

# FCC TEST REPORT

Test report  
On Behalf of  
Shenzhen Zidoo Technology Co.,Ltd  
For  
SMART TV BOX  
Model No.: X1 II

**FCC ID: 2AGN7-X1**

Prepared for : Shenzhen Zidoo Technology Co.,Ltd  
Central Avenue building A m, Unit 12D Xixiang Ave,BaoAn District,Shenzhen.

Prepared By : WST Certification & Testing (HK) Limited  
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Date of Test: Mar. 23, 2016 ~Apr. 05, 2016

Date of Report: Apr. 05, 2016

Report Number: WST160323118-E

## TEST RESULT CERTIFICATION

**Applicant's name** ..... Shenzhen Zidoo Technology Co.,Ltd

Address ..... Central Avenue building A m, Unit 12D Xixiang Ave,BaoAn District,Shenzhen.

**Manufacture's Name** ..... Shenzhen Zidoo Technology Co.,Ltd

Address ..... Central Avenue building A m, Unit 12D Xixiang Ave,BaoAn District,Shenzhen.

### Product description

Trade Mark: ZIDOO

Product name..... SMART TV BOX

Model and/or type X1 II  
reference .....

**Standards** ..... FCC Rules and Regulations Part 15 Subpart C Section 15.247  
ANSI C63.10: 2013

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**Date of Test** .....

Date (s) of performance of tests..... **Mar. 23, 2016 ~Apr. 05, 2016**

Date of Issue..... **Apr. 05, 2016**

Test Result..... **Pass**

Testing Engineer :



(Eric Xie)

Technical Manager :



(Dora Qin)

Authorized Signatory :



(Kait Chen)

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## 1. TEST SUMMARY

| FCC Rules                                                                        | Description of Test                   | Result    |
|----------------------------------------------------------------------------------|---------------------------------------|-----------|
| Section 15.247(a)(2)<br>And Part 2.1049                                          | 6dB Bandwidth Test                    | Compliant |
| Section 15.247(e)                                                                | Power Spectral Density Test           | Compliant |
| Section 15.247(b)<br>And Part 2.1046                                             | Maximum Peak Output Power Test        | Compliant |
| Section 15.247(d)<br>And Part 2.1051,<br>Part 2.1057                             | Band Edge Compliance Tes              | Compliant |
| Section 15.247(d)<br>Section 15.209)<br>Part 2.1051, Part<br>2.1053, Part 2.1057 | Radiated Spurious Emission Test       | Compliant |
| Section 15.247(d)<br>Part 2.1051, Part<br>2.1053, Part 2.1057                    | Conducted Spurious Emission Test      | Compliant |
| Section 15.207                                                                   | AC Power Line Conducted Emission Test | Compliant |
| Section 15.203                                                                   | Antenna Requirement                   | Compliant |

## 1.1 TEST FACILITY

Test Firm : Shenzhen WST Testing Technology Co., Ltd.  
Certificated by FCC, Registration No.: 939433  
Address : 1F,No.9 Building,TGK Science & Technology Park,Yangtian Rd.,  
NO.72 Bao'an Dist., Shenzhen,Guangdong,China. 518101  
Tel : (86)755-33916437  
Fax : (86)755-27822175

## 1.2 MEASUREMENT UNCERTAINTY

Measurement Uncertainty  
Conducted Emission Expanded Uncertainty = 2.23dB, k=2  
Radiated emission expanded uncertainty(9kHz-30MHz) = 3.08dB, k=2  
Radiated emission expanded uncertainty(30MHz-1000MHz) = 4.42dB, k=2  
Radiated emission expanded uncertainty(Above 1GHz) = 4.06dB, k=2

## 2. GENERAL INFORMATION

### 2.1 General description of EUT

|                          |                                                                                                            |
|--------------------------|------------------------------------------------------------------------------------------------------------|
| Equipment                | SMART TV BOX                                                                                               |
| Model Name               | X1 II                                                                                                      |
| Serial No                | N/A                                                                                                        |
| FCC ID                   | 2AGN7-X1                                                                                                   |
| Model Difference         | N/A                                                                                                        |
| Modulation Type          | WIFI:DBPSK,DQPSK,CCK,BPSK,                                                                                 |
| Antenna Type             | Internal Antenna                                                                                           |
| WLAN Operation frequency | 802.11b: 2412-2462MHz<br>802.11g: 2412-2462MHz<br>802.11n HT20: 2412-2462MHz<br>802.11n HT40: 2422-2452MHz |
| Number of Channels       | 802.11b/g/n (HT20):11<br>802.11n (HT40): 7                                                                 |
| Data Rate                | 802.11b: 11, 5.5, 2, 1 Mbps<br>802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps<br>802.11n: up to 150Mbps        |
| Modulation Type          | CCK, OFDM                                                                                                  |
| Power Source             | DC 5V from Adapter                                                                                         |
| Power Rating             | /                                                                                                          |
| Adapter Model            | KA23-0502000DES<br>Input: AC 100-240V, 0.35A, Output: DC5V, 2A                                             |

