

FCC REPORT

Applicant: Dragino Technology Co., Limited.

Address of Applicant: 303, Block B, No 8, 349, Jian'An 1 Road, Bao'An, Shenzhen, 518101, China

Equipment Under Test (EUT)

Product Name: 802.11b/g wireless sensor node

Model No.: MS12, FLM02A

Trade mark: Dragino

FCC ID: ZHZDRAGINOMS12

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247:2010

Date of sample receipt: 19 Apr., 2011

Date of Test: 03 -16 May, 2011

Date of report issue: 20 May, 2011

Test Result : PASS *

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

Authorized Signature:



Robinson Lo
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

| Version No. | Date | Description |
|--------------------|-------------------|--------------------|
| <i>00</i> | <i>2011-05-20</i> | <i>Original</i> |
| | | |
| | | |
| | | |
| | | |

Prepared By:

Collin.He

Date:

2011-05-20

Project Engineer

Check By:

Hans.Hu

Date:

2011-05-20

Reviewer

3 Contents

| | Page |
|---|------|
| 1 COVER PAGE | 1 |
| 2 VERSION | 2 |
| 3 CONTENTS | 3 |
| 4 TEST SUMMARY | 4 |
| 5 GENERAL INFORMATION | 5 |
| 5.1 CLIENT INFORMATION | 5 |
| 5.2 GENERAL DESCRIPTION OF E.U.T. | 5 |
| 5.3 TEST ENVIRONMENT AND MODE..... | 7 |
| 5.4 TEST FACILITY..... | 7 |
| 5.5 TEST LOCATION | 7 |
| 5.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER | 7 |
| 5.7 TEST INSTRUMENTS LIST | 8 |
| 6 TEST RESULTS AND MEASUREMENT DATA..... | 9 |
| 6.1 ANTENNA REQUIREMENT: | 9 |
| 6.2 CONDUCTED EMISSIONS..... | 10 |
| 6.3 CONDUCTED PEAK OUTPUT POWER..... | 13 |
| 6.4 6dB OCCUPY BANDWIDTH..... | 16 |
| 6.5 POWER SPECTRAL DENSITY..... | 20 |
| 6.6 BAND EDGE..... | 24 |
| 6.7 RF ANTENNA CONDUCTED SPURIOUS EMISSIONS | 27 |
| 6.8 RADIATED EMISSION | 31 |
| 6.8.1 Radiated emission below 1GHz..... | 33 |
| 6.8.2 Transmitter emission above 1GHz..... | 34 |
| 7 TEST SETUP PHOTO | 40 |
| 8 EUT CONSTRUCTIONAL DETAILS | 42 |

4 Test Summary

| Test Item | Section in CFR 47 | Result |
|----------------------------------|-------------------|--------|
| Antenna requirement | 15.203/15.247 (c) | PASS |
| AC Power Line Conducted Emission | 15.207 | PASS |
| Conducted Peak Output Power | 15.247 (b)(3) | PASS |
| 6dB Occupied Bandwidth | 15.247 (a)(2) | PASS |
| Power Spectral Density | 15.247 (e) | PASS |
| Radiated Emission | 15.205/15.209 | PASS |
| Band Edge | 15.247(d) | PASS |

Remark:

- Pass: The EUT complies with the essential requirements in the standard.
- Fail: The EUT does not comply with the essential requirements in the standard.

5 General Information

5.1 Client Information

| | |
|-----------------------------------|--|
| Applicant: | Dragino Technology Co., Limited. |
| Address of Applicant: | 303, Block B, No 8, 349, Jian'An 1 Road, Bao'An, Shenzhen, 518101, China |
| Manufacturer/ Factory: | Dragino Technology Co., Limited. |
| Address of Manufacturer/ Factory: | 303, Block B, No 8, 349, Jian'An 1 Road, Bao'An, Shenzhen, 518101, China |

5.2 General Description of E.U.T.

| | |
|--|---|
| Product Name: | 802.11b/g wireless sensor node |
| Model No.: | MS12, FLM02A |
| Operation Frequency: | 2412MHz~2462MHz |
| Channel numbers: | 11 |
| Channel separation: | 5MHz |
| Modulation technology: (IEEE 802.11b) | Direct Sequence Spread Spectrum (DSSS) |
| Modulation technology: (IEEE 802.11g) | Orthogonal Frequency Division Multiplexing(OFDM) |
| Data speed (IEEE 802.11b): | 1Mbps, 2Mbps, 5.5Mbps, 11Mbps |
| Data speed (IEEE 802.11g): | 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps |
| Antenna Type: | Integral |
| Antenna gain: | 2dBi (declare by Applicant) |
| Power supply: | Input: AC 100-240V 50/60Hz Output: DC 12V 0.5A |
| Remark: | Only the model No. MS12 was tested. MS12 and FLM02A are identical, But only different is model name. |

| Operation Frequency each of channel | | | | | | | |
|-------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1 | 2412MHz | 4 | 2427MHz | 7 | 2442MHz | 10 | 2457MHz |
| 2 | 2417MHz | 5 | 2432MHz | 8 | 2447MHz | 11 | 2462MHz |
| 3 | 2422MHz | 6 | 2437MHz | 9 | 2452MHz | X | |

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Channel | Frequency |
|---------------------|-----------|
| The lowest channel | 2412MHz |
| The middle channel | 2437MHz |
| The Highest channel | 2462MHz |

5.3 Test environment and mode

| | |
|-------------------------------|--|
| Operating Environment: | |
| Temperature: | 24.0 °C |
| Humidity: | 54 % RH |
| Atmospheric Pressure: | 1 010 mbar |
| Test mode: | |
| Operation mode | Keep the EUT in normal operation mode by WIFI. |
| Transmitting mode | Keep the EUT in transmitting mode. |

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

| | |
|--|-----------|
| Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case. | |
| Mode | Data rate |
| 802.11b | 1Mbps |
| 802.11g | 6Mbps |
| Final Test Mode: | |
| According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g | |

5.4 Test Facility

| |
|---|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC —Registration No.: 600491 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, July 20, 2010. ● Industry Canada (IC) The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1. |
|---|

5.5 Test Location

| |
|--|
| All tests were performed at: |
| Global United Technology Services Co., Ltd. Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China Tel: 0755-27798480 Fax: 0755-27798960 |

5.6 Other Information Requested by the Customer

| |
|-------|
| None. |
|-------|

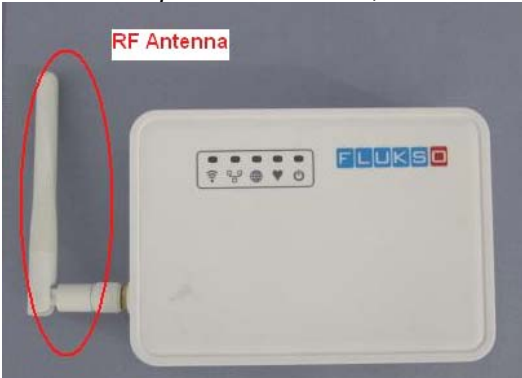

5.7 Test Instruments list

| Radiated Emission: | | | | | | |
|--------------------|-------------------------------|--------------------------------|-----------------------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1 | 3m Semi- Anechoic Chamber | ZhongYu Electron | 9.2(L)*6.2(W)* 6.4(H) | GTS201 | Mar. 30 2011 | Mar. 30 2012 |
| 2 | Control Room | ZhongYu Electron | 6.2(L)*2.5(W)* 2.4(H) | GTS202 | N/A | N/A |
| 3 | EMI Test Receiver | Rohde & Schwarz | ESU26 | GTS203 | Sept. 10 2010 | Sept. 10 2011 |
| 4 | BiConiLog Antenna | SCHWARZBECK MESS-ELEKTRONIK | VULB9163 | GTS204 | Feb. 26 2011 | Feb. 26 2011 |
| 5 | Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRONIK | 9120D-829 | GTS205 | June 30 2010 | June 30 2011 |
| 6 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 7 | Coaxial Cable | GTS | N/A | GTS400 | Apr. 01 2011 | Apr. 01 2012 |
| 8 | Coaxial Cable | GTS | N/A | GTS401 | Apr. 01 2011 | Apr. 01 2012 |
| 9 | Coaxial cable | GTS | N/A | GTS402 | Apr. 01 2011 | Apr. 01 2012 |
| 10 | Coaxial Cable | GTS | N/A | GTS407 | Apr. 01 2011 | Apr. 01 2012 |
| 11 | Coaxial Cable | GTS | N/A | GTS408 | Apr. 01 2011 | Apr. 01 2012 |
| 12 | Amplifier(10KHz-5GHz) | Sonnoma Instrument | 305-1052 | GTS210 | Aug. 03 2010 | Aug. 03 2011 |
| 13 | Amplifier(2GHz-20GHz) | HP | 8349B | GTS231 | Aug. 03 2010 | Aug. 03 2011 |
| 14 | Power Meter | Rohde & Schwarz | NRVD | SEL0069 | June 23 2010 | June 23 2011 |
| 15 | Power Sensor | Rohde & Schwarz | URV5-Z2 | SEL0071 | June 23 2010 | June 23 2011 |

| Conducted Emission: | | | | | | |
|---------------------|-------------------|--------------------------------|----------------------|---------------|---------------------|-------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal.Date (mm-dd-yy) | Cal.Due date (mm-dd-yy) |
| 1 | Shielding Room | ZhongYu Electron | 7.0(L)x3.0(W)x3.0(H) | GTS206 | Apr. 10 2011 | Apr. 10 2012 |
| 2 | EMI Test Receiver | Rohde & Schwarz | ESCS30 | GTS208 | Sept. 14 2010 | Sept. 14 2011 |
| 3 | 10dB Pulse Limita | Rohde & Schwarz | N/A | GTS209 | Sept. 14 2010 | Sept. 14 2011 |
| 4 | LISN | SCHWARZBECK MESS-ELEKTRONIK | NSLK 8127 | GTS207 | Apr. 14 2011 | Apr. 14 2012 |
| 5 | Coaxial Cable | GTS | N/A | GTS406 | Apr. 01 2011 | Apr. 01 2012 |
| 6 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |

6 Test results and Measurement Data

6.1 Antenna requirement:

| | |
|--|-------------------------------------|
| Standard requirement: | FCC Part15 C Section 15.203 /247(c) |
| <p><i>15.203 requirement:</i> <i>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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i></p> <p><i>15.247(c) (1)(i) requirement:</i> <i>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi 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 6dBi.</i></p> | |
| E.U.T Antenna: | |
| <p><i>The antenna port is an inverted, unconventional port; the best case gain of the antenna is 2.0dBi.</i></p> <div style="display: flex; justify-content: space-around;">   </div> | |

