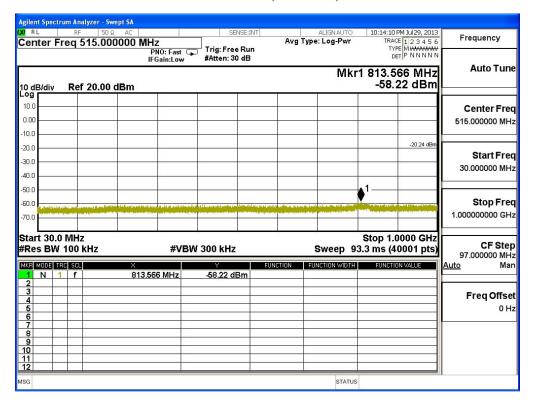
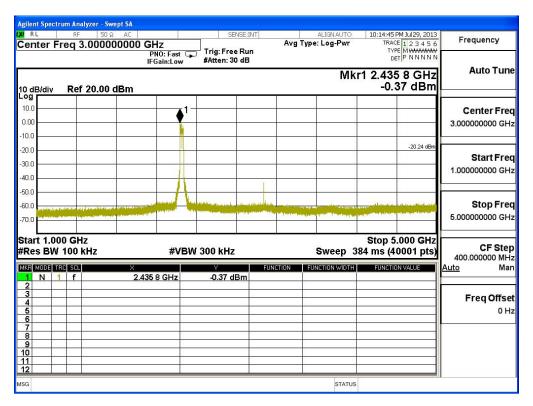
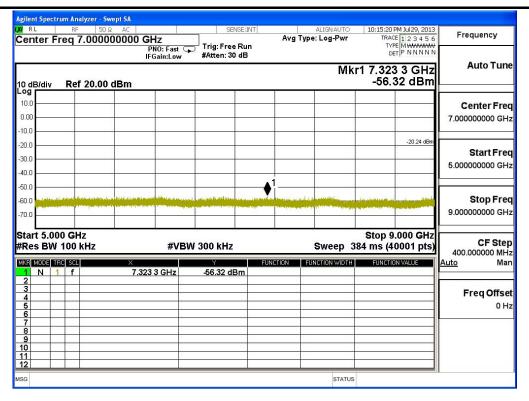


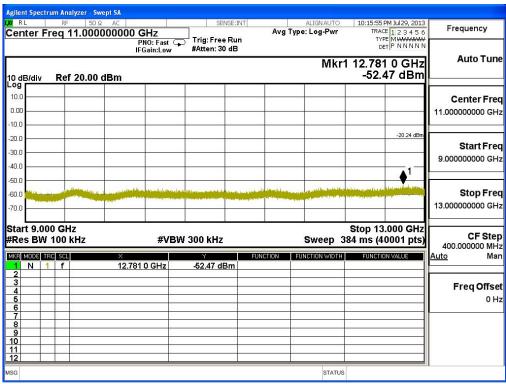
Channel 07 (2452MHz)



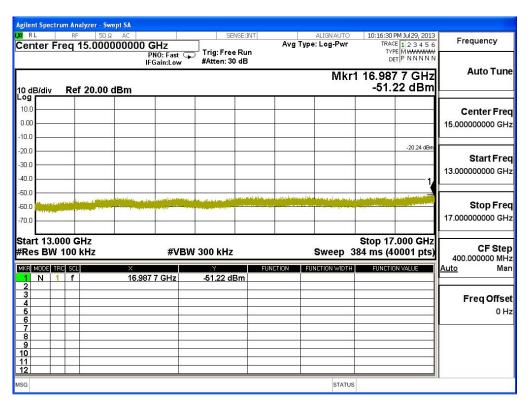


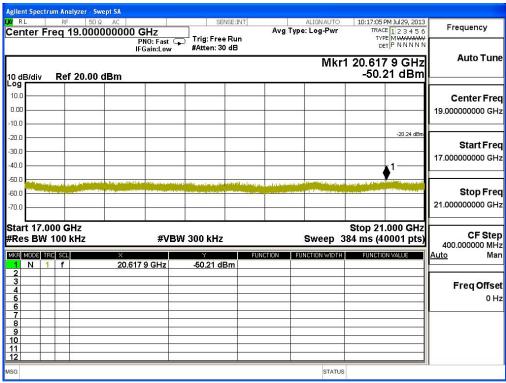




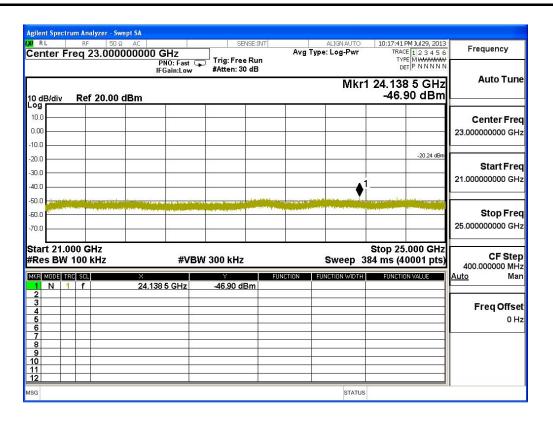














6. Band Edge

6.1. Test Equipment

RF Radiated Measurement:

The following test equipments are used during the band edge tests:

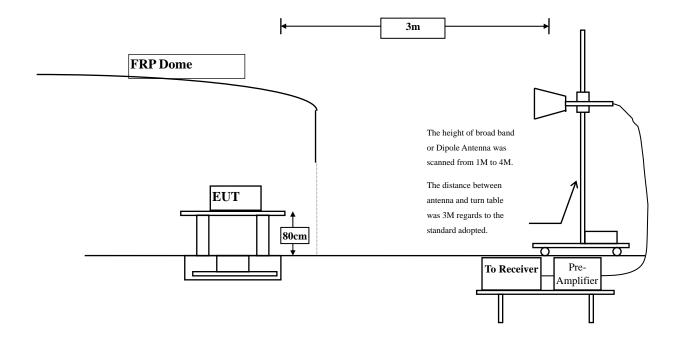
| Test Site | | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|-----------|---|-------------------|-----------------|-----------------------|------------|
| ⊠Site # 3 | | Bilog Antenna | Schaffner Chase | CBL6112B/2673 | Sep., 2012 |
| | X | Horn Antenna | Schwarzbeck | BBHA9120D/D305 | Sep., 2012 |
| | | Horn Antenna | Schwarzbeck | BBHA9170/208 | Jul., 2013 |
| | X | Pre-Amplifier | Agilent | 8447D/2944A09549 | Sep., 2012 |
| | X | Spectrum Analyzer | Agilent | E4407B / US39440758 | May, 2013 |
| | | Test Receiver | R & S | ESCS 30/ 825442/018 | Sep., 2012 |
| | X | Coaxial Cable | QuieTek | QTK-CABLE/ CAB5 | Feb., 2013 |
| | X | Controller | QuieTek | QTK-CONTROLLER/ CTRL3 | N/A |
| | X | Coaxial Switch | Anritsu | MP59B/6200265729 | N/A |

Note:

- 1. All instruments are calibrated every one year.
- 2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



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6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2009 on radiated measurement.

