

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART C REQUIREMENT**

*OF*

**Archos 8 home tablet**

**MODEL No.: 7800**

**FCC ID: SOV7800**

**REPORT NO: E1004074F**

**ISSUE DATE: May 16, 2010**

*Prepared for*

**ARCHOS SA  
12 Rue Ampere ZI 91430 Igny, France**

*Prepared by*

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## VERIFICATION OF COMPLIANCE

|                      |                                                                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicant:           | ARCHOS SA<br>12 Rue Ampere ZI 91430 Igny, France                                                                                                            |
| Manufacturer:        | SHENZHEN YIFANG DIGITAL TECHNOLOGY CO., LTD.<br>Building NO. 22, 23, Fifth Region, Baiwangxin Industrial Park, Songbai Rd., Nanshan, Shenzhen 518108, China |
| Product Description: | Archos 8 home tablet                                                                                                                                        |
| Brand Name:          | N/A                                                                                                                                                         |
| Model Number:        | 7800                                                                                                                                                        |
| Serial Number:       | N/A                                                                                                                                                         |
| File Number:         | E1004074F                                                                                                                                                   |
| Date of Test:        | April 21, 2010 to May 14, 2010                                                                                                                              |

### We hereby certify that:

The above equipment was tested by SHENZHEN EMTEK CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247.

The test results of this report relate only to the tested sample identified in this report.

**Approved By**



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**David Lee / Q.A. Manager**  
**SHENZHEN EMTEK CO., LTD.**

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## 1. GENERAL INFORMATION

### 1.1 Product Description

A major technical descriptions of EUT is described as following:

- A). Standards: IEEE802.11b/g
- B). Operation Frequency: 2400-2483.5MHz
- C). Modulation: OFDM with BPSK, QPSK, 16QAM, 64QAM(11g), BPSK, QPSK, CCK (11b)
- D). Number of Channel: 11
- E). Max Data Rate: 11Mbps(802.11b), 54Mbps(802.11g)
- F). Conducted Power: 15.8dBm(802.11b), 12.7dBm(802.11g),
- G) PCB Gain: 0dBi
- H). Antenna Type: PCB Antenna
- I). Power Supply: DC5V with AC Adapter
- J). Adapter: M/N: KSAS0100500200D5  
Input: 100-240V~50-60Hz, 0.4A  
Output: DC5V/2A

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|
| 1       | 2412            | 5       | 2432            | 9       | 2452            |
| 2       | 2417            | 6       | 2437            | 10      | 2457            |
| 3       | 2422            | 7       | 2442            | 11      | 2462            |
| 4       | 2427            | 8       | 2447            |         |                 |

Note:

1. This device is a 2.4GHz **Archos 8 home tablet** included 802.11b and 802.11g 2.4GHz transceiver function.
2. Test of channel was included the lowest middle and highest frequency in highest data rate and to perform the test, then record on this report.

### 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: SOV7800 filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules. The composite system (receiver) is compliance with Subpart B is authorized under a DOC procedure.

### 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

#### 1.4 Special Accessories

Not available for this EUT intended for grant.

#### 1.5 Equipment Modifications

Not available for this EUT intended for grant.

#### 1.6 Test Facility

Site Description  
EMC Lab.

: Accredited by CNAS, 2005.11.02  
The certificate is valid until 2010.11  
The Laboratory has been assessed and proved to be in compliance  
with CNAS/CL01:2006(identical to ISO/IEC17025: 2005)  
The Certificate Registration Number is L2291

Accredited by TUV Rheinland Shenzhen 2008.3  
The Laboratory has been assessed according to the requirements  
ISO/IEC 17025

Accredited by FCC, March 18, 2008  
The Certificate Registration Number is 709623.

Accredited by Industry Canada, May 24, 2008  
The Certificate Registration Number is 46405-4480.

Name of Firm  
Site Location

: SHENZHEN EMTEK CO., LTD  
: Bldg 69, Majialong Industry Zone,  
Nanshan District, Shenzhen, Guangdong, China

## 2. System Test Configuration

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

#### 2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2003.

### 2.4 Configuration of Tested System

**Fig. 2-1 Configuration of Tested System**



Table 2-1 Equipment Used in Tested System

| Item | Equipment            | Mfr/Brand | Model/Type No. | FCC ID  | Series No. | Note       |
|------|----------------------|-----------|----------------|---------|------------|------------|
| 1.   | Archos 8 home tablet | Archos    | 7800           | SOV7800 | N/A        | <b>EUT</b> |
|      |                      |           |                |         |            |            |
|      |                      |           |                |         |            |            |

**Note:**

- (1) Unless otherwise denoted as EUT in 『Remark』 column , device(s) used in tested system is a support equipment.



### **3. Description of test modes**

The Transmitter of EUT is a Archos 8 home tablet and powered by host equipment. This is Digital Transmission system(DTS) and have four type of modulation DBPSK DQPSK CCK&OFDM. The data rates are 54Mbps.

The equipment enables high-speed access without wires to network assets. This adapter uses the IEEE 802.11b/g protocol to enable wireless communications between the host Archos 8 home tablet and Archos 8 home tablets, in the same way that the Archos 8 home tablet would use an Ethernet adapter.

1. For lowest channel : 2412MHz(Channel 1)
2. For middle channel : 2437MHz(Channel 6)
3. For highest channel: 2462MHz(Channel 11)

#### **EUT operating conditions:**

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to typical use, The exercise sequence is listed as below:

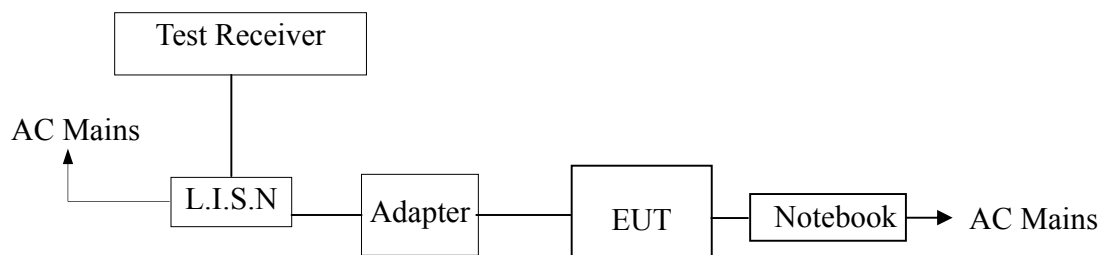
1. Setup the EUT and simulators as shown on 2.4.
2. Turn on the power of all equipments.
3. The EUT Ping with the wireless router.
4. Repeat the above steps.

## 4. Conducted Emissions Test

### 4.1 Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

### 4.2 Test SET-UP (Block Diagram of Configuration)



### 4.3 Measurement Equipment Used:

| Conducted Emission Test Site # 4 |                 |              |               |             |            |
|----------------------------------|-----------------|--------------|---------------|-------------|------------|
| EQUIPMENT TYPE                   | MFR             | MODEL NUMBER | SERIAL NUMBER | LAST CAL.   | CAL DUE.   |
| Test Receiver                    | Rohde & Schwarz | ESCS30       | 828985/018    | 05/29/2009  | 05/29/2010 |
| L.I.S.N                          | Rohde & Schwarz | ESH2-Z5      | 834549/005    | 05/29/2009  | 05/29/2010 |
| L.I.S.N                          | Rohde & Schwarz | ESH2-Z5      | 834549/005    | 05/29/2009  | 05/29/2010 |
| 50ΩCoaxial Switch                | Anritsu         | MP59B        | M20531        | 005/29/2009 | 05/29/2010 |

### 4.4 Conducted Emission Limit (7) Conducted Emission

| Frequency(MHz) | Quasi-peak | Average |
|----------------|------------|---------|
| 0.15-0.5       | 66-56      | 56-46   |
| 0.5-5.0        | 56         | 46      |
| 5.0-30.0       | 60         | 50      |

**Note:**

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

#### 4.5 Measurement Result:

|                     |                       |              |                  |
|---------------------|-----------------------|--------------|------------------|
| Date of Test:       | <u>April 28, 2010</u> | Temperature: | <u>22°C</u>      |
| Frequency Detector: | <u>0.15~30MHz</u>     | Humidity:    | <u>50%</u>       |
| Test Result:        | <u>PASS</u>           | Test Mode:   | <u>WIFI Mode</u> |

| Test Line | Frequency MHz | Emission Level QP dB(μV) | Emission Level AV dB(μV) | Limits QP dB(μV) | Limits AV dB(μV) | Margin QP dB(μV) | Margin AV dB(μV) |
|-----------|---------------|--------------------------|--------------------------|------------------|------------------|------------------|------------------|
| Neutral   | 0.200         | 56.98                    | 41.35                    | 63.61            | 53.61            | -6.63            | -12.26           |
|           | 0.300         | 48.41                    | 31.41                    | 60.24            | 50.24            | -11.83           | -18.83           |
|           | 0.400         | 45.68                    | 31.3                     | 57.85            | 47.85            | -12.17           | -16.55           |
|           | 0.925         | 41.36                    | 25.39                    | 56               | 46               | -14.64           | -20.61           |
|           | 1.45          | 41.62                    | 25.28                    | 56               | 46               | -14.38           | -20.72           |
|           | 12.5          | 45.14                    | 30.89                    | 60               | 50               | -14.86           | -19.11           |
| Line      | 0.200         | 53.22                    | 38.57                    | 63.61            | 53.61            | -10.39           | -15.04           |
|           | 0.300         | 41.74                    | 29.14                    | 60.24            | 50.24            | -18.5            | -21.1            |
|           | 0.41          | 40.08                    | 31.98                    | 57.65            | 47.65            | -17.57           | -15.67           |
|           | 0.745         | 40.35                    | 26.93                    | 56               | 46               | -15.65           | -19.07           |
|           | 0.925         | 40.03                    | 25.9                     | 56               | 46               | -15.97           | -20.1            |
|           | 12.57         | 46.72                    | 34.3                     | 60               | 50               | -13.28           | -15.7            |