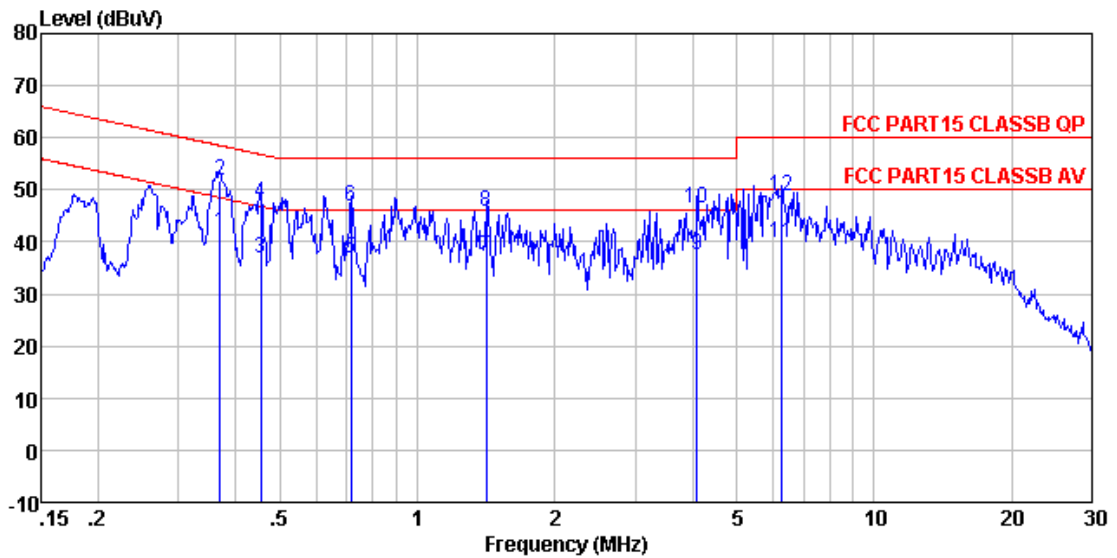
6.2 Conducted Emissions

| Test Requirement: | FCC Part15 C Section 15.207 | | | | | | | | | | | | | | |
|-----------------------|--|-----------------------|--------------------|--|------------|---------|----------|-----------|-----------|-------|----|----|------|----|----|
| Test Method: | ANSI C63.4:2003 | | | | | | | | | | | | | | |
| Test Frequency Range: | 150kHz to 30MHz | | | | | | | | | | | | | | |
| Class / Severity: | Class B | | | | | | | | | | | | | | |
| Receiver setup: | RBW=9kHz, VBW=30kHz | | | | | | | | | | | | | | |
| Limit: | <table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBμV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>* Decreases with the logarithm of the frequency.</p> | Frequency range (MHz) | Limit (dB μ V) | | Quasi-peak | Average | 0.15-0.5 | 66 to 56* | 56 to 46* | 0.5-5 | 56 | 46 | 5-30 | 60 | 50 |
| Frequency range (MHz) | Limit (dB μ V) | | | | | | | | | | | | | | |
| | Quasi-peak | Average | | | | | | | | | | | | | |
| 0.15-0.5 | 66 to 56* | 56 to 46* | | | | | | | | | | | | | |
| 0.5-5 | 56 | 46 | | | | | | | | | | | | | |
| 5-30 | 60 | 50 | | | | | | | | | | | | | |
| Test procedure | <p>The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.</p> | | | | | | | | | | | | | | |
| Test setup: | <p><i>Remark</i> <i>E.U.T: Equipment Under Test</i> <i>LISN: Line Impedance Stabilization Network</i> <i>Test table height=0.8m</i></p> | | | | | | | | | | | | | | |
| Test Instruments: | Refer to section 5.7 for details | | | | | | | | | | | | | | |
| Test mode: | Refer to section 5.3 for details | | | | | | | | | | | | | | |
| Test results: | Passed | | | | | | | | | | | | | | |

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.

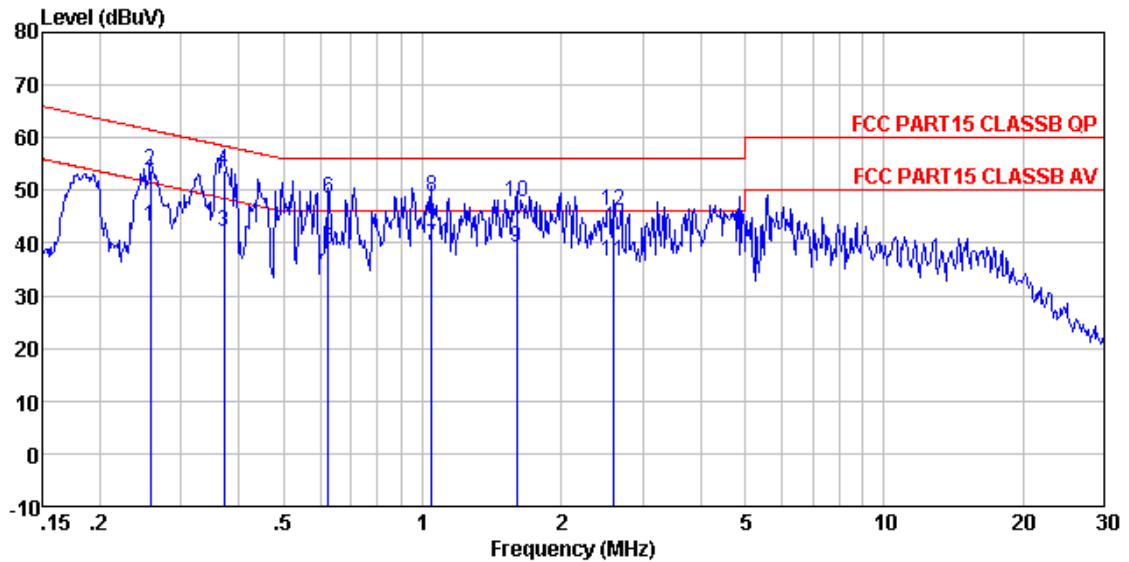
Live:



Condition : FCC PART15 CLASSB QP LISN(2011) LINE
 Job No. : 212RF
 Test Mode : Operation mode
 Test Engineer: Collin

| | Read Freq | LISN Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|----|-----------|------------|-------------|------------|-------|------------|------------|---------|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.369 | 40.98 | 0.59 | 0.10 | 41.67 | 48.52 | -6.85 | Average |
| 2 | 0.369 | 51.14 | 0.59 | 0.10 | 51.83 | 58.52 | -6.69 | QP |
| 3 | 0.454 | 36.18 | 0.57 | 0.10 | 36.85 | 46.80 | -9.95 | Average |
| 4 | 0.454 | 46.93 | 0.57 | 0.10 | 47.60 | 56.80 | -9.20 | QP |
| 5 | 0.716 | 36.18 | 0.51 | 0.10 | 36.79 | 46.00 | -9.21 | Average |
| 6 | 0.716 | 46.30 | 0.51 | 0.10 | 46.91 | 56.00 | -9.09 | QP |
| 7 | 1.418 | 36.48 | 0.44 | 0.10 | 37.02 | 46.00 | -8.98 | Average |
| 8 | 1.418 | 45.27 | 0.44 | 0.10 | 45.81 | 56.00 | -10.19 | QP |
| 9 | 4.092 | 37.22 | 0.32 | 0.10 | 37.64 | 46.00 | -8.36 | Average |
| 10 | 4.092 | 46.20 | 0.32 | 0.10 | 46.62 | 56.00 | -9.38 | QP |
| 11 | 6.285 | 39.28 | 0.27 | 0.12 | 39.67 | 50.00 | -10.33 | Average |
| 12 | 6.285 | 48.50 | 0.27 | 0.12 | 48.89 | 60.00 | -11.11 | QP |

Neutral:



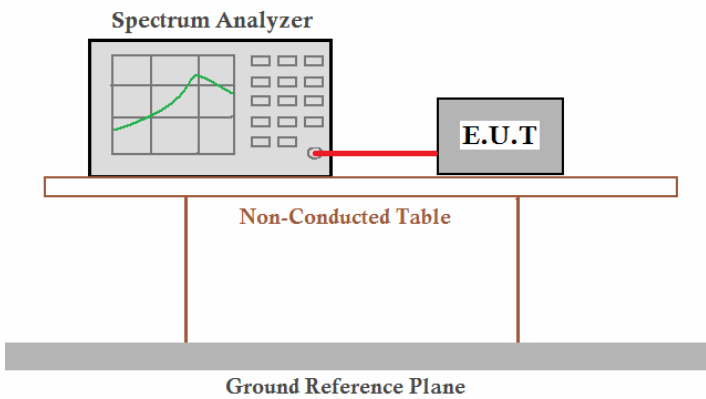
Condition : FCC PART15 CLASSB QP LISN(2011) NEUTRAL
 Job No. : 212RF
 Test Mode : Operation mode
 Test Engineer: Collin

| | Freq | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|----|-------|------------|-------------|------------|-------|------------|------------|---------|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.258 | 42.55 | 0.63 | 0.10 | 43.28 | 51.51 | -8.23 | Average |
| 2 | 0.258 | 52.94 | 0.63 | 0.10 | 53.67 | 61.51 | -7.84 | QP |
| 3 | 0.371 | 41.37 | 0.59 | 0.10 | 42.06 | 48.47 | -6.41 | Average |
| 4 | 0.371 | 53.13 | 0.59 | 0.10 | 53.82 | 58.47 | -4.65 | QP |
| 5 | 0.624 | 38.11 | 0.53 | 0.10 | 38.74 | 46.00 | -7.26 | Average |
| 6 | 0.624 | 47.79 | 0.53 | 0.10 | 48.42 | 56.00 | -7.58 | QP |
| 7 | 1.049 | 38.94 | 0.47 | 0.10 | 39.51 | 46.00 | -6.49 | Average |
| 8 | 1.049 | 48.11 | 0.47 | 0.10 | 48.68 | 56.00 | -7.32 | QP |
| 9 | 1.602 | 38.66 | 0.42 | 0.10 | 39.18 | 46.00 | -6.82 | Average |
| 10 | 1.602 | 47.11 | 0.42 | 0.10 | 47.63 | 56.00 | -8.37 | QP |
| 11 | 2.594 | 36.18 | 0.37 | 0.10 | 36.65 | 46.00 | -9.35 | Average |
| 12 | 2.594 | 45.79 | 0.37 | 0.10 | 46.26 | 56.00 | -9.74 | QP |

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

6.3 Conducted Peak Output Power

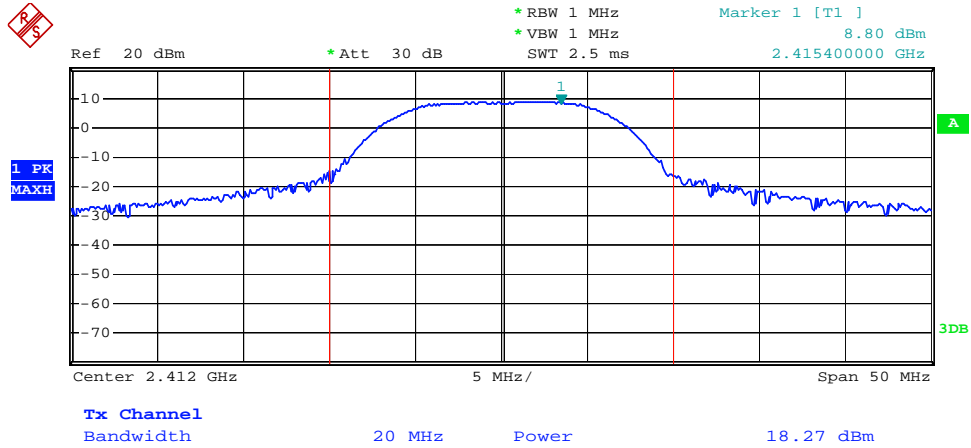
| | |
|-------------------|---|
| Test Requirement: | FCC Part15 C Section 15.247 (b)(3) |
| Test Method: | ANSI C63.4:2003 and KDB558074 |
| Limit: | 30dBm |
| Test setup: |  |
| Test Instruments: | Refer to section 5.7 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Measurement Data