6.5. Uncertainty

- ± 3.9 dB above 1GHz
- + 3.8 dB below 1GHz



6.6. Test Result of Band Edge

Product : 802.11b/g/n 1T1R Wireless LAN USB Module

Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 01 (Peak) | 2390.000 | 31.509 | 25.039 | 56.548 | 74.000 | 54.000 | Pass |
| 01 (Peak) | 2413.000 | 31.646 | 74.004 | 105.650 | | | |
| 01 (Average) | 2390.000 | 31.509 | 13.167 | 44.676 | 74.000 | 54.000 | Pass |
| 01 (Average) | 2414.800 | 31.660 | 69.171 | 100.831 | | | |

Figure Channel 01:

Horizontal (Peak)

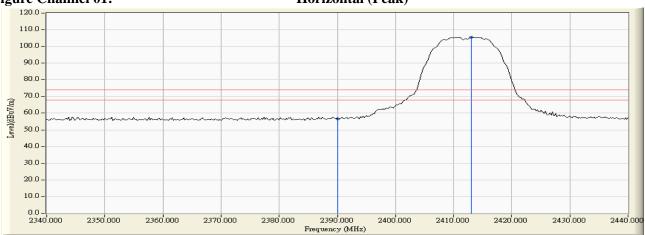


Figure Channel 01:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|-----------------------|------------|---------------|--------|
| Chamilei No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Kesuit |
| 01 (Peak) | 2389.200 | 30.919 | 25.422 | 56.341 | 74.000 | 54.000 | Pass |
| 01 (Peak) | 2390.000 | 30.915 | 23.488 | 54.403 | 74.000 | 54.000 | Pass |
| 01 (Peak) | 2413.000 | 30.956 | 68.090 | 99.046 | | | |
| 01 (Average) | 2390.000 | 30.915 | 12.332 | 43.247 | 74.000 | 54.000 | Pass |
| 01 (Average) | 2414.800 | 30.968 | 63.480 | 94.448 | | | |

Figure Channel 01:

Vertical (Peak)

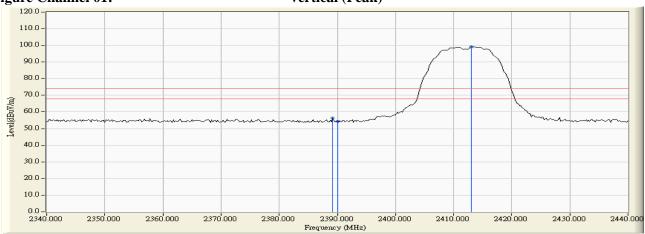
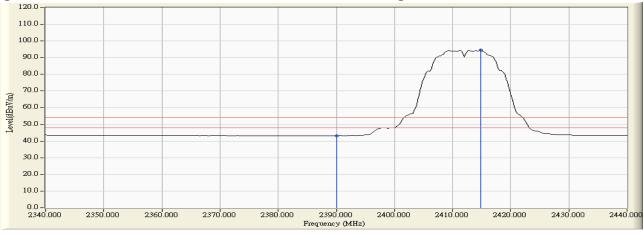


Figure Channel 01:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 11 (Peak) | 2460.500 | 32.008 | 75.119 | 107.127 | - | | - |
| 11 (Peak) | 2483.500 | 32.182 | 25.435 | 57.617 | 74.000 | 54.000 | Pass |
| 11 (Average) | 2461.100 | 32.013 | 70.320 | 102.333 | | | |
| 11 (Average) | 2483.500 | 32.182 | 13.811 | 45.993 | 74.000 | 54.000 | Pass |

Figure Channel 11:

Horizontal (Peak)

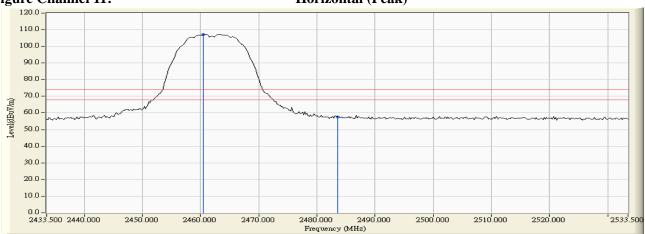
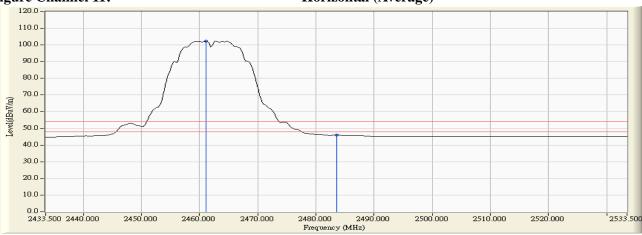


Figure Channel 11:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 11 (Peak) | 2463.300 | 31.299 | 69.877 | 101.176 | 1 | | 1 |
| 11 (Peak) | 2483.500 | 31.435 | 24.029 | 55.464 | 74.000 | 54.000 | Pass |
| 11 (Average) | 2461.300 | 31.286 | 65.216 | 96.502 | | | |
| 11 (Average) | 2483.500 | 31.435 | 12.562 | 43.997 | 74.000 | 54.000 | Pass |



Vertical (Peak)

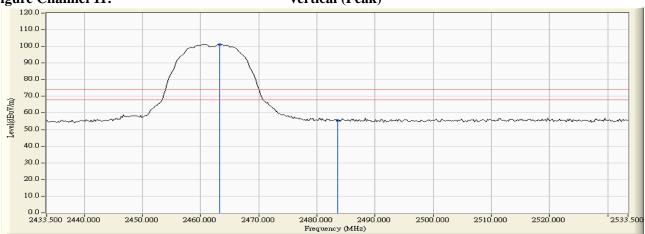
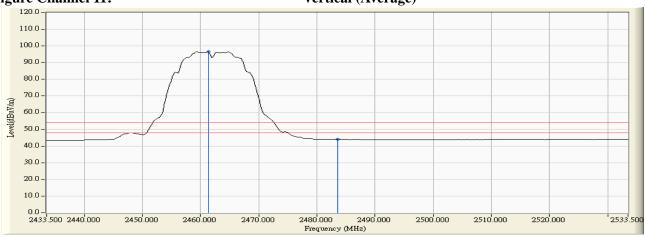


Figure Channel 11:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Resuit |
| 01 (Peak) | 2390.000 | 31.509 | 41.667 | 73.176 | 74.000 | 54.000 | Pass |
| 01 (Peak) | 2407.400 | 31.607 | 78.206 | 109.814 | | | |
| 01 (Average) | 2390.000 | 31.509 | 22.345 | 53.854 | 74.000 | 54.000 | Pass |
| 01 (Average) | 2419.400 | 31.695 | 60.888 | 92.583 | | | |