#### 4.6 Conducted Measurement Photos:



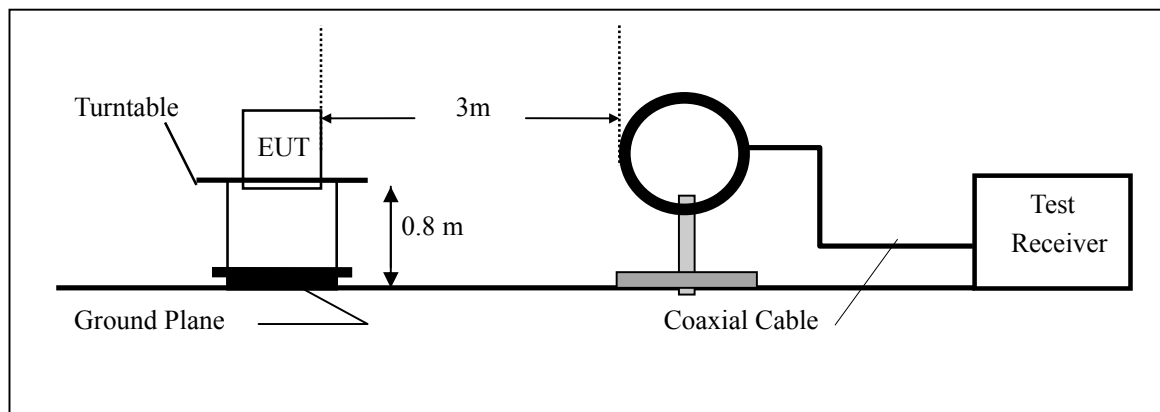
## 5. Radiated Emission Test

### 5.1 Measurement Procedure

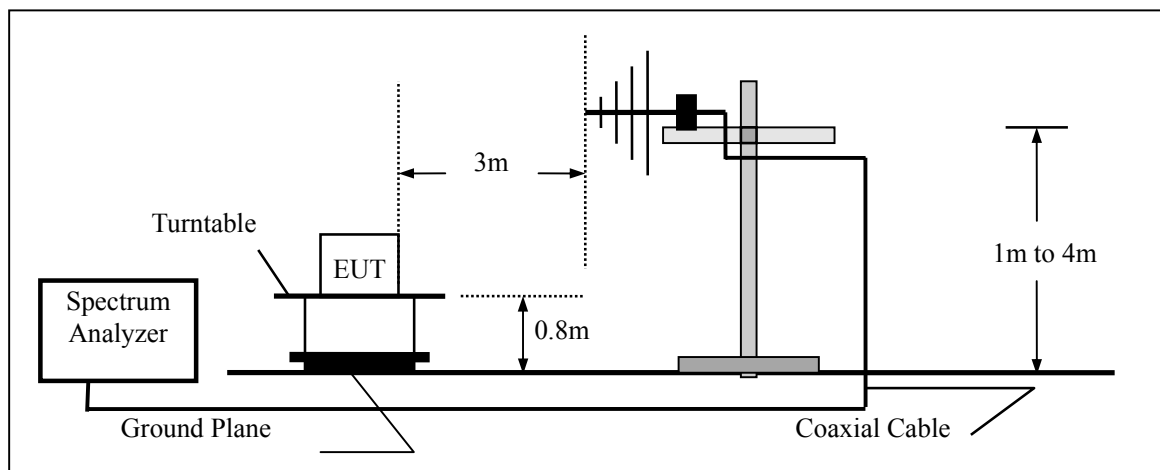
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

### 5.2 Test SET-UP (Block Diagram of Configuration)

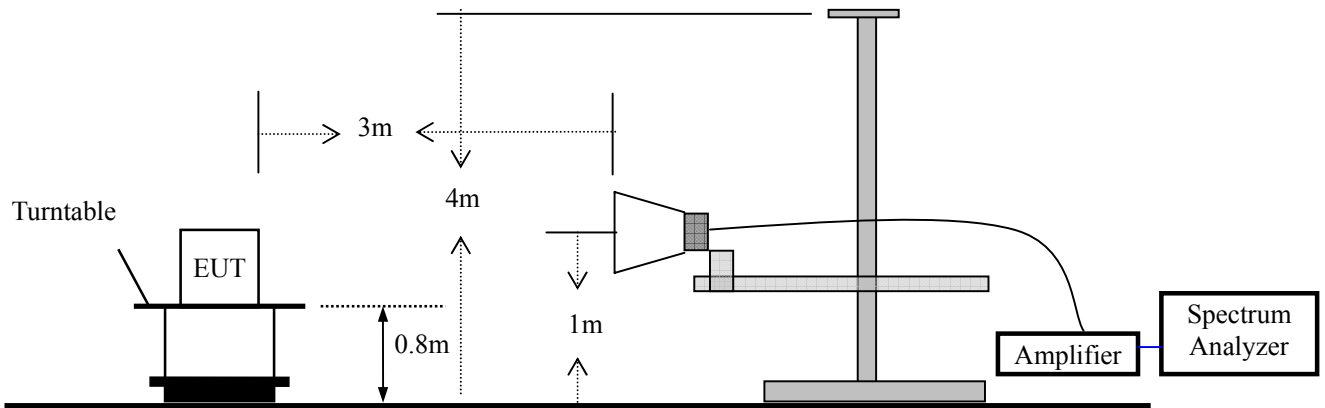
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



5.3 Measurement Equipment Used:

| EQUIPMENT TYPE    | MFR             | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
|-------------------|-----------------|--------------|---------------|------------|------------|
| Spectrum Analyzer | Rohde & Schwarz | FSP7         | 839511/010    | 05/29/2009 | 05/29/2010 |
| Spectrum Analyzer | HP              | E4407B       | 839840481     | 05/29/2009 | 05/29/2010 |
| EMI Test Receiver | Rohde & Schwarz | ESCS30       | 828985/018    | 05/29/2009 | 05/29/2010 |
| Pre-Amplifier     | HP              | 8447D        | 2944A07999    | 05/29/2009 | 05/29/2010 |
| Bilog Antenna     | Schwarzbeck     | VULB9163     | 142           | 05/29/2009 | 05/29/2010 |
| Loop Antenna      | ARA             | PLA-1030/B   | 1029          | 05/29/2009 | 05/29/2010 |
| Horn Antenna      | Electro-Metrics | EM-6961      | 103314        | 05/29/2009 | 05/29/2010 |
| Horn Antenna      | Schwarzbeck     | BBHA 9120    | D143          | 05/29/2009 | 05/29/2010 |

5.4 Radiated emission limit

FCC Class B Limit at 3m

| Frequency<br>MHz | Distance<br>Meter | Field Strength<br>uV/m | Field Strength<br>dBuV/m |
|------------------|-------------------|------------------------|--------------------------|
| 30~88            | 3                 | 100                    | 40.0                     |
| 88~216           | 3                 | 150                    | 43.5                     |
| 216~960          | 3                 | 200                    | 46.0                     |
| Above 960        | 3                 | 500                    | 54.0                     |

Note: The frequencies above 1000MHz, as measured using instrumentation with a peak detector function was corresponding to 20dB above maximum permitted average limit.

## 5.5 Measurement Result

Operation Mode: 802.11b TX Channel 1 Test Date : 04/28/2010  
Frequency Range: 30~1000MHz Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Measured Distance: 3m Test By: KL

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level<br>(dBuV) | Limit 3m<br>(dBuV/m) | Margin<br>(dB) | Note |
|----------------|-----------------|--------------------------|----------------------|----------------|------|
| 52.79          | V               | 31.24                    | 40.00                | -8.76          | PK   |
| 58.96          | V               | 32.48                    | 40.00                | -7.52          | PK   |
| 145.07         | V               | 35.94                    | 43.50                | -7.56          | PK   |
| 238.73         | V               | 32.36                    | 46.00                | -13.64         | PK   |
| 804.13         | V               | 37.18                    | 46.00                | -8.82          | PK   |
| 950.25         | V               | 42.72                    | 46.00                | -3.28          | PK   |
| 145.05         | H               | 34.51                    | 43.50                | -8.99          | PK   |
| 218.09         | H               | 36.78                    | 46.00                | -9.22          | PK   |
| 238.35         | H               | 38.17                    | 46.00                | -7.83          | PK   |
| 367.41         | H               | 36.36                    | 46.00                | -9.64          | PK   |
| 796.36         | H               | 39.03                    | 46.00                | -6.97          | PK   |
| 950.35         | H               | 40.01                    | 46.00                | -5.99          | PK   |

**Note:** (1) All Readings are Peak Value.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode: 802.11b TX Channel 6 Test Date : 04/28/2010  
Frequency Range: 30~1000MHz Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Measured Distance: 3m Test By: WOLF

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level<br>(dBuV) | Limit 3m<br>(dBuV/m) | Margin<br>(dB) | Note |
|----------------|-----------------|--------------------------|----------------------|----------------|------|
| 53.26          | V               | 30.68                    | 40.00                | -9.32          | PK   |
| 59.53          | V               | 31.91                    | 40.00                | -8.09          | PK   |
| 145.03         | V               | 35.94                    | 43.50                | -7.56          | PK   |
| 239.85         | V               | 29.57                    | 46.00                | -16.43         | PK   |
| 804.13         | V               | 38.18                    | 46.00                | -7.82          | PK   |
| 950.25         | V               | 44.72                    | 46.00                | -2.28          | PK   |
| 145.03         | H               | 34.56                    | 43.50                | -8.94          | PK   |
| 218.09         | H               | 36.81                    | 46.00                | -9.19          | PK   |
| 239.85         | H               | 38.17                    | 46.00                | -7.83          | PK   |
| 364.21         | H               | 37.36                    | 46.00                | -8.64          | PK   |
| 796.36         | H               | 39.03                    | 46.00                | -6.97          | PK   |
| 950.25         | H               | 40.03                    | 46.00                | -5.97          | PK   |

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) The average measurement was not performed when the peak measured data under the limit of average detection.



