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Report No.: SHEM130200024402  
Page 1 of 92

## ***FCC Part 15C TEST REPORT***

|                                                                                                                                     |                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Application No. :</b>                                                                                                            | SHEM1302000244ME                                                                                                 |
| <b>Applicant:</b>                                                                                                                   | iSmart Alarm, Inc                                                                                                |
| <b>FCC ID:</b>                                                                                                                      | SENIPU3                                                                                                          |
| <b>IC:</b>                                                                                                                          | 10970A-IPU3                                                                                                      |
| <b>Equipment Under Test (EUT):</b><br><b>NOTE:</b> The following sample(s) submitted was/were identified on behalf of the client as |                                                                                                                  |
| Product Name:                                                                                                                       | CUBEONE                                                                                                          |
| Brand Name:                                                                                                                         | iSmart Alarm                                                                                                     |
| Model:                                                                                                                              | iPU3                                                                                                             |
| Added Model:                                                                                                                        | N/A                                                                                                              |
| <b>Standards:</b>                                                                                                                   | FCC PART 15 Subpart C Section 15.247: 2012<br>RSS-210 Issue 8 (December 2010)<br>RSS-Gen Issue 3 (December 2010) |
| <b>Date of Receipt:</b>                                                                                                             | Feb. 28, 2013                                                                                                    |
| <b>Date of Test:</b>                                                                                                                | Mar.01, 2013 to Mar.03, 2013                                                                                     |
| <b>Date of Issue:</b>                                                                                                               | Mar. 12, 2013                                                                                                    |
| <b>Test Result :</b>                                                                                                                | <b>PASS *</b>                                                                                                    |

\*In the configuration tested, the EUT detailed in this report complied with the standards specified above



Mar. 2013

**E&E Section Manager**

**SGS-CSTC (Shanghai) Co., Ltd.**

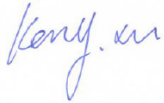
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Version

| Revision Record |         |              |          |          |
|-----------------|---------|--------------|----------|----------|
| Version         | Chapter | Date         | Modifier | Remark   |
| 00              | /       | Mar.12, 2013 | /        | Original |
|                 |         |              |          |          |
|                 |         |              |          |          |
|                 |         |              |          |          |

|                          |  |                                            |                                                                                                |
|--------------------------|--|--------------------------------------------|------------------------------------------------------------------------------------------------|
| Authorized for issue by: |  |                                            |                                                                                                |
| Engineer                 |  | Zenger Zhang<br>_____<br><b>Print Name</b> | <br>_____ |
| Clerk                    |  | Amy Wang<br>_____<br><b>Print Name</b>     | <br>_____ |
| Reviewer                 |  | Keny Xu<br>_____<br><b>Print Name</b>      | <br>_____ |



### 3 Test Summary

| Test Item                               | Test Requirement                                               | IC Requirement           | Test method                          | Result |
|-----------------------------------------|----------------------------------------------------------------|--------------------------|--------------------------------------|--------|
| Antenna Requirement                     | FCC Part 15, Subpart C<br>Section 15.203/15.247 (c)            | RSS-Gen 7.1.2            | ---                                  | PASS   |
| AC Power Line<br>Conducted<br>Emission  | FCC Part 15, Subpart C<br>Section 15.207                       | RSS-Gen Section<br>7.2.4 | ANSI C63.10 (2009)<br>Section 6.2    | PASS   |
| Minimum 6dB Bandwidth                   | FCC Part 15, Subpart C<br>Section 15.247 (a)(2)                | RSS 210 A 8.2(a)         | ANSI C63.10 (2009)<br>Section 6.9    | PASS   |
| Conducted Peak Output<br>Power          | FCC Part 15, Subpart C<br>Section 15.247 (b)(3)                | RSS-Gen section<br>4.6.1 | ANSI C63.10 (2009)<br>Section 6.10   | PASS   |
| Power Spectrum Density                  | FCC Part 15, Subpart C<br>Section 15.247 (e)                   | RSS 210 A 8.4(4)         | ANSI C63.10 (2009)<br>Section 6.11   | PASS   |
| RF Conducted Spurious<br>Emissions      | FCC Part 15, Subpart C<br>Section 15.247(d)                    | RSS 210 A 8.2(b)         | ANSI C63.10 (2009)<br>Section 7.7.10 | PASS   |
| Band-edge for RF<br>Conducted Emissions | FCC Part 15, Subpart C<br>Section 15.247(d)                    | RSS 210 A 8.5            | ANSI C63.10 (2009)<br>Section 7.7.10 | PASS   |
| Radiated Spurious<br>emissions          | FCC Part 15, Subpart C<br>Section 15.209 and<br>Section 15.205 | RSS 210 A 8.5            | ANSI C63.10 (2009)<br>Section 6.12   | PASS   |
| Radiated Band-edge                      | FCC Part 15, Subpart C<br>Section 15.205 and<br>Section 15.209 | RSS-Gen section 4.9      | ANSI C63.10 (2009)<br>Section 6.5    | PASS   |
| Occupied bandwidth                      | RSS-Gen Issue 3<br>Clause 4.6.1                                | RSS-Gen section 4.9      | RSS-Gen Issue 3<br>Clause 4.6.1      | PASS   |



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## 5 General Information

### 5.1 Client Information

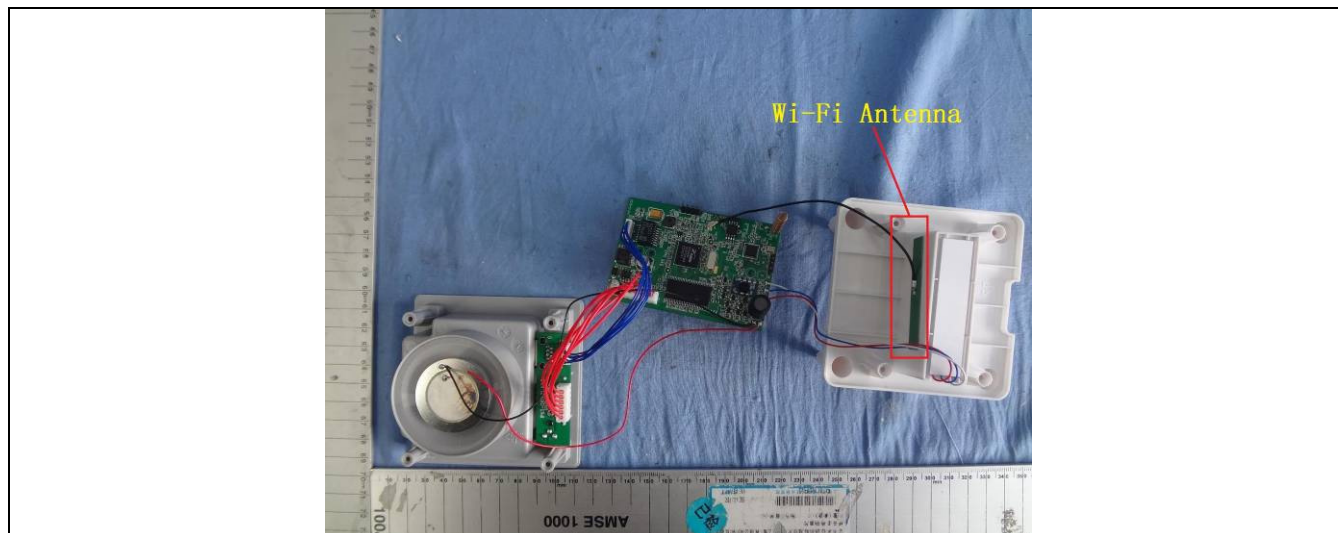
|                                 |                                               |
|---------------------------------|-----------------------------------------------|
| <b>Applicant:</b>               | iSmart Alarm, Inc                             |
| <b>Address of Applicant:</b>    | 723 N. Shoreline Blvd Mountain View, CA 94043 |
| <b>Manufacturer:</b>            | iSmart Alarm, Inc                             |
| <b>Address of Manufacturer:</b> | 723 N. Shoreline Blvd Mountain View, CA 94043 |
| <b>Factory:</b>                 | iSmart Alarm, Inc                             |

### 5.2 General Description of E.U.T.

|                             |                  |
|-----------------------------|------------------|
| <b>Product Name</b>         | CUBEONE          |
| <b>Brand Name:</b>          | iSmart Alarm     |
| <b>Model No:</b>            | iPU3             |
| <b>Added Model:</b>         | N/A              |
| <b>Product Description:</b> | Fixed production |

### 5.3 Technical Specifications:

|                              |                                                                                                                                                                |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operation Frequency:</b>  | 802.11b/g/n(HT20):2412MHz~2462MHz                                                                                                                              |
| <b>Modulation Technique:</b> | <input checked="" type="checkbox"/> 802.11b: DSSS <input checked="" type="checkbox"/> 802.11g: OFDM<br><input checked="" type="checkbox"/> 802.11n(HT20): OFDM |
| <b>Modulation Type:</b>      | <input checked="" type="checkbox"/> 802.11 b DSSS(CCK, DQPSK, DBPSK)<br><input checked="" type="checkbox"/> 802.11g/n OFDM(64QAM, 16QAM, QPSK, BPSK)           |
| <b>Number of Channel:</b>    | 802.11b/g/n11                                                                                                                                                  |
| <b>Power Supply:</b>         | 5.0V DC                                                                                                                                                        |
| <b>Antenna Type</b>          | Integral                                                                                                                                                       |
| <b>Antenna Gain</b>          | 3.0dBi                                                                                                                                                         |



#### 5.4 Accessories of Product:

|                 |               |              |        |
|-----------------|---------------|--------------|--------|
| <b>Adapter:</b> | Manufacturer: | DVE          |        |
|                 | Model No.:    | DSA-12CA-05  |        |
|                 | Rated Input:  | AC 100V-240V |        |
|                 | Rated Output: | DC 5.0V      |        |
|                 | Cable length: | AC port:     | (2Pin) |
|                 |               | DC port:     | 180 cm |

#### 5.5 Support equipments for Testing

| Description | Manufacturer | Model No.      | Serial No. | Supplied By |
|-------------|--------------|----------------|------------|-------------|
| Laptop      | Lenovo       | ThinkPad X100e | 2876A65    | SGS         |

| Software name  | Manufacturer | Supplied By |
|----------------|--------------|-------------|
| Hyper Terminal | Microsoft    | Client/SGS  |

#### Cable List:

| Cable Name    | START  |              | END    |              | Cable Spec. |              |               |
|---------------|--------|--------------|--------|--------------|-------------|--------------|---------------|
|               | Device | I/O Port     | Device | I/O Port     | Length (m)  | Shield (Y/N) | Ferrite (Y/N) |
| Network Cable | EUT    | Network Port | Route  | Network Port | 0.8         | N            | N             |

#### 5.6 Details of Test Mode

| Test Mode         | Description of Test Mode                    |
|-------------------|---------------------------------------------|
| Transmitting mode | Keep the EUT on continue transmitting mode. |

## Test Channel:

For 802.11b/g/n (HT20):

| Channel             | Frequency |
|---------------------|-----------|
| The Lowest channel  | 2412MHz   |
| The Middle channel  | 2437MHz   |
| The Highest channel | 2462MHz   |

## 5.7 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.  
No.588 West Jindu Road, Songjiang District, Shanghai, China.201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

## 5.8 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2015-02-22.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

## 6 Equipments Used during Test

### ☒ Conducted Emission

| Item | Test Equipment                              | Manufacturer    | Model No. | Serial No. | Cal. Date  | Cal. Due date |
|------|---------------------------------------------|-----------------|-----------|------------|------------|---------------|
| 1    | EMI test receiver                           | Rohde & Schwarz | ESCS30    | 100086     | 2012-04-13 | 2013-04-12    |
| 2    | Line impedance stabilization network (LISN) | SCHWARZBECK     | NSLK8127  | 8127-490   | 2012-10-15 | 2013-10-14    |
| 3    | Line impedance stabilization network (LISN) | ETS             | 3816/2    | 00034161   | 2012-10-15 | 2013-10-14    |

### ☒ Radiated Spurious Emission

| Item | Test Equipment      | Manufacturer    | Model No. | Serial No. | Cal. Date  | Cal. Due date |
|------|---------------------|-----------------|-----------|------------|------------|---------------|
| 1    | EMI test receiver   | Rohde & Schwarz | ESU40     | 100109     | 2012-06-02 | 2013-06-01    |
| 2    | Antenna             | SCHWARZBECK     | VULB9168  | 9168-313   | 2012-10-15 | 2013-10-14    |
| 3    | CONTROLLER          | INNCO           | CO200     | 474        | /          | /             |
| 4    | Antenna             | SCHWARZBECK     | BBHA9120D | 9120D-679  | 2012-10-15 | 2013-10-14    |
| 5    | Antenna             | SCHWARZBECK     | BBHA9170  | 9170-373   | 2012-10-15 | 2013-10-14    |
| 6    | Low noise amplifier | LNA6900         | TESEQ     | 71033      | 2012-10-15 | 2013-10-14    |

### ☒ RF Conducted Test

| Item | Test Equipment            | Manufacturer                         | Model No. | Serial No.      | Cal. Date  | Cal. Due date |
|------|---------------------------|--------------------------------------|-----------|-----------------|------------|---------------|
| 1    | EMI test receiver         | Rohde & Schwarz                      | ESU40     | 100109          | 2012-06-03 | 2013-06-01    |
| 2    | Horn Antenna              | SCHWARZBECK                          | BBHA9120D | 9120D-679       | 2012-06-03 | 2013-06-01    |
| 3    | Horn Antenna              | Rohde & Schwarz                      | HF906     | 100284          | 2012-06-03 | 2013-06-01    |
| 4    | ANTENNA                   | SCHWARZBECK                          | VULB9168  | 9168-313        | 2012-06-03 | 2013-06-01    |
| 5    | Horn Antenna              | SCHWARZBECK                          | BBHA 9170 | BBHA91703<br>73 | 2012-10-15 | 2013-10-14    |
| 6    | Ultra broadband antenna   | Rohde & Schwarz                      | HL562     | 100227          | 2012-10-09 | 2013-10-08    |
| 7    | Atmosphere pressure meter | Shanghai ZhongXuan Electronic Co;Ltd | BY—2009P  | --              | 2012-10-09 | 2013-10-08    |
| 8    | CLAMP METER               | FLUKE                                | 316       | 86080010        | 2012-06-03 | 2013-06-01    |
| 9    | Thermo-Hygrometer         | ZHICHEN                              | ZC1-2     | 01050033        | 2012-10-09 | 2013-10-08    |

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|    |                                               |                                   |                                           |          |            |            |
|----|-----------------------------------------------|-----------------------------------|-------------------------------------------|----------|------------|------------|
| 11 | High-low<br>temperature<br>cabinet            | Shanghai<br>YuanZhen              | GW2050                                    | --       | 2012-06-03 | 2013-06-01 |
| 12 | Tunable Notch<br>Filter                       | Wainwright<br>instruments<br>Gmbh | WRCT1800.<br>0/<br>2000.0-<br>0.2/40-5SSK | 11       | 2012-06-03 | 2013-06-01 |
| 13 | Tunable Notch<br>Filter                       | Wainwright<br>instruments<br>Gmbh | WRCT800.0/<br>880.0-<br>0.2/40-5SSK       | 9        | 2012-06-03 | 2013-06-01 |
| 14 | High pass Filter                              | FSCW                              | HP 12/2800-<br>5AA2                       | 19A45-02 | 2012-06-03 | 2013-06-01 |
| 15 | Low nosie<br>amplifier                        | TESEQ                             | LNA6900                                   | 70133    | 2012-06-03 | 2013-06-01 |
| 16 | EMI test receiver                             | Rohde & Schwarz                   | ESCS30                                    | 100086   | 2012-06-03 | 2013-06-01 |
| 17 | Line<br>impedance<br>stabilization<br>network | SCHWARZBECK                       | NSLK8127                                  | 8127-490 | 2012-06-03 | 2013-06-01 |
| 18 | Active Loop<br>Antenna                        | Beijing Daze                      | ZN30900A                                  | 0097     | 2012-10-28 | 2013-10-27 |



## 7 Test Results

### 7.1 E.U.T. test conditions

**Test Power:** 5.0V DC

**Requirements:** For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

**Operating Environment:**

**Temperature:** 20.0 -25.0 °C

**Humidity:** 35-75 % RH

**Atmospheric Pressure:** 992 -1020 mbar

### 7.2 Antenna Requirement

#### Standard requirement

15.203 requirement:

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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### EUT Antenna

The antenna is integrated on the main PCB and no consideration of replacement. The gain of the antenna is less than 3.0 dBi.

### 7.3 Conducted Emissions on Mains Terminals

**Test Requirement:** FCC Part 15C, Section 15.207  
RSS-Gen Section 7.2.4

**Test Method:** ANSI C63.10:2009 Section 6.2

**Test Date:** Mar.01, 2013

**Test Result:** Pass

**Test Voltage:** AC 120V 60Hz

**Frequency Range:** 150 KHz to 30 MHz

**Class/Severity:** Class B

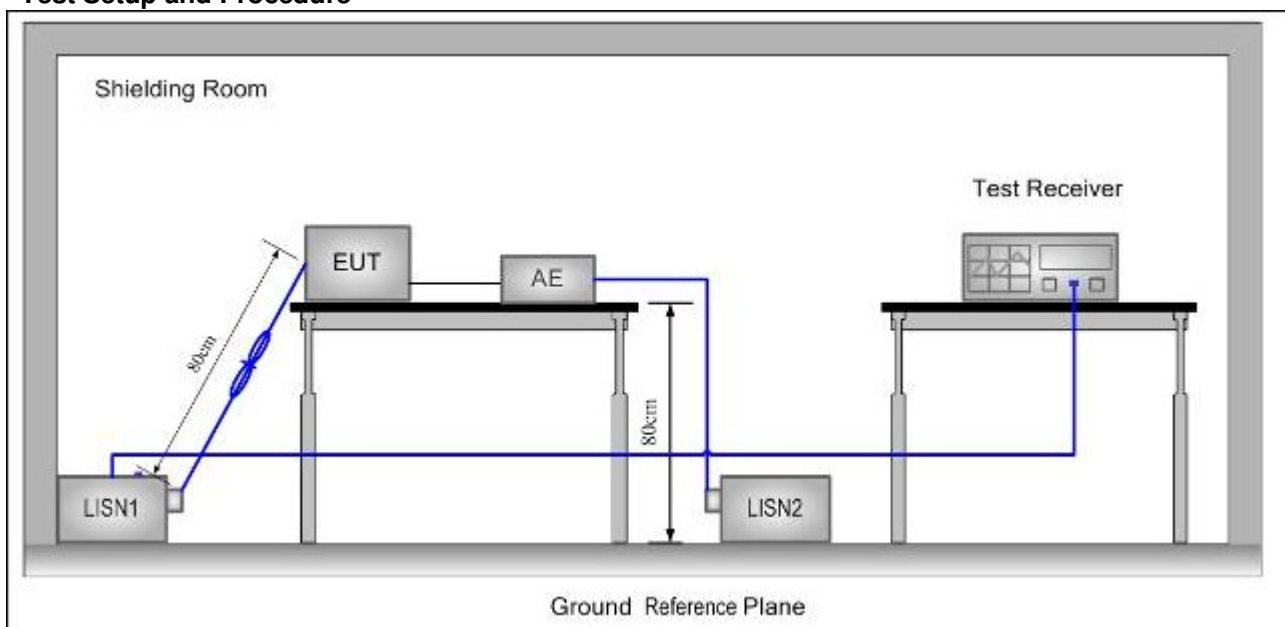
**Test mode:** Transmitting mode

**Limit:**

| Frequency range<br>MHz | Class B Limits<br>dB (μV) |          |
|------------------------|---------------------------|----------|
|                        | Quasi-peak                | Average  |
| 0.15 to 0.50           | 66 to 56                  | 56 to 46 |
| 0.50 to 5              | 56                        | 46       |
| 5 to 30                | 60                        | 50       |

Note1: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.  
Note2: The lower limit is applicable at the transition frequency.

#### Test Setup and Procedure



1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT was connected to a second LISN, which was bonded to the ground reference plane in the same way as the

LISN for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded

3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance was between the closest points of the LISN and the EUT. The mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m. All other units of the EUT and associated equipment was at least 0,8 m from the LISN.

## Measurement Data

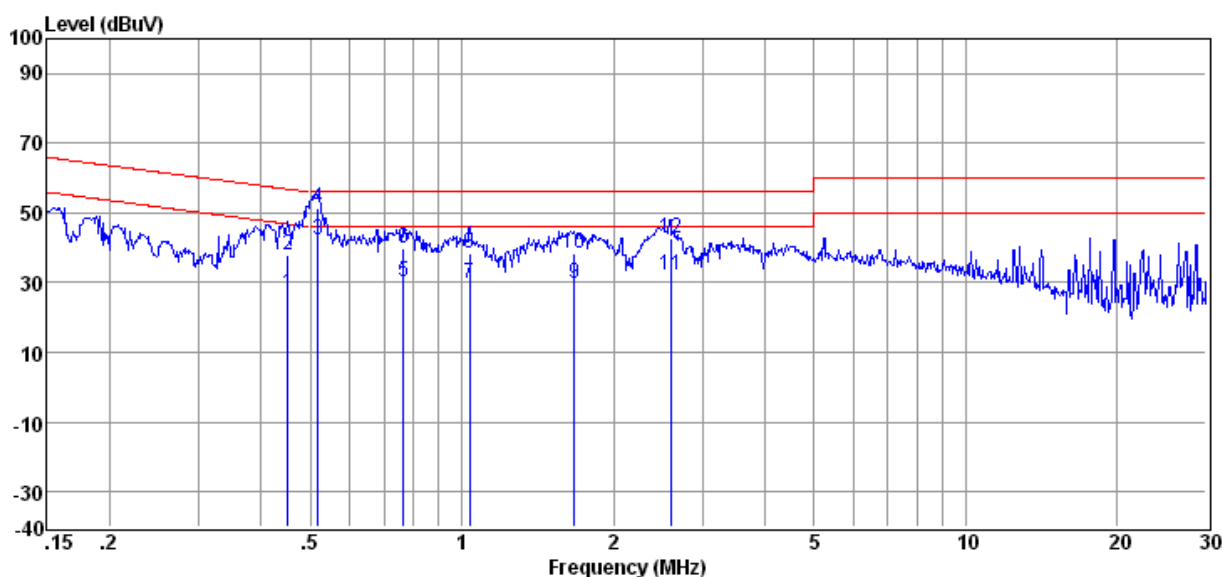
Pre-scan was performed with peak detected on all ports, Quasi-peak & average measurements were performed at the frequencies at which maximum peak emission level were detected.

Please see the attached Quasi-peak and Average test results.

Level = Read Level + LISN/ISN Factor + Cable Loss.

**Test Mode:** Transmitting mode

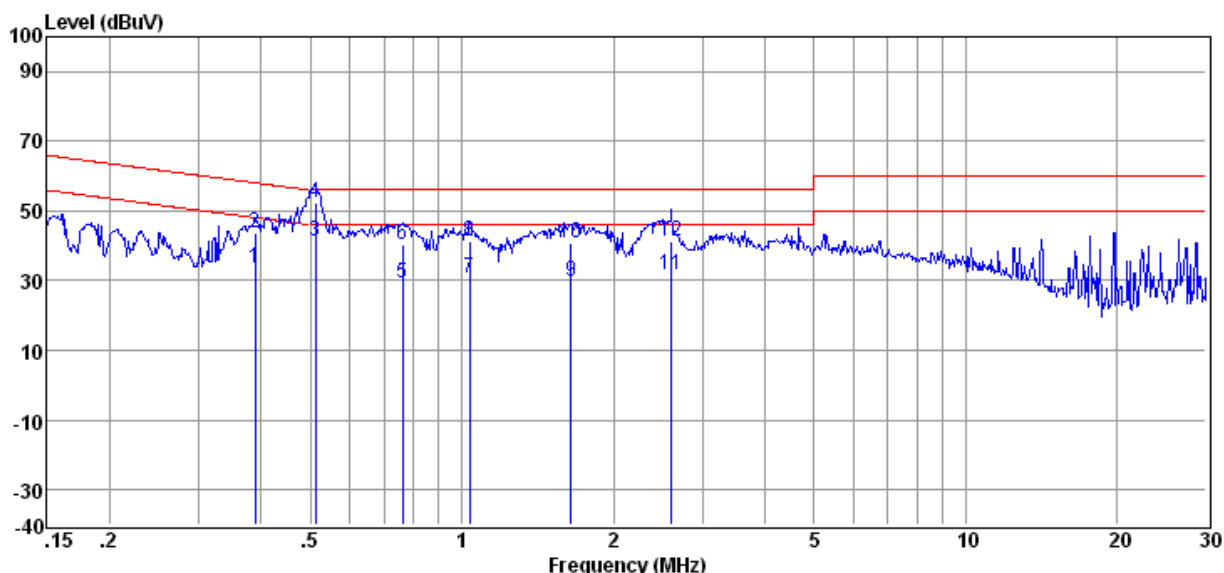
**Test Port:** AC Live Line



| Item   | Freq. | Read Level | LISN Factor | Cable Loss | Level  | Limit Line | Over Limit | Detector |
|--------|-------|------------|-------------|------------|--------|------------|------------|----------|
| (Mark) | (MHz) | (dBμV)     | (dB)        | (dB)       | (dBμV) | (dBμV)     | (dB)       |          |
| 1      | 0.452 | 26.65      | 0.18        | 0.10       | 26.93  | 46.85      | -19.92     | Average  |
| 2      | 0.452 | 37.45      | 0.18        | 0.10       | 37.73  | 56.85      | -19.12     | QP       |
| 3      | 0.518 | 41.73      | 0.20        | 0.10       | 42.03  | 46.00      | -3.97      | Average  |
| 4      | 0.518 | 51.00      | 0.20        | 0.10       | 51.30  | 56.00      | -4.70      | QP       |
| 5      | 0.767 | 29.75      | 0.20        | 0.10       | 30.05  | 46.00      | -15.95     | Average  |
| 6      | 0.767 | 39.38      | 0.20        | 0.10       | 39.68  | 56.00      | -16.32     | QP       |
| 7      | 1.037 | 29.55      | 0.20        | 0.10       | 29.85  | 46.00      | -16.15     | Average  |
| 8      | 1.037 | 38.00      | 0.20        | 0.10       | 38.30  | 56.00      | -17.70     | QP       |
| 9      | 1.671 | 29.26      | 0.27        | 0.10       | 29.63  | 46.00      | -16.37     | Average  |
| 10     | 1.671 | 38.24      | 0.27        | 0.10       | 38.61  | 56.00      | -17.39     | QP       |
| 11     | 2.594 | 31.84      | 0.30        | 0.12       | 32.26  | 46.00      | -13.74     | Average  |
| 12     | 2.594 | 42.30      | 0.30        | 0.12       | 42.72  | 56.00      | -13.28     | QP       |

**Test Mode:** Transmitting mode

**Test Port:** Neutral Line:



| Item   | Freq. | Read Level | LISN Factor | Cable Loss | Level  | Limit Line | Over Limit | Detector |
|--------|-------|------------|-------------|------------|--------|------------|------------|----------|
| (Mark) | (MHz) | (dBμV)     | (dB)        | (dB)       | (dBμV) | (dBμV)     | (dB)       |          |
| 1      | 0.389 | 33.57      | 0.16        | 0.10       | 33.83  | 48.08      | -14.25     | Average  |
| 2      | 0.389 | 43.34      | 0.16        | 0.10       | 43.60  | 58.08      | -14.48     | QP       |
| 3      | 0.513 | 41.20      | 0.20        | 0.10       | 41.50  | 46.00      | -4.50      | Average  |
| 4      | 0.513 | 52.23      | 0.20        | 0.10       | 52.53  | 56.00      | -3.47      | QP       |
| 5      | 0.763 | 29.14      | 0.20        | 0.10       | 29.44  | 46.00      | -16.56     | Average  |
| 6      | 0.763 | 40.26      | 0.20        | 0.10       | 40.56  | 56.00      | -15.44     | QP       |
| 7      | 1.037 | 30.31      | 0.20        | 0.10       | 30.61  | 46.00      | -15.39     | Average  |
| 8      | 1.037 | 40.99      | 0.20        | 0.10       | 41.29  | 56.00      | -14.71     | QP       |
| 9      | 1.645 | 29.17      | 0.26        | 0.10       | 29.53  | 46.00      | -16.47     | Average  |
| 10     | 1.645 | 40.25      | 0.26        | 0.10       | 40.61  | 56.00      | -15.39     | QP       |
| 11     | 2.608 | 31.06      | 0.30        | 0.12       | 31.48  | 46.00      | -14.52     | Average  |
| 12     | 2.608 | 40.93      | 0.30        | 0.12       | 41.35  | 56.00      | -14.65     | QP       |

#### 7.4 6dB Occupied Bandwidth

**Test Requirement:** FCC Part 15 C Section 15.247 (a)(2)  
RSS-Gen section 4.6.2

**Test Method:** ANSI C63.10 (2009) Section 6.9

**Test Date:** Mar.01, 2013

**Test Result:** Pass

**Exploratory Test Mode:** Transmitting mode

**Final Test Mode:** Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;  
6Mbps of rate is the worst case of 802.11g ; 6Mbps of rate is the worst  
case of 802.11n(HT20);

**Limit:**  $\geq 500$  kHz

**Test Procedure:**

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100KHz, VBW =3\* RBW, Span=30/50MHz, Sweep=auto
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat above procedures until all frequency measured were complete.