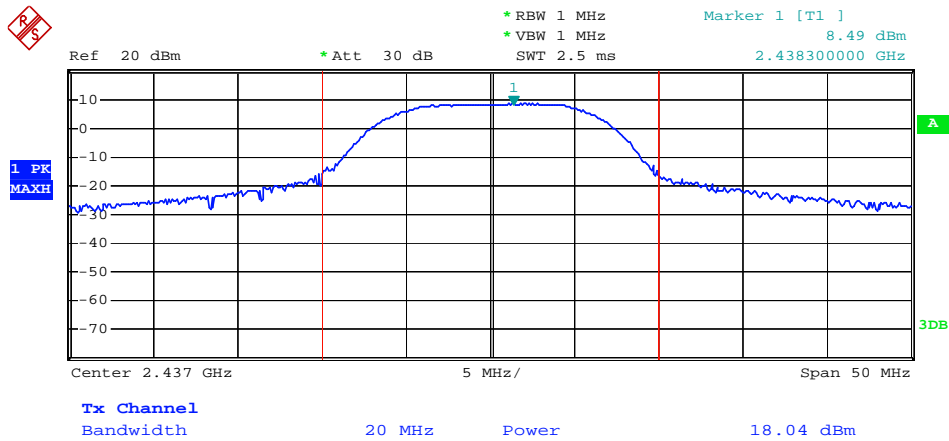
| 802.11b mode | | | |
|--------------|-------------------------|-------------|--------|
| Test channel | Peak Output Power (dBm) | Limit (dBm) | Result |
| Lowest | 18.27 | 30.00 | Pass |
| Middle | 18.04 | 30.00 | Pass |
| Highest | 18.30 | 30.00 | Pass |
| 802.11g mode | | | |
| Test channel | Peak Output Power (dBm) | Limit (dBm) | Result |
| Lowest | 15.90 | 30.00 | Pass |
| Middle | 15.60 | 30.00 | Pass |
| Highest | 15.67 | 30.00 | Pass |

Test plot as follows:

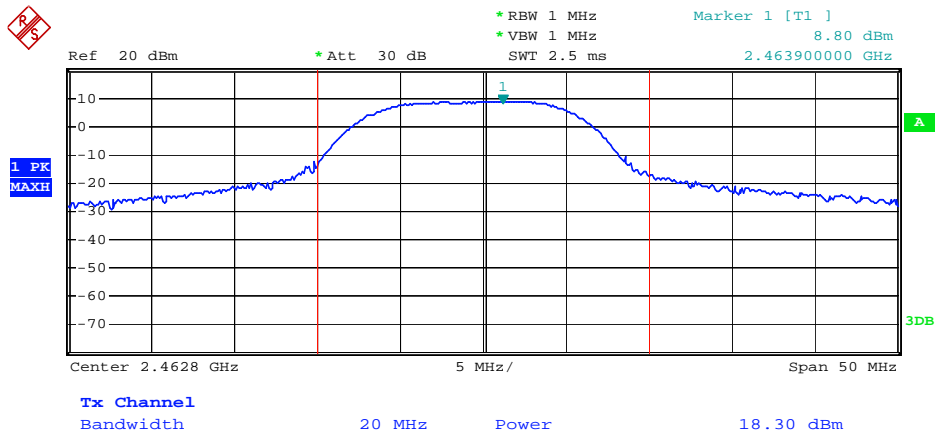
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Lowest |
|------------|---------|---------------|--------|



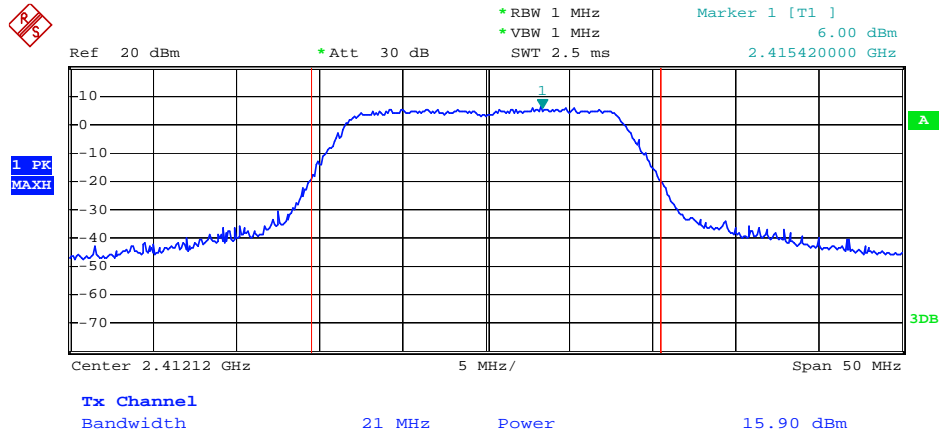
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Middle |
|------------|---------|---------------|--------|



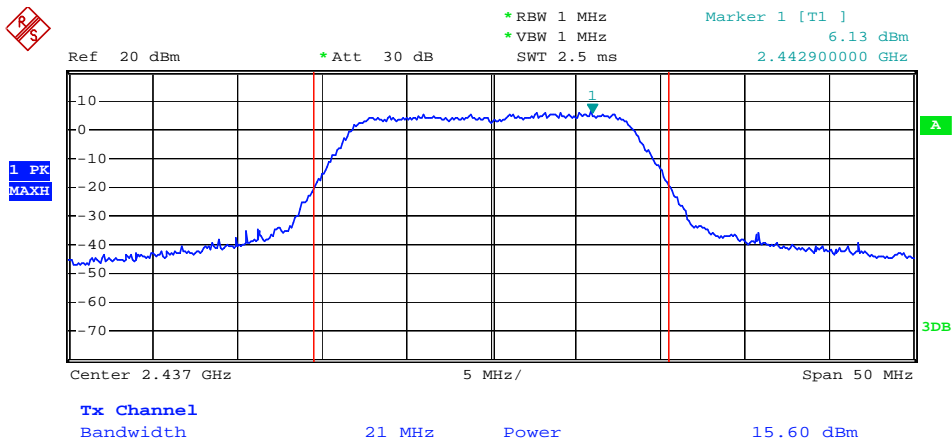
| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



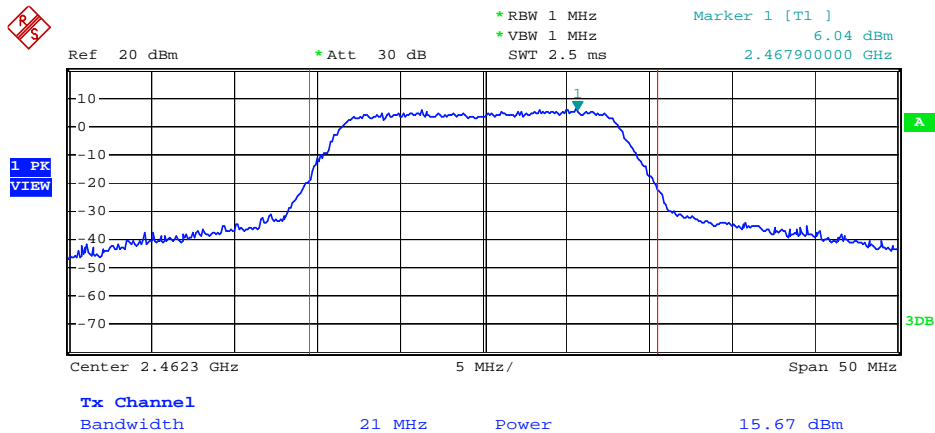
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|



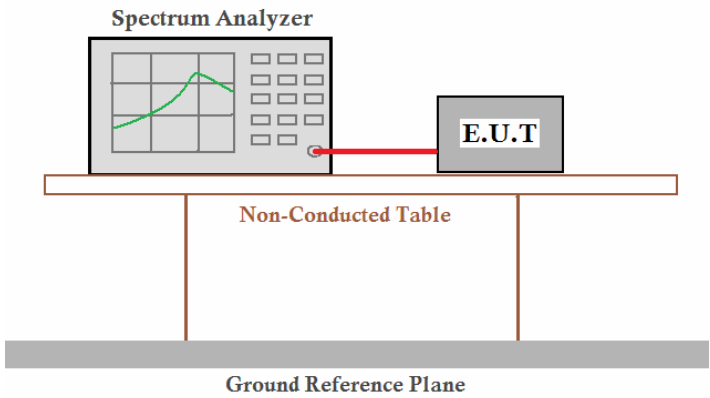
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Middle |
|------------|---------|---------------|--------|



| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|



6.4 6dB Occupancy Bandwidth

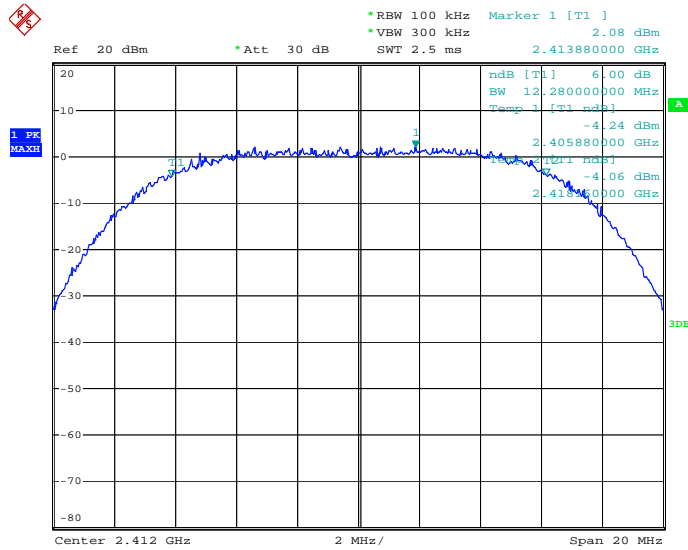
| | |
|-------------------|---|
| Test Requirement: | FCC Part15 C Section 15.247 (a)(2) |
| Test Method: | ANSI C63.4:2003 and KDB558074 |
| Limit: | >500KHz |
| Test setup: |  |
| Test Instruments: | Refer to section 5.7 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Measurement Data

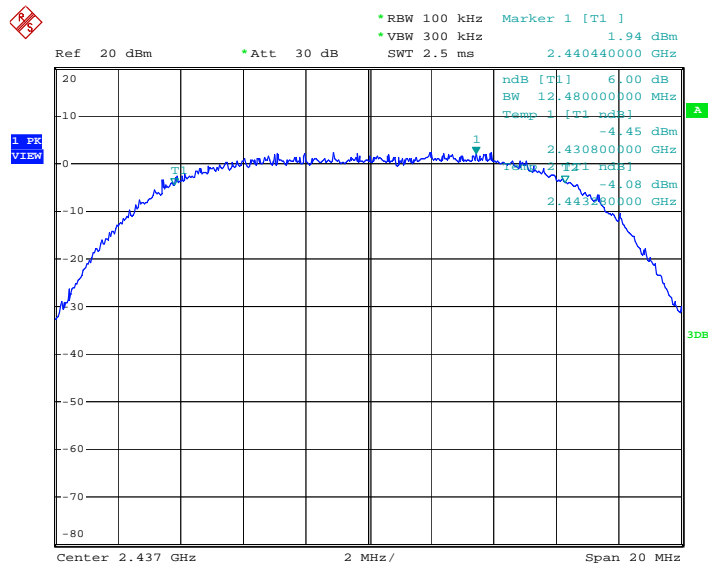
| 802.11b mode | | | |
|--------------|-------------------------------|-------------|--------|
| Test channel | 6dB Occupancy Bandwidth (MHz) | Limit (KHz) | Result |
| Lowest | 12.28 | >500 | Pass |
| Middle | 12.48 | >500 | Pass |
| Highest | 11.48 | >500 | Pass |
| 802.11g mode | | | |
| Test channel | 6dB Occupancy Bandwidth (MHz) | Limit (KHz) | Result |
| Lowest | 16.52 | >500 | Pass |
| Middle | 16.52 | >500 | Pass |
| Highest | 16.44 | >500 | Pass |

Test plot as follows:

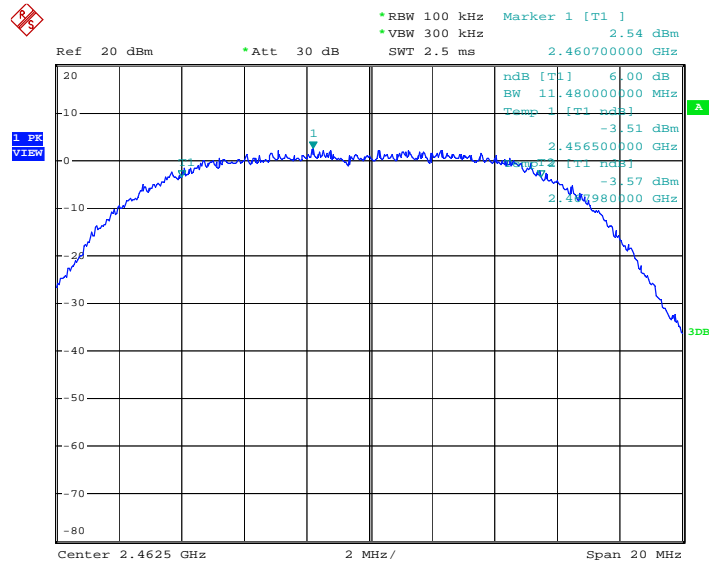
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Lowest |
|------------|---------|---------------|--------|



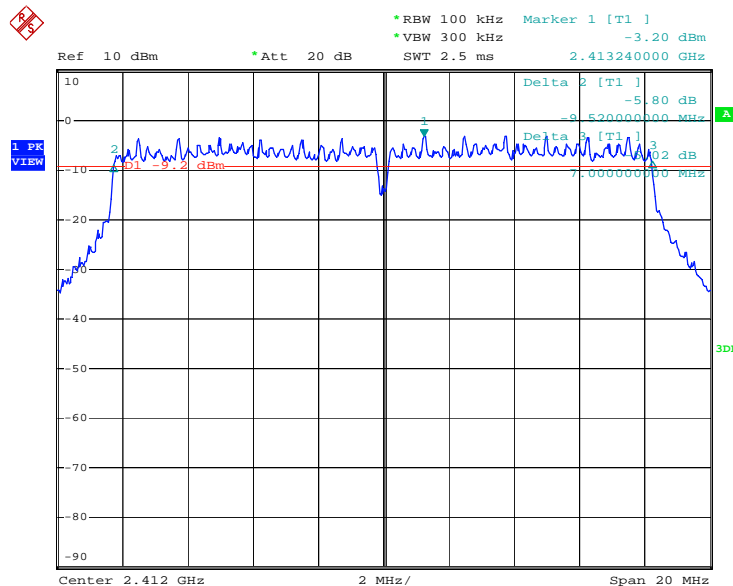
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Middle |
|------------|---------|---------------|--------|



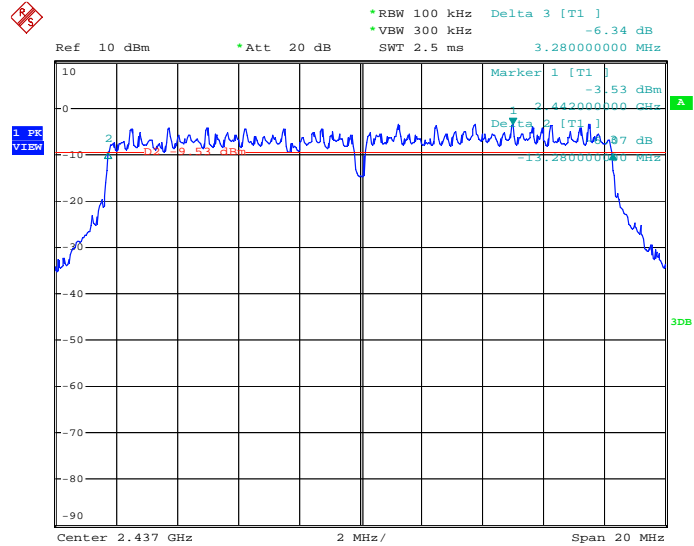
| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



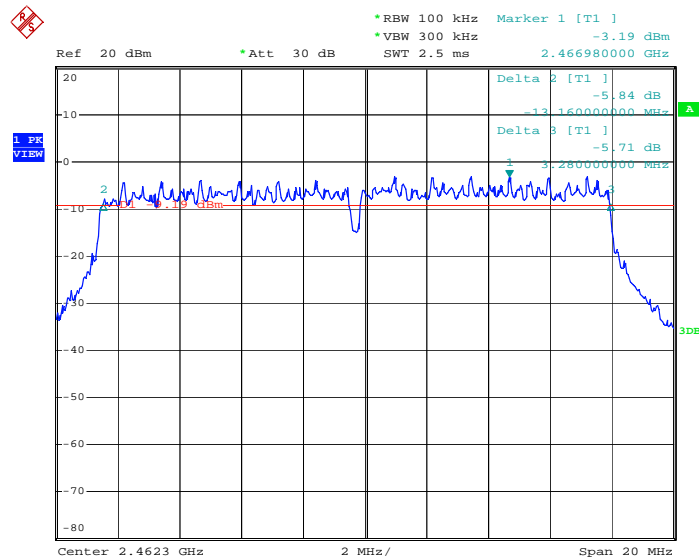
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|



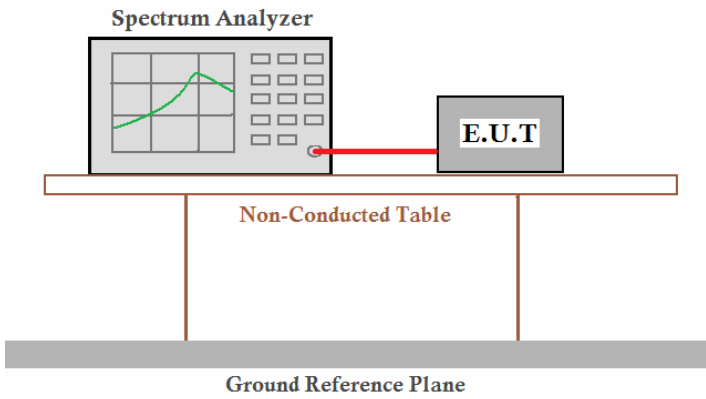
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Middle |
|------------|---------|---------------|--------|



| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|



6.5 Power Spectral Density

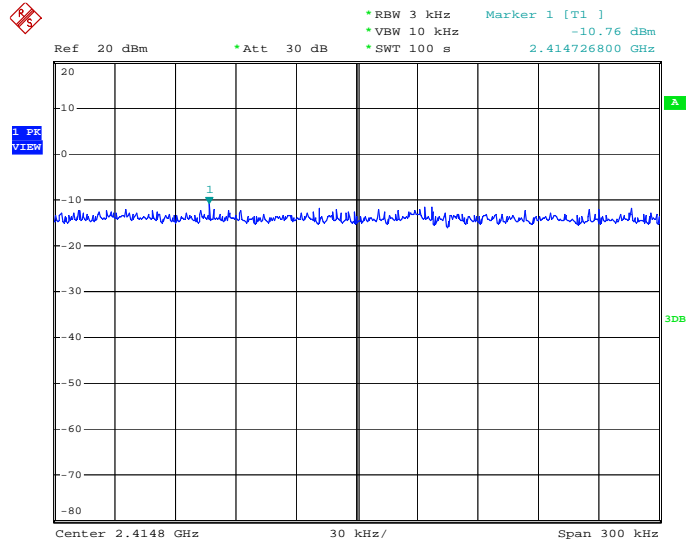
| | |
|-------------------|---|
| Test Requirement: | FCC Part15 C Section 15.247 (e) |
| Test Method: | ANSI C63.4:2003 and KDB558074 |
| Limit: | 8dBm |
| Test setup: |  |
| Test Instruments: | Refer to section 5.7 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Measurement Data

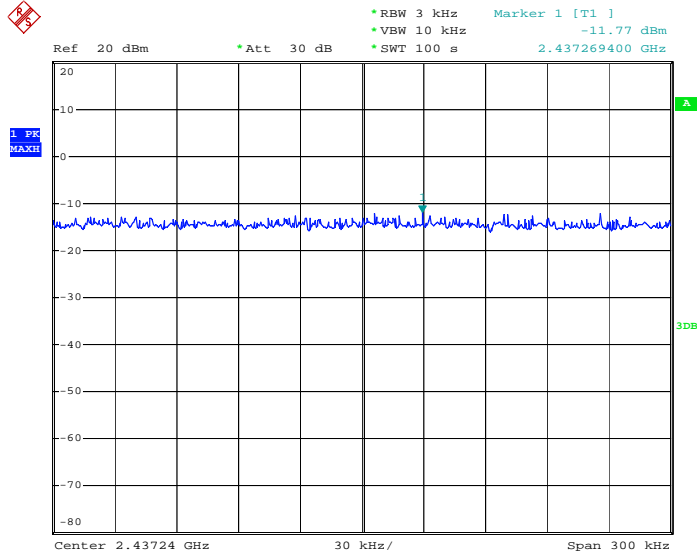
| 802.11b mode | | | |
|--------------|------------------------------|-------------|--------|
| Test channel | Power Spectral Density (dBm) | Limit (dBm) | Result |
| Lowest | -10.76 | 8.00 | Pass |
| Middle | -11.77 | 8.00 | Pass |
| Highest | -11.07 | 8.00 | Pass |
| 802.11g mode | | | |
| Test channel | Power Spectral Density (dBm) | Limit (dBm) | Result |
| Lowest | -16.97 | 8.00 | Pass |
| Middle | -17.33 | 8.00 | Pass |
| Highest | -15.90 | 8.00 | Pass |

Test plot as follows:

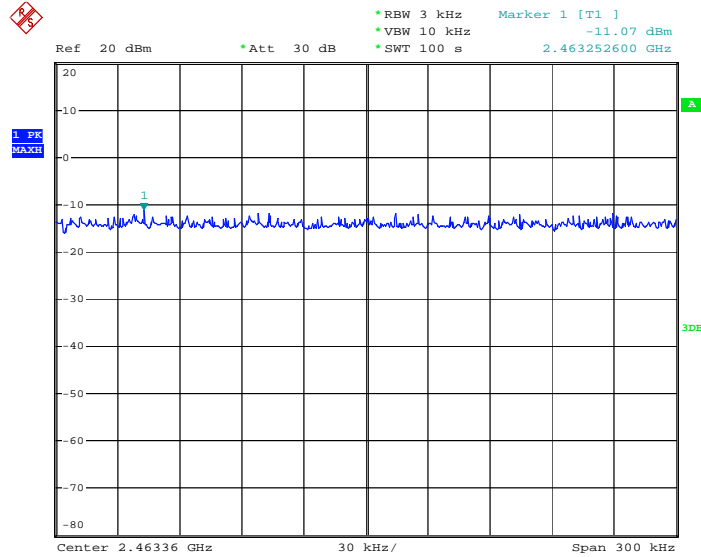
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Lowest |
|------------|---------|---------------|--------|