Figure Channel 01:

Horizontal (Peak)

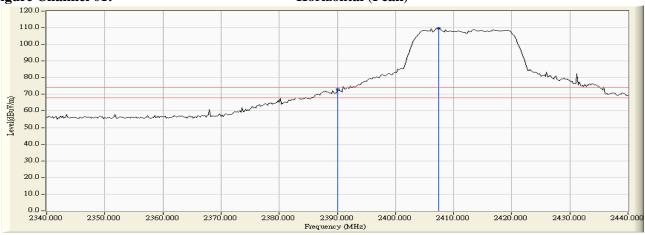
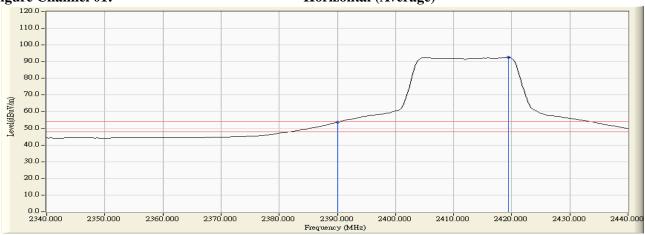


Figure Channel 01:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average etection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|-----------------------|------------|---------------|--------|
| Chainlei No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Kesuit |
| 01 (Peak) | 2389.200 | 30.919 | 34.891 | 65.810 | 74.000 | 54.000 | Pass |
| 01 (Peak) | 2390.000 | 30.915 | 33.519 | 64.434 | 74.000 | 54.000 | Pass |
| 01 (Peak) | 2407.400 | 30.932 | 72.778 | 103.710 | | | |
| 01 (Average) | 2390.000 | 30.915 | 17.872 | 48.787 | 74.000 | 54.000 | Pass |
| 01 (Average) | 2419.200 | 30.998 | 56.301 | 87.299 | | | |





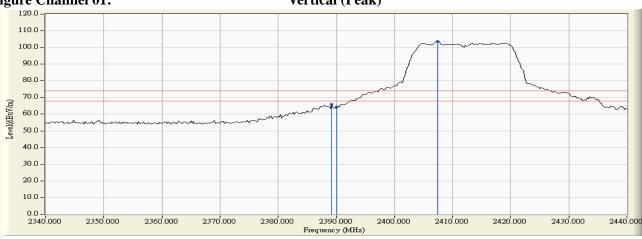


Figure Channel 01:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 11 (Peak) | 2457.300 | 31.984 | 75.803 | 107.787 | 1 | - | - |
| 11 (Peak) | 2483.500 | 32.182 | 40.429 | 72.611 | 74.000 | 54.000 | Pass |
| 11 (Peak) | 2484.500 | 32.190 | 41.565 | 73.755 | 74.000 | 54.000 | Pass |
| 11 (Average) | 2469.300 | 32.074 | 59.376 | 91.451 | - | | |
| 11 (Average) | 2483.500 | 32.182 | 17.765 | 49.947 | 74.000 | 54.000 | Pass |

Figure Channel 11:

Horizontal (Peak)

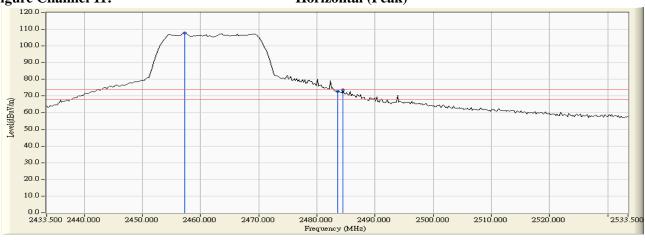
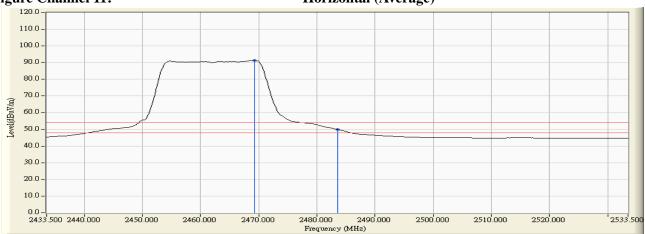


Figure Channel 11:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average etection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Dagult |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 11 (Peak) | 2457.300 | 31.259 | 70.399 | 101.657 | | | |
| 11 (Peak) | 2483.500 | 31.435 | 33.838 | 65.273 | 74.000 | 54.000 | Pass |
| 11 (Average) | 2454.900 | 31.242 | 54.286 | 85.528 | | | |
| 11 (Average) | 2483.500 | 31.435 | 14.565 | 46.000 | 74.000 | 54.000 | Pass |

Figure Channel 11:

Vertical (Peak)

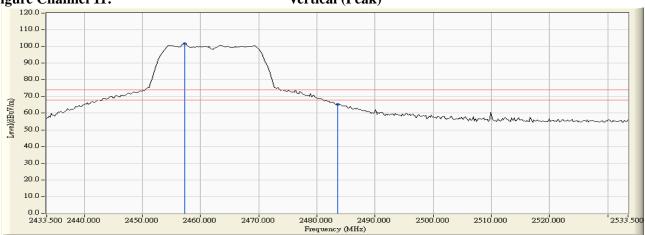


Figure Channel 11:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

RF Radiated Measurement (Horizontal):

| | 1 | , , | 1 | | | | |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 01 (Peak) | 2390.000 | 31.509 | 41.478 | 72.987 | 74.000 | 54.000 | Pass |
| 01 (Peak) | 2418.600 | 31.689 | 75.699 | 107.388 | | | |
| 01 (Average) | 2390.000 | 31.509 | 19.973 | 51.482 | 74.000 | 54.000 | Pass |
| 01 (Average) | 2419.000 | 31.691 | 58.938 | 90.630 | | | |

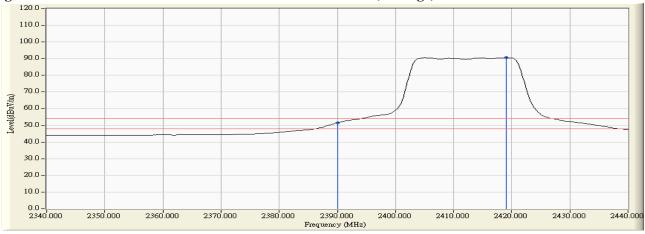
Figure Channel 01:

Horizontal (Peak)



Figure Channel 01:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- The average measurement was not performed when the peak measured data under the limit of average etection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