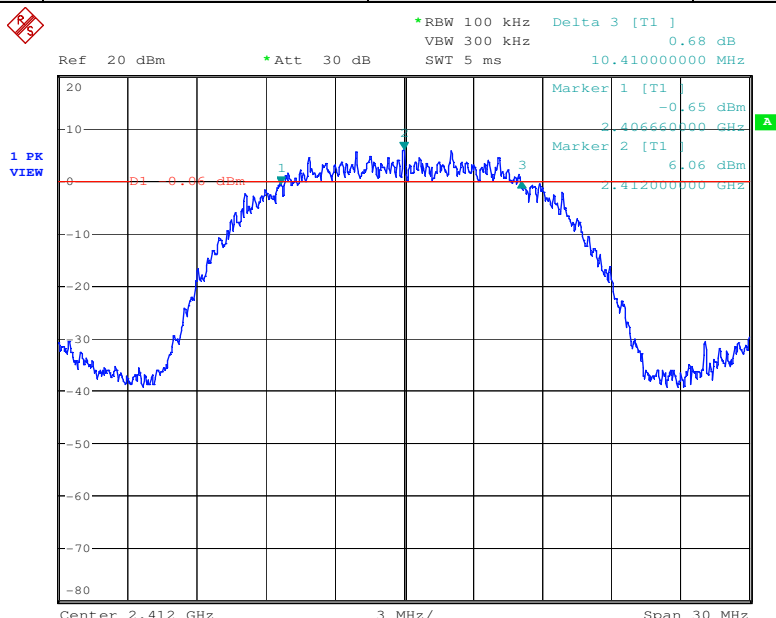
**Test date**

| EUT Mode      | Test Channel | 6dB Occupy Bandwidth (MHz) | Limit (kHz) | Results |
|---------------|--------------|----------------------------|-------------|---------|
| 802.11b       | Low          | 10.41                      | 500         | Pass    |
|               | Middle       | 10.56                      | 500         | Pass    |
|               | High         | 12.12                      | 500         | Pass    |
| 802.11g       | Low          | 16.53                      | 500         | Pass    |
|               | Middle       | 16.53                      | 500         | Pass    |
|               | High         | 16.56                      | 500         | Pass    |
| 802.11n(HT20) | Low          | 17.70                      | 500         | Pass    |
|               | Middle       | 17.73                      | 500         | Pass    |
|               | High         | 17.64                      | 500         | Pass    |



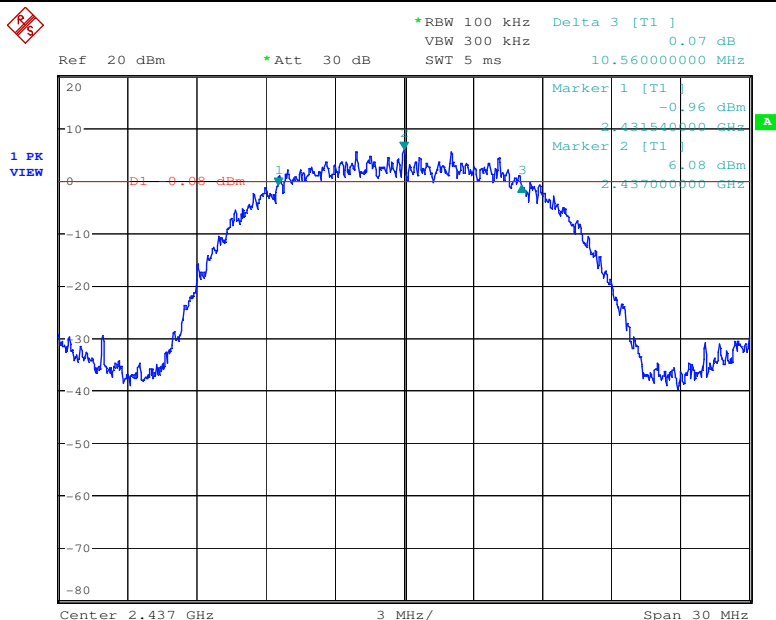
Test plot as follows:

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



Date: 1.MAR.2013 16:22:00

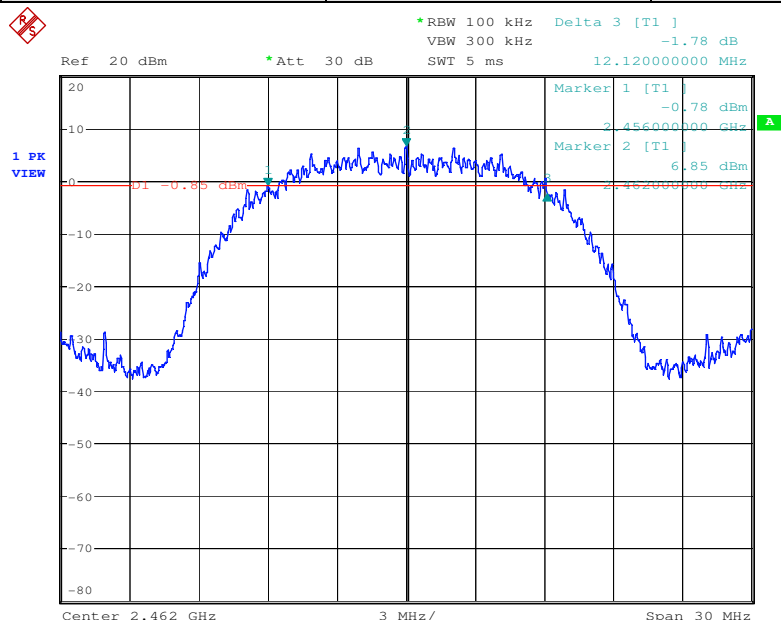
|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Middle |
|------------|---------|---------------|--------|



Date: 1.MAR.2013 16:23:46

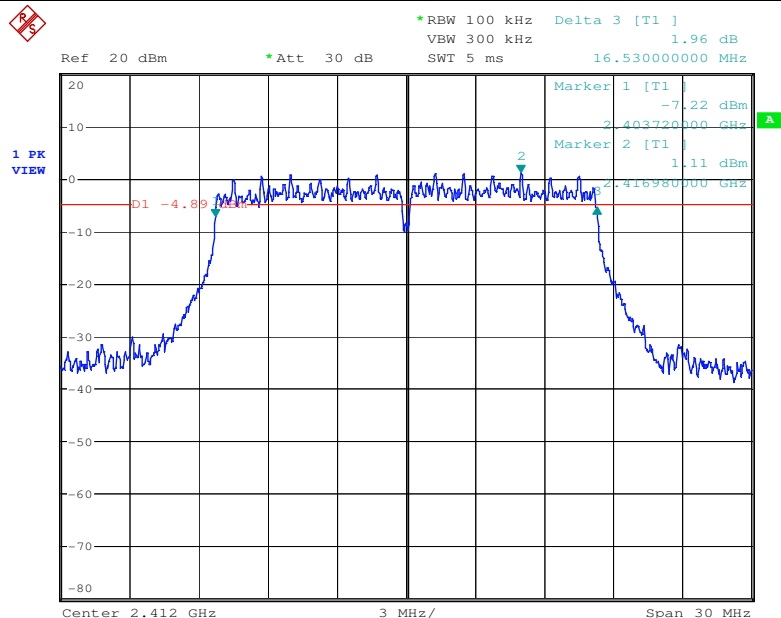


|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



Date: 1.MAR.2013 16:26:34

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

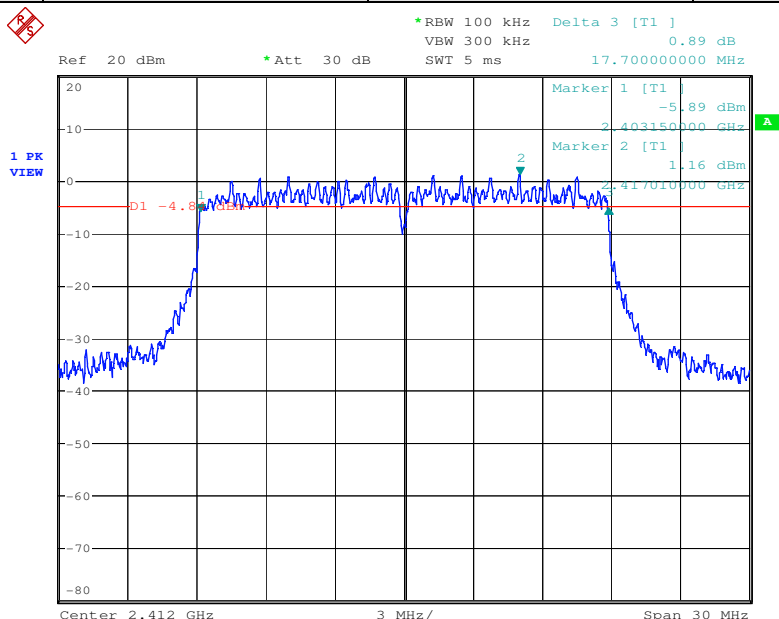


Date: 1.MAR.2013 16:31:41



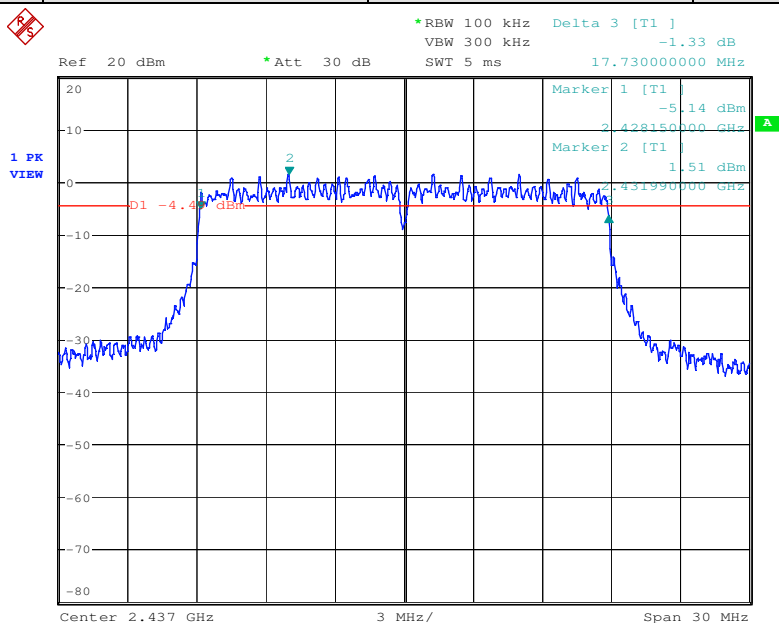


|            |               |               |        |
|------------|---------------|---------------|--------|
| Test mode: | 802.11n(HT20) | Test channel: | Lowest |
|------------|---------------|---------------|--------|



Date: 1.MAR.2013 16:34:46

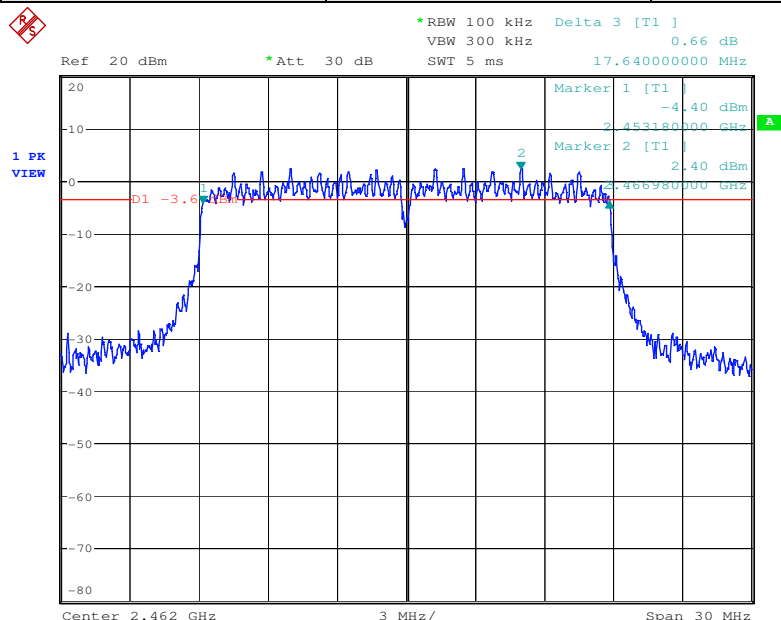
|            |               |               |        |
|------------|---------------|---------------|--------|
| Test mode: | 802.11n(HT20) | Test channel: | Middle |
|------------|---------------|---------------|--------|



Date: 1.MAR.2013 16:44:36



|            |               |               |         |
|------------|---------------|---------------|---------|
| Test mode: | 802.11n(HT20) | Test channel: | Highest |
|------------|---------------|---------------|---------|

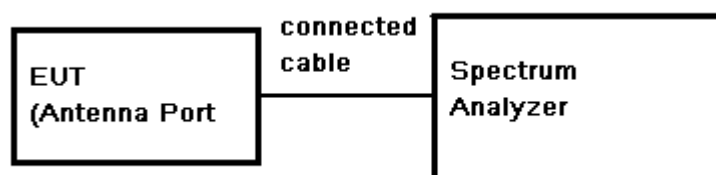


Date: 1.MAR.2013 16:45:57

## 7.5 Conducted Peak Output Power

|                               |                                                                                                                                                                            |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | FCC Part 15.247 Section 15.247(b)(3)<br>RSS 210 A 8.4(4)                                                                                                                   |
| <b>Test Method:</b>           | ANSI C63.10 (2009) Section 6.10                                                                                                                                            |
| <b>Test Date:</b>             | Mar.01, 2013                                                                                                                                                               |
| <b>Test Result:</b>           | Pass                                                                                                                                                                       |
| <b>Test Limit:</b>            | 30dBm                                                                                                                                                                      |
| <b>Exploratory Test Mode:</b> | Transmitting mode                                                                                                                                                          |
| <b>Final Test Mode:</b>       | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;<br>6Mbps of rate is the worst case of 802.11g ; 6Mbps of rate is the worst<br>case of 802.11n(HT20) |

### Test Configuration:



### Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1 MHz. VBW = 3 MHz. Span= fully encompass the bandwidth, Sweep = auto; Detector Function = Peak Trace mode=max hold
3. Use the spectrum analyzer's channel power measurement function with the band limits set equal to the bandwidth edges.
4. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

### Test Results record:

Pre-scan under all rate at lowest channel 1

|             |               |        |          |              |        |        |          |              |
|-------------|---------------|--------|----------|--------------|--------|--------|----------|--------------|
| Mode        | 802.11b       |        |          |              |        |        |          |              |
| Data Rate   | 1Mbps         | 2Mbps  | 5.5Mbps  | 11Mbps       |        |        |          |              |
| Power (dBm) | 19.42         | 19.31  | 20.77    | <b>21.93</b> |        |        |          |              |
| Mode        | 802.11g       |        |          |              |        |        |          |              |
| Data Rate   | 6Mbps         | 9Mbps  | 12Mbps   | 18Mbps       | 24Mbps | 36Mbps | 48Mbps   | 54Mbps       |
| Power (dBm) | 20.45         | 20.38  | 19.85    | 20.00        | 20.87  | 20.69  | 20.92    | <b>21.25</b> |
| Mode        | 802.11n(HT20) |        |          |              |        |        |          |              |
| Data Rate   | 6.5Mbps       | 13Mbps | 19.5Mbps | 26Mbps       | 39Mbps | 52Mbps | 58.5Mbps | 65Mbps       |
| Power (dBm) | 20.07         | 19.93  | 19.97    | 20.47        | 20.66  | 20.69  | 21.02    | <b>21.07</b> |

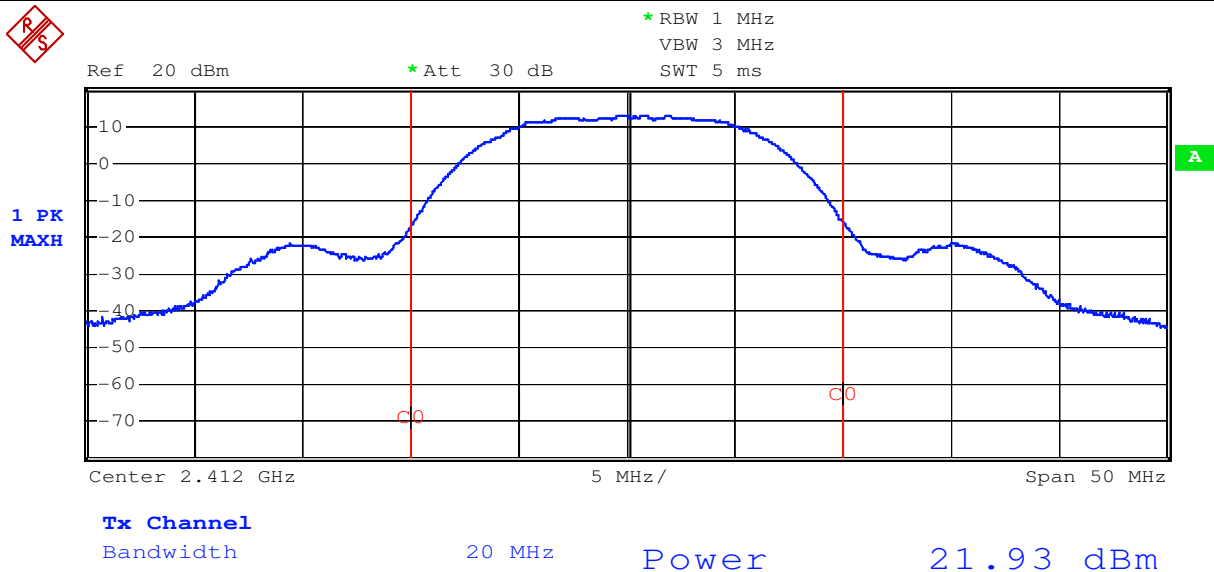


Final test Results:

| Test mode       | Channel | Reading Peak Power (dBm) | Cable Loss (dB) | Output Peak Power (dBm) | Peak Power Limit (dBm) | Result |
|-----------------|---------|--------------------------|-----------------|-------------------------|------------------------|--------|
| 802.11b         | Low     | 21.93                    | 1.5             | 23.43                   | 30                     | PASS   |
|                 | Mid     | 21.80                    | 1.5             | 23.30                   | 30                     | PASS   |
|                 | High    | 22.55                    | 1.5             | 24.05                   | 30                     | PASS   |
| 802.11g         | Low     | 21.25                    | 1.5             | 22.75                   | 30                     | PASS   |
|                 | Mid     | 21.61                    | 1.5             | 23.11                   | 30                     | PASS   |
|                 | High    | 22.44                    | 1.5             | 23.94                   | 30                     | PASS   |
| 802.11n<br>HT20 | Low     | 21.07                    | 1.5             | 22.57                   | 30                     | PASS   |
|                 | Mid     | 21.48                    | 1.5             | 22.98                   | 30                     | PASS   |
|                 | High    | 22.28                    | 1.5             | 23.78                   | 30                     | PASS   |

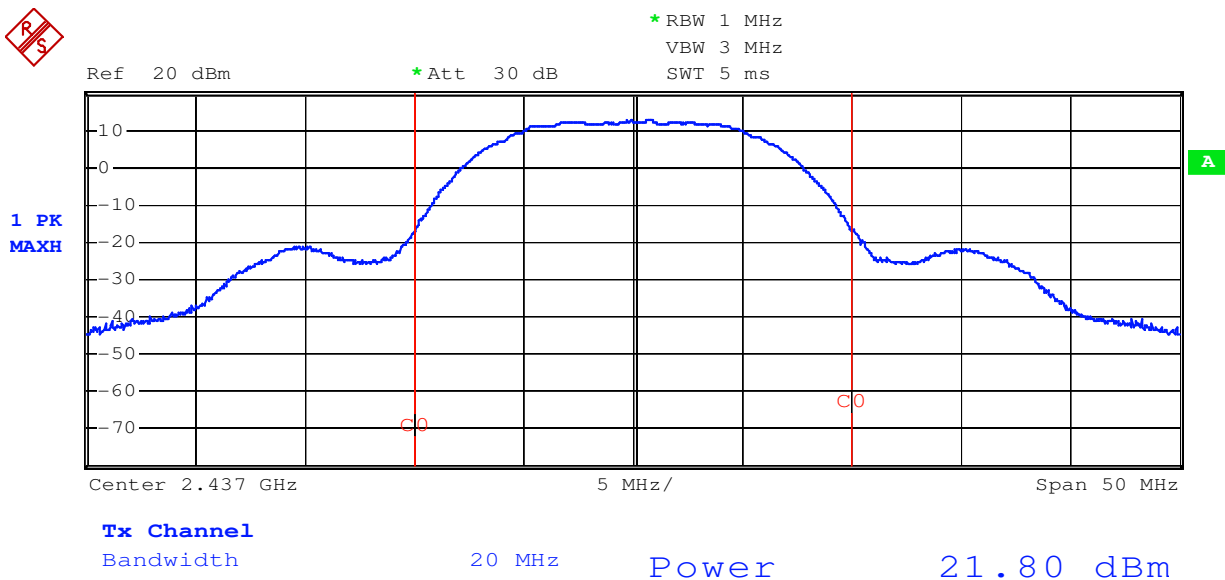
Test result plot as follows:

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

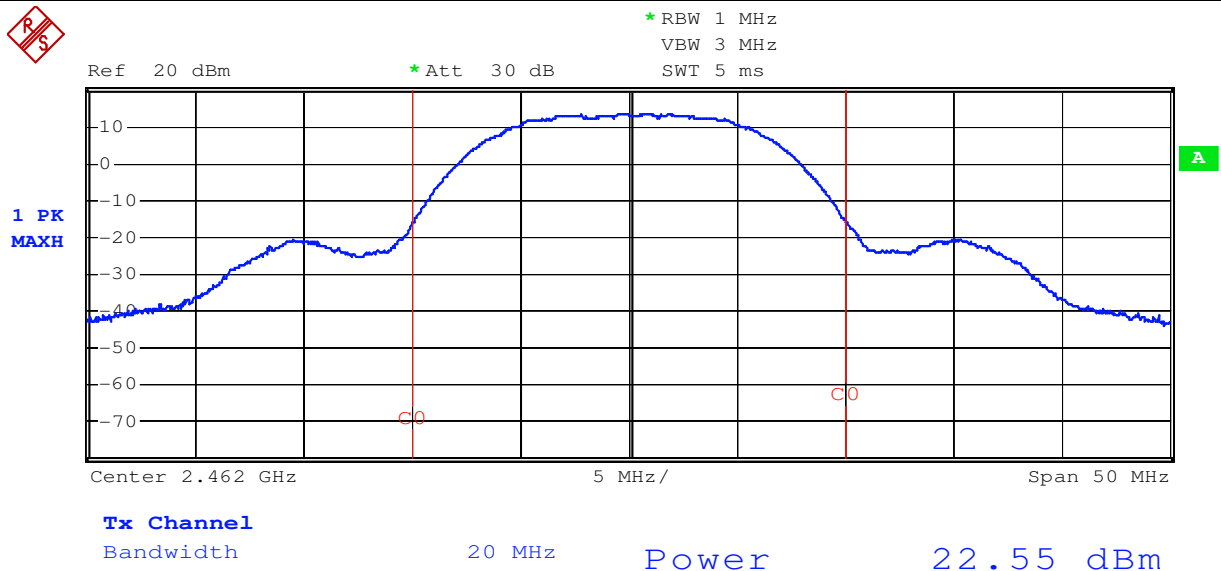




|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Middle |
|------------|---------|---------------|--------|

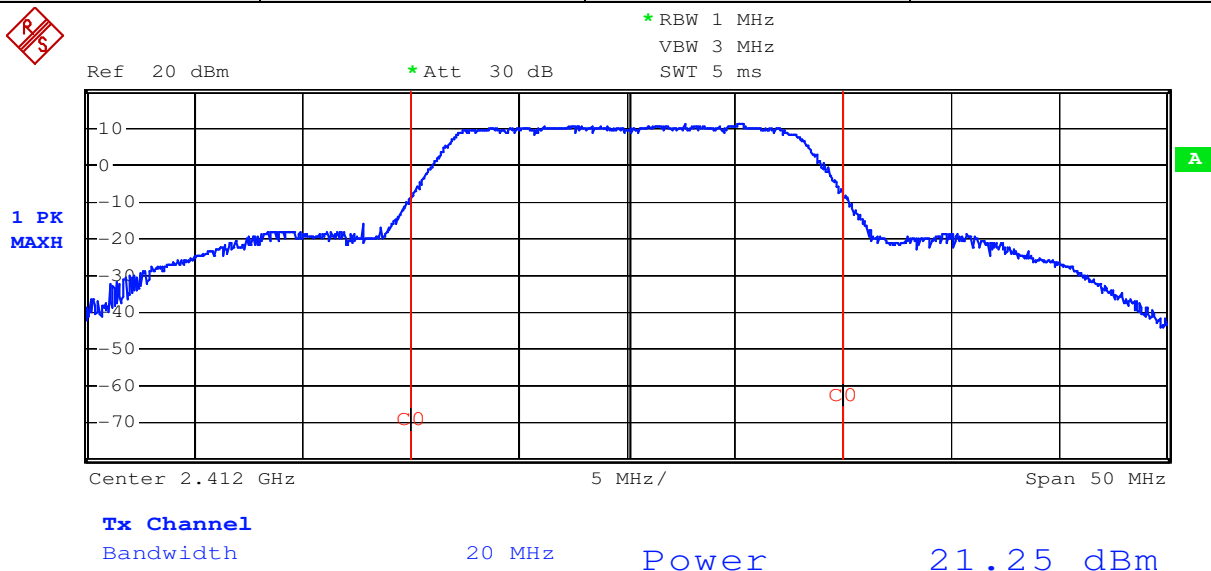


|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|

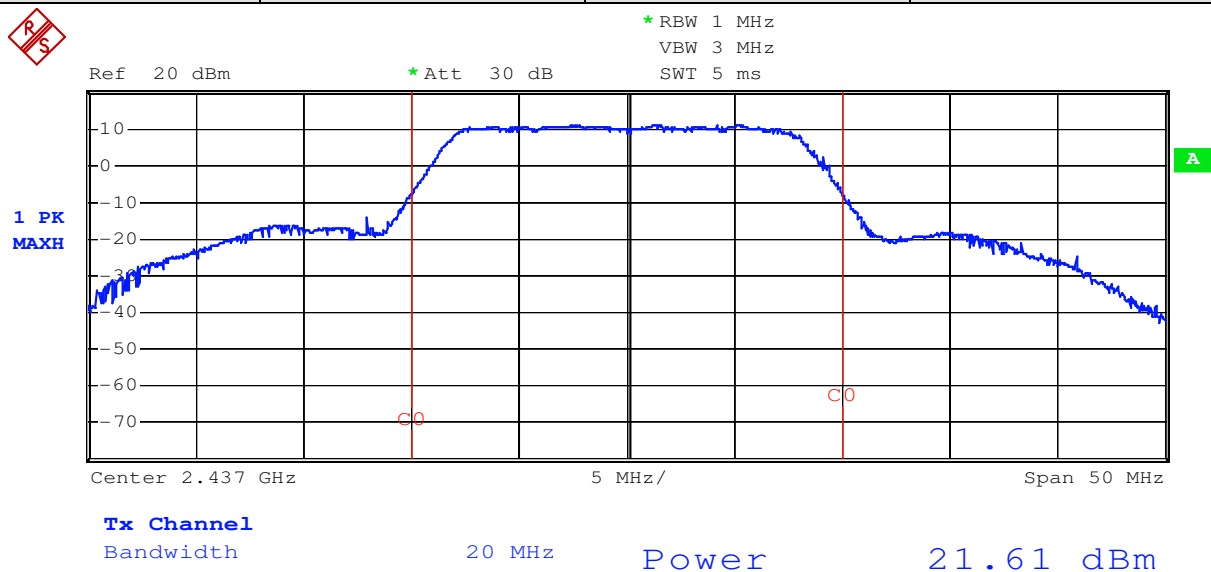




|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|

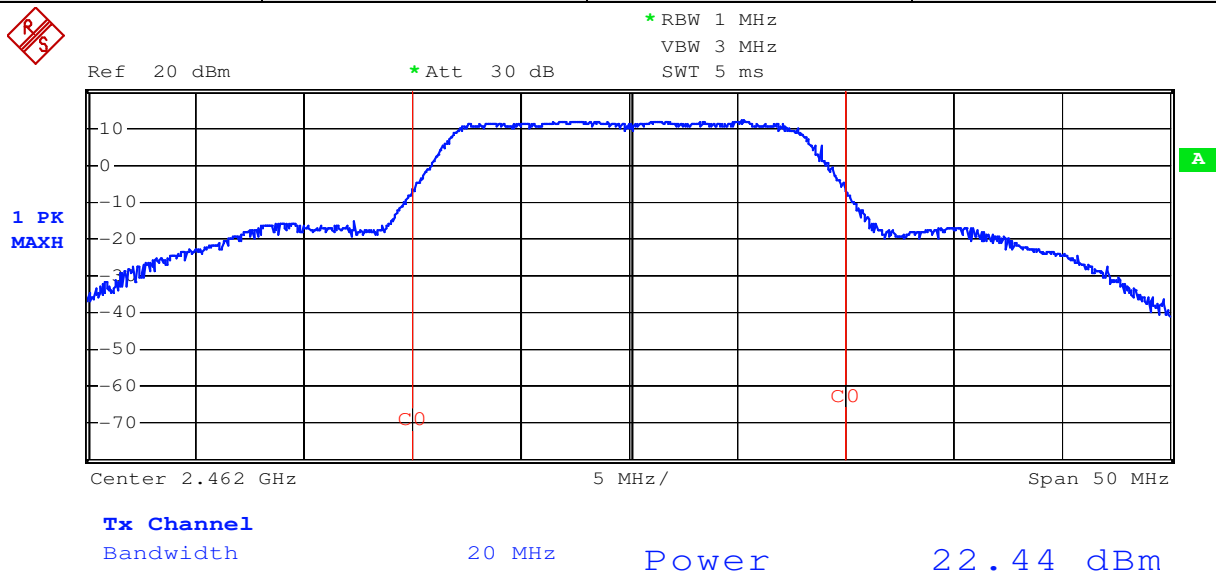


|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Middle |
|------------|---------|---------------|--------|

