

## **Certification Test Report**

**FCC ID: AZ489FT7061**  
**IC: 109U-89FT7061**

**FCC Rule Part: 15.247**  
**IC Radio Standards Specification: RSS-210**

**ACS Report Number: 14-2134.W06.1D**

**Applicant: Motorola Solutions**  
**Model(s): H91TGD9PW7AN**

**Test Begin Date: December 17, 2014**  
**Test End Date: February 13, 2015**

**Report Issue Date: May 28, 2015**



FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER AT-1533

This report must not be used by the client to claim product certification, approval, or endorsement by ACCLASS, ANSI, or any agency of the Federal Government.

**Project Manager:**

A handwritten signature in blue ink, appearing to read "Thierry Jean-Charles".

**Thierry Jean-Charles**  
**EMC Engineer**  
**Advanced Compliance Solutions, Inc.**

**Reviewed by:**

A handwritten signature in blue ink, appearing to read "Kirby Munroe".

**Kirby Munroe**  
**Director, Wireless Certifications**  
**Advanced Compliance Solutions, Inc.**

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**This report contains 68 pages**

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## 1 GENERAL

### 1.1 Purpose

The purpose of this report is to demonstrate compliance with Part 15 Subpart C of the FCC's Code of Federal Regulations and Industry Canada's Radio Standards Specification RSS-210.

### 1.2 Applicant Information

Motorola Solutions  
8000 West Sunrise Blvd.  
Fort Lauderdale, FL 33322

### 1.3 Product Description

The EUT is a P25 Portable Public Safety Radio

#### Technical Details

|                     |                                  |
|---------------------|----------------------------------|
| Mode of Operation:  | WLAN 802.11b/g/n                 |
| Frequency Range:    | 2412 MHz - 2462 MHz              |
| Number of Channels: | 11                               |
| Channel Separation: | 5 MHz                            |
| Modulations:        | 802.11b: DSSS<br>802.11g/n: OFDM |
| Antenna Type/Gain:  | PIFA, 2.58 dBi                   |
| Input Power:        | 7.4 VDC Lithium Ion Battery      |

Model Number: H91TGD9PW7AN

Test Sample Serial Number(s): KT000006A01MK4KA127X (Radiated & Power Line Conducted Emissions), KT000006A01MK4KA12N2 (RF Conducted)

Test Sample Condition: The equipment was provided in good condition without any physical damage.

### 1.4 Test Methodology and Considerations

The EUT was evaluated for radiated, power line and RF conducted emissions for the 2.4 GHz IEEE 802.11b/g/n radio. Preliminary power measurements were carried out for all available data rates. The configurations leading to the highest output power per mode of operation were used for the remaining measurements.

The RF conducted measurements were performed on a sample with the back cover removed for access to the RF port.

The radiated emission evaluation was performed for the EUT set in multiple configurations. The unit was investigated stand-alone in three orthogonal orientations, when installed in a charger and when communicating with a remote computer. The final measurements were executed using the worst case configuration which consists of the EUT with the charger.

The unit was also investigated for inter-modulation products between the co-located Wi-Fi and the land mobile radio. The measurements were performed for two antenna configurations of the land mobile radio. The first antenna covers the VHF, UHF, 7/800 MHz and GPS bands while the second antenna covers the 7/800 MHz and GPS band. All inter-modulation products between the co-located radios were found to be compliant to the FCC limits of 15.209 and Industry Canada RSS-GEN.

The EUT was evaluated for power line conducted emissions when installed in the charger for the radio mode of operation leading to the worst case emissions.

**Table 1.4-1: 802.11b/g/n Radio Test Configuration**

| Mode of Operation | Frequency (MHz) | Channel | Test Software Power Setting | Data Rate Setting) |
|-------------------|-----------------|---------|-----------------------------|--------------------|
| 802.11b           | 2412            | 1       | 18                          | 1 Mbps             |
|                   | 2437            | 6       |                             |                    |
|                   | 2462            | 11      |                             |                    |
| 802.11g           | 2412            | 1       | 13                          | 6 Mbps             |
|                   | 2437            | 6       |                             |                    |
|                   | 2462            | 11      |                             |                    |
| 802.11n 20 MHz    | 2412            | 1       | 13                          | 6.5 Mbps           |
|                   | 2437            | 6       |                             |                    |
|                   | 2462            | 11      |                             |                    |

The EUT was also evaluated for unintentional emissions. The results are documented separately in a Declaration of Conformity/Verification test report.

## **2 TEST FACILITIES**

### **2.1 Location**

The radiated and conducted emissions test sites are located at the following address:

Advanced Compliance Solutions, Inc.  
3998 FAU Blvd, Suite 310  
Boca Raton, Florida 33431  
Phone: (561) 961-5585  
Fax: (561) 961-5587  
[www.acstestlab.com](http://www.acstestlab.com)

FCC Test Firm Registration #: 475089  
Industry Canada Lab Code: 4175C

### **2.2 Laboratory Accreditations/Recognitions/Certifications**

ACS is accredited to ISO/IEC 17025 by ANSI-ASQ National Accreditation Board under their ACLASS program and has been issued certificate number AT-1533 in recognition of this accreditation. Unless otherwise specified, all test methods described within this report are covered under the ISO/IEC 17025 scope of accreditation.

## 2.3 Radiated & Conducted Emissions Test Site Description

### 2.3.1 Semi-Anechoic Chamber Test Site

The EMC radiated test facility consists of an RF-shielded enclosure. The interior dimensions of the indoor semi-anechoic chamber are approximately 48 feet (14.6 m) long by 36 feet (10.8 m) wide by 24 feet (7.3 m) high and consist of rigid, 1/8 inch (0.32 cm) steel-clad, wood core modular panels with steel framing. In the shielded enclosure, the faces of the panels are galvanized and the chamber is self-supporting. 8-foot RF absorbing cones are installed on 4 walls and the ceiling. The steel-clad ground plane is covered with vinyl floor.

The turntable is driven by pneumatic motor, which is capable of supporting a 2000 lb. load. The turntable is flushed with the chamber floor which it is connected to, around its circumference, with a continuous metallic loaded spring. An EMCO Model 1050 Multi-device Controller controls the turntable position.

A pneumatic motor is used to control antenna polarizations and height relative to the ground. The height information is displayed on the control unit EMCO Model 1050.

The control room is an RF shielded enclosure attached to the semi-anechoic chamber with two bulkhead panels for connecting RF, and control cables. The dimension of the room is 7.3 m x 4.9 m x 3 m high and the entrance doors of both control and conducted rooms are 3 feet (0.91 m) by 7 feet (2.13 m).

A diagram of the Semi-Anechoic Chamber Test Site is shown in Figure 2.3.1-1 below:

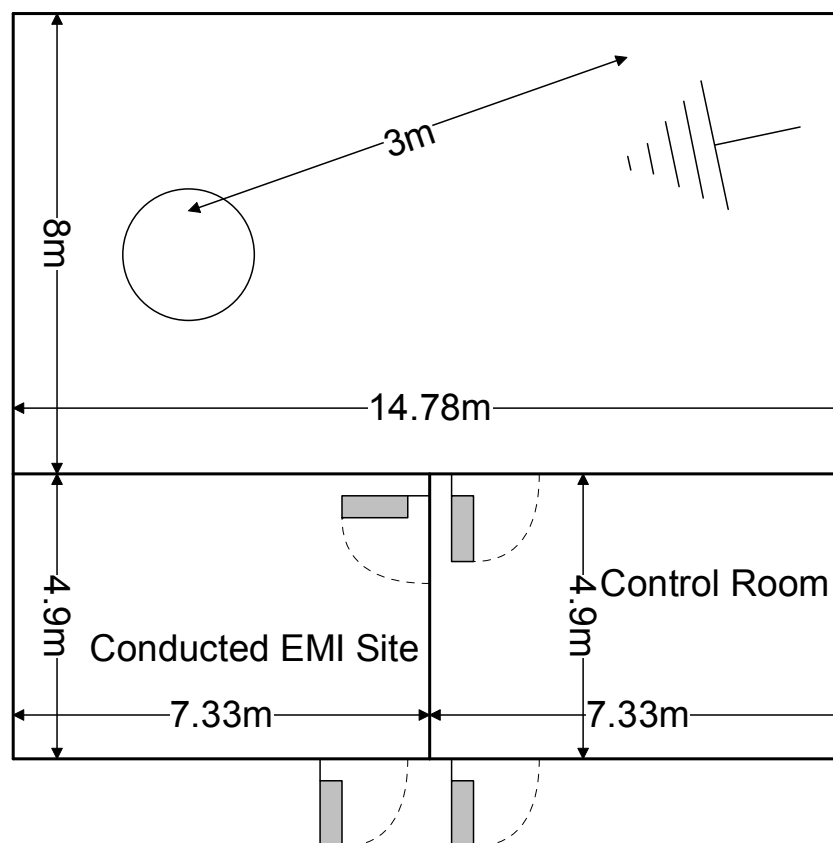


Figure 2.3.1-1: Semi-Anechoic Chamber Test Site

### 2.3.2 Conducted Emissions Test Site Description

The dimensions of the shielded conducted room are 7.3 x 4.9 x 3 m<sup>3</sup>. As per ANSI C63.4 2009 requirements, the data were taken using two LISNs; a Solar Model 8028-50 50  $\Omega$ /50  $\mu$ H and an EMCO Model 3825, which are installed as shown in Photograph 3. For evaluations requiring 220 V, 50 Hz, a Polarad LISN (S/N 879341/048) is used in conjunction with a 1 kVA, 50 Hz/220 V EDGAR variable frequency generator, Model 1001B, to filter conducted noise from the generator.

A diagram of the room is shown below in figure 2.3.2-1:

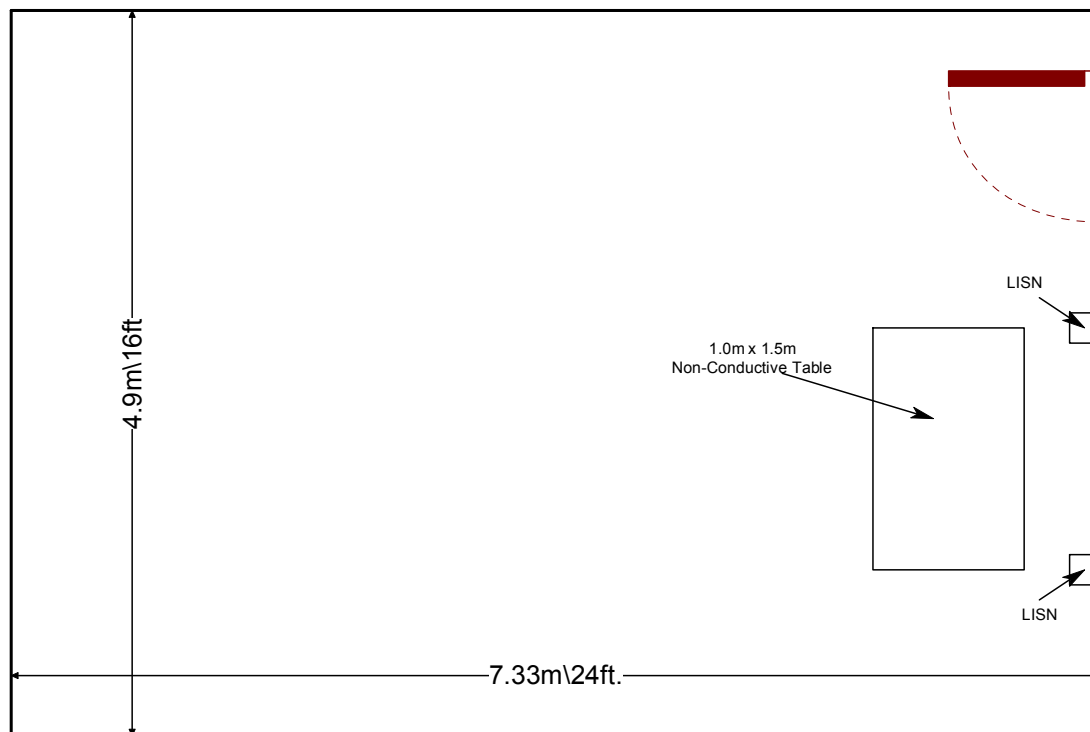


Figure 2.3.2-1: AC Mains Conducted EMI Site

### **3 APPLICABLE STANDARD REFERENCES**

The following standards were used:

- ❖ ANSI C63.4-2009: Method of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the 9 kHz to 40 GHz.
- ❖ ANSI C63.10-2009: American National Standard for Testing Unlicensed Wireless Devices.
- ❖ US Code of Federal Regulations (CFR): Title 47, Part 2, Subpart J: Equipment Authorization Procedures, 2015.
- ❖ US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators, 2015
- ❖ KDB Publication No. 558074 D01 DTS Meas Guidance v03r02 – Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247, June 4, 2014.
- ❖ Industry Canada Radio Standards Specification: RSS-210 - Low-power License-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment, Issue 8 December 2010.
- ❖ Industry Canada Radio Standards Specification: RSS-GEN – General Requirements for Compliance of Radio Apparatus, Issue 4, November 2014.

#### 4 LIST OF TEST EQUIPMENT

The calibration interval of test equipment is annually or the manufacturer's recommendations. Where the calibration interval deviates from the annual cycle based on the instrument manufacturer's recommendations, it shall be stated below.

**Table 4-1: Test Equipment**

| AssetID | Manufacturer               | Model #                | Equipment Type     | Serial #   | Last Calibration Date | Calibration Due Date |
|---------|----------------------------|------------------------|--------------------|------------|-----------------------|----------------------|
| 2111    | Aeroflex Inmet             | 40AH2W-20              | Attenuator         | 2111       | 7/25/2014             | 7/25/2015            |
| 283     | Rohde & Schwarz            | FSP40                  | Spectrum Analyzers | 1000033    | 9/18/2013             | 9/18/2015            |
| 523     | Agilent                    | E7405                  | Spectrum Analyzers | MY45103293 | 1/8/2013              | 1/8/2015             |
| 523     | Agilent                    | E7405                  | Spectrum Analyzers | MY45103293 | 12/26/2014            | 12/26/2016           |
| 2002    | EMCO                       | 3108                   | Antennas           | 2147       | 11/22/2013            | 11/22/2015           |
| 2004    | EMCO                       | 3146                   | Antennas           | 1385       | 11/22/2013            | 11/22/2015           |
| 2006    | EMCO                       | 3115                   | Antennas           | 2573       | 4/24/2013             | 4/24/2015            |
| 2008    | COM-Power                  | AH-826                 | Antennas           | 81009      | NCR                   | NCR                  |
| 2011    | Hewlett-Packard            | HP 8447D               | Amplifiers         | 2443A03952 | 12/31/2013            | 12/31/2014           |
| 2011    | Hewlett-Packard            | HP 8447D               | Amplifiers         | 2443A03952 | 12/31/2014            | 12/31/2015           |
| 2022    | EMCO                       | LISN3825/2R            | LISN               | 1095       | 9/9/2013              | 9/9/2015             |
| 2037    | ACS Boca                   | Chamber EMI Cable Set  | Cable Set          | 2037       | 2/27/2014             | 2/27/2015            |
| 2044    | QMI                        | N/A                    | Cables             | 2044       | 12/31/2013            | 12/31/2014           |
| 2044    | QMI                        | N/A                    | Cables             | 2044       | 12/31/2014            | 12/31/2015           |
| 2045    | ACS Boca                   | Conducted Cable Set    | Cable Set          | 2045       | 1/1/2014              | 1/1/2015             |
| 2045    | ACS Boca                   | Conducted Cable Set    | Cable Set          | 2045       | 1/1/2015              | 1/1/2016             |
| 2070    | Mini Circuits              | VHF-8400+              | Filter             | 2070       | 12/31/2014            | 12/31/2015           |
| 2070    | Mini Circuits              | VHF-8400+              | Filter             | 2070       | 1/1/2014              | 1/1/2015             |
| 2072    | Mini Circuits              | VHF-3100+              | Filter             | 30737      | 1/1/2014              | 1/1/2015             |
| 2072    | Mini Circuits              | VHF-3100+              | Filter             | 30737      | 12/31/2014            | 12/31/2015           |
| 2082    | Teledyne Storm Products    | 90-010-048             | Cables             | 2082       | 5/8/2014              | 5/8/2015             |
| 2086    | Merrimac                   | FAN-6-10K              | Attenuators        | 23148-83-1 | 12/21/2013            | 12/31/2014           |
| 2086    | Merrimac                   | FAN-6-10K              | Attenuators        | 23148-83-1 | 12/31/2014            | 12/31/2015           |
| 2089    | Agilent Technologies, Inc. | 83017A                 | Amplifiers         | 3123A00214 | 12/12/2014            | 12/12/2015           |
| 2095    | ETS Lindgren               | TILE4! - Version 4.2.A | Software           | 85242      | NCR                   | NCR                  |
| 3004    | Teseq                      | CFL 9206A              | Attenuators        | 34720      | 10/21/2013            | 10/21/2015           |

**Notes:**

- NCR=No Calibration Required
- The asset calibration information is provided to cover the entire test period.

## 5 SUPPORT EQUIPMENT

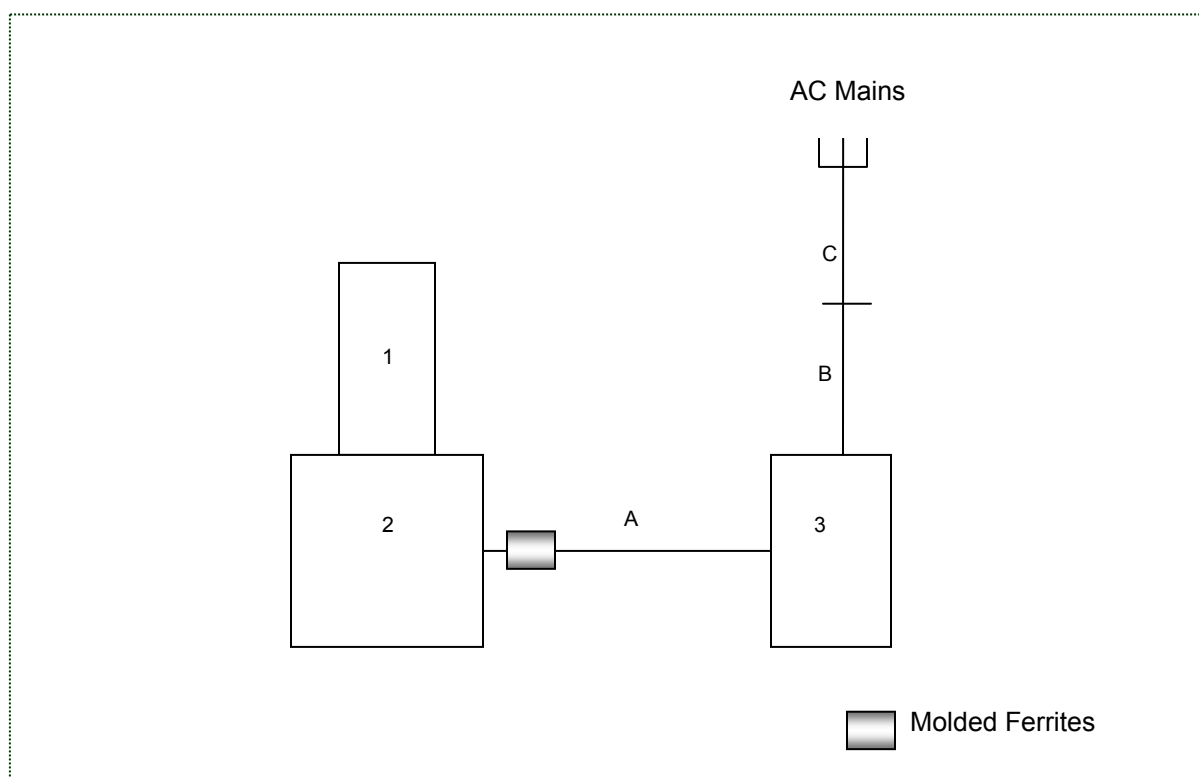
**Table 5-1: EUT and Support Equipment**

| Item # | Type Device  | Manufacturer       | Model/Part #      | Serial #            |
|--------|--------------|--------------------|-------------------|---------------------|
| 1      | EUT          | Motorola Solutions | H91TGD9PW7AN      | KT00006A01MK4KA127X |
| 2      | Dock Charger | Motorola Solutions | NNTN7079A (V3.90) | N/A                 |
| 3      | Power Supply | Motorola Solutions | NU20-C140150-I3   | 1209                |

**Table 5-2: Cable Description**

| Cable # | Cable Type     | Length | Shield | Termination                    |
|---------|----------------|--------|--------|--------------------------------|
| A       | Power          | 1.90 m | No     | Charger to power Supply        |
| B       | Power          | 1.23 m | No     | Power Supply to Extension Cord |
| C       | Extension Cord | 1.82 m | No     | Power Cord to AC Mains         |

## 6 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM



**Figure 6-1: EUT Test Setup**

## 7 SUMMARY OF TESTS

Along with the tabular data shown below, plots were taken of all signals deemed important enough to document.

### 7.1 Antenna Requirement – FCC: Section 15.203

The EUT uses a 2.58 dBi internal PIFA which connects to the RF port via a spring contact. The EUT meets the requirements of FCC 15.203.

### 7.2 6 dB Bandwidth - FCC: Section 15.247(a)(2) 99% Bandwidth IC: RSS-210 A8.2(a)

#### 7.2.1 Measurement Procedure

The 6dB bandwidth was measured in accordance with the FCC KDB Publication No. 558074 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (47 CFR 15.247)” DTS 6-dB Signal Bandwidth Option 1. The RBW of the spectrum analyzer was set to 100 kHz and VBW 300 kHz. Span was set large enough to capture the entire emissions and >> RBW.

The 99% occupied bandwidth was measured with the spectrum analyzer span set to fully display the emission. The RBW was set to 1% to 5% of the approximated bandwidth. . The occupied 99% bandwidth was measured by using a delta marker at the lower and upper frequencies leading to 0.5% of the total power.

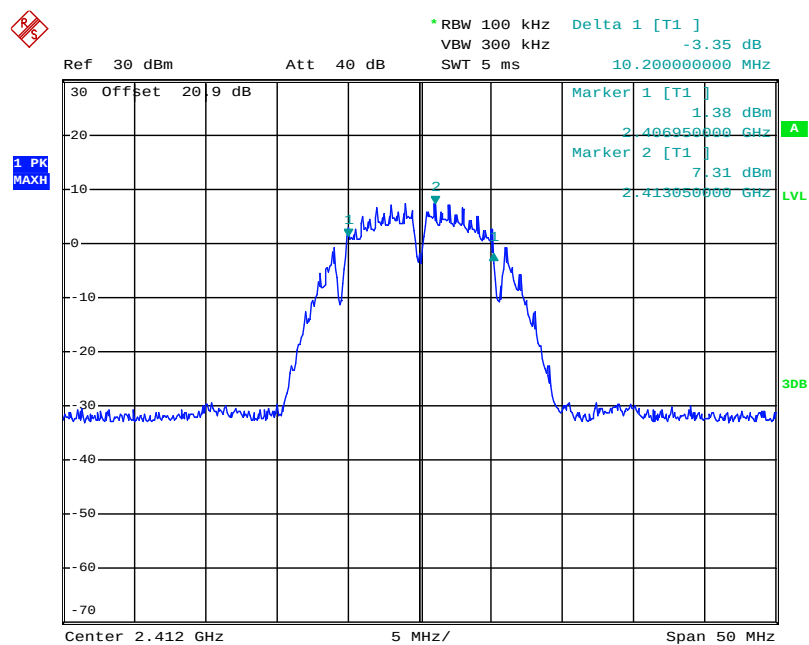
#### 7.2.2 Measurement Results

Results are shown below.

