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Report No.: SZEMO081005331RFF
Page: 1 of 50
FCC ID: VSAIR8000I00001

TEST REPORT

Application No: SZEMO081005331RF
Applicant: King Champion (Hong Kong) Ltd.
Address of Applicant: Unit 1520, Phase 1 Metro Centre, 32 Lam Hing Street, Kowloon Bay, Kowloon, Hong Kong
FCC ID: VSAIR8000I00001
Fundamental Carrier Frequency : 2.412GHz to 2.462GHz
Equipment Under Test (EUT):
Name: Internet Radio with FM
Model: IR-80
Product Rated Voltage: AC 100V-240V
Standards: FCC PART 15 Subpart C: 2008
Date of Receipt: 29 October 2008
Date of Test: 29 October to 31 December 2008
Date of Issue: 04 January 2009

| | |
|----------------------|---------------|
| Test Result : | PASS * |
|----------------------|---------------|

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Lo
Laboratory Manager

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2 Test Summary

| Test | Test Requirement | Standard Paragraph | Result |
|---|-------------------|-------------------------|--------|
| Conducted Emissions | FCC PART 15:2008 | Section 15.107 / 15.207 | PASS |
| Radiated Emission | FCC PART 15:2008 | Section 15.205/15.209 | PASS* |
| Maximum Peak Output Power | FCC PART 15 :2008 | Section 15.247 (b) | PASS |
| Occupied Bandwidth | FCC PART 15 :2008 | Section 15.247 (a2) | PASS |
| Edges Measurement | FCC PART 15 2008 | Section 15.247(d) | PASS |
| Power Spectral Density Measurement | FCC PART 15 :2008 | Section 15.247 (e) | PASS |
| Antenna requirement. | FCC PART 15:2008 | Section 15.247 (b) | PASS |

Remark:

The EUT passed the Radiated Emission test after retest.

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4 General Information

4.1 General Description of E.U.T.

| | |
|--------------------|---|
| Name: | Internet Radio with FM |
| Item No.: | IR-80 |
| Frequency Range | 802.11b/g:2412-2462MHz |
| Transfer Rate | 802.11b mode: 1/2/5.5/11Mbps 802.11g mode: 6/9/12/18/24/36/48/54Mbps |
| Number of Channel | 11 channels (802.11b & 802.11g) |
| Antenna Type; | Integral |
| Type of Modulation | 802.11b DBPSK(1MHz), DQPSK(2MHz), CCK(5.5/11MHz), 802.11g OFDM(6MHz-54MHz) |
| Antenna Type | Integral |

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Verify the Frequency and Channel

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

Note:

1. Section 15.31(m): Measurements on intentional radiators or receivers shall be performed at three frequencies for operating frequency range over 10 MHz. The locations of these frequencies one near the top, one near the middle and one near the bottom.
2. So all the items as followed in testing report are need to test these three frequencies with 802.11b and 802.11g modulation type respectively:

Top: Channel 1: 2412MHz.

Middle: Channel 6: 2437MHz.

Bottom: Channel 11: 2462 MHz.

4.2 Test Location

No.198 Kezhu Road, Science Town Economic& Technology Development District Guangzhou, China 510663
Telephone: +86 (0) 20 8215 5555 Fax: +86 (0) 20 8207 5059

4.3 Other Information Requested by the Customer

None

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5 Test Results

5.1 Test Instruments

| RE in Chamber | | | | | | |
|---------------|--------------------------------|----------------------|---------------------------------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (dd-mm-yy) | Cal.Due date (dd-mm-yy) |
| 1 | 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEL0017 | 16-06-2007 | 15-06-2009 |
| 2 | EMI Test Receiver | Rohde & Schwarz | ESIB26 | SEL0023 | 12-12-2008 | 11-12-2009 |
| 3 | EMI Test software | AUDIX | E3 | SEL0050 | N/A | N/A |
| 4 | Coaxial cable | SGS | N/A | SEL0028 | 18-06-2008 | 17-06-2009 |
| 5 | BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN | 3142C | SEL0014 | 12-08-2008 | 11-08-2009 |
| 6 | Pre-amplifier (0.1-1300MHz) | Agilent Technologies | 8447D | SEL0053 | 18-06-2008 | 17-06-2009 |
| 7 | Double-ridged horn (1-18GHz) | ETS-LINDGREN | 3117 | SEL0005 | 12-08-2008 | 11-08-2009 |
| 8 | Horn Antenna (18-26GHz) | ETS-LINDGREN | 3160 | SEL0076 | 12-08-2008 | 11-08-2009 |
| 9 | Pre-amplifier (1-18GHz) | Rohde & Schwarz | AFS42-00101 800-25-S-42 | SEL0081 | 18-06-2008 | 17-06-2009 |
| 10 | Pre-amplifier (18-26GHz) | Rohde & Schwarz | AFS33- 18002650-30- 8P-44 | SEL0080 | 18-06-2008 | 17-06-2009 |
| 11 | Band filter | Amindeon | 82346 | SEL0094 | 18-06-2008 | 17-06-2009 |
| 12 | Active Loop Antenna | Beijing Daze | ZN30900A | SEL0097 | 15-06-2008 | 14-06-2009 |

| Conducted Emission | | | | | | |
|--------------------|-------------------|------------------|-------------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (dd-mm-yy) | Cal.Due date (dd-mm-yy) |
| 1 | Shielding Room | ZhongYu Electron | GB-88 | SEL0042 | N/A | N/A |
| 2 | LISN | ETS-LINDGREN | 3816/2 | SEL0021 | 18-06-2008 | 17-06-2009 |
| 3 | ISN | Rohde & Schwarz | ENY 22 1109 | EMC0114 | 18-06-2008 | 17-06-2009 |
| 4 | ISN | Rohde & Schwarz | ENY 41 1110 | EMC0115 | 18-06-2008 | 17-06-2009 |
| 5 | EMI Test Receiver | Rohde & Schwarz | ESCI | SEL0022 | 18-06-2008 | 17-06-2009 |
| 6 | Coaxial Cable | SGS | N/A | SEL0024 | 18-06-2008 | 17-06-2009 |

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5.2 E.U.T. Operation

AC adaptor: Input: AC 100-240V 50/60Hz 0.3A MAX

Output: DC 9.0V 800mA

EUT power supply: DC9.0V (6*1.5V"AA"Size Batteries)

Operating Environment

Temperature: 24 °C

Humidity: 56 % RH

Atmospheric Pressure: 1010 mbar

Operation:

Test the EUT as a product which Direct Sequence Spread Spectrum. The total channels are 11 channels (1 to 11 channels), the fundamental frequencies are from 2.412GHz to 2.462GHz. The test procedure provided by applicant enabled the EUT to transmit and receive data at lowest (Channel 1: 2.412GHz), middle (Channel 6: 2.437GHz), and highest channel (Channel 11: 2.462GHz), frequencies individually. Pre-test the entire frequencies mode and their power status, compliance test in the worse case: Channel 1, Channel 6, Channel 11

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps and 802.11g 6/9/12/18/24/36/48/54Mbps) and antenna ports (if EUT with antenna diversity architecture).

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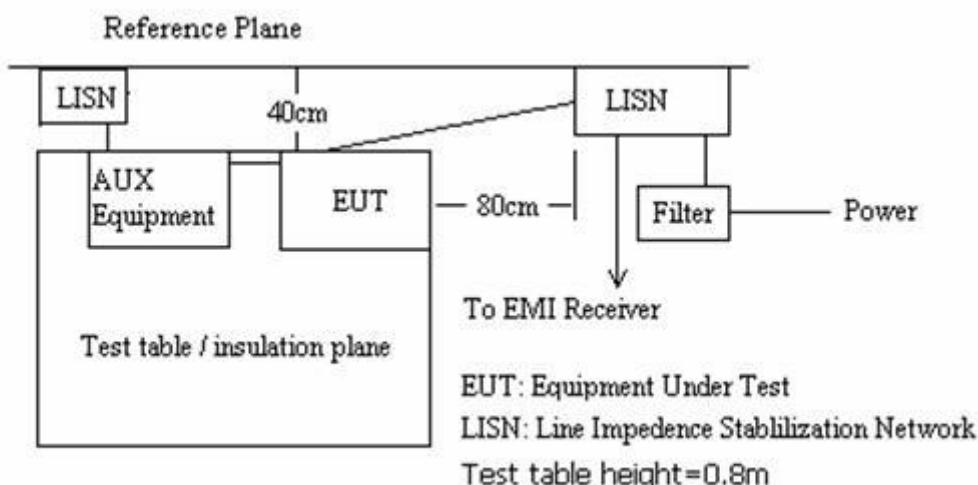
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5.3 Test Procedure & Measurement Data

5.3.1 Conducted Emissions

Test Requirement: FCC Part15 C Section 15.207
Test Method: ANSI C63.4:2003
Frequency Range: 150KHz to 30MHz
Class / Severity: Class B
Detector: RBW=9KHz VBW=30KHz
Operating Environment:
Temperature: 24 °C Humidity: 52 % RH Atmospheric Pressure: 1010 Mbar
EUT Operation: Test in normal mode. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.
Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Plan View of Test Setup



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5.3.1.1 Measurement Data

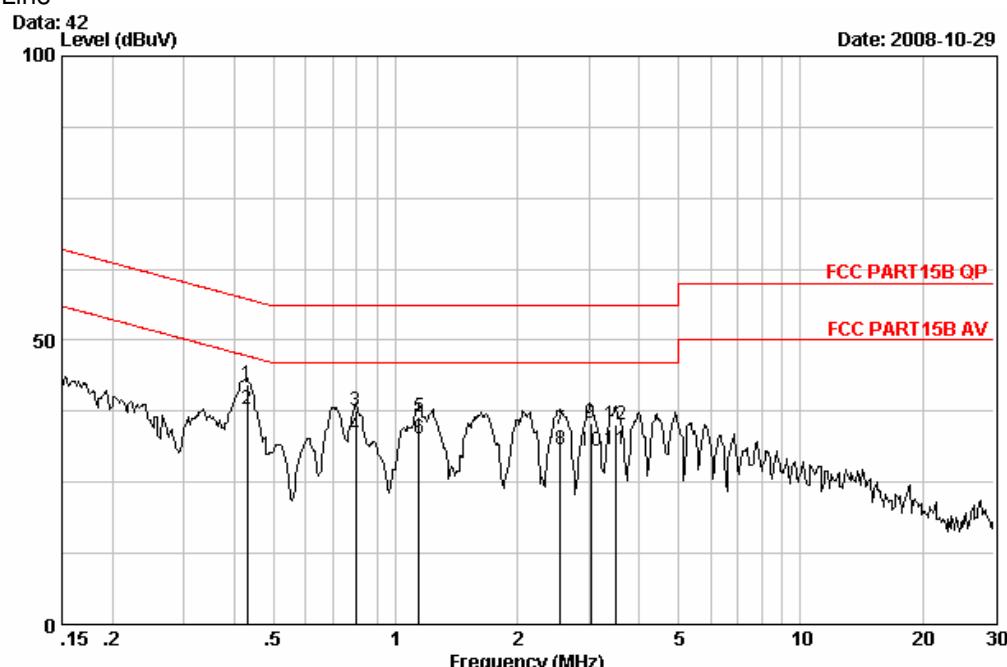
An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected. For EUT communicating with worst case mode.