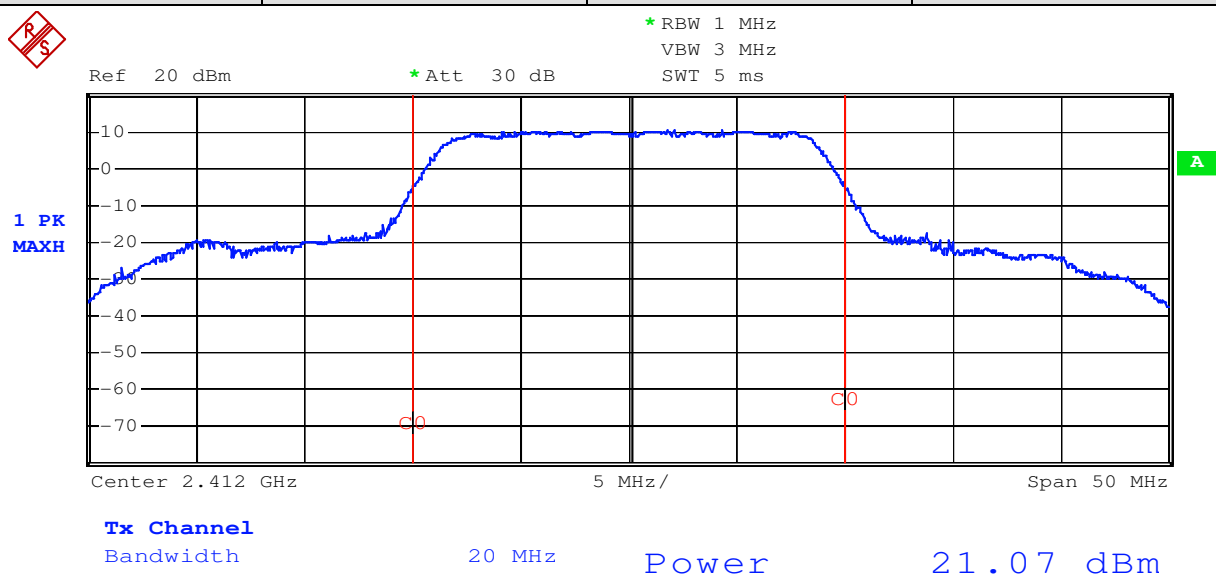




|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|

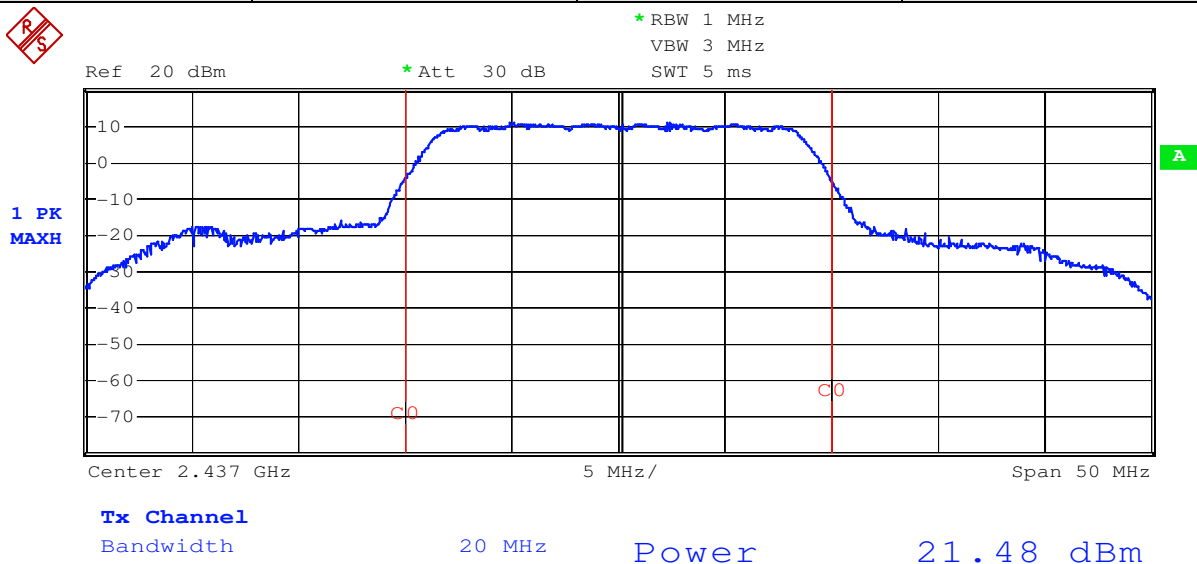


|            |              |               |        |
|------------|--------------|---------------|--------|
| Test mode: | 802.11n HT20 | Test channel: | Lowest |
|------------|--------------|---------------|--------|

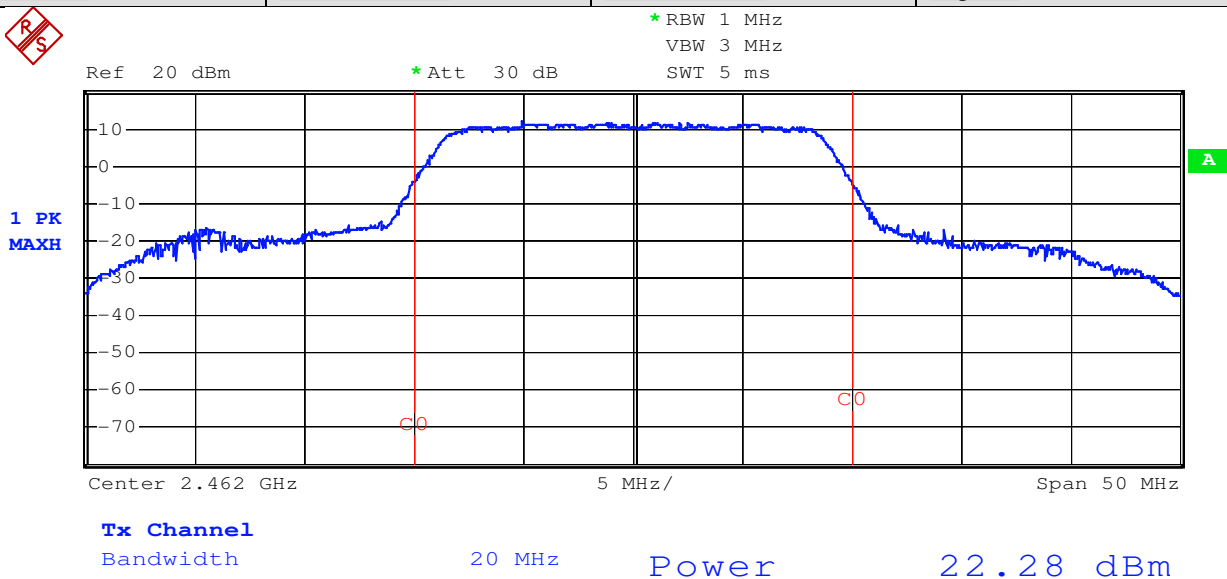




|            |              |               |        |
|------------|--------------|---------------|--------|
| Test mode: | 802.11n HT20 | Test channel: | Middle |
|------------|--------------|---------------|--------|



|            |              |               |         |
|------------|--------------|---------------|---------|
| Test mode: | 802.11n HT20 | Test channel: | Highest |
|------------|--------------|---------------|---------|



## 7.6 Peak Power Spectral Density

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | FCC Part 15, Subpart C Section 15.247 (e)<br>RSS 210 A 8.2(b)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Test Method:</b>           | ANSI C63.10,2009 Section 6.11.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Test Date:</b>             | Mar.01, 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Test Result:</b>           | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Test Limit:</b>            | 8dBm/3kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Exploratory Test Mode:</b> | Transmitting mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Final Test Mode:</b>       | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6Mbps of rate is the worst case of 802.11n (HT20)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Measurement Procedure:</b> | <ol style="list-style-type: none"> <li>1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.</li> <li>2. Set the spectrum analyzer: Centre Frequency= Channel Frequency, RBW = 3 kHz VBW = 10 kHz. Span= fully encompass the bandwidth, Sweep = auto; Detector Function = Peak Trace mode=max hold,</li> <li>3. Set MKR=Centre Frequency, Trace=Clear Write.</li> <li>4. Adjust the Span = 300 kHz, Sweep Time=100s, Trace=Max Hold, MKR=Peak Search.</li> <li>5. Record the marker level for the particular mode.</li> <li>6. Repeat these steps for other channel and device modes.</li> </ol> |

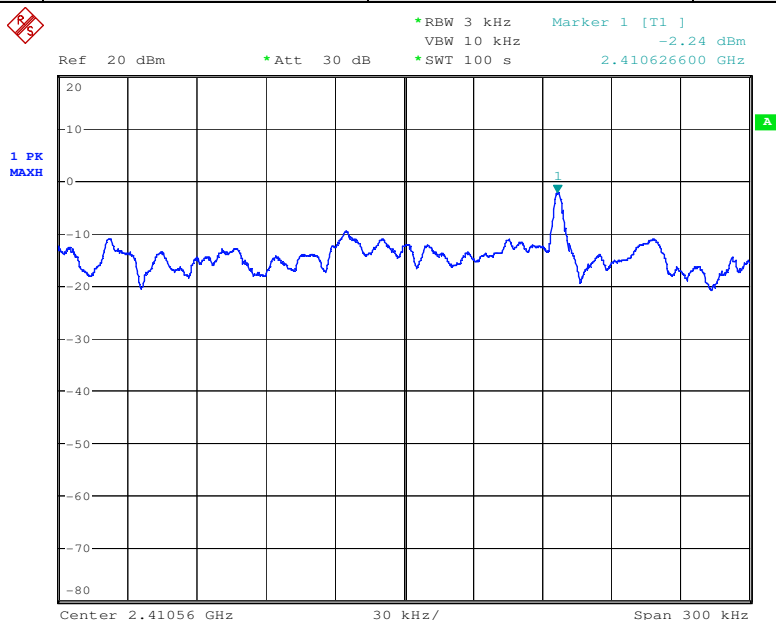
### Test Results record:

| Test mode       | Channel | Reading (dBm) | Cable Loss (dB) | RF Power Density (dBm) | Peak Power Limit (dBm) | Result |
|-----------------|---------|---------------|-----------------|------------------------|------------------------|--------|
| 802.11b         | Low     | -2.24         | 1.5             | -0.74                  | 8                      | PASS   |
|                 | Mid     | -8.17         | 1.5             | -6.67                  | 8                      | PASS   |
|                 | High    | 3.90          | 1.5             | 5.40                   | 8                      | PASS   |
| 802.11g         | Low     | -15.98        | 1.5             | -14.48                 | 8                      | PASS   |
|                 | Mid     | -15.08        | 1.5             | -13.58                 | 8                      | PASS   |
|                 | High    | -14.11        | 1.5             | -12.61                 | 8                      | PASS   |
| 802.11n<br>HT20 | Low     | -16.17        | 1.5             | -14.67                 | 8                      | PASS   |
|                 | Mid     | -15.70        | 1.5             | -14.20                 | 8                      | PASS   |
|                 | High    | -15.02        | 1.5             | -13.52                 | 8                      | PASS   |



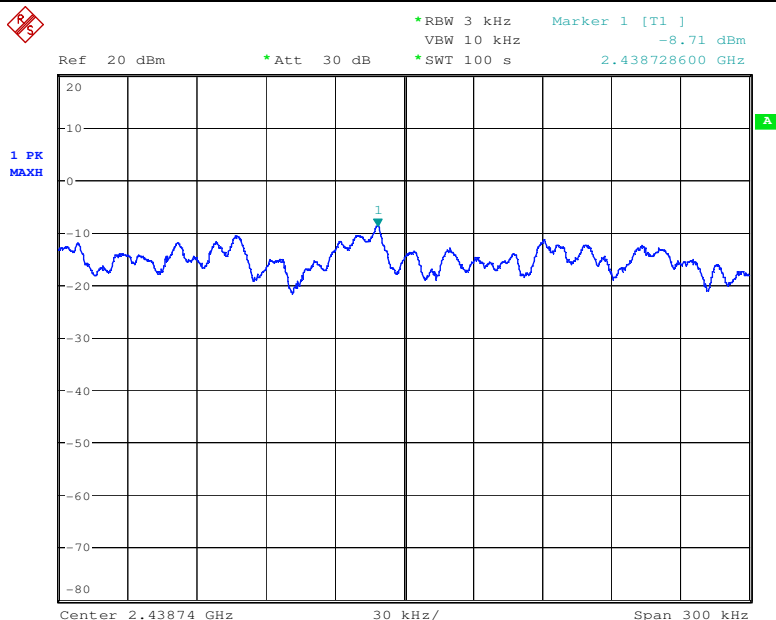
Test plot as follows:

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



Date: 1.MAR.2013 17:58:36

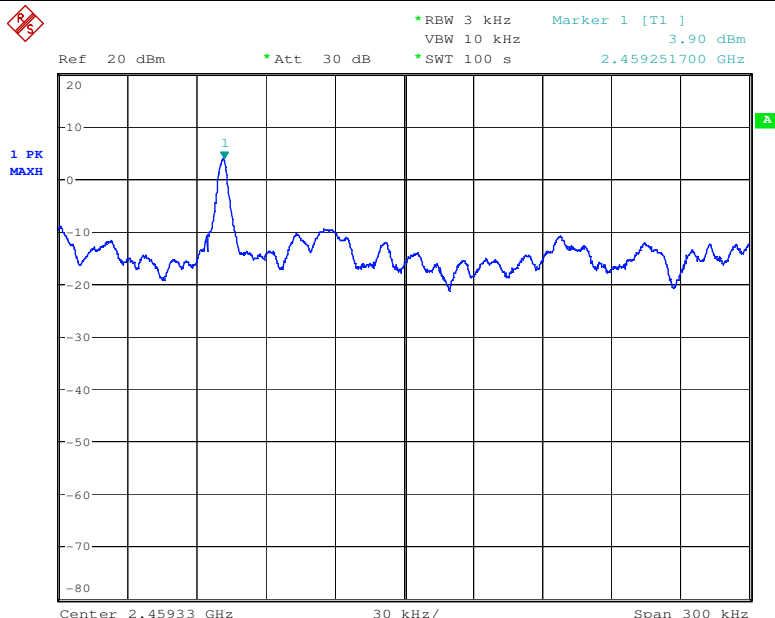
|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Middle |
|------------|---------|---------------|--------|



Date: 1.MAR.2013 18:02:30

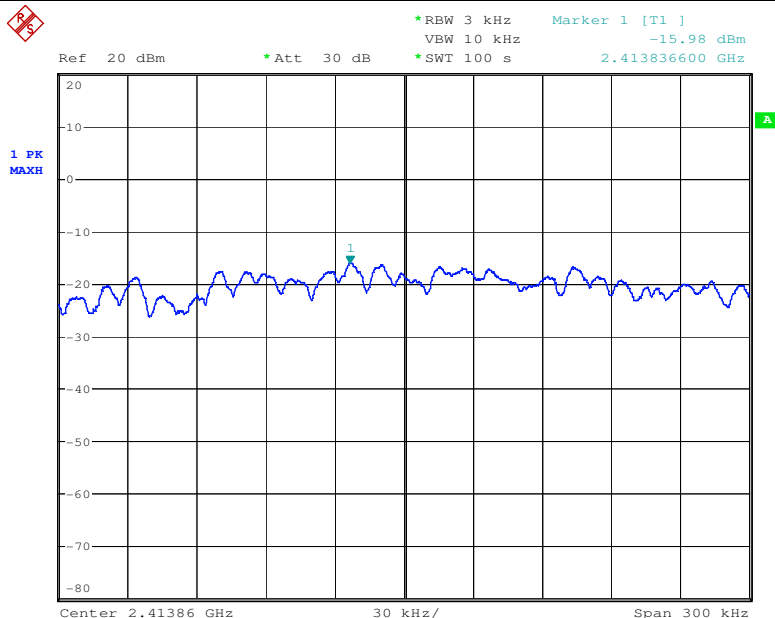


|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



Date: 1.MAR.2013 18:19:17

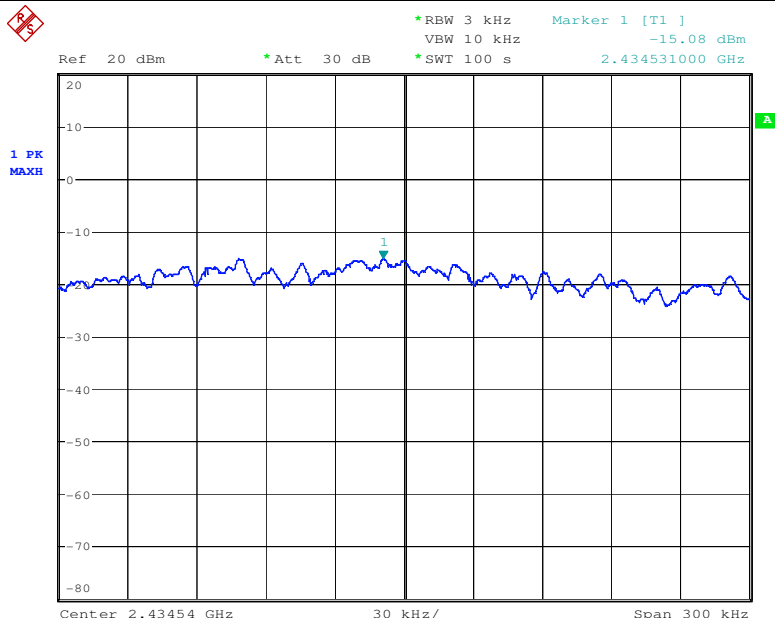
|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|



Date: 1.MAR.2013 18:35:08

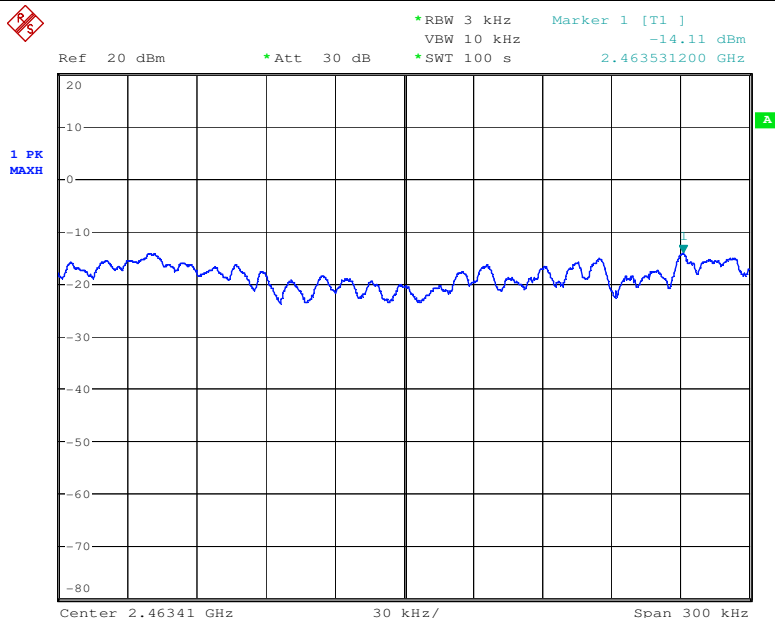


|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Middle |
|------------|---------|---------------|--------|



Date: 1.MAR.2013 18:30:07

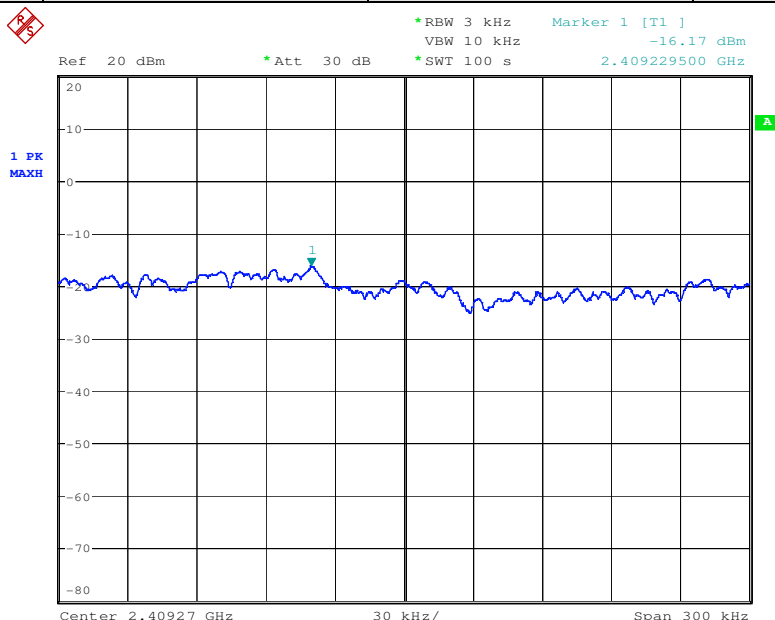
|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|



Date: 1.MAR.2013 18:24:44

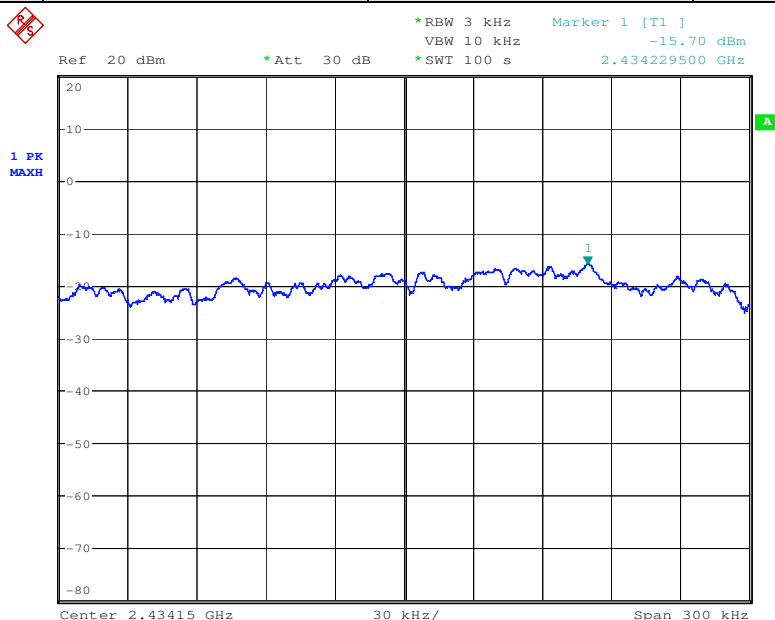


|            |               |               |        |
|------------|---------------|---------------|--------|
| Test mode: | 802.11n(HT20) | Test channel: | Lowest |
|------------|---------------|---------------|--------|



Date: 1.MAR.2013 18:40:53

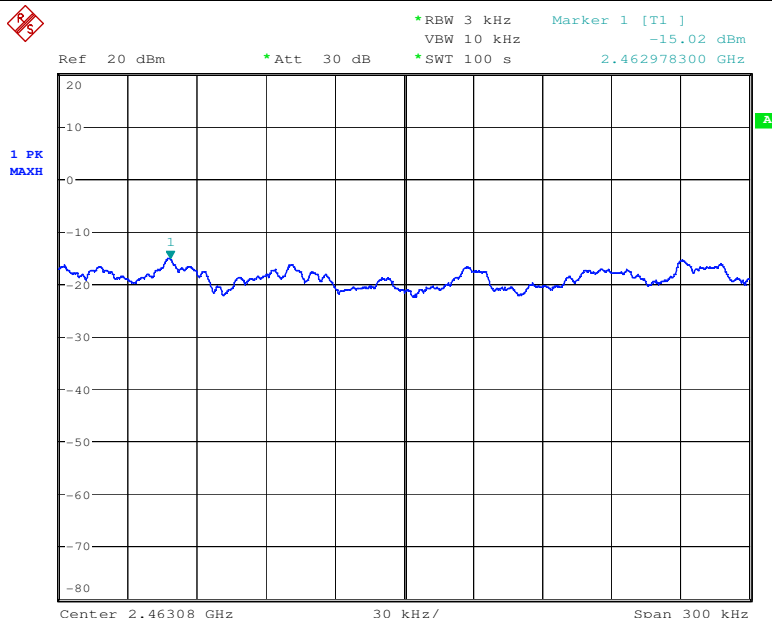
|            |               |               |        |
|------------|---------------|---------------|--------|
| Test mode: | 802.11n(HT20) | Test channel: | Middle |
|------------|---------------|---------------|--------|



Date: 1.MAR.2013 18:45:34



|            |               |               |         |
|------------|---------------|---------------|---------|
| Test mode: | 802.11n(HT20) | Test channel: | Highest |
|------------|---------------|---------------|---------|

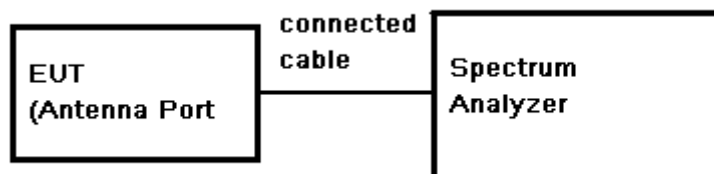


Date: 1.MAR.2013 18:50:13

## 7.7 Conducted Spurious Emissions

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | FCC Part 15 Section 15.247(d)<br><b>RSS 210 A 8.5</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Test Method:</b>           | ANSI C63.10:2009 Clause 7.7.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Test Date:</b>             | Mar.01, 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Test Result:</b>           | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Limit:</b>                 | (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. provided the transmitter demonstrates compliance with the peak conducted power limits. |
| <b>Exploratory Test Mode:</b> | Transmitting mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Final Test Mode:</b>       | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6Mbps of rate is the worst case of 802.11n(HT20) .                                                                                                                                                                                                                                                                                                                                    |

### Test Configuration:

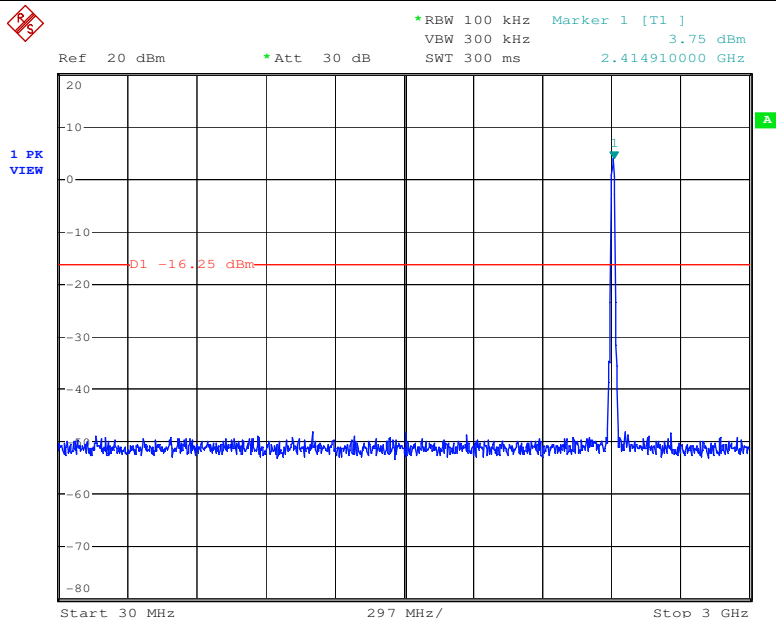


|                        |                                                                                                                                                                                                                                                                                     |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Procedure:</b> | <ol style="list-style-type: none"> <li>1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.</li> <li>2. Set the spectrum analyzer: RBW = 100KHz. VBW &gt;= RBW. Sweep = auto; Detector Function = Peak (Max. hold).</li> </ol> |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

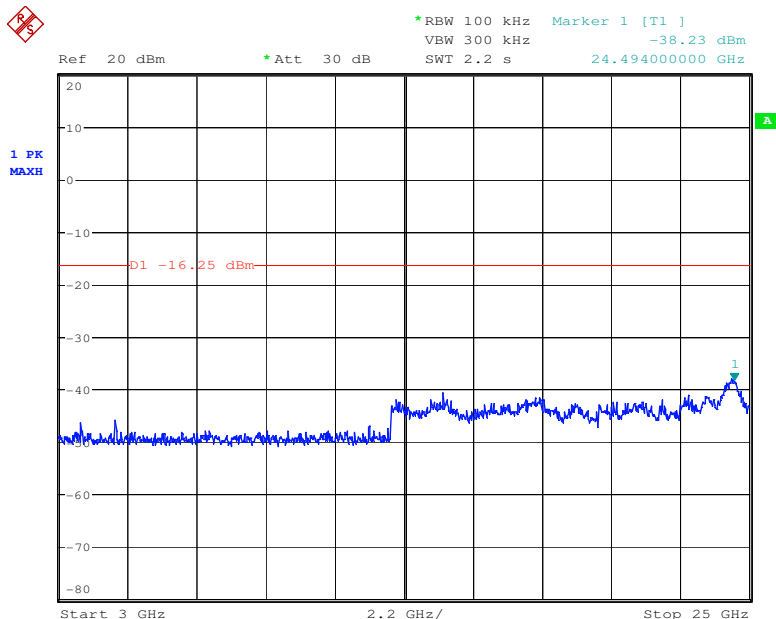


Test plot as follows:

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



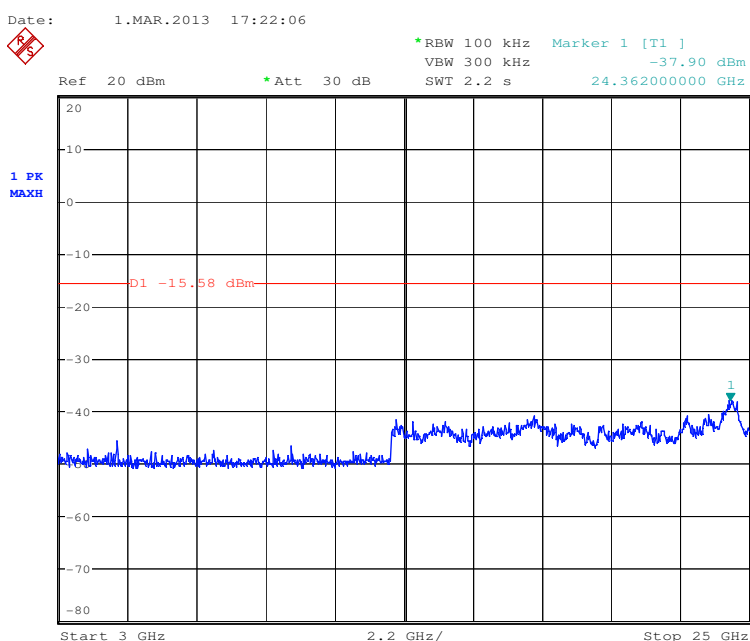
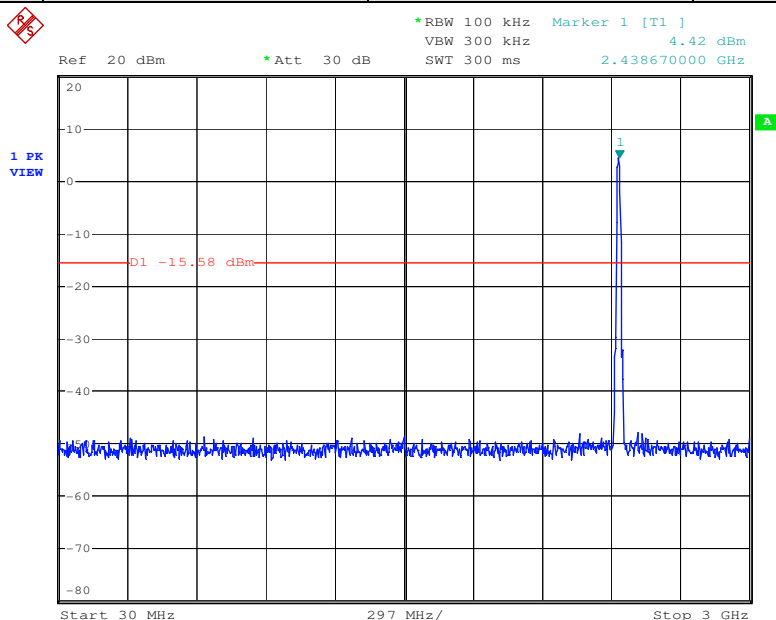
Date: 1.MAR.2013 17:19:57