#### 802.11b

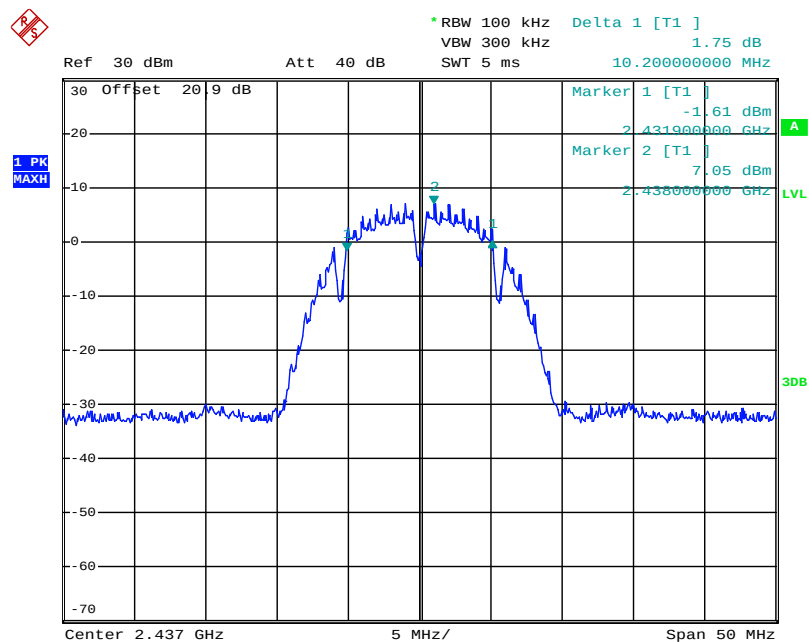
Table 7.2.2-1: 6dB / 20dB / 99% Bandwidth

| Frequency<br>[MHz] | 6dB Bandwidth<br>[MHz] | 20dB Bandwidth<br>[MHz] | 99% Bandwidth<br>(MHz) |
|--------------------|------------------------|-------------------------|------------------------|
| 2412               | 10.2000                | 16.1188                 | 13.7000                |
| 2437               | 10.2000                | 16.2700                 | 13.7000                |
| 2462               | 10.2000                | 16.2313                 | 13.7000                |



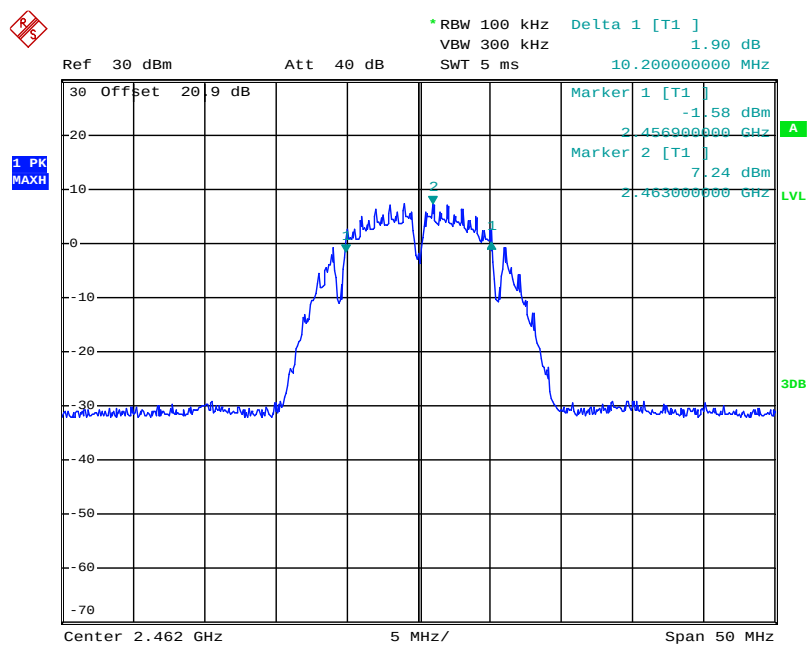
Date: 2.JAN.2015 19:59:20

Figure 7.2.2-1: 6dB BW - Low Channel



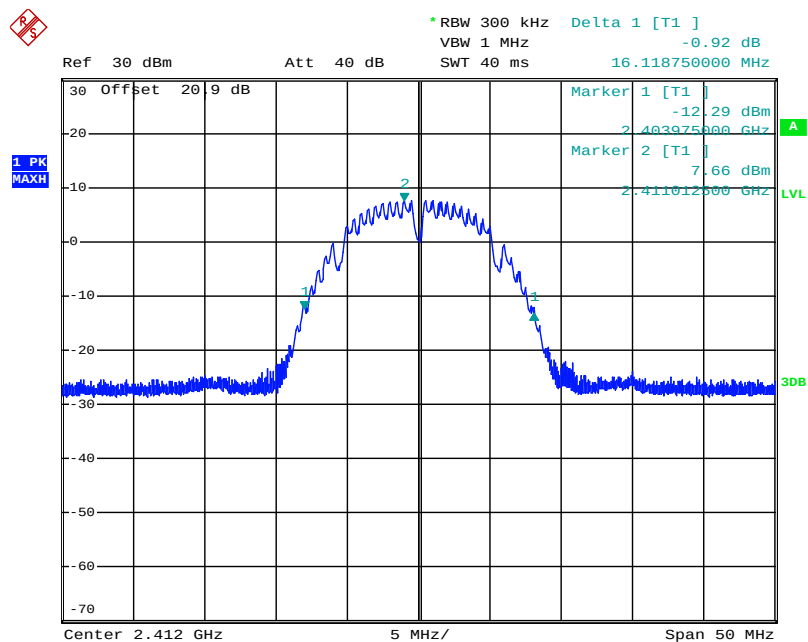
Date: 2.JAN.2015 19:54:03

Figure 7.2.2-2: 6dB BW - Middle Channel



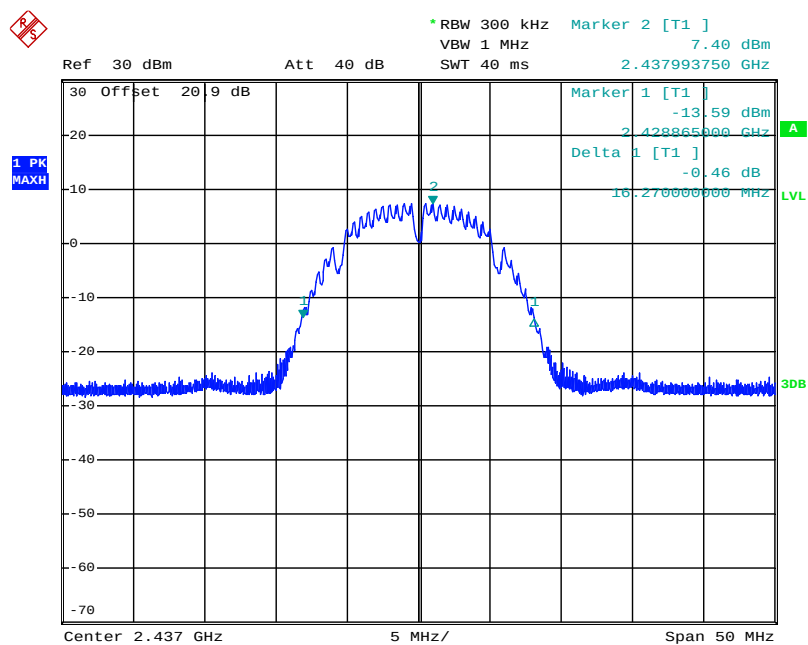
Date: 2.JAN.2015 18:44:12

Figure 7.2.2-3: 6dB BW - High Channel



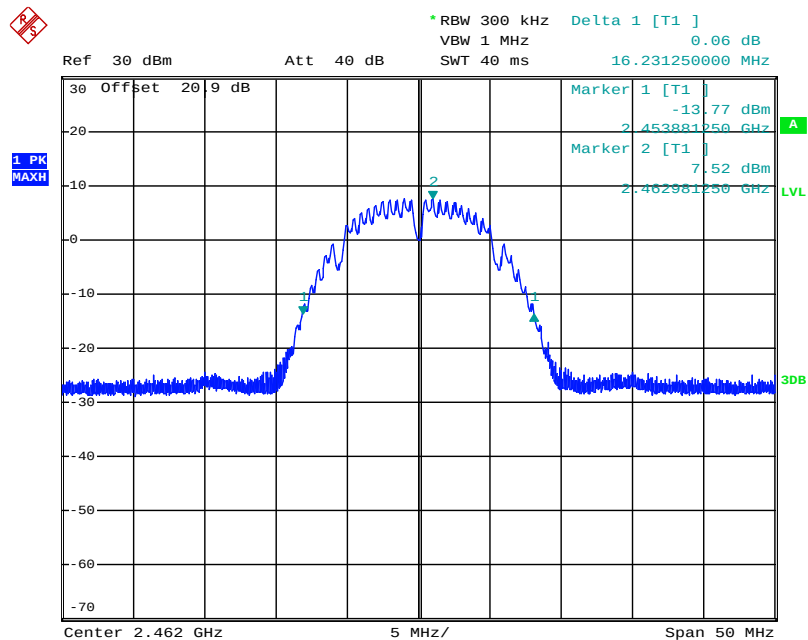
Date: 2.JAN.2015 16:38:02

Figure 7.2.2-4: 20dB BW - Low Channel



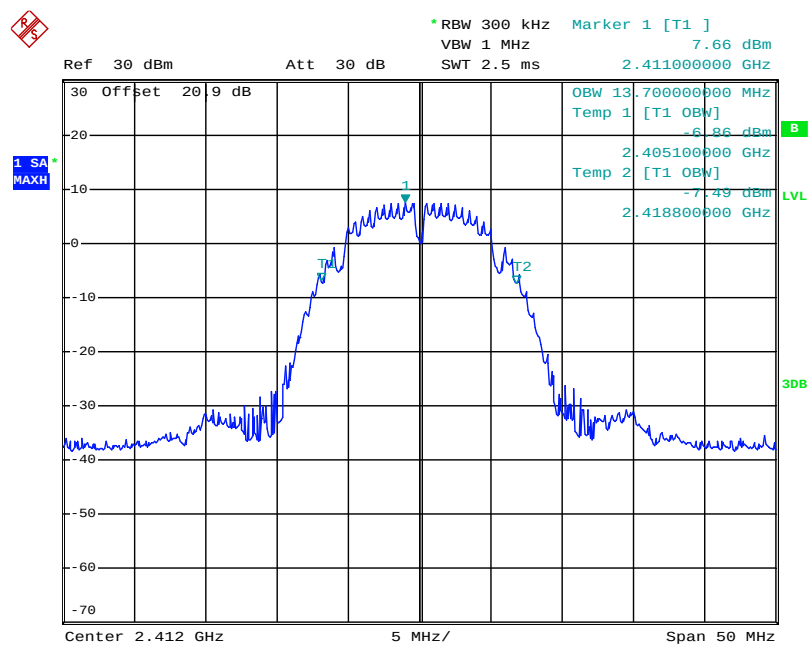
Date: 19.DEC.2014 17:44:27

Figure 7.2.2-5: 20dB BW - Middle Channel



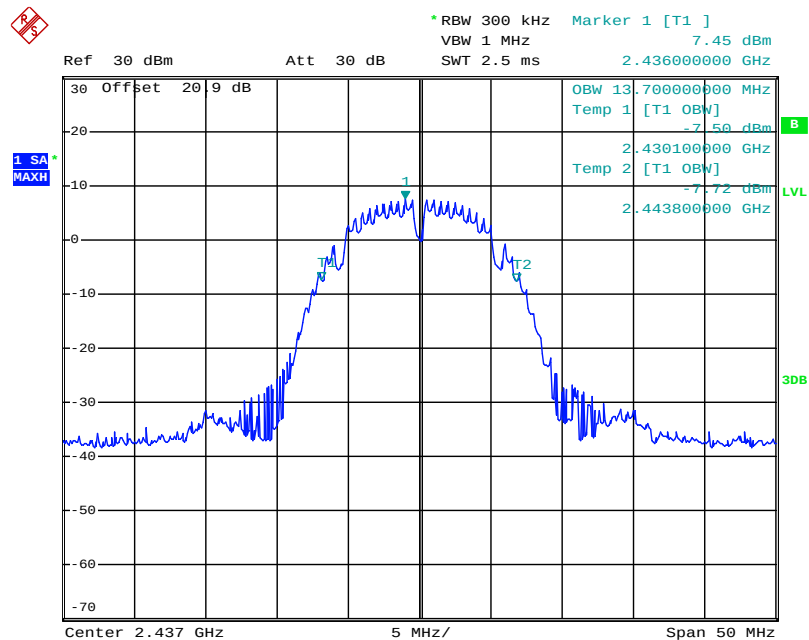
Date: 2.JAN.2015 16:49:44

Figure 7.2.2-6: 20dB BW - High Channel



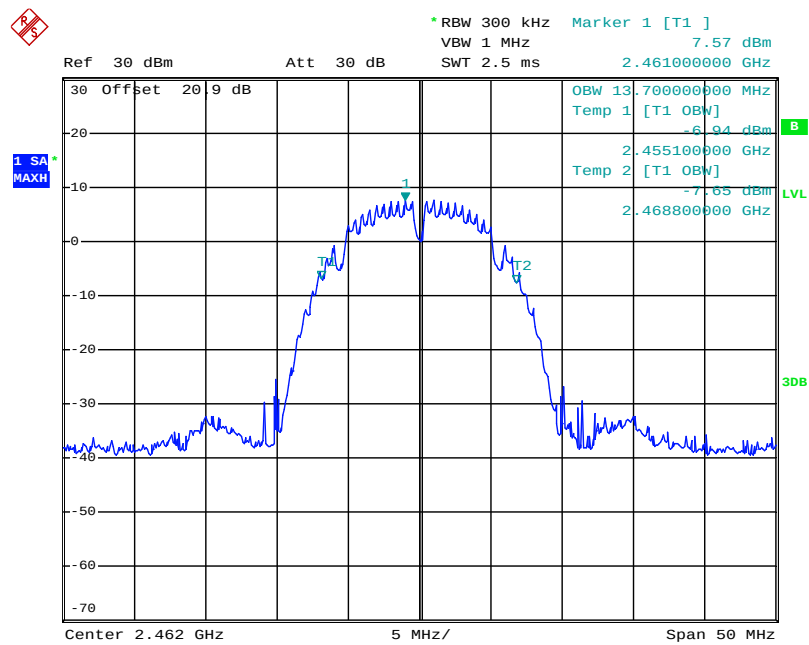
Date: 2.JAN.2015 20:04:15

Figure 7.2.2-7: 99% OBW - Low Channel



Date: 2.JAN.2015 19:51:50

Figure 7.2.2-8: 99% OBW - Middle Channel



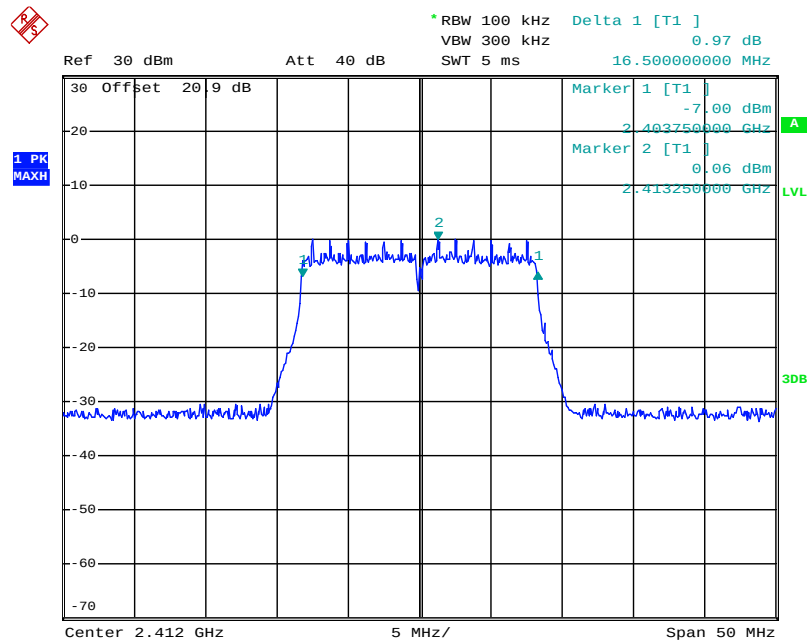
Date: 2.JAN.2015 19:46:11

Figure 7.2.2-9: 99% OBW - High Channel

802.11g

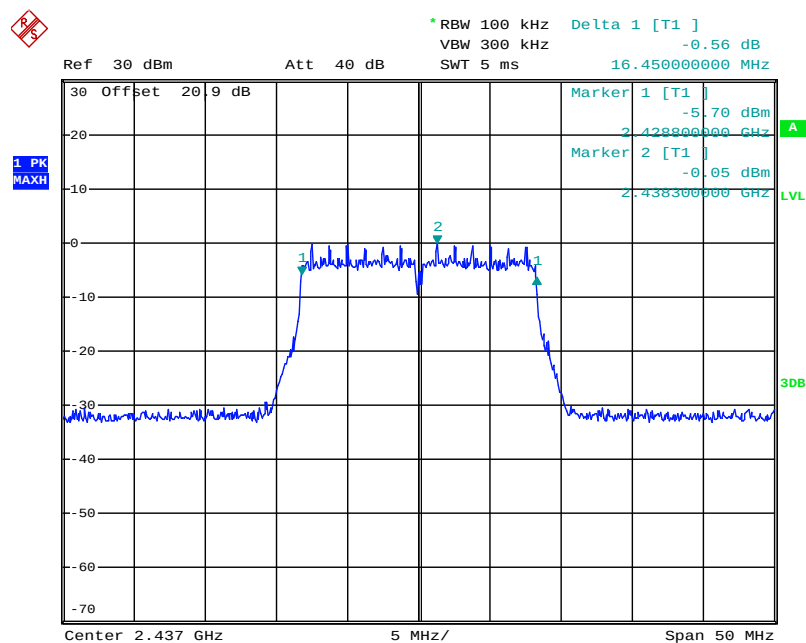
Table 7.2.2-2: 6dB / 20dB / 99% Bandwidth

| Frequency [MHz] | 6dB Bandwidth [MHz] | 20dB Bandwidth [MHz] | 99% Bandwidth (MHz) |
|-----------------|---------------------|----------------------|---------------------|
| 2412            | 16.5000             | 19.4625              | 17.0000             |
| 2437            | 16.4500             | 19.5250              | 16.9000             |
| 2462            | 16.4500             | 19.6000              | 16.9000             |