RF Radiated Measurement (Vertical):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Dogult |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 01 (Peak) | 2390.000 | 30.915 | 36.201 | 67.116 | 74.000 | 54.000 | Pass |
| 01 (Peak) | 2419.400 | 30.999 | 69.594 | 100.594 | - | | |
| 01 (Average) | 2390.000 | 30.915 | 15.928 | 46.843 | 74.000 | 54.000 | Pass |
| 01 (Average) | 2419.000 | 30.996 | 54.059 | 85.056 | | | |

Figure Channel 01:

Vertical (Peak)

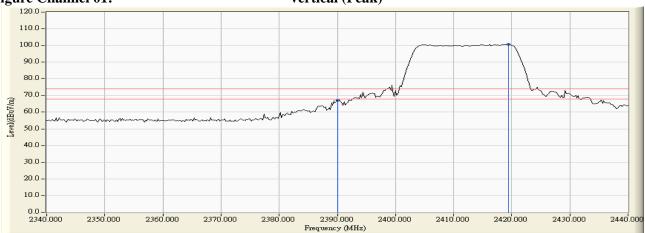
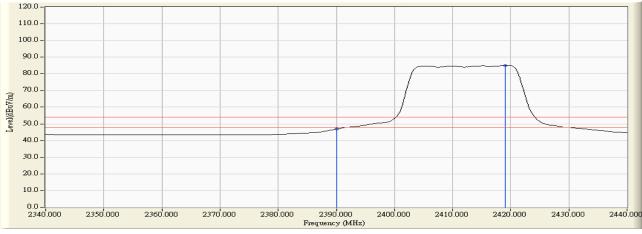


Figure Channel 01:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

RF Radiated Measurement (Horizontal):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Dagult |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 11 (Peak) | 2469.300 | 32.074 | 73.502 | 105.577 | 1 | | |
| 11 (Peak) | 2483.500 | 32.182 | 40.382 | 72.564 | 74.000 | 54.000 | Pass |
| 11 (Peak) | 2485.300 | 32.196 | 40.896 | 73.092 | 74.000 | 54.000 | Pass |
| 11 (Average) | 2469.100 | 32.073 | 57.526 | 89.599 | | | |
| 11 (Average) | 2483.500 | 32.182 | 15.243 | 47.425 | 74.000 | 54.000 | Pass |

Figure Channel 11:

Horizontal (Peak)

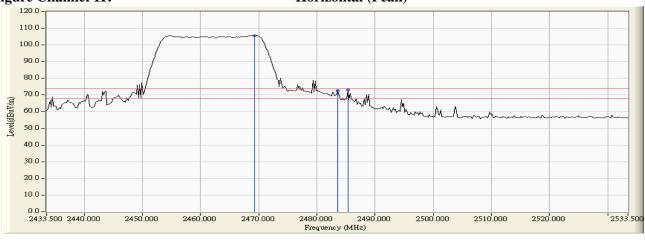


Figure Channel 11:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average etection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

RF Radiated Measurement (Vertical):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Dagult |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 11 (Peak) | 2468.700 | 31.336 | 70.117 | 101.452 | - | - | |
| 11 (Peak) | 2483.500 | 31.435 | 32.563 | 63.998 | 74.000 | 54.000 | Pass |
| 11 (Peak) | 2484.500 | 31.442 | 34.686 | 66.128 | 74.000 | 54.000 | Pass |
| 11 (Average) | 2468.900 | 31.337 | 54.410 | 85.747 | | | |
| 11 (Average) | 2483.500 | 31.435 | 14.049 | 45.484 | 74.000 | 54.000 | Pass |



Vertical (Peak)

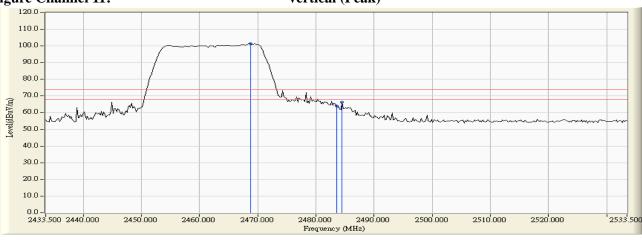
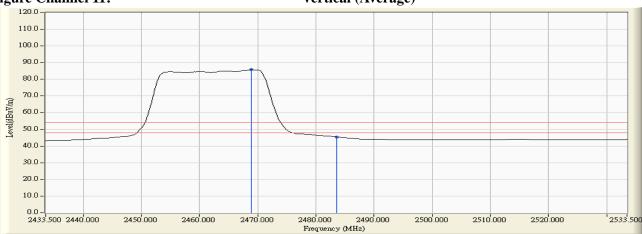


Figure Channel 11:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

RF Radiated Measurement (Horizontal):

| | 1 | , , | 1 | | | | |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 03 (Peak) | 2390.000 | 31.509 | 38.930 | 70.439 | 74.000 | 54.000 | Pass |
| 03 (Peak) | 2408.000 | 31.611 | 73.459 | 105.071 | | | |
| 03 (Average) | 2390.000 | 31.509 | 21.301 | 52.810 | 74.000 | 54.000 | Pass |
| 03 (Average) | 2438.800 | 31.844 | 51.036 | 82.879 | | | |

Figure Channel 03:

Horizontal (Peak)

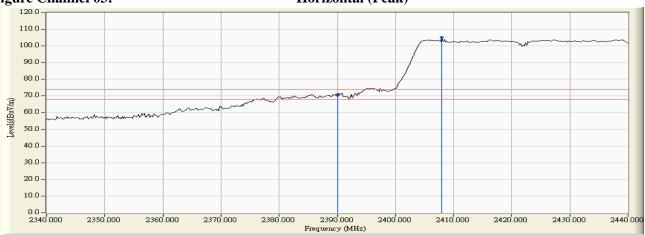
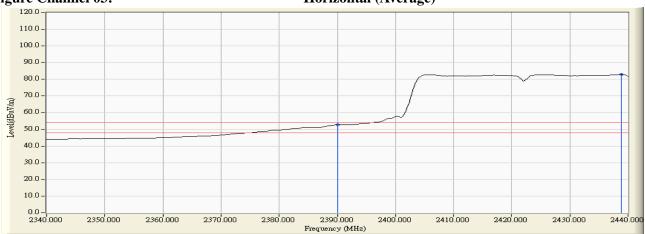


Figure Channel 03:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average etection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

RF Radiated Measurement (Vertical):

| Channal No | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 03 (Peak) | 2390.000 | 30.915 | 31.538 | 62.453 | 74.000 | 54.000 | Pass |
| 03 (Peak) | 2416.400 | 30.979 | 67.195 | 98.174 | | | |
| 03 (Average) | 2390.000 | 30.915 | 16.220 | 47.135 | 74.000 | 54.000 | Pass |
| 03 (Average) | 2425.000 | 31.037 | 46.168 | 77.206 | | | |

Figure Channel 03:

Vertical (Peak)