Operation Mode: 802.11b TX Channel 11 Test Date : 04/28/2010  
Frequency Range: 30~1000MHz Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Measured Distance: 3m Test By: WOLF

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level<br>(dBuV) | Limit 3m<br>(dBuV/m) | Margin<br>(dB) | Note |
|----------------|-----------------|--------------------------|----------------------|----------------|------|
| 53.29          | V               | 30.24                    | 40.00                | -9.76          | PK   |
| 61.06          | V               | 33.45                    | 40.00                | -6.55          | PK   |
| 148.67         | V               | 35.90                    | 43.50                | -7.60          | PK   |
| 239.53         | V               | 32.37                    | 46.00                | -13.63         | PK   |
| 804.83         | V               | 37.20                    | 46.00                | -8.80          | PK   |
| 950.65         | V               | 41.72                    | 46.00                | -4.28          | PK   |
| 150.25         | H               | 35.41                    | 43.50                | -8.09          | PK   |
| 225.99         | H               | 36.98                    | 46.00                | -9.02          | PK   |
| 245.25         | H               | 38.23                    | 46.00                | -7.77          | PK   |
| 371.01         | H               | 36.25                    | 46.00                | -9.75          | PK   |
| 805.16         | H               | 37.03                    | 46.00                | -8.97          | PK   |
| 960.45         | H               | 41.01                    | 46.00                | -4.99          | PK   |

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode: 802.11g TX Channel 1 Test Date : 04/28/2010  
Frequency Range: 30~1000MHz Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Measured Distance: 3m Test By: WOLF

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level<br>(dBuV) | Limit 3m<br>(dBuV/m) | Margin<br>(dB) | Note |
|----------------|-----------------|--------------------------|----------------------|----------------|------|
| 52.93          | V               | 30.14                    | 40.00                | -9.86          | PK   |
| 60.06          | V               | 33.42                    | 40.00                | -6.58          | PK   |
| 146.67         | V               | 35.94                    | 43.50                | -7.56          | PK   |
| 240.53         | V               | 31.37                    | 46.00                | -14.63         | PK   |
| 806.83         | V               | 37.26                    | 46.00                | -8.74          | PK   |
| 950.35         | V               | 41.32                    | 46.00                | -4.68          | PK   |
| 149.25         | H               | 35.32                    | 43.50                | -8.18          | PK   |
| 219.99         | H               | 36.69                    | 46.00                | -9.31          | PK   |
| 241.25         | H               | 38.15                    | 46.00                | -7.85          | PK   |
| 370.91         | H               | 36.89                    | 46.00                | -9.11          | PK   |
| 804.76         | H               | 37.05                    | 46.00                | -8.95          | PK   |
| 958.45         | H               | 40.97                    | 46.00                | -5.03          | PK   |

**Note:** (1) All Readings are Peak Value.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode: 802.11g TX Channel 6 Test Date : 04/28/2010  
Frequency Range: 30~1000MHz Temperature : 28 °C  
Test Result: PASS Humidity : 65%  
Measured Distance: 3m Test By: WOLF

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level<br>(dBuV) | Limit 3m<br>(dBuV/m) | Margin<br>(dB) | Note |
|----------------|-----------------|--------------------------|----------------------|----------------|------|
| 53.11          | V               | 30.16                    | 40.00                | -9.84          | PK   |
| 59.74          | V               | 33.57                    | 40.00                | -6.43          | PK   |
| 145.63         | V               | 36.01                    | 43.50                | -7.49          | PK   |
| 239.93         | V               | 31.29                    | 46.00                | -14.71         | PK   |
| 806.73         | V               | 37.37                    | 46.00                | -8.63          | PK   |
| 950.81         | V               | 41.11                    | 46.00                | -4.89          | PK   |
| 148.25         | H               | 34.32                    | 43.50                | -9.18          | PK   |
| 219.89         | H               | 36.38                    | 46.00                | -9.62          | PK   |
| 239.85         | H               | 38.25                    | 46.00                | -7.75          | PK   |
| 371.08         | H               | 36.81                    | 46.00                | -9.19          | PK   |
| 804.68         | H               | 37.15                    | 46.00                | -8.85          | PK   |
| 958.38         | H               | 41.35                    | 46.00                | -4.65          | PK   |

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode: 802.11g TX Channel 11 Test Date : 04/28/2010  
Frequency Range: 30~1000MHz Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Measured Distance: 3m Test By: WOLF

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level<br>(dBuV) | Limit 3m<br>(dBuV/m) | Margin<br>(dB) | Note |
|----------------|-----------------|--------------------------|----------------------|----------------|------|
| 53.35          | V               | 30.18                    | 40.00                | -9.82          | PK   |
| 59.59          | V               | 33.37                    | 40.00                | -6.63          | PK   |
| 145.61         | V               | 36.03                    | 43.50                | -7.47          | PK   |
| 239.62         | V               | 31.25                    | 46.00                | -14.75         | PK   |
| 806.63         | V               | 37.41                    | 46.00                | -8.59          | PK   |
| 950.79         | V               | 41.09                    | 46.00                | -4.91          | PK   |
| 148.04         | H               | 33.87                    | 43.50                | -9.63          | PK   |
| 219.77         | H               | 35.99                    | 46.00                | -10.01         | PK   |
| 239.70         | H               | 38.17                    | 46.00                | -7.83          | PK   |
| 370.95         | H               | 36.37                    | 46.00                | -9.63          | PK   |
| 804.58         | H               | 36.15                    | 46.00                | -9.85          | PK   |
| 957.43         | H               | 40.27                    | 46.00                | -5.73          | PK   |

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode: 802.11b TX Channel 1      Test Date : 04/28/2010  
Frequency Range: Above 1GHz      Temperature : 28 °C  
Test Result: PASS      Humidity : 65 %  
Measured Distance: 3m      Test By: WOLF

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Margin(dB) |        |
|----------------|-----------------|----------------------|-------|------------------|----|------------|--------|
|                |                 | PK                   | AV    | PK               | AV | PK         | AV     |
| 4851.34        | V               | 48.35                | 35.67 | 74               | 54 | -25.65     | -18.33 |
| 7238.78        | V               | 51.28                | 40.66 | 74               | 54 | -22.72     | -13.34 |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| 4814.34        | H               | 47.79                | 34.36 | 74               | 54 | -26.21     | -19.64 |
| 7238.78        | H               | 52.98                | 41.62 | 74               | 54 | -21.02     | -12.38 |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |

**All emissions not reported were more than 20dB below the specified limit or in the noise floor.**

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Operation Mode: 802.11b(Channel 6)      Test Date : 04/28/2010  
Frequency Range: Above 1GHz      Temperature : 28 °C  
Test Result: PASS      Humidity : 65 %  
Measured Distance: 3m      Test By: WOLF

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Margin(dB) |        |
|----------------|-----------------|----------------------|-------|------------------|----|------------|--------|
|                |                 | PK                   | AV    | PK               | AV | PK         | AV     |
| 4868.59        | V               | 47.35                | 36.67 | 74               | 54 | -26.65     | -17.33 |
| 7293.26        | V               | 50.28                | 39.78 | 74               | 54 | -23.72     | -14.22 |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| 4868.59        | H               | 47.87                | 35.51 | 74               | 54 | -26.13     | -18.49 |
| 7320.51        | H               | 51.49                | 40.37 | 74               | 54 | -22.51     | -13.63 |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |

**All emissions not reported were more than 20dB below the specified limit or in the noise floor.**

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

|                    |                     |               |            |
|--------------------|---------------------|---------------|------------|
| Operation Mode:    | 802.11b(Channel 11) | Test Date :   | 04/28/2010 |
| Frequency Range:   | Above 1GHz          | Temperature : | 28 °C      |
| Test Result:       | PASS                | Humidity :    | 65 %       |
| Measured Distance: | 3m                  | Test By:      | WOLF       |

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Margin(dB) |        |
|----------------|-----------------|----------------------|-------|------------------|----|------------|--------|
|                |                 | PK                   | AV    | PK               | AV | PK         | AV     |
| 4868.37        | V               | 46.35                | 37.67 | 74               | 54 | -57.65     | -16.33 |
| 7293.15        | V               | 50.19                | 49.28 | 74               | 54 | -23.81     | -14.72 |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| 4868.29        | H               | 47.35                | 35.19 | 74               | 54 | -26.65     | -18.81 |
| 7320.33        | H               | 50.98                | 40.76 | 74               | 54 | -23.02     | -13.24 |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |

**No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.247.**

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Operation Mode: 802.11g TX Channel 1      Test Date : 04/28/2010  
Frequency Range: Above 1GHz      Temperature : 28 °C  
Test Result: PASS      Humidity : 65 %  
Measured Distance: 3m      Test By: WOLF

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Margin(dB) |        |
|----------------|-----------------|----------------------|-------|------------------|----|------------|--------|
|                |                 | PK                   | AV    | PK               | AV | PK         | AV     |
| 4923.07        | V               | 52.13                | 38.57 | 74               | 54 | -21.87     | -15.43 |
| 7402.24        | V               | 52.54                | 39.41 | 74               | 54 | -21.46     | -14.59 |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| 4923.07        | H               | 51.09                | 47.08 | 74               | 54 | -22.91     | -16.92 |
| 7402.24        | H               | 50.28                | 40.36 | 74               | 54 | -23.72     | -13.64 |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |

**All emissions not reported were more than 20dB below the specified limit or in the noise floor.**

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.



Operation Mode: 802.11g(Channel 6) Test Date : 04/28/2010  
Frequency Range: Above 1GHz Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Measured Distance: 3m Test By: Andy

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Margin(dB) |        |
|----------------|-----------------|----------------------|-------|------------------|----|------------|--------|
|                |                 | PK                   | AV    | PK               | AV | PK         | AV     |
| 4858           | V               | 42.37                | 35.01 | 74               | 54 | -31.63     | -18.99 |
| 7304           | V               | 46.34                | 38.52 | 74               | 54 | -27.66     | -15.48 |
| --             | V               | --                   | --    | 74               | 54 | --         | --     |
| --             | V               | --                   | --    | 74               | 54 | --         | --     |
| --             | V               | --                   | --    | 74               | 54 | --         | --     |
| --             | V               | --                   | --    | 74               | 54 | --         | --     |
| 4858           | H               | 44.26                | 34.80 | 74               | 54 | -29.74     | -19.20 |
| 7304           | H               | 41.96                | 33.09 | 74               | 54 | -32.04     | -20.91 |
| --             | V               | --                   | --    | 74               | 54 | --         | --     |
| --             | H               | --                   | --    | 74               | 54 | --         | --     |
| --             | H               | --                   | --    | 74               | 54 | --         | --     |
| --             | H               | --                   | --    | 74               | 54 | --         | --     |

**All emissions not reported were more than 20dB below the specified limit or in the noise floor.**

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) Data of measurement within this frequency range shown “ -- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