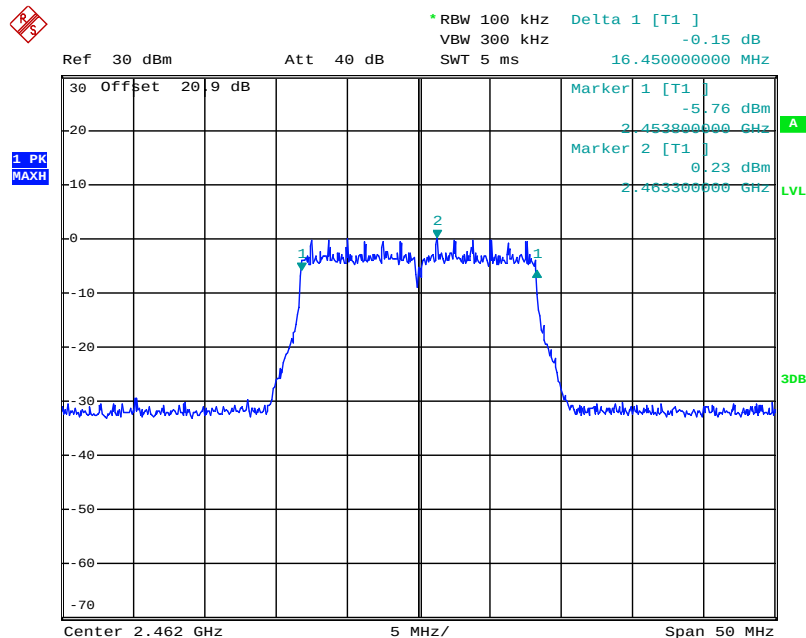
Date: 2.JAN.2015 18:08:04

Figure 7.2.2-10: 6dB BW - Low Channel



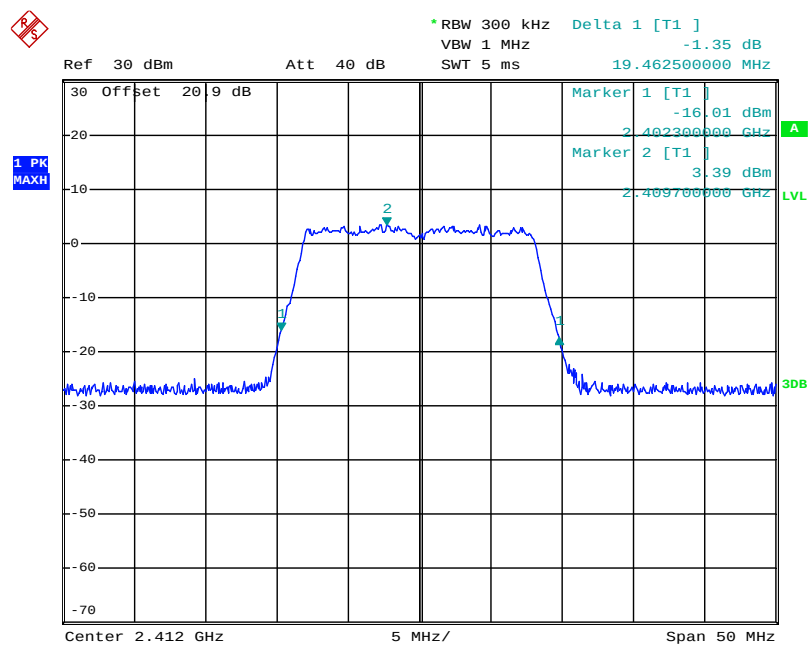
Date: 2.JAN.2015 18:12:07

Figure 7.2.2-11: 6dB BW - Middle Channel



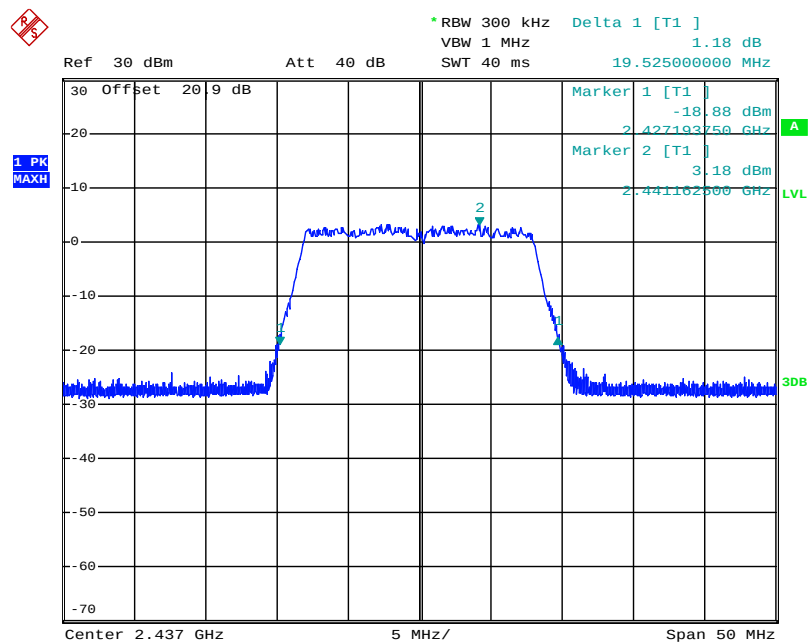
Date: 2.JAN.2015 18:23:18

Figure 7.2.2-12: 6dB BW - High Channel



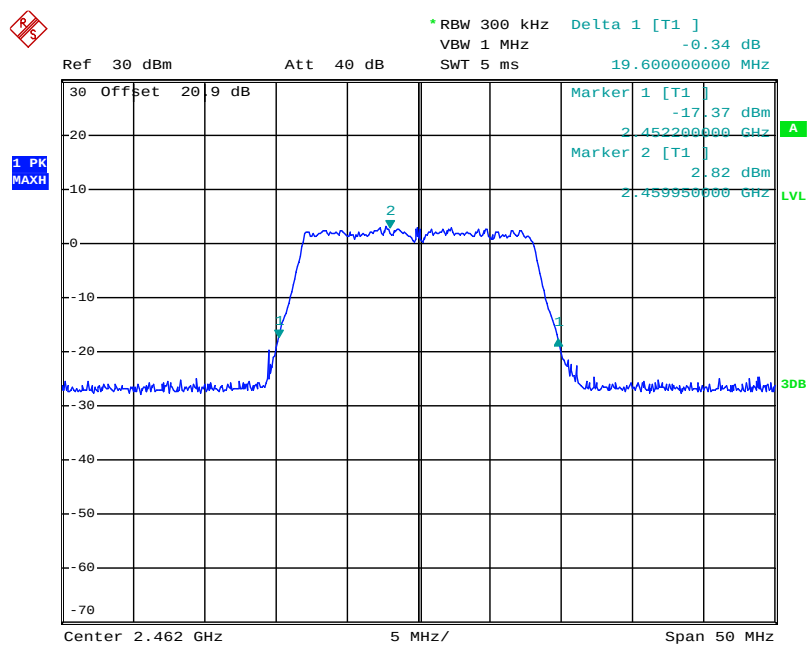
Date: 2.JAN.2015 16:57:36

Figure 7.2.2-13: 20dB BW - Low Channel



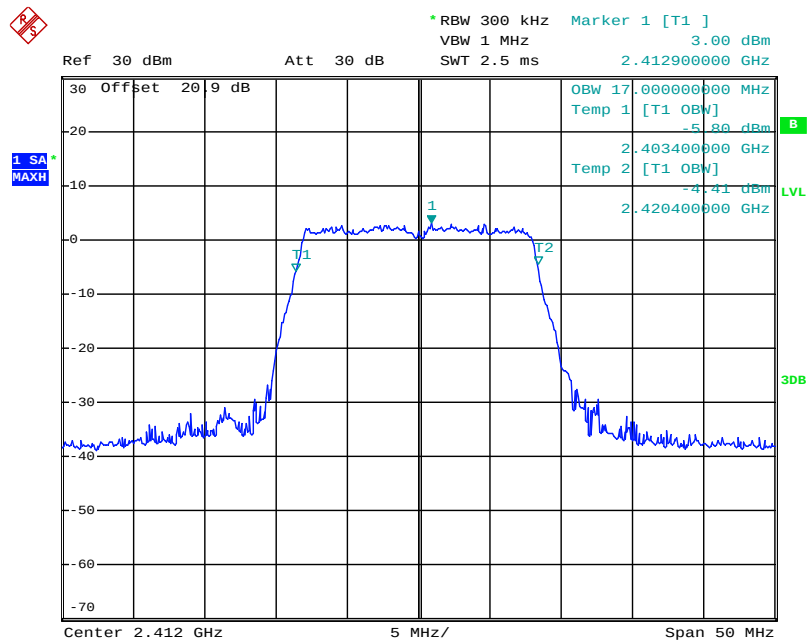
Date: 19.DEC.2014 18:38:31

Figure 7.2.2-14: 20dB BW - Middle Channel



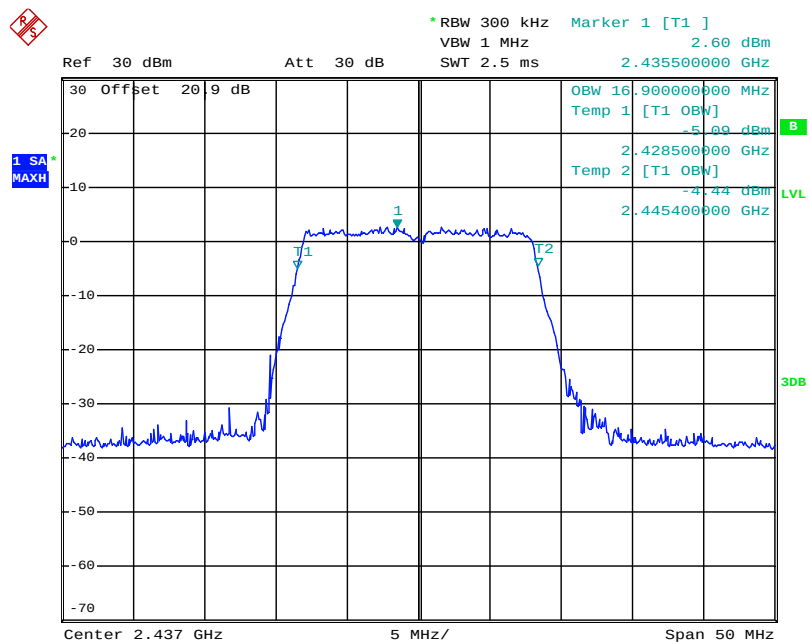
Date: 2.JAN.2015 17:05:31

Figure 7.2.2-15: 20dB BW - High Channel



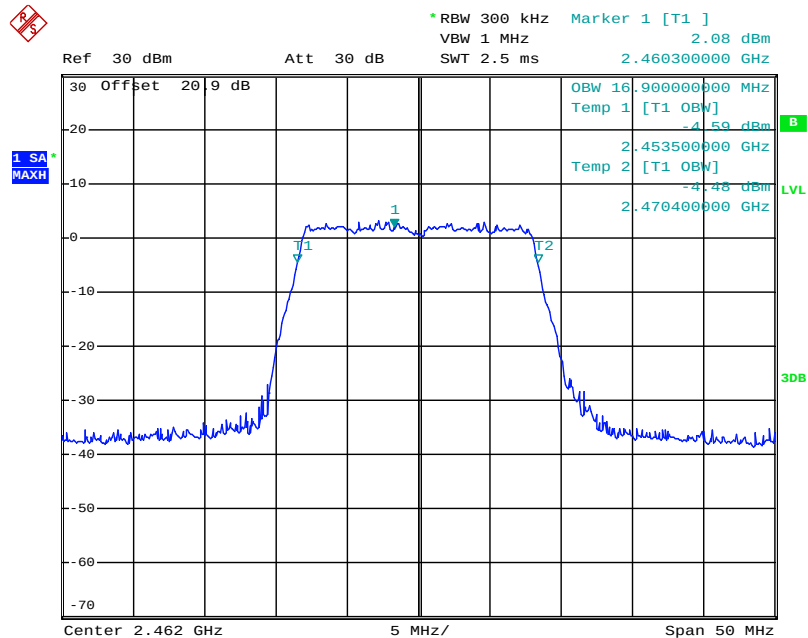
Date: 2.JAN.2015 18:05:22

Figure 7.2.2-16: 99% OBW - Low Channel



Date: 2.JAN.2015 18:14:47

Figure 7.2.2-17: 99% OBW - Middle Channel



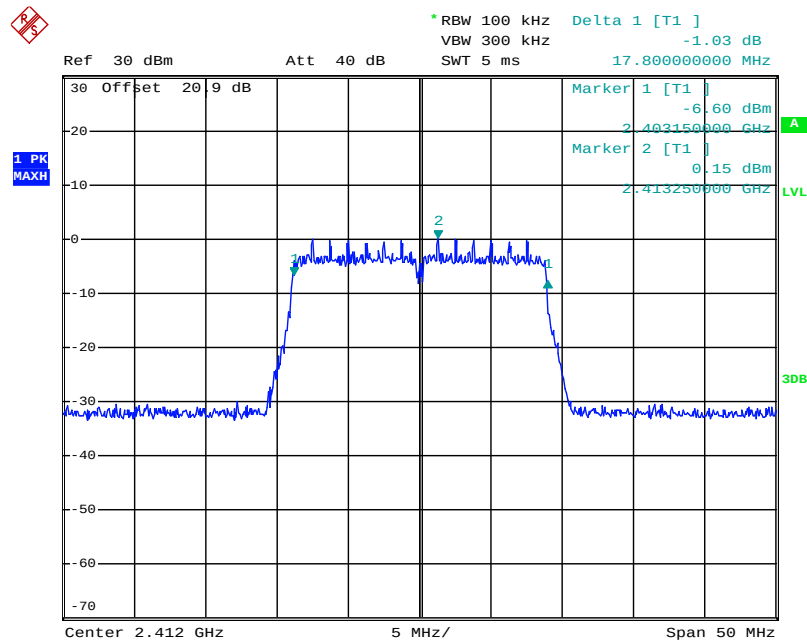
Date: 2.JAN.2015 18:17:57

Figure 7.2.2-18: 99% OBW - High Channel

802.11n 20 MHz

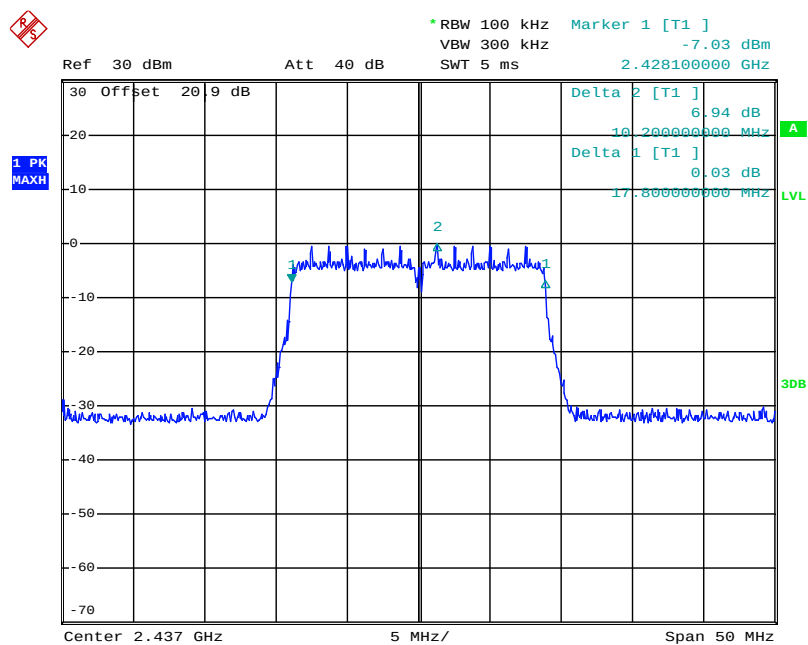
Table 7.2.2-3: 6dB / 20dB / 99% Bandwidth

| Frequency [MHz] | 6dB Bandwidth [MHz] | 20dB Bandwidth [MHz] | 99% Bandwidth (MHz) |
|-----------------|---------------------|----------------------|---------------------|
| 2412            | 17.8000             | 20.2000              | 18.1000             |
| 2437            | 17.8000             | 20.4000              | 18.1000             |
| 2462            | 17.8000             | 20.3500              | 18.0000             |



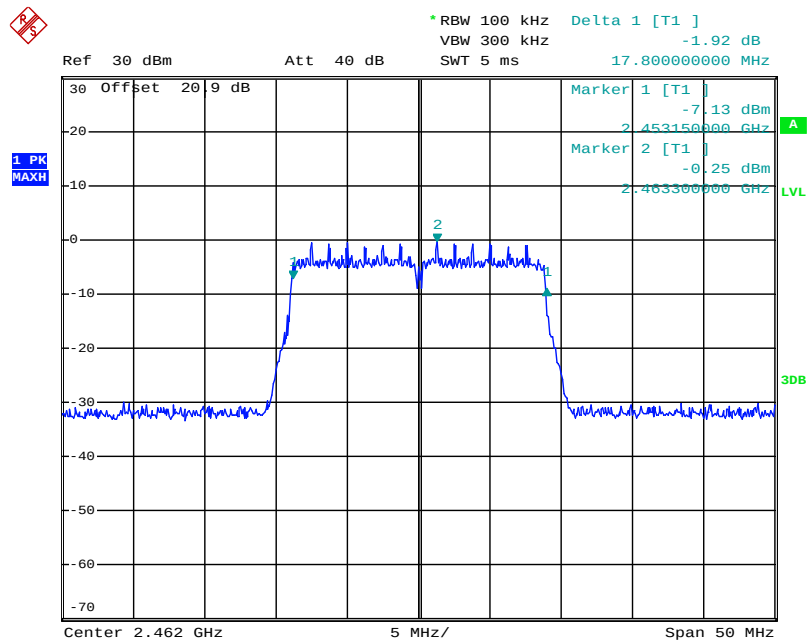
Date: 2.JAN.2015 18:00:15

Figure 7.2.2-19: 6dB BW - Low Channel



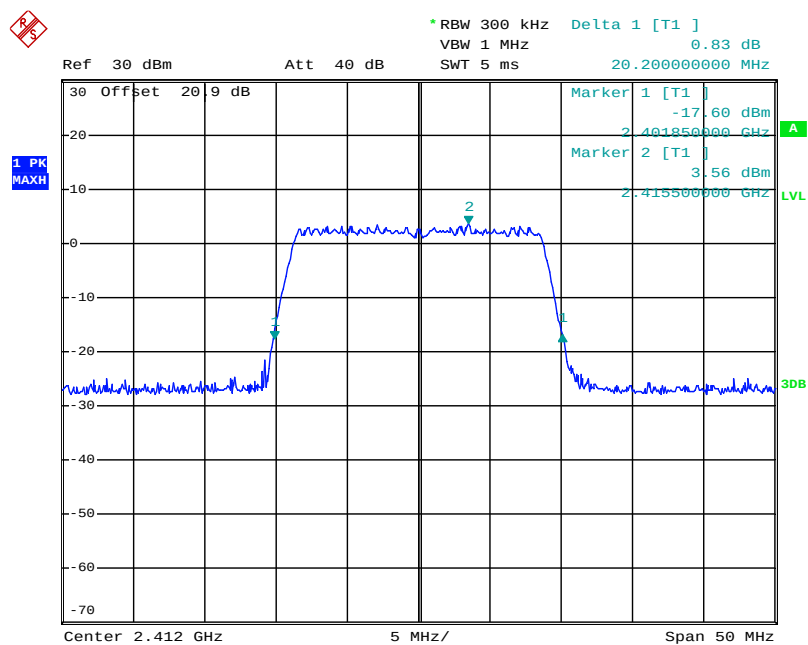
Date: 2.JAN.2015 17:55:35

Figure 7.2.2-20: 6dB BW - Middle Channel



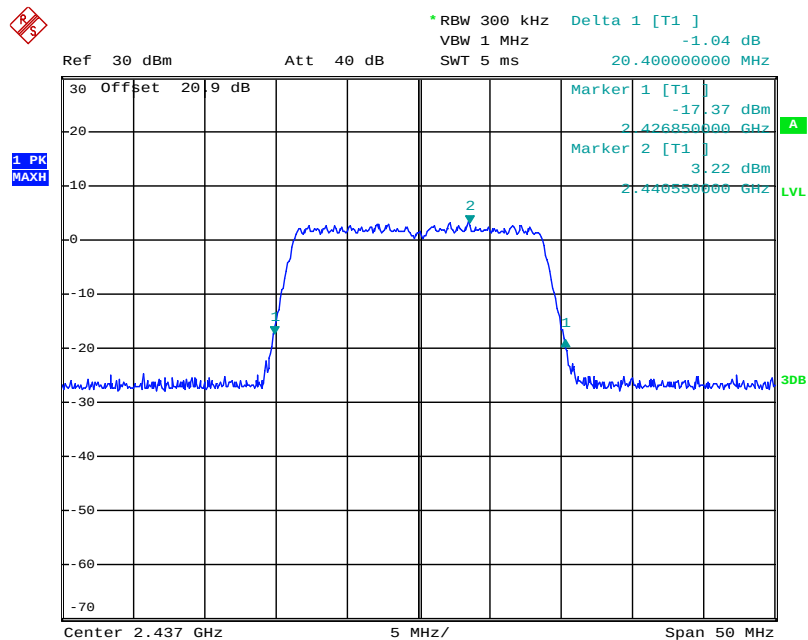
Date: 2.JAN.2015 17:42:48

Figure 7.2.2-21: 6dB BW - High Channel



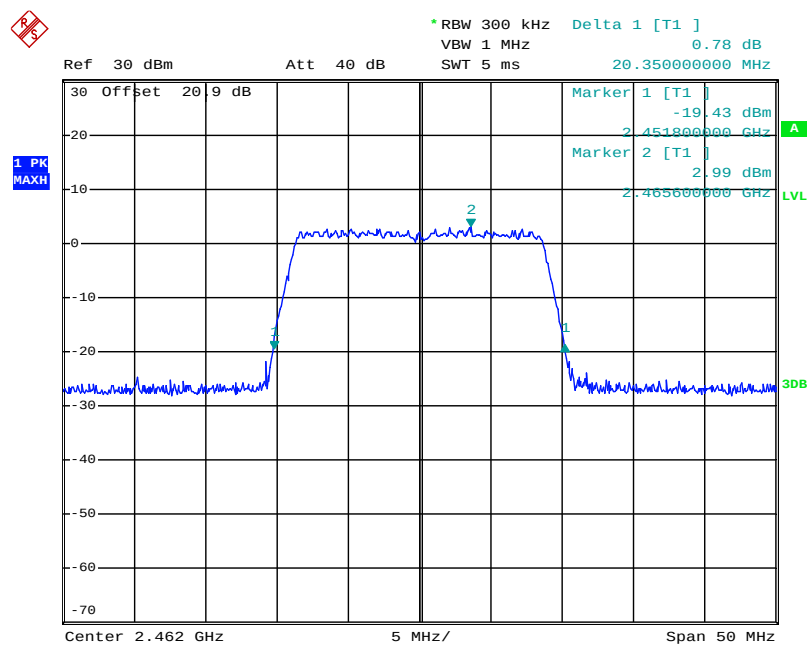
Date: 2.JAN.2015 17:12:17

Figure 7.2.2-22: 20dB BW - Low Channel



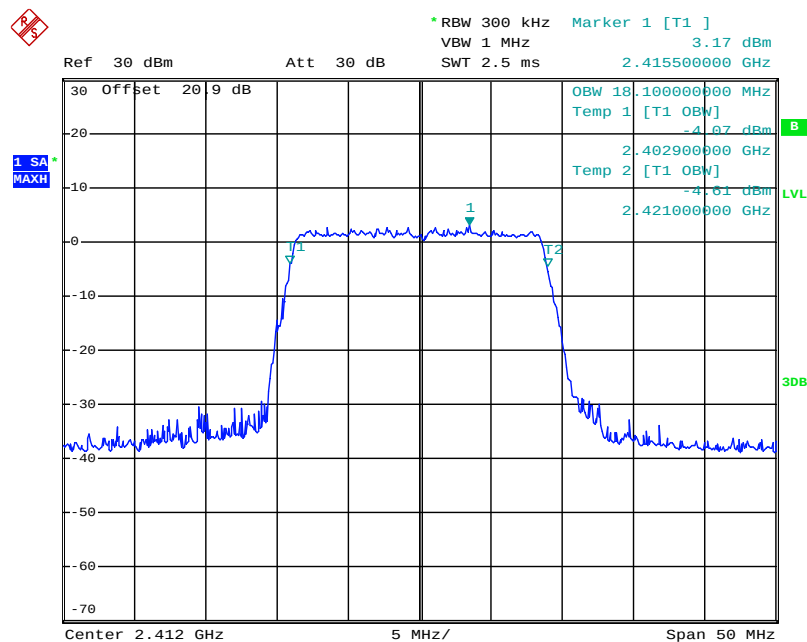
Date: 19.DEC.2014 23:07:32

Figure 7.2.2-23: 20dB BW - Middle Channel



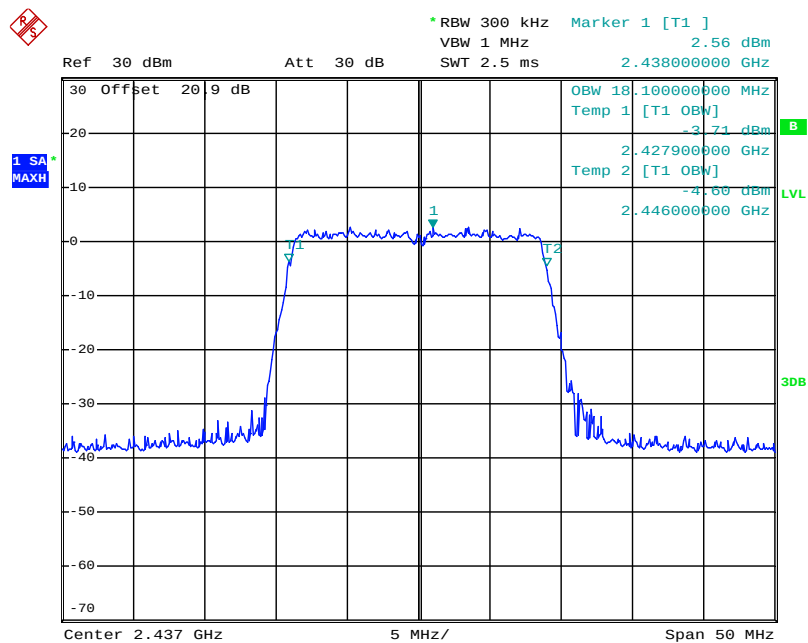
Date: 2.JAN.2015 17:16:34

Figure 7.2.2-24: 20dB BW - High Channel



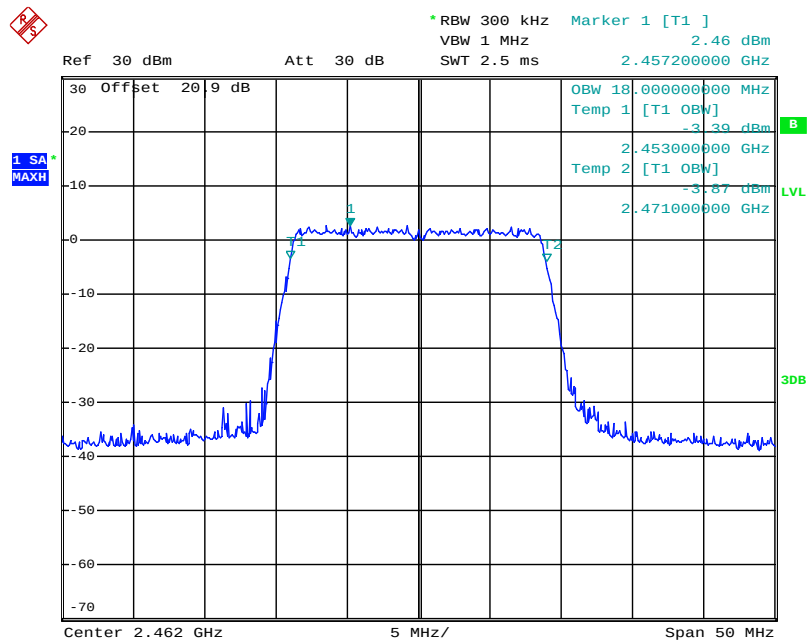
Date: 2.JAN.2015 18:02:26

Figure 7.2.2-25: 99% OBW - Low Channel



Date: 2. JAN. 2015 17:52:16

Figure 7.2.2-26: 99% OBW - Middle Channel



Date: 2. JAN. 2015 17:49:49

Figure 7.2.2-27: 99% OBW - High Channel

### 7.3 Peak Output Power - FCC Section 15.247(b)(3) IC: RSS-210 A8.4(4)

#### 7.3.1 Measurement Procedure (Conducted Method)

The Peak Output Power was measured in accordance with the FCC KDB Publication No. 558074 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (47 CFR 15.247)" Section 9.2.2.2 Method AVGSA-1 (trace averaging with the EUT transmitting at full power throughout each sweep). The RF output of the equipment under test was directly connected to the input of the spectrum analyzer through suitable attenuation.