The following Quasi-Peak and Average measurements were performed on the EUT:

FM mode

Live Line

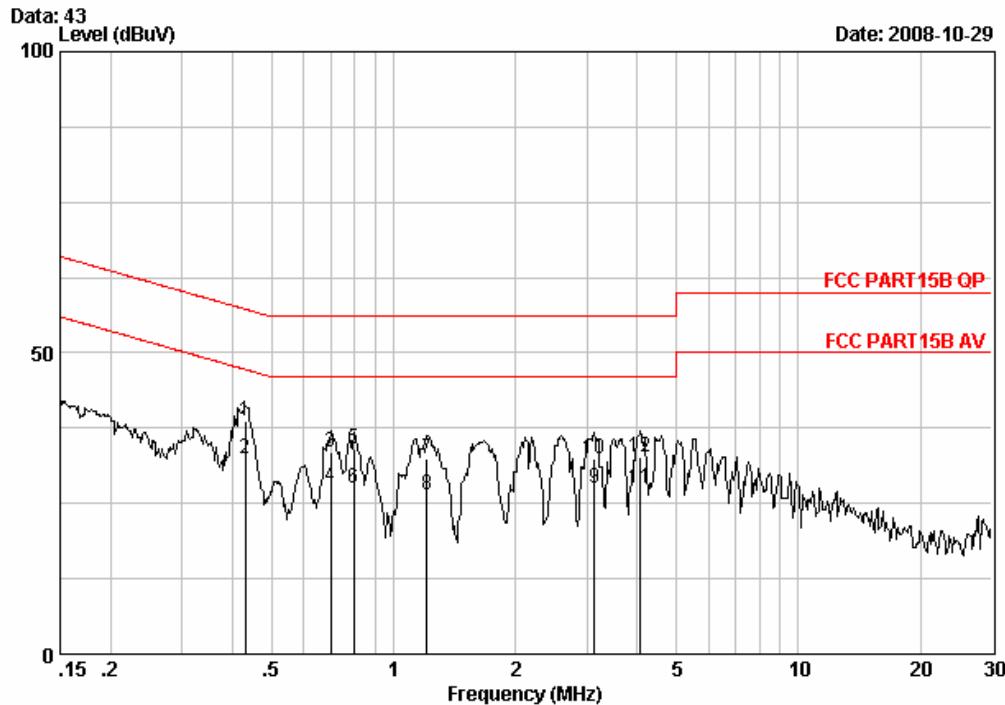


Site : Shielding Room
 Condition : FCC PART15B QP CE LINE
 EUT : Internet Radio with FM
 Job No. : 5331RF
 Test Mode : FM

| Freq | Cable | LISN | Read | Limit | Over | Remark |
|------|---------|------|-------|-------|-------|----------------------|
| | MHz | dB | dB | dBuV | dBuV | |
| 1 | 0.43000 | 0.06 | -0.04 | 42.14 | 42.15 | 57.25 -15.10 QP |
| 2 | 0.43000 | 0.06 | -0.04 | 37.80 | 37.81 | 47.25 -9.44 Average |
| 3 | 0.79600 | 0.07 | -0.05 | 37.50 | 37.52 | 56.00 -18.48 QP |
| 4 | 0.79600 | 0.07 | -0.05 | 33.24 | 33.26 | 46.00 -12.74 Average |
| 5 | 1.140 | 0.09 | -0.05 | 36.40 | 36.44 | 56.00 -19.56 QP |
| 6 | 1.140 | 0.09 | -0.05 | 32.60 | 32.64 | 46.00 -13.36 Average |
| 7 | 2.550 | 0.13 | -0.07 | 34.25 | 34.31 | 56.00 -21.69 QP |
| 8 | 2.550 | 0.13 | -0.07 | 30.70 | 30.76 | 46.00 -15.24 Average |
| 9 | 3.030 | 0.14 | -0.08 | 35.40 | 35.47 | 56.00 -20.54 QP |
| 10 | 3.030 | 0.14 | -0.08 | 30.40 | 30.47 | 46.00 -15.54 Average |
| 11 | 3.490 | 0.15 | -0.08 | 30.60 | 30.67 | 46.00 -15.33 Average |
| 12 | 3.490 | 0.15 | -0.08 | 35.14 | 35.21 | 56.00 -20.79 QP |

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Neutral Line


Site : Shielding Room
 Condition : FCC PART15B QP CE NEUTRAL
 EUT : Internet Radio with FM
 Job No. : 5331RF
 Test Mode : FM

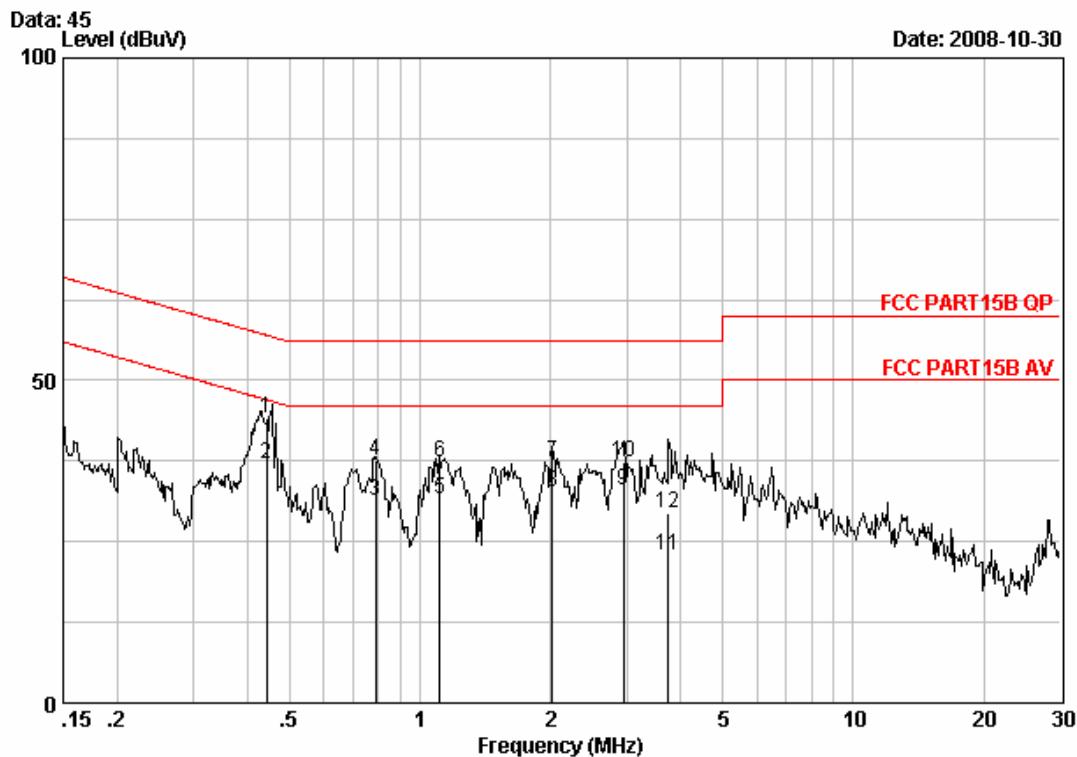
| | Freq | Cable | LISN | Read | Limit | | Over | Remark |
|----|---------|-------|--------|-------|-------|-------|--------|---------|
| | | Loss | Factor | Level | Level | Line | Limit | |
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.43000 | 0.06 | -0.04 | 38.80 | 38.82 | 57.25 | -18.43 | QP |
| 2 | 0.43000 | 0.06 | -0.04 | 32.40 | 32.42 | 47.25 | -14.83 | Average |
| 3 | 0.70000 | 0.06 | -0.04 | 33.50 | 33.52 | 56.00 | -22.48 | QP |
| 4 | 0.70000 | 0.06 | -0.04 | 27.80 | 27.82 | 46.00 | -18.18 | Average |
| 5 | 0.79600 | 0.07 | -0.04 | 33.92 | 33.94 | 56.00 | -22.06 | QP |
| 6 | 0.79600 | 0.07 | -0.04 | 27.40 | 27.42 | 46.00 | -18.58 | Average |
| 7 | 1.210 | 0.09 | -0.05 | 32.40 | 32.44 | 56.00 | -23.56 | QP |
| 8 | 1.210 | 0.09 | -0.05 | 26.50 | 26.54 | 46.00 | -19.46 | Average |
| 9 | 3.140 | 0.14 | -0.08 | 27.47 | 27.53 | 46.00 | -18.47 | Average |
| 10 | 3.140 | 0.14 | -0.08 | 32.47 | 32.53 | 56.00 | -23.47 | QP |
| 11 | 4.070 | 0.16 | -0.10 | 27.50 | 27.56 | 46.00 | -18.44 | Average |
| 12 | 4.070 | 0.16 | -0.10 | 32.60 | 32.66 | 56.00 | -23.34 | QP |

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WIFI mode

Live Line



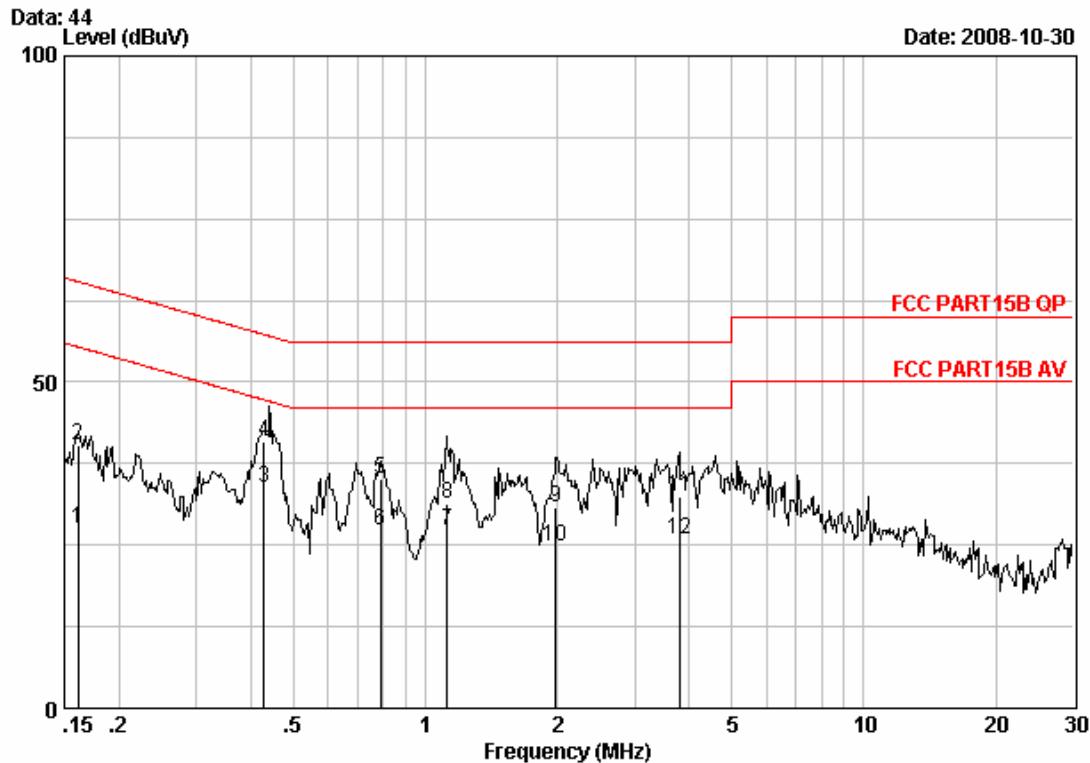
Site : Shielding Room
 Condition : FCC PART15B QP CE LINE
 EUT : Internet Radio with FM
 Job No. : 5331RF
 Test Mode : WIFI

| | Freq | Cable | LISN | Read | Limit | Over | Remark |
|----|---------|-------|-------|--------|-------|-------|----------------|
| | | MHz | Loss | Factor | Level | Level | |
| 1 | 0.44300 | 0.06 | -0.04 | 44.20 | 44.21 | 57.01 | -12.79 QP |
| 2 | 0.44300 | 0.06 | -0.04 | 37.10 | 37.11 | 47.01 | -9.89 Average |
| 3 | 0.79100 | 0.07 | -0.05 | 31.20 | 31.22 | 46.00 | -14.78 Average |
| 4 | 0.79100 | 0.07 | -0.05 | 37.50 | 37.52 | 56.00 | -18.48 QP |
| 5 | 1.110 | 0.09 | -0.05 | 31.50 | 31.53 | 46.00 | -14.47 Average |
| 6 | 1.110 | 0.09 | -0.05 | 37.40 | 37.43 | 56.00 | -18.57 QP |
| 7 | 2.020 | 0.12 | -0.06 | 37.20 | 37.26 | 56.00 | -18.74 QP |
| 8 | 2.020 | 0.12 | -0.06 | 32.60 | 32.66 | 46.00 | -13.34 Average |
| 9 | 2.950 | 0.14 | -0.07 | 32.80 | 32.86 | 46.00 | -13.14 Average |
| 10 | 2.950 | 0.14 | -0.07 | 37.40 | 37.46 | 56.00 | -18.54 QP |
| 11 | 3.740 | 0.15 | -0.09 | 22.70 | 22.77 | 46.00 | -23.23 Average |
| 12 | 3.740 | 0.15 | -0.09 | 29.30 | 29.37 | 56.00 | -26.63 QP |