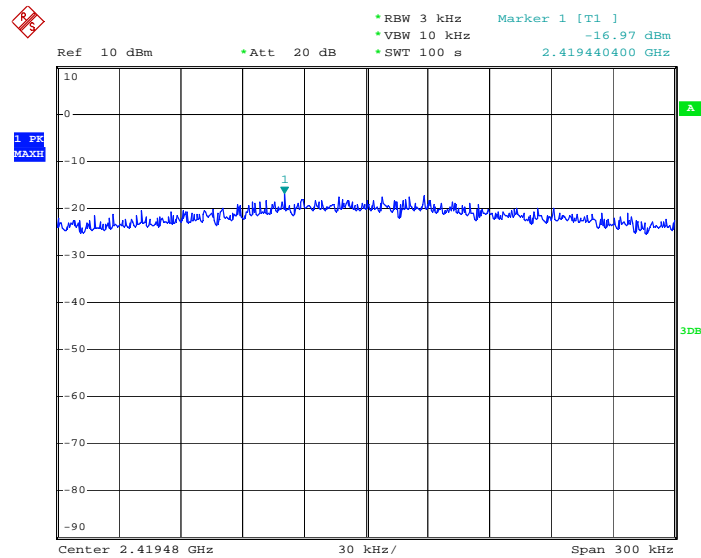
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Middle |
|------------|---------|---------------|--------|



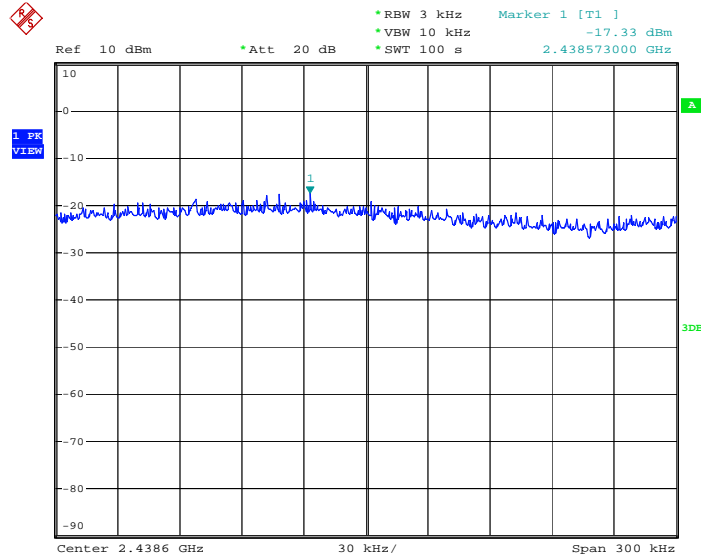
| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



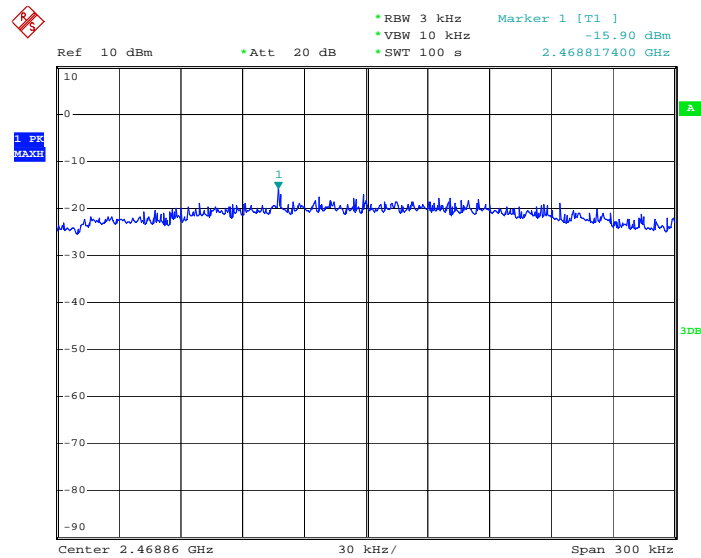
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|



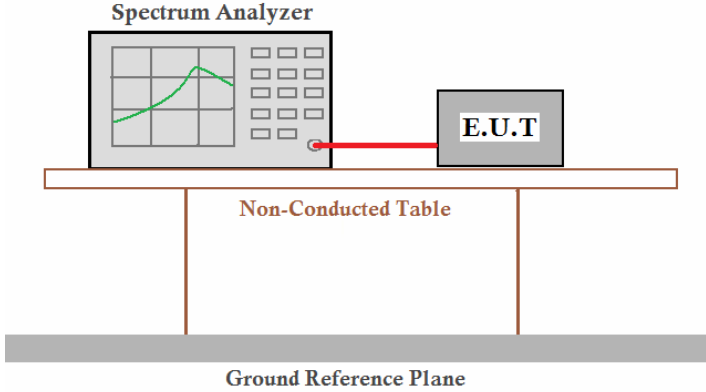
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Middle |
|------------|---------|---------------|--------|



| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|

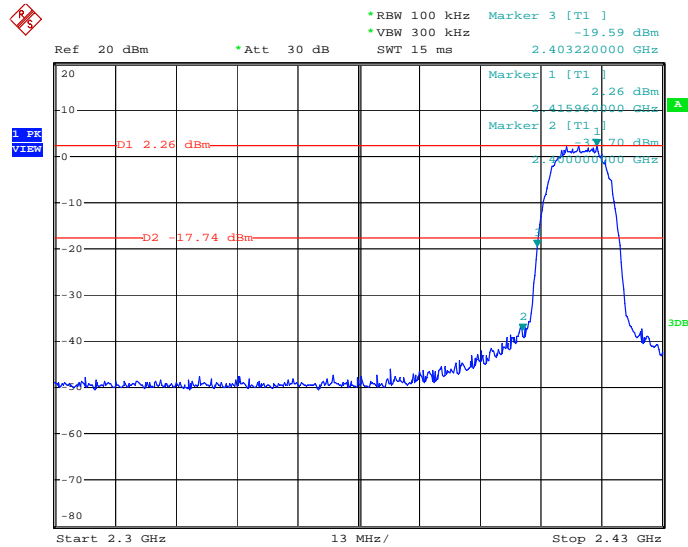


6.6 Band Edge

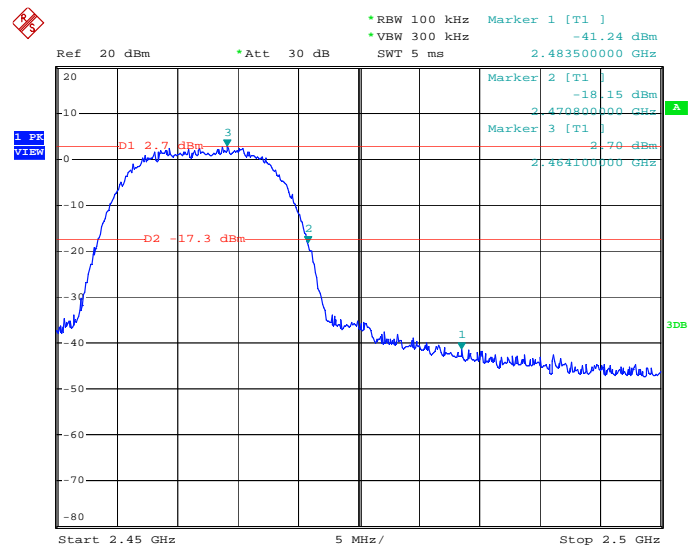
| | |
|-------------------|---|
| Test Requirement: | FCC Part15 C Section 15.247 (d) |
| Test Method: | ANSI C63.4:2003 and KDB558074 |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced 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 setup: |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 5.7 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Test plot as follows:

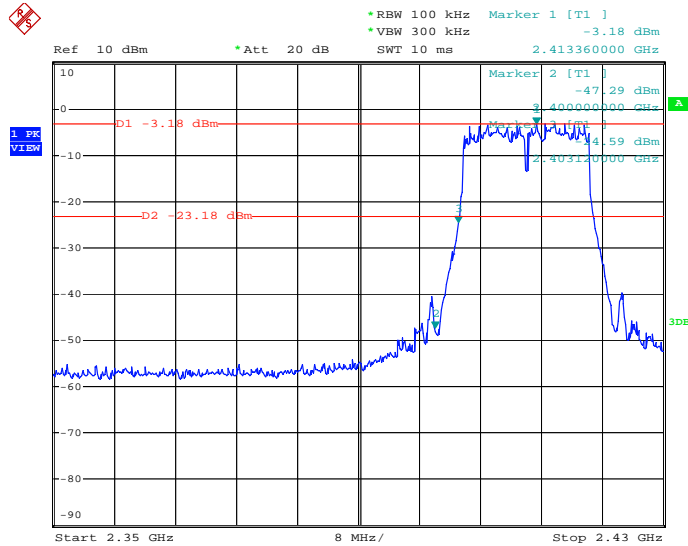
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Lowest |
|------------|---------|---------------|--------|



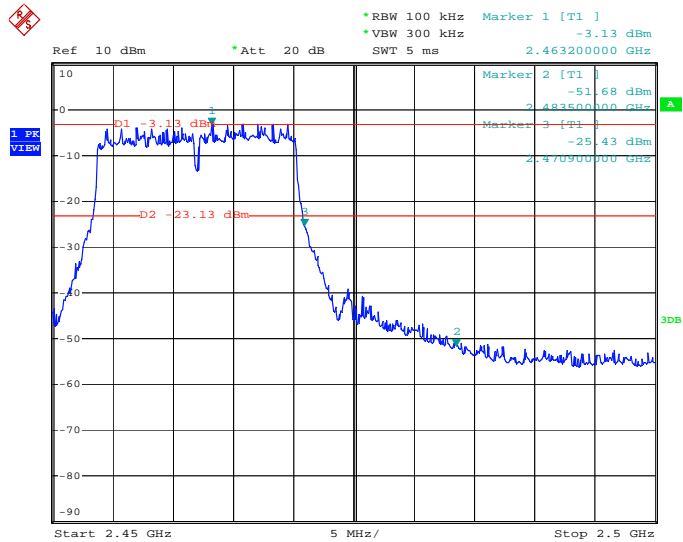
| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



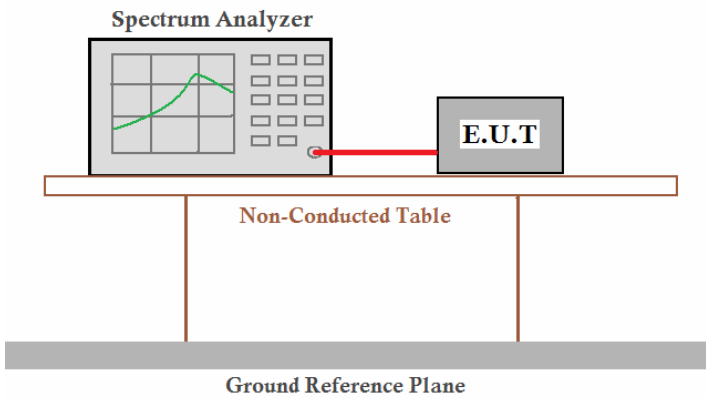
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|



| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|

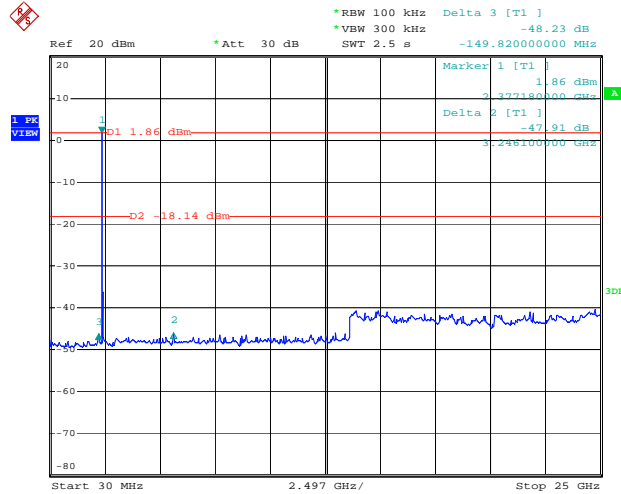


6.7 RF Antenna Conducted spurious emissions

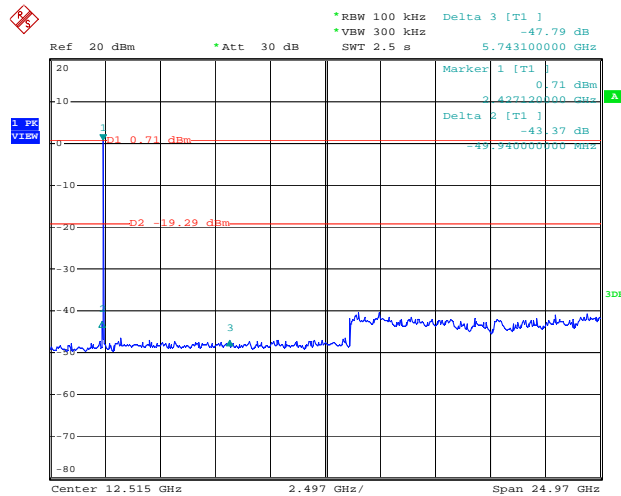
| | |
|-------------------|---|
| Test Requirement: | FCC Part15 C Section 15.247 (d) |
| Test Method: | ANSI C63.4:2003 and KDB558074 |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced 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 setup: |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by two legs. Below the table is a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 5.7 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Test plot as follows:

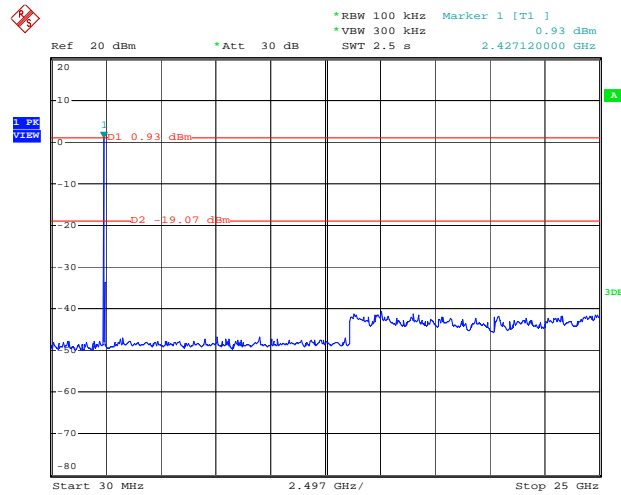
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Lowest |
|------------|---------|---------------|--------|



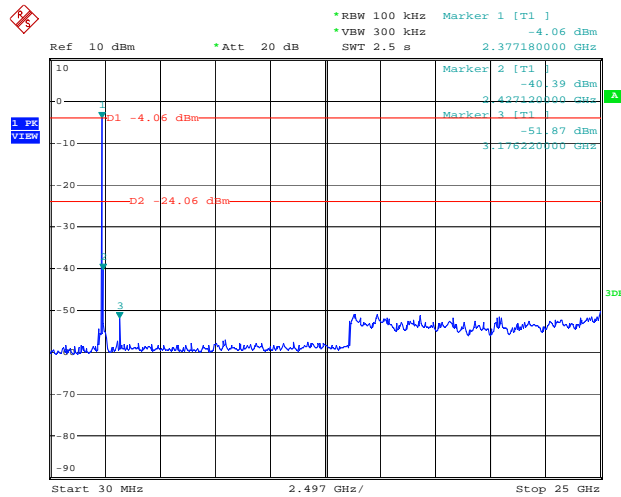
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Middle |
|------------|---------|---------------|--------|



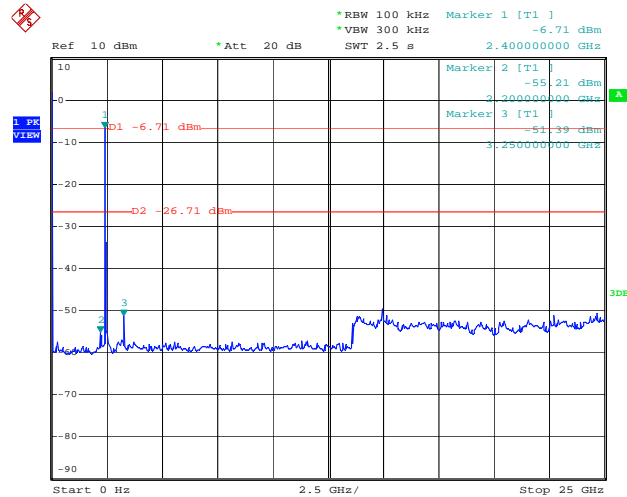
| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



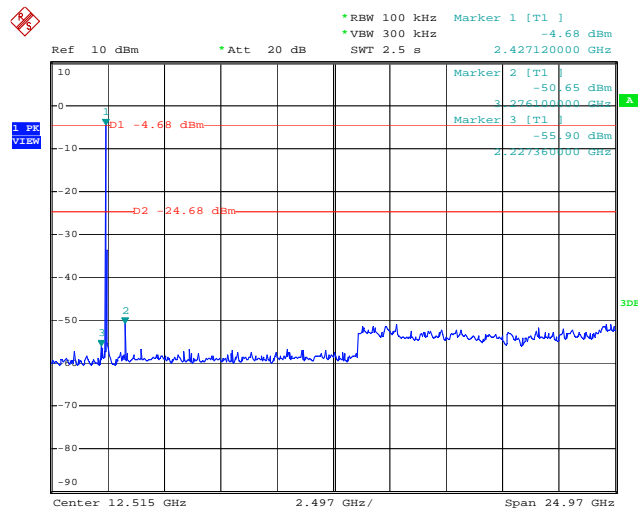
| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|



| | | | |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Middle |
|------------|---------|---------------|--------|



| | | | |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|



6.8 Radiated Emission

| Test Requirement: | FCC Part15 C Section 15.209 and 15.205 | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|--|--------------------------|------------------|---------------|------------------|-----------|--------------------------|--------|-------------|--------|------------------|--------------|--------|------------------|------------------|------------|------------------|-------------|------|------------------|------------|------|---------------|---------------|------------|
| Test Method: | ANSI C63.4: 2003 | | | | | | | | | | | | | | | | | | | | | | | | |
| Test Frequency Range: | 30MHz to 25GHz | | | | | | | | | | | | | | | | | | | | | | | | |
| Test site: | Measurement Distance: 3m (Semi-Anechoic Chamber) | | | | | | | | | | | | | | | | | | | | | | | | |
| Receiver setup: | <table border="1"> <thead> <tr> <th>Frequency</th> <th>Detector</th> <th>RBW</th> <th>VBW</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>30MHz-1GHz</td> <td>Quasi-peak</td> <td>100kHz</td> <td>300kHz</td> <td>Quasi-peak Value</td> </tr> <tr> <td rowspan="2">Above 1GHz</td> <td>Peak</td> <td>1MHz</td> <td>3MHz</td> <td>Peak Value</td> </tr> <tr> <td>Peak</td> <td>1MHz</td> <td>10Hz</td> <td>Average Value</td> </tr> </tbody> </table> | | | | | Frequency | Detector | RBW | VBW | Remark | 30MHz-1GHz | Quasi-peak | 100kHz | 300kHz | Quasi-peak Value | Above 1GHz | Peak | 1MHz | 3MHz | Peak Value | Peak | 1MHz | 10Hz | Average Value | |
| | Frequency | Detector | RBW | VBW | Remark | | | | | | | | | | | | | | | | | | | | |
| | 30MHz-1GHz | Quasi-peak | 100kHz | 300kHz | Quasi-peak Value | | | | | | | | | | | | | | | | | | | | |
| | Above 1GHz | Peak | 1MHz | 3MHz | Peak Value | | | | | | | | | | | | | | | | | | | | |
| Peak | | 1MHz | 10Hz | Average Value | | | | | | | | | | | | | | | | | | | | | |
| Limit: | <table border="1"> <thead> <tr> <th>Frequency</th> <th>Limit (dBμV/m @3m)</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>30MHz-88MHz</td> <td>40.0</td> <td>Quasi-peak Value</td> </tr> <tr> <td>88MHz-216MHz</td> <td>43.5</td> <td>Quasi-peak Value</td> </tr> <tr> <td>216MHz-960MHz</td> <td>46.0</td> <td>Quasi-peak Value</td> </tr> <tr> <td>960MHz-1GHz</td> <td>54.0</td> <td>Quasi-peak Value</td> </tr> <tr> <td rowspan="2">Above 1GHz</td> <td>54.0</td> <td>Average Value</td> </tr> <tr> <td>74.0</td> <td>Peak Value</td> </tr> </tbody> </table> | | | | | Frequency | Limit (dB μ V/m @3m) | Remark | 30MHz-88MHz | 40.0 | Quasi-peak Value | 88MHz-216MHz | 43.5 | Quasi-peak Value | 216MHz-960MHz | 46.0 | Quasi-peak Value | 960MHz-1GHz | 54.0 | Quasi-peak Value | Above 1GHz | 54.0 | Average Value | 74.0 | Peak Value |
| | Frequency | Limit (dB μ V/m @3m) | Remark | | | | | | | | | | | | | | | | | | | | | | |
| | 30MHz-88MHz | 40.0 | Quasi-peak Value | | | | | | | | | | | | | | | | | | | | | | |
| | 88MHz-216MHz | 43.5 | Quasi-peak Value | | | | | | | | | | | | | | | | | | | | | | |
| | 216MHz-960MHz | 46.0 | Quasi-peak Value | | | | | | | | | | | | | | | | | | | | | | |
| | 960MHz-1GHz | 54.0 | Quasi-peak Value | | | | | | | | | | | | | | | | | | | | | | |
| Above 1GHz | 54.0 | Average Value | | | | | | | | | | | | | | | | | | | | | | | |
| | 74.0 | Peak Value | | | | | | | | | | | | | | | | | | | | | | | |
| Test Procedure: | a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. | | | | | | | | | | | | | | | | | | | | | | | | |
| | b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. | | | | | | | | | | | | | | | | | | | | | | | | |
| | c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. | | | | | | | | | | | | | | | | | | | | | | | | |
| | d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. | | | | | | | | | | | | | | | | | | | | | | | | |
| | e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. | | | | | | | | | | | | | | | | | | | | | | | | |
| | f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. | | | | | | | | | | | | | | | | | | | | | | | | |
| Test setup: | Below 1GHz | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|-------------------|----------------------------------|
| | <p>Above 1GHz</p> |
| Test Instruments: | Refer to section 5.7 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Note:

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

$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$

6.8.1 Radiated emission below 1GHz

| Frequency (MHz) | Read Level (dB μ V) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dB μ V/m) | Limit Line (dB μ V/m) | Over Limit (dB) | polarization |
|-----------------|-------------------------|-----------------------|-----------------|--------------------|----------------------|---------------------------|-----------------|--------------|
| 74.92 | 52.50 | 12.86 | 0.89 | 31.85 | 34.40 | 40.00 | -5.60 | Vertical |
| 125.01 | 48.69 | 10.23 | 1.35 | 31.84 | 28.43 | 43.50 | -15.07 | Vertical |
| 175.04 | 56.10 | 10.07 | 1.65 | 32.12 | 35.70 | 43.50 | -7.80 | Vertical |
| 552.88 | 40.71 | 18.90 | 2.57 | 31.44 | 30.74 | 46.00 | -15.26 | Vertical |
| 750.11 | 45.70 | 21.49 | 3.05 | 31.60 | 38.64 | 46.00 | -7.36 | Vertical |
| 875.25 | 41.97 | 24.13 | 3.28 | 31.47 | 37.91 | 46.00 | -8.09 | Vertical |
| 74.92 | 50.18 | 9.26 | 0.89 | 31.85 | 28.48 | 40.00 | -11.52 | Horizontal |
| 125.01 | 48.36 | 10.52 | 1.35 | 31.84 | 28.39 | 43.50 | -15.11 | Horizontal |
| 175.04 | 55.04 | 11.22 | 1.65 | 32.12 | 35.79 | 43.50 | -7.71 | Horizontal |
| 250.30 | 58.09 | 11.63 | 1.95 | 32.28 | 39.39 | 46.00 | -6.61 | Horizontal |
| 460.73 | 49.22 | 19.72 | 2.35 | 31.88 | 39.41 | 46.00 | -6.59 | Horizontal |
| 750.11 | 45.85 | 22.54 | 3.05 | 31.60 | 39.84 | 46.00 | -6.16 | Horizontal |