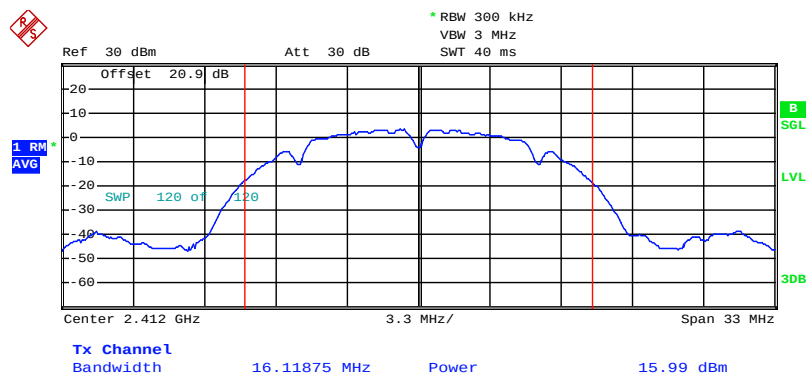
#### 7.3.2 Measurement Results

Results are shown below.

802.11b

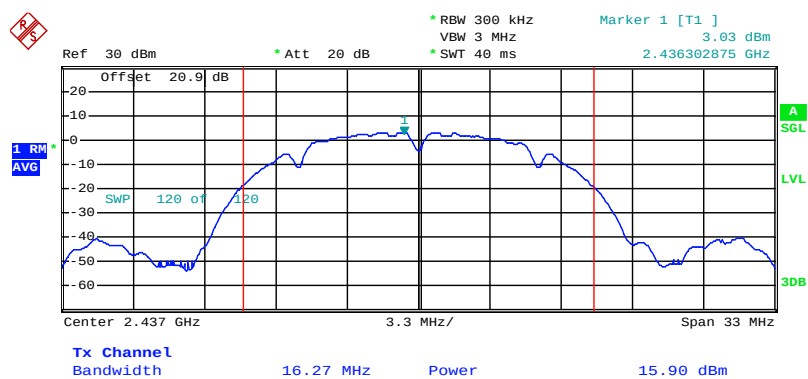
Table 7.3.2-1: RF Output Power

| Frequency [MHz] | Level [dBm] |
|-----------------|-------------|
| 2412            | 15.99       |
| 2437            | 15.90       |
| 2462            | 15.93       |



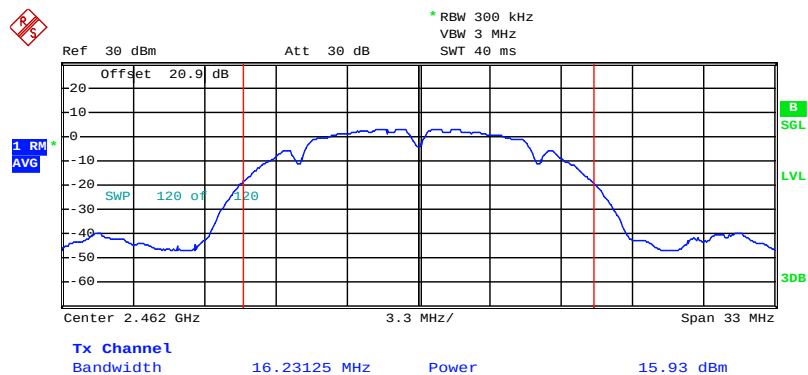
Date: 2.JAN.2015 16:44:40

Figure 7.3.2-1: RF Output Power - Low Channel



Date: 20.DEC.2014 13:10:47

Figure 7.3.2-2: RF Output Power - Middle Channel



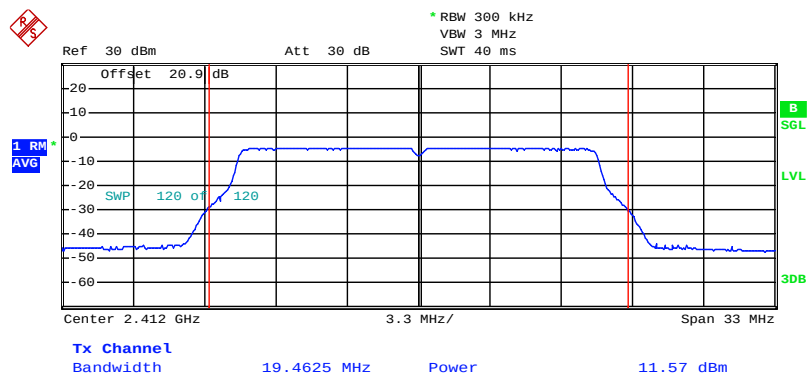
Date: 2.JAN.2015 16:51:24

Figure 7.3.2-3: RF Output Power - High Channel

802.11g

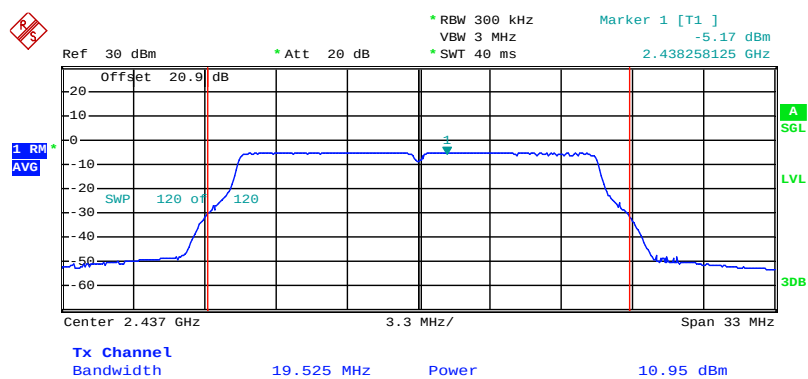
Table 7.3.2-2: RF Output Power

| Frequency [MHz] | Level [dBm] |
|-----------------|-------------|
| 2412            | 11.57       |
| 2437            | 10.95       |
| 2462            | 11.04       |



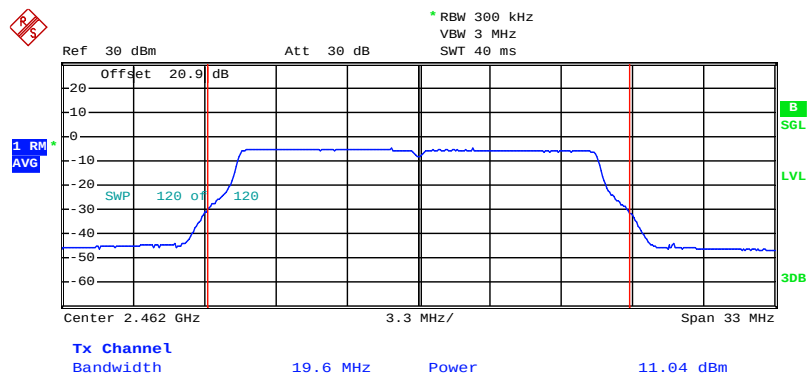
Date: 2.JAN.2015 16:59:47

Figure 7.3.2-4: RF Output Power - Low Channel



Date: 20.DEC.2014 13:22:08

Figure 7.3.2-5: RF Output Power - Middle Channel



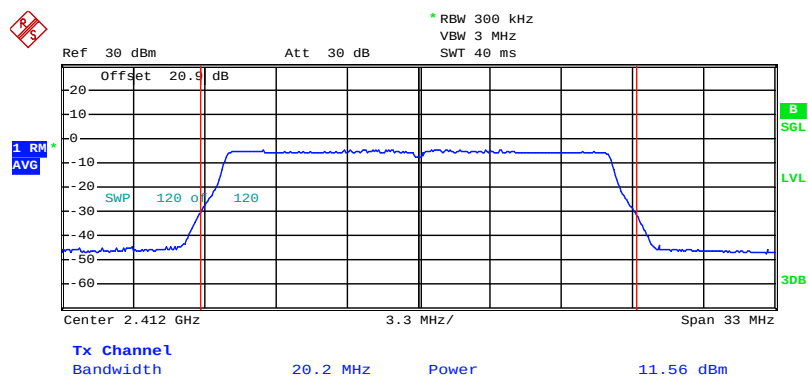
Date: 2.JAN.2015 17:06:48

Figure 7.3.2-6: RF Output Power - High Channel

802.11n 20 MHz

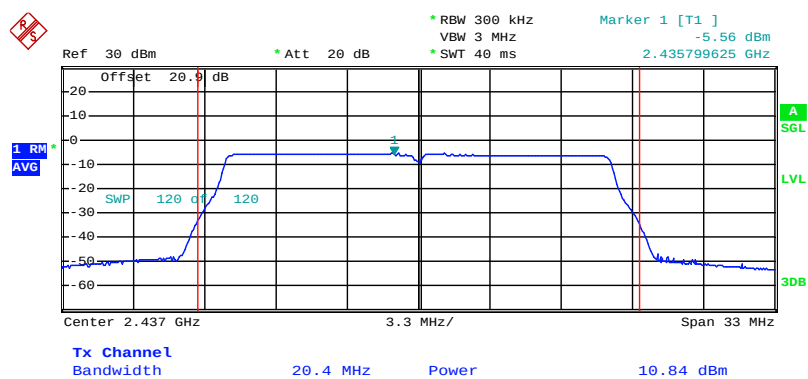
Table 7.3.2-3: RF Output Power

| Frequency [MHz] | Level [dBm] |
|-----------------|-------------|
| 2412            | 11.56       |
| 2437            | 10.84       |
| 2462            | 11.05       |



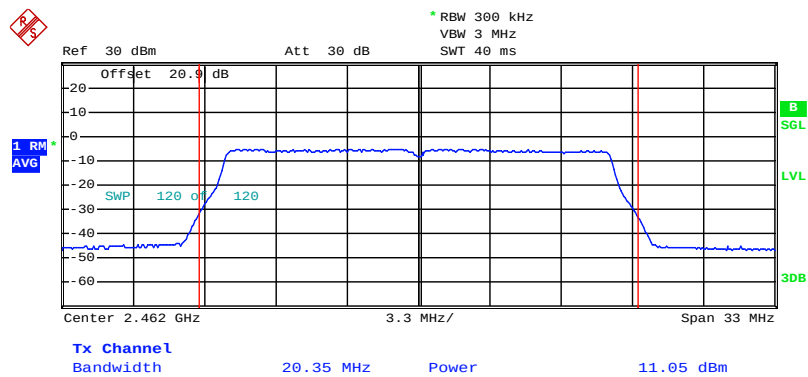
Date: 2.JAN.2015 17:13:48

Figure 7.3.2-7: RF Output Power - Low Channel



Date: 20.DEC.2014 13:46:02

Figure 7.3.2-8: RF Output Power - Middle Channel



Date: 2.JAN.2015 17:21:22

Figure 7.3.2-9: RF Output Power - High Channel

## 7.4 Band-Edge Compliance and Spurious Emissions-FCC 15.247(d) IC: RSS-210 A8.5

### 7.4.1 Band-Edge Compliance of RF Conducted Emissions

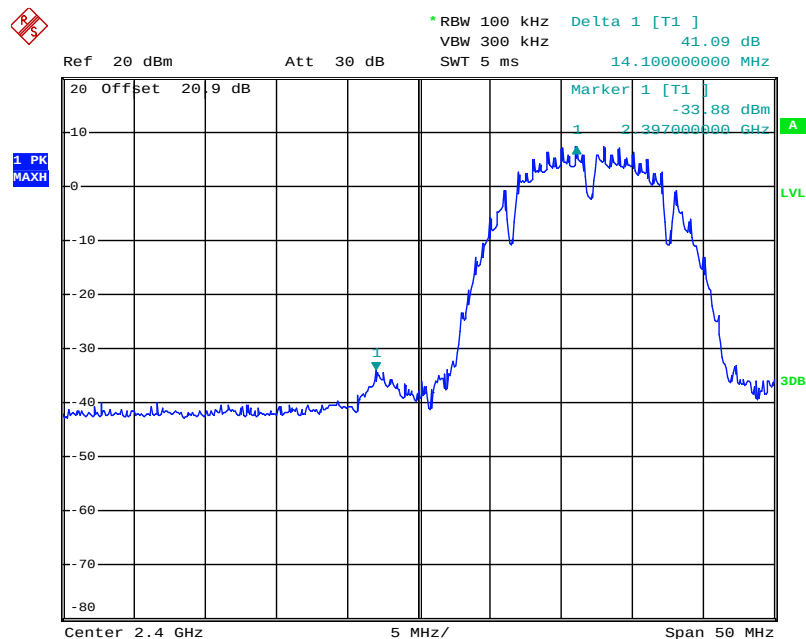
#### 7.4.1.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer via suitable attenuation. The EUT was investigated at the lowest and highest channel available to determine band-edge compliance. For each measurement the spectrum analyzer's RBW was set to 100 kHz, and the VBW was set to 300 kHz.

#### 7.4.1.2 Measurement Results

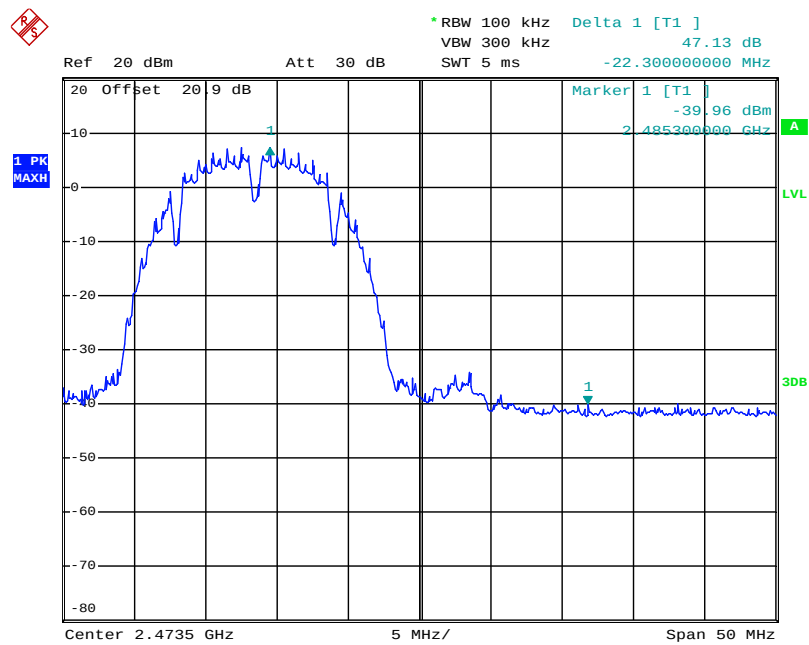
Results are shown below.

##### 802.11b



Date: 6.FEB.2015 18:30:31

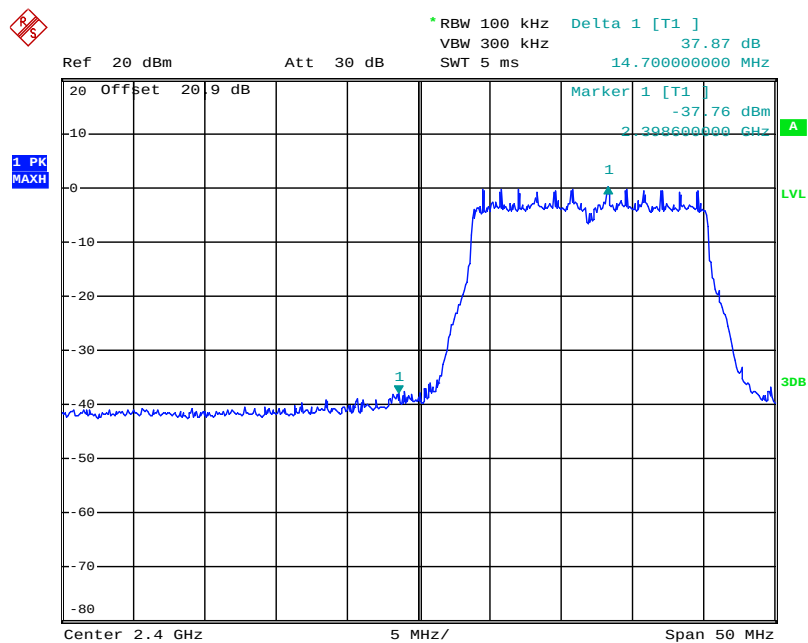
Figure 7.4.1.2-1: Lower Band-edge



Date: 6.FEB.2015 18:25:54

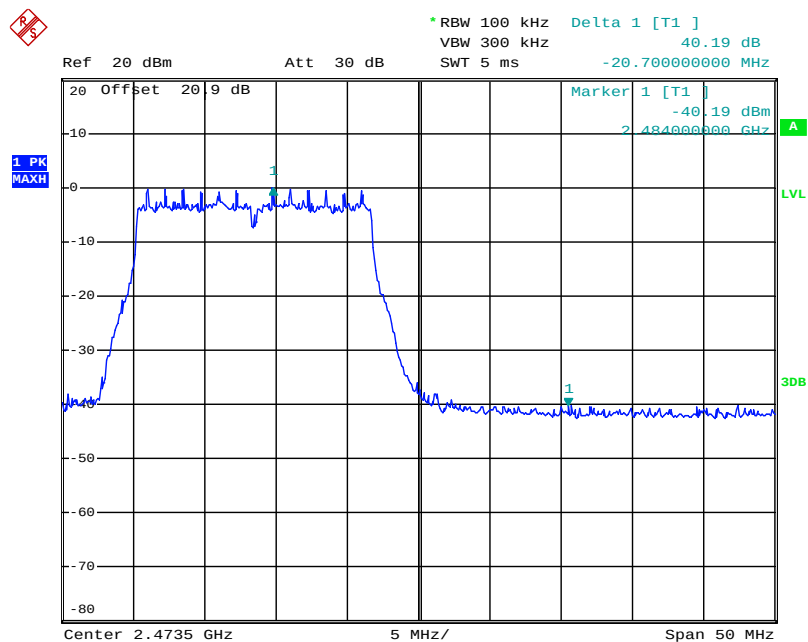
Figure 7.4.1.2-2: Upper Band-edge

802.11g



Date: 6.FEB.2015 18:09:24

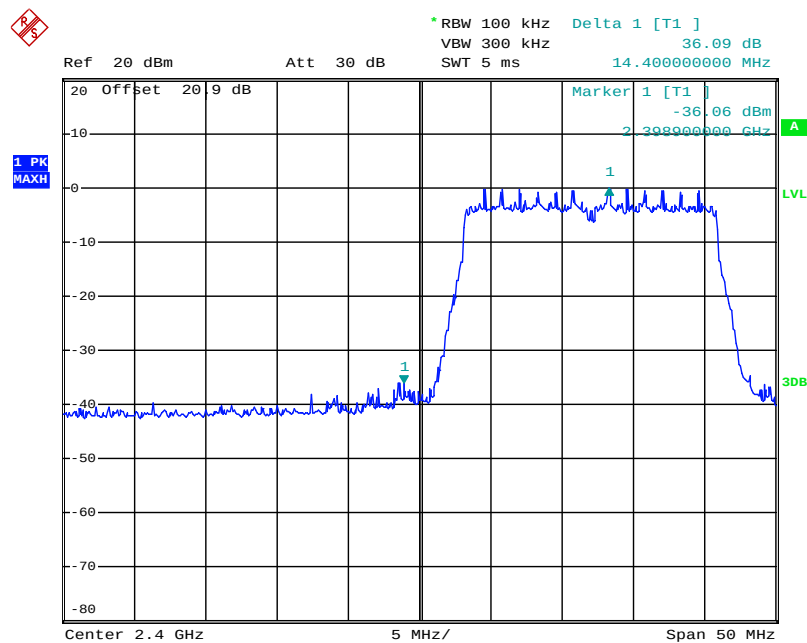
Figure 7.4.1.2-3: Lower Band-edge



Date: 6.FEB.2015 18:20:14

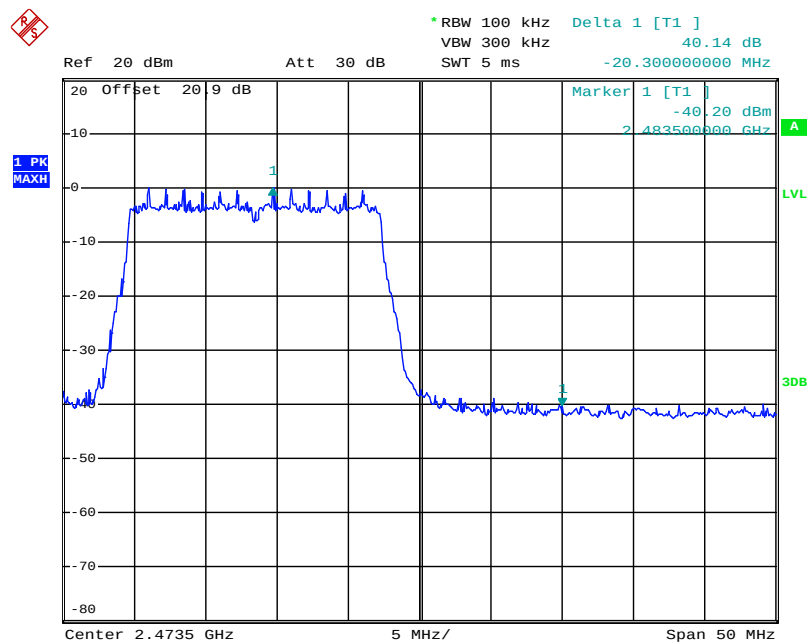
Figure 7.4.1.2-4: Upper Band-edge

802.11n 20 MHz



Date: 6.FEB.2015 18:02:08

Figure 7.4.1.2-5: Lower Band-edge



Date: 6.FEB.2015 17:55:13

Figure 7.4.1.2-6: Upper Band-edge

## 7.4.2 RF Conducted Spurious Emissions

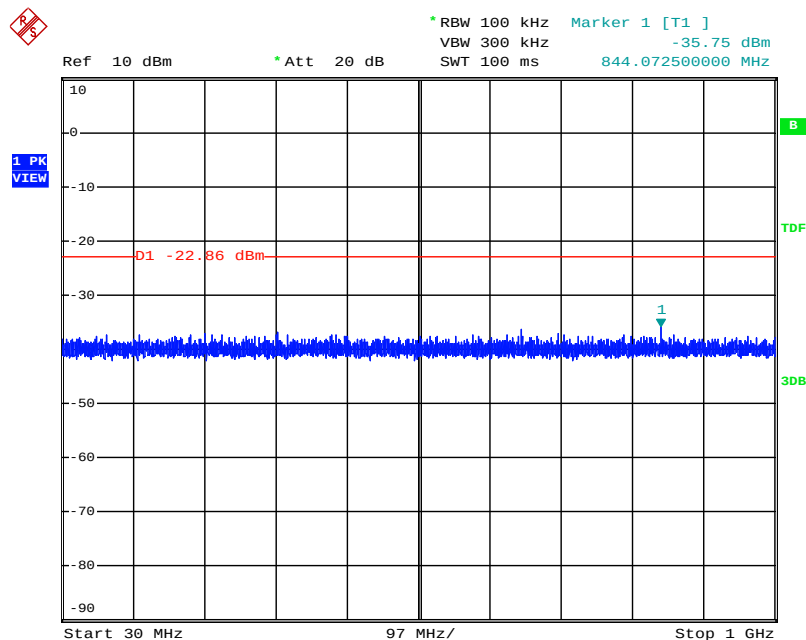
### 7.4.2.1 Measurement Procedure

The RF Conducted Spurious Emissions were measured in accordance with the FCC KDB Publication No. 558074 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (47 CFR 15.247)". The RF output port of the equipment under test was directly connected to the input of the spectrum analyzer. The EUT was investigated for conducted spurious emissions from 30MHz to 26 GHz, 10 times the highest fundamental frequency. Measurements were made at the low, center and high channels of the EUT. For each measurement, the spectrum analyzer's RBW was set to 100 kHz and the VBW was set to 300 kHz. The peak Max Hold function of the analyzer was utilized. The reference level was determined by measuring the Peak PSD level in any 100 kHz bandwidth within the DTS channel bandwidth.