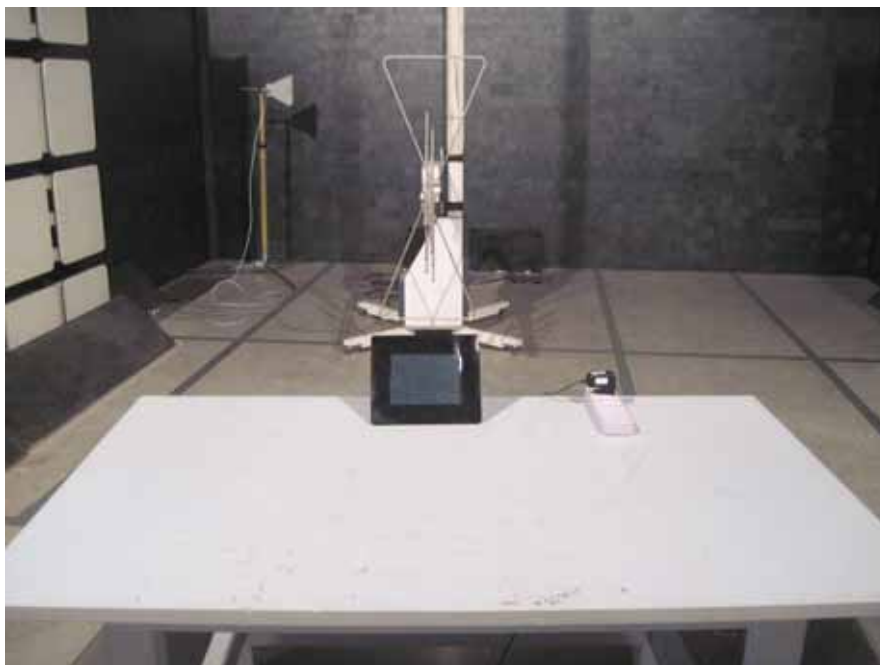
Operation Mode: 802.11g(Channel 11) Test Date : 04/28/2010  
Frequency Range: Above 1GHz Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Measured Distance: 3m Test By: Andy

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Margin(dB) |        |
|----------------|-----------------|----------------------|-------|------------------|----|------------|--------|
|                |                 | PK                   | AV    | PK               | AV | PK         | AV     |
| 4923.07        | V               | 51.54                | 39.57 | 74               | 54 | -22.46     | -14.43 |
| 7402.24        | V               | 52.77                | 41.26 | 74               | 54 | -21.23     | -12.74 |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| --             | V               | --                   | --    | --               | -- | --         | --     |
| 4923.07        | H               | 52.27                | 38.33 | 74               | 54 | -21.73     | -15.67 |
| 7402.24        | H               | 51.71                | 40.68 | 74               | 54 | -22.29     | -13.32 |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |
| --             | H               | --                   | --    | --               | -- | --         | --     |

**No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.247.**

**Note:** (1) All Readings are Peak Value and AV.  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss  
(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

## 5.6 Radiated Measurement Photos:

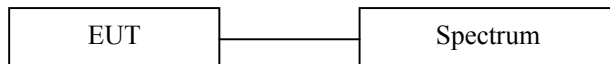


## 6. Occupied Bandwidth test

### 6.1 Measurement Procedure

The EUT was operating in IEEE 802.11b/g mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

### 6.2 Test SET-UP (Block Diagram of Configuration)



### 6.3 Measurement Equipment Used:

Same as 4.3 Radiated Emission Measurement.

### 6.4 Limit

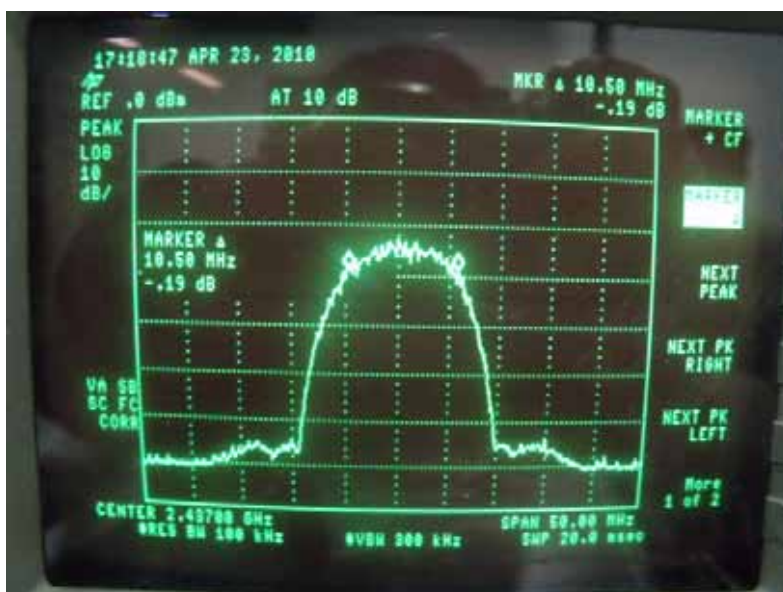
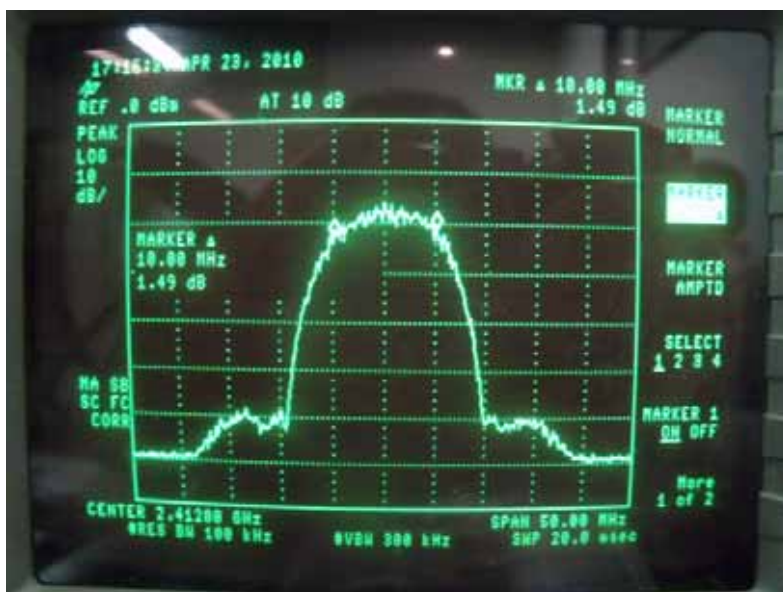
The minimum 6dB bandwidth shall be at least 500kHz.

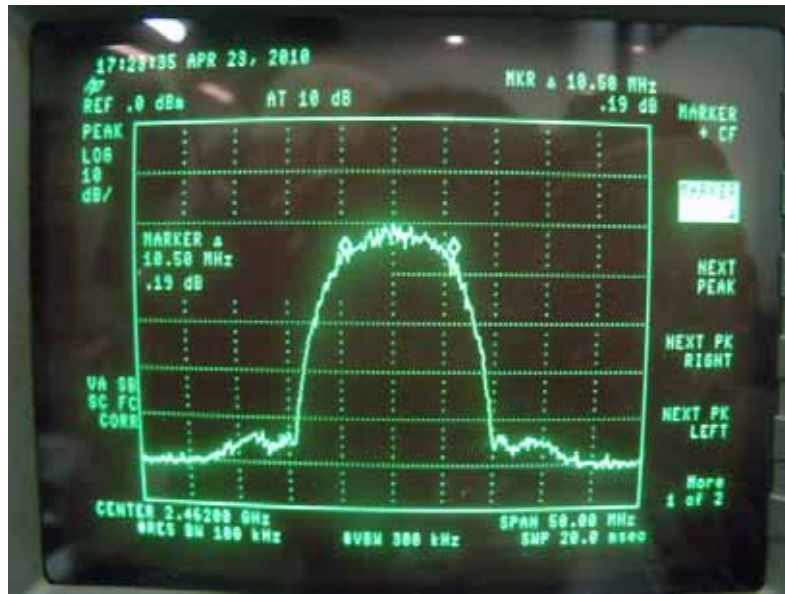
### 6.5 Measurement Results:

Refer to attached data chart.

|                    |         |               |            |
|--------------------|---------|---------------|------------|
| Spectrum Detector: | PK      | Test Date :   | 04/23/2010 |
| Test By:           | Andy    | Temperature : | 28 °C      |
| Test Result:       | PASS    | Humidity :    | 65 %       |
| Operation Mode:    | 802.11b |               |            |

