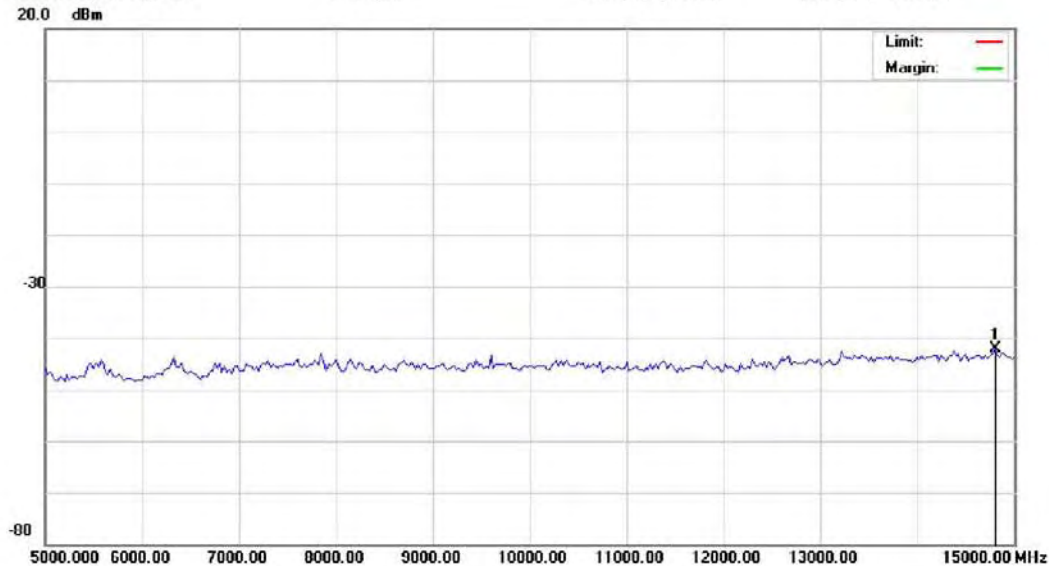
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#4

Date: 2007/03/07

Time: 下午 10:56:51



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH01(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 14800.00     | -42.06                  | 0.00                    | -42.06                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#4

Page: 1

Engineer Signature:



A Test Lab Techno Corp.  
Tel: +886-3-271-0188 Fax: +886-3-271-0190  
NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

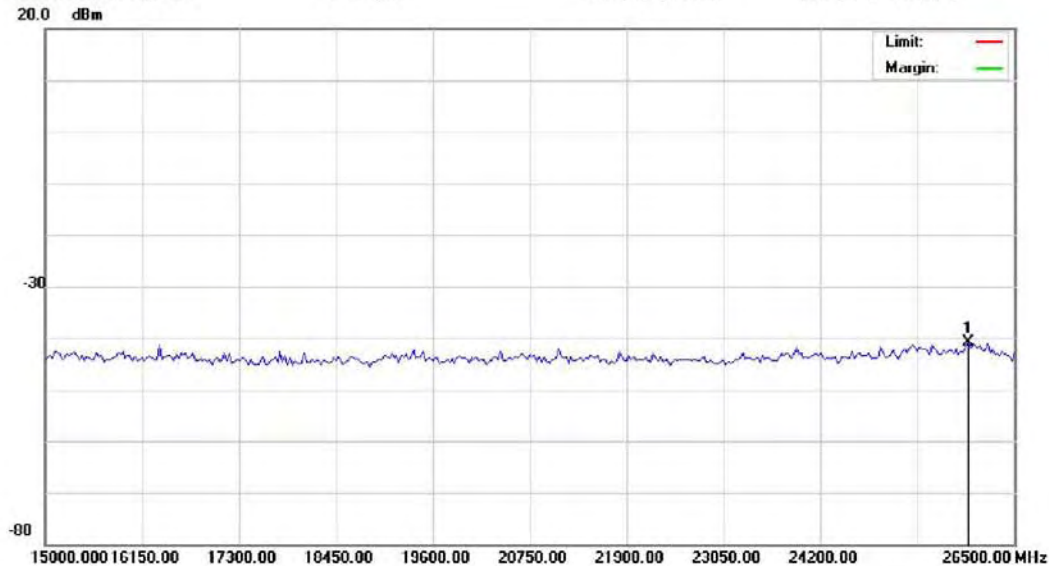
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#5