## 2.2 Carrier frequency of channels

| Channel List for 802.11b/g/n(20 MHz) |                 |         |                 |         |                 |         |                 |
|--------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                              | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 01                                   | 2412            | 04      | 2427            | 07      | 2442            | 10      | 2457            |
| 02                                   | 2417            | 05      | 2432            | 08      | 2447            | 11      | 2462            |
| 03                                   | 2422            | 06      | 2437            | 09      | 2452            |         |                 |

| Channel List for 802.11n(40MHz) |                 |         |                 |         |                 |         |                 |
|---------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                         | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 03                              | 2422            | 06      | 2437            | 09      | 2452            |         |                 |
| 04                              | 2427            | 07      | 2442            |         |                 |         |                 |
| 05                              | 2432            | 08      | 2447            |         |                 |         |                 |

## 2.3 Operation of EUT during testing

### Operating Mode

The mode is used: **802.11b Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

### **802.11g Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

### **802.11n (HT20) Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

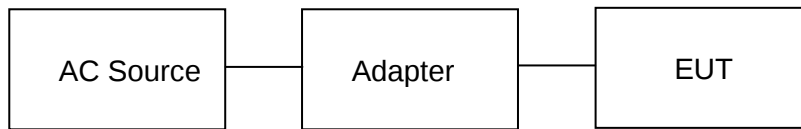
### **802.11n (HT40) Transmitting mode**

Low Channel: 2422MHz

Middle Channel: 2437MHz

High Channel: 2452MHz

## 2.4 Description of test setup



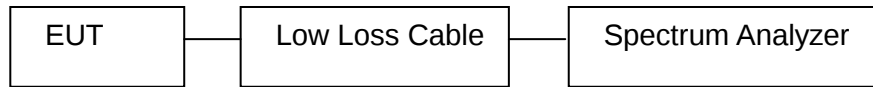
## 2.5 Measurement instruments list

| Item | Equipment                                   | Manufacturer         | Model No.  | Serial No.    | Last Cal.    | Cal. Interval |
|------|---------------------------------------------|----------------------|------------|---------------|--------------|---------------|
| 1.   | EMI Receiver                                | Rohde & Schwarz      | ESCI       | 100627        | May 19, 2015 | 1 Year        |
| 2.   | LISN                                        | SchwarzBeck          | NSLK 8126  | 8126377       | May 19, 2015 | 1 Year        |
| 3.   | RF Switching Unit                           | Compliance Direction | RSU-M2     | 38303         | May 19, 2015 | 1 Year        |
| 4.   | EMI Test Software ES-K1                     | Rohde & Schwarz      | N/A        | N/A           | N/A          | N/A           |
| 5.   | EMI Test Receiver                           | Rohde & Schwarz      | ESCI       | 100627        | May 19, 2015 | 1 Year        |
| 6.   | Trilog Broadband Antenna                    | Schwarzbeck          | VULB9163   | VULB 9163-289 | May 17, 2015 | 1 Year        |
| 7.   | Pre-amplifier                               | Compliance Direction | PAP-0203   | 22008         | May 19, 2015 | 1 Year        |
| 8.   | EMI Test Software EZ-EMC                    | SHURPLE              | N/A        | N/A           | N/A          | N/A           |
| 9.   | EMI Receiver                                | Rohde & Schwarz      | ESCI       | 100627        | May 19, 2015 | 1 Year        |
| 10.  | LISN                                        | SchwarzBeck          | NSLK 8126  | 8126377       | May 19, 2015 | 1 Year        |
| 11.  | RF Switching Unit                           | Compliance Direction | RSU-M2     | 38303         | May 19, 2015 | 1 Year        |
| 12.  | EMI Test Software ES-K1                     | Rohde & Schwarz      | N/A        | N/A           | N/A          | N/A           |
| 13.  | EMI Receiver                                | Rohde & Schwarz      | ESCI       | 100627        | May 19, 2015 | 1 Year        |
| 14.  | EMI Receiver                                | Rohde & Schwarz      | ESCI       | 100627        | May 19, 2015 | 1 Year        |
| 15.  | LISN                                        | SchwarzBeck          | NSLK 8126  | 8126377       | May 19, 2015 | 1 Year        |
| 16.  | RF Switching Unit                           | Compliance Direction | RSU-M2     | 38303         | May 19, 2015 | 1 Year        |
| 17.  | EMI Test Software ES-K1                     | Rohde & Schwarz      | N/A        | N/A           | N/A          | N/A           |
| 18.  | Programmable AC Power source                | SOPH POWER           | PAG-1050   | 630250        | May 26, 2015 | 1 Year        |
| 19.  | Harmonic and Flicker Analyzer               | LAPLACE              | AC2000A    | 272629        | May 26, 2015 | 1 Year        |
| 20.  | Harmonic and Flicker Test Software AC 2000A | LAPLACE              | N/A        | N/A           | N/A          | N/A           |
| 21.  | ESD Simulators                              | KIKUSUI              | KES4021    | LJ003477      | May 25, 2015 | 1 Year        |
| 22.  | EFT Generator                               | EMPEK                | EFT-4040B  | 0430928N      | May 19, 2015 | 1 Year        |
| 23.  | Shielding Room                              | ChangZhou ZhongYu    | JB88       | SEL0166       | May 19, 2015 | 1 Year        |
| 24.  | Signal Generator 9KHz~2.2GHz                | R&S                  | SML02      | SEL0143       | May 19, 2015 | 1 Year        |
| 25.  | Signal Generator 9KHz~1.1GHz                | R&S                  | SML01      | SEL0135       | May 19, 2015 | 1 Year        |
| 26.  | Power Meter                                 | R&S                  | NRVS       | SEL0144       | May 19, 2015 | 1 Year        |
| 27.  | RF Level Meter                              |                      | URV35      | SEL0137       | May 19, 2015 | 1 Year        |
| 28.  | Audio Analyzer                              | R&S                  | UPL        | SEL0136       | May 19, 2015 | 1 Year        |
| 29.  | RF-Amplifier 150KHz~150MHz                  | BONN Elektronik      | BSA1515-25 | SEL0157       | May 19, 2015 | 1 Year        |