Date: 1.MAR.2013 17:20:58



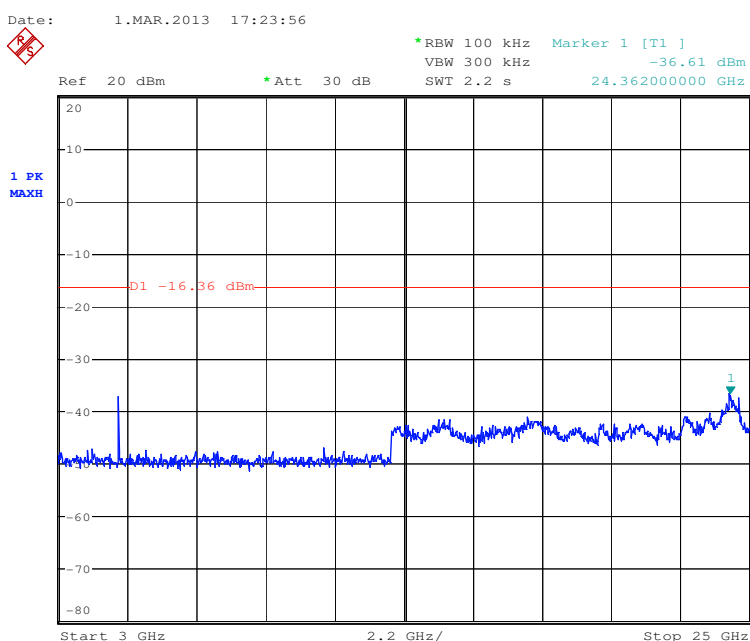
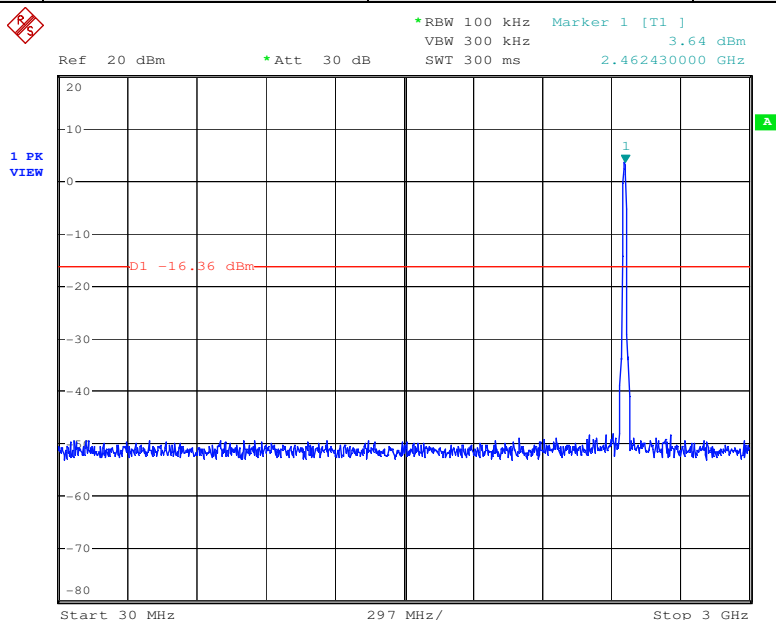
|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11b | Test channel: | Middle |
|------------|---------|---------------|--------|



Date: 1.MAR.2013 17:22:48



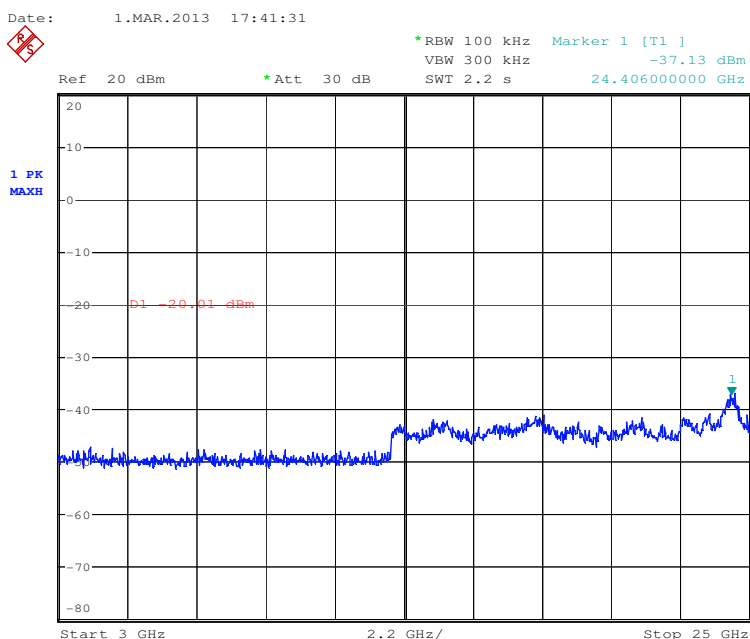
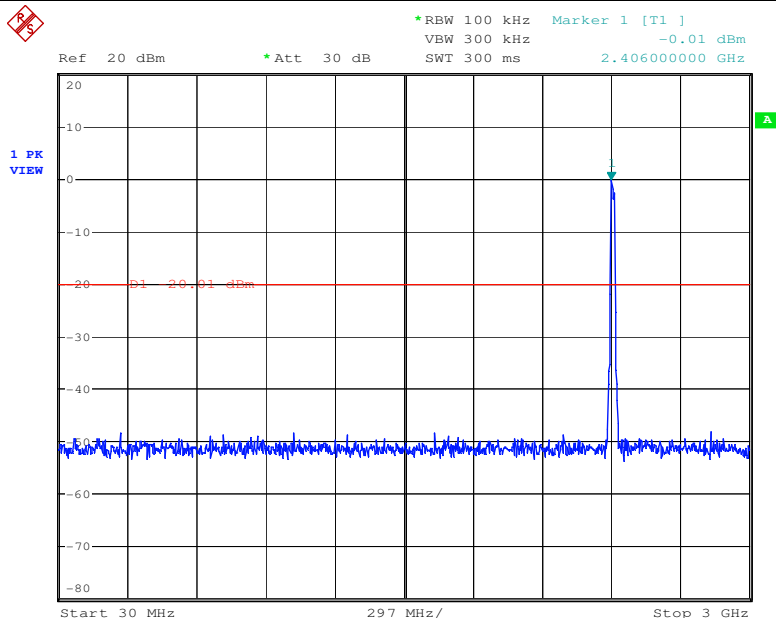
|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



Date: 1.MAR.2013 17:24:46



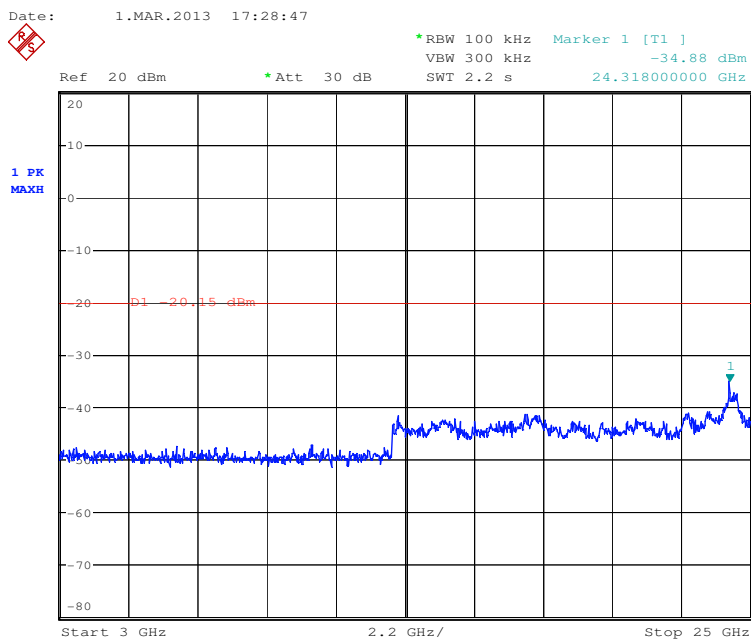
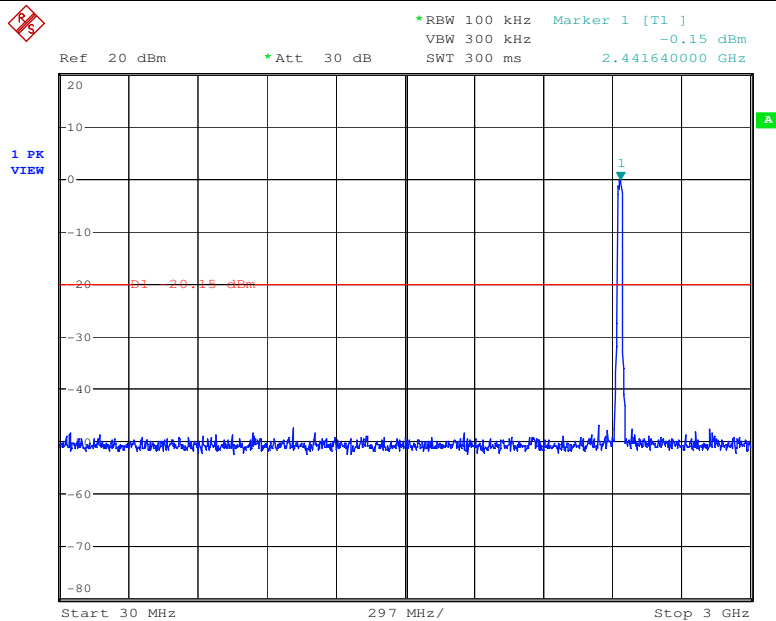
|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Lowest |
|------------|---------|---------------|--------|



Date: 1.MAR.2013 17:42:05



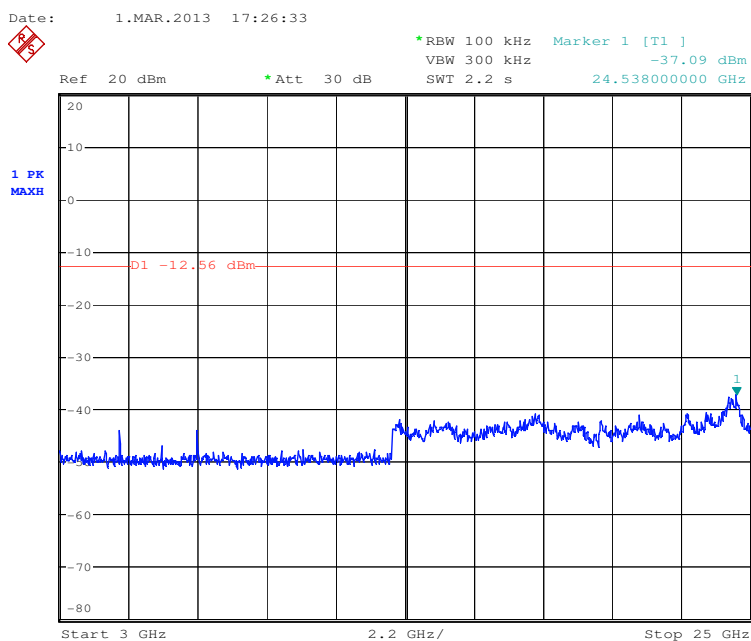
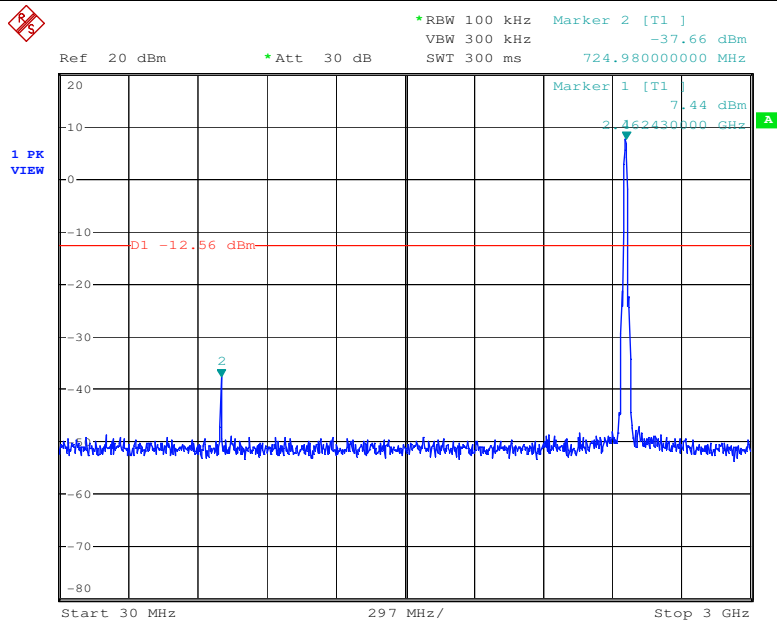
|            |         |               |        |
|------------|---------|---------------|--------|
| Test mode: | 802.11g | Test channel: | Middle |
|------------|---------|---------------|--------|



Date: 1.MAR.2013 17:29:29



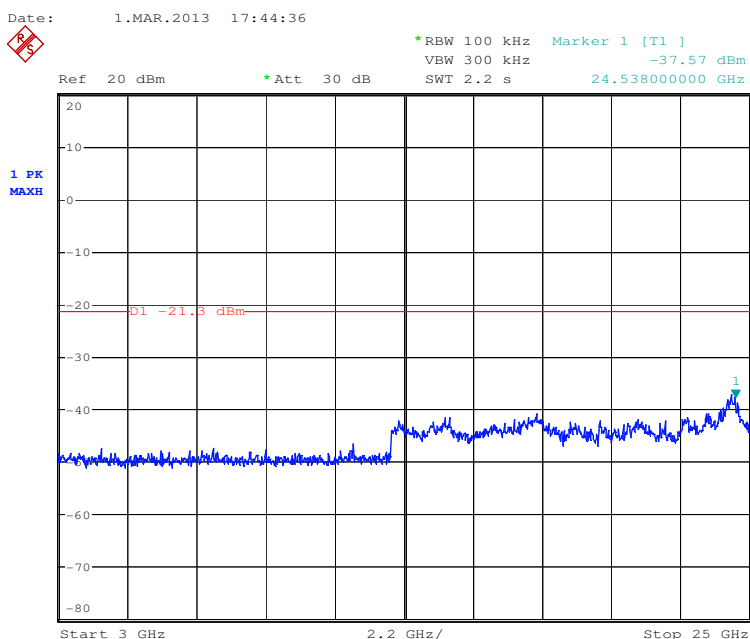
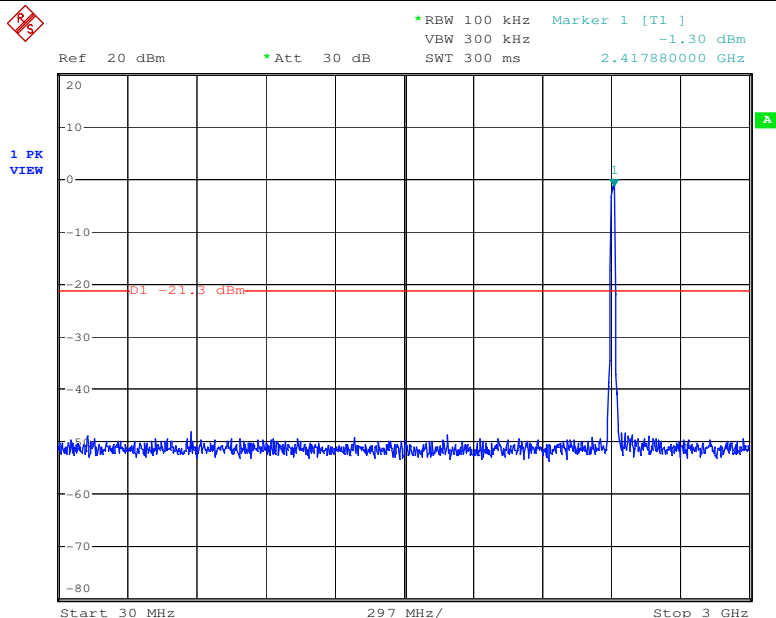
|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|



Date: 1.MAR.2013 17:27:16



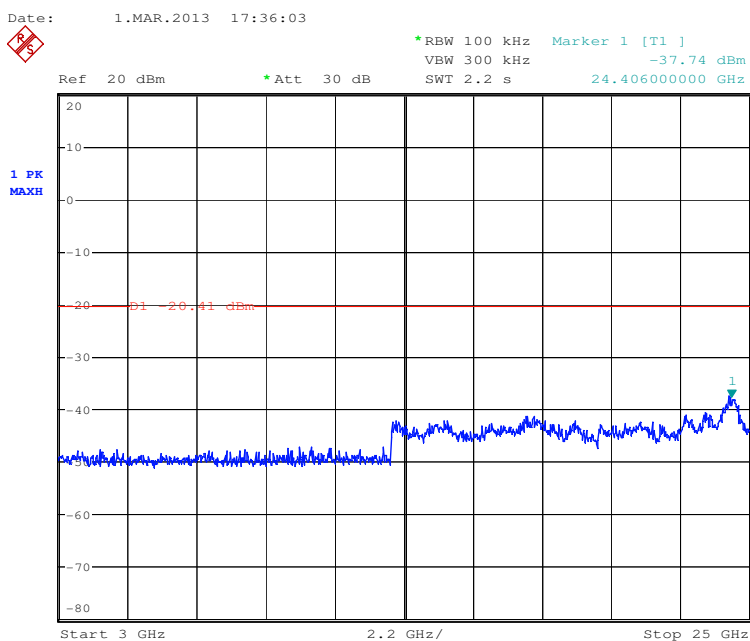
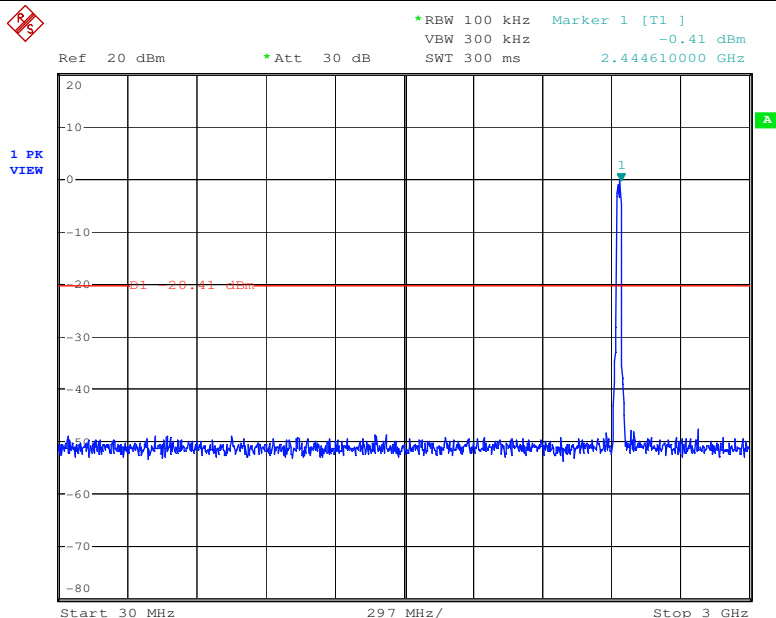
|            |              |               |        |
|------------|--------------|---------------|--------|
| Test mode: | 802.11n HT20 | Test channel: | Lowest |
|------------|--------------|---------------|--------|



Date: 1.MAR.2013 17:45:26



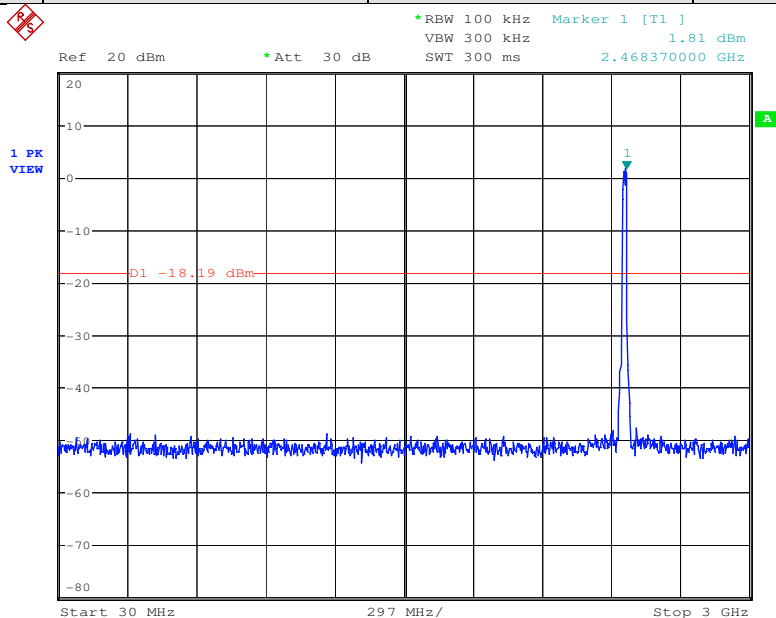
|            |              |               |        |
|------------|--------------|---------------|--------|
| Test mode: | 802.11n HT20 | Test channel: | Middle |
|------------|--------------|---------------|--------|



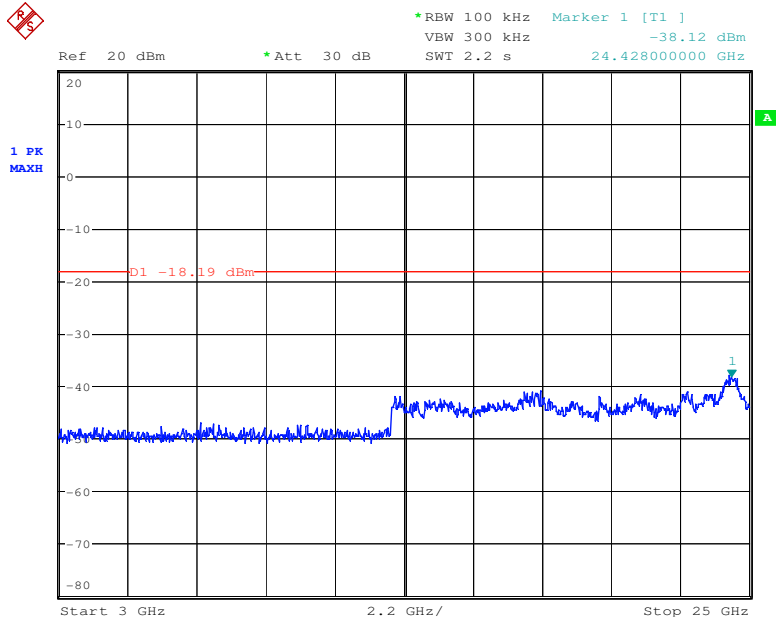
Date: 1.MAR.2013 17:36:47



|            |              |               |         |
|------------|--------------|---------------|---------|
| Test mode: | 802.11n HT20 | Test channel: | Highest |
|------------|--------------|---------------|---------|



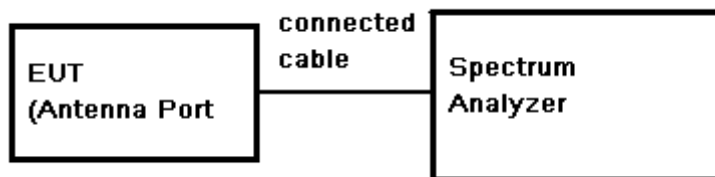
Date: 1.MAR.2013 17:37:59



Date: 1.MAR.2013 17:38:50

## 7.8 Conducted Band-edge

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | FCC Part 15 Section 15.247(d)<br><b>RSS 210 A 8.5</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Test Method:</b>           | ANSI C63.10:2009 Clause 7.7.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Test Date:</b>             | Mar.01, 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Test Result:</b>           | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Limit:</b>                 | (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. provided the transmitter demonstrates compliance with the peak conducted power limits. |
| <b>Exploratory Test Mode:</b> | Hopping transmitting with all kind of modulation and all kind of data type                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Final Test Mode:</b>       | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6Mbps of rate is the worst case of 802.11n(HT20)                                                                                                                                                                                                                                                                                                                                       |
| <b>Test Configuration:</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

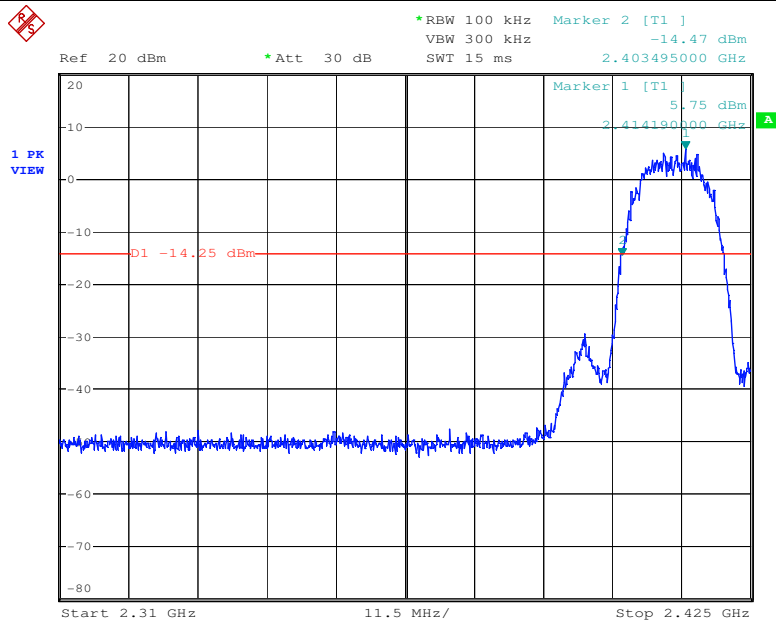


|                        |                                                                                                                                                                                                                                                                                     |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Procedure:</b> | <ol style="list-style-type: none"> <li>1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.</li> <li>2. Set the spectrum analyzer: RBW = 100KHz. VBW &gt;= RBW. Sweep = auto; Detector Function = Peak (Max. hold).</li> </ol> |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



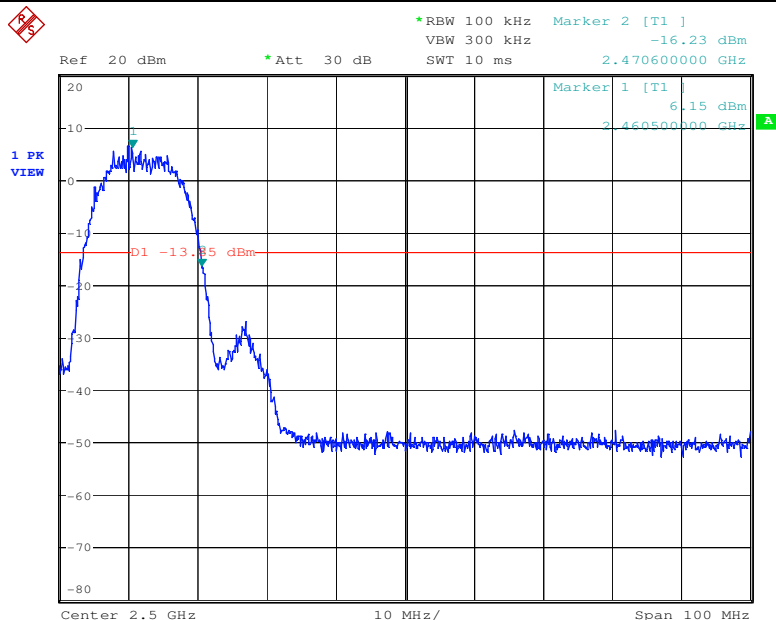
Test plot as follows:

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



Date: 1.MAR.2013 17:11:12

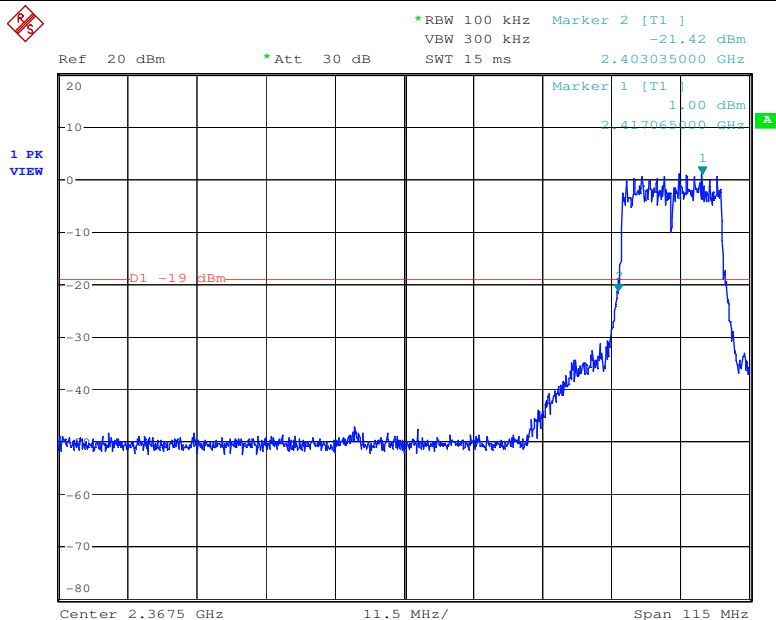
|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11b | Test channel: | Highest |
|------------|---------|---------------|---------|