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Neutral Line



Site : Shielding Room
 Condition : FCC PART15B QP CE NEUTRAL
 EUT : Internet Radio with FM
 Job No. : 5331RF
 Test Mode : WIFI

| Freq | Cable | LISN | Read | Limit | Over | Remark | |
|------|---------|------|--------|-------|-------|--------|----------------|
| | MHz | Loss | Factor | | | | |
| | | | | | | | |
| 1 | 0.16100 | 0.04 | -0.05 | 27.50 | 27.49 | 55.41 | -27.92 Average |
| 2 | 0.16100 | 0.04 | -0.05 | 40.30 | 40.29 | 65.41 | -25.12 QP |
| 3 | 0.42740 | 0.06 | -0.04 | 33.80 | 33.82 | 47.30 | -13.49 Average |
| 4 | 0.42740 | 0.06 | -0.04 | 40.80 | 40.82 | 57.30 | -16.49 QP |
| 5 | 0.79100 | 0.07 | -0.04 | 35.20 | 35.22 | 56.00 | -20.78 QP |
| 6 | 0.79100 | 0.07 | -0.04 | 27.10 | 27.12 | 46.00 | -18.88 Average |
| 7 | 1.120 | 0.09 | -0.05 | 27.30 | 27.34 | 46.00 | -18.66 Average |
| 8 | 1.120 | 0.09 | -0.05 | 31.20 | 31.24 | 56.00 | -24.76 QP |
| 9 | 1.980 | 0.12 | -0.06 | 30.70 | 30.76 | 56.00 | -25.24 QP |
| 10 | 1.980 | 0.12 | -0.06 | 24.80 | 24.86 | 46.00 | -21.14 Average |
| 11 | 3.800 | 0.15 | -0.09 | 32.30 | 32.36 | 56.00 | -23.64 QP |
| 12 | 3.800 | 0.15 | -0.09 | 25.80 | 25.86 | 46.00 | -20.14 Average |

TEST RESULTS: The unit does meet the FCC requirement

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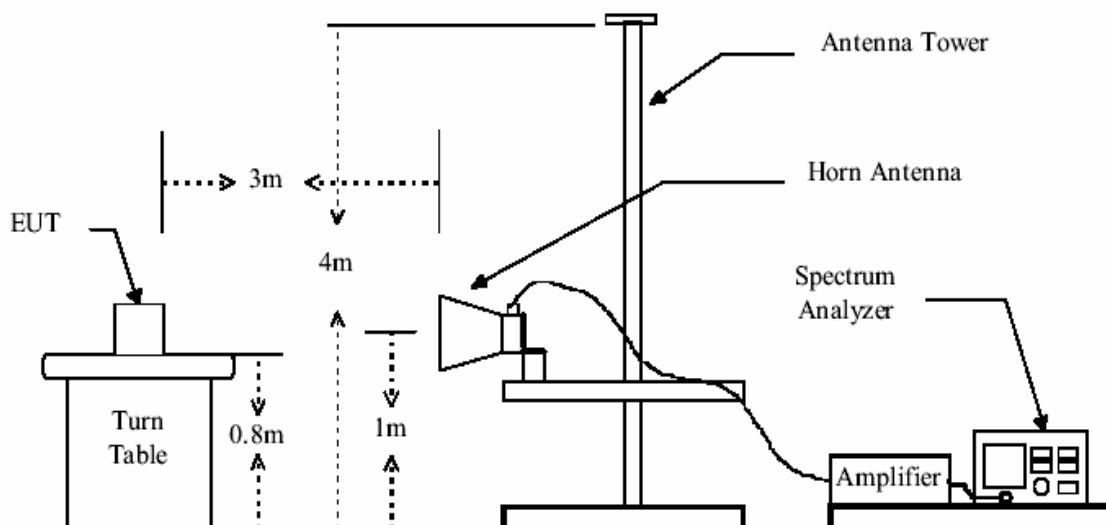
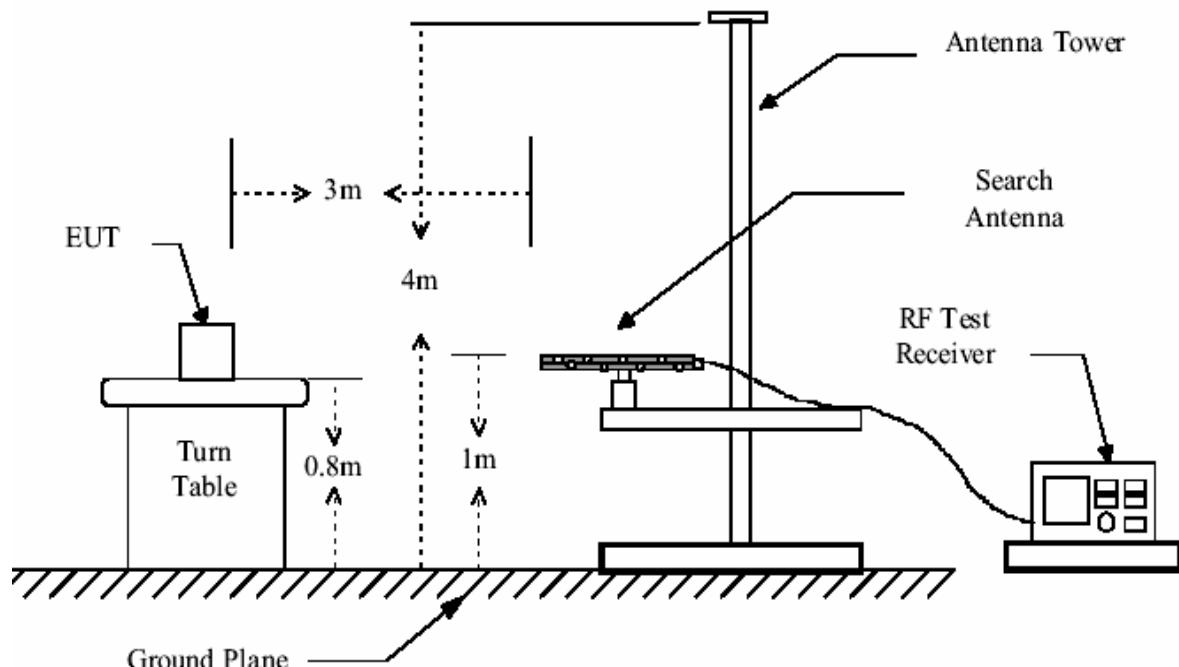
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5.3.2 Radiated Emissions

| | |
|-------------------|---|
| Test Requirement: | FCC Part15 C Section 15.247, 15.209 and 15.205 |
| Test Method: | ANSI C63.4 & DA 00-705 |
| Select test mode: | 802.11 b 1Mbps & 802.11g 6Mbps |
| Test site: | Measurement Distance: 3m (Semi-Anechoic Chamber) |
| Test Range | 30MHz to 25GHz |
| Receive setup: | 30MHz-1000MHz: RBW=100KHz, VBW=300KHz Above 1GHz: PK RBW=1MHz, VBW=3MHz Average RBW=1MHz, VBW=10Hz |
| 15.209 Limit: | 40.0 dB μ V/m between 30MHz & 88MHz 43.5 dB μ V/m between 88MHz & 216MHz 46.0 dB μ V/m between 216MHz & 960MHz above 960MHz: Average value Limit 54.0 dB μ V/m Peak value Limit 74.0 dB μ V/m. |
| Test Procedure: | The procedure used was ANSI Standard C63.4-2003. The receiver was scanned from 30MHz to 25GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported. |

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Test Configuration


The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

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5.3.2.1 Radiated emission below 1GHz

Test in WIFI mode.

Vertical

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|
| 198.780 | 1.40 | 10.19 | 27.16 | 48.44 | 32.87 | 43.50 | -10.63 |
| 206.540 | 1.44 | 10.52 | 27.12 | 48.83 | 33.67 | 43.50 | -9.83 |
| 229.820 | 1.57 | 11.64 | 27.00 | 43.57 | 29.78 | 46.00 | -16.22 |
| 397.630 | 2.20 | 16.27 | 27.39 | 41.16 | 32.24 | 46.00 | -13.76 |
| 498.510 | 2.59 | 17.80 | 27.70 | 41.98 | 34.67 | 46.00 | -11.33 |
| 598.420 | 2.70 | 19.74 | 27.62 | 41.79 | 36.61 | 46.00 | -9.39 |

Horizontal

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|
| 207.510 | 1.45 | 10.61 | 27.11 | 47.69 | 32.64 | 43.50 | -10.86 |
| 214.300 | 1.49 | 10.93 | 27.08 | 47.40 | 32.74 | 43.50 | -10.76 |
| 261.830 | 1.73 | 12.55 | 26.87 | 44.30 | 31.71 | 46.00 | -14.29 |
| 322.940 | 1.98 | 14.76 | 26.90 | 43.75 | 33.59 | 46.00 | -12.41 |
| 397.630 | 2.20 | 16.27 | 27.39 | 44.67 | 35.75 | 46.00 | -10.25 |
| 598.420 | 2.70 | 19.74 | 27.62 | 38.55 | 33.37 | 46.00 | -12.63 |

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Test in FM mode.**Vertical**

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|
| 148.340 | 1.32 | 8.86 | 27.47 | 44.92 | 27.63 | 43.50 | -15.87 |
| 160.950 | 1.34 | 9.59 | 27.38 | 49.03 | 32.58 | 43.50 | -10.92 |
| 172.590 | 1.36 | 9.61 | 27.31 | 47.89 | 31.55 | 43.50 | -11.95 |
| 207.510 | 1.45 | 10.61 | 27.11 | 48.87 | 33.82 | 43.50 | -9.68 |
| 478.140 | 2.52 | 17.80 | 27.65 | 38.94 | 31.61 | 46.00 | -14.39 |
| 707.060 | 2.92 | 21.60 | 27.26 | 37.07 | 34.33 | 46.00 | -11.67 |

Horizontal

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|
| 148.340 | 1.32 | 8.86 | 27.47 | 46.84 | 29.55 | 43.50 | -13.95 |
| 160.950 | 1.34 | 9.59 | 27.38 | 47.28 | 30.83 | 43.50 | -12.67 |
| 172.590 | 1.36 | 9.61 | 27.31 | 45.03 | 28.69 | 43.50 | -14.81 |
| 207.510 | 1.45 | 10.61 | 27.11 | 47.40 | 32.35 | 43.50 | -11.15 |
| 330.700 | 2.00 | 14.95 | 26.95 | 44.28 | 34.28 | 46.00 | -11.72 |
| 598.420 | 2.70 | 19.74 | 27.62 | 36.73 | 31.55 | 46.00 | -14.45 |

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5.3.2.2 Transmitter emission above 1GHz

For EUT communicating with 802.11b Mode(2.412GHz)

Peak Measurement

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|--------------|
| 2439 | 5.03 | 32.26 | 47.56 | 65.84 | 55.57 | 74.00 | -18.43 | Vertical |
| 2400 | 4.97 | 32.25 | 47.38 | 70.66 | 60.50 | 74.00 | -13.50 | Vertical |
| 4824 | 6.62 | 34.04 | 45.40 | 56.15 | 51.41 | 74.00 | -22.59 | Vertical |
| 7236 | 7.62 | 36.25 | 44.48 | 34.69 | 34.08 | 74.00 | -39.92 | Vertical |
| 9648 | 8.55 | 37.01 | 42.17 | 35.36 | 38.75 | 74.00 | -35.25 | Vertical |
| 12060 | 10.12 | 38.82 | 43.40 | 35.23 | 40.77 | 74.00 | -33.23 | Vertical |
| 2439 | 5.03 | 32.26 | 47.56 | 66.38 | 55.57 | 74.00 | -18.43 | Horizontal |
| 2400 | 4.97 | 32.25 | 47.38 | 69.84 | 60.50 | 74.00 | -13.50 | Horizontal |
| 4824 | 6.62 | 34.04 | 45.40 | 39.69 | 34.95 | 74.00 | -39.05 | Horizontal |
| 7236 | 7.62 | 36.25 | 44.48 | 34.58 | 33.97 | 74.00 | -40.03 | Horizontal |
| 9648 | 8.55 | 37.01 | 42.17 | 36.17 | 39.56 | 74.00 | -34.44 | Horizontal |
| 12060 | 10.12 | 38.82 | 43.40 | 34.66 | 40.20 | 74.00 | -33.80 | Horizontal |