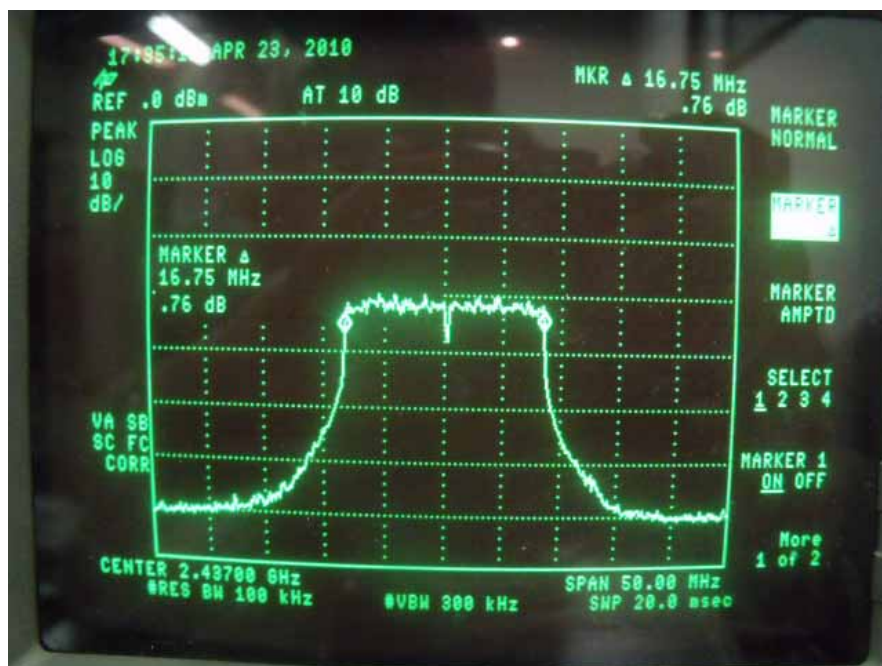
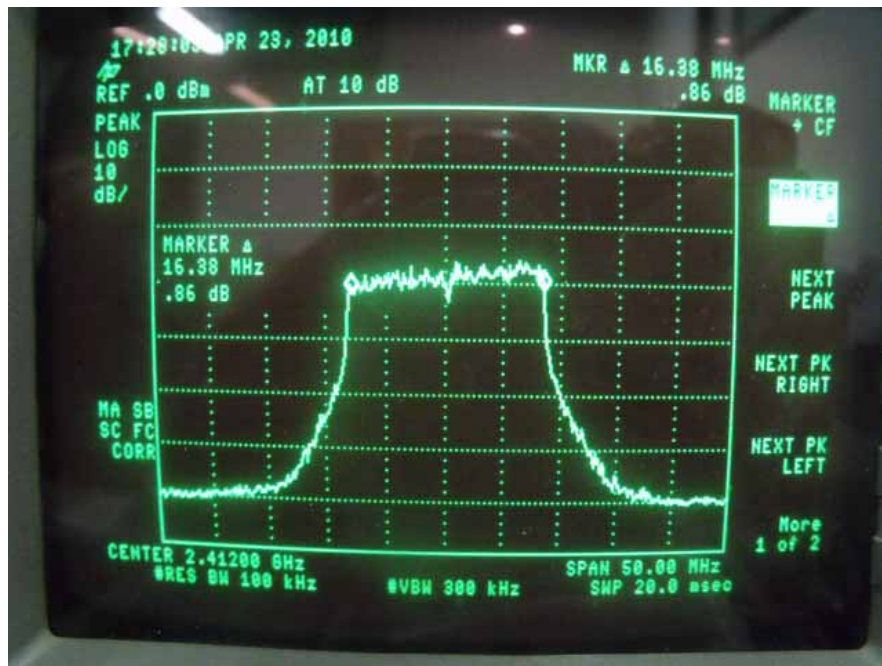
| Channel number | Channel frequency<br>(MHz) | Measurement level<br>(MHz) | Required Limit<br>(KHz) |
|----------------|----------------------------|----------------------------|-------------------------|
| 1              | 2412                       | 10.00                      | >500                    |
| 6              | 2437                       | 10.50                      | >500                    |
| 11             | 2462                       | 10.50                      | >500                    |



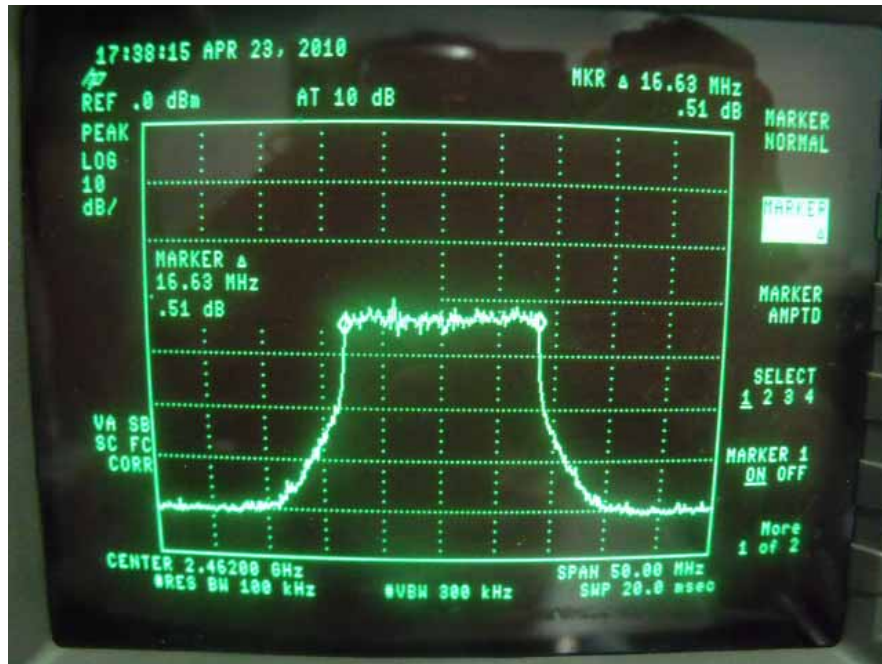


|                          |      |               |            |
|--------------------------|------|---------------|------------|
| Spectrum Detector:       | PK   | Test Date :   | 04/23/2010 |
| Test By:                 | Andy | Temperature : | 28 °C      |
| Test Result:             | PASS | Humidity :    | 65 %       |
| Operation Mode: 802.11 g |      |               |            |

| Channel number | Channel frequency (MHz) | Measurement level (MHz) | Required Limit (KHz) |
|----------------|-------------------------|-------------------------|----------------------|
| 1              | 2412                    | 16.38                   | >500                 |
| 6              | 2437                    | 16.75                   | >500                 |
| 11             | 2462                    | 16.63                   | >500                 |







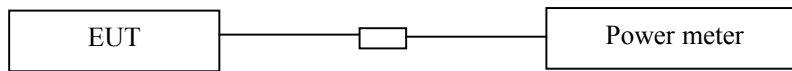


## 7. MAXIMUM PEAK OUTPUT POWER TEST

### 7.1 Measurement Procedure

- The Transmitter output (antenna port) was connected to the power meter.
- Turn on the EUT and power meter and then record the peak power value.
- Repeat above procedures on all channels needed to be tested.

### 7.2 Test SET-UP (Block Diagram of Configuration)



### 7.3 Measurement Equipment Used:

| EQUIPMENT TYPE | MFR     | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
|----------------|---------|--------------|---------------|------------|------------|
| Power meter    | Boonton | 4232A        | 29001         | 05/29/2009 | 05/29/2010 |
| Power sensor   | Boonton | 51011-EMC    | 31184         | 05/29/2009 | 05/29/2010 |

### 7.4 Peak Power output limit

The maximum peak power shall be less 1Watt.

### 7.5 Measurement Results:

Spectrum Detector: PK                      Test Date : 04/23/2010  
Test By: Andy                      Temperature : 28 °C  
Test Result: PASS                      Humidity : 65 %  
Operation Mode: 802.11b

| Channel number | Channel Frequency (MHz) | Peak Power output(dBm) | Peak Power Limit(W) | Pass/Fail |
|----------------|-------------------------|------------------------|---------------------|-----------|
| 1              | 2412.00                 | 15.10                  | 1W(30dBm)           | PASS      |
| 6              | 2437.00                 | 15.08                  | 1W(30dBm)           | PASS      |
| 11             | 2462.00                 | 15.34                  | 1W(30dBm)           | PASS      |

Spectrum Detector: PK                      Test Date : 04/23/2010  
Test By: Andy                      Temperature : 28 °C  
Test Result: PASS                      Humidity : 65 %  
Operation Mode: 802.11g

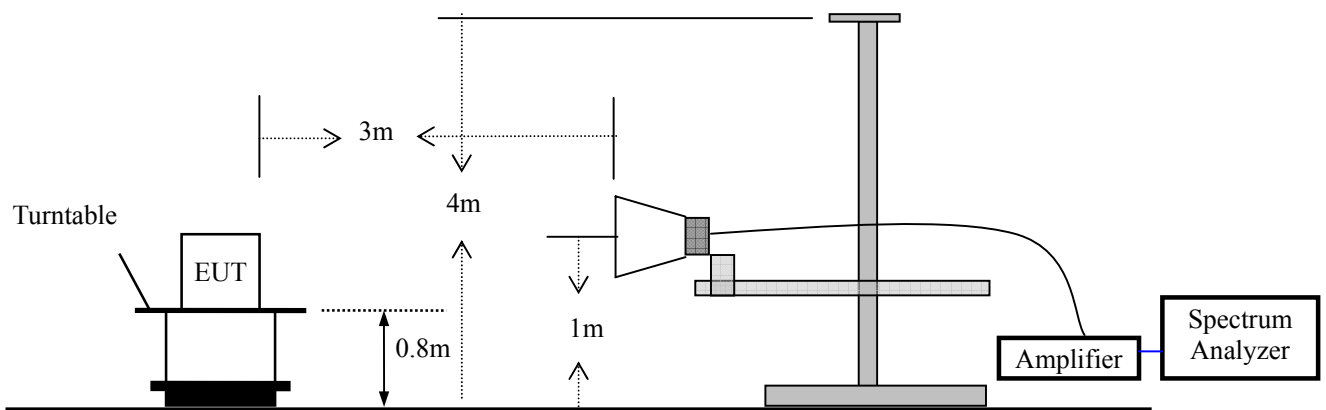
| Channel number | Channel Frequency (MHz) | Peak Power output(dBm) | Peak Power Limit(W) | Pass/Fail |
|----------------|-------------------------|------------------------|---------------------|-----------|
| 1              | 2412.00                 | 12.17                  | 1W(30dBm)           | PASS      |
| 6              | 2437.00                 | 12.45                  | 1W(30dBm)           | PASS      |
| 11             | 2462.00                 | 11.38                  | 1W(30dBm)           | PASS      |

## 8. Band EDGE test

### 8.1 Measurement Procedure

1. The EUT was Operating in hopping mode or could be controlled its channel. Printed out test result from the spectrum by hard copy function.
2. The EUT was placed on a turn table which is 0.8m above ground plane.
3. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
4. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5. Repeat above procedures until all frequency measured were complete.

### 8.2 Test SET-UP (Block Diagram of Configuration)



### 8.3 Measurement Equipment Used:

Same as 4.3 Radiated Emission Measurement.