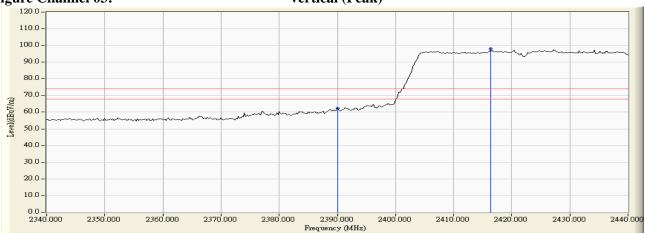
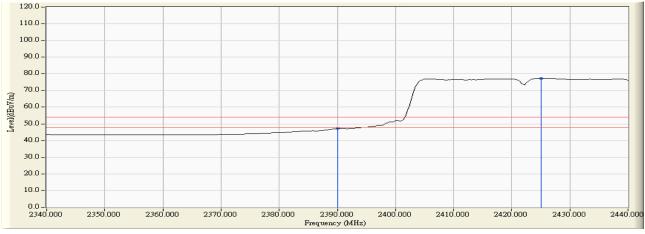


Figure Channel 03:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

RF Radiated Measurement (Horizontal):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Result |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 09 (Peak) | 2456.500 | 31.977 | 72.082 | 104.060 | - | | |
| 09 (Peak) | 2483.500 | 32.182 | 37.901 | 70.083 | 74.000 | 54.000 | Pass |
| 09 (Average) | 2468.700 | 32.070 | 50.959 | 83.029 | | | |
| 09 (Average) | 2483.500 | 32.182 | 17.279 | 49.461 | 74.000 | 54.000 | Pass |

Figure Channel 09:

Horizontal (Peak)

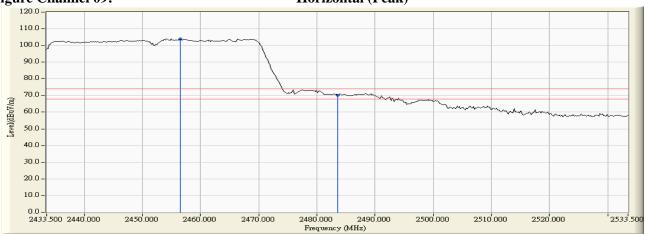
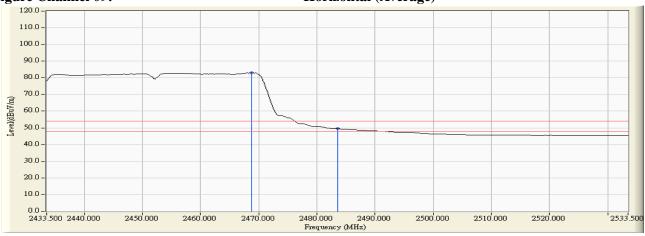


Figure Channel 09:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average etection.



Test Item : Band Edge Data
Test Site : No.3 OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

RF Radiated Measurement (Vertical):

| Channel No. | Frequency | Correct Factor | Reading Level | Emission Level | Peak Limit | Average Limit | Dagult |
|--------------|-----------|----------------|---------------|----------------|------------|---------------|--------|
| Channel No. | (MHz) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dBuV/m) | Result |
| 09 (Peak) | 2437.700 | 31.124 | 66.957 | 98.081 | 1 | - | |
| 09 (Peak) | 2483.500 | 31.435 | 33.005 | 64.440 | 74.000 | 54.000 | Pass |
| 09 (Peak) | 2486.900 | 31.459 | 33.882 | 65.340 | 74.000 | 54.000 | Pass |
| 09 (Average) | 2468.700 | 31.336 | 46.306 | 77.641 | - | | |
| 09 (Average) | 2483.500 | 31.435 | 14.529 | 45.964 | 74.000 | 54.000 | Pass |

Figure Channel 09:

Vertical (Peak)

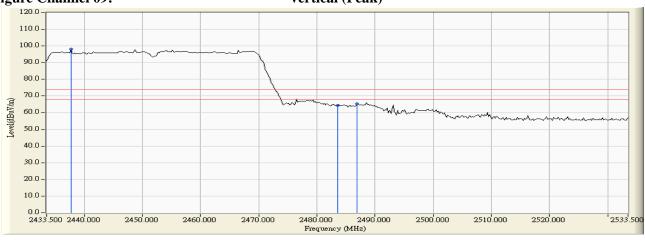
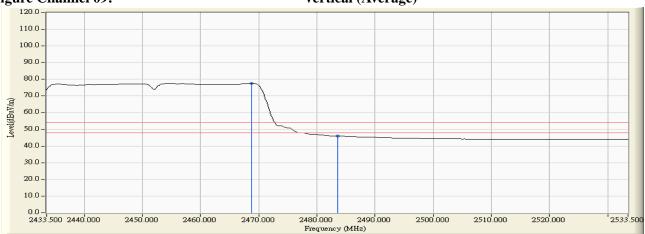


Figure Channel 09:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



7. Occupied Bandwidth

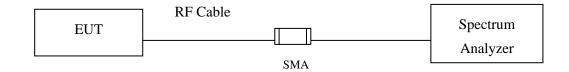
7.1. Test Equipment

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|------------|
| | Spectrum Analyzer | R&S | FSP40 / 100170 | Jun, 2013 |
| | Spectrum Analyzer | Agilent | E4407B / US39440758 | Jun, 2013 |
| X | Spectrum Analyzer | Agilent | N9010A / MY48030495 | Apr., 2013 |

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

7.5. Uncertainty

± 150Hz



7.6. Test Result of Occupied Bandwidth

Product : 802.11b/g/n 1T1R Wireless LAN USB Module

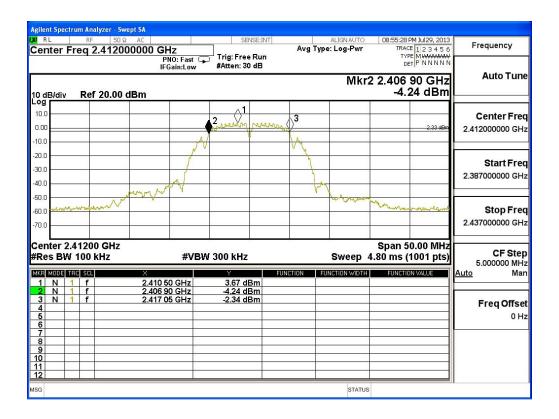
Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 1 | 2412 | 10150 | >500 | Pass |

Figure Channel 1:





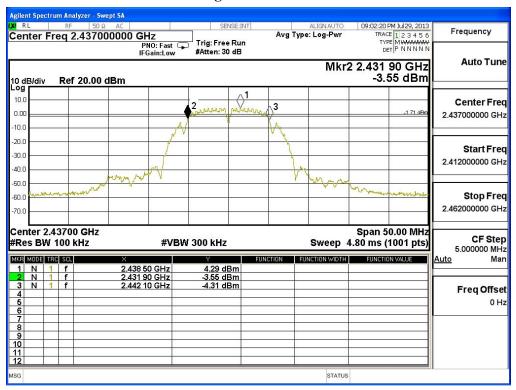
Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 6 | 2437 | 10200 | >500 | Pass |