Date: 2007/03/07

Time: 下午 10:57:04



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH01(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 25953.75     | -40.77                  | 0.00                    | -40.77                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#5

Page: 1

Engineer Signature:



A Test Lab Techno Corp.  
Tel: +886-3-271-0188 Fax: +886-3-271-0190  
NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

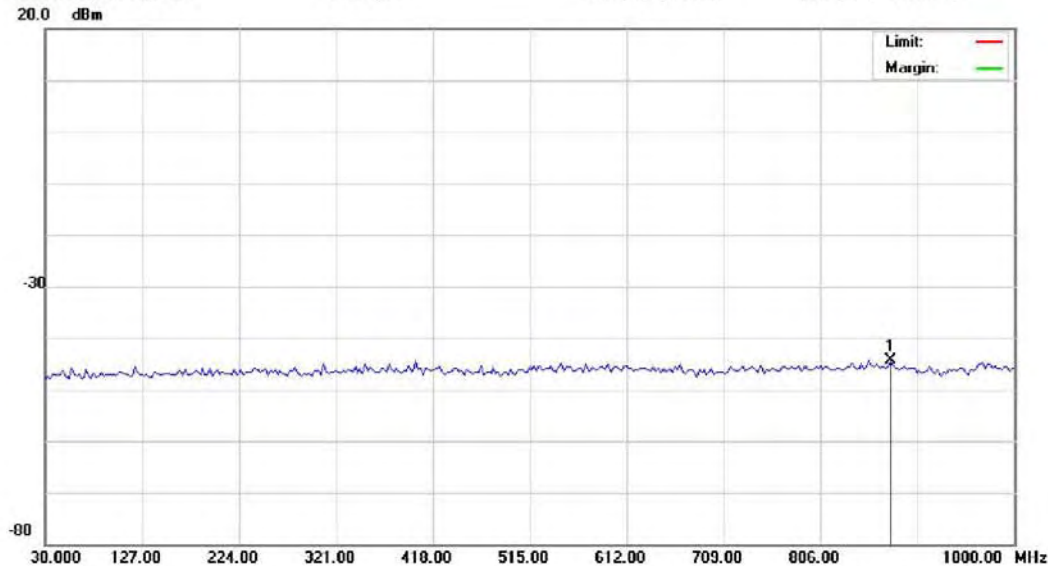
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#6

Date: 2007/03/07

Time: 下午 10:58:46



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH06(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 876.3250     | -44.32                  | 0.00                    | -44.32                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#6

Page: 1

Engineer Signature:



A Test Lab Techno Corp.  
Tel: +886-3-271-0188 Fax: +886-3-271-0190  
NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

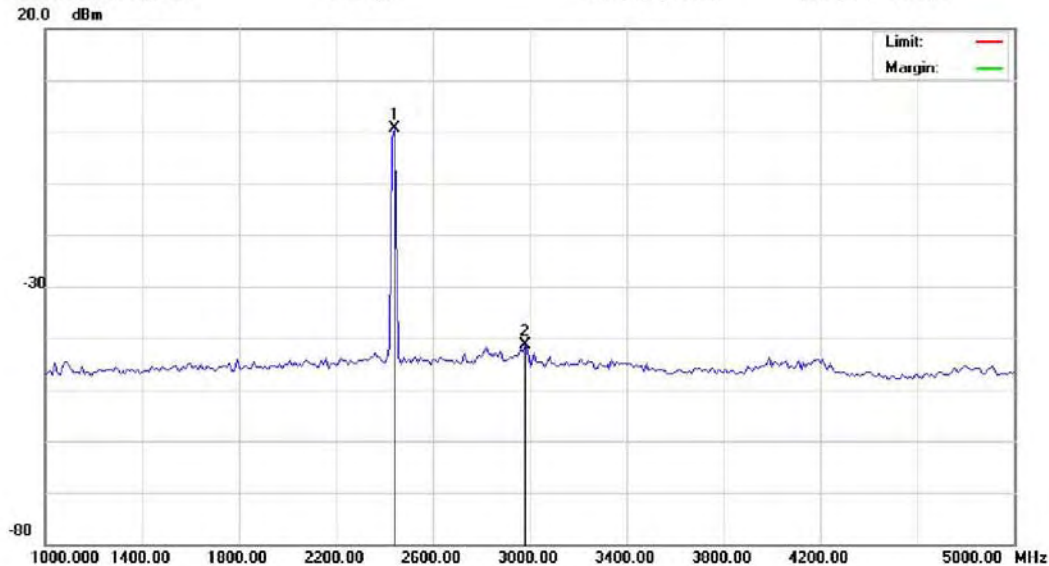
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#7