Average Measurement

| Frequency (MHz) | Cable loss (dB) | Antenna factors (dB/m) | Preamp factor (dB) | Reading Level (dB μ V) | Emission Level (dB μ V/m) | Limit (dB μ V/m) | Over limit | polarization |
|-----------------|-----------------|------------------------|--------------------|----------------------------|-------------------------------|----------------------|------------|--------------|
| 2439 | 5.03 | 32.26 | 47.56 | 52.38 | 42.11 | 54.00 | -11.89 | Vertical |
| 2400 | 4.97 | 32.25 | 47.38 | 50.27 | 40.11 | 54.00 | -13.89 | Vertical |
| 4824 | 6.62 | 34.04 | 45.40 | 38.56 | 33.82 | 54.00 | -20.18 | Vertical |
| 7236 | 7.62 | 36.25 | 44.48 | 35.81 | 35.20 | 54.00 | -18.80 | Vertical |
| 9648 | 8.55 | 37.01 | 42.17 | 33.49 | 36.88 | 54.00 | -17.12 | Vertical |
| 12060 | 10.12 | 38.82 | 43.40 | 32.14 | 37.68 | 54.00 | -16.32 | Vertical |
| 2439 | 5.03 | 32.26 | 47.56 | 48.61 | 42.11 | 54.00 | -11.89 | Horizontal |
| 2400 | 4.97 | 32.25 | 47.38 | 50.27 | 40.11 | 54.00 | -13.89 | Horizontal |
| 4824 | 6.62 | 34.04 | 45.40 | 35.24 | 33.82 | 54.00 | -20.18 | Horizontal |
| 7236 | 7.62 | 36.25 | 44.48 | 33.64 | 35.20 | 54.00 | -18.80 | Horizontal |
| 9648 | 8.55 | 37.01 | 42.17 | 33.27 | 36.88 | 54.00 | -17.12 | Horizontal |
| 12060 | 10.12 | 38.82 | 43.40 | 30.56 | 37.68 | 54.00 | -16.32 | Horizontal |

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For EUT communicating with 802.11b Mode(2.437GHz)

Peak Measurement

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|--------------|
| 2400 | 4.97 | 32.25 | 47.38 | 58.64 | 48.48 | 74.00 | -25.52 | Vertical |
| 2483.5 | 5.08 | 32.29 | 46.87 | 57.92 | 48.42 | 74.00 | -25.58 | Vertical |
| 4874 | 6.64 | 34.02 | 45.42 | 53.94 | 49.18 | 74.00 | -24.82 | Vertical |
| 7311 | 7.59 | 36.14 | 44.41 | 53.28 | 52.60 | 74.00 | -21.40 | Vertical |
| 9748 | 8.64 | 37.10 | 42.08 | 51.29 | 54.95 | 74.00 | -19.05 | Vertical |
| 12185 | 10.16 | 38.91 | 43.55 | 50.73 | 56.25 | 74.00 | -17.75 | Vertical |
| 2400 | 4.97 | 32.25 | 47.38 | 57.61 | 47.45 | 74.00 | -26.55 | Horizontal |
| 2483.5 | 5.08 | 32.29 | 46.87 | 55.47 | 45.97 | 74.00 | -28.03 | Horizontal |
| 4874 | 6.64 | 34.02 | 45.42 | 55.54 | 50.78 | 74.00 | -23.22 | Horizontal |
| 7311 | 7.59 | 36.14 | 44.41 | 53.24 | 52.56 | 74.00 | -21.44 | Horizontal |
| 9748 | 8.64 | 37.10 | 42.08 | 52.81 | 56.47 | 74.00 | -17.53 | Horizontal |
| 12185 | 10.16 | 38.91 | 43.55 | 51.43 | 56.95 | 74.00 | -17.05 | Horizontal |

Average Measurement

| Frequency (MHz) | Cable loss (dB) | Antenna factors (dB/m) | Preamp factor (dB) | Reading Level (dB μ V) | Emission Level (dB μ V/m) | Limit (dB μ V/m) | Over limit | polarization |
|-----------------|-----------------|------------------------|--------------------|----------------------------|-------------------------------|----------------------|------------|--------------|
| 2400 | 4.97 | 32.25 | 47.38 | 45.38 | 35.22 | 54.00 | -18.78 | Vertical |
| 2483.5 | 5.08 | 32.29 | 46.87 | 43.29 | 33.79 | 54.00 | -20.21 | Vertical |
| 4874 | 6.64 | 34.02 | 45.42 | 36.90 | 32.14 | 54.00 | -21.86 | Vertical |
| 7311 | 7.59 | 36.14 | 44.41 | 35.61 | 34.93 | 54.00 | -19.07 | Vertical |
| 9748 | 8.64 | 37.10 | 42.08 | 33.27 | 36.93 | 54.00 | -17.07 | Vertical |
| 12185 | 10.16 | 38.91 | 43.55 | 31.44 | 36.96 | 54.00 | -17.04 | Vertical |
| 2400 | 4.97 | 32.25 | 47.38 | 44.87 | 34.71 | 54.00 | -19.29 | Horizontal |
| 2483.5 | 5.08 | 32.29 | 46.87 | 42.19 | 32.69 | 54.00 | -21.31 | Horizontal |
| 4874 | 6.64 | 34.02 | 45.42 | 35.74 | 30.98 | 54.00 | -23.02 | Horizontal |
| 7311 | 7.59 | 36.14 | 44.41 | 33.68 | 33.00 | 54.00 | -21.00 | Horizontal |
| 9748 | 8.64 | 37.10 | 42.08 | 32.95 | 36.61 | 54.00 | -17.39 | Horizontal |
| 12185 | 10.16 | 38.91 | 43.55 | 30.57 | 36.09 | 54.00 | -17.91 | Horizontal |

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For EUT communicating with 802.11b Mode(2.462GHz)

Peak Measurement

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|--------------|
| 2483.5 | 5.08 | 32.29 | 46.87 | 60.57 | 51.07 | 74.00 | -22.93 | Vertical |
| 2500 | 5.10 | 32.30 | 46.75 | 57.86 | 48.51 | 74.00 | -25.49 | Vertical |
| 4924 | 6.66 | 34.01 | 45.43 | 53.64 | 48.88 | 74.00 | -25.12 | Vertical |
| 7386 | 7.55 | 35.99 | 44.32 | 52.91 | 52.13 | 74.00 | -21.87 | Vertical |
| 9848 | 8.71 | 37.17 | 42.00 | 50.48 | 54.36 | 74.00 | -19.64 | Vertical |
| 12310 | 10.20 | 38.99 | 43.70 | 50.62 | 56.11 | 74.00 | -17.89 | Vertical |
| 2483.5 | 5.08 | 32.29 | 46.87 | 60.27 | 50.77 | 74.00 | -23.23 | Horizontal |
| 2500 | 5.10 | 32.30 | 46.75 | 56.58 | 47.23 | 74.00 | -26.77 | Horizontal |
| 4924 | 6.66 | 34.01 | 45.43 | 53.84 | 49.08 | 74.00 | -24.92 | Horizontal |
| 7386 | 7.55 | 35.99 | 44.32 | 55.17 | 54.39 | 74.00 | -19.61 | Horizontal |
| 9848 | 8.71 | 37.17 | 42.00 | 52.10 | 55.98 | 74.00 | -18.02 | Horizontal |
| 12310 | 10.20 | 38.99 | 43.70 | 51.67 | 57.16 | 74.00 | -16.84 | Horizontal |

Average Measurement

| Frequency (MHz) | Cable loss (dB) | Antenna factors (dB/m) | Preamp factor (dB) | Reading Level (dB μ V) | Emission Level (dB μ V/m) | Limit (dB μ V/m) | Over limit | polarization |
|-----------------|-----------------|------------------------|--------------------|----------------------------|-------------------------------|----------------------|------------|--------------|
| 2483.5 | 5.08 | 32.29 | 46.87 | 48.57 | 39.07 | 54.00 | -14.93 | Vertical |
| 2500 | 5.10 | 32.30 | 46.75 | 45.62 | 36.27 | 54.00 | -17.73 | Vertical |
| 4924 | 6.66 | 34.01 | 45.43 | 36.19 | 31.43 | 54.00 | -22.57 | Vertical |
| 7386 | 7.55 | 35.99 | 44.32 | 35.29 | 34.51 | 54.00 | -19.49 | Vertical |
| 9848 | 8.71 | 37.17 | 42.00 | 33.21 | 37.09 | 54.00 | -16.91 | Vertical |
| 12310 | 10.20 | 38.99 | 43.70 | 32.15 | 37.64 | 54.00 | -16.36 | Vertical |
| 2483.5 | 5.08 | 32.29 | 46.87 | 47.69 | 38.19 | 54.00 | -15.81 | Horizontal |
| 2500 | 5.10 | 32.30 | 46.75 | 44.67 | 35.32 | 54.00 | -18.68 | Horizontal |
| 4924 | 6.66 | 34.01 | 45.43 | 38.29 | 33.53 | 54.00 | -20.47 | Horizontal |
| 7386 | 7.55 | 35.99 | 44.32 | 35.48 | 34.70 | 54.00 | -19.30 | Horizontal |
| 9848 | 8.71 | 37.17 | 42.00 | 33.64 | 37.52 | 54.00 | -16.48 | Horizontal |
| 12310 | 10.20 | 38.99 | 43.70 | 32.18 | 37.67 | 54.00 | -16.33 | Horizontal |

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For EUT communicating with 802.11g Mode(2.412GHz)

Peak Measurement

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|--------------|
| 2439 | 5.03 | 32.26 | 47.56 | 60.28 | 50.01 | 74.00 | -23.99 | Vertical |
| 2400 | 4.97 | 32.25 | 47.38 | 62.35 | 52.19 | 74.00 | -21.81 | Vertical |
| 4874 | 6.64 | 34.02 | 45.42 | 57.68 | 52.92 | 74.00 | -21.08 | Vertical |
| 7311 | 7.59 | 36.14 | 44.41 | 55.38 | 54.70 | 74.00 | -19.30 | Vertical |
| 9748 | 8.64 | 37.10 | 42.08 | 53.72 | 57.38 | 74.00 | -16.62 | Vertical |
| 12185 | 10.16 | 38.91 | 43.55 | 52.18 | 57.70 | 74.00 | -16.30 | Vertical |
| 2439 | 5.03 | 32.26 | 47.56 | 60.58 | 50.31 | 74.00 | -23.69 | Horizontal |
| 2400 | 4.97 | 32.25 | 47.38 | 62.31 | 52.15 | 74.00 | -21.85 | Horizontal |
| 4784 | 6.60 | 34.04 | 45.39 | 57.86 | 53.11 | 74.00 | -20.89 | Horizontal |
| 7311 | 7.59 | 36.14 | 44.41 | 55.49 | 54.81 | 74.00 | -19.19 | Horizontal |
| 9748 | 8.64 | 37.10 | 42.08 | 54.92 | 58.58 | 74.00 | -15.42 | Horizontal |
| 12185 | 10.16 | 38.91 | 43.55 | 53.29 | 58.81 | 74.00 | -15.19 | Horizontal |