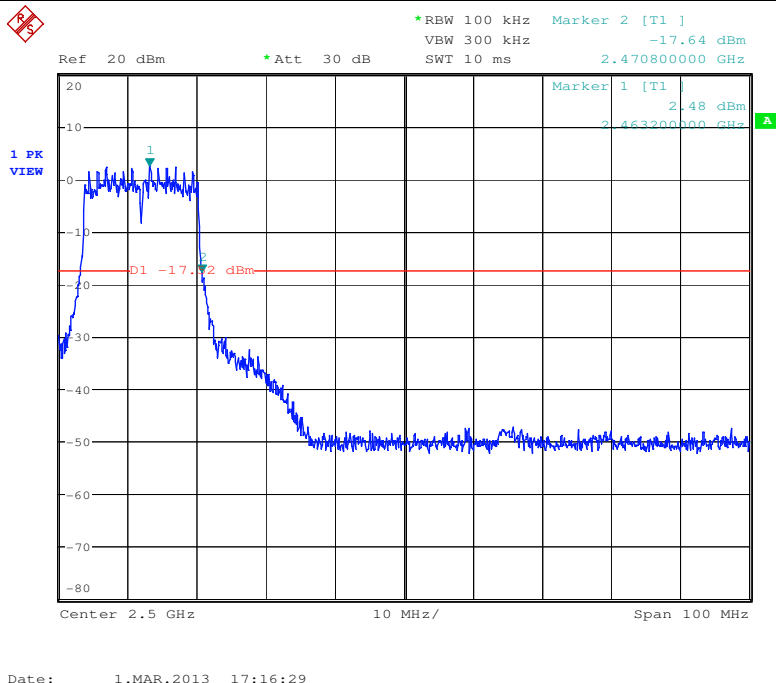
Date: 1.MAR.2013 17:17:33



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

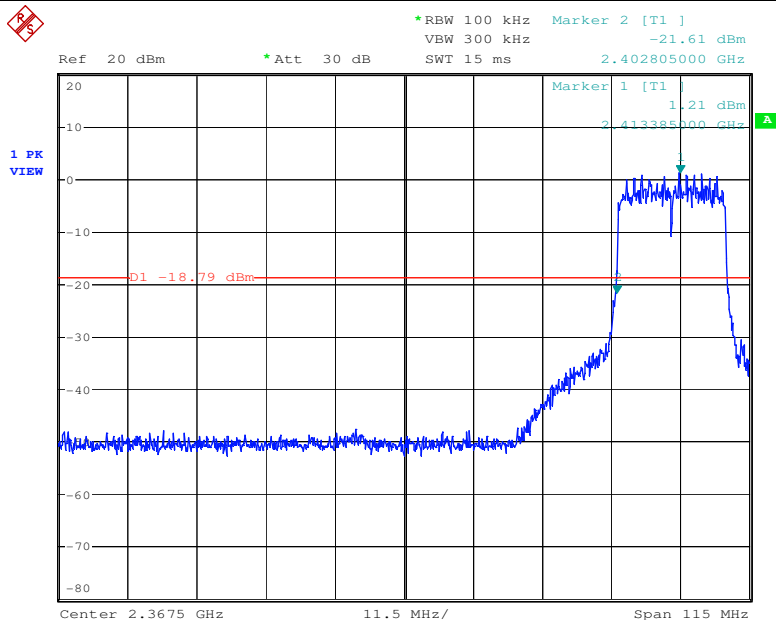


|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|



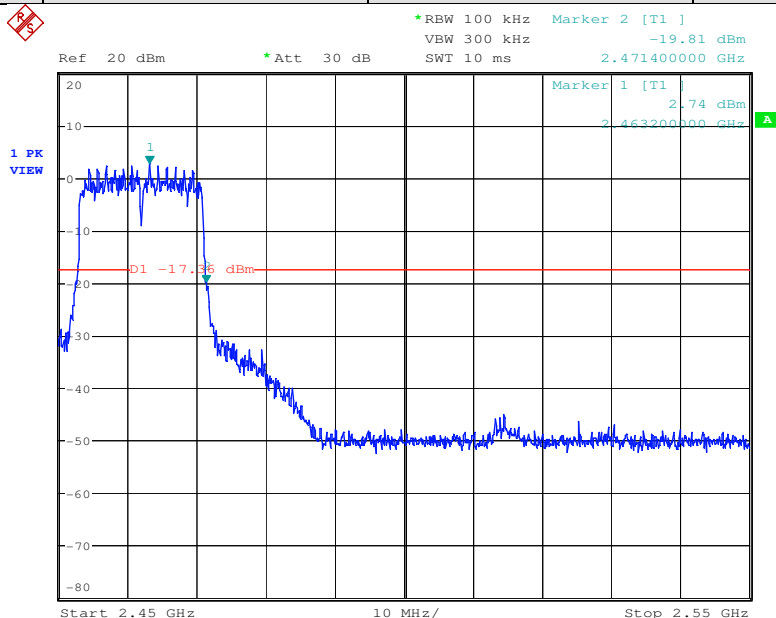


|            |               |               |        |
|------------|---------------|---------------|--------|
| Test mode: | 802.11n(HT20) | Test channel: | Lowest |
|------------|---------------|---------------|--------|



Date: 1.MAR.2013 17:14:04

|            |               |               |         |
|------------|---------------|---------------|---------|
| Test mode: | 802.11n(HT20) | Test channel: | Highest |
|------------|---------------|---------------|---------|



Date: 1.MAR.2013 17:15:26



## 7.9 Radiated Spurious Emissions

**Test Requirement:** FCC Part 15 Section 15.209 and Section 15.205  
**RSS-Gen section 4.9**

**Test Method:** ANSI C63.10:2009 Clause 6.12

**Test Date:** Mar.01, 2013

**Test Result:** Pass

**Test Mode:** Transmitting mode

**Final Test Mode:** Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6Mbps of rate is the worst case of 802.11n(HT20)

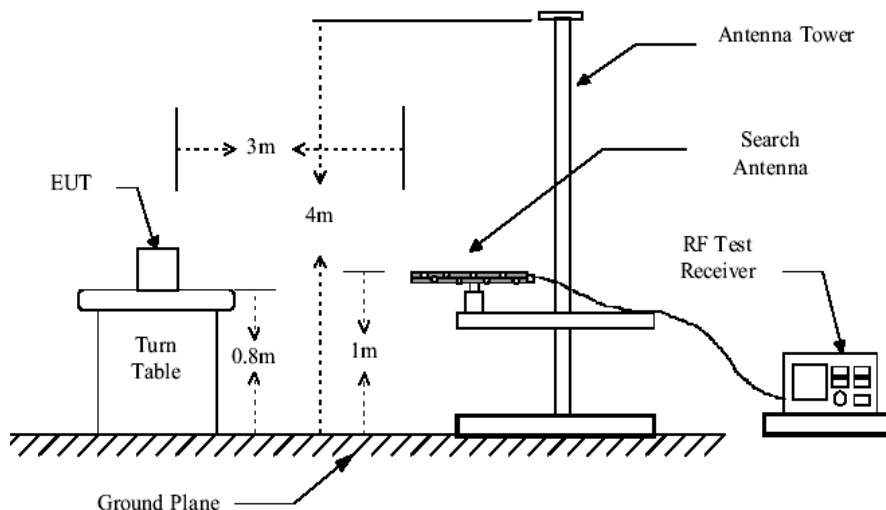
**Test site/setup:** Measurement Distance: 3m (Semi-Anechoic Chamber)  
Test instrumentation resolution bandwidth 120 kHz and Quasi-Peak detector applies (30 MHz - 1000 MHz).  
For PK value:  
RBW = 1 MHz for  $f \geq 1$  GHz  
VBW  $\geq$  RBW; Sweep = auto  
Detector function = peak  
Trace = max hold  
For AV value:  
RBW = 1 MHz for  $f \geq 1$  GHz  
VBW = 10Hz; Sweep = auto  
Detector function = peak  
Trace = max hold  
Receive antenna scan height 1 m - 4 m. polarization Vertical / Horizontal

### 15.209 Limit:

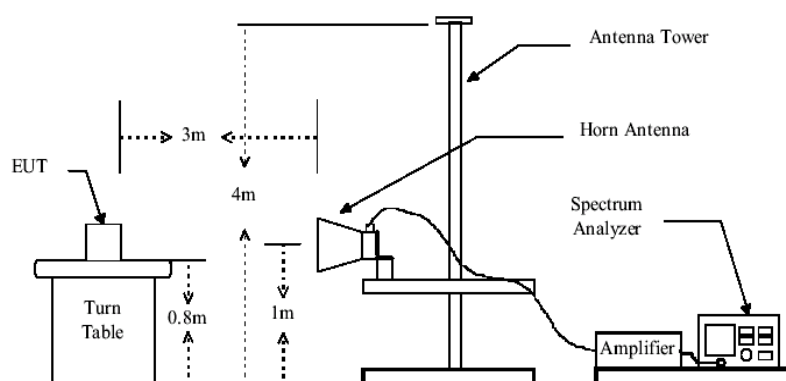
| Frequency         | Field strength (microvolt/meter) | Limit (dBuV/m) | Remark     | Measurement distance (m) |
|-------------------|----------------------------------|----------------|------------|--------------------------|
| 0.009MHz-0.490MHz | 2400/F(kHz)                      | -              | -          | 300                      |
| 0.490MHz-1.705MHz | 24000/F(kHz)                     | -              | -          | 30                       |
| 1.705MHz-30MHz    | 30                               | -              | -          | 30                       |
| 30MHz-88MHz       | 100                              | 40.0           | Quasi-peak | 3                        |
| 88MHz-216MHz      | 150                              | 43.5           | Quasi-peak | 3                        |
| 216MHz-960MHz     | 200                              | 46.0           | Quasi-peak | 3                        |
| 960MHz-1GHz       | 500                              | 54.0           | Quasi-peak | 3                        |
| Above 1GHz        | 500                              | 54.0           | Average    | 3                        |

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

### Test Configuration:



**Figure 1. 30MHz to 1GHz radiated emissions test configuration**



**Figure 2. Above 1GHz radiated emissions test configuration**

### Test Procedure:

The procedure used was ANSI Standard C63.10:2009. The receiver was scanned from 30MHz to 25GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

Low noise amplifier was used below 1GHz, High pass Filter was used above 3GHz.  
Between 1G and 3GHz, we did not use any amplifier or filter.



Test were performed for there spatial orthogonal(X, Y, Z), the worst test data (X orthogonal) was submitted.

1) For this intentional radiator operates below 25 GHz. the spectrum shall be investigated to the tenth harmonic of the highest fundamental frequency. And above the third harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 5rd harmonic.

As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

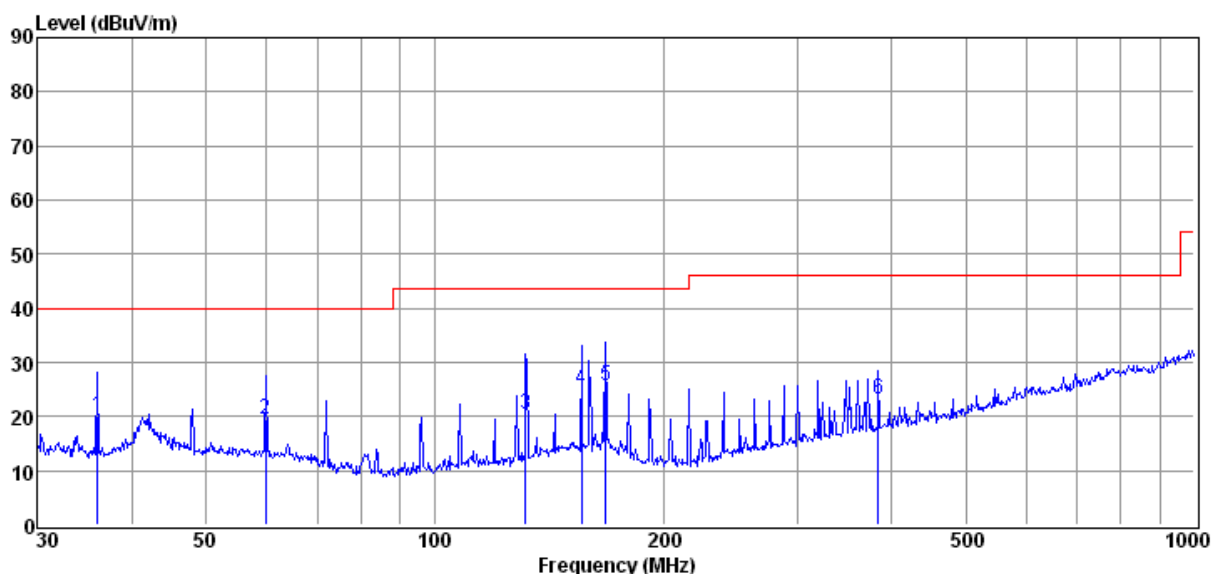
The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.

Test data as follows:

| 30MHz~1GHz |                                                                                                                                                               |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test mode: | Transmitting mode (Pre-test was performed on 802.11.b/g/n mode with adapter mode, Compliance test was performed on worse case (802.11 b mode with charging).) |

QP value:

Vertical:

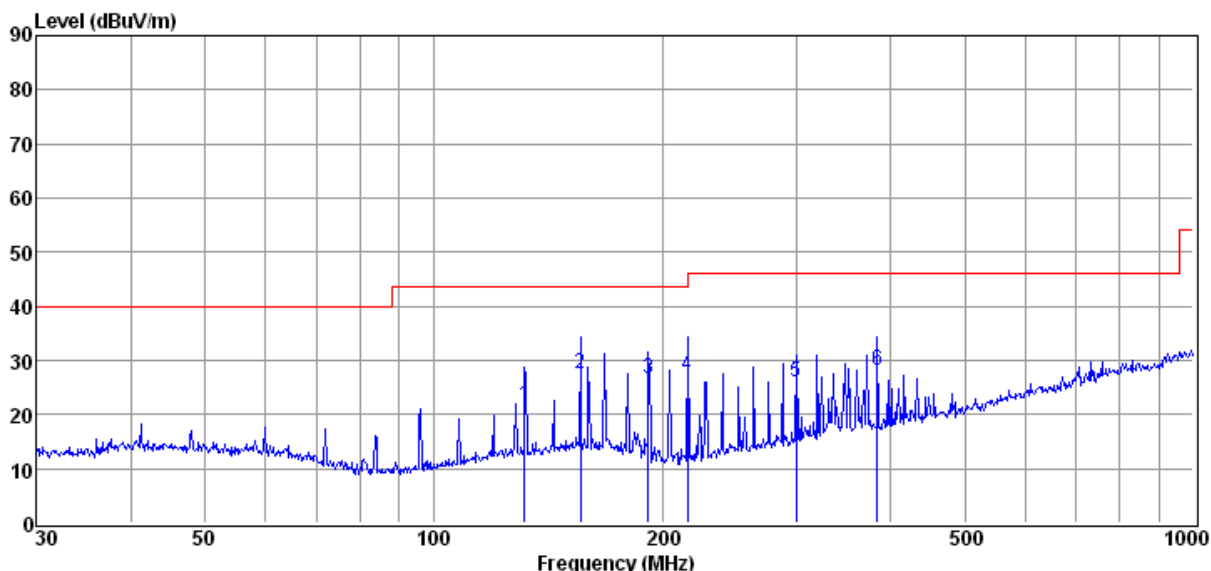


| Item<br>(Mark) | Freq.<br>(MHz) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>(dB/m) | Preamp<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Result<br>Level<br>(dBμV/m) | Limit<br>Line<br>(dBμV/m) | Over<br>Limit<br>(dB) | Detector | Polarization |
|----------------|----------------|-------------------------|-----------------------------|--------------------------|-----------------------|-----------------------------|---------------------------|-----------------------|----------|--------------|
| 1              | 36.00          | 31.83                   | 12.58                       | 24.70                    | 0.50                  | 20.21                       | 40.00                     | -19.79                | QP       | VERTICAL     |
| 2              | 59.86          | 31.36                   | 12.21                       | 24.70                    | 0.73                  | 19.60                       | 40.00                     | -20.40                | QP       | VERTICAL     |
| 3              | 131.76         | 33.15                   | 10.86                       | 24.70                    | 1.19                  | 20.50                       | 43.50                     | -23.00                | QP       | VERTICAL     |
| 4              | 155.91         | 35.94                   | 12.64                       | 24.70                    | 1.30                  | 25.18                       | 43.50                     | -18.32                | QP       | VERTICAL     |
| 5              | 167.82         | 36.60                   | 12.37                       | 24.62                    | 1.35                  | 25.70                       | 43.50                     | -17.80                | QP       | VERTICAL     |
| 6              | 383.93         | 31.01                   | 14.48                       | 24.40                    | 2.24                  | 23.33                       | 46.00                     | -22.67                | QP       | VERTICAL     |

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

2. If Peak Result comply with QP limit, QP Result is deemed to comply with QP limit.

Horizontal:



| Item<br>(Mark) | Freq.<br>(MHz) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>(dB/m) | Preamp<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Result<br>Level<br>(dBμV/m) | Limit<br>Line<br>(dBμV/m) | Over<br>Limit<br>(dB) | Detector | Polarization |
|----------------|----------------|-------------------------|-----------------------------|--------------------------|-----------------------|-----------------------------|---------------------------|-----------------------|----------|--------------|
| 1              | 131.76         | 33.46                   | 11.69                       | 24.70                    | 1.19                  | 21.64                       | 43.50                     | -21.86                | QP       | Horizontal   |
| 2              | 155.91         | 38.15                   | 12.64                       | 24.70                    | 1.30                  | 27.39                       | 43.50                     | -16.11                | QP       | Horizontal   |
| 3              | 191.75         | 40.03                   | 9.63                        | 24.60                    | 1.47                  | 26.53                       | 43.50                     | -16.97                | QP       | Horizontal   |
| 4              | 216.02         | 41.16                   | 9.14                        | 24.60                    | 1.58                  | 27.28                       | 46.00                     | -18.72                | QP       | Horizontal   |
| 5              | 300.37         | 36.15                   | 12.41                       | 24.50                    | 1.95                  | 26.01                       | 46.00                     | -19.99                | QP       | Horizontal   |
| 6              | 383.93         | 36.15                   | 14.23                       | 24.40                    | 2.24                  | 28.22                       | 46.00                     | -17.78                | QP       | Horizontal   |

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

2. If Peak Result comply with QP limit, QP Result is deemed to comply with QP limit.



**Above 1GHz**

|            |                             |
|------------|-----------------------------|
| Test mode: | 802.11b (Transmitting mode) |
|------------|-----------------------------|

**Test Antenna: Horizontal**

**Test Channel: Low**

| Mk. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Detector | Corrected<br>factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-----|--------------------|---------------------|----------|-------------------------|--------------------|-------------------|----------------|
| 1   | 1199.750           | 61.57               | peak     | -12.51                  | 49.06              | 74.00             | -24.94         |
| 2   | 2410.000           | 50.43               | peak     | -6.52                   | 43.91              | 74.00             | -30.09         |
| 3   | 3209.000           | 49.03               | peak     | -4.61                   | 44.42              | 74.00             | -29.58         |
| 4   | 4818.750           | 66.53               | peak     | -0.11                   | 66.42              | 74.00             | -7.58          |
| 5   | 4823.570           | 48.64               | AVG      | -0.10                   | 48.54              | 54.00             | -5.46          |
| 6   | 7227.500           | 48.05               | peak     | 6.36                    | 54.41              | 74.00             | -19.59         |
| 7   | 7235.380           | 36.34               | AVG      | 6.39                    | 42.73              | 54.00             | -11.27         |
| 8   | 9636.250           | 37.85               | peak     | 11.71                   | 49.56              | 74.00             | -24.44         |

**Test Antenna: Vertical**

**Test Channel: Low**

| Mk. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Detector | Corrected<br>factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-----|--------------------|---------------------|----------|-------------------------|--------------------|-------------------|----------------|
| 1   | 1199.750           | 61.46               | peak     | -12.51                  | 48.95              | 74.00             | -25.05         |
| 2   | 2128.000           | 53.06               | peak     | -6.94                   | 46.12              | 74.00             | -27.88         |
| 3   | 2985.750           | 51.08               | peak     | -5.23                   | 45.85              | 74.00             | -28.15         |
| 4   | 4818.750           | 63.22               | peak     | -0.11                   | 63.11              | 74.00             | -10.89         |
| 5   | 4825.670           | 46.89               | AVG      | -0.08                   | 46.81              | 54.00             | -7.19          |
| 6   | 7236.610           | 37.29               | AVG      | 6.40                    | 43.69              | 54.00             | -10.31         |
| 7   | 7239.250           | 48.73               | peak     | 6.41                    | 55.14              | 74.00             | -18.86         |
| 8   | 9518.750           | 38.33               | peak     | 11.89                   | 50.22              | 74.00             | -23.78         |



**Test Antenna: Horizontal**

**Test Channel: Middle**

| Mk. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Detector | Corrected<br>factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-----|--------------------|---------------------|----------|-------------------------|--------------------|-------------------|----------------|
| 1   | 1199.750           | 61.26               | peak     | -12.51                  | 48.75              | 74.00             | -25.25         |
| 2   | 2433.500           | 48.65               | peak     | -6.48                   | 42.17              | 74.00             | -31.83         |
| 3   | 3244.250           | 47.09               | peak     | -4.52                   | 42.57              | 74.00             | -31.43         |
| 4   | 4873.560           | 47.05               | AVG      | 0.10                    | 47.15              | 54.00             | -6.85          |
| 5   | 4877.500           | 64.06               | peak     | 0.12                    | 64.18              | 74.00             | -9.82          |
| 6   | 7309.750           | 49.91               | peak     | 6.76                    | 56.67              | 74.00             | -17.33         |
| 7   | 7313.430           | 38.24               | AVG      | 6.79                    | 45.03              | 54.00             | -8.97          |
| 8   | 9612.750           | 38.20               | peak     | 11.74                   | 49.94              | 74.00             | -24.06         |

**Test Antenna: Vertical**

**Test Channel: Middle**

| Mk. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Detector | Corrected<br>factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-----|--------------------|---------------------|----------|-------------------------|--------------------|-------------------|----------------|
| 1   | 1199.750           | 61.11               | peak     | -12.51                  | 48.60              | 74.00             | -25.40         |
| 2   | 2128.000           | 50.97               | peak     | -6.94                   | 44.03              | 74.00             | -29.97         |
| 3   | 2985.750           | 50.01               | peak     | -5.23                   | 44.78              | 74.00             | -29.22         |
| 4   | 4873.460           | 46.96               | AVG      | 0.10                    | 47.06              | 54.00             | -6.94          |
| 5   | 4877.500           | 62.75               | peak     | 0.12                    | 62.87              | 74.00             | -11.13         |
| 6   | 7309.750           | 49.59               | peak     | 6.76                    | 56.35              | 74.00             | -17.65         |
| 7   | 7313.430           | 38.70               | AVG      | 6.79                    | 45.49              | 54.00             | -8.51          |
| 8   | 9589.250           | 38.78               | peak     | 11.78                   | 50.56              | 74.00             | -23.44         |



**Test Antenna: Horizontal**

**Test Channel: High**

| Mk. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Detector | Corrected<br>factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-----|--------------------|---------------------|----------|-------------------------|--------------------|-------------------|----------------|
| 1   | 1199.750           | 61.62               | peak     | -12.51                  | 49.11              | 74.00             | -24.89         |
| 2   | 2457.000           | 51.88               | peak     | -6.45                   | 45.43              | 74.00             | -28.57         |
| 3   | 2703.750           | 49.77               | peak     | -5.90                   | 43.87              | 74.00             | -30.13         |
| 4   | 4923.960           | 46.05               | AVG      | 0.30                    | 46.35              | 54.00             | -7.65          |
| 5   | 4924.500           | 63.39               | peak     | 0.30                    | 63.69              | 74.00             | -10.31         |
| 6   | 7380.250           | 52.67               | peak     | 7.12                    | 59.79              | 74.00             | -14.21         |
| 7   | 7387.090           | 40.87               | AVG      | 7.16                    | 48.03              | 54.00             | -5.97          |
| 8   | 9577.500           | 38.29               | peak     | 11.79                   | 50.08              | 74.00             | -23.92         |

**Test Antenna: Vertical**

**Test Channel: High**

| Mk. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Detector | Corrected<br>factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-----|--------------------|---------------------|----------|-------------------------|--------------------|-------------------|----------------|
| 1   | 1199.750           | 60.24               | peak     | -12.51                  | 47.73              | 74.00             | -26.27         |
| 2   | 2116.250           | 52.56               | peak     | -6.96                   | 45.60              | 74.00             | -28.40         |
| 3   | 2703.750           | 52.85               | peak     | -5.90                   | 46.95              | 74.00             | -27.05         |
| 4   | 4923.960           | 47.21               | AVG      | 0.30                    | 47.51              | 54.00             | -6.49          |
| 5   | 4924.500           | 65.60               | peak     | 0.30                    | 65.90              | 74.00             | -8.10          |
| 6   | 7380.250           | 51.02               | peak     | 7.12                    | 58.14              | 74.00             | -15.86         |
| 7   | 7386.240           | 38.01               | AVG      | 7.15                    | 45.16              | 54.00             | -8.84          |
| 8   | 9577.500           | 38.88               | peak     | 11.79                   | 50.67              | 74.00             | -23.33         |



Above 1GHz

|            |                             |
|------------|-----------------------------|
| Test mode: | 802.11g (Transmitting mode) |
|------------|-----------------------------|

Test Antenna: Horizontal

Test Channel: Low

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 4818.75            | 73.50                | -1.78                    | 71.72             | 74                     | -2.28  | Peak   |
| 2   | 4824.51            | 53.58                | -1.77                    | 51.81             | 54                     | -2.19  | AVG    |
| 3   | 7624.28            | 40.44                | 5.06                     | 45.50             | 54                     | -8.50  | AVG    |
| 4   | 7627.00            | 55.26                | 5.06                     | 60.32             | 74                     | -13.68 | Peak   |
| 5   | 9352.13            | 38.89                | 7.77                     | 46.66             | 54                     | -7.34  | AVG    |
| 6   | 9354.25            | 52.01                | 7.78                     | 59.79             | 74                     | -14.21 | Peak   |
| 7   | 10739.37           | 37.66                | 7.36                     | 45.02             | 54                     | -8.98  | AVG    |
| 8   | 10740.75           | 52.16                | 7.36                     | 59.52             | 74                     | -14.48 | Peak   |

Test Antenna: Vertical

Test Channel: Low

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 4818.75            | 69.41                | -1.78                    | 67.63             | 74                     | -6.37  | Peak   |
| 2   | 4824.14            | 54.27                | -1.77                    | 52.50             | 54                     | -1.50  | AVG    |
| 3   | 7623.88            | 40.46                | 5.06                     | 45.52             | 54                     | -8.48  | AVG    |
| 4   | 7627.00            | 53.82                | 5.06                     | 58.88             | 74                     | -15.12 | Peak   |
| 5   | 9391.85            | 38.12                | 7.87                     | 45.99             | 54                     | -8.01  | AVG    |
| 6   | 9401.25            | 52.30                | 7.88                     | 60.18             | 74                     | -13.82 | Peak   |
| 7   | 11918.72           | 38.95                | 5.42                     | 44.37             | 54                     | -9.63  | AVG    |
| 8   | 11927.50           | 53.42                | 5.40                     | 58.82             | 74                     | -15.18 | Peak   |



**Test Antenna: Horizontal**

**Test Channel: Middle**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 4873.16            | 54.26                | -1.61                    | 52.65             | 54                     | -1.35  | AVG    |
| 2   | 4877.50            | 69.40                | -1.59                    | 67.81             | 74                     | -6.19  | Peak   |
| 3   | 7650.50            | 53.16                | 5.09                     | 58.25             | 74                     | -15.75 | Peak   |
| 4   | 7655.10            | 39.85                | 5.09                     | 44.94             | 54                     | -9.06  | AVG    |
| 5   | 9364.24            | 38.69                | 7.80                     | 46.49             | 54                     | -7.51  | AVG    |
| 6   | 9366.00            | 51.52                | 7.81                     | 59.33             | 74                     | -14.67 | Peak   |
| 7   | 11104.04           | 38.61                | 6.95                     | 45.56             | 54                     | -8.44  | AVG    |
| 8   | 11105.00           | 52.28                | 6.94                     | 59.22             | 74                     | -14.78 | Peak   |

**Test Antenna: Vertical**

**Test Channel: Middle**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 4874.36            | 52.52                | -1.61                    | 50.91             | 54                     | -3.09  | AVG    |
| 2   | 4877.50            | 69.26                | -1.59                    | 67.67             | 74                     | -6.33  | Peak   |
| 3   | 7907.68            | 39.79                | 5.31                     | 45.10             | 54                     | -8.90  | AVG    |
| 4   | 7909.00            | 53.50                | 5.32                     | 58.82             | 74                     | -15.18 | Peak   |
| 5   | 9353.71            | 38.83                | 7.78                     | 46.61             | 54                     | -7.39  | AVG    |
| 6   | 9354.25            | 52.31                | 7.78                     | 60.09             | 74                     | -13.91 | Peak   |
| 7   | 11044.65           | 38.57                | 7.10                     | 45.67             | 54                     | -8.33  | AVG    |
| 8   | 11046.25           | 52.29                | 7.09                     | 59.38             | 74                     | -14.62 | Peak   |



**Test Antenna: Horizontal**

**Test Channel: High**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 4923.96            | 53.09                | -1.45                    | 51.64             | 54                     | -2.36  | AVG    |
| 2   | 4924.50            | 72.42                | -1.45                    | 70.97             | 74                     | -3.03  | Peak   |
| 3   | 7920.75            | 53.40                | 5.33                     | 58.73             | 74                     | -15.27 | Peak   |
| 4   | 7920.85            | 39.56                | 5.33                     | 44.89             | 54                     | -9.11  | AVG    |
| 5   | 9366.00            | 52.23                | 7.81                     | 60.04             | 74                     | -13.96 | Peak   |
| 6   | 9374.28            | 38.44                | 7.82                     | 46.26             | 54                     | -7.74  | AVG    |
| 7   | 10061.48           | 38.36                | 7.76                     | 46.12             | 54                     | -7.88  | AVG    |
| 8   | 10071.00           | 51.84                | 7.76                     | 59.6              | 74                     | -14.4  | Peak   |

**Test Antenna: Vertical**

**Test Channel: High**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 4923.98            | 53.88                | -1.45                    | 52.43             | 54                     | -1.57  | AVG    |
| 2   | 4924.50            | 71.90                | -1.45                    | 70.45             | 74                     | -3.55  | Peak   |
| 3   | 7638.75            | 53.59                | 5.07                     | 58.66             | 74                     | -15.34 | Peak   |
| 4   | 7643.19            | 40.10                | 5.08                     | 45.18             | 54                     | -8.82  | AVG    |
| 5   | 9330.75            | 51.49                | 7.73                     | 59.22             | 74                     | -14.78 | Peak   |
| 6   | 9335.37            | 38.78                | 7.74                     | 46.52             | 54                     | -7.48  | AVG    |
| 7   | 10987.50           | 52.34                | 7.20                     | 59.54             | 74                     | -14.46 | Peak   |
| 8   | 10989.06           | 38.44                | 7.20                     | 45.64             | 54                     | -8.36  | AVG    |



|            |                             |
|------------|-----------------------------|
| Test mode: | 802.11n (Transmitting mode) |
|------------|-----------------------------|