6.8.2 Transmitter emission above 1GHz

| Test mode: | | 802.11b | | Test channel: | | Lowest | | Remark: | | Peak |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1384.00 | 39.60 | 25.63 | 2.43 | 21.35 | 46.31 | 74.00 | -27.69 | Vertical | | |
| 2390.00 | 49.67 | 27.59 | 3.33 | 30.10 | 50.49 | 74.00 | -23.51 | Vertical | | |
| 2400.00 | 55.30 | 27.58 | 3.37 | 30.10 | 56.15 | 74.00 | -17.85 | Vertical | | |
| 4824.00 | 41.63 | 31.79 | 5.34 | 24.07 | 54.69 | 74.00 | -19.31 | Vertical | | |
| 7236.00 | 34.04 | 36.19 | 6.88 | 26.44 | 50.67 | 74.00 | -23.33 | Vertical | | |
| 9648.00 | 32.21 | 38.07 | 8.96 | 25.36 | 53.88 | 74.00 | -20.12 | Vertical | | |
| 1384.00 | 43.46 | 25.63 | 2.43 | 21.35 | 50.17 | 74.00 | -23.83 | Horizontal | | |
| 2390.00 | 51.64 | 27.59 | 3.33 | 30.10 | 52.46 | 74.00 | -21.54 | Horizontal | | |
| 2400.00 | 55.70 | 27.58 | 3.37 | 30.10 | 56.55 | 74.00 | -17.45 | Horizontal | | |
| 4824.00 | 45.33 | 31.79 | 5.34 | 24.07 | 58.39 | 74.00 | -15.61 | Horizontal | | |
| 7236.00 | 34.42 | 36.19 | 6.88 | 26.44 | 51.05 | 74.00 | -22.95 | Horizontal | | |
| 9648.00 | 33.34 | 38.07 | 8.96 | 25.36 | 55.01 | 74.00 | -18.99 | Horizontal | | |

| Test mode: | | 802.11b | | Test channel: | | Lowest | | Remark: | | Average |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|---------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1384.00 | 23.14 | 25.63 | 2.43 | 21.35 | 29.85 | 54.00 | -24.15 | Vertical | | |
| 2390.00 | 33.31 | 27.59 | 3.33 | 30.10 | 34.13 | 54.00 | -19.87 | Vertical | | |
| 2400.00 | 38.29 | 27.58 | 3.37 | 30.10 | 39.14 | 54.00 | -14.86 | Vertical | | |
| 4824.00 | 20.39 | 31.79 | 5.34 | 24.07 | 33.45 | 54.00 | -20.55 | Vertical | | |
| 7236.00 | 18.04 | 36.19 | 6.88 | 26.44 | 34.67 | 54.00 | -19.33 | Vertical | | |
| 9648.00 | 15.69 | 38.07 | 8.96 | 25.36 | 37.36 | 54.00 | -16.64 | Vertical | | |
| 1384.00 | 25.43 | 25.63 | 2.43 | 21.35 | 32.14 | 54.00 | -21.86 | Horizontal | | |
| 2390.00 | 35.28 | 27.59 | 3.33 | 30.10 | 36.10 | 54.00 | -17.90 | Horizontal | | |
| 2400.00 | 38.69 | 27.58 | 3.37 | 30.10 | 39.54 | 54.00 | -14.46 | Horizontal | | |
| 4824.00 | 26.55 | 31.79 | 5.34 | 24.07 | 39.61 | 54.00 | -14.39 | Horizontal | | |
| 7236.00 | 18.42 | 36.19 | 6.88 | 26.44 | 35.05 | 54.00 | -18.95 | Horizontal | | |
| 9648.00 | 16.82 | 38.07 | 8.96 | 25.36 | 38.49 | 54.00 | -15.51 | Horizontal | | |

| Test mode: | | 802.11b | | Test channel: | | Middle | | Remark: | | Peak |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1754.00 | 49.46 | 25.09 | 2.61 | 28.59 | 48.57 | 74.00 | -25.43 | Vertical | | |
| 4874.00 | 45.02 | 31.85 | 5.40 | 24.01 | 58.26 | 74.00 | -15.74 | Vertical | | |
| 7311.00 | 36.04 | 36.37 | 6.90 | 26.58 | 52.73 | 74.00 | -21.27 | Vertical | | |
| 9688.00 | 29.37 | 38.13 | 8.98 | 25.34 | 51.14 | 74.00 | -22.86 | Vertical | | |
| 12185.00 | 31.74 | 38.92 | 10.38 | 25.04 | 56.00 | 74.00 | -18.00 | Vertical | | |
| 14622.00 | 28.06 | 42.33 | 11.91 | 24.45 | 57.85 | 74.00 | -16.15 | Vertical | | |
| 1754.00 | 51.10 | 25.09 | 2.61 | 28.59 | 50.21 | 74.00 | -23.79 | Horizontal | | |
| 4874.00 | 49.54 | 31.85 | 5.40 | 24.01 | 62.78 | 74.00 | -11.22 | Horizontal | | |
| 7311.00 | 36.35 | 36.37 | 6.90 | 26.58 | 53.04 | 74.00 | -20.96 | Horizontal | | |
| 9688.00 | 31.13 | 38.13 | 8.98 | 25.34 | 52.90 | 74.00 | -21.10 | Horizontal | | |
| 12185.00 | 30.97 | 38.92 | 10.38 | 25.04 | 55.23 | 74.00 | -18.77 | Horizontal | | |
| 14622.00 | 28.16 | 42.33 | 11.91 | 24.45 | 57.95 | 74.00 | -16.05 | Horizontal | | |

| Test mode: | | 802.11b | | Test channel: | | Middle | | Remark: | | Average |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|---------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1754.00 | 32.14 | 25.09 | 2.61 | 28.59 | 31.25 | 54.00 | -22.75 | Vertical | | |
| 4874.00 | 22.32 | 31.85 | 5.40 | 24.01 | 35.56 | 54.00 | -18.44 | Vertical | | |
| 7311.00 | 19.73 | 36.37 | 6.90 | 26.58 | 36.42 | 54.00 | -17.58 | Vertical | | |
| 9688.00 | 15.35 | 38.13 | 8.98 | 25.34 | 37.12 | 54.00 | -16.88 | Vertical | | |
| 12185.00 | 17.08 | 38.92 | 10.38 | 25.04 | 41.34 | 54.00 | -12.66 | Vertical | | |
| 14622.00 | 13.83 | 42.33 | 11.91 | 24.45 | 43.62 | 54.00 | -10.38 | Vertical | | |
| 1754.00 | 30.63 | 25.09 | 2.61 | 28.59 | 29.74 | 54.00 | -24.26 | Horizontal | | |
| 4874.00 | 26.31 | 31.85 | 5.40 | 24.01 | 39.55 | 54.00 | -14.45 | Horizontal | | |
| 7311.00 | 20.05 | 36.37 | 6.90 | 26.58 | 36.74 | 54.00 | -17.26 | Horizontal | | |
| 9688.00 | 16.45 | 38.13 | 8.98 | 25.34 | 38.22 | 54.00 | -15.78 | Horizontal | | |
| 12185.00 | 16.97 | 38.92 | 10.38 | 25.04 | 41.23 | 54.00 | -12.77 | Horizontal | | |
| 14622.00 | 14.21 | 42.33 | 11.91 | 24.45 | 44.00 | 54.00 | -10.00 | Horizontal | | |

| Test mode: | | 802.11b | | Test channel: | | Highest | | Remark: | | Peak |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1648.00 | 45.72 | 24.87 | 2.55 | 27.09 | 46.05 | 74.00 | -27.95 | Vertical | | |
| 2483.50 | 50.21 | 27.53 | 3.49 | 29.93 | 51.30 | 74.00 | -22.70 | Vertical | | |
| 2500.00 | 55.58 | 27.55 | 3.52 | 30.70 | 55.95 | 74.00 | -18.05 | Vertical | | |
| 4924.00 | 39.91 | 31.89 | 5.46 | 23.96 | 53.30 | 74.00 | -20.70 | Vertical | | |
| 7386.00 | 31.54 | 36.49 | 6.93 | 26.79 | 48.17 | 74.00 | -25.83 | Vertical | | |
| 12310.00 | 28.85 | 38.83 | 10.41 | 24.90 | 53.19 | 74.00 | -20.81 | Vertical | | |
| 1648.00 | 46.01 | 24.87 | 2.55 | 27.09 | 46.34 | 74.00 | -27.66 | Horizontal | | |
| 2483.50 | 52.23 | 27.53 | 3.49 | 29.93 | 53.32 | 74.00 | -20.68 | Horizontal | | |
| 2500.00 | 56.08 | 27.55 | 3.52 | 30.70 | 56.45 | 74.00 | -17.55 | Horizontal | | |
| 4924.00 | 40.83 | 31.89 | 5.46 | 23.96 | 54.22 | 74.00 | -19.78 | Horizontal | | |
| 7386.00 | 32.12 | 36.49 | 6.93 | 26.79 | 48.75 | 74.00 | -25.25 | Horizontal | | |
| 12310.00 | 29.92 | 38.83 | 10.41 | 24.90 | 54.26 | 74.00 | -19.74 | Horizontal | | |

| Test mode: | | 802.11b | | Test channel: | | Highest | | Remark: | | Average |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|---------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1648.00 | 28.13 | 24.87 | 2.55 | 27.09 | 28.46 | 54.00 | -25.54 | Vertical | | |
| 2483.50 | 37.07 | 27.53 | 3.49 | 29.93 | 38.16 | 54.00 | -15.84 | Vertical | | |
| 2500.00 | 33.97 | 27.55 | 3.52 | 30.70 | 34.34 | 54.00 | -19.66 | Vertical | | |
| 4924.00 | 21.54 | 31.89 | 5.46 | 23.96 | 34.93 | 54.00 | -19.07 | Vertical | | |
| 7386.00 | 19.42 | 36.49 | 6.93 | 26.79 | 36.05 | 54.00 | -17.95 | Vertical | | |
| 12310.00 | 16.84 | 38.83 | 10.41 | 24.90 | 41.18 | 54.00 | -12.82 | Vertical | | |
| 1648.00 | 28.42 | 24.87 | 2.55 | 27.09 | 28.75 | 54.00 | -25.25 | Horizontal | | |
| 2483.50 | 39.09 | 27.53 | 3.49 | 29.93 | 40.18 | 54.00 | -13.82 | Horizontal | | |
| 2500.00 | 34.47 | 27.55 | 3.52 | 30.70 | 34.84 | 54.00 | -19.16 | Horizontal | | |
| 4924.00 | 26.09 | 31.89 | 5.46 | 23.96 | 39.48 | 54.00 | -14.52 | Horizontal | | |
| 7386.00 | 20.00 | 36.49 | 6.93 | 26.79 | 36.63 | 54.00 | -17.37 | Horizontal | | |
| 12310.00 | 17.91 | 38.83 | 10.41 | 24.90 | 42.25 | 54.00 | -11.75 | Horizontal | | |