Average Measurement

| Frequency (MHz) | Cable loss (dB) | Antenna factors (dB/m) | Preamp factor (dB) | Reading Level (dB μ V) | Emission Level (dB μ V/m) | Limit (dB μ V/m) | Over limit (dB) | polarization |
|-----------------|-----------------|------------------------|--------------------|----------------------------|-------------------------------|----------------------|-----------------|--------------|
| 2439 | 5.03 | 32.26 | 47.56 | 45.62 | 35.35 | 54.00 | -18.65 | Vertical |
| 2400 | 4.97 | 32.25 | 47.38 | 47.29 | 37.13 | 54.00 | -16.87 | Vertical |
| 4824 | 6.62 | 34.04 | 45.40 | 36.92 | 32.18 | 54.00 | -21.82 | Vertical |
| 7236 | 7.62 | 36.25 | 44.48 | 35.64 | 35.03 | 54.00 | -18.97 | Vertical |
| 9648 | 8.55 | 37.01 | 42.17 | 33.18 | 36.57 | 54.00 | -17.43 | Vertical |
| 12060 | 10.12 | 38.82 | 43.40 | 32.85 | 38.39 | 54.00 | -15.61 | Vertical |
| 2439 | 5.03 | 32.26 | 47.56 | 44.95 | 34.68 | 54.00 | -19.32 | Horizontal |
| 2400 | 4.97 | 32.25 | 47.38 | 48.06 | 37.90 | 54.00 | -16.10 | Horizontal |
| 4824 | 6.62 | 34.04 | 45.40 | 36.85 | 32.11 | 54.00 | -21.89 | Horizontal |
| 7236 | 7.62 | 36.25 | 44.48 | 34.15 | 33.54 | 54.00 | -20.46 | Horizontal |
| 9648 | 8.55 | 37.01 | 42.17 | 33.65 | 37.04 | 54.00 | -16.96 | Horizontal |
| 12060 | 10.12 | 38.82 | 43.40 | 32.74 | 38.28 | 54.00 | -15.72 | Horizontal |

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For EUT communicating with 802.11g Mode(2.437GHz)

Peak Measurement

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|--------------|
| 2400 | 4.97 | 32.25 | 47.38 | 60.24 | 50.08 | 74.00 | -23.92 | Vertical |
| 2483.5 | 5.08 | 32.29 | 46.87 | 57.68 | 48.18 | 74.00 | -25.82 | Vertical |
| 4874 | 6.64 | 34.02 | 45.42 | 55.94 | 51.18 | 74.00 | -22.82 | Vertical |
| 7311 | 7.59 | 36.14 | 44.41 | 53.49 | 52.81 | 74.00 | -21.19 | Vertical |
| 9748 | 8.64 | 37.10 | 42.08 | 53.42 | 57.08 | 74.00 | -16.92 | Vertical |
| 12185 | 10.16 | 38.91 | 43.55 | 50.29 | 55.81 | 74.00 | -18.19 | Vertical |
| 2400 | 4.97 | 32.25 | 47.38 | 59.78 | 49.62 | 74.00 | -24.38 | Horizontal |
| 2483.5 | 5.08 | 32.29 | 46.87 | 57.62 | 48.12 | 74.00 | -25.88 | Horizontal |
| 4874 | 6.64 | 34.02 | 45.42 | 56.03 | 51.27 | 74.00 | -22.73 | Horizontal |
| 7311 | 7.59 | 36.14 | 44.41 | 54.39 | 53.71 | 74.00 | -20.29 | Horizontal |
| 9748 | 8.64 | 37.10 | 42.08 | 52.19 | 55.85 | 74.00 | -18.15 | Horizontal |
| 12185 | 10.16 | 38.91 | 43.55 | 51.09 | 56.61 | 74.00 | -17.39 | Horizontal |

Average Measurement

| Frequency (MHz) | Cable loss (dB) | Antenna factors (dB/m) | Preamp factor (dB) | Reading Level (dB μ V) | Emission Level (dB μ V/m) | Limit (dB μ V/m) | Over limit (dB) | polarization |
|-----------------|-----------------|------------------------|--------------------|----------------------------|-------------------------------|----------------------|-----------------|--------------|
| 2400 | 4.97 | 32.25 | 47.38 | 45.27 | 35.11 | 54.00 | -18.89 | Vertical |
| 2483.5 | 5.08 | 32.29 | 46.87 | 43.67 | 34.17 | 54.00 | -19.83 | Vertical |
| 4874 | 6.64 | 34.02 | 45.42 | 38.18 | 33.42 | 54.00 | -20.58 | Vertical |
| 7311 | 7.59 | 36.14 | 44.41 | 36.15 | 35.47 | 54.00 | -18.53 | Vertical |
| 9748 | 8.64 | 37.10 | 42.08 | 35.29 | 38.95 | 54.00 | -15.05 | Vertical |
| 12185 | 10.16 | 38.91 | 43.55 | 34.12 | 39.64 | 54.00 | -14.36 | Vertical |
| 2400 | 4.97 | 32.25 | 47.38 | 44.62 | 34.46 | 54.00 | -19.54 | Horizontal |
| 2483.5 | 5.08 | 32.29 | 46.87 | 43.24 | 33.74 | 54.00 | -20.26 | Horizontal |
| 4874 | 6.64 | 34.02 | 45.42 | 38.65 | 33.89 | 54.00 | -20.11 | Horizontal |
| 7311 | 7.59 | 36.14 | 44.41 | 37.14 | 36.46 | 54.00 | -17.54 | Horizontal |
| 9748 | 8.64 | 37.10 | 42.08 | 35.55 | 39.21 | 54.00 | -14.79 | Horizontal |
| 12185 | 10.16 | 38.91 | 43.55 | 33.62 | 39.14 | 54.00 | -14.86 | Horizontal |

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For EUT communicating with 802.11g Mode(2.462GHz)

Peak Measurement

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | polarization |
|-----------------|-----------------|-----------------------|--------------------|-------------------|----------------|---------------------|-----------------|--------------|
| 2483.5 | 5.08 | 32.29 | 46.87 | 63.51 | 54.01 | 74.00 | -19.99 | Vertical |
| 2500 | 5.10 | 32.30 | 46.75 | 60.35 | 51.00 | 74.00 | -23.00 | Vertical |
| 4924 | 6.66 | 34.01 | 45.43 | 57.62 | 52.86 | 74.00 | -21.14 | Vertical |
| 7386 | 7.55 | 35.99 | 44.32 | 55.49 | 54.71 | 74.00 | -19.29 | Vertical |
| 9848 | 8.71 | 37.17 | 42.00 | 53.28 | 57.16 | 74.00 | -16.84 | Vertical |
| 12310 | 10.20 | 38.99 | 43.70 | 52.47 | 57.96 | 74.00 | -16.04 | Vertical |
| 2483.5 | 5.08 | 32.29 | 46.87 | 64.18 | 54.68 | 74.00 | -19.32 | Horizontal |
| 2500 | 5.10 | 32.30 | 46.75 | 59.86 | 50.51 | 74.00 | -23.49 | Horizontal |
| 4924 | 6.66 | 34.01 | 45.43 | 56.88 | 52.12 | 74.00 | -21.88 | Horizontal |
| 7386 | 7.55 | 35.99 | 44.32 | 55.44 | 54.66 | 74.00 | -19.34 | Horizontal |
| 9848 | 8.71 | 37.17 | 42.00 | 53.61 | 57.49 | 74.00 | -16.51 | Horizontal |
| 12310 | 10.20 | 38.99 | 43.70 | 53.09 | 58.58 | 74.00 | -15.42 | Horizontal |

Average Measurement

| Frequency (MHz) | Cable loss (dB) | Antenna factors (dB/m) | Preamp factor (dB) | Reading Level (dB μ V) | Emission Level (dB μ V/m) | Limit (dB μ V/m) | Over limit (dB) | polarization |
|-----------------|-----------------|------------------------|--------------------|----------------------------|-------------------------------|----------------------|-----------------|--------------|
| 2483.5 | 5.08 | 32.29 | 46.87 | 47.68 | 38.18 | 54.00 | -15.82 | Vertical |
| 2500 | 5.10 | 32.30 | 46.75 | 45.27 | 35.92 | 54.00 | -18.08 | Vertical |
| 4924 | 6.66 | 34.01 | 45.43 | 39.51 | 34.75 | 54.00 | -19.25 | Vertical |
| 7386 | 7.55 | 35.99 | 44.32 | 36.54 | 35.76 | 54.00 | -18.24 | Vertical |
| 9848 | 8.71 | 37.17 | 42.00 | 34.08 | 37.96 | 54.00 | -16.04 | Vertical |
| 12310 | 10.20 | 38.99 | 43.70 | 33.57 | 39.06 | 54.00 | -14.94 | Vertical |
| 2483.5 | 5.08 | 32.29 | 46.87 | 48.27 | 38.77 | 54.00 | -15.23 | Horizontal |
| 2500 | 5.10 | 32.30 | 46.75 | 45.17 | 35.82 | 54.00 | -18.18 | Horizontal |
| 4924 | 6.66 | 34.01 | 45.43 | 38.95 | 34.19 | 54.00 | -19.81 | Horizontal |
| 7386 | 7.55 | 35.99 | 44.32 | 35.61 | 34.83 | 54.00 | -19.17 | Horizontal |
| 9848 | 8.71 | 37.17 | 42.00 | 34.58 | 38.46 | 54.00 | -15.54 | Horizontal |
| 12310 | 10.20 | 38.99 | 43.70 | 34.17 | 39.66 | 54.00 | -14.34 | Horizontal |

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Remark:

Section 15.205 Restricted bands of operation.

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| ¹ 0.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 7.25 - 7.75 |
| 4.125 - 4.128 | 25.5 - 25.67 | 1300 - 1427 | 8.025 - 8.5 |
| 4.17725 - 4.17775 | 37.5 - 38.25 | 1435 - 1626.5 | 9.0 - 9.2 |
| 4.20725 - 4.20775 | 73 - 74.6 | 1645.5 - 1646.5 | 9.3 - 9.5 |
| 6.215 - 6.218 | 74.8 - 75.2 | 1660 - 1710 | 10.6 - 12.7 |
| 6.26775 - 6.26825 | 108 - 121.94 | 1718.8 - 1722.2 | 13.25 - 13.4 |
| 6.31175 - 6.31225 | 123 - 138 | 2200 - 2300 | 14.47 - 14.5 |
| 8.291 - 8.294 | 149.9 - 150.05 | 2310 - 2390 | 15.35 - 16.2 |
| 8.362 - 8.366 | 156.52475 - 156.52525 | 2483.5 - 2500 | 17.7 - 21.4 |
| 8.37625 - 8.38675 | 156.7 - 156.9 | 2655 - 2900 | 22.01 - 23.12 |
| 8.41425 - 8.41475 | 162.0125 - 167.17 | 3260 - 3267 | 23.6 - 24.0 |
| 12.29 - 12.293 | 167.72 - 173.2 | 3332 - 3339 | 31.2 - 31.8 |
| 12.51975 - 12.52025 | 240 - 285 | 3345.8 - 3358 | 36.43 - 36.5 |
| 12.57675 - 12.57725 | 322 - 335.4 | 3600 - 4400 | (²) |
| 13.36 - 13.41 | | | |

TEST RESULTS: The unit does meet the FCC requirements.

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5.3.3 Occupied Bandwidth

| | |
|-------------------|--|
| Test Requirement: | FCC 15.247(a2) |
| Test Method: | ANSI C63.4:2003 and KDB558074 |
| Select test mode: | 802.11 b 1Mbps & 802.11g 6Mbps |
| Requirements: | 15.247 (a2) For direct sequence systems, the minimum 6 dB bandwidth shall be at least 500 kHz. |

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps and 802.11g 6/9/12/18/24/36/48/54Mbps) and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
802.11b 1Mbps and 802.11g 6Mbps

| | |
|-------------------|--------------------------------|
| Equipment Mode | Spectrum Analyzer |
| Detector Function | Peak Mode |
| RBW | 100KHz for 802.11b and 802.11g |
| VBW | 300KHz for 802.11b and 802.11g |

Method of measurement: The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB. Analyzer and the attached plot were taken. The EUT was setup to ANSI C63.4, 2003, tested to DTS test procedure of Oct 2002 KDB558074 for compliance with FCC 47CFR 15.247 requirements.

Test results:

1. The EUT communicating with 802.11b Mode

| CHANNEL FREQUENCY (MHz) | 6 dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS/FAIL |
|-------------------------|----------------------|---------------------|-----------|
| 2.412 | 12.56 | 0.5 | Pass |
| 2.437 | 12.20 | 0.5 | Pass |
| 2.462 | 12.20 | 0.5 | Pass |

2. The EUT communicating with 802.11g Mode

| CHANNEL FREQUENCY (MHz) | 6 dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS/FAIL |
|-------------------------|----------------------|---------------------|-----------|
| 2.412 | 16.60 | 0.5 | Pass |
| 2.437 | 16.60 | 0.5 | Pass |
| 2.462 | 16.64 | 0.5 | Pass |

Conclusion: The unit does meet the FCC requirements.