**Test Antenna: Horizontal**

**Test Channel: Low**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 1599.25            | 65.83                | -9.79                    | 56.04             | 74                     | -17.96 | Peak   |
| 2   | 1607.97            | 49.48                | -9.72                    | 39.76             | 54                     | -14.24 | AVG    |
| 3   | 3209.00            | 44.70                | -3.85                    | 40.85             | 74                     | -33.15 | Peak   |
| 4   | 4818.75            | 66.61                | 1.21                     | 67.82             | 74                     | -6.18  | Peak   |
| 5   | 4823.71            | 48.35                | 1.28                     | 49.63             | 54                     | -4.37  | AVG    |
| 6   | 7233.85            | 27.42                | 10.16                    | 37.58             | 54                     | -16.42 | AVG    |
| 7   | 7239.25            | 42.82                | 10.19                    | 53.01             | 74                     | -20.99 | Peak   |
| 8   | 9530.50            | 36.87                | 15.41                    | 52.28             | 74                     | -21.72 | Peak   |

**Test Antenna: Vertical**

**Test Channel: Low**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 1599.25            | 66.84                | -9.79                    | 57.05             | 74                     | -16.95 | Peak   |
| 2   | 2010.50            | 58.19                | -6.21                    | 51.98             | 74                     | -22.02 | Peak   |
| 3   | 4818.75            | 60.38                | 1.21                     | 61.59             | 74                     | -12.41 | Peak   |
| 4   | 4824.11            | 43.55                | 1.29                     | 44.84             | 54                     | -9.16  | AVG    |
| 5   | 7233.09            | 30.69                | 10.16                    | 40.85             | 54                     | -13.15 | AVG    |
| 6   | 7234.03            | 26.80                | 10.16                    | 36.96             | 54                     | -17.04 | AVG    |
| 7   | 7239.25            | 47.16                | 10.19                    | 57.35             | 74                     | -16.65 | Peak   |
| 8   | 9589.25            | 37.28                | 15.32                    | 52.60             | 74                     | -21.4  | Peak   |



**Test Antenna: Horizontal**

**Test Channel: Middle**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 1622.75            | 68.39                | -9.59                    | 58.80             | 74                     | -15.20 | Peak   |
| 2   | 4874.76            | 47.67                | 1.90                     | 49.57             | 54                     | -4.43  | AVG    |
| 3   | 4877.50            | 64.64                | 1.89                     | 66.53             | 74                     | -7.47  | Peak   |
| 4   | 7309.49            | 25.87                | 10.53                    | 36.40             | 54                     | -17.60 | AVG    |
| 5   | 7309.75            | 41.81                | 10.53                    | 52.34             | 74                     | -21.66 | Peak   |
| 6   | 9589.25            | 37.43                | 15.32                    | 52.75             | 74                     | -21.25 | Peak   |
| 7   | 11105.00           | 38.81                | 13.26                    | 52.07             | 74                     | -21.93 | Peak   |
| 8   | 1622.75            | 68.39                | -9.59                    | 58.80             | 74                     | -15.20 | Peak   |

**Test Antenna: Vertical**

**Test Channel: Middle**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 1622.75            | 69.61                | -9.59                    | 60.02             | 74                     | -13.98 | Peak   |
| 2   | 1624.87            | 52.45                | -9.57                    | 42.88             | 54                     | -11.12 | AVG    |
| 3   | 2139.75            | 57.71                | -6.02                    | 51.69             | 74                     | -22.31 | Peak   |
| 4   | 4874.36            | 42.84                | 1.90                     | 44.74             | 54                     | -9.26  | AVG    |
| 5   | 4877.50            | 58.27                | 1.89                     | 60.16             | 74                     | -13.84 | Peak   |
| 6   | 7304.19            | 25.99                | 10.51                    | 36.50             | 54                     | -17.50 | AVG    |
| 7   | 7309.75            | 45.65                | 10.53                    | 56.18             | 74                     | -17.82 | Peak   |
| 8   | 9777.25            | 37.77                | 15.01                    | 52.78             | 74                     | -21.22 | Peak   |



**Test Antenna: Horizontal**

**Test Channel: High**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 1634.50            | 70.32                | -9.48                    | 60.84             | 74                     | -13.16 | Peak   |
| 2   | 3279.50            | 45.32                | -3.72                    | 41.60             | 74                     | -32.40 | Peak   |
| 3   | 4876.58            | 24.50                | 1.90                     | 26.40             | 54                     | -27.60 | AVG    |
| 4   | 4923.38            | 46.08                | 1.87                     | 47.95             | 54                     | -6.05  | AVG    |
| 5   | 4924.50            | 63.69                | 1.89                     | 65.58             | 74                     | -8.42  | Peak   |
| 6   | 7309.75            | 39.66                | 10.53                    | 50.19             | 74                     | -23.81 | Peak   |
| 7   | 9589.25            | 37.28                | 15.32                    | 52.60             | 74                     | -21.40 | Peak   |
| 8   | 11739.50           | 39.29                | 12.46                    | 51.75             | 74                     | -22.25 | Peak   |

**Test Antenna: Vertical**

**Test Channel: High**

| MK. | Frequency<br>(MHz) | Read Level<br>(dBuV) | Antenna Factor<br>(dB/m) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Margin | Remark |
|-----|--------------------|----------------------|--------------------------|-------------------|------------------------|--------|--------|
| 1   | 1634.50            | 69.58                | -9.48                    | 60.10             | 74                     | -13.90 | Peak   |
| 2   | 1641.68            | 47.75                | -9.42                    | 38.33             | 54                     | -15.67 | AVG    |
| 3   | 2139.75            | 56.21                | -6.02                    | 50.19             | 74                     | -23.81 | Peak   |
| 4   | 4924.40            | 39.15                | 1.89                     | 41.04             | 54                     | -12.96 | AVG    |
| 5   | 4924.50            | 54.78                | 1.89                     | 56.67             | 74                     | -17.33 | Peak   |
| 6   | 7380.25            | 42.69                | 10.88                    | 53.57             | 74                     | -20.43 | Peak   |
| 7   | 9601.00            | 36.92                | 15.30                    | 52.22             | 74                     | -21.78 | Peak   |
| 8   | 11234.25           | 39.54                | 13.05                    | 52.59             | 74                     | -21.41 | Peak   |

Remark: The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. .

Test Level =Receiver Reading + Antenna Factor + Cable Loss –Preamplifier Factor.

Remark: No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part. Hence there no other emissions have been reported.



## 7.10 Band edge (Radiated Emission)

|                              |                                                                                                                                                                                                                                                                |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>     | Section 15.247(d) In addition, radiated emissions which fall in the restricted bands. as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c).<br><b>RSS-Gen section 4.9</b> |
| <b>Test Method:</b>          | ANSI 63.10:2009 Clause 6.12                                                                                                                                                                                                                                    |
| <b>Test Date:</b>            | Mar.01, 2013                                                                                                                                                                                                                                                   |
| <b>Test Result:</b>          | Pass                                                                                                                                                                                                                                                           |
| <b>Measurement Distance:</b> | 3m (Semi-Anechoic Chamber)                                                                                                                                                                                                                                     |
| <b>Limit:</b>                | 40.0 dB $\mu$ V/m between 30MHz & 88MHz;<br>43.5 dB $\mu$ V/m between 88MHz & 216MHz;<br>46.0 dB $\mu$ V/m between 216MHz & 960MHz;<br>54.0 dB $\mu$ V/m above 960MHz.                                                                                         |
| <b>Detector:</b>             | For PK value:<br>RBW = 1 MHz for $f \geq 1$ GHz<br>VBW $\geq$ RBW; Sweep = auto<br>Detector function = peak<br>Trace = max hold<br>For AV value:<br>RBW = 1 MHz for $f \geq 1$ GHz<br>VBW = 10Hz; Sweep = auto<br>Detector function = peak<br>Trace = max hold |

According to section 15.35(b) for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Pre-test were performed for there spatial orthogonal(X, Y, Z), the worst test data (X orthogonal) was submitted.

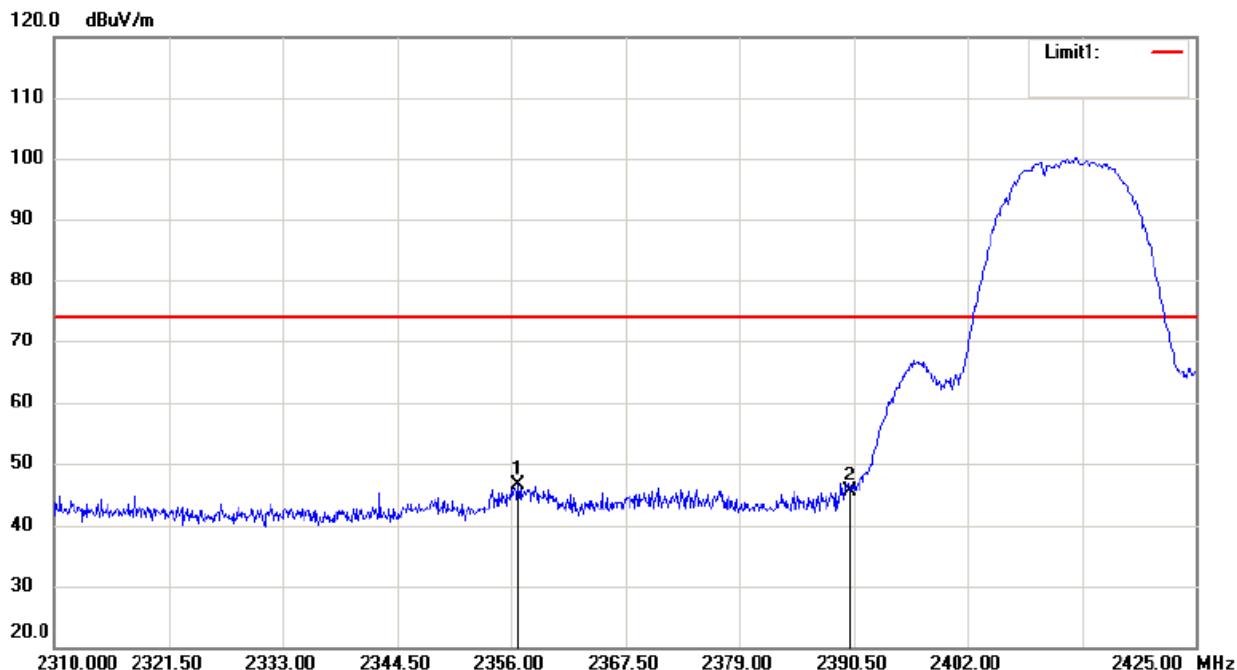
**Test Result:** The EUT does meet the FCC requirements.



Measurement Result:

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

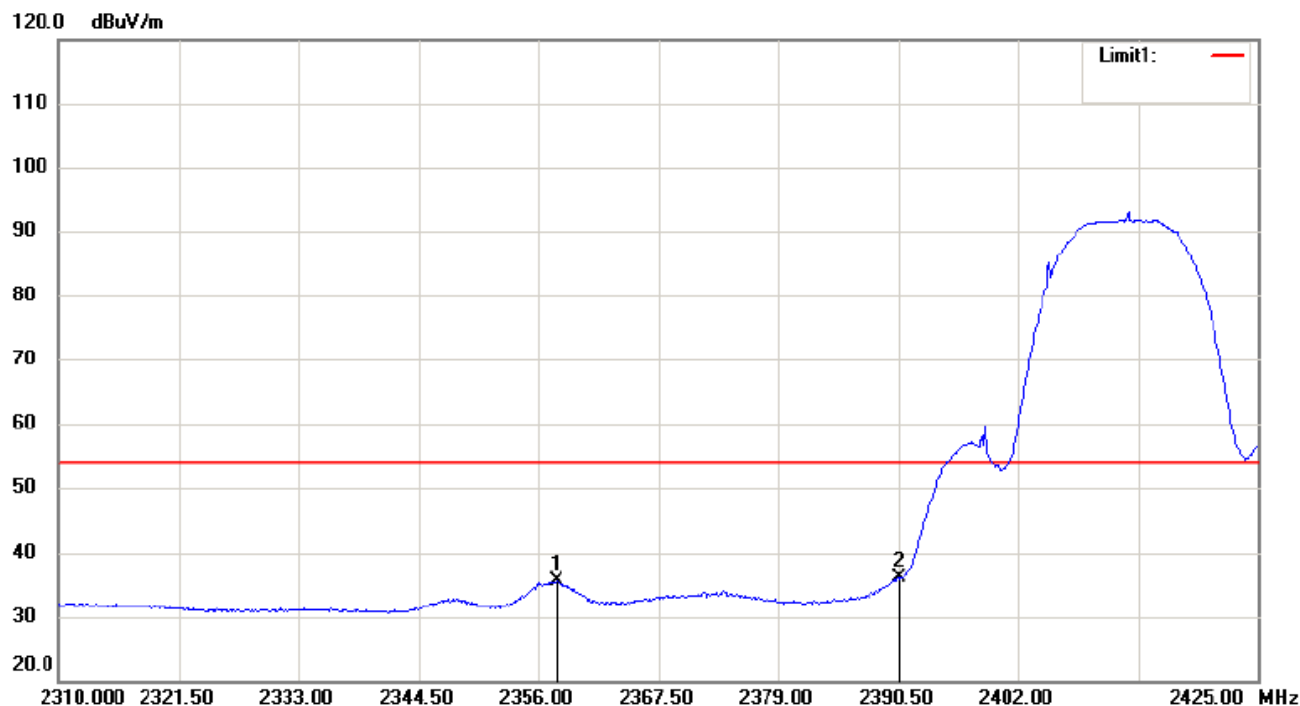
Horizontal, Peak Detector:



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2356.690        | 53.03            | peak     | -6.60                | 46.43           | 74.00          | -27.57      |
| 2   | 2390.155        | 52.02            | peak     | -6.55                | 45.47           | 74.00          | -28.53      |

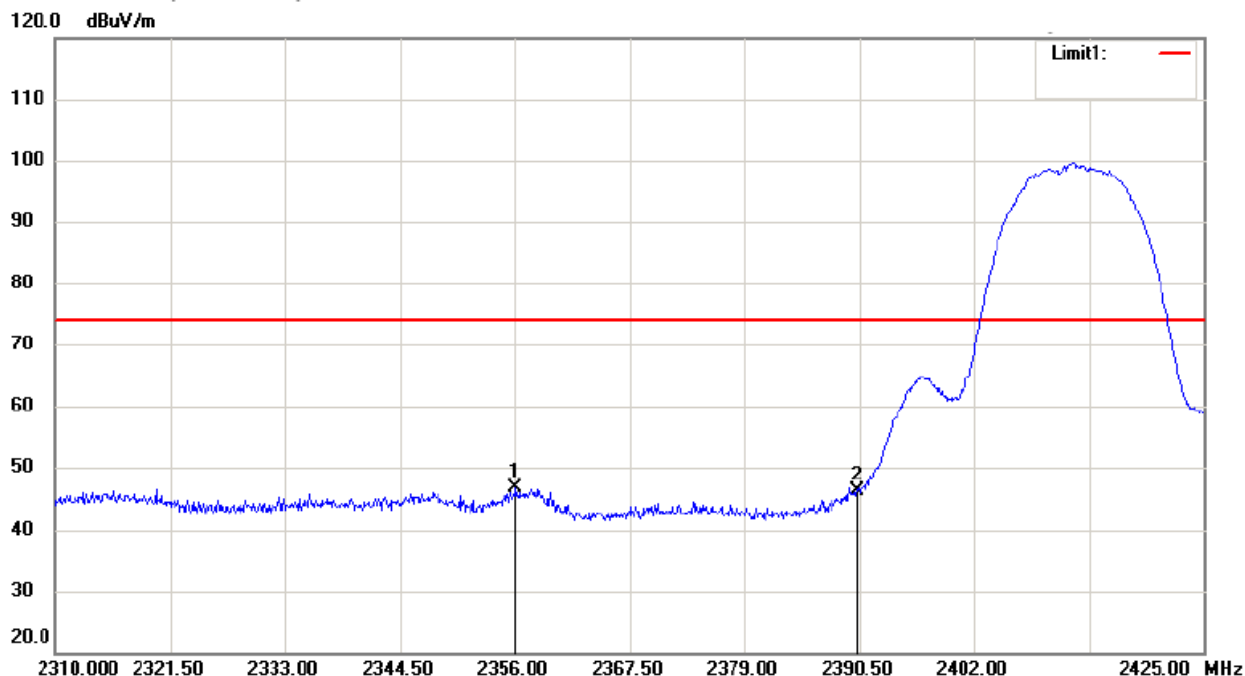


Horizontal, Average Detector:



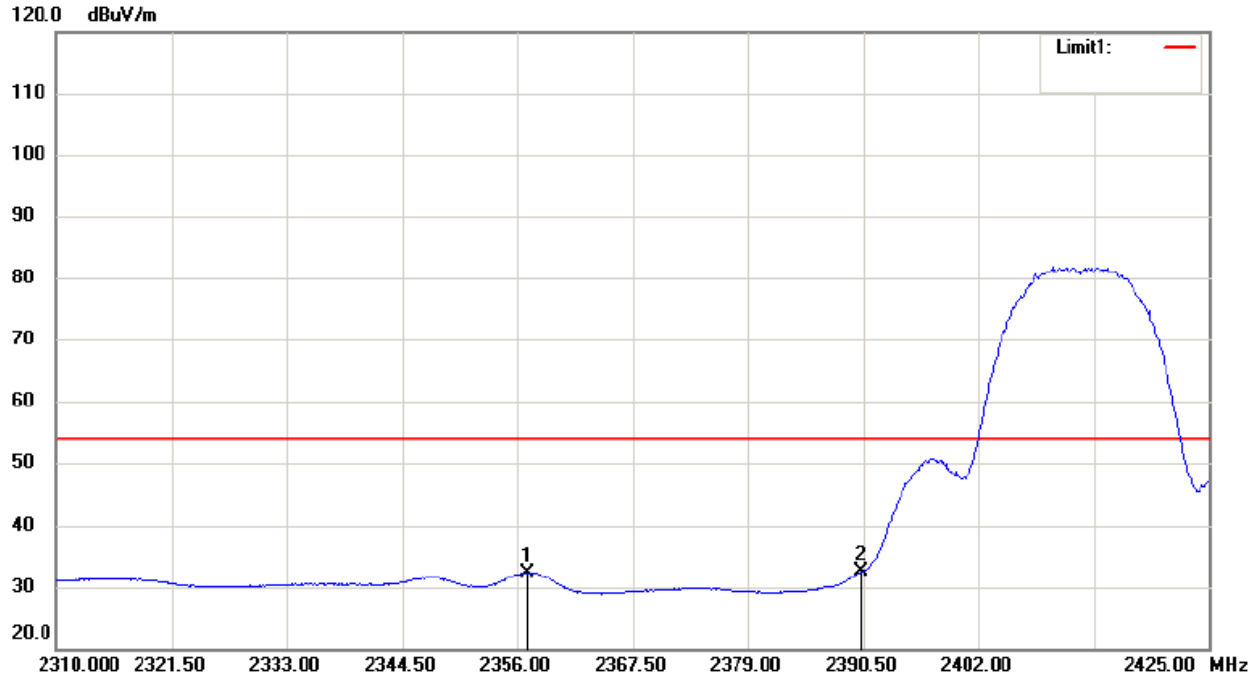
| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2357.725        | 42.22            | peak     | -6.60                | 35.62           | 54.00          | -18.38      |
| 2   | 2390.615        | 42.63            | peak     | -6.55                | 36.08           | 54.00          | -17.92      |

**Vertical , Peak Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2356.115        | 53.25            | peak     | -6.60                | 46.65           | 74.00          | -27.35      |
| 2   | 2390.270        | 52.76            | peak     | -6.55                | 46.21           | 74.00          | -27.79      |

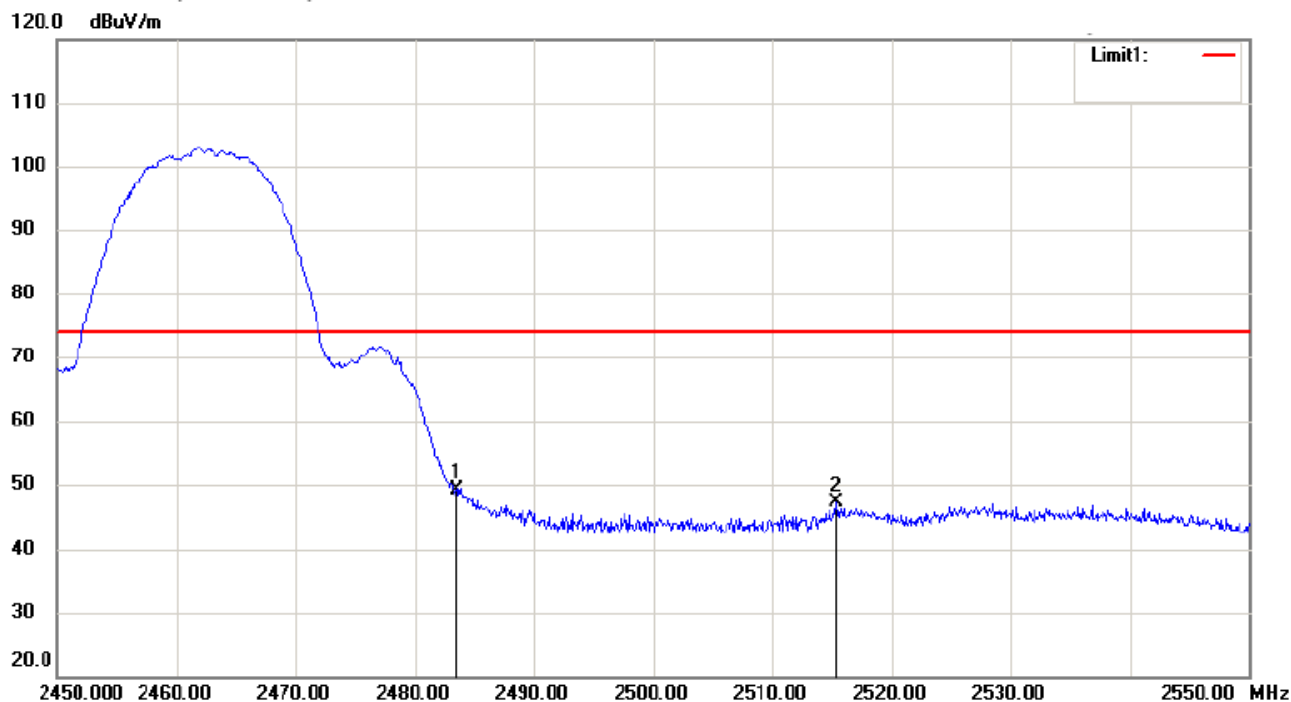
**Vertical , Average Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2356.920        | 39.09            | peak     | -6.60                | 32.49           | 54.00          | -21.51      |
| 2   | 2390.270        | 39.22            | peak     | -6.55                | 32.67           | 54.00          | -21.33      |

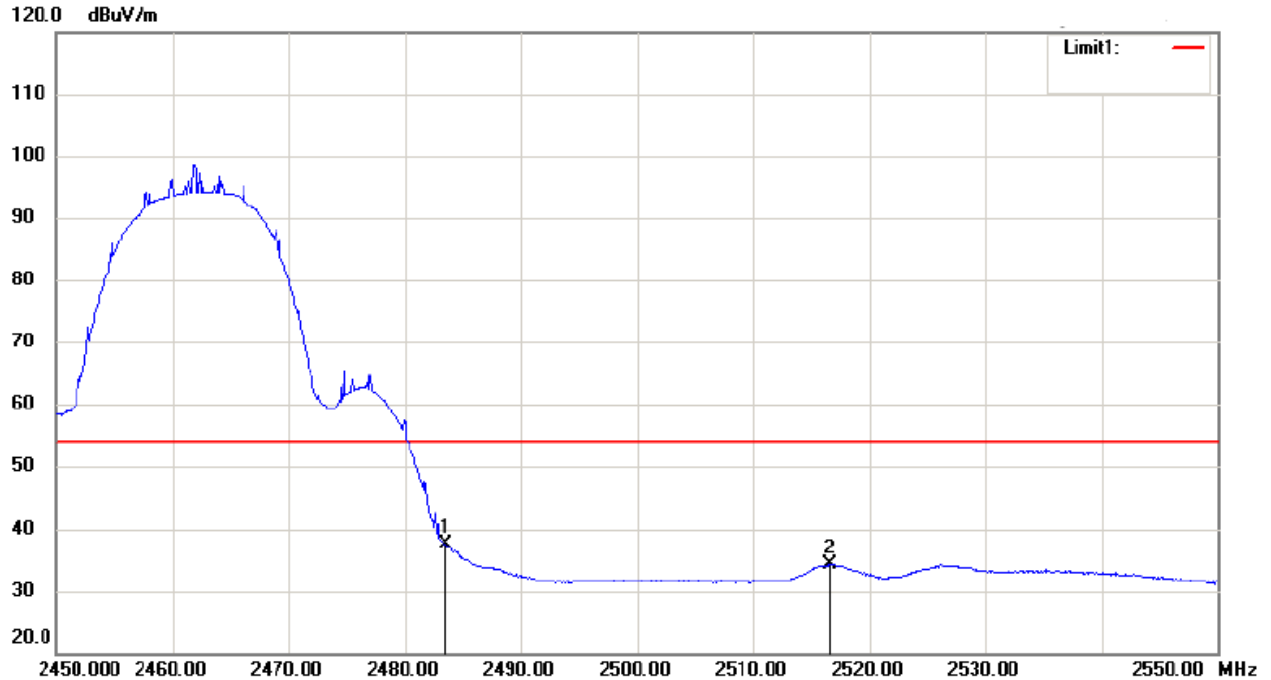
|            |         |               |      |
|------------|---------|---------------|------|
| Test mode: | 802.11b | Test channel: | High |
|------------|---------|---------------|------|

**Horizontal, Peak Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 55.65            | peak     | -6.41                | 49.24           | 74.00          | -24.76      |
| 2   | 2515.400        | 53.55            | peak     | -6.35                | 47.20           | 74.00          | -26.80      |

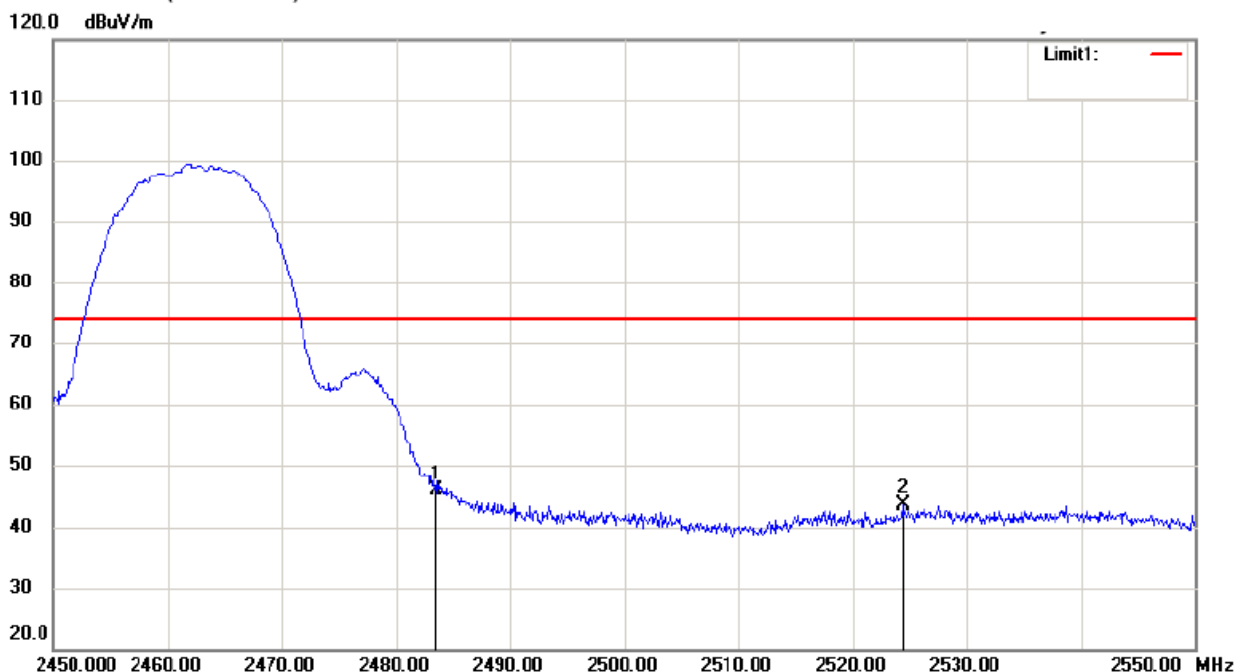
**Horizontal, Average Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 43.94            | peak     | -6.41                | 37.53           | 54.00          | -16.47      |
| 2   | 2516.600        | 40.82            | peak     | -6.35                | 34.47           | 54.00          | -19.53      |



Vertical , Peak Detector:



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 52.34            | peak     | -6.41                | 45.93           | 74.00          | -28.07      |
| 2   | 2524.400        | 49.97            | peak     | -6.34                | 43.63           | 74.00          | -30.37      |

**Vertical , Average Detector:**



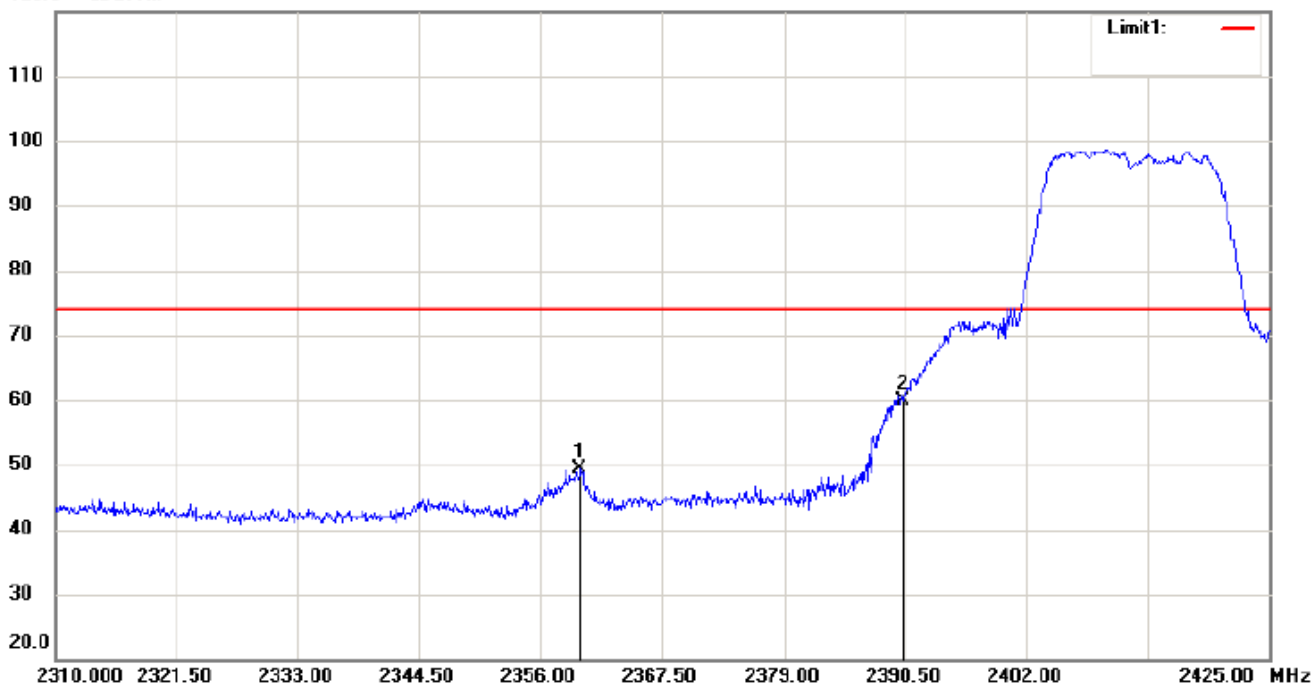
| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|-----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 41.83            | peak     | -6.41                 | 35.42           | 54.00          | -18.58      |
| 2   | 2526.700        | 37.29            | peak     | -6.32                 | 30.97           | 54.00          | -23.03      |