Date: 2007/03/07

Time: 下午 10:58:59



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH06(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 2440.000     | 0.71                    | 0.00                    | 0.71                    |              |            | peak     |         |
| 2   |     | 2980.000     | -41.41                  | 0.00                    | -41.41                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#7

Page: 1

Engineer Signature:



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Tel: +886-3-271-0188 Fax: +886-3-271-0190  
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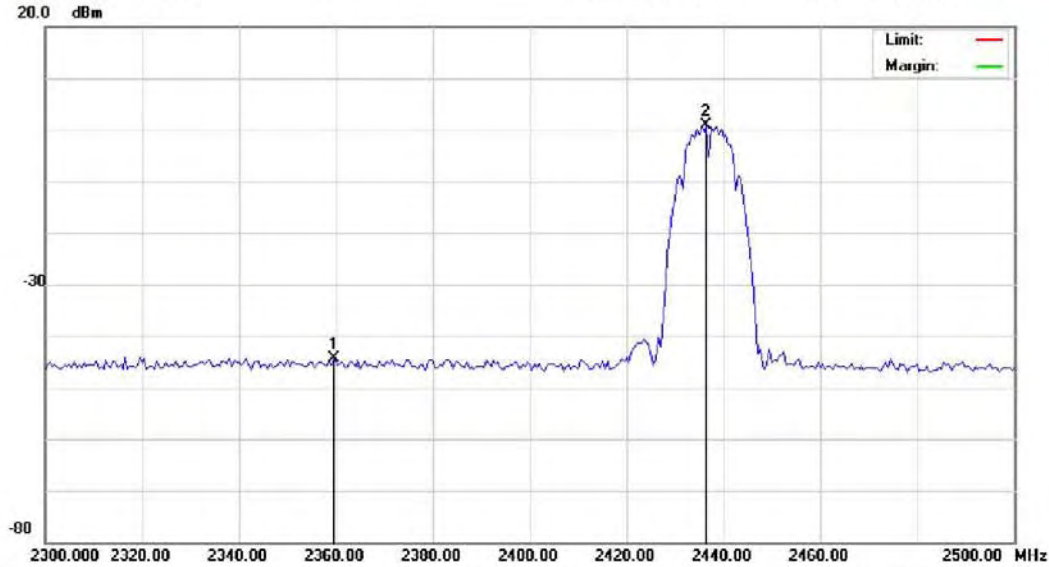
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#8

Date: 2007/03/07

Time: 下午 10:59:12



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH06(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   |     | 2359.500     | -44.37                  | 0.00                    | -44.37                  |              |            | peak     |         |
| 2   | *   | 2436.500     | 0.79                    | 0.00                    | 0.79                    |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#8

Page: 1

Engineer Signature:





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### Radiated Emission Measurement