| Test mode: | | 802.11g | | Test channel: | | Lowest | | Remark: | | Peak |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1384.00 | 36.12 | 25.63 | 2.43 | 21.35 | 42.83 | 74.00 | -31.17 | Vertical | | |
| 2390.00 | 48.12 | 27.59 | 3.33 | 30.10 | 48.94 | 74.00 | -25.06 | Vertical | | |
| 2400.00 | 53.68 | 27.58 | 3.37 | 30.10 | 54.53 | 74.00 | -19.47 | Vertical | | |
| 4824.00 | 34.96 | 31.79 | 5.34 | 24.07 | 48.02 | 74.00 | -25.98 | Vertical | | |
| 7236.00 | 32.28 | 36.19 | 6.88 | 26.44 | 48.91 | 74.00 | -25.09 | Vertical | | |
| 9648.00 | 30.38 | 38.07 | 8.96 | 25.36 | 52.05 | 74.00 | -21.95 | Vertical | | |
| 1384.00 | 41.57 | 25.63 | 2.43 | 21.35 | 48.28 | 74.00 | -25.72 | Horizontal | | |
| 2390.00 | 50.28 | 27.59 | 3.33 | 30.10 | 51.10 | 74.00 | -22.90 | Horizontal | | |
| 2400.00 | 54.30 | 27.58 | 3.37 | 30.10 | 55.15 | 74.00 | -18.85 | Horizontal | | |
| 4824.00 | 45.42 | 31.79 | 5.34 | 24.07 | 58.48 | 74.00 | -15.52 | Horizontal | | |
| 7236.00 | 32.94 | 36.19 | 6.88 | 26.44 | 49.57 | 74.00 | -24.43 | Horizontal | | |
| 9648.00 | 31.51 | 38.07 | 8.96 | 25.36 | 53.18 | 74.00 | -20.82 | Horizontal | | |

| Test mode: | | 802.11g | | Test channel: | | Lowest | | Remark: | | Average |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|---------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1384.00 | 24.80 | 25.63 | 2.43 | 21.35 | 31.51 | 54.00 | -22.49 | Vertical | | |
| 2390.00 | 33.38 | 27.59 | 3.33 | 30.10 | 34.20 | 54.00 | -19.80 | Vertical | | |
| 2400.00 | 38.77 | 27.58 | 3.37 | 30.10 | 39.62 | 54.00 | -14.38 | Vertical | | |
| 4824.00 | 21.28 | 31.79 | 5.34 | 24.07 | 34.34 | 54.00 | -19.66 | Vertical | | |
| 7236.00 | 19.34 | 36.19 | 6.88 | 26.44 | 35.97 | 54.00 | -18.03 | Vertical | | |
| 9648.00 | 17.40 | 38.07 | 8.96 | 25.36 | 39.07 | 54.00 | -14.93 | Vertical | | |
| 1384.00 | 25.60 | 25.63 | 2.43 | 21.35 | 32.31 | 54.00 | -21.69 | Horizontal | | |
| 2390.00 | 35.98 | 27.59 | 3.33 | 30.10 | 36.80 | 54.00 | -17.20 | Horizontal | | |
| 2400.00 | 39.92 | 27.58 | 3.37 | 30.10 | 40.77 | 54.00 | -13.23 | Horizontal | | |
| 4824.00 | 30.90 | 31.79 | 5.34 | 24.07 | 43.96 | 54.00 | -10.04 | Horizontal | | |
| 7236.00 | 20.71 | 36.19 | 6.88 | 26.44 | 37.34 | 54.00 | -16.66 | Horizontal | | |
| 9648.00 | 19.33 | 38.07 | 8.96 | 25.36 | 41.00 | 54.00 | -13.00 | Horizontal | | |

| Test mode: | | 802.11g | | Test channel: | | Middle | | Remark: | | Peak |
|-----------------|-------------------------|-----------------------|-----------------|--------------------|----------------------|---------------------------|-----------------|--------------|--|------|
| Frequency (MHz) | Read Level (dB μ V) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dB μ V/m) | Limit Line (dB μ V/m) | Over Limit (dB) | polarization | | |
| 1754.00 | 45.29 | 25.09 | 2.61 | 28.59 | 44.40 | 74.00 | -29.60 | Vertical | | |
| 4874.00 | 36.84 | 31.85 | 5.40 | 24.01 | 50.08 | 74.00 | -23.92 | Vertical | | |
| 7311.00 | 32.32 | 36.37 | 6.90 | 26.58 | 49.01 | 74.00 | -24.99 | Vertical | | |
| 9688.00 | 27.12 | 38.13 | 8.98 | 25.34 | 48.89 | 74.00 | -25.11 | Vertical | | |
| 12185.00 | 28.79 | 38.92 | 10.38 | 25.04 | 53.05 | 74.00 | -20.95 | Vertical | | |
| 14622.00 | 25.48 | 42.33 | 11.91 | 24.45 | 55.27 | 74.00 | -18.73 | Vertical | | |
| 1754.00 | 43.88 | 25.09 | 2.61 | 28.59 | 42.99 | 74.00 | -31.01 | Horizontal | | |
| 4874.00 | 45.70 | 31.85 | 5.40 | 24.01 | 58.94 | 74.00 | -15.06 | Horizontal | | |
| 7311.00 | 32.54 | 36.37 | 6.90 | 26.58 | 49.23 | 74.00 | -24.77 | Horizontal | | |
| 9688.00 | 28.02 | 38.13 | 8.98 | 25.34 | 49.79 | 74.00 | -24.21 | Horizontal | | |
| 12185.00 | 28.38 | 38.92 | 10.38 | 25.04 | 52.64 | 74.00 | -21.36 | Horizontal | | |
| 14622.00 | 25.46 | 42.33 | 11.91 | 24.45 | 55.25 | 74.00 | -18.75 | Horizontal | | |

| Test mode: | | 802.11g | | Test channel: | | Middle | | Remark: | | Average |
|-----------------|-------------------------|-----------------------|-----------------|--------------------|----------------------|---------------------------|-----------------|--------------|--|---------|
| Frequency (MHz) | Read Level (dB μ V) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dB μ V/m) | Limit Line (dB μ V/m) | Over Limit (dB) | polarization | | |
| 1754.00 | 32.81 | 25.09 | 2.61 | 28.59 | 31.92 | 54.00 | -22.08 | Vertical | | |
| 4874.00 | 23.52 | 31.85 | 5.40 | 24.01 | 36.76 | 54.00 | -17.24 | Vertical | | |
| 7311.00 | 21.46 | 36.37 | 6.90 | 26.58 | 38.15 | 54.00 | -15.85 | Vertical | | |
| 9688.00 | 17.61 | 38.13 | 8.98 | 25.34 | 39.38 | 54.00 | -14.62 | Vertical | | |
| 12185.00 | 19.87 | 38.92 | 10.38 | 25.04 | 44.13 | 54.00 | -9.87 | Vertical | | |
| 14622.00 | 17.15 | 42.33 | 11.91 | 24.45 | 46.94 | 54.00 | -7.06 | Vertical | | |
| 1754.00 | 31.18 | 25.09 | 2.61 | 28.59 | 30.29 | 54.00 | -23.71 | Horizontal | | |
| 4874.00 | 28.77 | 31.85 | 5.40 | 24.01 | 42.01 | 54.00 | -11.99 | Horizontal | | |
| 7311.00 | 21.24 | 36.37 | 6.90 | 26.58 | 37.93 | 54.00 | -16.07 | Horizontal | | |
| 9688.00 | 17.96 | 38.13 | 8.98 | 25.34 | 39.73 | 54.00 | -14.27 | Horizontal | | |
| 12185.00 | 18.80 | 38.92 | 10.38 | 25.04 | 43.06 | 54.00 | -10.94 | Horizontal | | |
| 14622.00 | 14.36 | 42.33 | 11.91 | 24.45 | 44.15 | 54.00 | -9.85 | Horizontal | | |

| Test mode: | | 802.11g | | Test channel: | | Highest | | Remark: | | Peak |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1648.00 | 40.41 | 24.87 | 2.55 | 27.09 | 40.74 | 74.00 | -33.26 | Vertical | | |
| 2483.50 | 48.95 | 27.53 | 3.49 | 29.93 | 50.04 | 74.00 | -23.96 | Vertical | | |
| 2500.00 | 54.37 | 27.55 | 3.52 | 30.70 | 54.74 | 74.00 | -19.26 | Vertical | | |
| 4924.00 | 32.61 | 31.89 | 5.46 | 23.96 | 46.00 | 74.00 | -28.00 | Vertical | | |
| 7386.00 | 30.43 | 36.49 | 6.93 | 26.79 | 47.06 | 74.00 | -26.94 | Vertical | | |
| 12310.00 | 27.79 | 38.83 | 10.41 | 24.90 | 52.13 | 74.00 | -21.87 | Vertical | | |
| 1648.00 | 41.00 | 24.87 | 2.55 | 27.09 | 41.33 | 74.00 | -32.67 | Horizontal | | |
| 2483.50 | 51.17 | 27.53 | 3.49 | 29.93 | 52.26 | 74.00 | -21.74 | Horizontal | | |
| 2500.00 | 54.97 | 27.55 | 3.52 | 30.70 | 55.34 | 74.00 | -18.66 | Horizontal | | |
| 4924.00 | 44.96 | 31.89 | 5.46 | 23.96 | 58.35 | 74.00 | -15.65 | Horizontal | | |
| 7386.00 | 30.91 | 36.49 | 6.93 | 26.79 | 47.54 | 74.00 | -26.46 | Horizontal | | |
| 12310.00 | 28.66 | 38.83 | 10.41 | 24.90 | 53.00 | 74.00 | -21.00 | Horizontal | | |

| Test mode: | | 802.11g | | Test channel: | | Highest | | Remark: | | Average |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|--|---------|
| Frequency (MHz) | Read Level (dBμV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBμV/m) | Limit Line (dBμV/m) | Over Limit (dB) | polarization | | |
| 1648.00 | 29.24 | 24.87 | 2.55 | 27.09 | 29.57 | 54.00 | -24.43 | Vertical | | |
| 2483.50 | 38.49 | 27.53 | 3.49 | 29.93 | 39.58 | 54.00 | -14.42 | Vertical | | |
| 2500.00 | 35.70 | 27.55 | 3.52 | 30.70 | 36.07 | 54.00 | -17.93 | Vertical | | |
| 4924.00 | 23.58 | 31.89 | 5.46 | 23.96 | 36.97 | 54.00 | -17.03 | Vertical | | |
| 7386.00 | 21.77 | 36.49 | 6.93 | 26.79 | 38.40 | 54.00 | -15.60 | Vertical | | |
| 12310.00 | 19.50 | 38.83 | 10.41 | 24.90 | 43.84 | 54.00 | -10.16 | Vertical | | |
| 1648.00 | 28.37 | 24.87 | 2.55 | 27.09 | 28.70 | 54.00 | -25.30 | Horizontal | | |
| 2483.50 | 39.42 | 27.53 | 3.49 | 29.93 | 40.51 | 54.00 | -13.49 | Horizontal | | |
| 2500.00 | 35.18 | 27.55 | 3.52 | 30.70 | 35.55 | 54.00 | -18.45 | Horizontal | | |
| 4924.00 | 28.64 | 31.89 | 5.46 | 23.96 | 42.03 | 54.00 | -11.97 | Horizontal | | |
| 7386.00 | 21.47 | 36.49 | 6.93 | 26.79 | 38.10 | 54.00 | -15.90 | Horizontal | | |
| 12310.00 | 19.76 | 38.83 | 10.41 | 24.90 | 44.10 | 54.00 | -9.90 | Horizontal | | |