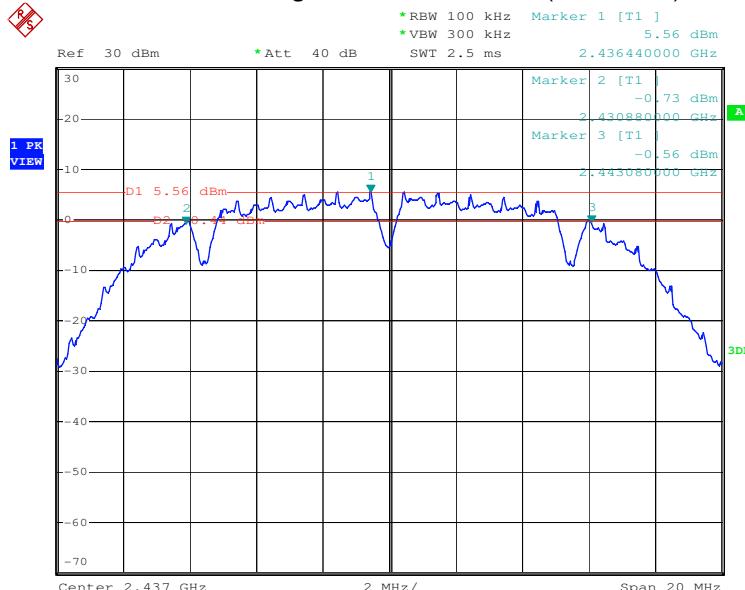
Please refer to the graph as below:

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1. For EUT communicating with 802.11b mode (2.412GHz)

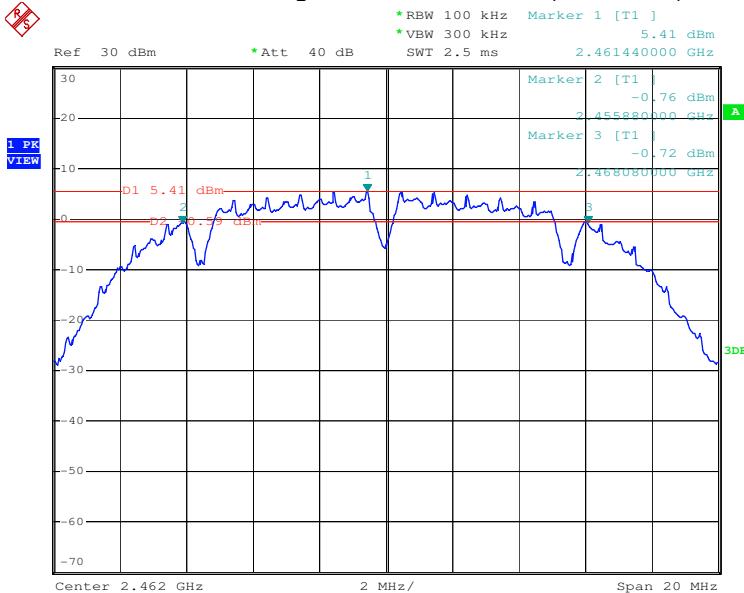

Date: 26.DEC.2008 13:15:09

2. For EUT communicating with 802.11b mode (2.437GHz)


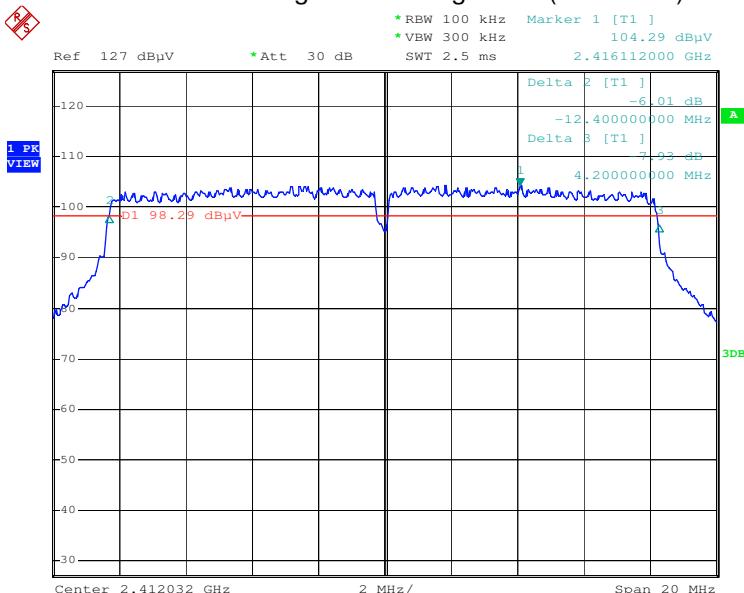
Date: 26.DEC.2008 13:34:03

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3. For EUT communicating with 802.11b mode (2.462GHz)


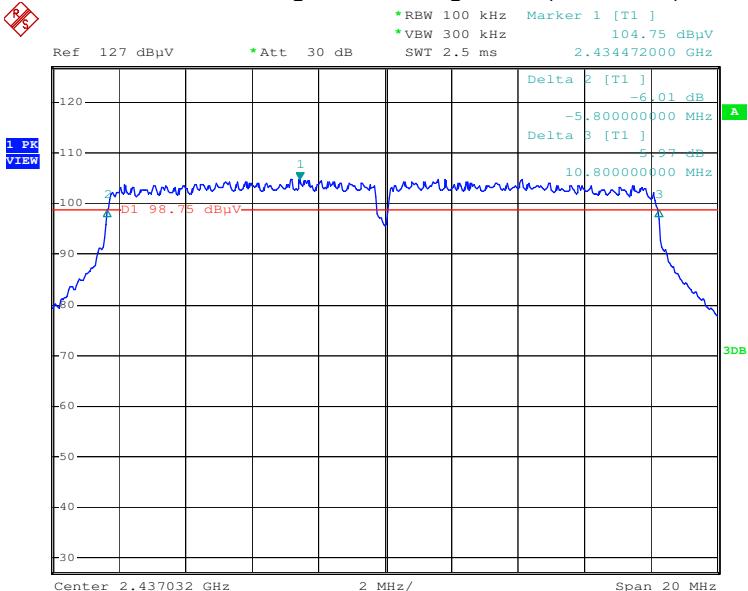
Date: 26.DEC.2008 13:44:51

4. For EUT communicating with 802.11g mode (2.412GHz)


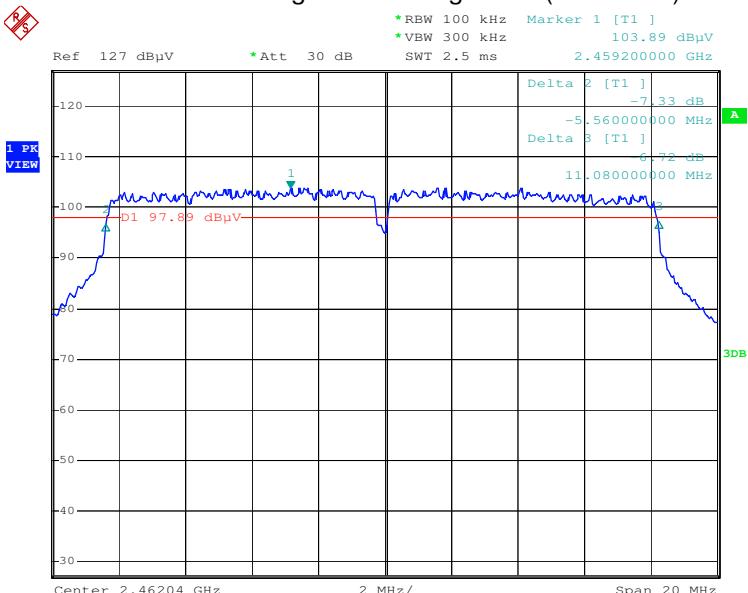
Date: 9.DEC.2008 15:36:51

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5. For EUT communicating with 802.11g mode (2.437GHz)


Date: 9.DEC.2008 15:38:47

6. For EUT communicating with 802.11g Mode (2.462GHz)


Date: 9.DEC.2008 15:57:29

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5.3.4 Maximum Peak Output Power

Test Requirement: FCC 15.247(b)
Test Method: ANSI C63.4:2003 and KDB558074.
Method of measurement: The EUT was setup to ANSI C63.4, 2003, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Test mode: 802.11 b 6/1Mbps & 802.11g 6/54Mbps

| Equipment Mode | Spectrum Analyzer |
|-------------------|-------------------|
| Detector Function | Peak Mode |
| RBW | 1MHz |
| VBW | 3MHz |

Test Procedure:

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps and 802.11g 6/9/12/18/24/36/48/54Mbps) and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
802.11b 1Mbps and 802.11g 6Mbps.

Requirements:

Regulation 15.247 (b) The Limit of Maximum Peak Output Power Measurement is 30dBm.

Test Result:

For EUT communicating with 802.11b Mode

| Test channel (GHz) | Peak Output Power (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------|-------------|
| 2.410 | 19.85 | 30.00 | 10.15 |
| 2.437 | 20.08 | 30.00 | 9.92 |
| 2.462 | 19.90 | 30.00 | 10.01 |

For EUT communicating with 802.11g Mode

| Test channel (GHz) | Peak Output Power (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------|-------------|
| 2.410 | 19.38 | 30.00 | 10.62 |
| 2.437 | 19.44 | 30.00 | 10.56 |
| 2.462 | 19.13 | 30.00 | 10.87 |

Test result: The unit does meet the FCC requirements.

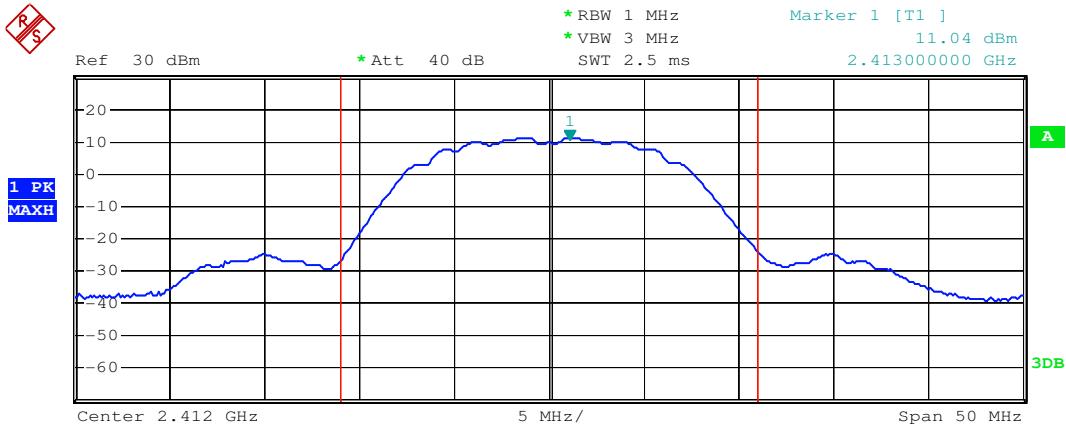
Test result plot as follows:

FCC ID: VSAIR8000I00001

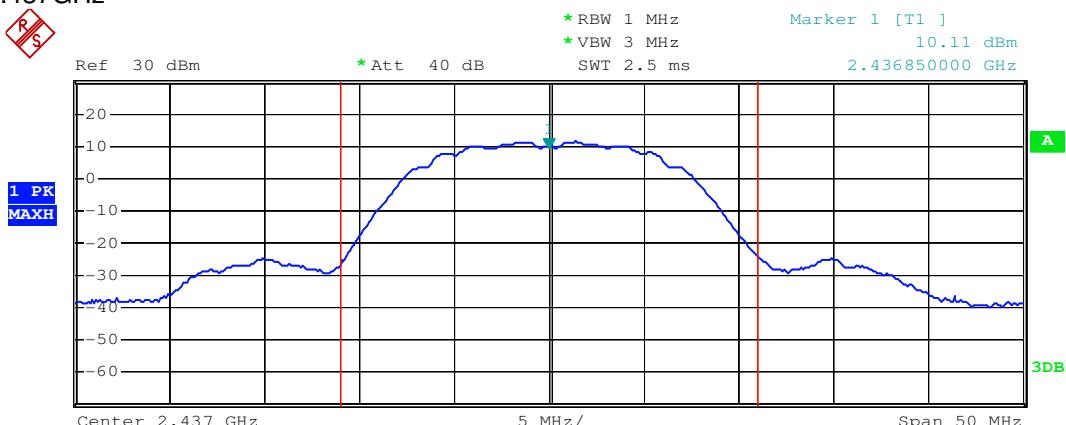
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The EUT communicating with 802.11b Mode