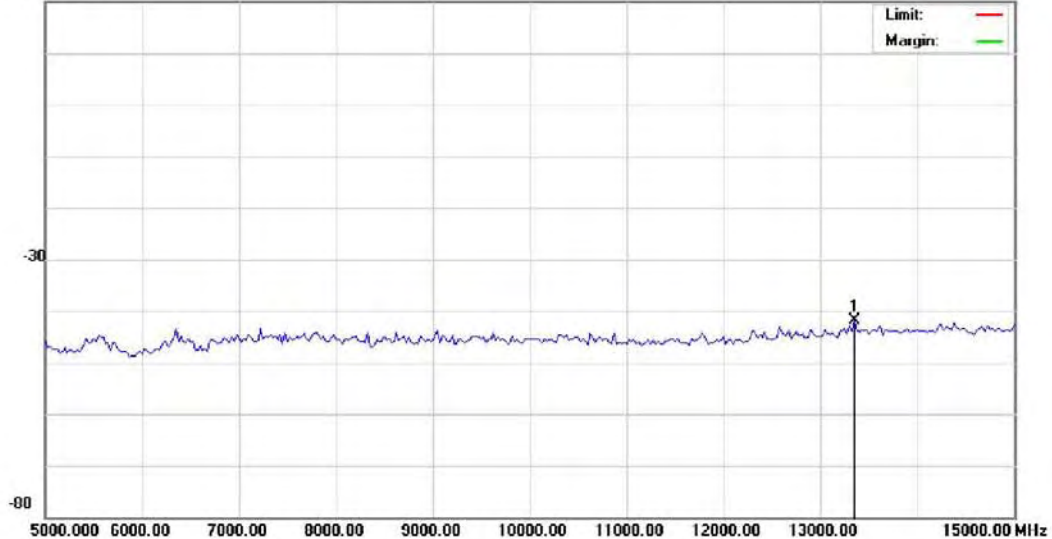
File :M619(BPSK)20dB

Data :#9

Date: 2007/03/07

Time: 下午 10:59:25

20.0 dBm



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH06(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 13350.00     | -41.99                  | 0.00                    | -41.99                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#9

Page: 1

Engineer Signature:



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NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

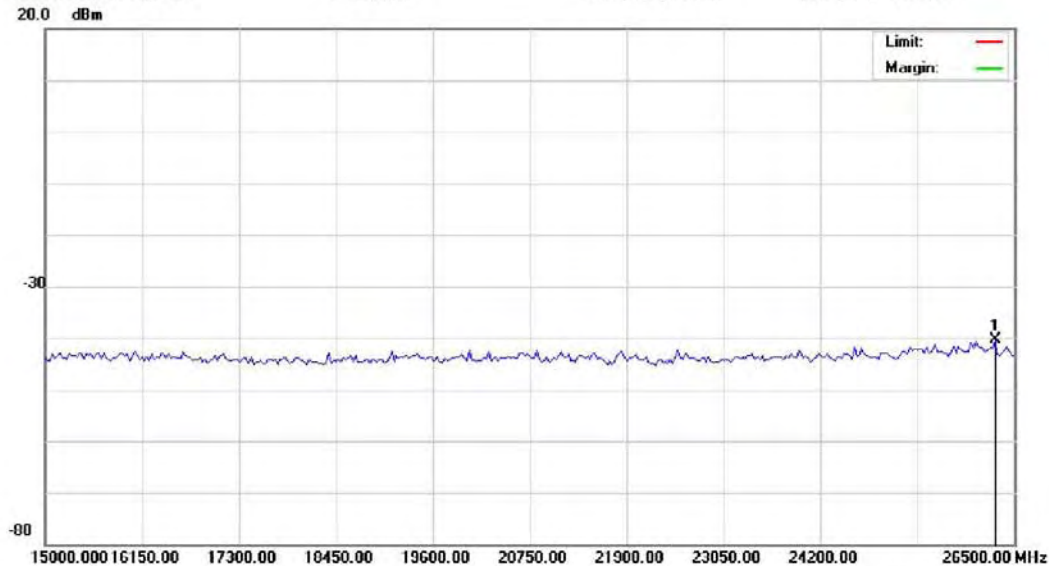
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#10

Date: 2007/03/07

Time: 下午 10:59:39



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH06(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 26270.00     | -40.27                  | 0.00                    | -40.27                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#10

Page: 1

Engineer Signature:



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NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