|     |                                    |                     |                      |         |               |        |
|-----|------------------------------------|---------------------|----------------------|---------|---------------|--------|
| 30. | Stripline Test Cell                | Erika Fiedler       | VDE0872              | SEL0167 | N/A           | N/A    |
| 31. | TV Test Transmitter                | R&S                 | SFM                  | SEL0159 | May 17, 2015  | 1 Year |
| 32. | TV Generator PAL                   | R&S                 | SGPF                 | SEL0138 | May 19, 2015  | 1 Year |
| 33. | TV Generator Ntsc                  | R&S                 | SGMF                 | SEL0140 | May 19, 2015  | 1 Year |
| 34. | TV Generator Secam                 | R&S                 | SGSF                 | SEL0139 | May 19, 2015  | 1 Year |
| 35. | TV Test Transmitter 0.3MHz~3300MHz | R&S                 | SFQ                  | SEL0142 | May 19, 2015  | 1 Year |
| 36. | MPEG2 Measurement Generator        | R&S                 | DVG                  | SEL0141 | May 19, 2015  | 1 Year |
| 37. | Spectrum Analyzer                  | R&S                 | FSP                  | SEL0177 | May 19, 2015  | 1 Year |
| 38. | Matching                           | R&S                 | RAM                  | SEL0146 | N/A           | N/A    |
| 39. | Matching                           | R&S                 | RAM                  | SEL0148 | N/A           | N/A    |
| 40. | Absorbing Clamp                    | R&S                 | MDS21                | SEL0158 | May 17, 2015  | 1 Year |
| 41. | Coupling Set                       | Erika Fiedler       | Rco, Rci, MC, AC, LC | SEL0149 | N/A           | N/A    |
| 42. | Filters                            | Erika Fiedler       | Sr, LBS              | SEL0150 | N/A           | N/A    |
| 43. | Matching Network                   | Erika Fiedler       | MN, X1 II            | SEL0151 | N/A           | N/A    |
| 44. | Fully Anechoic Room                | ChangZhou ZhongYu   | 854                  | SEL0169 | Jun. 10, 2015 | 1 Year |
| 45. | Signal Generator                   | R&S                 | SML03                | SEL0068 | May 17, 2015  | 1 Year |
| 46. | RF-Amplifier 30M~1GHz              | Amplifier Reasearch | 250W1000A            | SEL0066 | Oct. 24, 2015 | 1 Year |
| 47. | RF-Amplifier 0.8~3.0GHz            | Amplifier Reasearch | 60S1G3               | SEL0065 | Oct. 24, 2015 | 1 Year |
| 48. | Power Meter                        | R&S                 | NRVD                 | SEL0069 | May 17, 2015  | 1 Year |
| 49. | Power Sensor                       | R&S                 | URV5-Z2              | SEL0071 | May 17, 2015  | 1 Year |
| 50. | Power Sensor                       | R&S                 | URV5-Z2              | SEL0072 | May 17, 2015  | 1 Year |
| 51. | Software EMC32                     | R&S                 | EMC32-S              | SEL0082 | N/A           | N/A    |
| 52. | Log-periodic Antenna               | Amplifier Reasearch | AX1 II 080           | SEL0073 | N/A           | N/A    |
| 53. | Antenna Tripod                     | Amplifier Reasearch | TP1000A              | SEL0074 | N/A           | N/A    |
| 54. | High Gain Horn Antenna(0.8-5G Hz)  | Amplifier Reasearch | AT4002A              | SEL0075 | N/A           | N/A    |