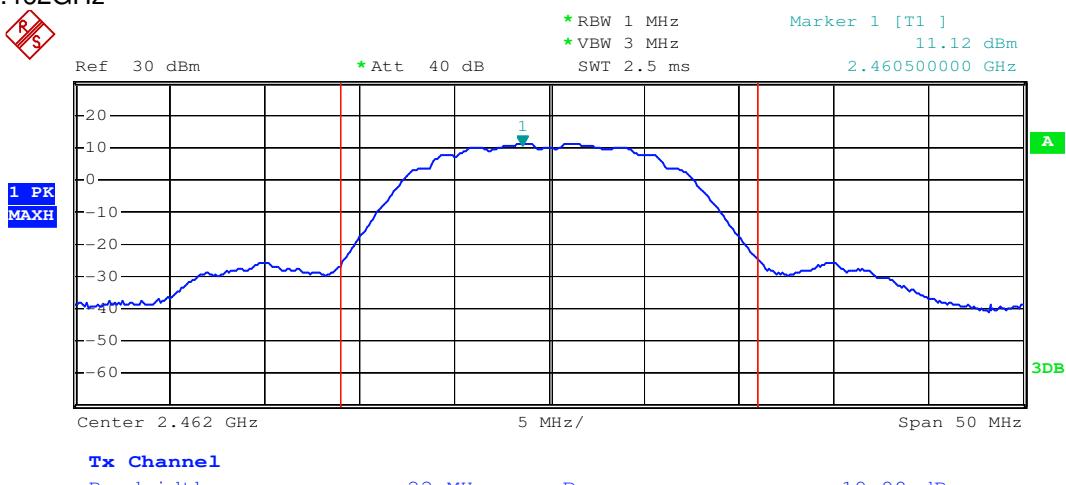
2.412GHz



2.437GHz



2.462GHz



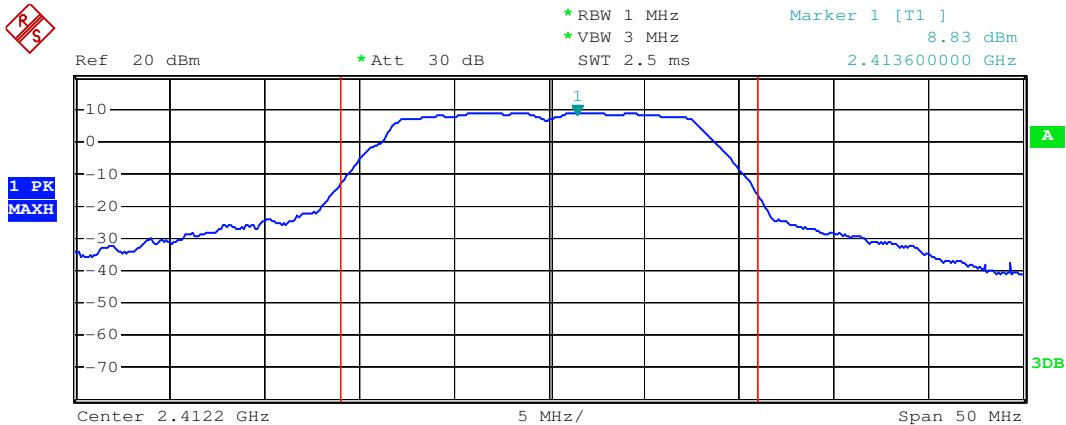
Tx Channel
Bandwidth 22 MHz Power 20.08 dBm

FCC ID: VSAIR8000100001

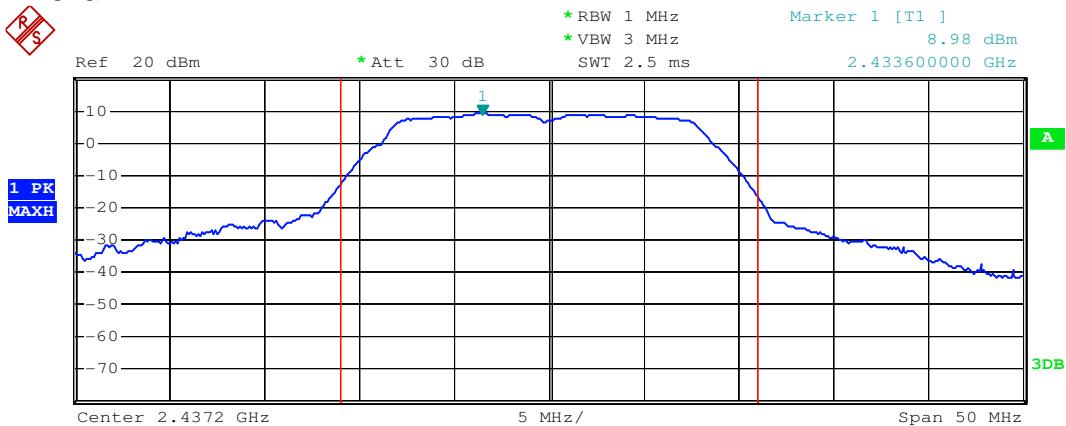
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The EUT communicating with 802.11g Mode

2.412GHz



2.437GHz



2.462GHz


Conclusion: The EUT meets the requirements of this section.

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5.3.5 Band Edges Measurement

Test Requirement: FCC Part15 C Section 15.247(d)
Test Method: ANSI C63.4; FCC Part15 C Section 15.247:
KDB Publication No. 558074 Public Notice DA 00-705 for DSS
Select test mode: 802.11 b 1Mbps & 802.11g 6Mbps
Requirements:

Regulation 15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

Test Procedures:

Procedure: The EUT was setup to ANSI C63.4, 2003, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

| | |
|-------------------|-------------------|
| Equipment Mode | Spectrum Analyzer |
| Detector Function | Peak Mode |
| RBW | 100KHz |
| VBW | 300KHz |

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps and 802.11g 6/9/12/18/24/36/48/54Mbps) and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

802.11b 1Mbps and 802.11g 6Mbps

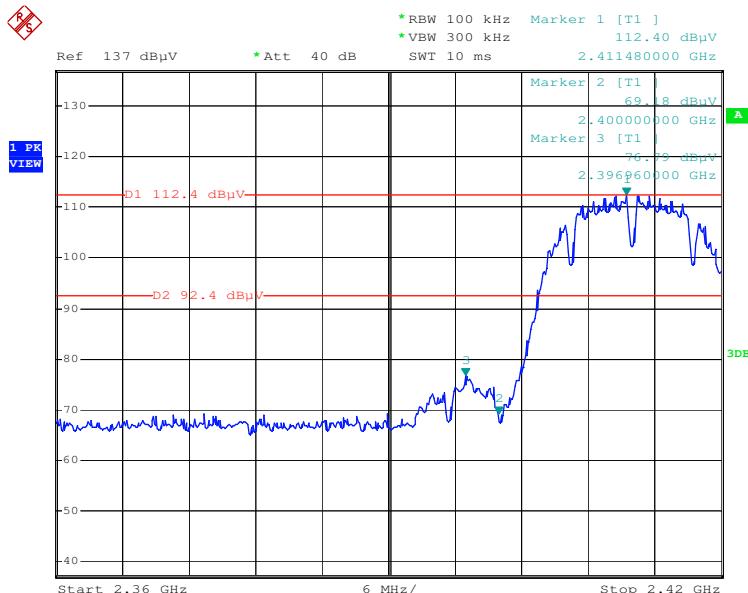
Test Result:

Please refer to the measurement graph and data.

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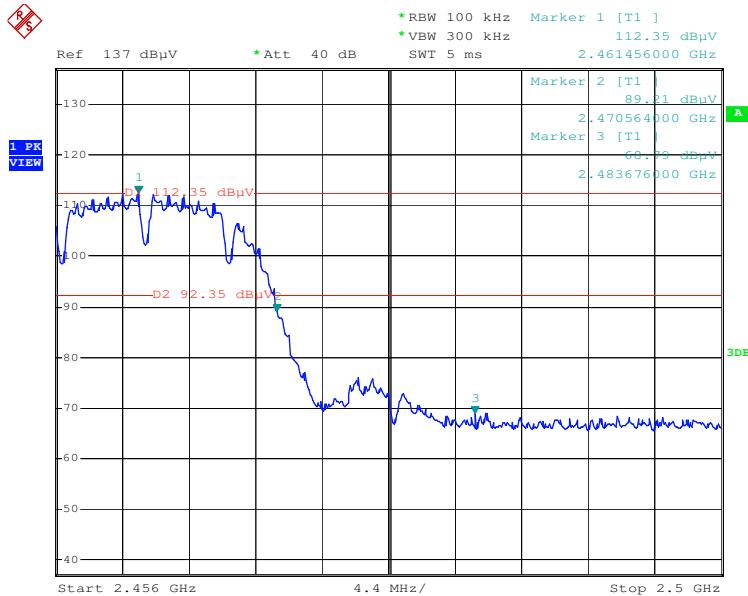
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802.11b mode at 2.412GHz



Date: 26.DEC.2008 13:24:59

802.11b mode at 2.462 GHz

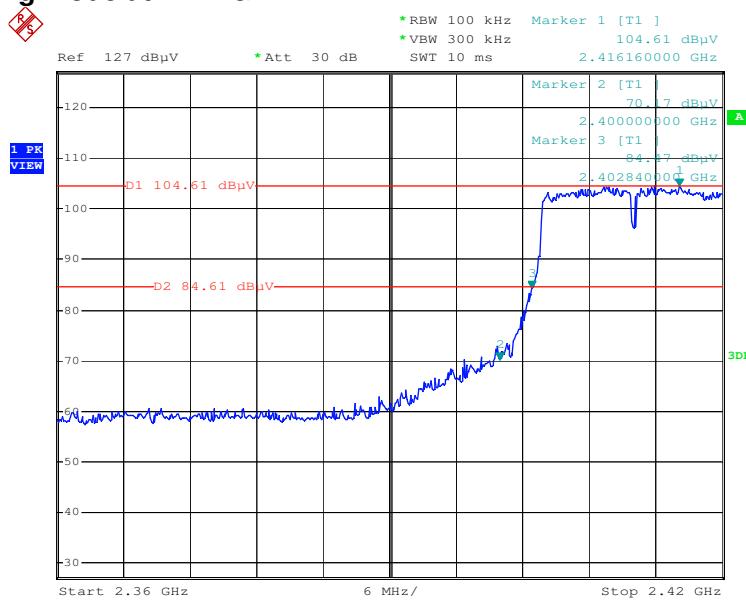


Date: 26.DEC.2008 13:48:37

FCC ID: VSAIR8000I00001

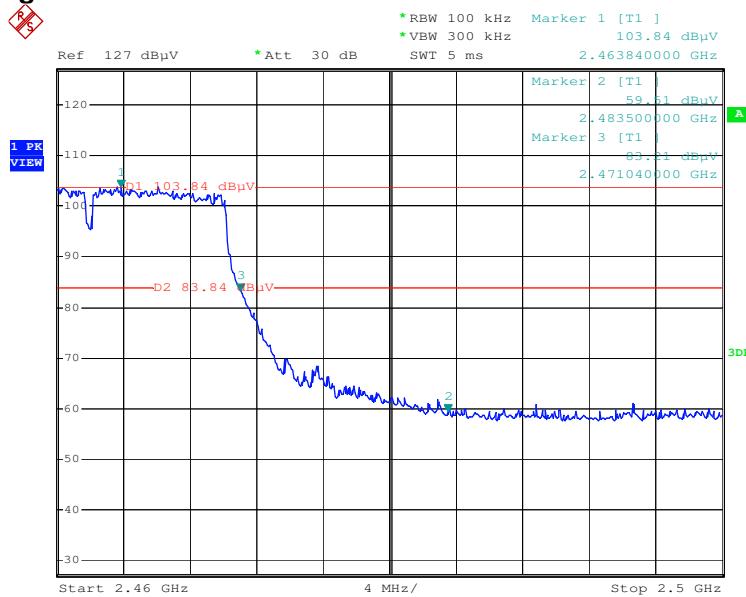
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802.11g mode at 2.412GHz



Date: 9.DEC.2008 15:32:13

802.11g mode at 2.462GHz



Date: 9.DEC.2008 15:59:53

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5.3.6 Power Spectral Density Measurement

Test Requirement: FCC 15.247(d)

Test Method: ANSI C63.4 and KDB Publication No. 558074 Public Notice DA 00-705 for DSS.