### 8.4 Measurement Results:

Refer to attached data chart.

|                    |         |               |            |
|--------------------|---------|---------------|------------|
| Spectrum Detector: | PK      | Test Date :   | 04/23/2010 |
| Test By:           | Andy    | Temperature : | 28 °C      |
| Test Result:       | PASS    | Humidity :    | 65 %       |
| Operation Mode:    | 802.11b |               |            |

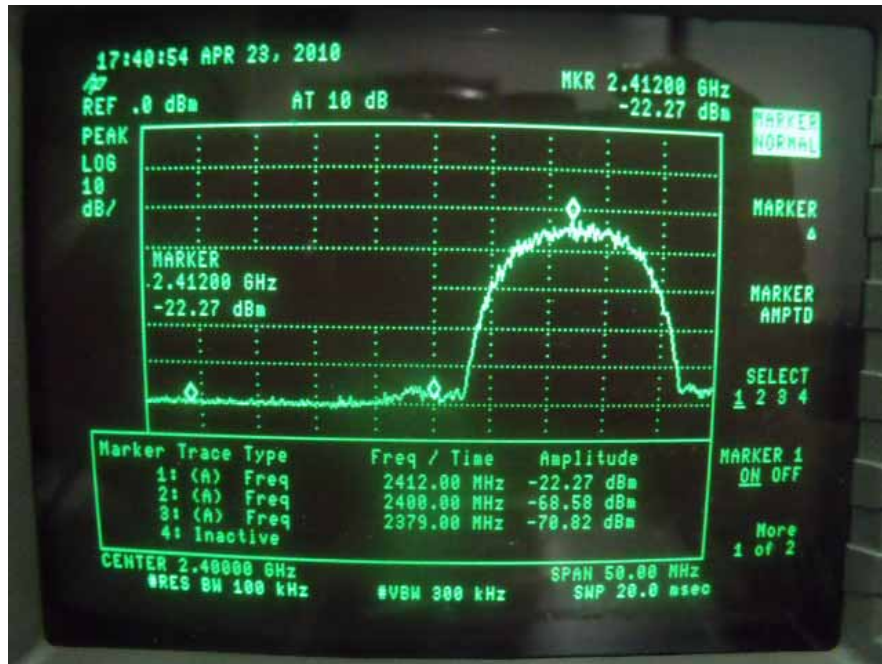
#### 1. Conducted Test

| Frequency (MHz) | Peak Power Output(dBm) | Emission read Value(dBm) | Result of Band edge(dBc) | Band edge Limit(dBc) |
|-----------------|------------------------|--------------------------|--------------------------|----------------------|
| <2400           | -18.18                 | -69.77                   | 51.59                    | >20dBc               |
| >2483.5         | -22.27                 | -68.58                   | 46.31                    | >20dBc               |

#### 2. Radiated emission test

| Frequency (MHz) | Antenna polarization (H/V) | Emission (dBuV/m) |       | Band edge Limit (dBuV/m) |       |
|-----------------|----------------------------|-------------------|-------|--------------------------|-------|
|                 |                            | PK                | AV    | PK                       | AV    |
| <2400           | H                          | 57.39             | 48.76 | 74.00                    | 54.00 |
| >2483.5         | H                          | 58.63             | 49.54 | 74.00                    | 54.00 |





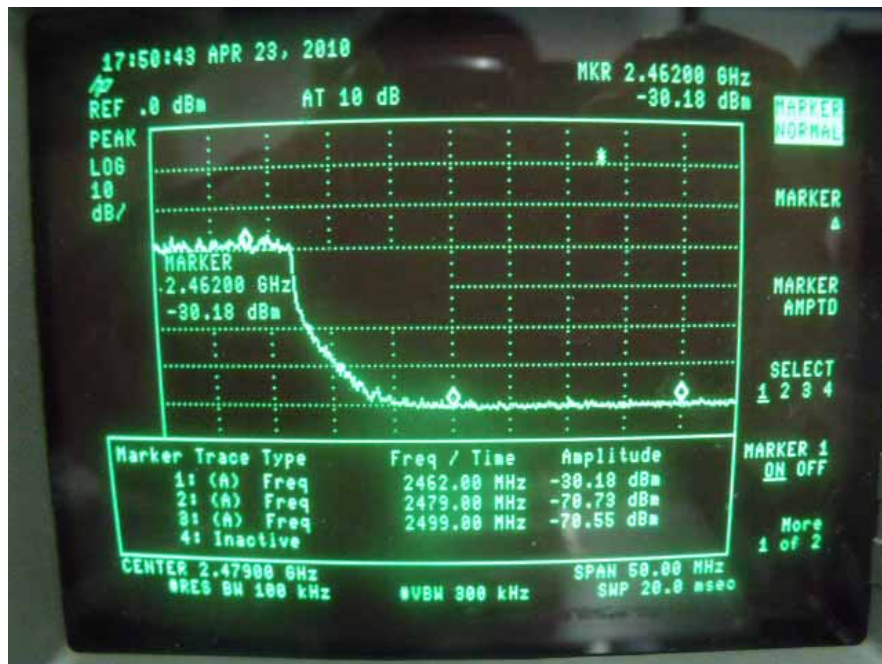
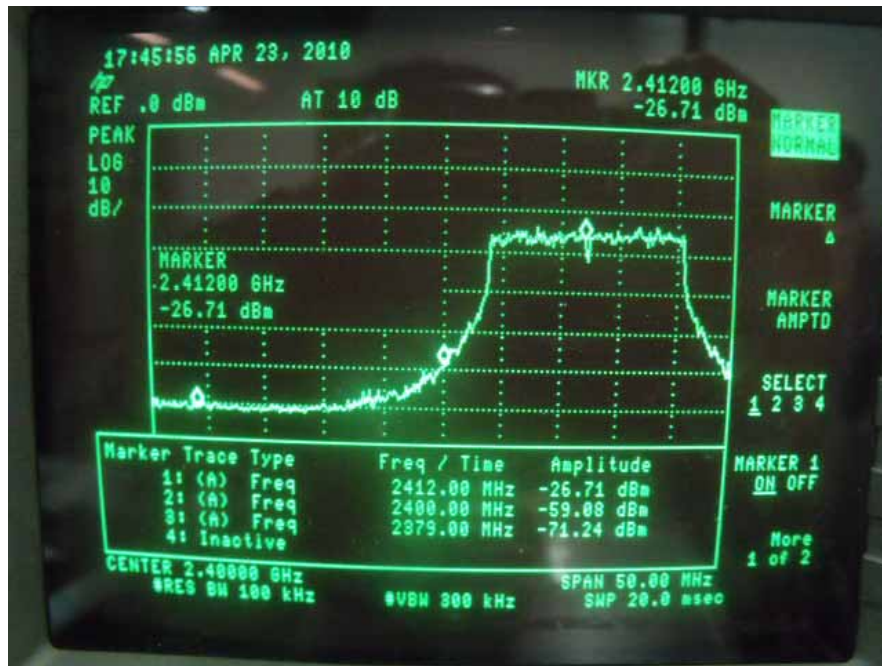
Spectrum Detector: PK Test Date : 03/22/2010  
Test By: Andy Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Operation Mode: 802.11g

#### 1. Conducted Test

| Frequency (MHz) | Peak Power Output(dBm) | Emission read Value(dBm) | Result of Band edge(dBc) | Band edge Limit(dBc) |
|-----------------|------------------------|--------------------------|--------------------------|----------------------|
| <2400           | -26.71                 | -59.08                   | 32.37                    | >20dBc               |
| >2483.5         | -30.18                 | -70.03                   | 39.85                    | >20dBc               |

#### 2. Radiated emission test

| Frequency (MHz) | Antenna polarization (H/V) | Emission (dBuV/m) |       | Band edge Limit (dBuV/m) |       |
|-----------------|----------------------------|-------------------|-------|--------------------------|-------|
|                 |                            | PK                | AV    | PK                       | AV    |
| <2400           | H                          | 58.35             | 49.25 | 74.00                    | 54.00 |
| >2483.5         | H                          | 57.34             | 48.46 | 74.00                    | 54.00 |



## 9. Power density

### 9.1 Test Equipment

| EQUIPMENT TYPE    | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
|-------------------|-----|--------------|---------------|------------|------------|
| Spectrum Analyzer | HP  | 8594E        | 88156318      | 05/29/2009 | 05/29/2010 |

### 9.2 Measuring Instruments and setting

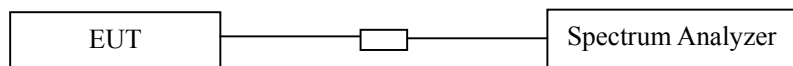
The following table is the setting of spectrum analyzer.

|                   |          |
|-------------------|----------|
| Spectrum analyzer | Setting  |
| Attenuation       | Auto     |
| Span Frequency    | 300kHz   |
| RB                | 3kHz     |
| VB                | 30kHz    |
| Detector          | Peak     |
| Trace             | Max hold |
| Sweep Time        | 100s     |

### 9.3 Test Procedures

- The transmitter output (antenna port) was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 3kHz and VBW to 30kHz, Set Detector to Peak, Trace to Max Hold.
- Mark the frequency with maximum peak power as the center of the display of the spectrum.
- Set the span to 300kHz and the sweep time to 100s and record the maximum peak value.

### 9.4 Block Diagram of Test setup



### 9.5 Limit

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3KHz bandwidth.



## 9.6. Test Result

Spectrum Detector: PK Test Date : 04/28/2010  
Test By: Andy Temperature : 28 °C  
Test Result: PASS Humidity : 65 %  
Operation Mode: 802.11 b

| Frequency (MHz) | Measurement Level (dBm) | Required limit (dBm) | Result |
|-----------------|-------------------------|----------------------|--------|
| 2412.00         | -28.65                  | <8dBm                | PASS   |
| 2437.00         | -28.74                  | <8dBm                | PASS   |
| 2462.00         | -28.08                  | <8dBm                | PASS   |