### 7.4.2.2 Measurement Results

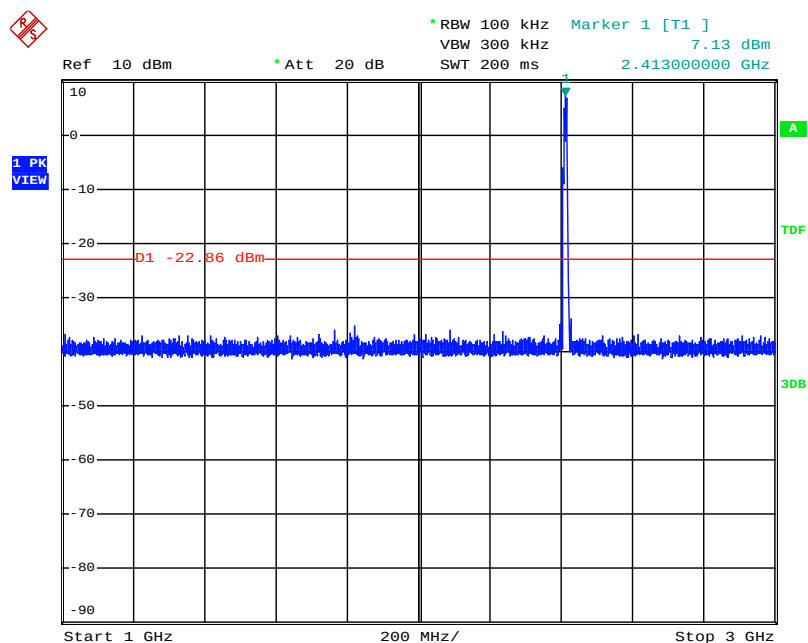
Results are shown below.

#### 802.11b



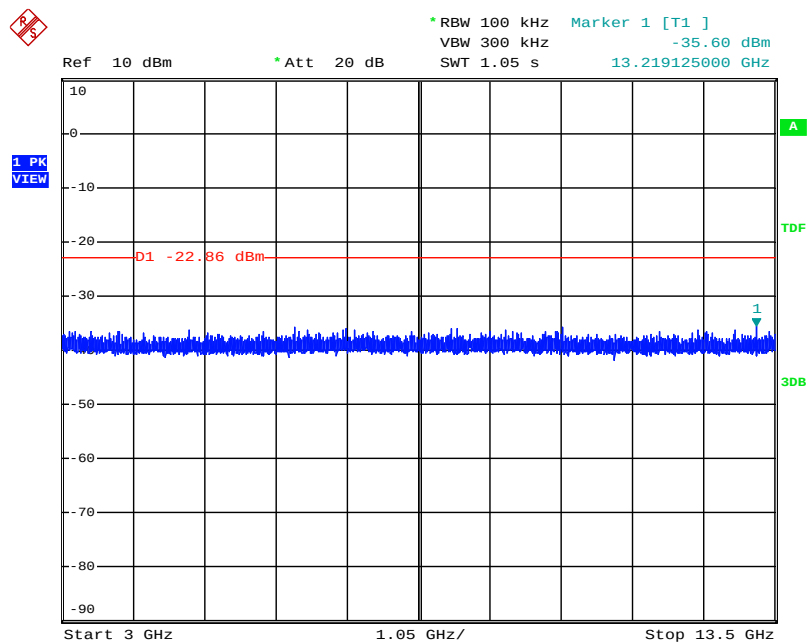
Date: 6.FEB.2015 18:42:45

Figure 7.4.2.2-1: 30 MHz – 1 GHz – Low Channel



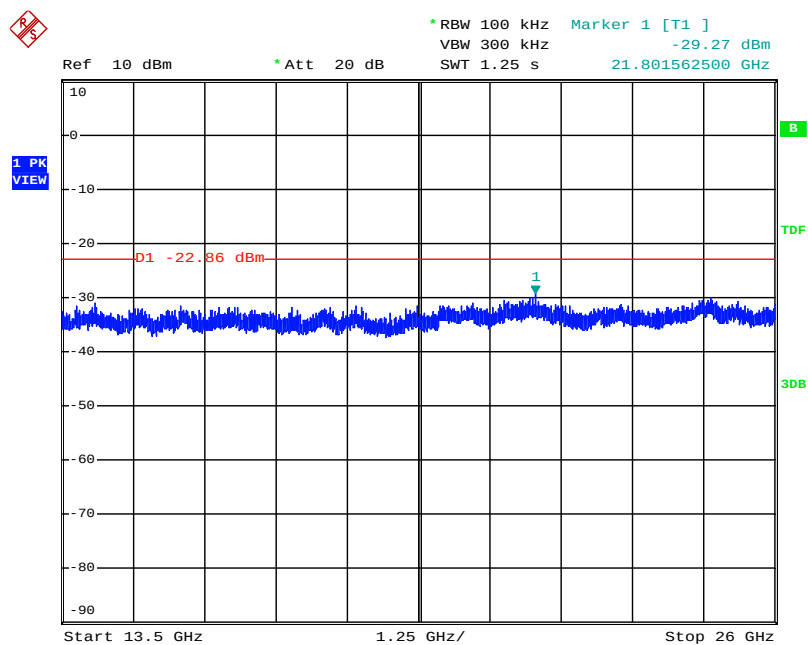
Date: 6.FEB.2015 18:44:09

Figure 7.4.2.2-2: 1 GHz –3 GHz – Low Channel



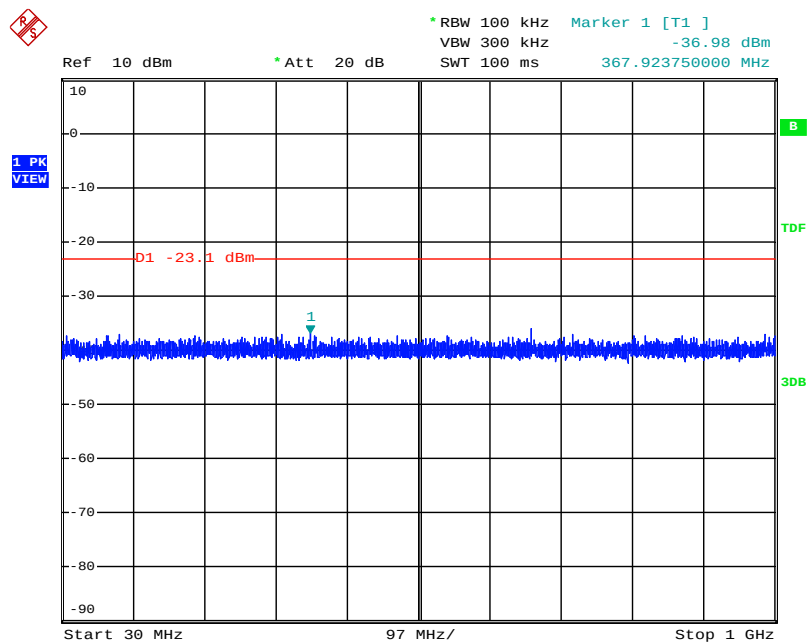
Date: 6.FEB.2015 18:48:10

Figure 7.4.2.2-3: 3 GHz –13.5 GHz – Low Channel



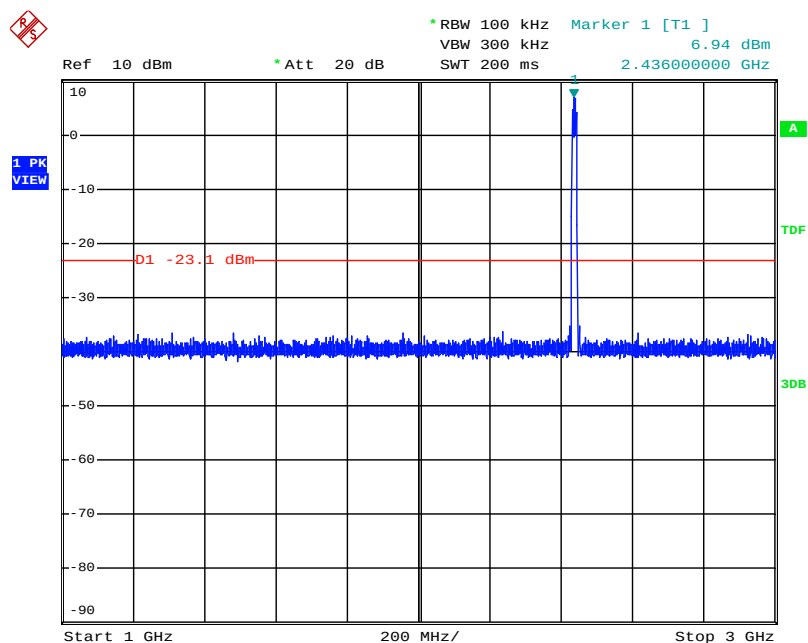
Date: 6.FEB.2015 18:47:41

Figure 7.4.2.2-4: 13.5 GHz – 26 GHz – Low Channel



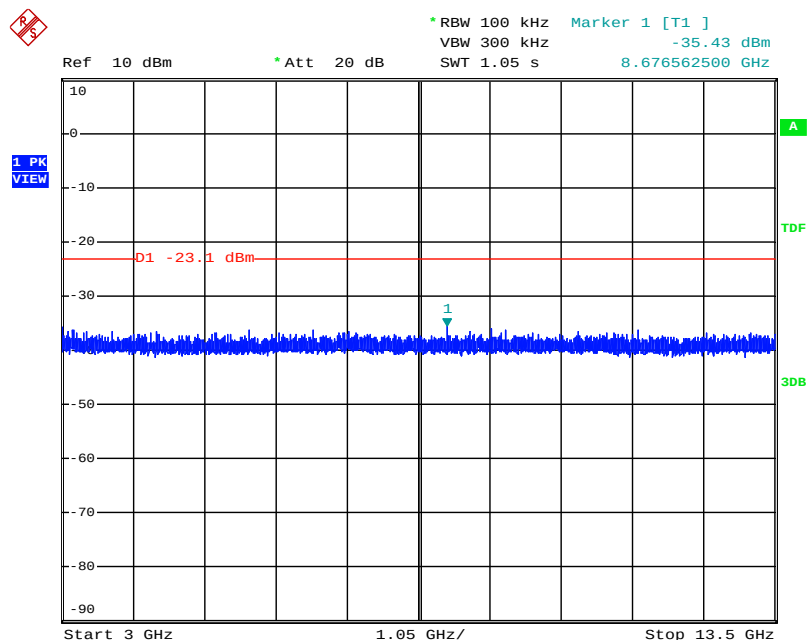
Date: 6.FEB.2015 18:56:50

Figure 7.4.2.2-5: 30 MHz – 1 GHz – Middle Channel



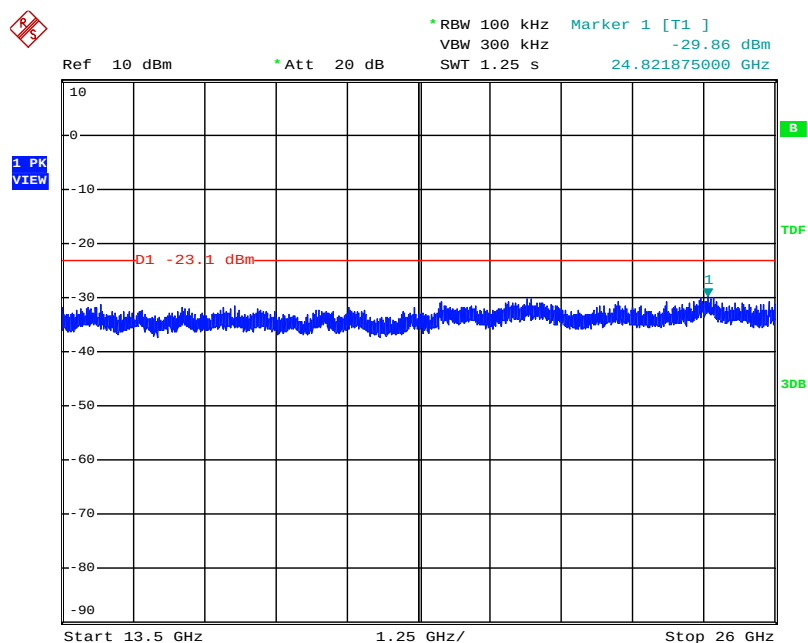
Date: 6.FEB.2015 18:57:09

Figure 7.4.2.2-6: 1 GHz –3 GHz – Middle Channel



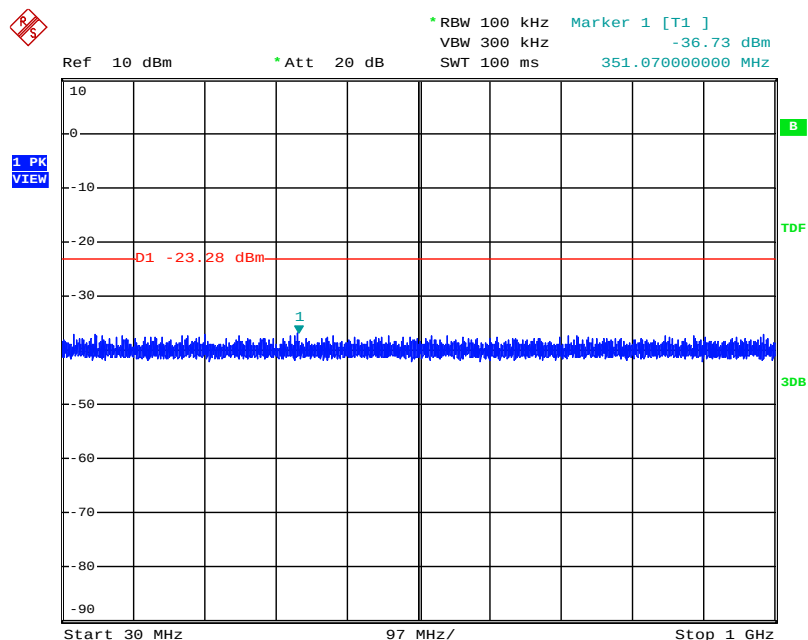
Date: 6.FEB.2015 18:52:44

Figure 7.4.2.2-7: 3 GHz –13.5 GHz – Middle Channel



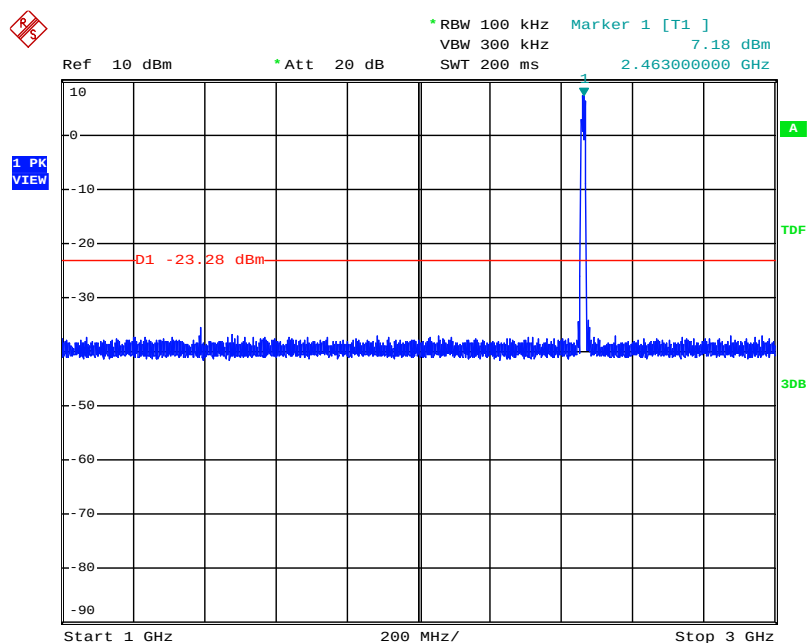
Date: 6.FEB.2015 18:53:04

Figure 7.4.2.2-8: 13.5 GHz – 26 GHz – Middle Channel



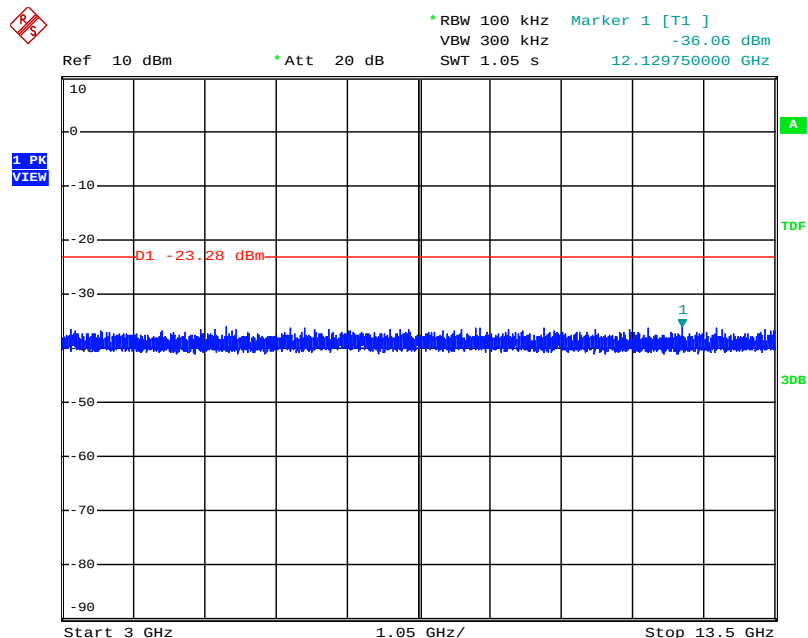
Date: 6.FEB.2015 19:02:24

Figure 7.4.2.2-9: 30 MHz – 1 GHz – High Channel



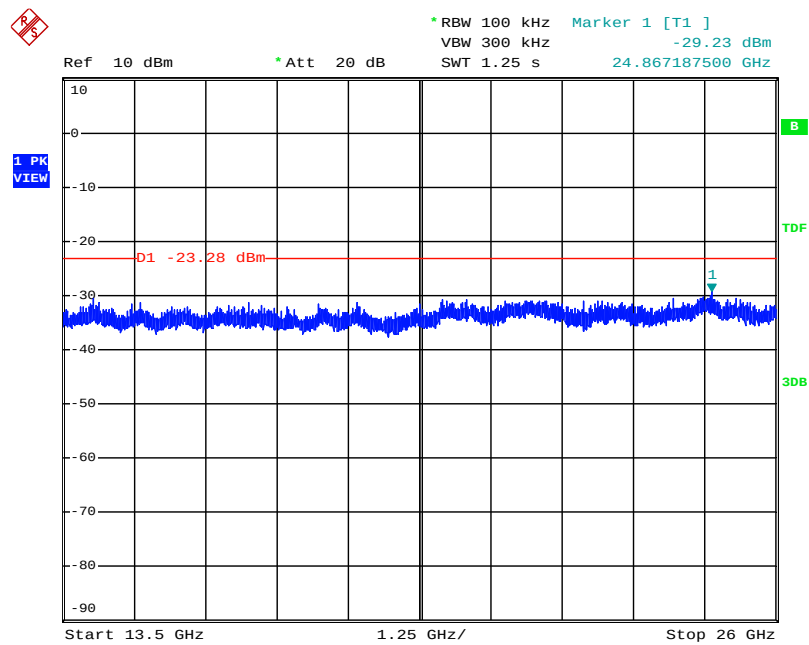
Date: 6.FEB.2015 19:02:47

Figure 7.4.2.2-10: 1 GHz –3 GHz –High Channel



Date: 6.FEB.2015 19:06:24

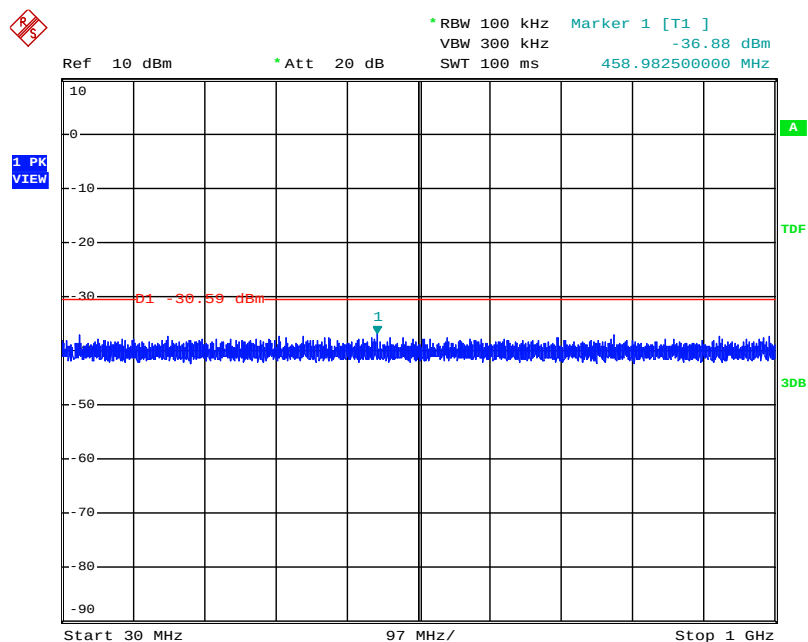
Figure 7.4.2.2-11: 3 GHz – 13.5 GHz –High Channel



Date: 6.FEB.2015 19:06:44

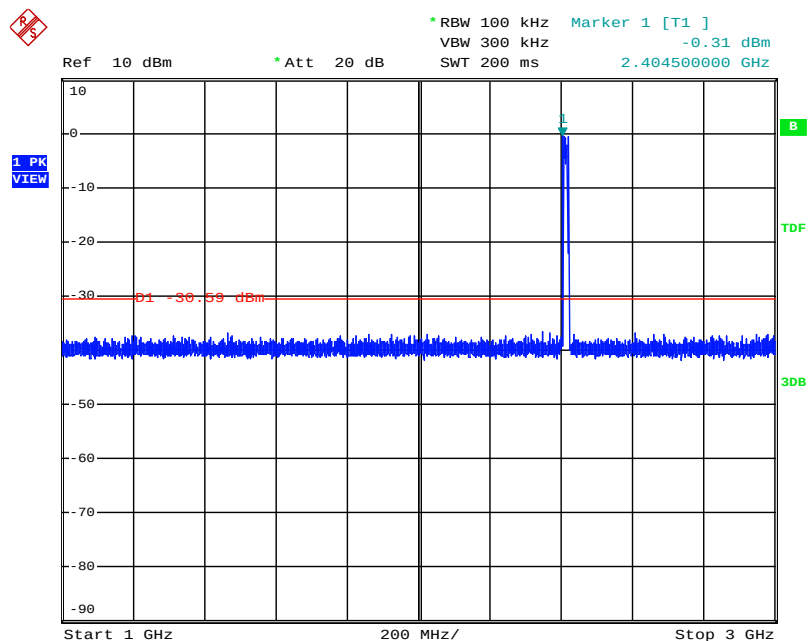
Figure 7.4.2.2-12: 13.5 GHz – 26 GHz –High Channel

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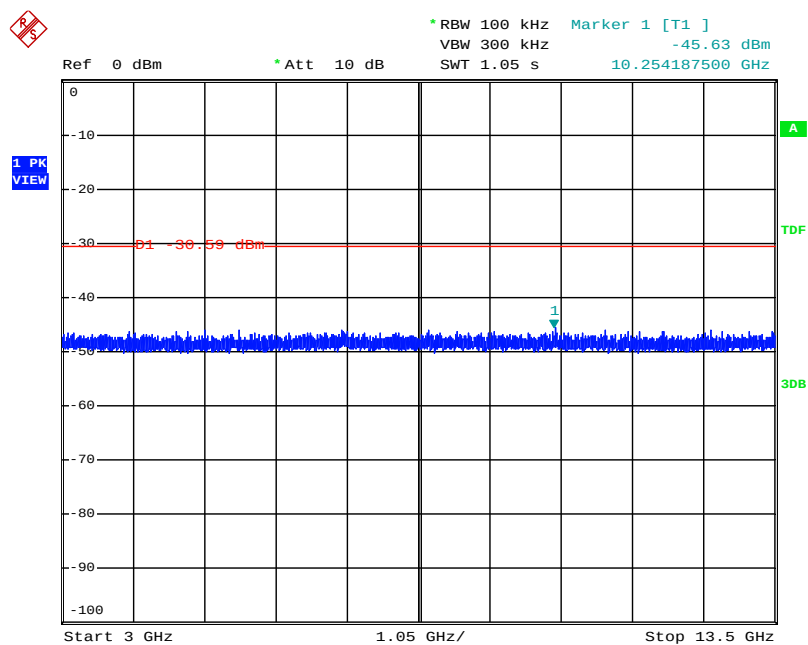
Date: 6.FEB.2015 19:28:26