### 3. 6DB BANDWIDTH MEASUREMENT

#### 3.1 Block diagram of test setup



#### 3.2 Limit

Part 2.1049 and Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz

#### 3.3 Block diagram of test setup

3.3.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

3.3.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz

3.3.3. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

#### 3.4 Test result

| 802.11b |                 |                    |            |
|---------|-----------------|--------------------|------------|
| Channel | Frequency (MHz) | 6DB Bandwidth(MHz) | Limit(MHz) |
| Low     | 2412            | 9.942              | >0.5MHz    |
| Middle  | 2437            | 8.374              | >0.5MHz    |
| High    | 2462            | 6.771              | >0.5MHz    |

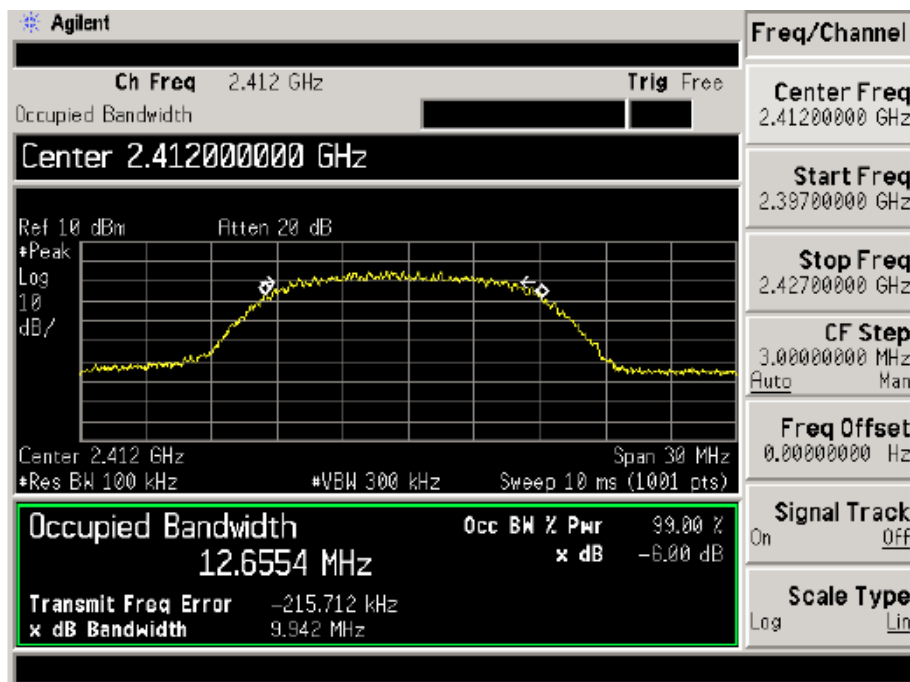
| 802.11g |                 |                    |            |
|---------|-----------------|--------------------|------------|
| Channel | Frequency (MHz) | 6DB Bandwidth(MHz) | Limit(MHz) |
| Low     | 2412            | 16.545             | >0.5MHz    |
| Middle  | 2437            | 12.668             | >0.5MHz    |
| High    | 2462            | 10.038             | >0.5MHz    |

| 802.11n (HT20) |                 |                    |            |
|----------------|-----------------|--------------------|------------|
| Channel        | Frequency (MHz) | 6DB Bandwidth(MHz) | Limit(MHz) |
| Low            | 2412            | 17.713             | >0.5MHz    |
| Middle         | 2437            | 13.460             | >0.5MHz    |
| High           | 2462            | 8.631              | >0.5MHz    |