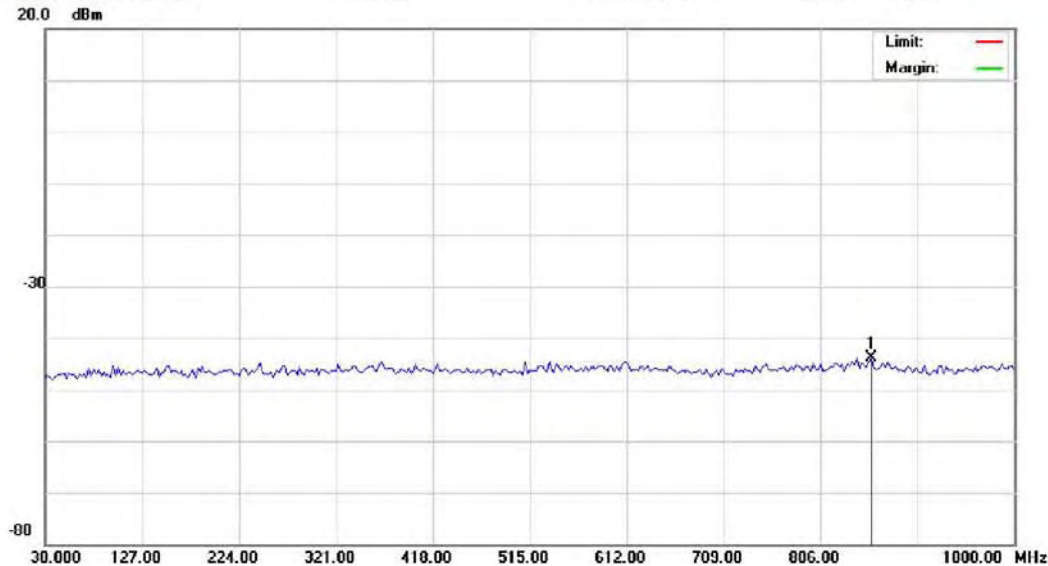
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#11

Date: 2007/03/07

Time: 下午 11:00:17



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH11(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 856.9250     | -43.90                  | 0.00                    | -43.90                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#11

Page: 1

Engineer Signature:





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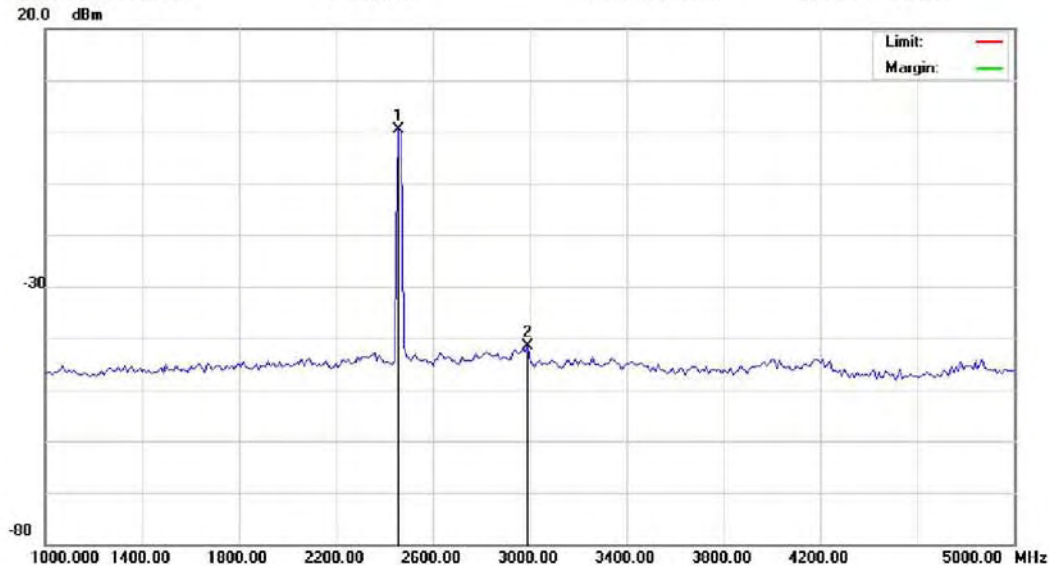
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#12