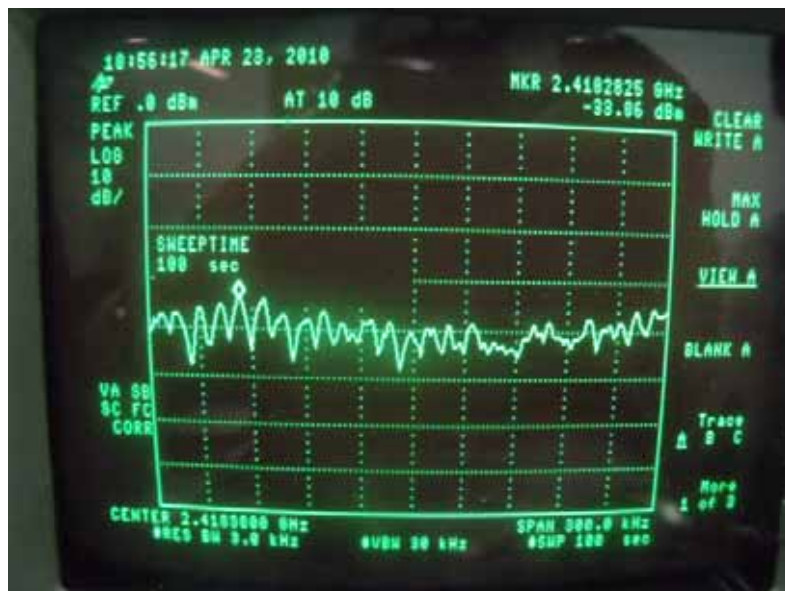


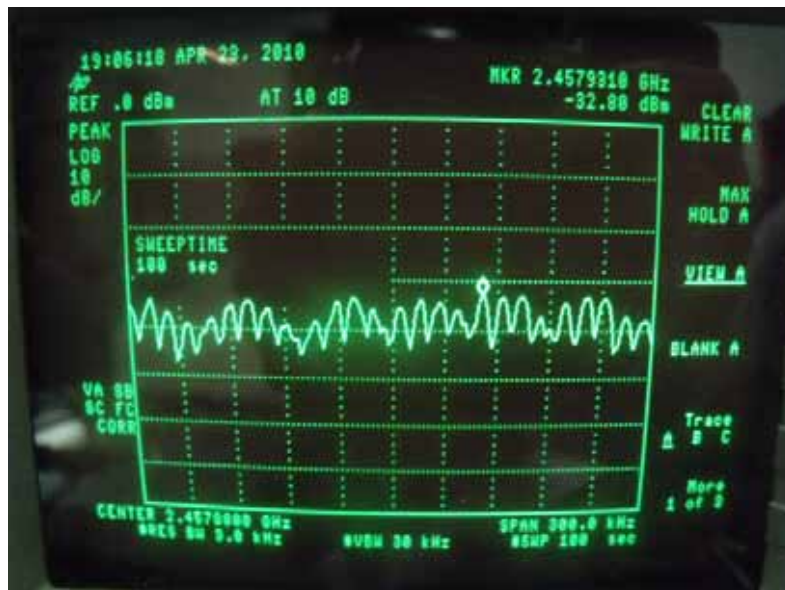
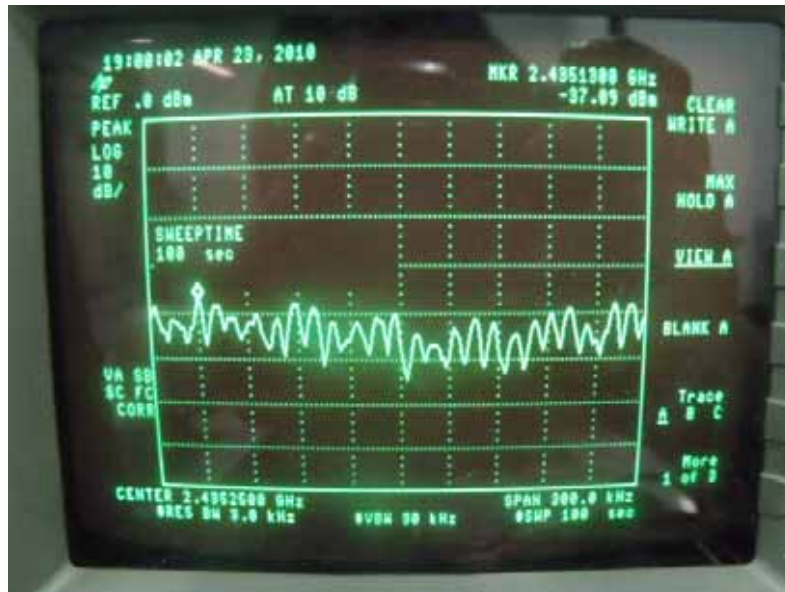




Spectrum Detector: PK                      Test Date : 04/28/2010  
Test By: Andy                      Temperature : 28 °C  
Test Result: PASS                      Humidity : 65 %  
Operation Mode: 802.11 g

| Frequency (MHz) | Measurement Level (dBm) | Required limit (dBm) | Result |
|-----------------|-------------------------|----------------------|--------|
| 2418.00         | -33.86                  | <8dBm                | PASS   |
| 2435.00         | -37.09                  | <8dBm                | PASS   |
| 2457.00         | -32.80                  | <8dBm                | PASS   |





## 10. Antenna Port Emission

### 10.1 Test Equipment

| EQUIPMENT TYPE    | MFR             | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
|-------------------|-----------------|--------------|---------------|------------|------------|
| EMI Test Receiver | Rohde & Schwarz | ESU          | 1302.6005.26  | 05/29/2009 | 05/29/2010 |

### 10.2 Measuring Instruments and setting

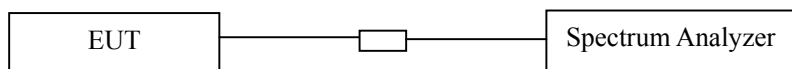
The following table is the setting of spectrum analyzer.

|                   |          |
|-------------------|----------|
| Spectrum analyzer | Setting  |
| Attenuation       | Auto     |
| RB                | 100kHz   |
| VB                | 300kHz   |
| Detector          | Peak     |
| Trace             | Max hold |

### 10.3 Test Procedures

The conducted spurious emissions were measured conducted using a spectrum analyzer at low, mid, and hi channels, The limit was determined by attenuation 20dB of the RF peak power output.

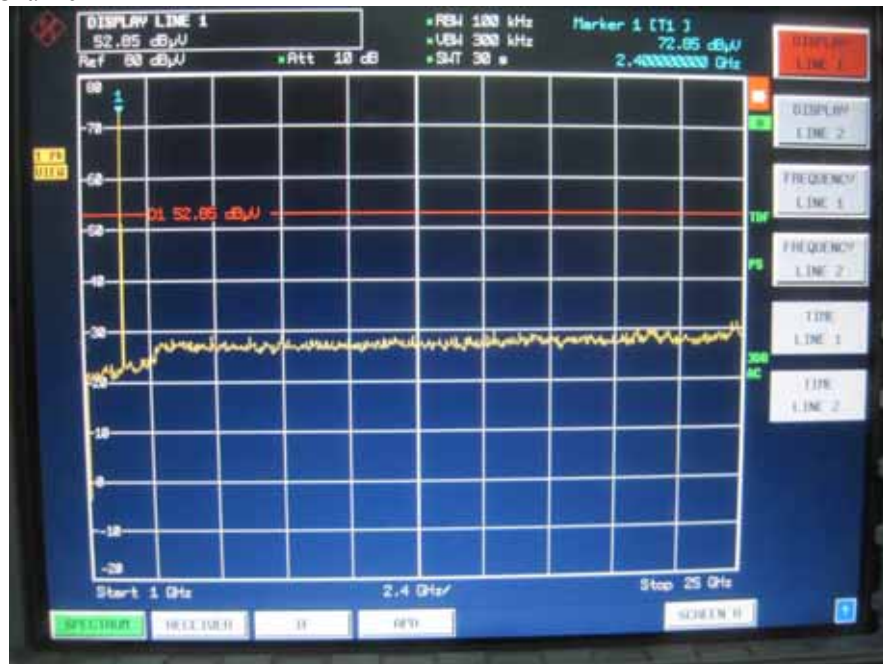
### 10.4 Block Diagram of Test setup



### 10.6. Test Result

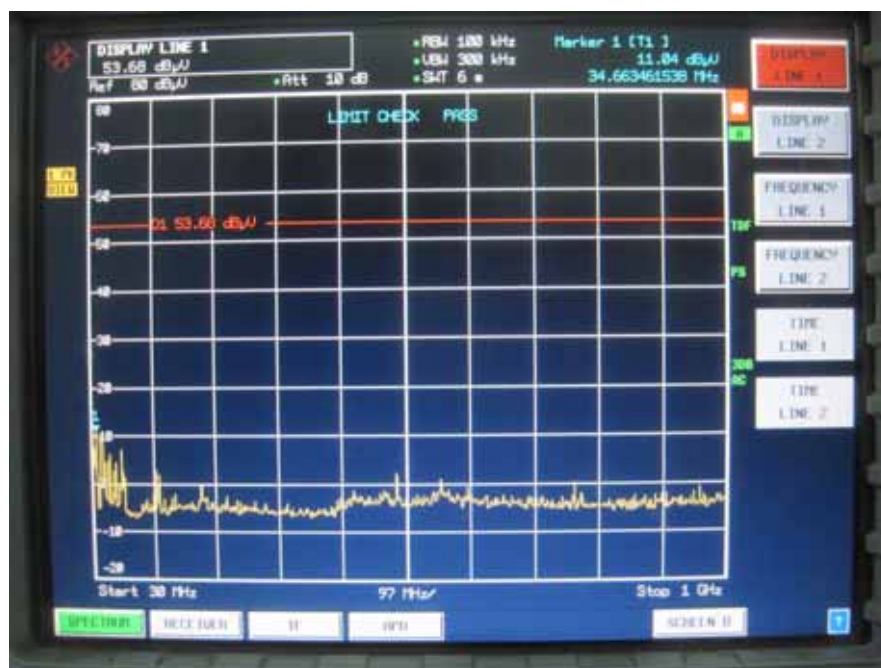
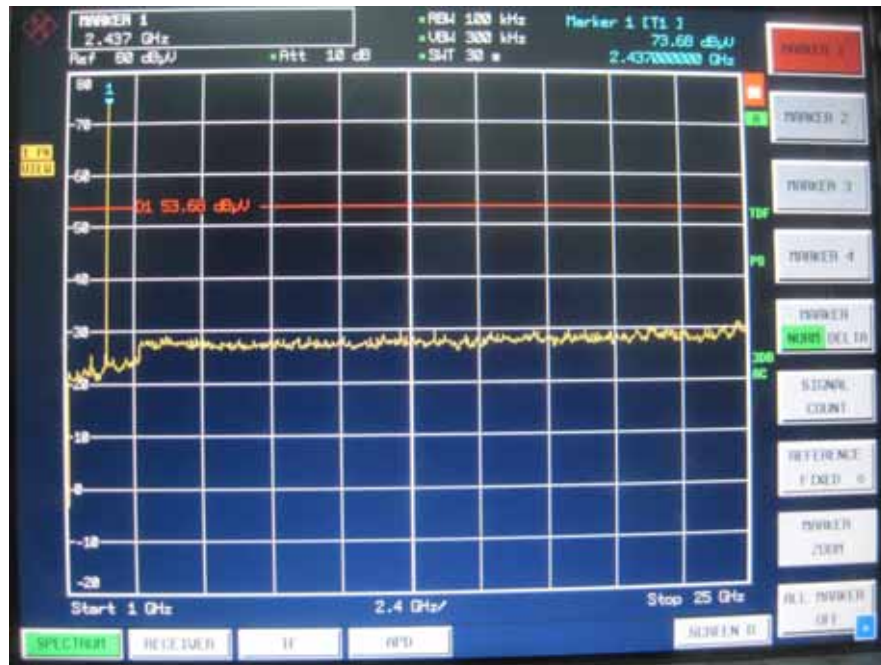
PASS.