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

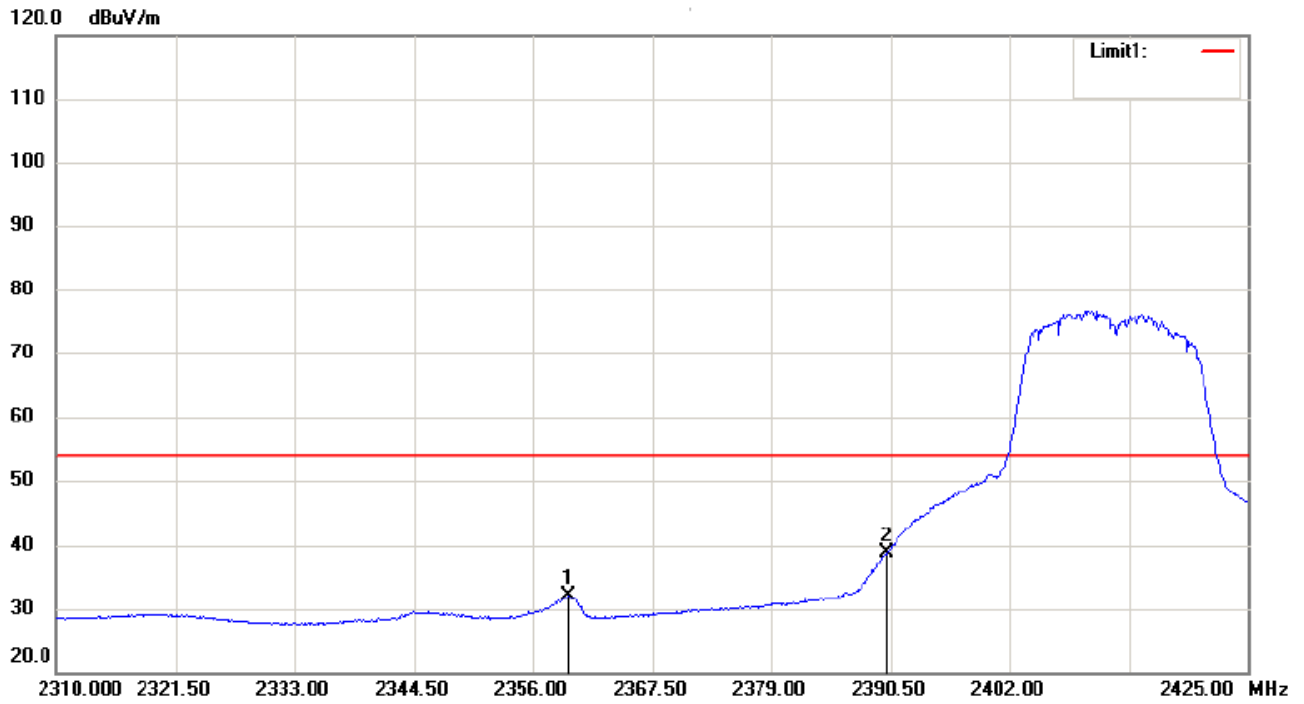
**Horizontal, Peak Detector:**

120.0 dBuV/m



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2359.795        | 56.10            | peak     | -6.60                | 49.50           | 74.00          | -24.50      |
| 2   | 2390.270        | 66.44            | peak     | -6.55                | 59.89           | 74.00          | -14.11      |

**Horizontal, Average Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2359.450        | 38.72            | peak     | -6.60                | 32.12           | 54.00          | -21.88      |
| 2   | 2390.155        | 45.37            | peak     | -6.55                | 38.82           | 54.00          | -15.18      |

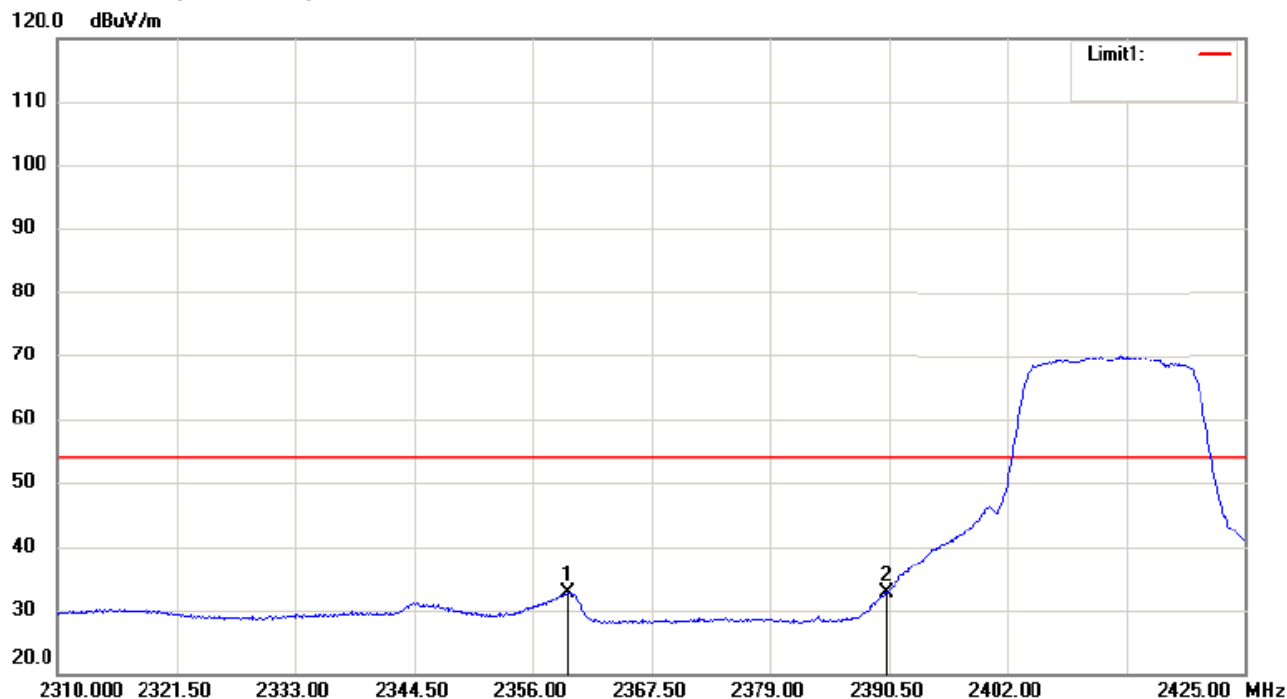
**Vertical , Peak Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2359.910        | 56.98            | peak     | -6.60                | 50.38           | 74.00          | -23.62      |
| 2   | 2390.155        | 71.83            | peak     | -6.55                | 65.28           | 74.00          | -8.72       |



Vertical , Average Detector:

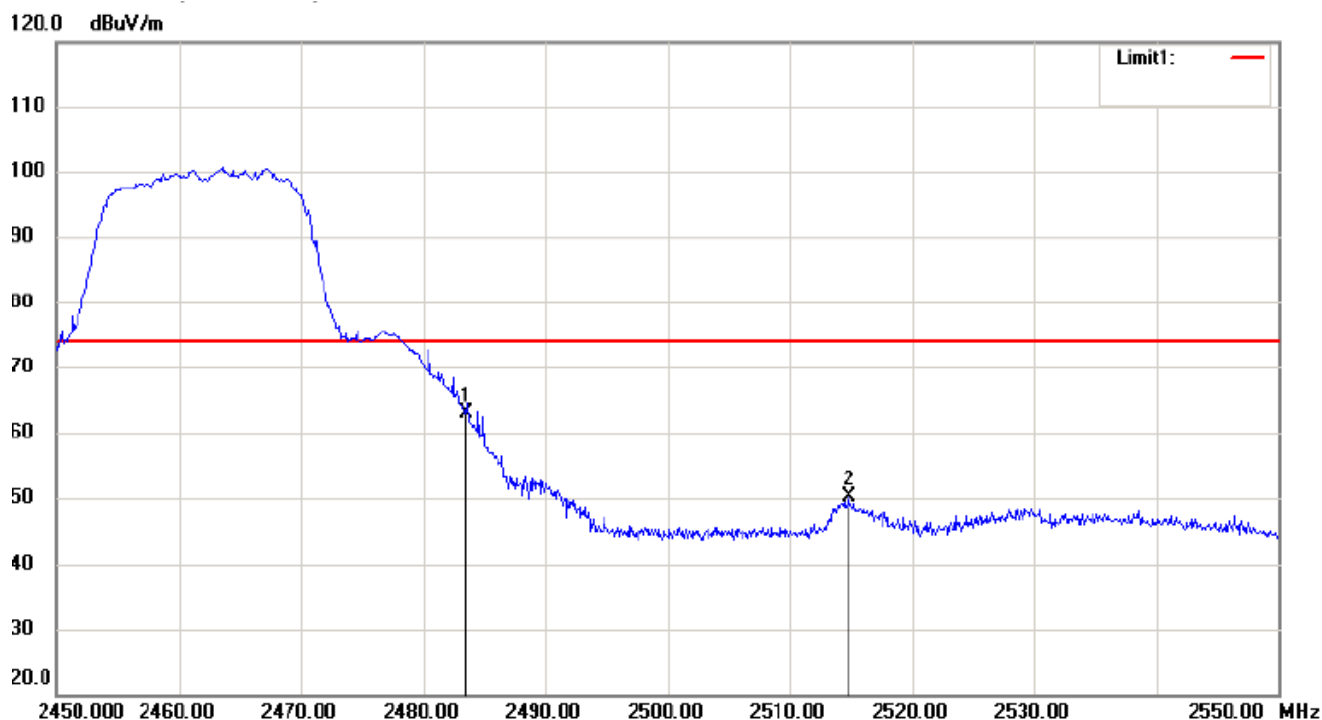


| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2359.450        | 39.49            | peak     | -6.60                | 32.89           | 54.00          | -21.11      |
| 2   | 2390.270        | 39.42            | peak     | -6.55                | 32.87           | 54.00          | -21.13      |



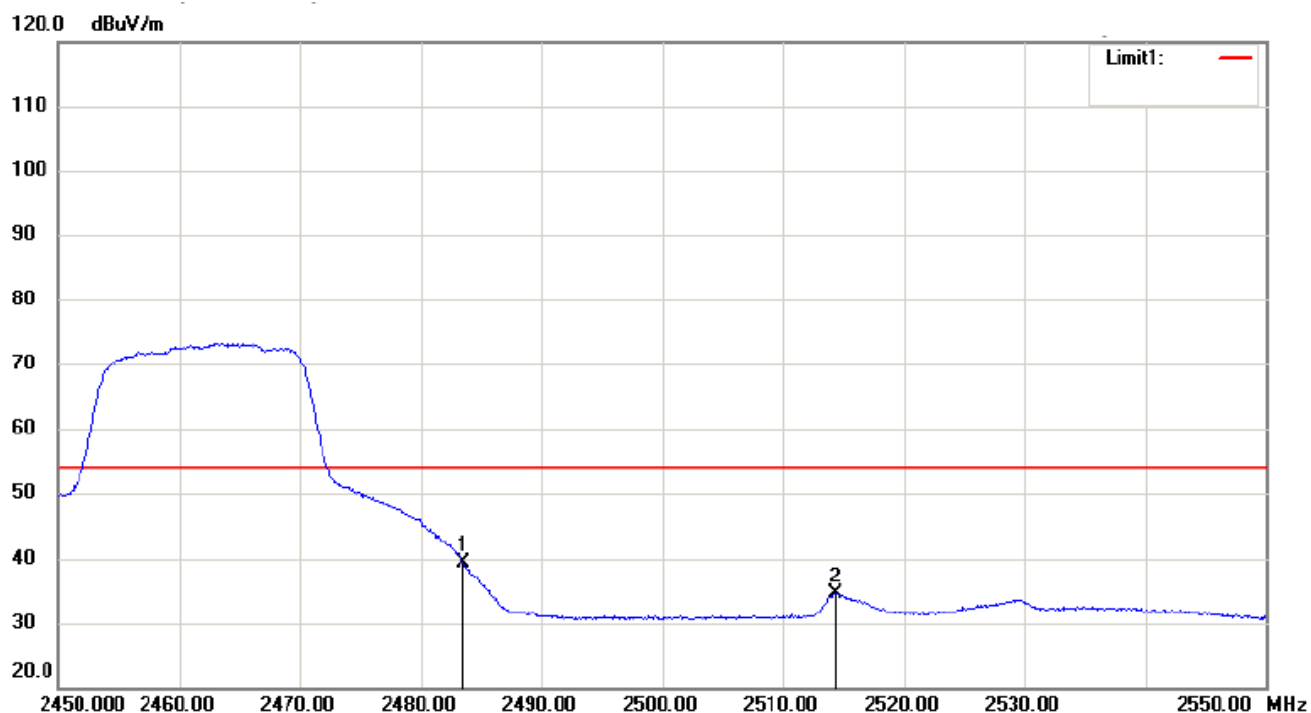
|            |         |               |         |
|------------|---------|---------------|---------|
| Test mode: | 802.11g | Test channel: | Highest |
|------------|---------|---------------|---------|

**Horizontal, Peak Detector:**



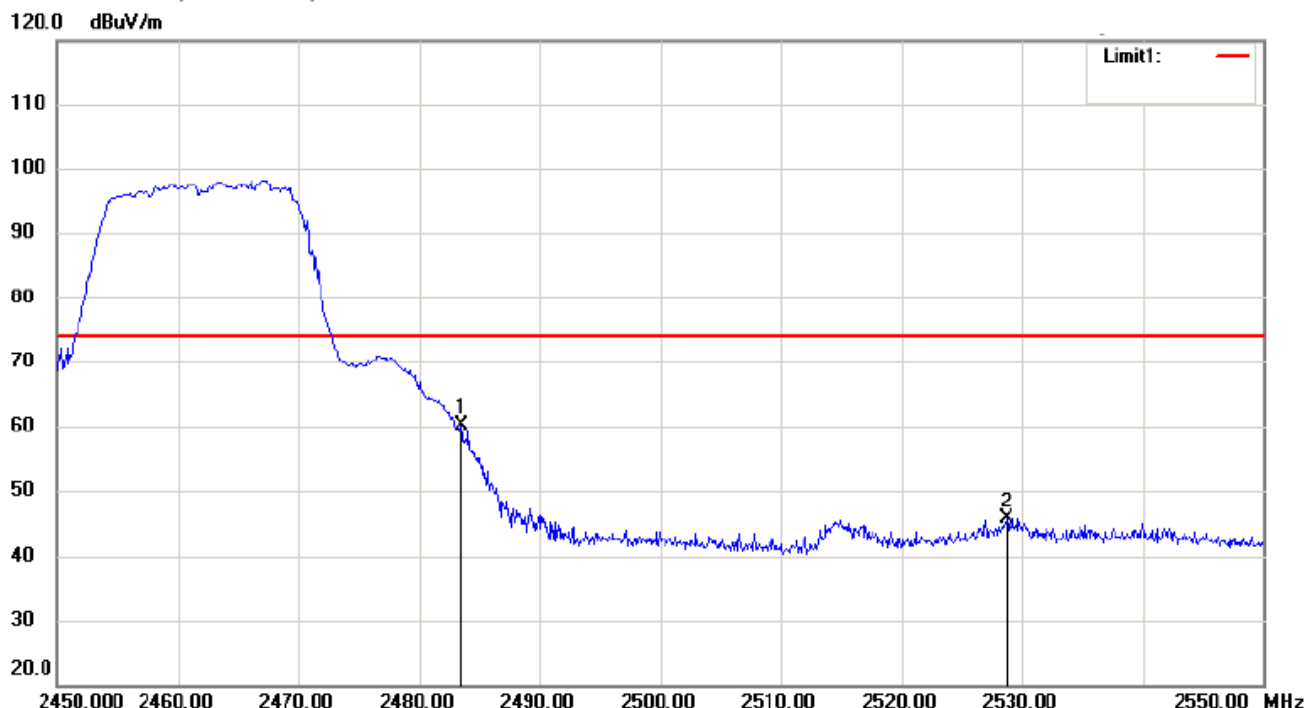
| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 69.29            | peak     | -6.41                | 62.88           | 74.00          | -11.12      |
| 2   | 2514.800        | 56.50            | peak     | -6.35                | 50.15           | 74.00          | -23.85      |

**Horizontal, Average Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 45.75            | peak     | -6.41                | 39.34           | 54.00          | -14.66      |
| 2   | 2514.300        | 41.04            | peak     | -6.35                | 34.69           | 54.00          | -19.31      |

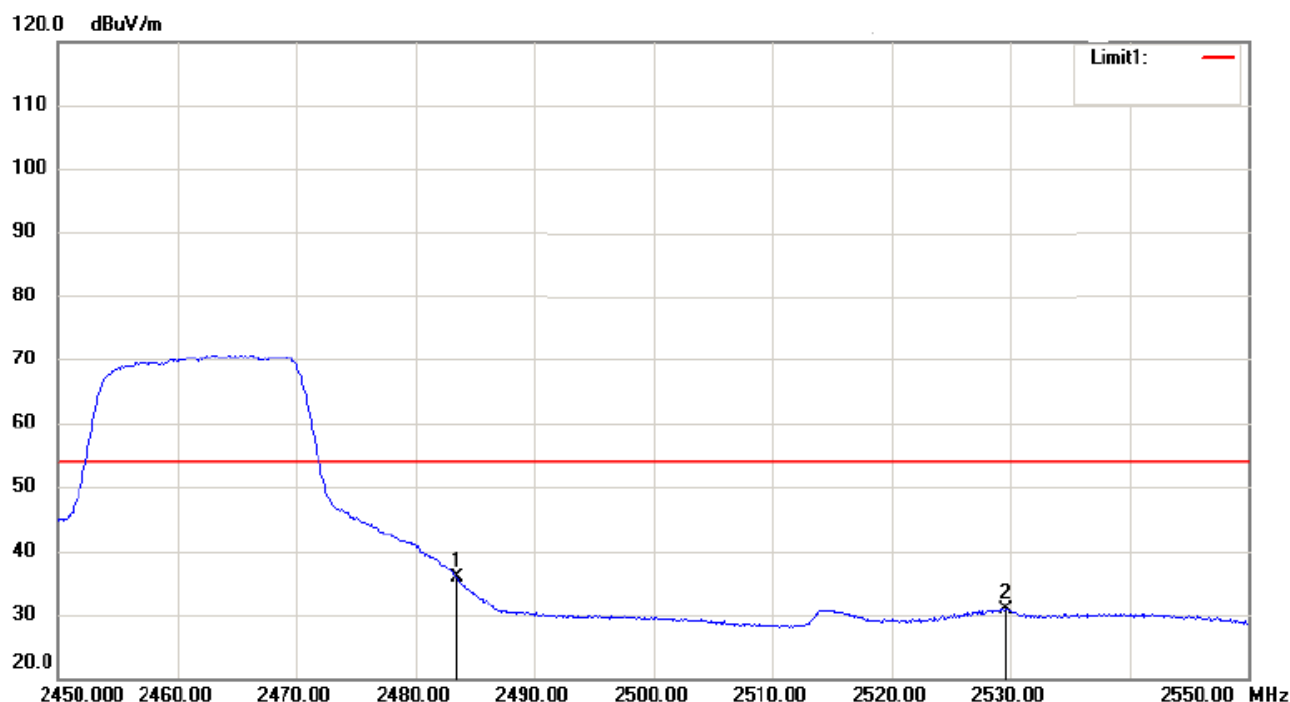
**Vertical , Peak Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 66.43            | peak     | -6.41                | 60.02           | 74.00          | -13.98      |
| 2   | 2528.700        | 52.02            | peak     | -6.32                | 45.70           | 74.00          | -28.30      |



Vertical , Average Detector:

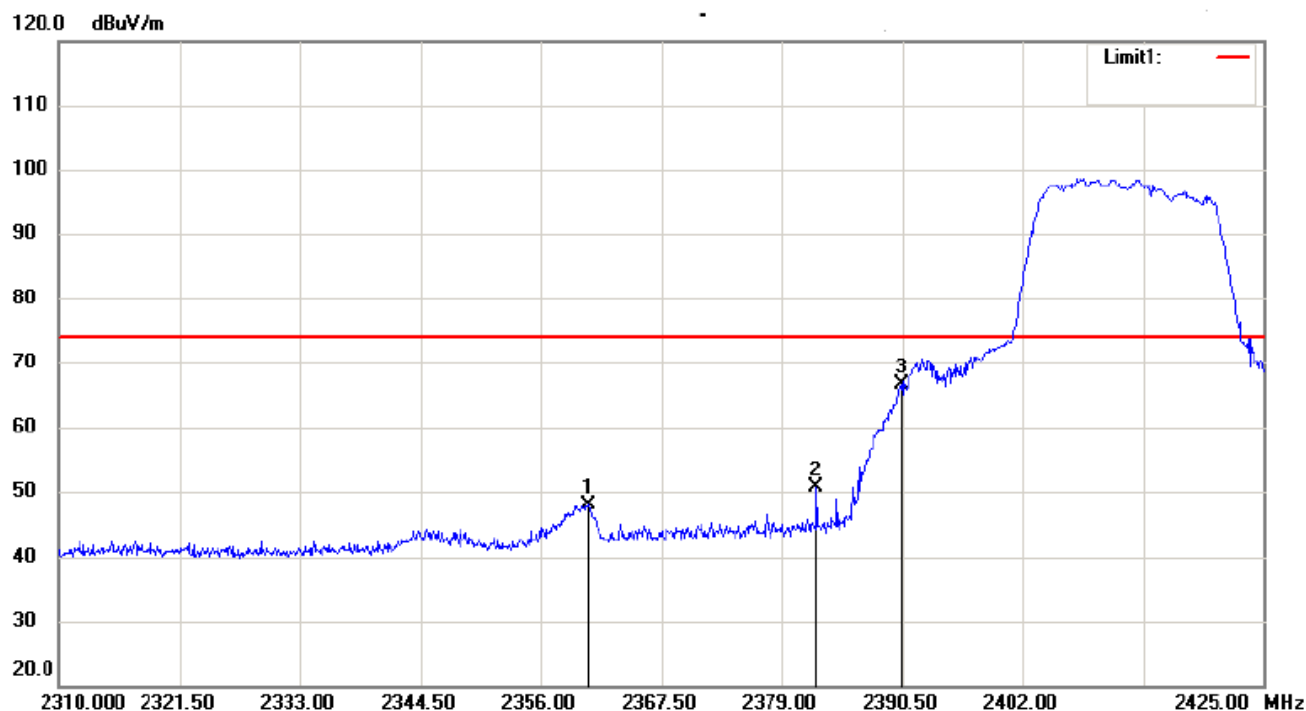


| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 42.22            | peak     | -6.41                | 35.81           | 54.00          | -18.19      |
| 2   | 2529.700        | 37.21            | peak     | -6.31                | 30.90           | 54.00          | -23.10      |



|            |               |               |        |
|------------|---------------|---------------|--------|
| Test mode: | 802.11n(HT20) | Test channel: | Lowest |
|------------|---------------|---------------|--------|

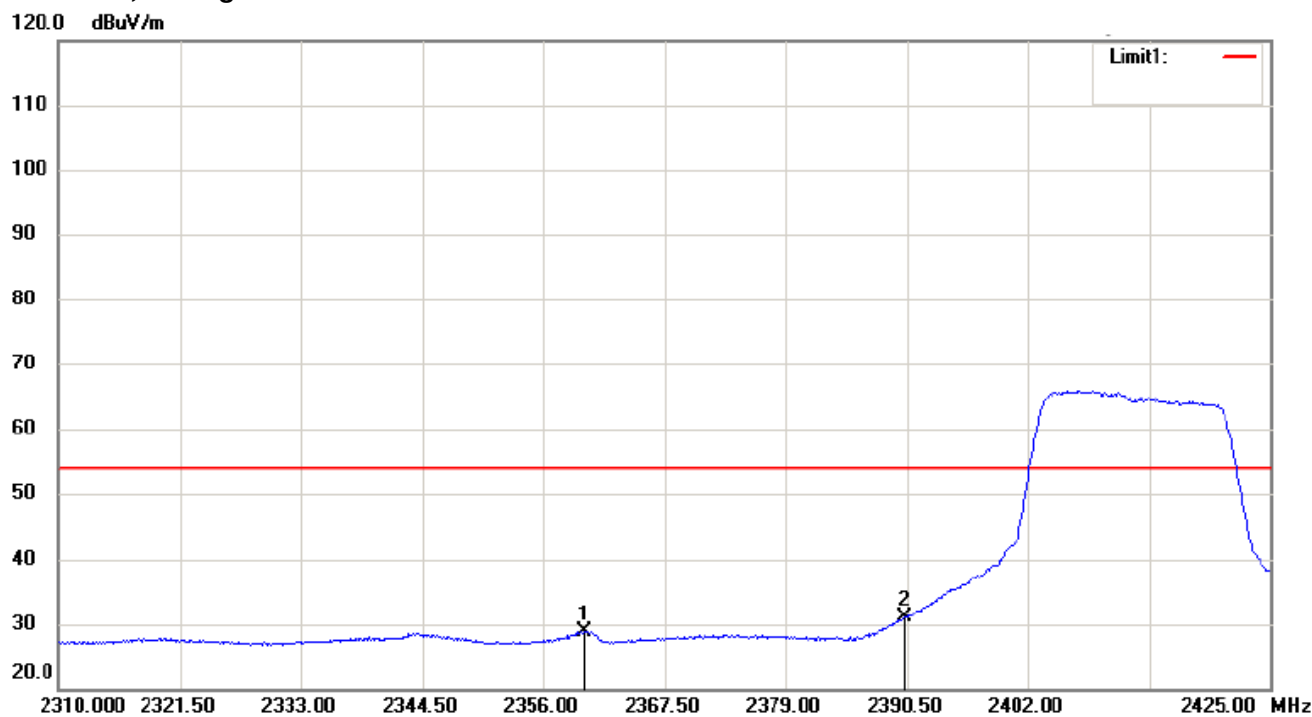
Horizontal, Peak Detector:



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2360.485        | 54.36            | peak     | -6.60                | 47.76           | 74.00          | -26.24      |
| 2   | 2382.335        | 57.20            | peak     | -6.56                | 50.64           | 74.00          | -23.36      |
| 3   | 2390.385        | 73.30            | peak     | -6.55                | 66.75           | 74.00          | -7.25       |

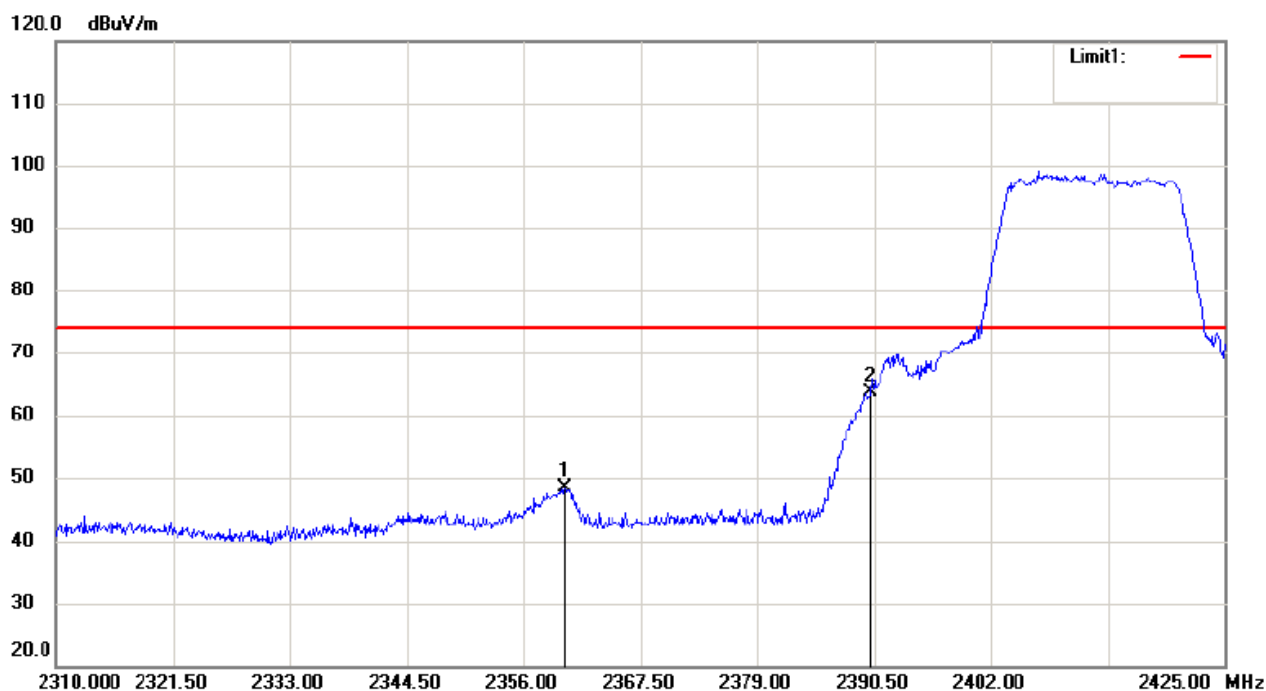


Horizontal, Average Detector:



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2359.910        | 35.57            | peak     | -6.60                | 28.97           | 54.00          | -25.03      |
| 2   | 2390.270        | 37.60            | peak     | -6.55                | 31.05           | 54.00          | -22.95      |

**Vertical , Peak Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2360.025        | 54.87            | peak     | -6.60                | 48.27           | 74.00          | -25.73      |
| 2   | 2390.155        | 70.27            | peak     | -6.55                | 63.72           | 74.00          | -10.28      |



Vertical , Average Detector:



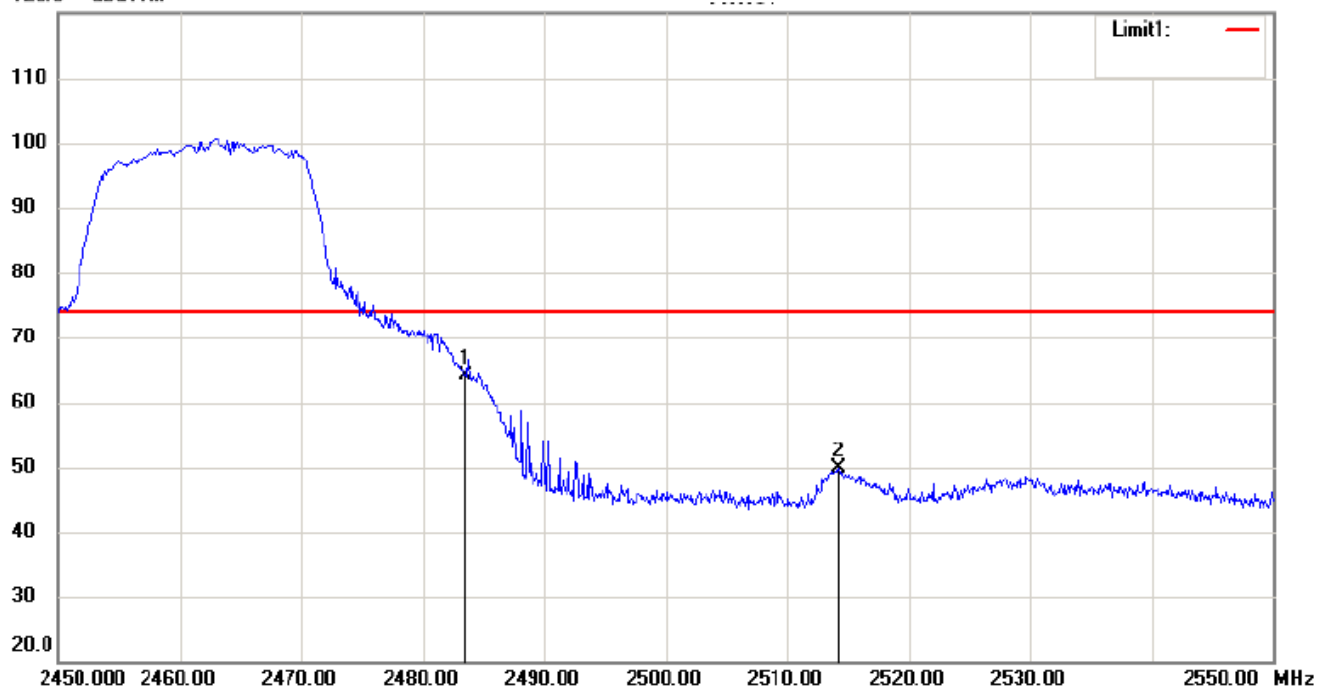
| Mk. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Detector | Corrected<br>factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-----|--------------------|---------------------|----------|-------------------------|--------------------|-------------------|----------------|
| 1   | 2360.025           | 39.67               | peak     | -6.60                   | 33.07              | 54.00             | -20.93         |
| 2   | 2390.270           | 41.25               | peak     | -6.55                   | 34.70              | 54.00             | -19.30         |



|            |               |               |         |
|------------|---------------|---------------|---------|
| Test mode: | 802.11n(HT20) | Test channel: | Highest |
|------------|---------------|---------------|---------|

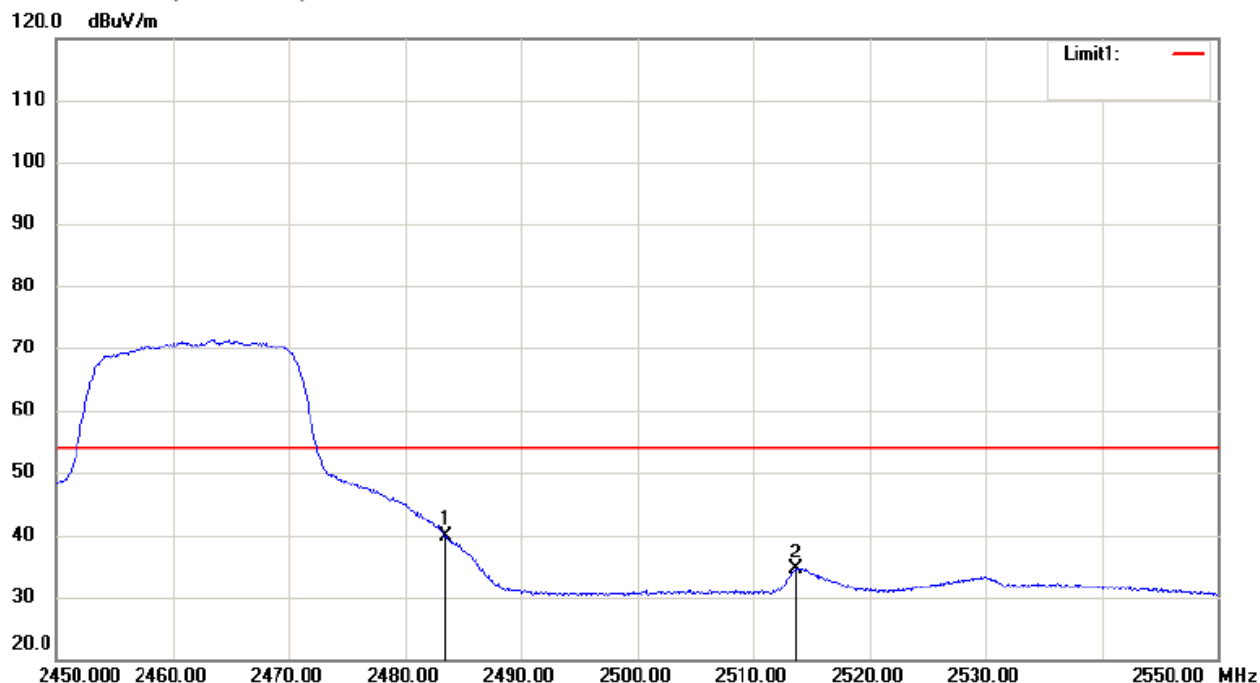
Horizontal, Peak Detector:

120.0 dBuV/m



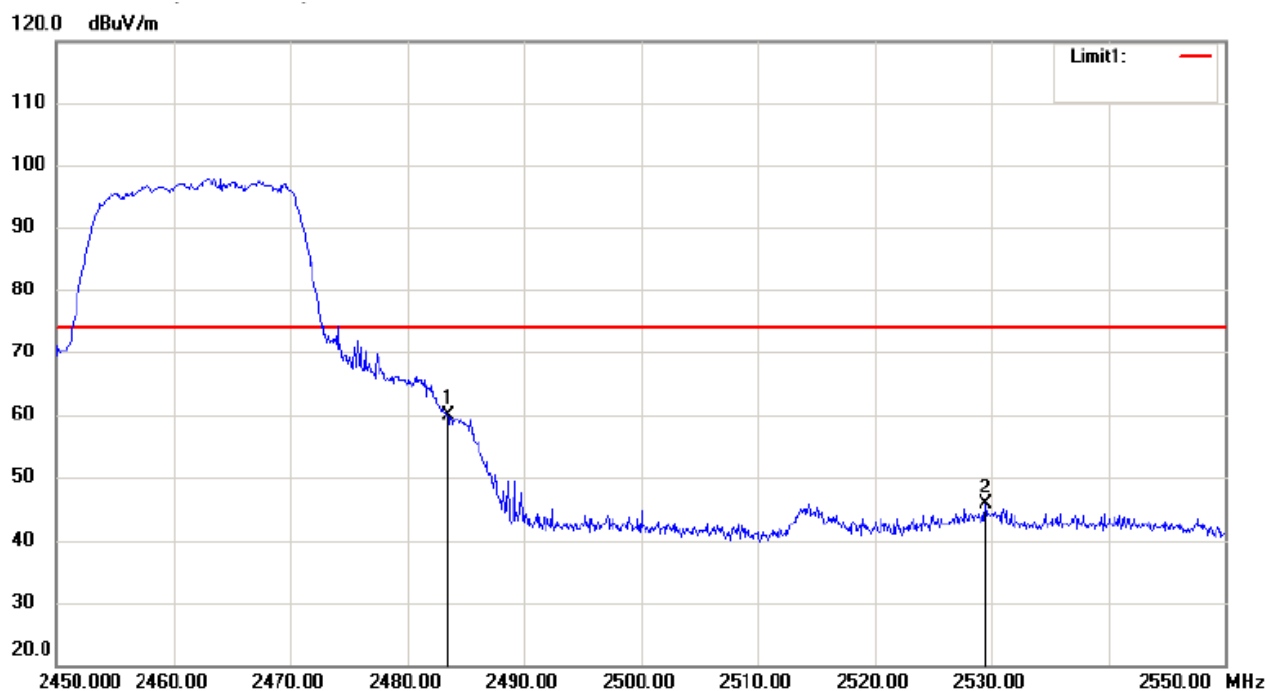
| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 70.62            | peak     | -6.41                | 64.21           | 74.00          | -9.79       |
| 2   | 2514.200        | 56.21            | peak     | -6.35                | 49.86           | 74.00          | -24.14      |

**Horizontal, Average Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 46.28            | peak     | -6.41                | 39.87           | 54.00          | -14.13      |
| 2   | 2513.600        | 41.04            | peak     | -6.35                | 34.69           | 54.00          | -19.31      |

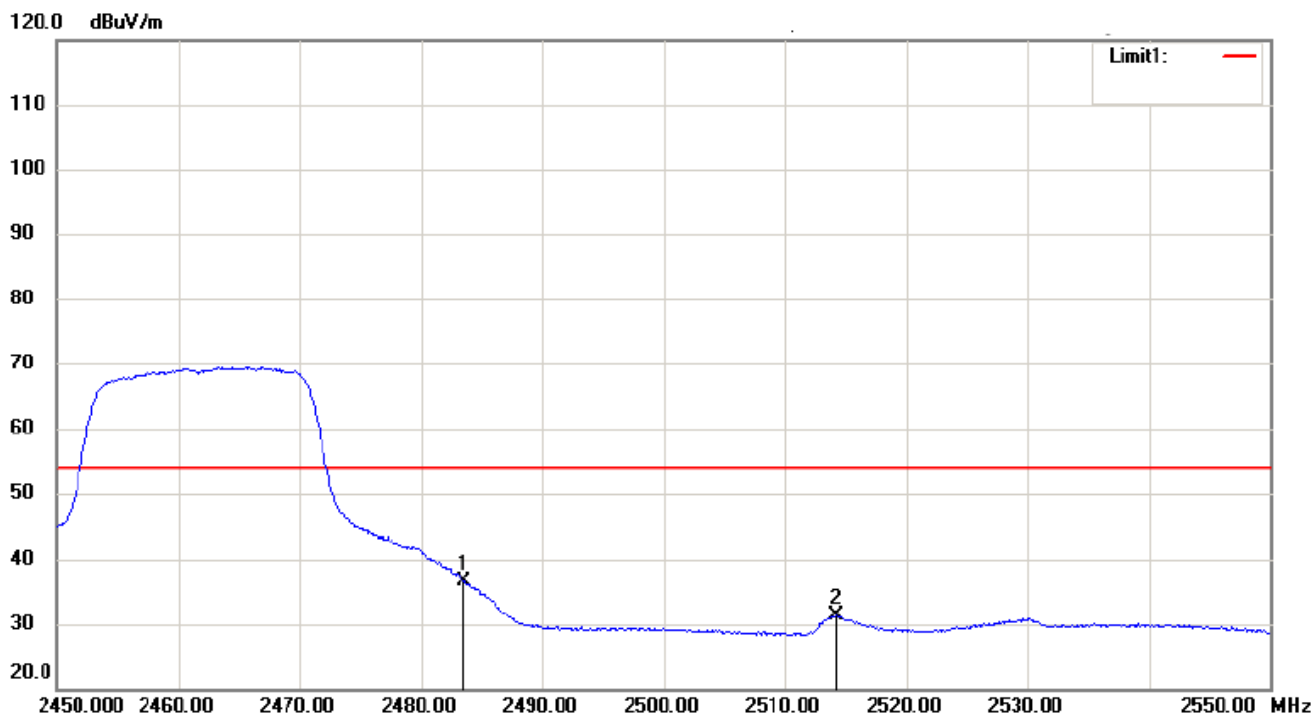
**Vertical , Peak Detector:**



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 66.20            | peak     | -6.41                | 59.79           | 74.00          | -14.21      |
| 2   | 2529.500        | 52.03            | peak     | -6.31                | 45.72           | 74.00          | -28.28      |



Vertical , Average Detector:



| Mk. | Frequency (MHz) | Reading (dBuV/m) | Detector | Corrected factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----|-----------------|------------------|----------|----------------------|-----------------|----------------|-------------|
| 1   | 2483.500        | 43.03            | peak     | -6.41                | 36.62           | 54.00          | -17.38      |
| 2   | 2514.200        | 37.68            | peak     | -6.35                | 31.33           | 54.00          | -22.67      |

Remark: No any other emission which fall in restricted bands can be detected and be reported.

Test Level = Receiver Reading + Antenna Factor + Cable Loss- Preamplifier Factor

All frequencies within the “Restricted bands” have been evaluated to compliance. Section 15.205 Restricted bands of operation.



Except as shown in paragraph of this section. only spurious emissions are permitted in any of the frequency bands listed below:

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

## 7.11 Occupied Bandwidth Test

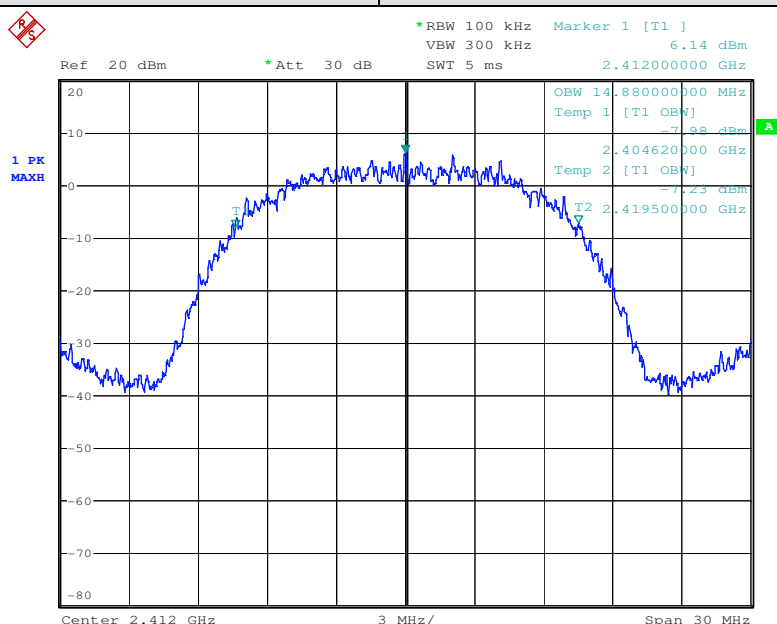
|                            |                                                                                                                                                                        |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>   | RSS-Gen Issue 3 Clause 4.6.1                                                                                                                                           |
| <b>Standard Applicable</b> | According to the section RSS-Gen Issue 3 Clause 4.6.1                                                                                                                  |
| <b>EUT Setup</b>           | The occupied bandwidth per RSS-Gen Issue 3 Clause 4.6.1 was measured using the Spectrum Analyzer with the resolutions set at 100kHz,the video bandwidth set at 300kHz. |

### Measurement Result: For 2412-2462MHz Band

| Test mode | Channel | Frequency (MHz) | Bandwidth (MHz) |
|-----------|---------|-----------------|-----------------|
| b         | Low     | 2412            | 14.88           |
|           | Middle  | 2438            | 14.91           |
|           | High    | 2462            | 14.88           |
| g         | Low     | 2412            | 16.47           |
|           | Middle  | 2438            | 16.44           |
|           | High    | 2462            | 16.44           |
| n20       | Low     | 2412            | 17.58           |
|           | Middle  | 2438            | 17.58           |
|           | High    | 2462            | 17.55           |

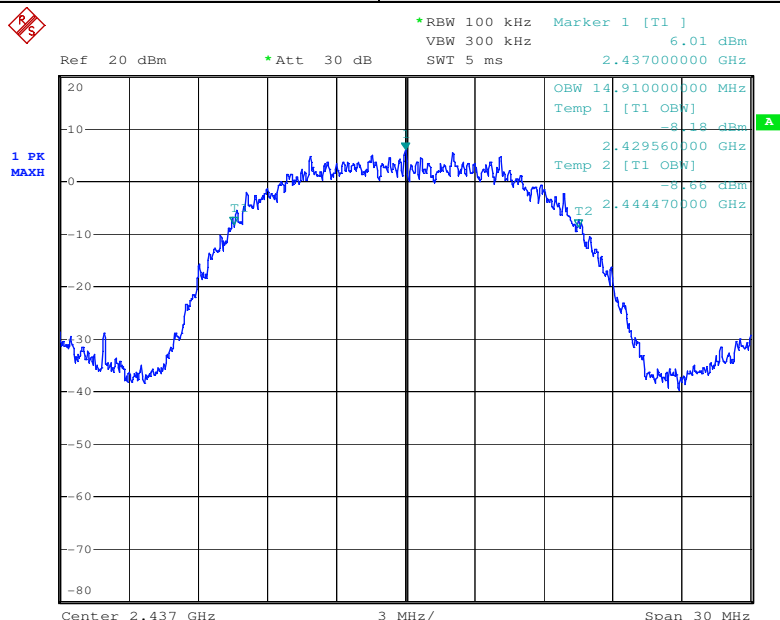
  

|            |          |               |     |
|------------|----------|---------------|-----|
| Test mode: | <b>b</b> | Test channel: | Low |
|------------|----------|---------------|-----|

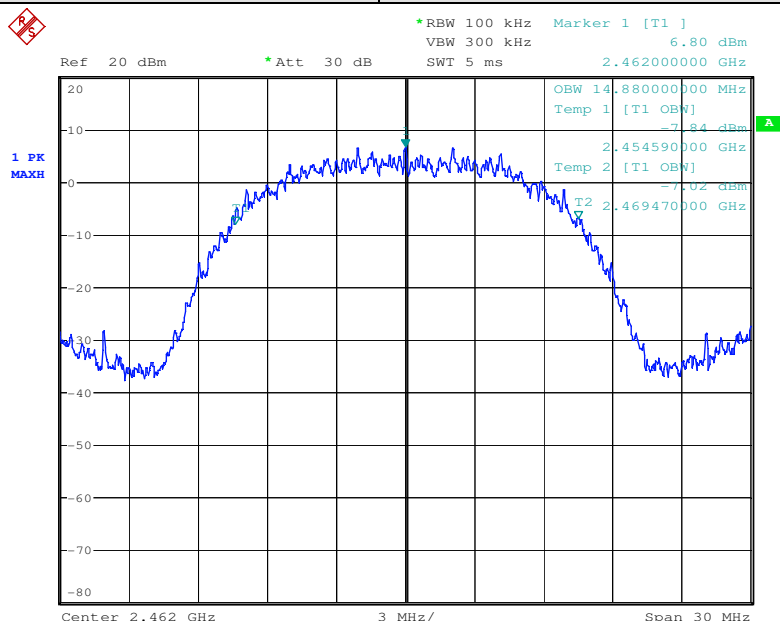




|            |   |               |        |
|------------|---|---------------|--------|
| Test mode: | b | Test channel: | Middle |
|------------|---|---------------|--------|

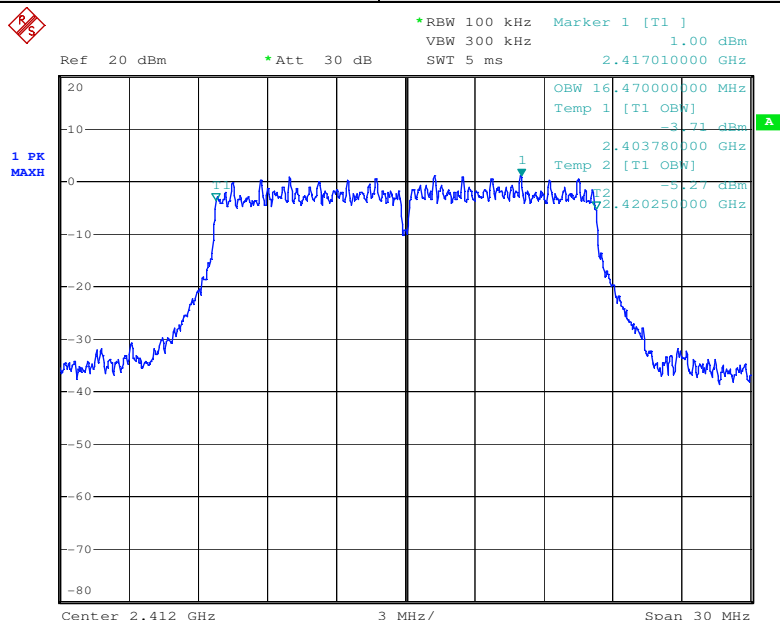


|            |   |               |      |
|------------|---|---------------|------|
| Test mode: | b | Test channel: | High |
|------------|---|---------------|------|

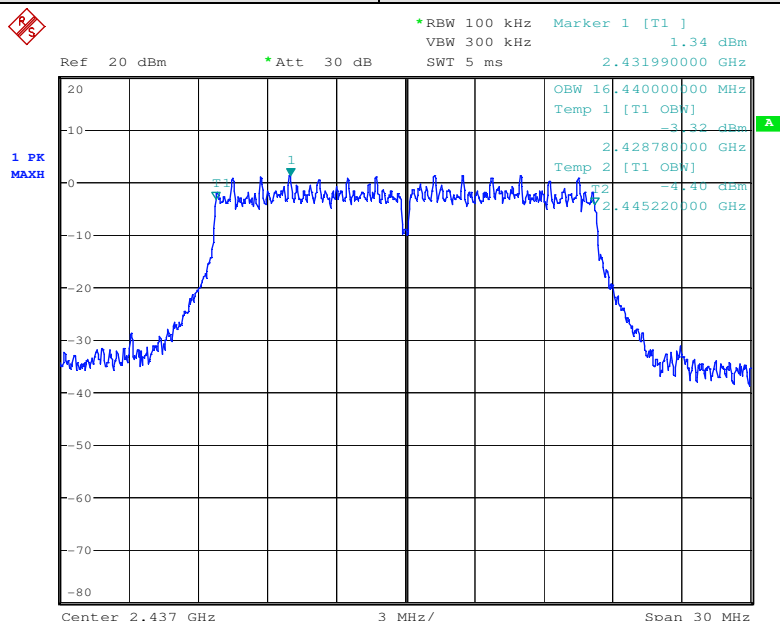




|            |   |               |     |
|------------|---|---------------|-----|
| Test mode: | g | Test channel: | Low |
|------------|---|---------------|-----|

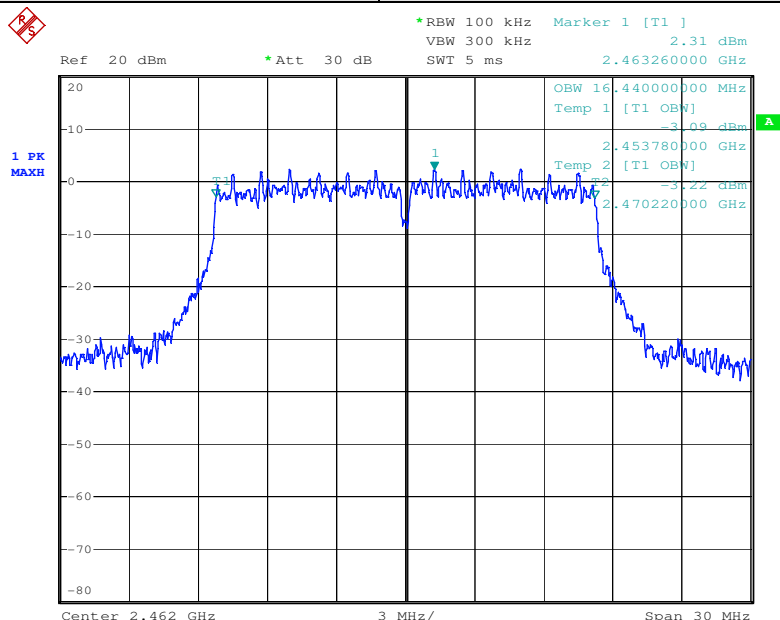


|            |   |               |        |
|------------|---|---------------|--------|
| Test mode: | g | Test channel: | Middle |
|------------|---|---------------|--------|

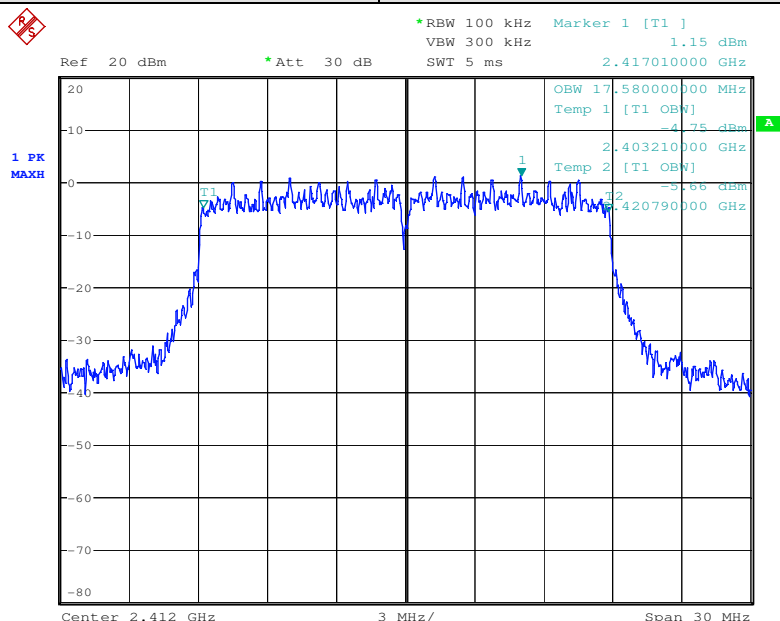




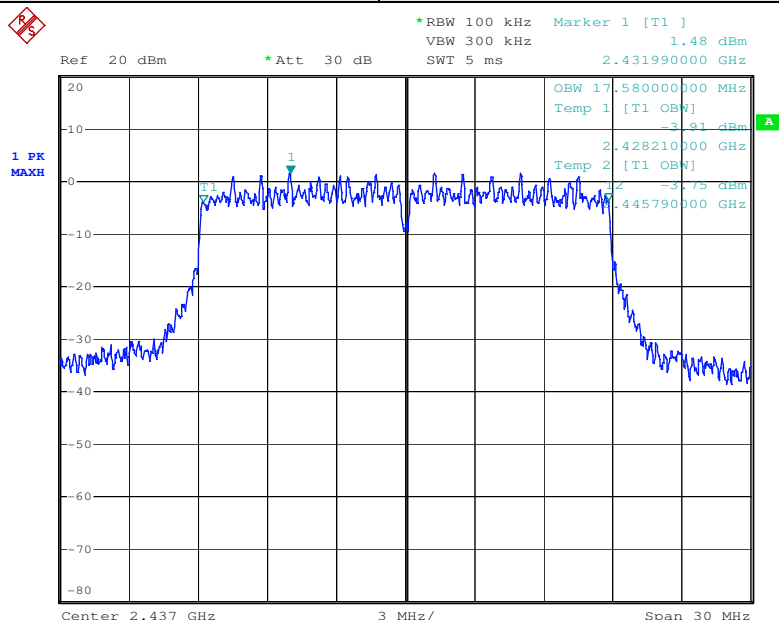
|            |   |               |      |
|------------|---|---------------|------|
| Test mode: | g | Test channel: | High |
|------------|---|---------------|------|



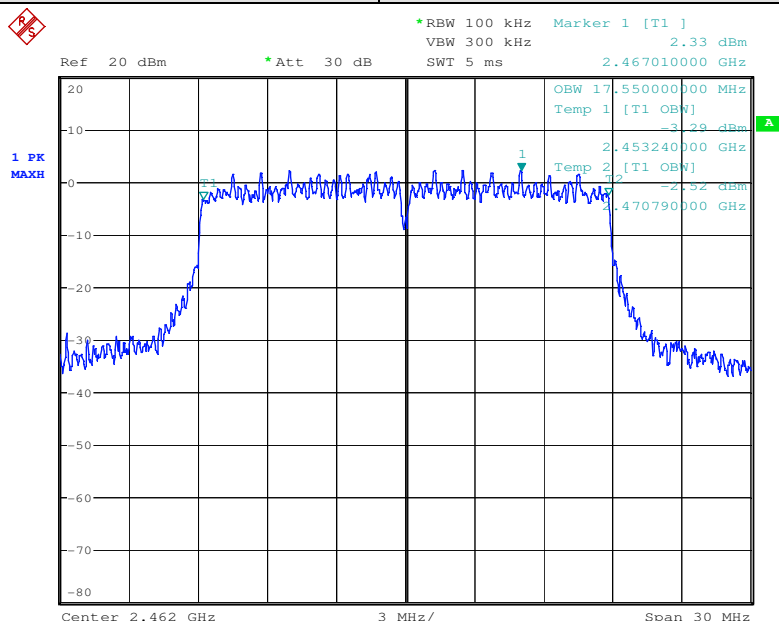
|            |   |               |     |
|------------|---|---------------|-----|
| Test mode: | n | Test channel: | Low |
|------------|---|---------------|-----|



|            |   |               |        |
|------------|---|---------------|--------|
| Test mode: | n | Test channel: | Middle |
|------------|---|---------------|--------|



|            |   |               |      |
|------------|---|---------------|------|
| Test mode: | n | Test channel: | High |
|------------|---|---------------|------|





## **8 Test Setup Photographs**

Refer to the < IPU3 Setup photos>.

## **9 EUT Constructional Details**

Refer to the < IPU3 External Photos > & < IPU3 Internal Photos >.

***End of Report***