Date: 2007/03/07

Time: 下午 11:00:30



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH11(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 2460.000     | 0.30                    | 0.00                    | 0.30                    |              |            | peak     |         |
| 2   |     | 2990.000     | -41.70                  | 0.00                    | -41.70                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#12

Page: 1

Engineer Signature:



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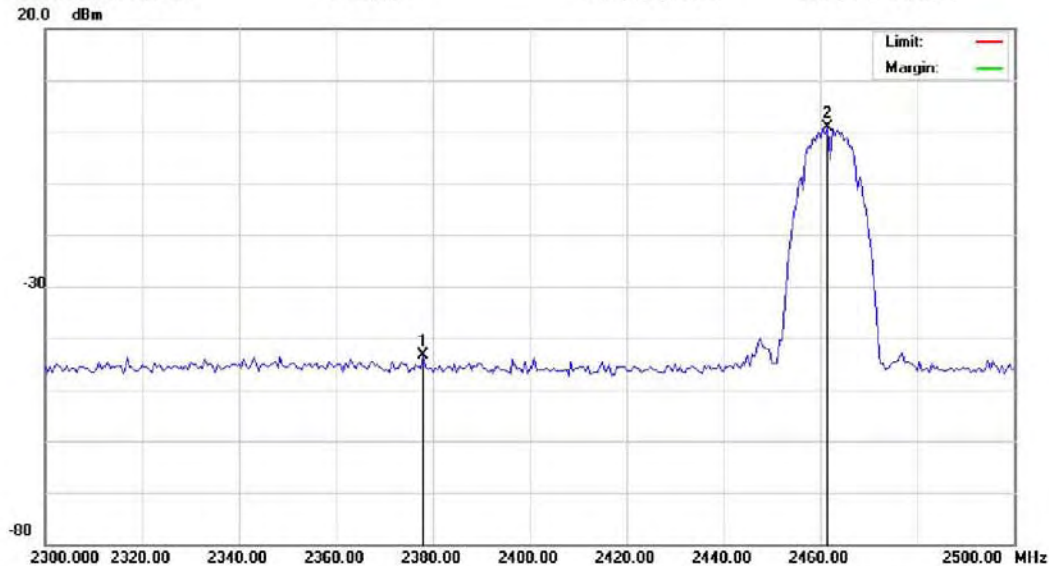
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#13

Date: 2007/03/07

Time: 下午 11:00:44



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH11(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   |     | 2378.000     | -43.33                  | 0.00                    | -43.33                  |              |            | peak     |         |
| 2   | *   | 2461.500     | 0.82                    | 0.00                    | 0.82                    |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#13

Page: 1

Engineer Signature:



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NO.140-1,Changan Street,Bade City,Taoyuan Country 344,Taiwan,

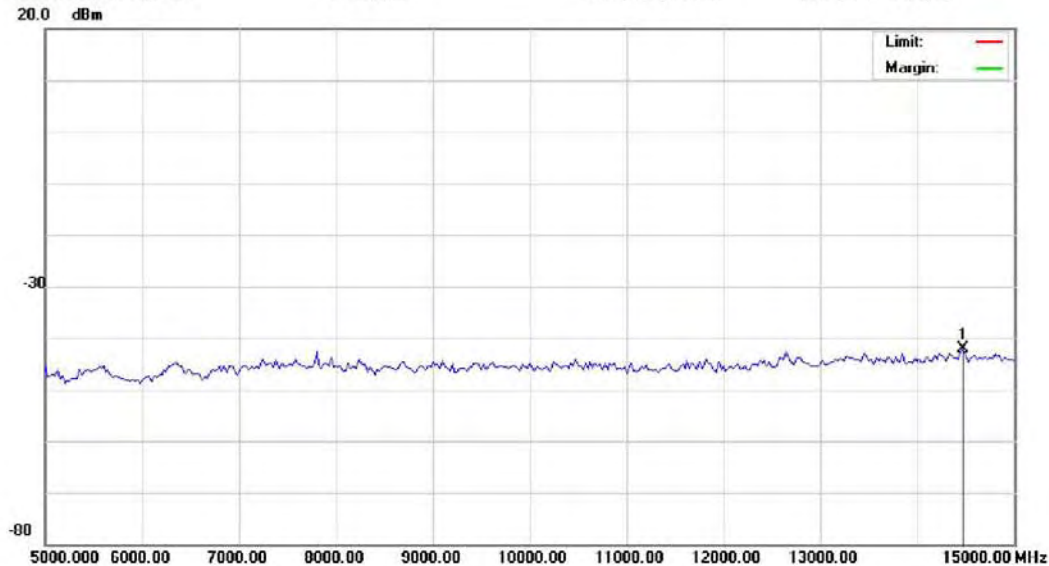
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#14