Figure Channel 6:





Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 11 | 2462 | 10200 | >500 | Pass |

Figure Channel 11: Agilent Spectrum Analyzer - Swept SA 09:08:35 PM Jul 29, 2013 TRACE 1 2 3 4 5 6 TYPE M WWWWWW DET P N N N N N Center Freq 2.462000000 GHz Frequency Avg Type: Log-Pwr Trig: Free Run #Atten: 30 dB PNO: Fast 🖵 **Auto Tune** Mkr2 2.456 90 GHz -1.96 dBm Ref 20.00 dBm Center Freq 0.06 dB 0.00 2.462000000 GHz -10.0 Start Freq -30.0 2.437000000 GHz -40.C -50.0 Stop Freq 2.487000000 GHz Center 2.46200 GHz Span 50.00 MHz **CF Step** 5.000000 MHz #Res BW 100 kHz **#VBW** 300 kHz Sweep 4.80 ms (1001 pts) MKR MODE TRC SCL 1 N 1 f 2 N 1 f 3 N 1 f <u>Auto</u> Man 6.06 dBm -1.96 dBm -2.61 dBm 2.463 50 GHz 2.456 90 GHz 2.467 10 GHz Freq Offset 0 Hz

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802.11b/g/n 1T1R Wireless LAN USB Module Product

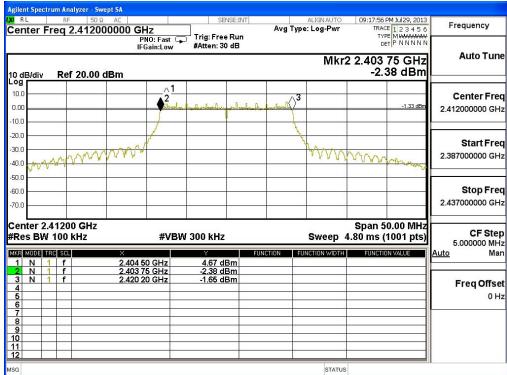
Test Item Occupied Bandwidth Data

Test Site No.3 OATS

Test Mode Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 1 | 2412 | 16450 | >500 | Pass |

Figure Channel 1:





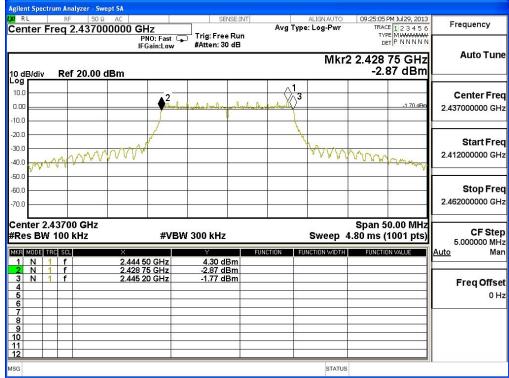
Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 6 | 2437 | 16450 | >500 | Pass |

Figure Channel 6:





Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 11 | 2462 | 16450 | >500 | Pass |

Figure Channel 11: Agilent Spectrum Analyzer - Swept SA 09:32:06 PM Jul 29, 2013 TRACE 1 2 3 4 5 6 TYPE M WWWWWW DET P N N N N N Center Freq 2.462000000 GHz Frequency Avg Type: Log-Pwr Trig: Free Run #Atten: 30 dB PNO: Fast 🖵 **Auto Tune** Mkr2 2.453 75 GHz -3.76 dBm Ref 20.00 dBm Center Freq 0.00 2.462000000 GHz -10.0 Start Freq -30.0 2.437000000 GHz -40.C -50.0 -60.0 Stop Freq 2.487000000 GHz Center 2.46200 GHz Span 50.00 MHz **CF Step** 5.000000 MHz #Res BW 100 kHz **#VBW** 300 kHz Sweep 4.80 ms (1001 pts) MKR MODE TRC SCL 1 N 1 f 2 N 1 f 3 N 1 f <u>Auto</u> Man 3.36 dBm -3.76 dBm -2.84 dBm Freq Offset 0 Hz

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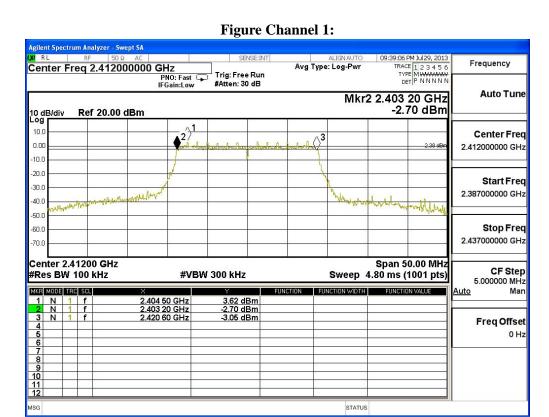


Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 1 | 2412 | 17400 | >500 | Pass |



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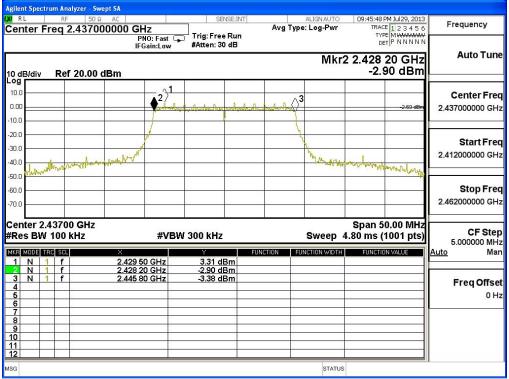
Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 6 | 2437 | 17600 | >500 | Pass |

Figure Channel 6:



Frequency

Auto Tune



Product : 802.11b/g/n 1T1R Wireless LAN USB Module

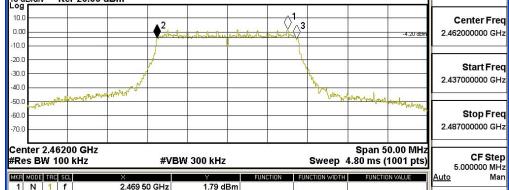
Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

| Channel No. | Frequency (MHz) | 1 | | Result |
|-------------|-----------------|-------|------|--------|
| 11 | 2462 | 17400 | >500 | Pass |

Figure Channel 11:



| 1 | N | 1 | f | 2.469 50 GHz | | | | 1 | |
|-----|---|---|---|---|-----------|----|--------|--|-------------|
| 2 | N | 1 | f | 2.453 20 GHz | | | | | |
| 3 | N | 1 | f | 2.470 60 GHz | -5.05 dBm | | | | Erog Offcot |
| 4 | | | | 55 S (Harris Metroved IX 1894 S (1804 | | | | | Frequise |
| 5 | | | | | | | | | Freq Offset |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | ĵ. | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| | | | | | | | | | |
| MSG | | | | | | | STATUS | | |
| | | | | | | | | la contraction of the contractio | |