Figure 7.4.2.2-13: 30 MHz – 1 GHz – Low Channel



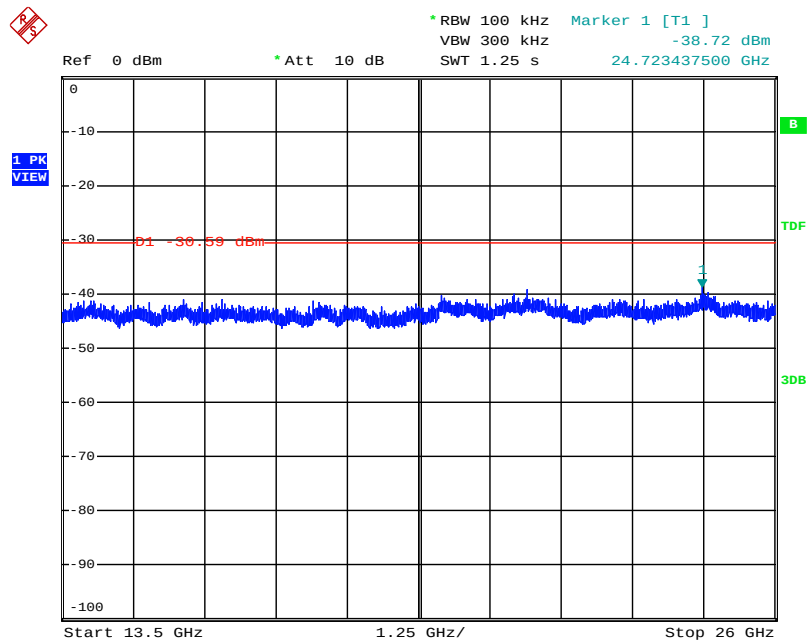
Date: 6.FEB.2015 19:28:09

Figure 7.4.2.2-14: 1 GHz – 3 GHz – Low Channel



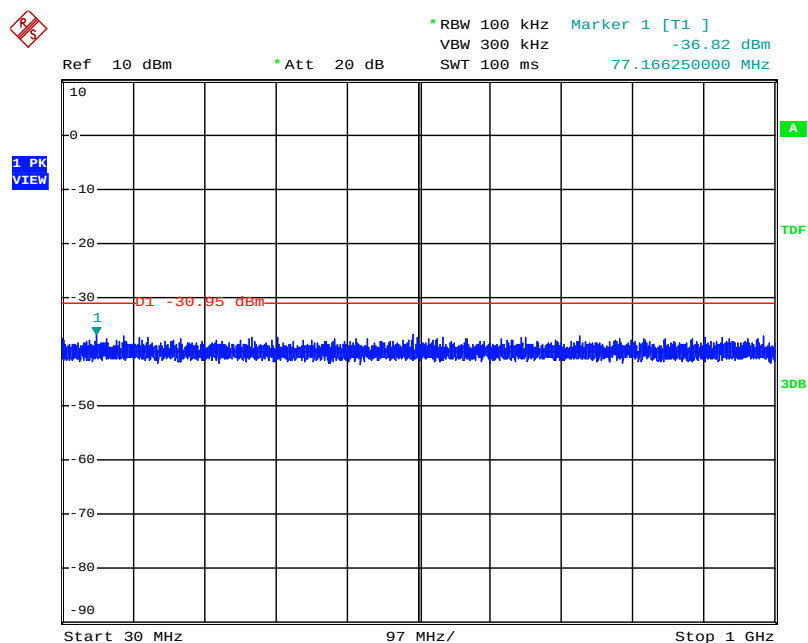
Date: 6.FEB.2015 19:23:31

Figure 7.4.2.2-15: 3 GHz –13.5 GHz – Low Channel



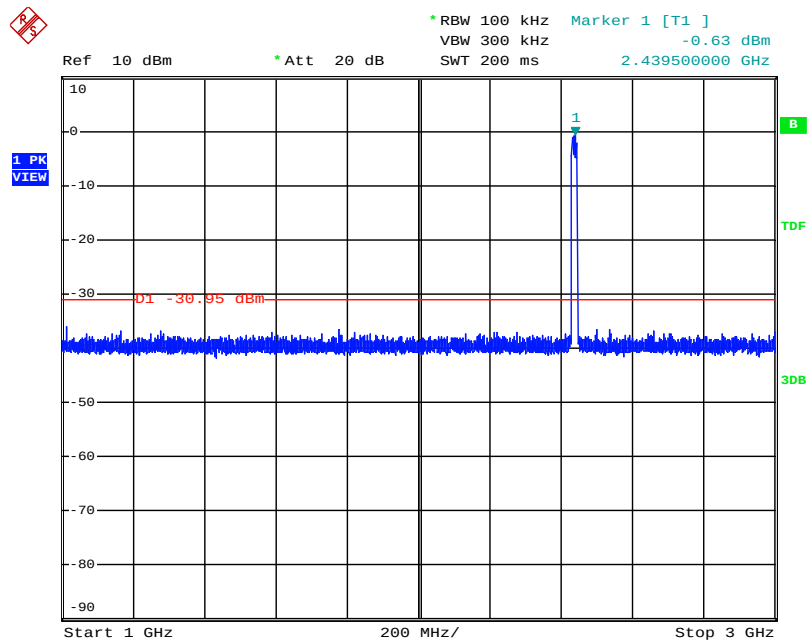
Date: 6.FEB.2015 19:23:04

Figure 7.4.2.2-16: 13.5 GHz – 26 GHz – Low Channel



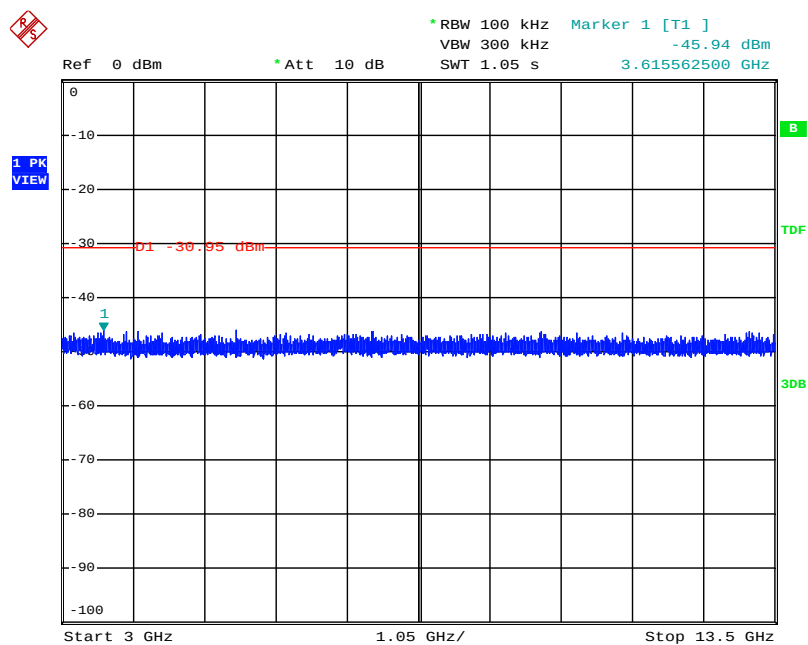
Date: 6.FEB.2015 19:34:18

Figure 7.4.2.2-17: 30 MHz – 1 GHz –Middle Channel



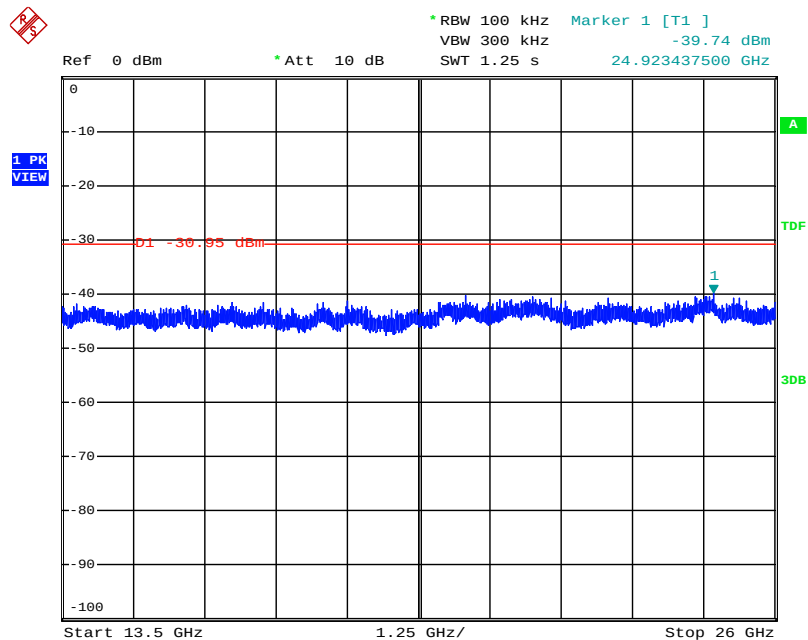
Date: 6.FEB.2015 19:33:46

Figure 7.4.2.2-18: 1 GHz – 3 GHz – Middle Channel



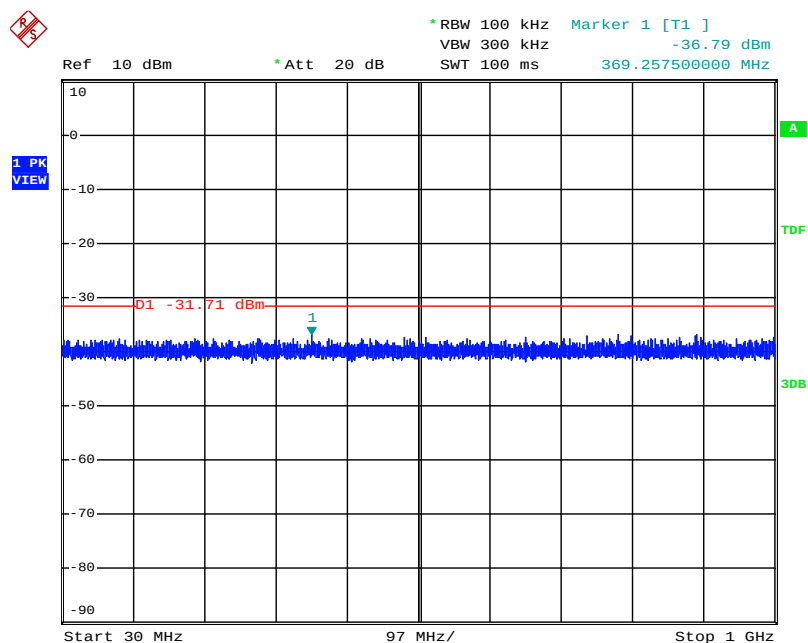
Date: 6.FEB.2015 19:37:56

Figure 7.4.2.2-19: 3 GHz – 13.5 GHz – Middle Channel



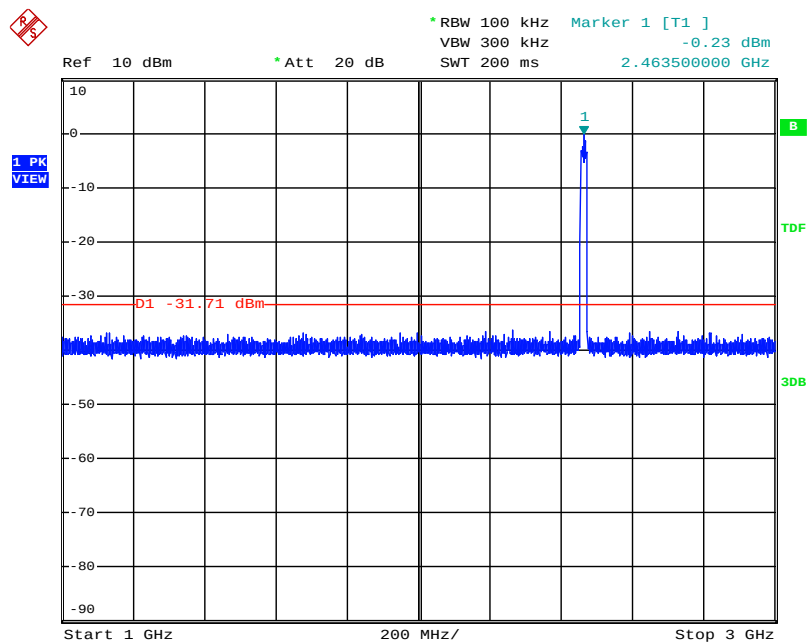
Date: 6.FEB.2015 19:37:36

Figure 7.4.2.2-20: 13.5 GHz – 26 GHz – Middle Channel



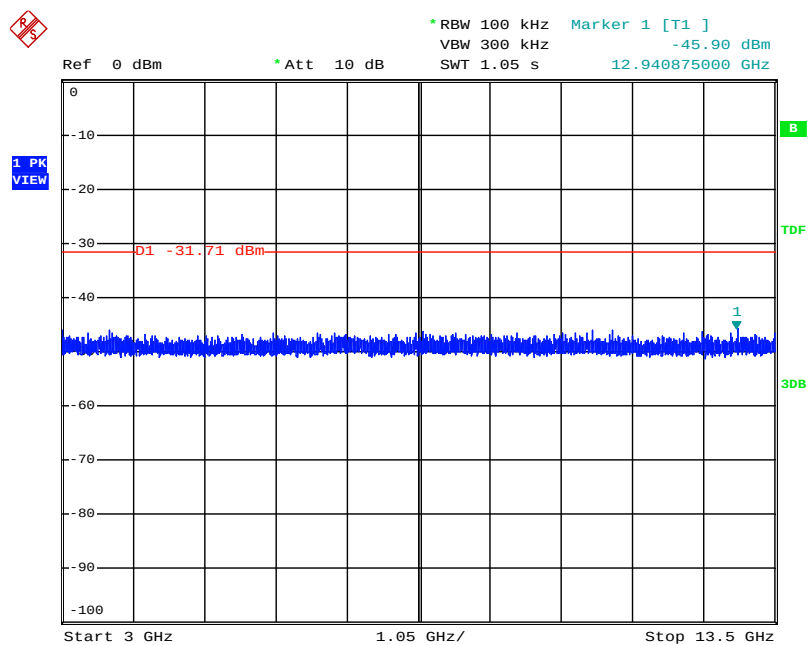
Date: 6.FEB.2015 23:34:37

Figure 7.4.2.2-21: 30 MHz – 1 GHz – High Channel



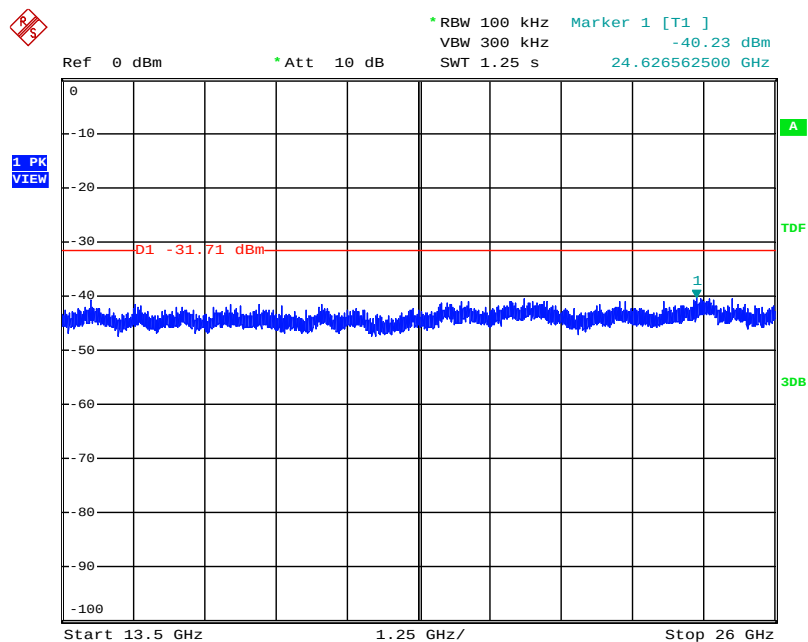
Date: 6.FEB.2015 19:47:05

Figure 7.4.2.2-22: 1 GHz – 3 GHz –High Channel



Date: 6.FEB.2015 19:42:32

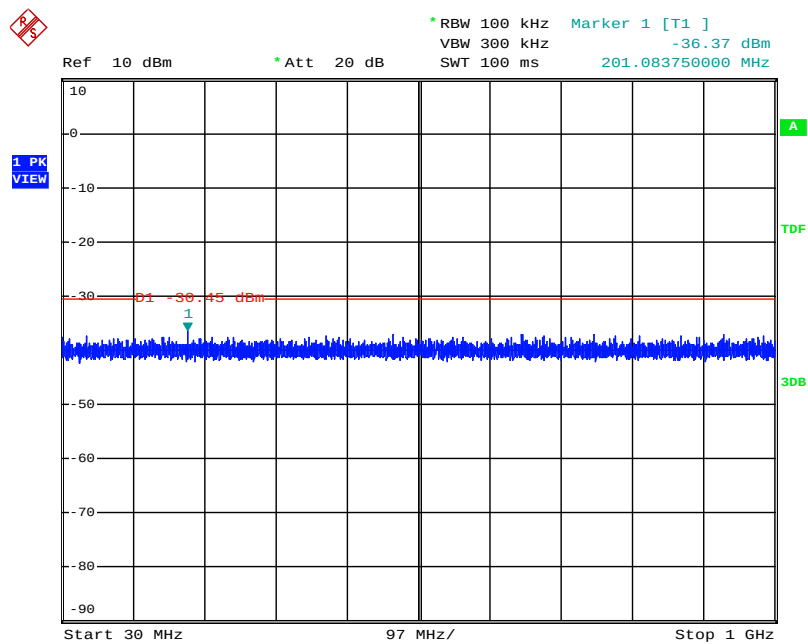
Figure 7.4.2.2-23: 3 GHz – 13.5 GHz –High Channel



Date: 6.FEB.2015 19:42:51

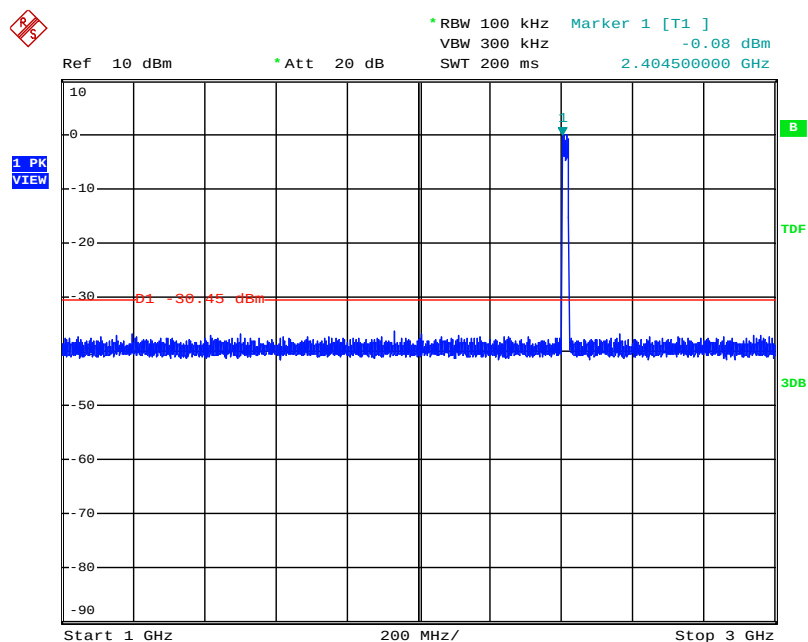
Figure 7.4.2.2-24: 13.5 GHz – 26 GHz –High Channel

## 802.11n 20 MHz



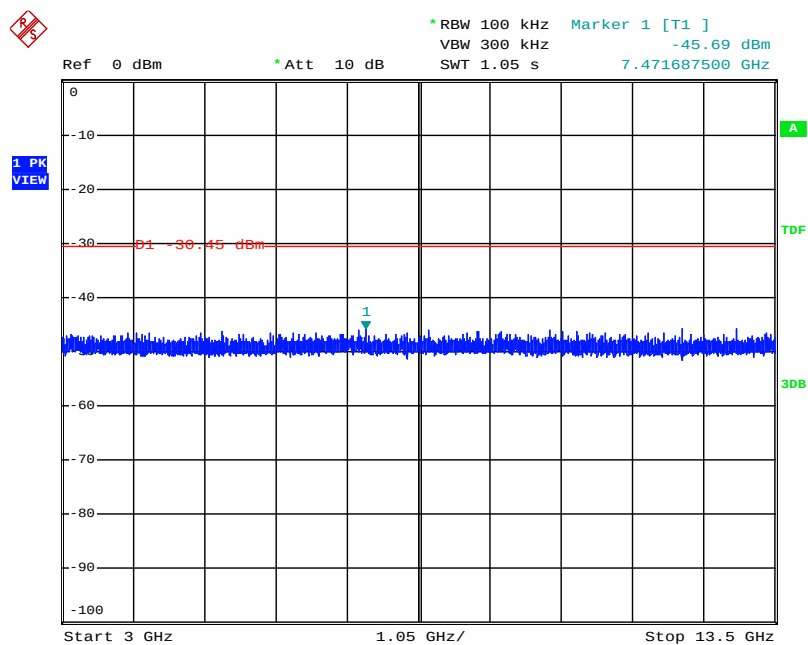
Date: 6.FEB.2015 22:26:10

Figure 7.4.2.2-25: 30 MHz – 1 GHz – Low Channel



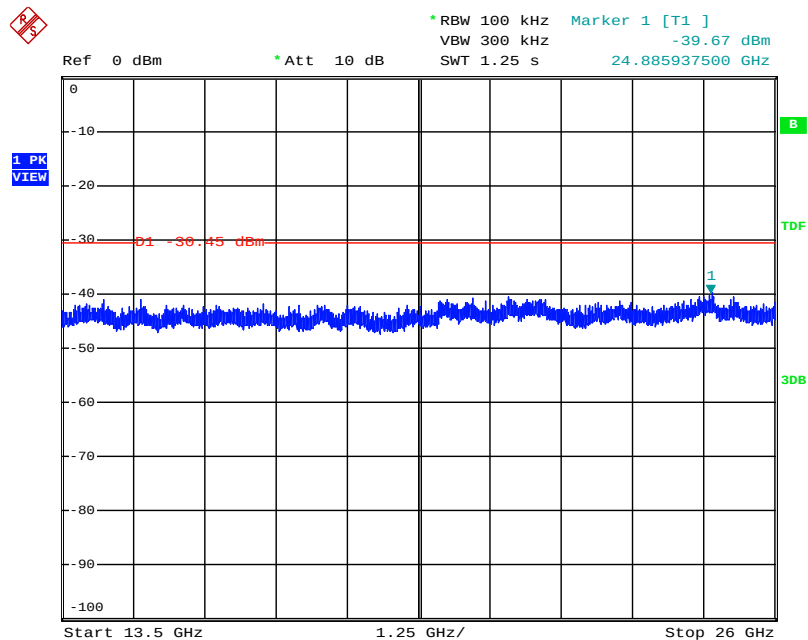
Date: 6.FEB.2015 22:25:51

Figure 7.4.2.2-26: 1 GHz –3 GHz – Low Channel



Date: 6.FEB.2015 22:29:26

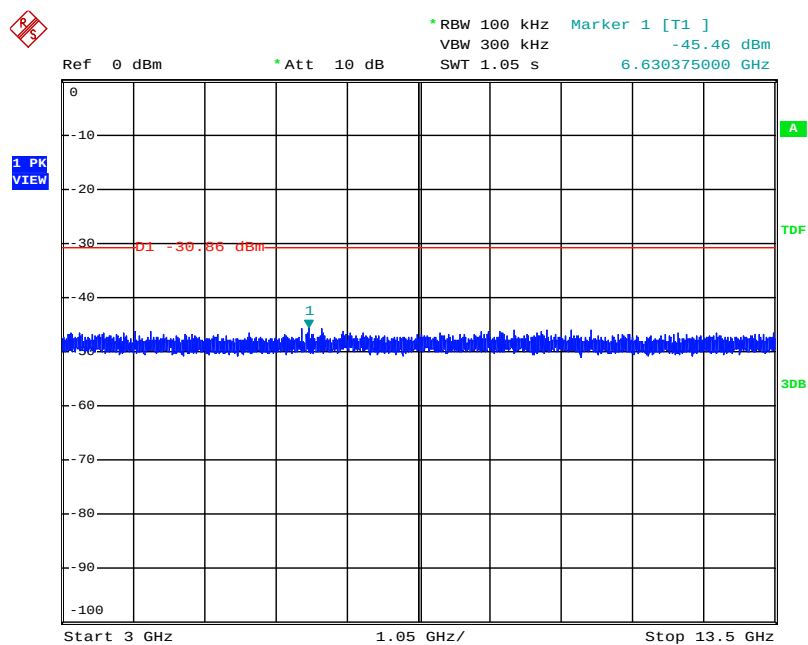
Figure 7.4.2.2-27: 3 GHz – 13.5 GHz – Low Channel