Regulation 15.247 (d) for direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

Test Procedures:

| Equipment Mode | Spectrum Analyzer |
|-------------------|-------------------|
| Detector Function | Peak Mode |
| RBW | 3KHz |
| VBW | 10KHz |
| Span | 300KHz |
| Sweep Time | 100S |

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps and 802.11g 6/9/12/18/24/36/48/54Mbps) and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
802.11b 1Mbps and 802.11g 6Mbps

The EUT was set transmitting continuously and force selection of output power level and channel number. We'd observed that the peak levels aren't greater than +8dBm limit.

The EUT was setup to ANSI C63.4, 2003, tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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Test Result:1. For EUT communicating with 802.11b Mode

| CHANNEL FREQUENCY (GHz) | RF POWER LEVEL IN 3 KHz BW (dBm) | MAXIMUM Limit (dBm) | PASS/FAIL |
|-------------------------------|---|---------------------------|-----------|
| 2.412 | -12.41 | 8.00 | Pass |
| 2.437 | -12.30 | 8.00 | Pass |
| 2.462 | -12.58 | 8.00 | Pass |

2. For EUT communicating with 802.11g Mode

| CHANNEL FREQUENCY (GHz) | RF POWER LEVEL IN 3 KHz BW (dBm) | MAXIMUM Limit (dBm) | PASS/FAIL |
|-------------------------------|---|---------------------------|-----------|
| 2.412 | -16.89 | 8.00 | Pass |
| 2.437 | -17.51 | 8.00 | Pass |
| 2.462 | -17.58 | 8.00 | Pass |

Conclusion:**The EUT meets the requirements of this section.**

Please refer to the graph and data as below:

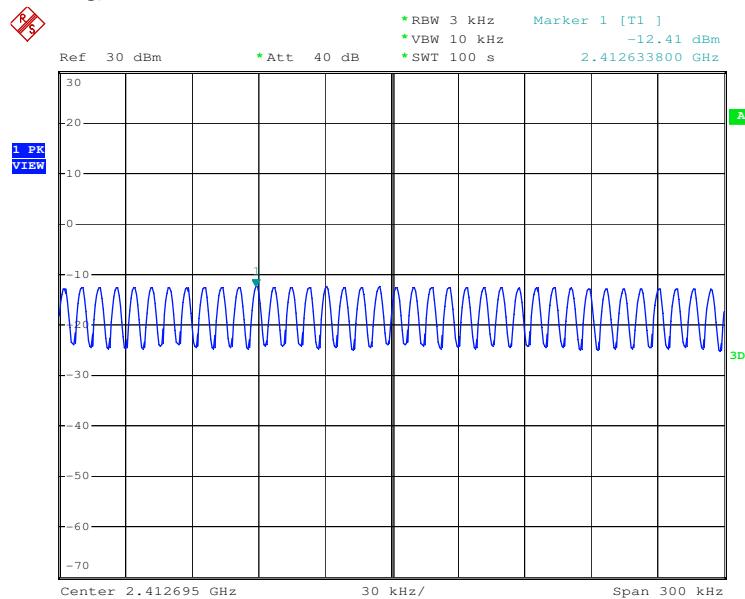
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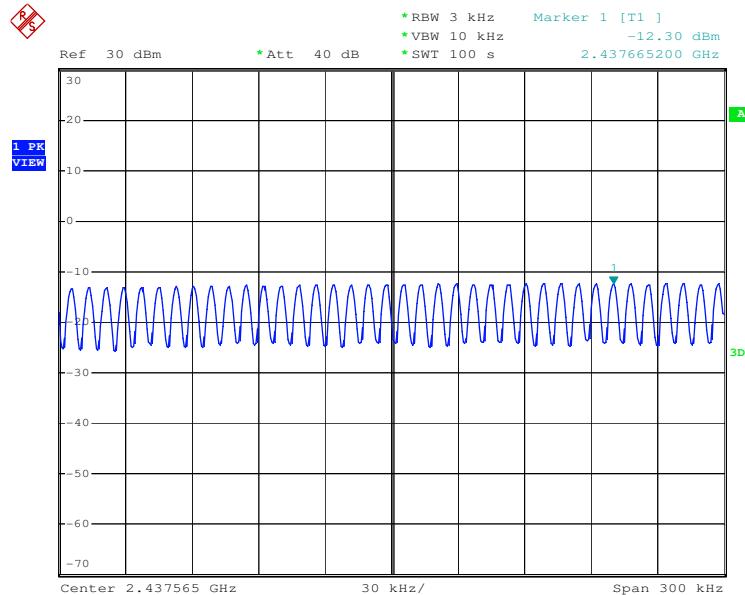
Test Result:

802.11b mode:

2.412GHz



Date: 26.DEC.2008 13:29:52

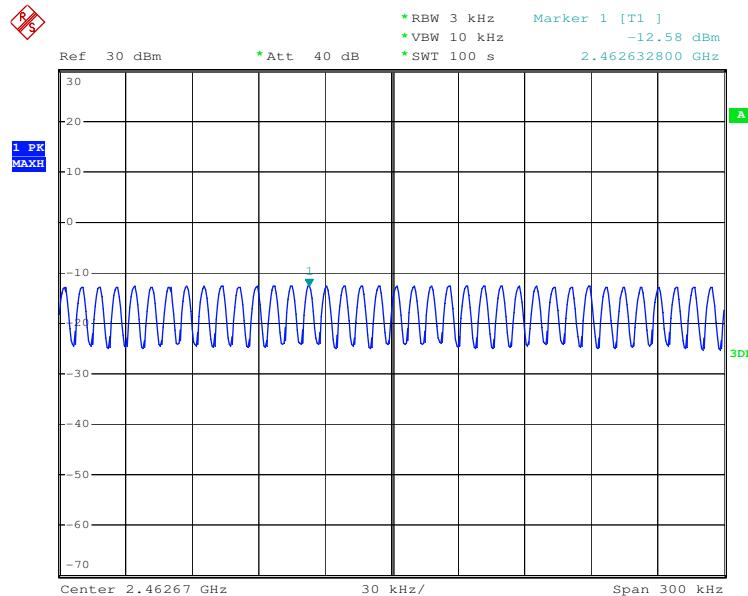
2.437 GHz


Date: 26.DEC.2008 13:40:42

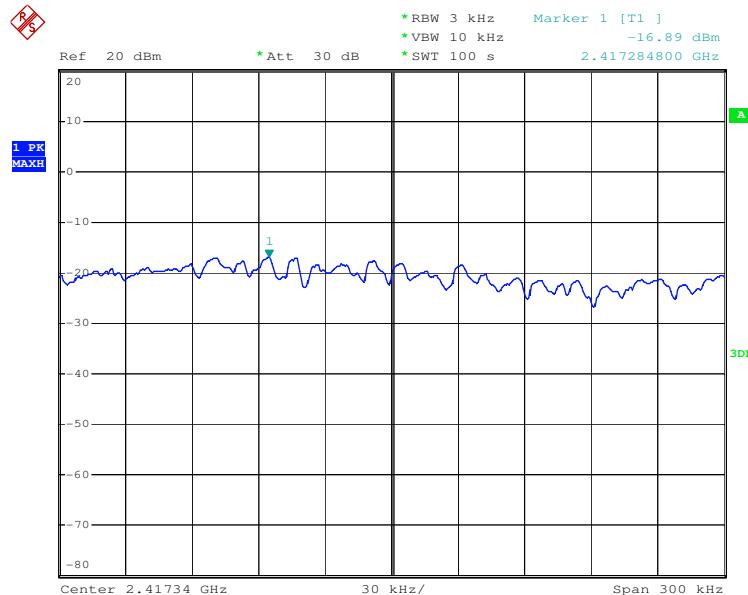
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2.462 GHz



Date: 26.DEC.2008 13:52:48

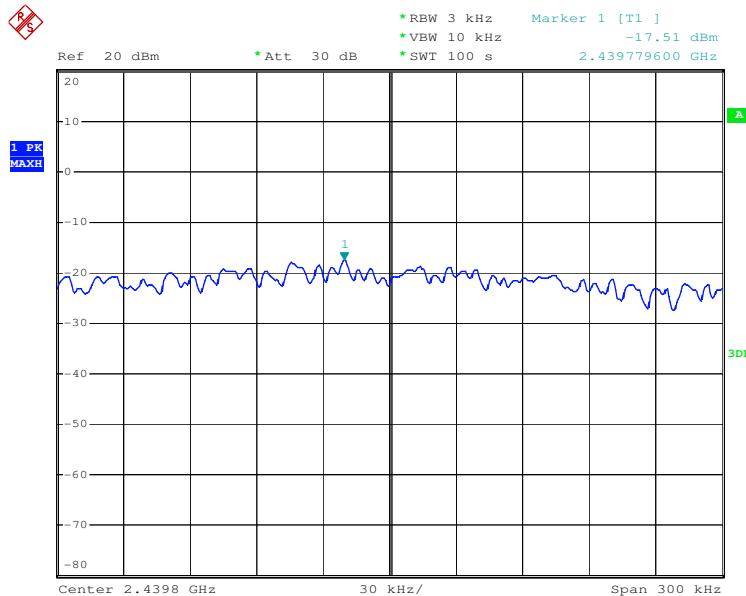
802.11g mode:
2.412 GHz


Date: 9.DEC.2008 15:29:53

FCC ID: VSAIR8000I00001

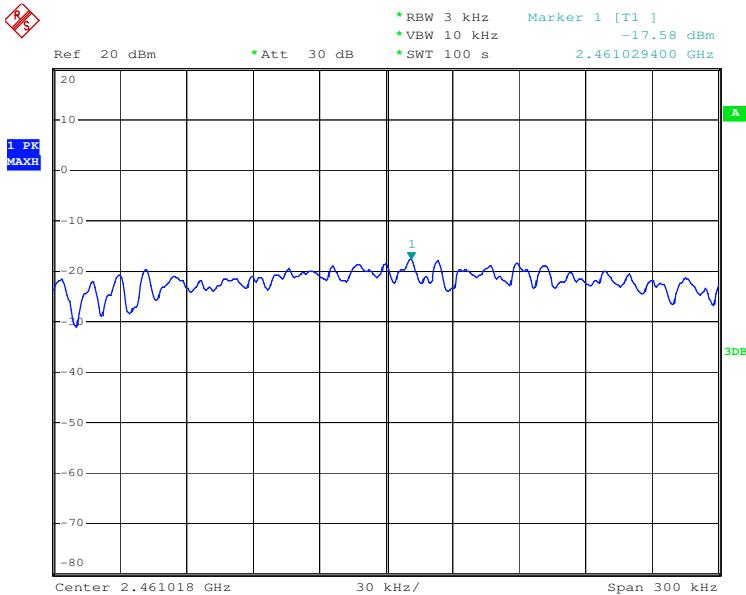
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2.437 GHz



Date: 9.DEC.2008 15:48:38

2.462 GHz



Date: 9.DEC.2008 15:53:57

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5.3.7 Antenna Requirement

Standard requirement

15.203 requirement:

For intentional device. According to 15.203. an intentional radiator shall be designed to Ensure that no antenna other than that furnished by the responsible party shall be used with the device.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz bands that are used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna

The best case gain of the antenna is 0dBi.

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