Date: 2007/03/07

Time: 下午 11:00:57



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH11(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 14475.00     | -42.11                  | 0.00                    | -42.11                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#14

Page: 1

Engineer Signature:



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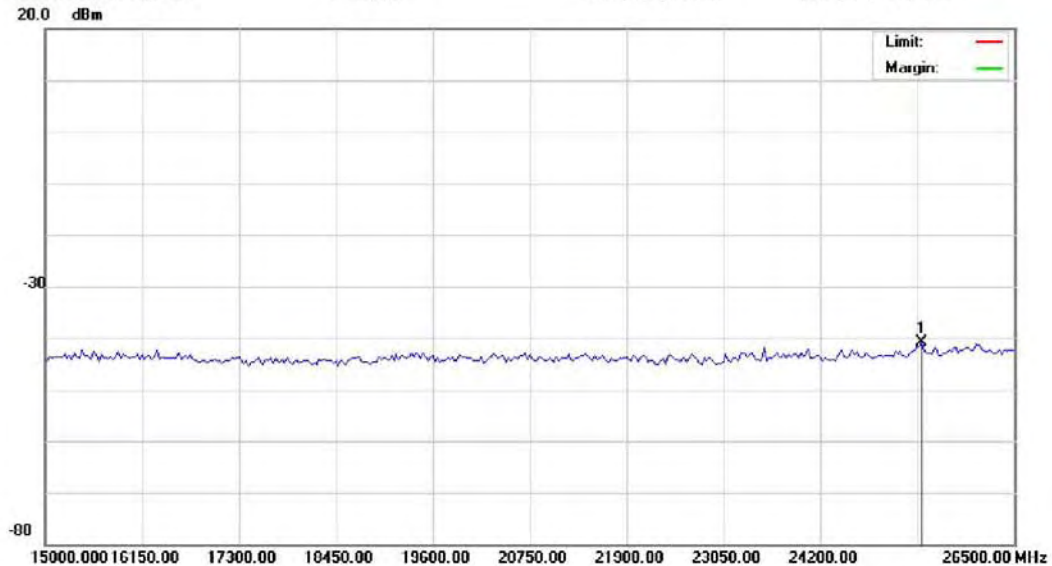
### Radiated Emission Measurement

File :M619(BPSK)20dB

Data :#15

Date: 2007/03/07

Time: 下午 11:01:10



Site 966半電波暗室

Polarization:

Temperature: 22 °C

Limit:

Power: AC 110V/60Hz

Humidity: 60 %

EUT: PDA

Distance: 3m

M/N: M619

Mode: 11b

Note: CH11(BPSK)

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBm | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBm | Limit<br>dBm | Over<br>dB | Detector | Comment |
|-----|-----|--------------|-------------------------|-------------------------|-------------------------|--------------|------------|----------|---------|
| 1   | *   | 25407.50     | -40.80                  | 0.00                    | -40.80                  |              |            | peak     |         |

\*:Maximum data x:Over limit !:over margin

●Reference Only

File :M619(BPSK)20dB\Data :#15

Page: 1

Engineer Signature:



## 7.5.2 802.11b Test Graphs \_ CCK