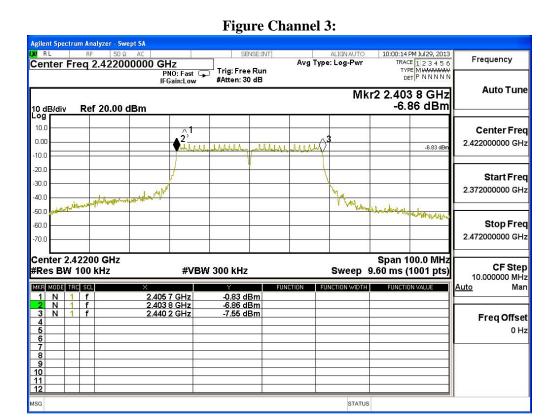


Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | 1 | |
|-------------|-----------------|-------------------------|------|------|
| 3 | 2422 | 36400 | >500 | Pass |



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802.11b/g/n 1T1R Wireless LAN USB Module Product

Occupied Bandwidth Data Test Item

Test Site No.3 OATS

Test Mode Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 6 | 2437 | 36600 | >500 | Pass |

Figure Channel 6:





Test Item : Occupied Bandwidth Data

Test Site : No.3 OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|-------------------------|--------|
| 9 | 2452 | 36500 | >500 | Pass |

Figure Channel 9: Agilent Spectrum Analyzer - Swept SA 10:13:02 PM Jul 29, 2013 TRACE 1 2 3 4 5 6 TYPE M WWWWWW DET P N N N N N Frequency Center Freq 2.452000000 GHz Avg Type: Log-Pwr Trig: Free Run #Atten: 30 dB PNO: Fast 🖵 **Auto Tune** Mkr2 2.433 7 GHz -9.13 dBm Ref 20.00 dBm Center Freq 0.00 mun. 2.452000000 GHz alphalalaphala. -6.28 dE -10.0 Start Freq -30.0 2.402000000 GHz Traffin from a procession / land of land of the -40.C -50.0 Stop Freq 2.502000000 GHz Center 2.45200 GHz Span 100.0 MHz **CF Step** 10.000000 MHz #Res BW 100 kHz **#VBW** 300 kHz Sweep 9.60 ms (1001 pts) MKF MODE TRC SCL 1 N 1 f 2 N 1 f 3 N 1 f Man -0.28 dBm -9.13 dBm -6.40 dBm 2.435 7 GHz 2.433 7 GHz 2.470 2 GHz Freq Offset 0 Hz

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8. Power Density

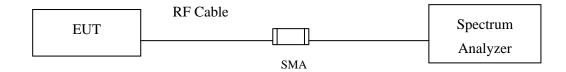
8.1. Test Equipment

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|------------|
| | Spectrum Analyzer | R&S | FSP40 / 100170 | Jun, 2013 |
| | Spectrum Analyzer | Agilent | E4407B / US39440758 | Jun, 2013 |
| X | Spectrum Analyzer | Agilent | N9010A / MY48030495 | Apr., 2013 |

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

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

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

 \pm 1.27 dB



8.6. Test Result of Power Density

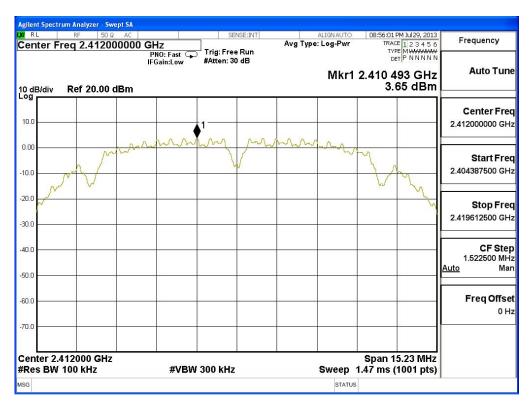
Product : 802.11b/g/n 1T1R Wireless LAN USB Module

Test Item : Power Density Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

| Channel No. | Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Result |
|-------------|-----------------|---------------------|----------------|--------|
| 1 | 2412 | 3.65 | < 8dBm | Pass |



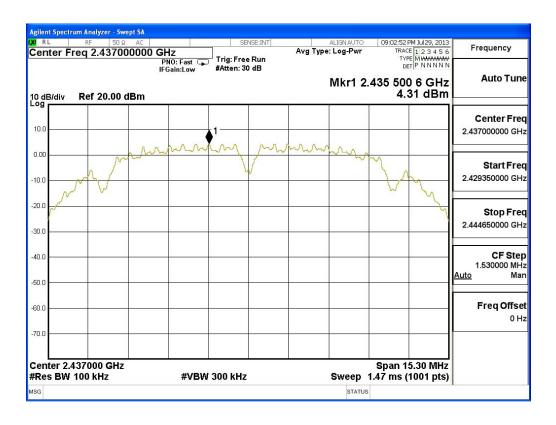


Test Item : Power Density Data

Test Site : No.3OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 | 2437 | 4.31 | < 8dBm | Pass |



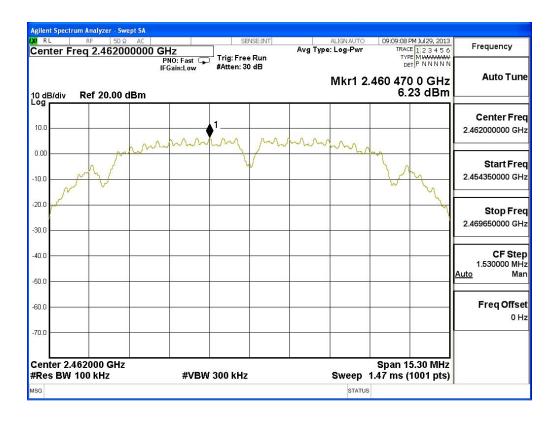


Test Item : Power Density Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 11 | 2462 | 6.23 | < 8dBm | Pass |



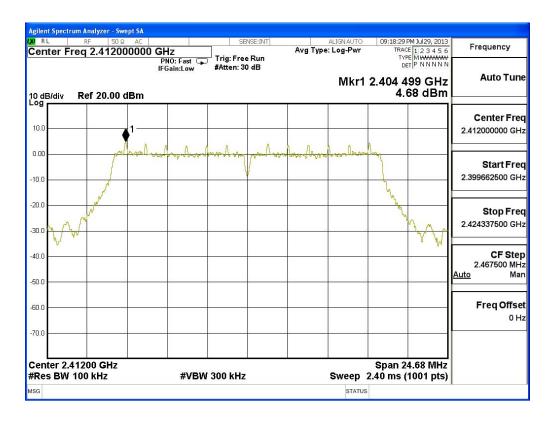


Test Item : Power Density Data

Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

| Channel No. | Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Result |
|-------------|-----------------|---------------------|-------------|--------|
| 1 | 2412 | 4.68 | < 8dBm | Pass |