Date: 6.FEB.2015 22:29:50

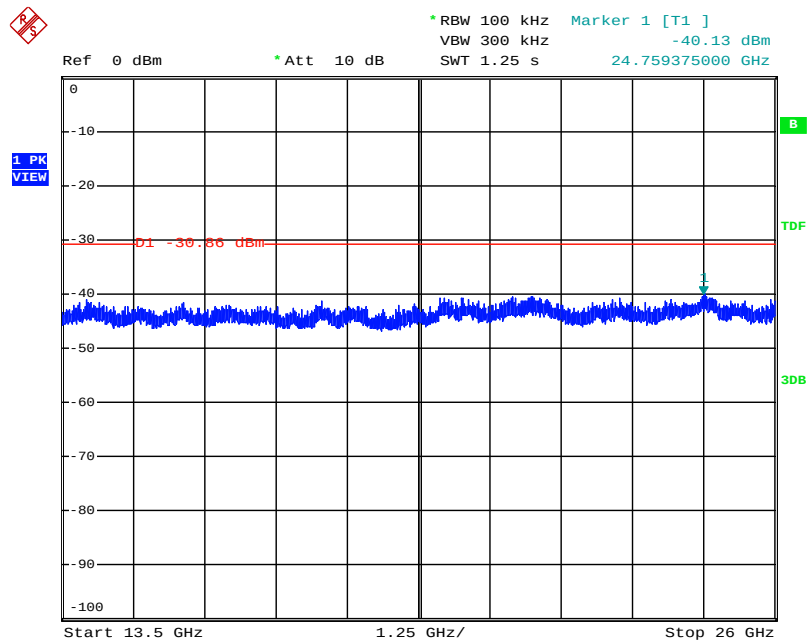
Figure 7.4.2.2-28: 13.5 GHz – 26 GHz – Low Channel





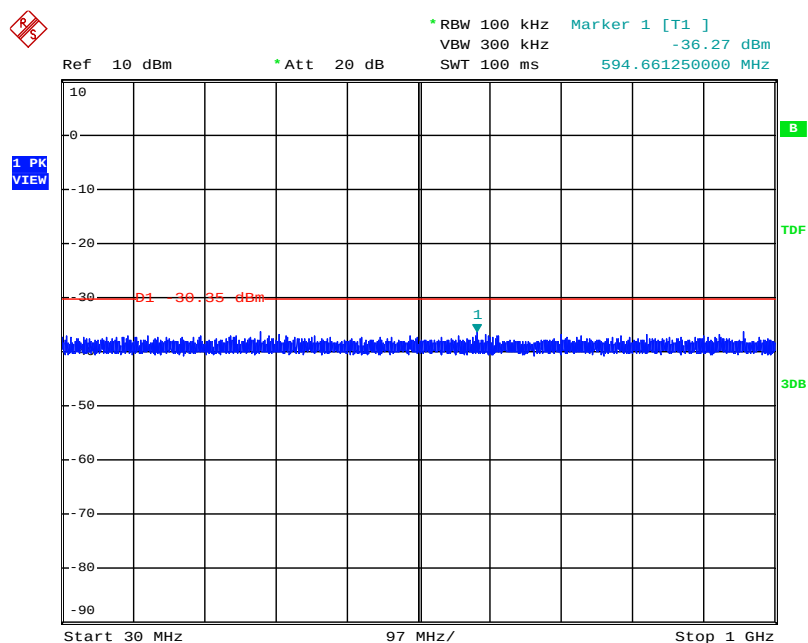
Date: 6.FEB.2015 22:35:48

Figure 7.4.2.2-31: 3 GHz – 13.5 GHz – Middle Channel



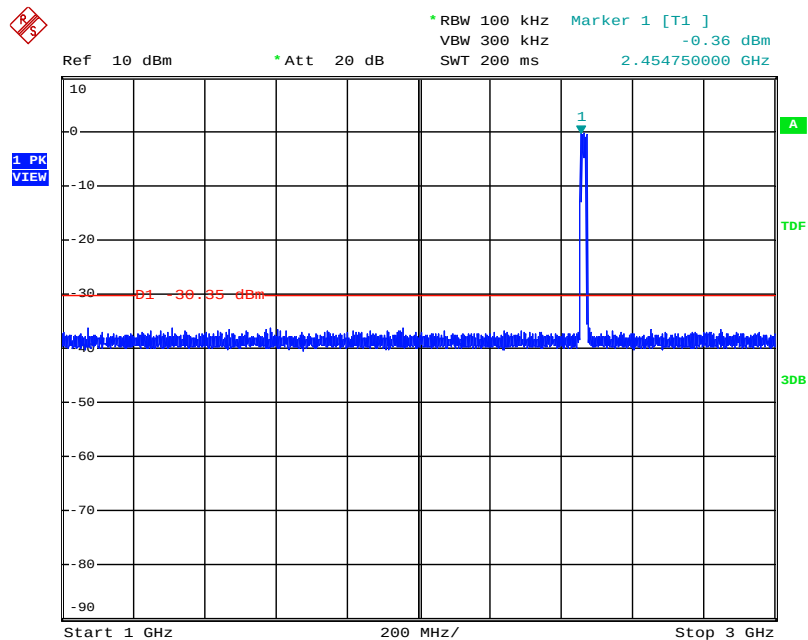
Date: 6.FEB.2015 22:35:26

Figure 7.4.2.2-32: 13.5 GHz – 26 GHz – Middle Channel



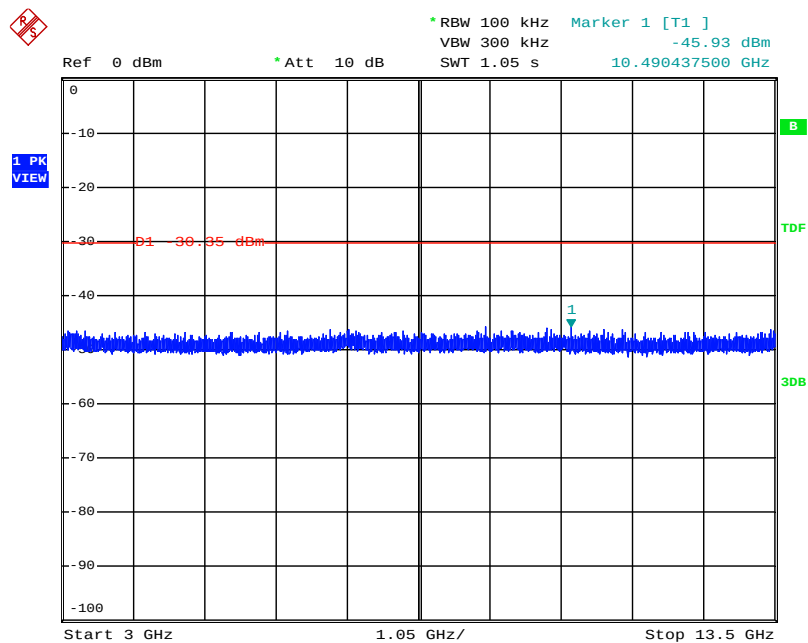
Date: 6.FEB.2015 22:57:31

Figure 7.4.2.2-33: 30 MHz – 1 GHz – High Channel



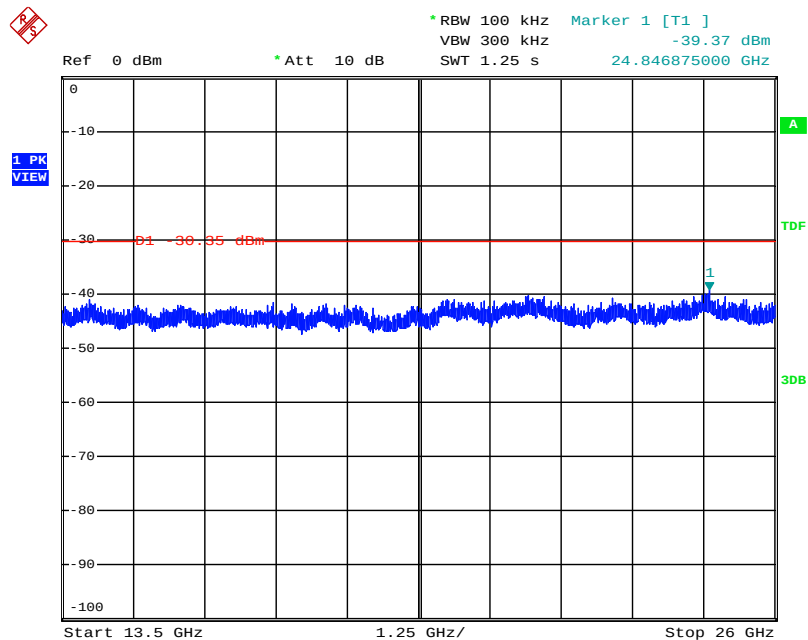
Date: 6.FEB.2015 23:01:39

Figure 7.4.2.2-34: 1 GHz – 3 GHz –High Channel



Date: 6.FEB.2015 23:05:29

Figure 7.4.2.2-35: 3 GHz – 13.5 GHz –High Channel



Date: 6.FEB.2015 23:05:52

Figure 7.4.2.2-36: 13.5 GHz – 26 GHz –High Channel

### 7.4.3 Radiated Spurious Emissions into Restricted Frequency Bands - FCC 15.205, 15.209; IC: RSS-210 2.2, RSS-Gen 8.9, 8.10

#### 7.4.3.1 Measurement Procedure

Radiated emissions tests were made over the frequency range of 9 kHz to 26 GHz, 10 times the highest fundamental frequency. Each emission found to be in a restricted band as defined by section 15.205, including any emission at the operational band-edge, was compared to the radiated emission limits as defined in section 15.209.

For measurements below 30 MHz, the receive antenna height was set to 1m and the EUT was rotated through 360 degrees. The resolution bandwidth was set to 200 Hz below 150 kHz and to 9 kHz above 150 kHz.

The EUT was rotated through 360° and the receive antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. For frequencies below 1000MHz, quasi-peak measurements were made using a resolution bandwidth RBW of 120 kHz and a video bandwidth VBW of 300 kHz. For frequencies above 1000 MHz, peak measurements are made with RBW of 1 MHz and VBW of 3 MHz. Average measurements are performed in the linear scale using VBW of 30 Hz over a 5 second sweep.

#### 7.4.3.2 Measurement Results

Radiated band-edge and spurious emissions found in the restricted frequency bands of 9 kHz to 26 GHz are reported in the tables below.

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**Table 7.4.3.2-1: Radiated Spurious Emissions Tabulated Data**

| Frequency<br>(MHz)        | Level<br>(dBuV) |         | Antenna<br>Polarity<br><br>(H/V) | Correction<br>Factors<br><br>(dB) | Corrected Level<br>(dBuV/m) |         | Limit<br>(dBuV/m) |         | Margin<br>(dB) |         |
|---------------------------|-----------------|---------|----------------------------------|-----------------------------------|-----------------------------|---------|-------------------|---------|----------------|---------|
|                           | pk              | Qpk/Avg |                                  |                                   | pk                          | Qpk/Avg | pk                | Qpk/Avg | pk             | Qpk/Avg |
| Low Channel = 2412 MHz    |                 |         |                                  |                                   |                             |         |                   |         |                |         |
| 2390                      | 62.54           | 50.78   | V                                | -7.86                             | 54.68                       | 42.92   | 74.0              | 54.0    | 19.3           | 11.1    |
| Middle Channel = 2437 MHz |                 |         |                                  |                                   |                             |         |                   |         |                |         |
| 7311                      | 48.00           | 37.03   | H                                | 5.28                              | 53.28                       | 42.31   | 74.0              | 54.0    | 20.7           | 11.7    |
| 7311                      | 47.74           | 36.38   | V                                | 5.28                              | 53.02                       | 41.66   | 74.0              | 54.0    | 21.0           | 12.3    |
| High Channel = 2462 MHz   |                 |         |                                  |                                   |                             |         |                   |         |                |         |
| 2483.5                    | 62.77           | 47.68   | V                                | -7.47                             | 55.30                       | 40.21   | 74.0              | 54.0    | 18.7           | 13.8    |
| 7386                      | 49.05           | 38.29   | H                                | 5.50                              | 54.55                       | 43.79   | 74.0              | 54.0    | 19.4           | 10.2    |
| 7386                      | 48.57           | 37.43   | V                                | 5.50                              | 54.07                       | 42.93   | 74.0              | 54.0    | 19.9           | 11.1    |

**Note:** All the emissions above 7.386 GHz were attenuated below the limits and the noise floor of the measurement equipment.

802.11g

Table 7.4.3.2-2: Radiated Spurious Emissions Tabulated Data

| Frequency<br>(MHz)                                                            | Level<br>(dBuV) |         | Antenna<br>Polarity<br>(H/V) | Correction<br>Factors<br>(dB) | Corrected Level<br>(dBuV/m) |         | Limit<br>(dBuV/m) |         | Margin<br>(dB) |         |
|-------------------------------------------------------------------------------|-----------------|---------|------------------------------|-------------------------------|-----------------------------|---------|-------------------|---------|----------------|---------|
|                                                                               | pk              | Qpk/Avg |                              |                               | pk                          | Qpk/Avg | pk                | Qpk/Avg | pk             | Qpk/Avg |
| Low Channel = 2412 MHz                                                        |                 |         |                              |                               |                             |         |                   |         |                |         |
| 2390                                                                          | 65.76           | 47.59   | H                            | -7.86                         | 57.90                       | 39.73   | 74.0              | 54.0    | 16.1           | 14.3    |
| 2390                                                                          | 74.50           | 54.55   | V                            | -7.86                         | 66.64                       | 46.69   | 74.0              | 54.0    | 7.4            | 7.3     |
| Middle Channel = 2437 MHz                                                     |                 |         |                              |                               |                             |         |                   |         |                |         |
|                                                                               |                 |         |                              |                               |                             |         |                   |         |                |         |
| All the restricted bands were attenuated below the limits and the noise floor |                 |         |                              |                               |                             |         |                   |         |                |         |
|                                                                               |                 |         |                              |                               |                             |         |                   |         |                |         |
| High Channel = 2462 MHz                                                       |                 |         |                              |                               |                             |         |                   |         |                |         |
| 2483.5                                                                        | 62.13           | 45.53   | H                            | -7.47                         | 54.66                       | 38.06   | 74.0              | 54.0    | 19.3           | 15.9    |
| 2483.5                                                                        | 68.46           | 49.12   | V                            | -7.47                         | 60.99                       | 41.65   | 74.0              | 54.0    | 13.0           | 12.3    |
| 7386                                                                          | 58.35           | 44.53   | H                            | 5.50                          | 63.85                       | 50.03   | 74.0              | 54.0    | 10.1           | 4.0     |

Note: All the emissions above 7.386 GHz were attenuated below the limits and the noise floor of the measurement equipment.

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Table 7.4.3.2-3: Radiated Spurious Emissions Tabulated Data

| Frequency<br>(MHz)                                                            | Level<br>(dBuV) |         | Antenna<br>Polarity<br>(H/V) | Correction<br>Factors<br>(dB) | Corrected Level<br>(dBuV/m) |         | Limit<br>(dBuV/m) |         | Margin<br>(dB) |         |
|-------------------------------------------------------------------------------|-----------------|---------|------------------------------|-------------------------------|-----------------------------|---------|-------------------|---------|----------------|---------|
|                                                                               | pk              | Qpk/Avg |                              |                               | pk                          | Qpk/Avg | pk                | Qpk/Avg | pk             | Qpk/Avg |
| Low Channel = 2412 MHz                                                        |                 |         |                              |                               |                             |         |                   |         |                |         |
| 2390                                                                          | 69.00           | 48.34   | H                            | -7.86                         | 61.14                       | 40.48   | 74.0              | 54.0    | 12.9           | 13.5    |
| 2390                                                                          | 79.44           | 55.69   | V                            | -7.86                         | 71.58                       | 47.83   | 74.0              | 54.0    | 2.4            | 6.2     |
| Middle Channel = 2437 MHz                                                     |                 |         |                              |                               |                             |         |                   |         |                |         |
|                                                                               |                 |         |                              |                               |                             |         |                   |         |                |         |
| All the restricted bands were attenuated below the limits and the noise floor |                 |         |                              |                               |                             |         |                   |         |                |         |
|                                                                               |                 |         |                              |                               |                             |         |                   |         |                |         |
| High Channel = 2462 MHz                                                       |                 |         |                              |                               |                             |         |                   |         |                |         |
| 2483.5                                                                        | 61.47           | 46.25   | H                            | -7.47                         | 54.00                       | 38.78   | 74.0              | 54.0    | 20.0           | 15.2    |
| 2483.5                                                                        | 73.19           | 52.11   | V                            | -7.47                         | 65.72                       | 44.64   | 74.0              | 54.0    | 8.3            | 9.4     |

Note: All the emissions above 2.4835 GHz were attenuated below the limits and the noise floor of the measurement equipment.

**7.4.3.3 Sample Calculation:**

$$R_C = R_U + CF_T$$

Where:

|        |   |                                                                   |
|--------|---|-------------------------------------------------------------------|
| $CF_T$ | = | Total Correction Factor (AF+CA+AG)-DC (Average Measurements Only) |
| $R_U$  | = | Uncorrected Reading                                               |
| $R_C$  | = | Corrected Level                                                   |
| AF     | = | Antenna Factor                                                    |
| CA     | = | Cable Attenuation                                                 |
| AG     | = | Amplifier Gain                                                    |
| DC     | = | Duty Cycle Correction Factor                                      |

**Example Calculation: Peak**

Corrected Level:  $62.54 + (-7.86) = 54.68 \text{ dB}\mu\text{V/m}$

Margin:  $74 \text{ dB}\mu\text{V/m} - 54.68 \text{ dB}\mu\text{V/m} = 19.3 \text{ dB}$

**Example Calculation: Average**

Corrected Level:  $50.78 + (-7.86) = 42.92 \text{ dB}\mu\text{V/m}$

Margin:  $54 \text{ dB}\mu\text{V/m} - 42.92 \text{ dB}\mu\text{V/m} = 11.1 \text{ dB}$

## 7.5 Power Spectral Density - FCC Section 15.247(e) IC: RSS-210 A8.2(b)

### 7.5.1 PSD Measurement Procedure (Conducted Method)

The power spectral density was measured in accordance with the FCC KDB Publication No. 558074 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (47 CFR 15.247)" Section 10.2 Method PKPSD (peak PSD). The RF output port of the EUT was directly connected to the input of the spectrum analyzer. Offset values were input for cable and external attenuation. The spectrum analyzer RBW was set to 100 kHz and VBW 300 kHz. Span was adjusted to 1.5 times the 6 dB bandwidth and the sweep time was set to auto.

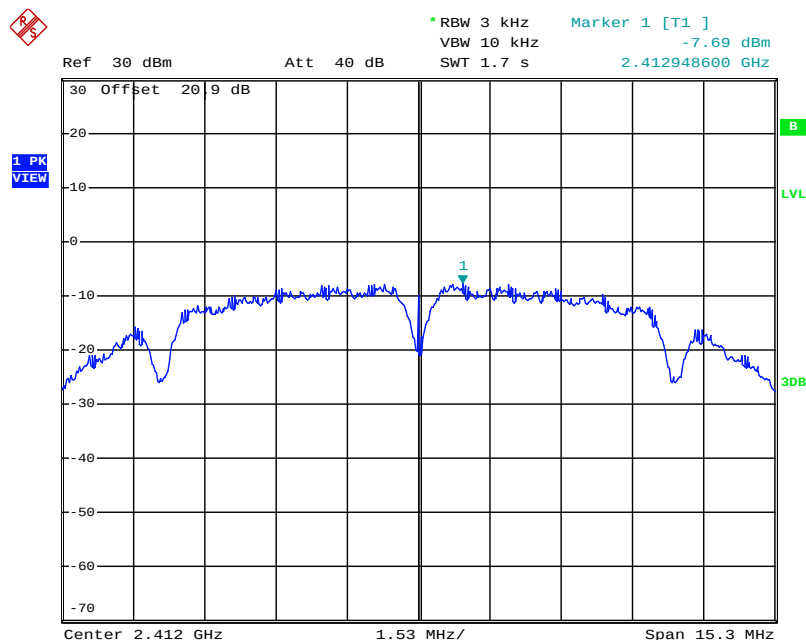
### 7.5.2 Measurement Results

Results are shown below.