802.11b Low Channel 1

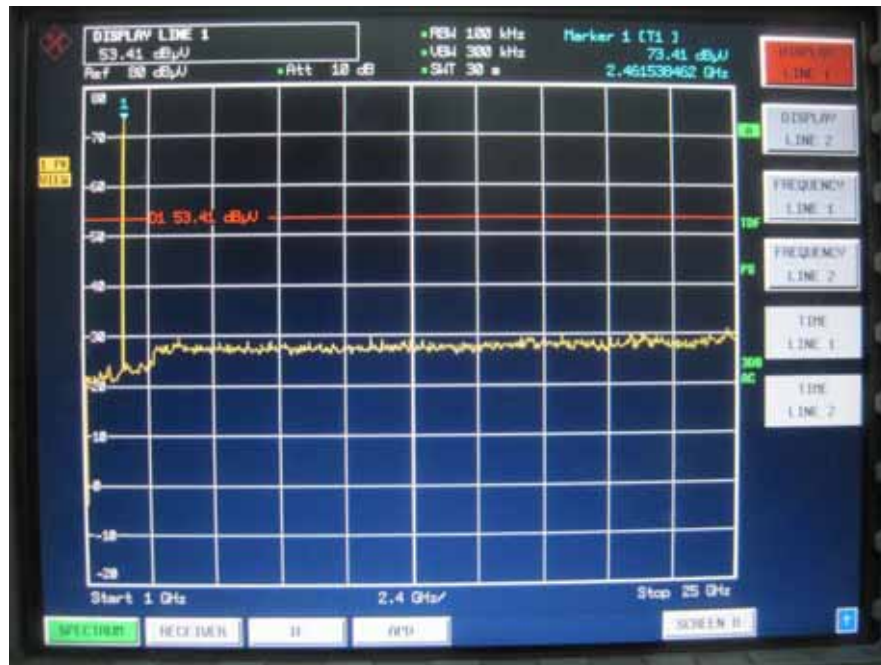




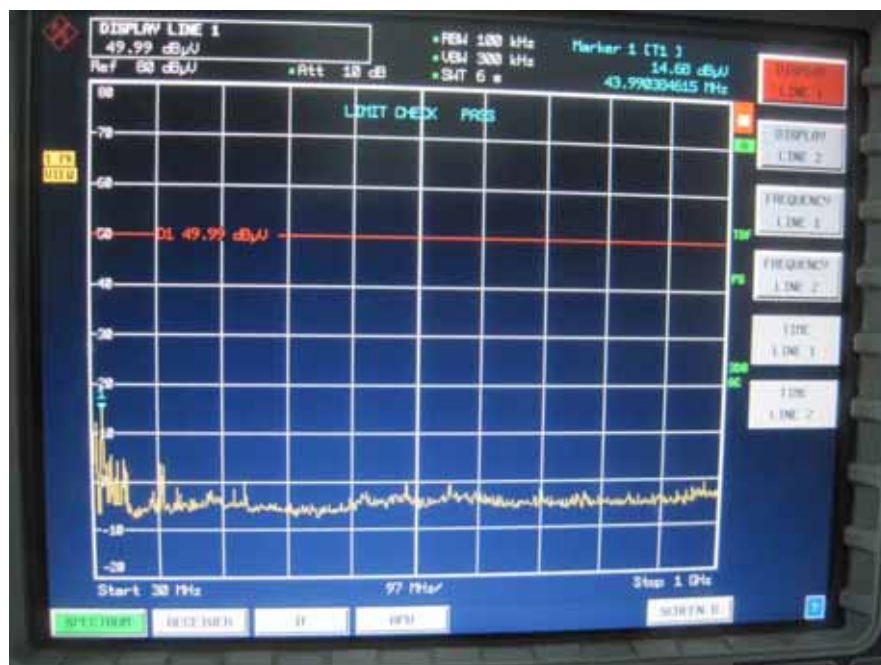
802.11b Mid Channel 6



802.11b Hi Channel 11

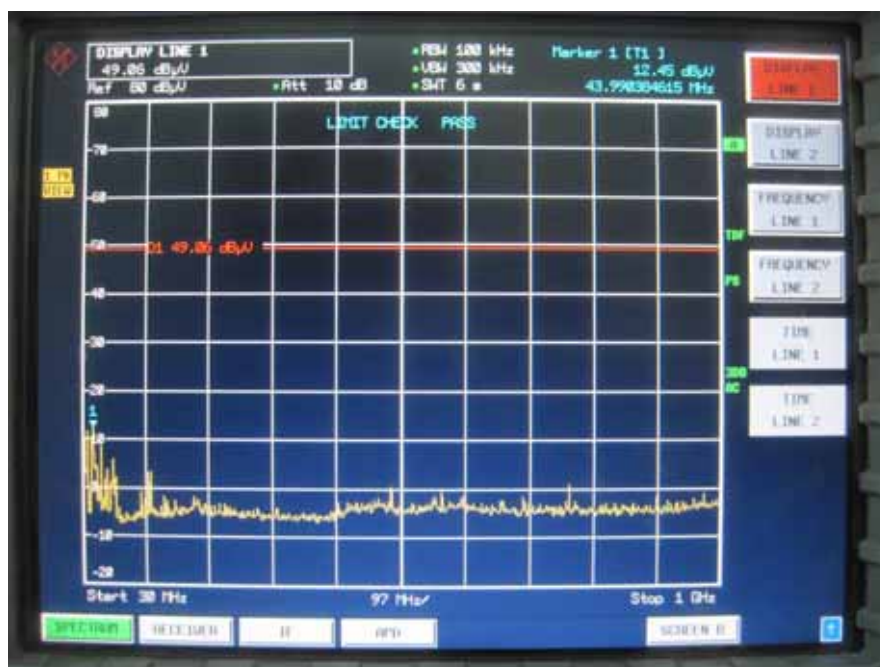


802.11g Low Channel 1

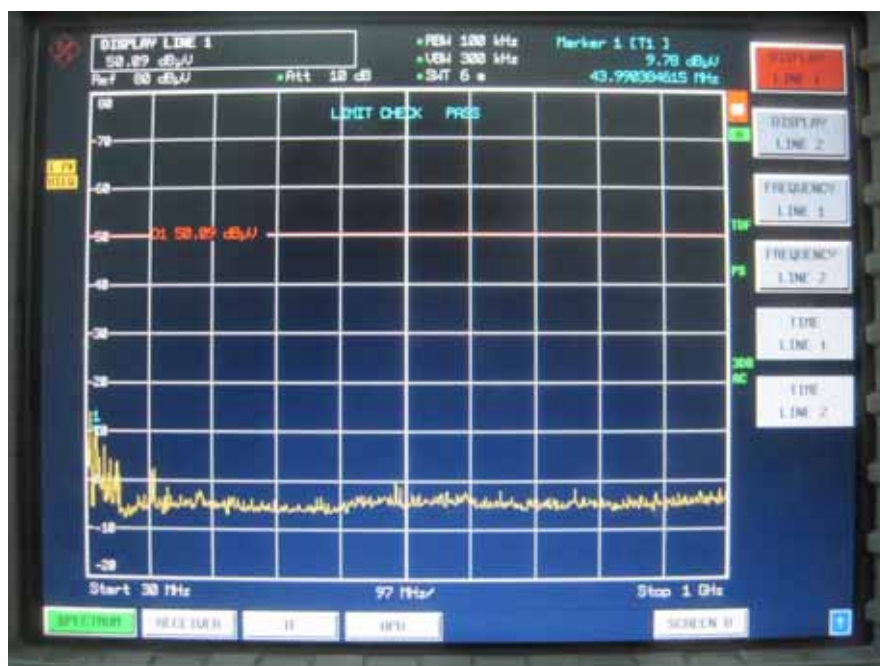
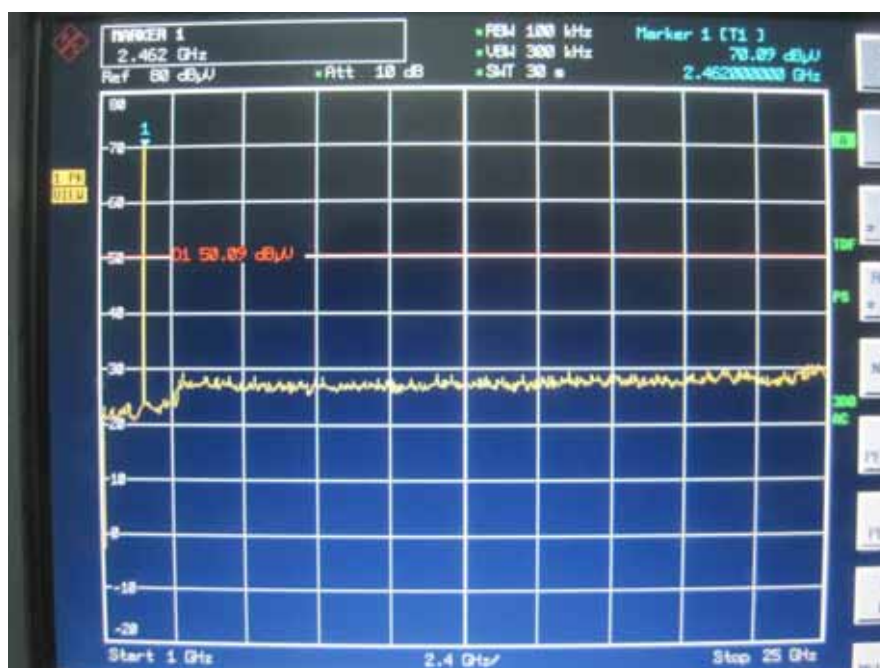




802.11g Mid Channel 6



802.11b Hi Channel 11



## **11. Antenna Application**

### **11.1 Antenna requirement**

The EUT'S antenna is met the requirement of FCC part 15C section 15.203.

### **11.2 Result**

The EUT'S antenna is Chip antenna on PCB. The antenna's gain is 0dBi and meets the requirement.