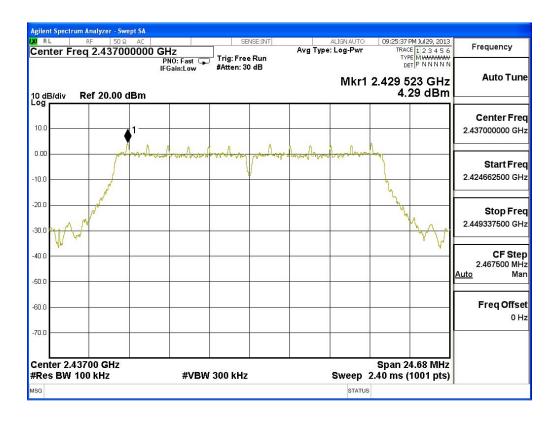


Test Item : Power Density Data

Test Site : No.3OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 | 2437 | 4.29 | < 8dBm | Pass |



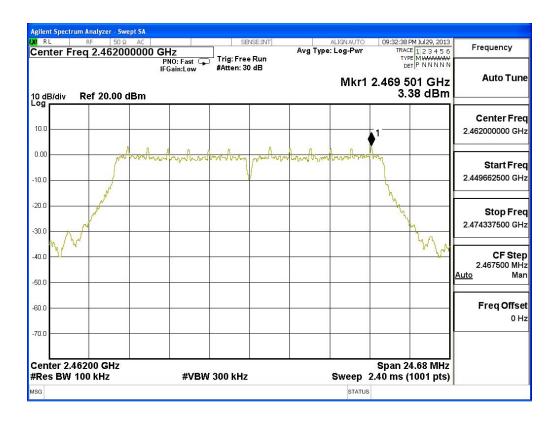


Test Item : Power Density Data

Test Site : No.3 OATS

Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 11 | 2462 | 3.38 | < 8dBm | Pass |



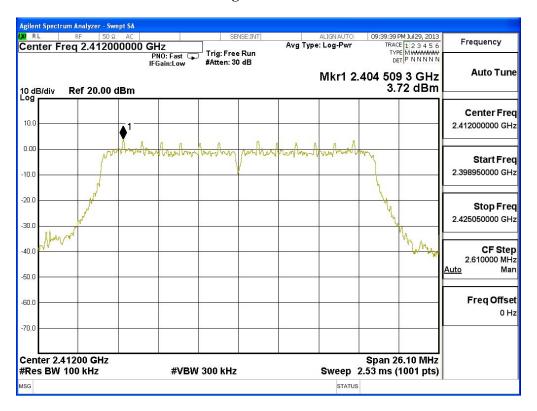


Test Item : Power Density Data

Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

| Channel No. | Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Result |
|-------------|-----------------|---------------------|----------------|--------|
| 1 | 2412 | 3.72 | < 8dBm | Pass |



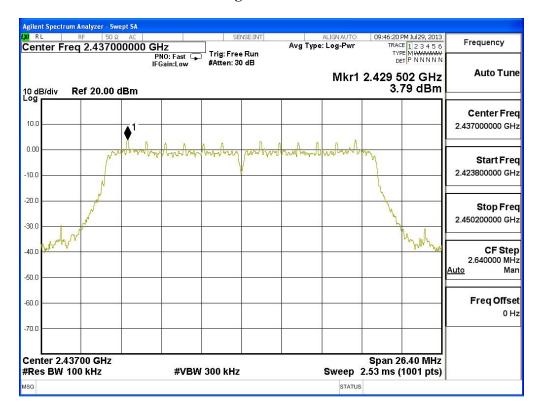


Test Item : Power Density Data

Test Site : No.3OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 | 2437 | 3.79 | < 8dBm | Pass |



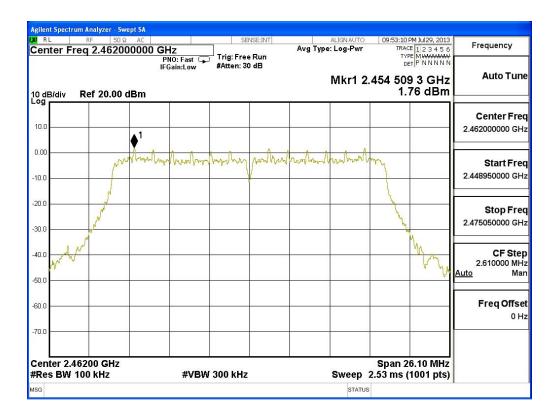


Test Item : Power Density Data

Test Site : No.3 OATS

Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 11 | 2462 | 1.76 | < 8dBm | Pass |



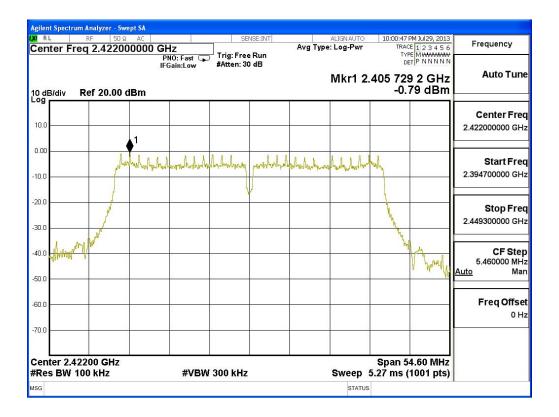


Test Item : Power Density Data

Test Site : No.3 OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

| Channel No. | Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Result |
|-------------|-----------------|---------------------|----------------|--------|
| 3 | 2422 | -0.79 | < 8dBm | Pass |



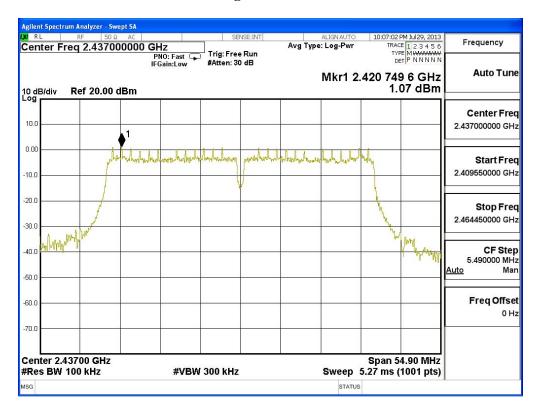


Test Item : Power Density Data

Test Site : No.3OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 | 2437 | 1.07 | < 8dBm | Pass |





Test Item : Power Density Data

Test Site : No.3 OATS

Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 9 | 2452 | -0.24 | < 8dBm | Pass |





9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

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Attachment 1: EUT Test Photographs

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Attachment 2: EUT Detailed Photographs

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