802.11b

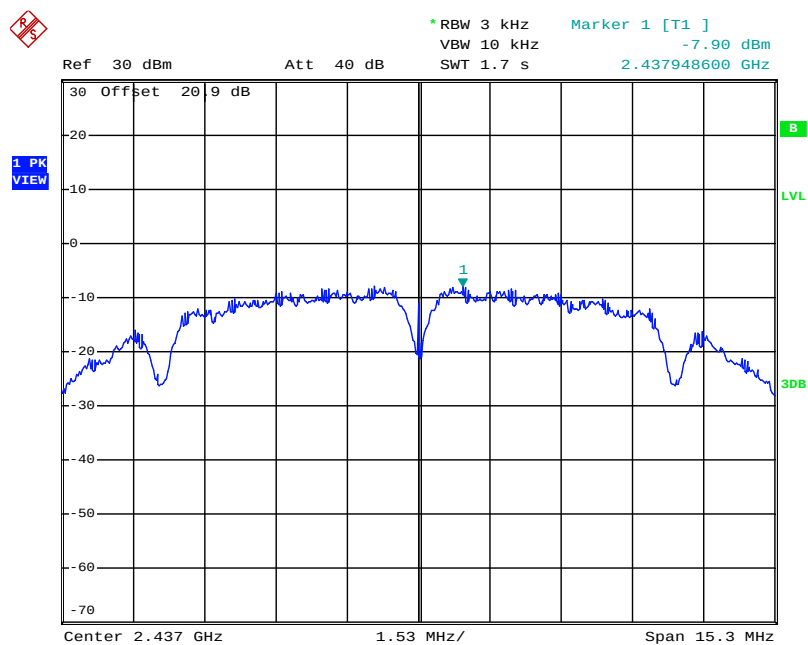
Table 7.5.2-1: Power Spectral Density

| Frequency (MHz) | PSD (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-----------|-------------|-------------|
| 2412            | -7.69     | 8.0         | 15.69       |
| 2437            | -7.90     | 8.0         | 15.90       |
| 2462            | -8.00     | 8.0         | 16.00       |



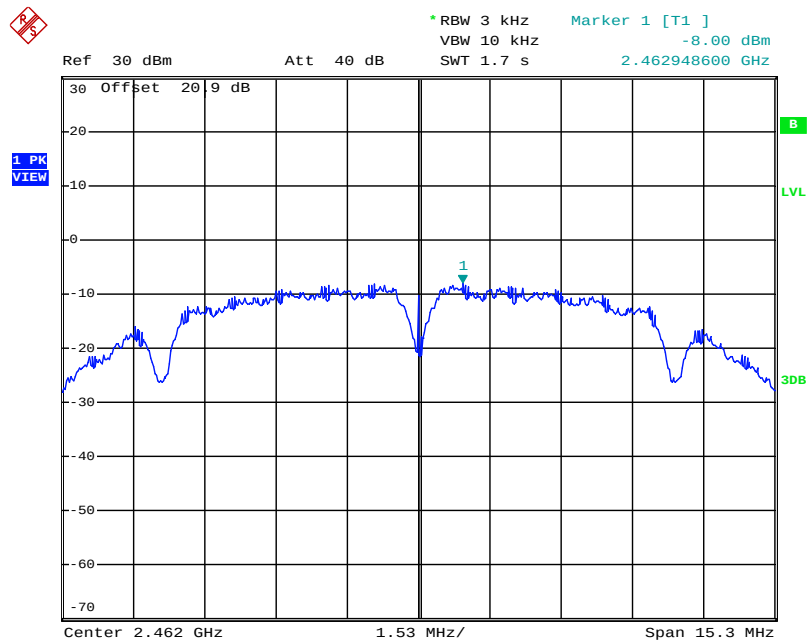
Date: 6.FEB.2015 16:36:17

Figure 7.5.2-1: Power Spectral Density - Low Channel



Date: 6.FEB.2015 16:42:43

Figure 7.5.2-2: Power Spectral Density - Middle Channel



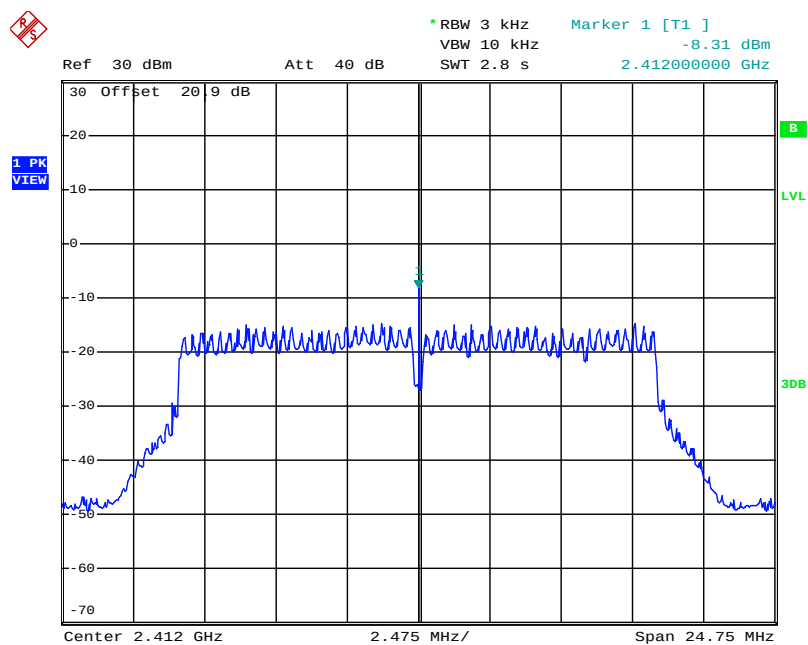
Date: 6.FEB.2015 16:48:13

Figure 7.5.2-3: Power Spectral Density – High Channel

802.11g

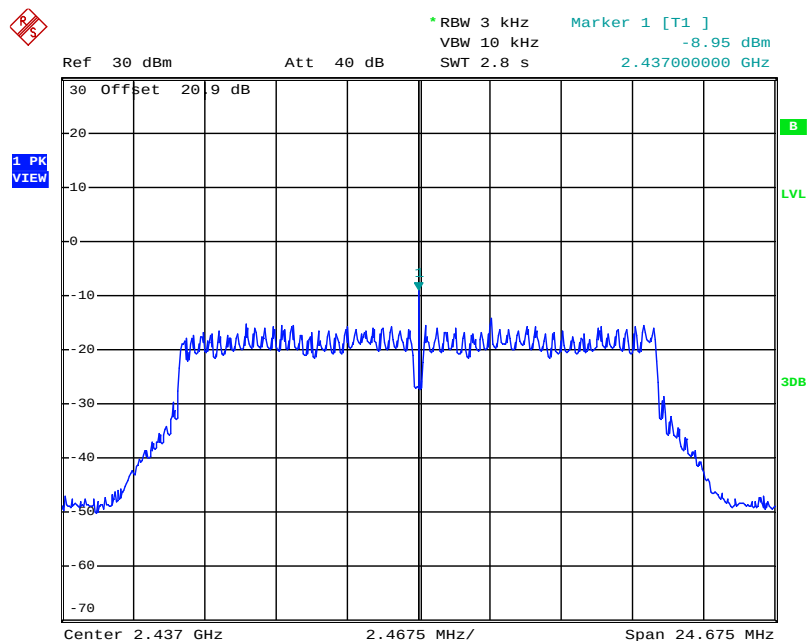
Table 7.5.2-2: Power Spectral Density

| Frequency (MHz) | PSD (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-----------|-------------|-------------|
| 2412            | -8.31     | 8.0         | 16.31       |
| 2437            | -8.95     | 8.0         | 16.95       |
| 2462            | -9.48     | 8.0         | 17.48       |



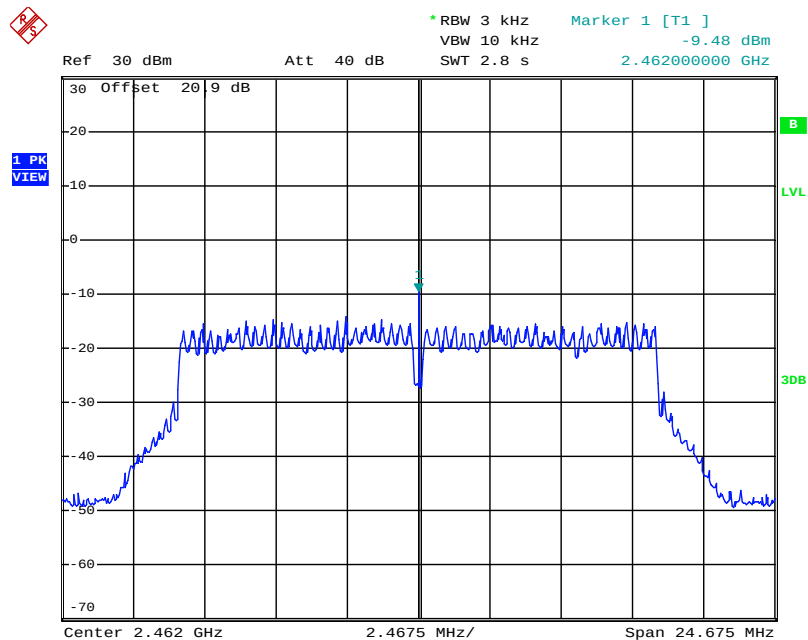
Date: 6.FEB.2015 17:03:38

Figure 7.5.2-4: Power Spectral Density - Low Channel



Date: 6.FEB.2015 17:08:50

Figure 7.5.2-5: Power Spectral Density - Middle Channel



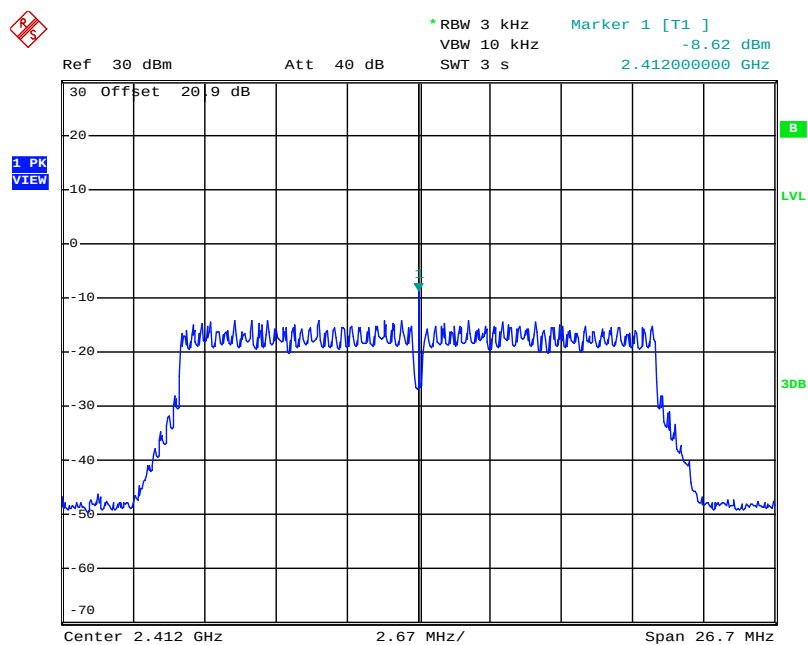
Date: 6.FEB.2015 17:15:05

Figure 7.5.2-6: Power Spectral Density – High Channel

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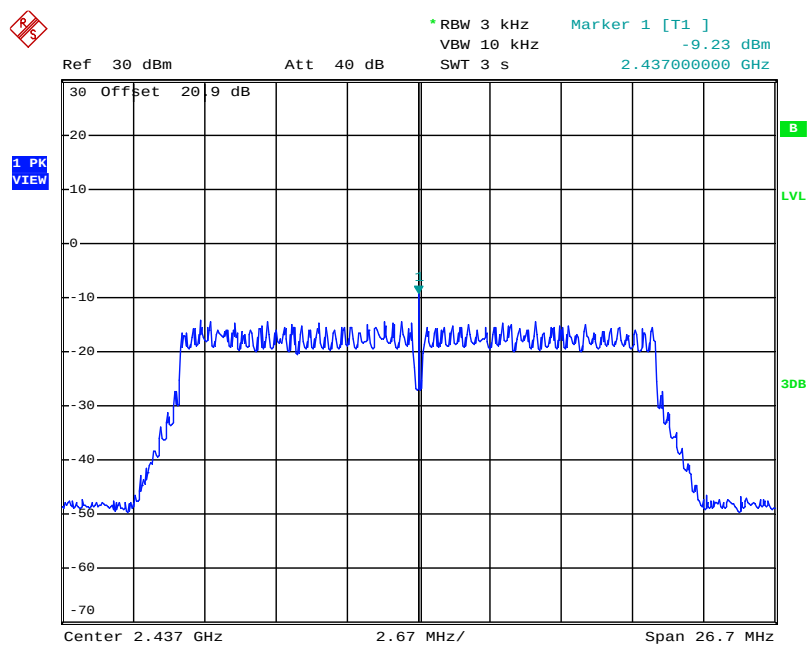
Table 7.5.2-3: Power Spectral Density

| Frequency (MHz) | PSD (dBm) | Limit (dBm) | Margin (dB) |
|-----------------|-----------|-------------|-------------|
| 2412            | -8.62     | 8.0         | 16.62       |
| 2437            | -9.23     | 8.0         | 17.23       |
| 2462            | -9.55     | 8.0         | 17.55       |



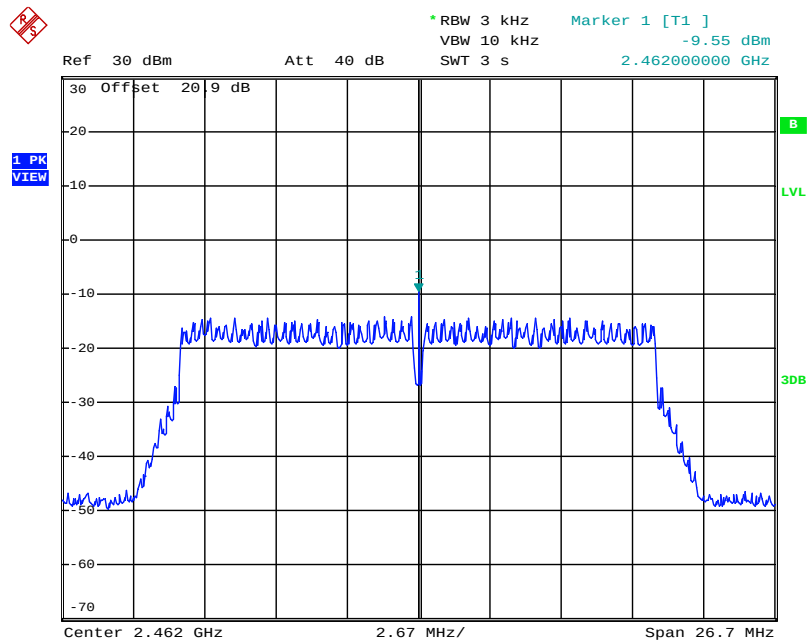
Date: 6.FEB.2015 17:23:24

Figure 7.5.2-7: Power Spectral Density - Low Channel



Date: 6.FEB.2015 17:31:24

Figure 7.5.2-8: Power Spectral Density - Middle Channel



Date: 6.FEB.2015 17:47:01

Figure 7.5.2-9: Power Spectral Density – High Channel

## 7.6 Power Line Conducted Emissions – FCC: Section 15.207 IC: RSS-Gen 8.8

### 7.6.1 Measurement Procedure

ANSI C63.4 sections 6 and 7 were the guiding documents for this evaluation. Conducted emissions were performed from 150 kHz to 30 MHz with the spectrum analyzer's resolution bandwidth set to 9 kHz and the video bandwidth set to 30 kHz. The calculation for the conducted emissions is as follows:

**Corrected Reading = Analyzer Reading + LISN Loss + Cable Loss**

**Margin = Applicable Limit - Corrected Reading**

### 7.6.2 Measurement Results

Results are shown below.

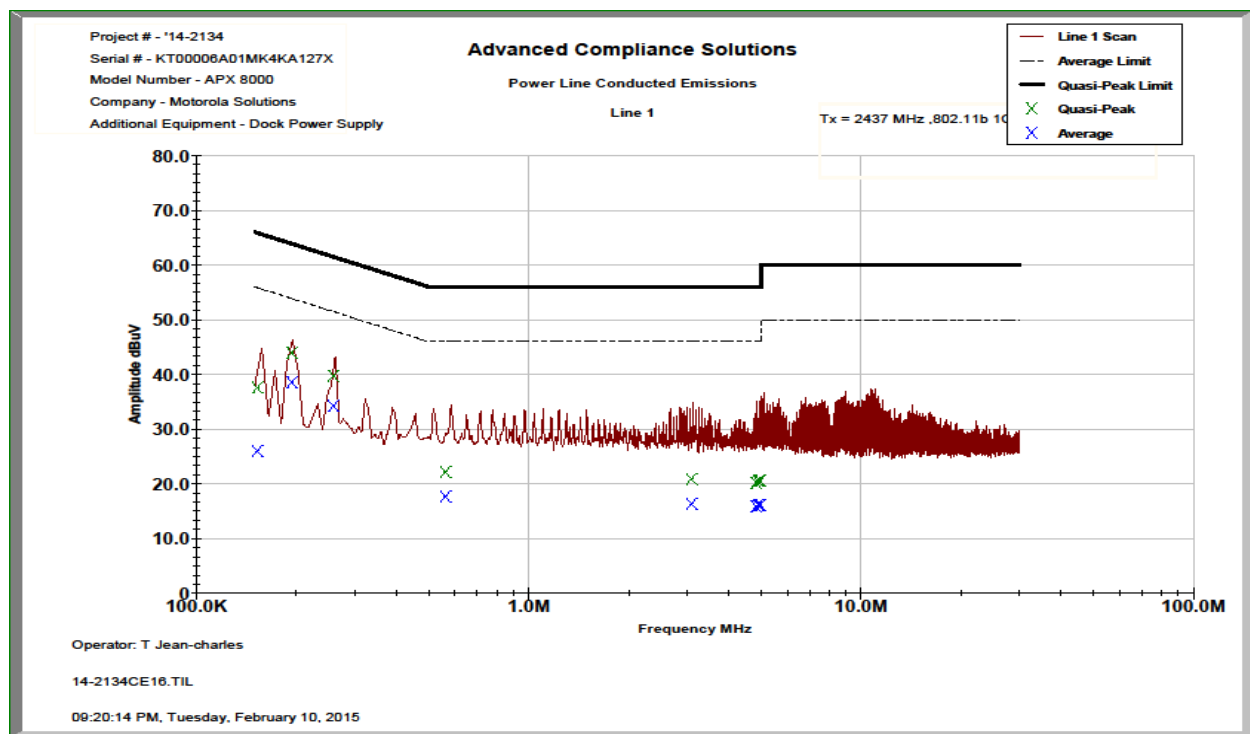


Figure 7.6.2-1: Conducted Emissions Results – Line 1

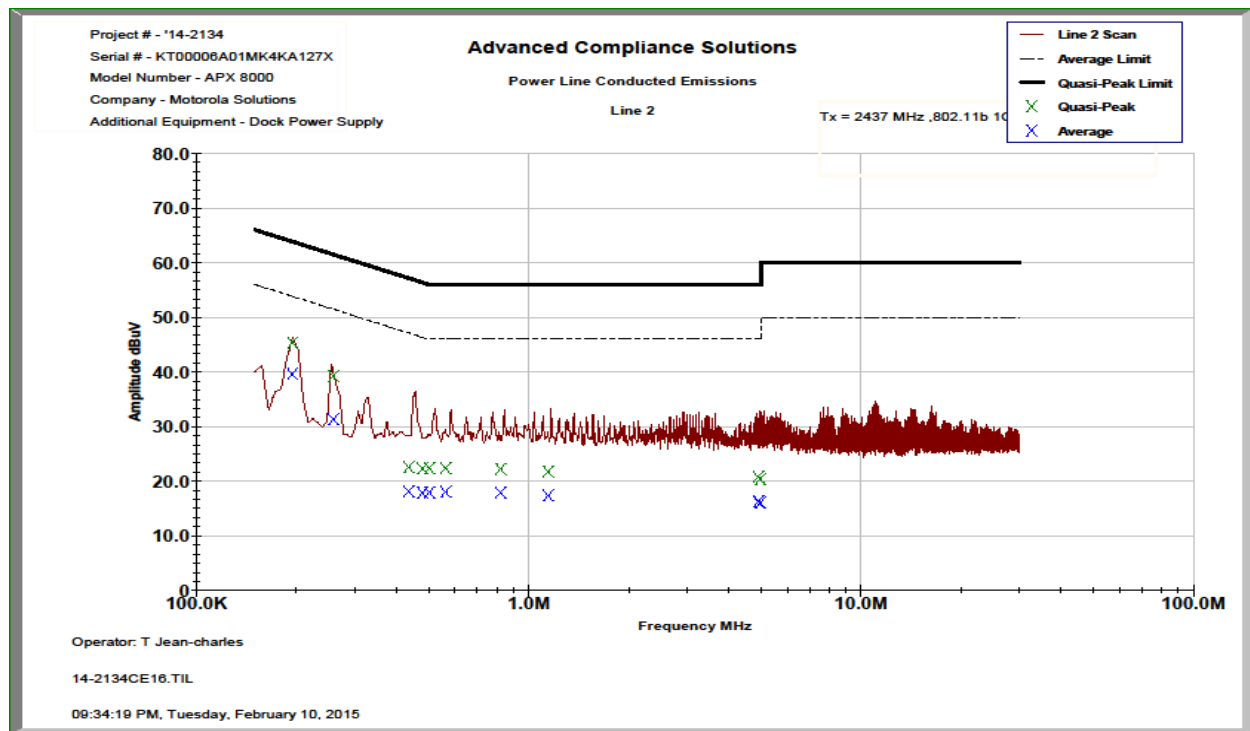


Figure 7.6.2-2: Conducted Emissions Results – Line 2

Table 7.6.2-1: Conducted EMI Results

| <div><div><div><input checked="" type="checkbox"/> Line 1</div><div><input checked="" type="checkbox"/> Line 2</div><div><input type="checkbox"/> Line 3</div><div><input type="checkbox"/> Line 4</div><div><input type="checkbox"/> To Ground</div><div><input checked="" type="checkbox"/> Floating</div><div><input type="checkbox"/> Telecom Port</div><div><input checked="" type="checkbox"/> dBµV</div><div><input type="checkbox"/> dBµA</div></div><div><div>Plot Number: 14-2134CE16</div><div>Power Supply Description: 14 VDC</div></div></div> |                     |         |                              |                 |         |            |         |             |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------|------------------------------|-----------------|---------|------------|---------|-------------|---------|
| Frequency (MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Uncorrected Reading |         | Total Correction Factor (dB) | Corrected Level |         | Limit      |         | Margin (dB) |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Quasi-Peak          | Average |                              | Quasi-Peak      | Average | Quasi-Peak | Average | Quasi-Peak  | Average |
| Line 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |         |                              |                 |         |            |         |             |         |
| 0.152748                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 27.5                | 15.957  | 10.05                        | 37.55           | 26.00   | 65.85      | 55.85   | 28.3        | 29.8    |
| 0.194024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 33.927              | 28.539  | 10.04                        | 43.96           | 38.58   | 63.86      | 53.86   | 19.9        | 15.3    |
| 0.258988                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 29.754              | 24.226  | 10.03                        | 39.78           | 34.25   | 61.46      | 51.46   | 21.7        | 17.2    |
| 0.562824                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12.15               | 7.694   | 10.03                        | 22.18           | 17.72   | 56.00      | 46.00   | 33.8        | 28.3    |
| 3.09261                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10.699              | 6.172   | 10.20                        | 20.90           | 16.38   | 56.00      | 46.00   | 35.1        | 29.6    |
| 4.8463                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 9.956               | 5.62    | 10.24                        | 20.20           | 15.86   | 56.00      | 46.00   | 35.8        | 30.1    |
| 4.91346                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10.212              | 5.871   | 10.24                        | 20.45           | 16.11   | 56.00      | 46.00   | 35.5        | 29.9    |
| 4.97316                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10.199              | 5.719   | 10.24                        | 20.44           | 15.96   | 56.00      | 46.00   | 35.6        | 30.0    |
| 4.98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10.219              | 5.906   | 10.24                        | 20.46           | 16.15   | 56.00      | 46.00   | 35.5        | 29.9    |
| 4.9801                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10.291              | 5.866   | 10.24                        | 20.53           | 16.11   | 56.00      | 46.00   | 35.5        | 29.9    |
| Line 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |         |                              |                 |         |            |         |             |         |
| 0.194775                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 35.322              | 29.579  | 10.05                        | 45.38           | 39.63   | 63.83      | 53.83   | 18.5        | 14.2    |
| 0.258975                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 29.191              | 21.257  | 10.05                        | 39.24           | 31.31   | 61.46      | 51.46   | 22.2        | 20.2    |
| 0.435963                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12.491              | 8.07    | 10.03                        | 22.53           | 18.10   | 57.14      | 47.14   | 34.6        | 29.0    |
| 0.479999                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12.268              | 7.877   | 10.04                        | 22.30           | 17.91   | 56.34      | 46.34   | 34.0        | 28.4    |
| 0.503125                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12.292              | 7.961   | 10.04                        | 22.33           | 18.00   | 56.00      | 46.00   | 33.7        | 28.0    |
| 0.562825                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12.291              | 7.98    | 10.04                        | 22.33           | 18.02   | 56.00      | 46.00   | 33.7        | 28.0    |
| 0.824013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12.206              | 7.86    | 10.06                        | 22.27           | 17.92   | 56.00      | 46.00   | 33.7        | 28.1    |
| 1.1449                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 11.714              | 7.286   | 10.06                        | 21.77           | 17.34   | 56.00      | 46.00   | 34.2        | 28.7    |
| 4.906                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10.42               | 5.912   | 10.26                        | 20.68           | 16.17   | 56.00      | 46.00   | 35.3        | 29.8    |
| 4.97316                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 9.982               | 5.66    | 10.26                        | 20.24           | 15.92   | 56.00      | 46.00   | 35.8        | 30.1    |

## **8 CONCLUSION**

In the opinion of ACS, Inc., the model H91TGD9PW7AN manufactured by Motorola Solutions meets the requirements of FCC Part 15 subpart C and Industry Canada's Radio Standards Specification RSS-210 for the test procedures documented in the test report.

**END REPORT**