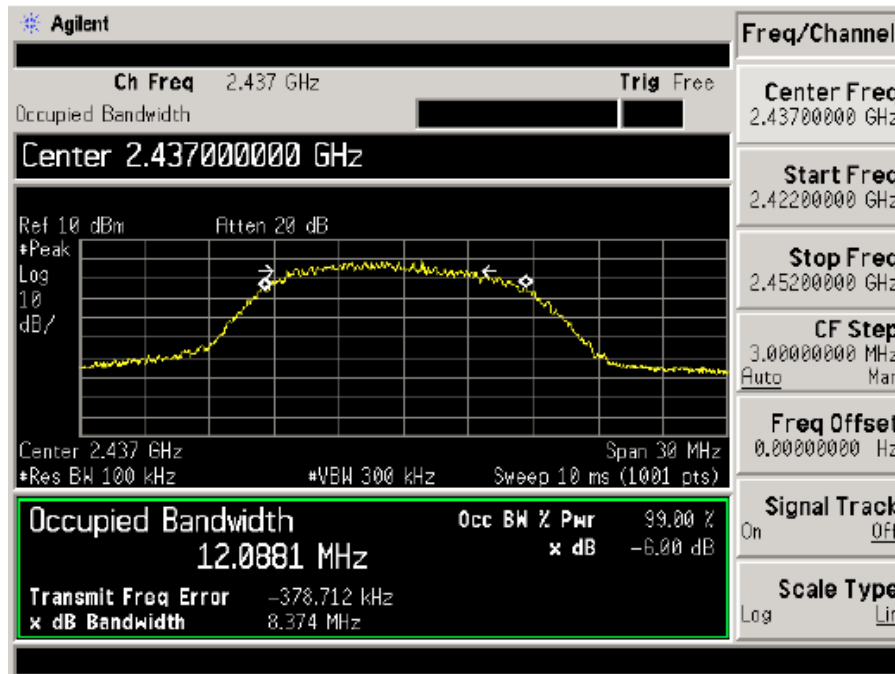
| 802.11n (HT40) |                 |                    |            |
|----------------|-----------------|--------------------|------------|
| Channel        | Frequency (MHz) | 6DB Bandwidth(MHz) | Limit(MHz) |
| Low            | 2422            | 15.282             | >0.5MHz    |
| Middle         | 2437            | 17.842             | >0.5MHz    |
| High           | 2452            | 34.494             | >0.5MHz    |

The spectrum analyzer plots are attached as below.

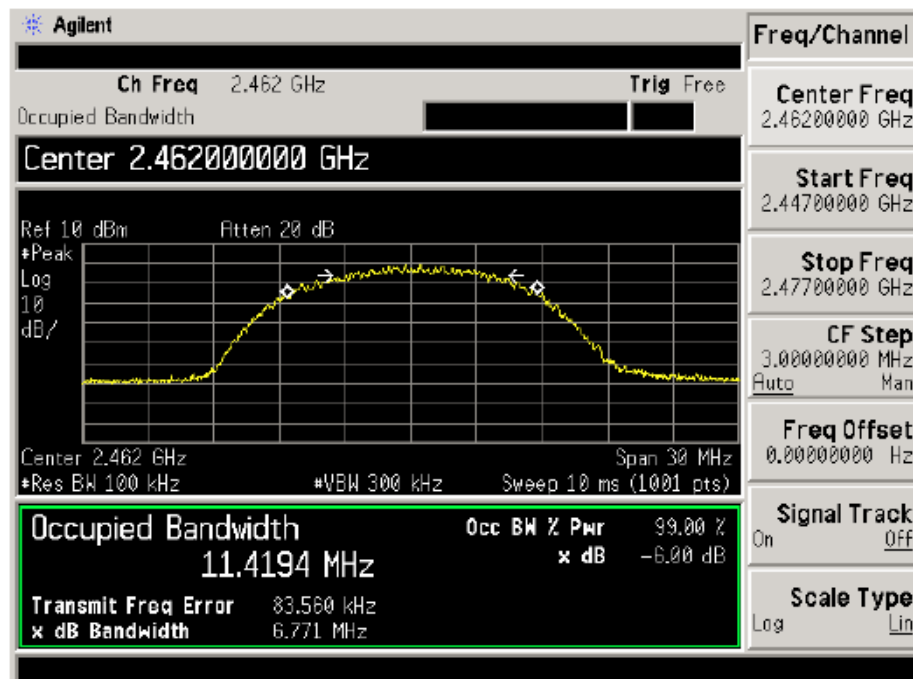
#### 802.11b Channel Low 2412MHz



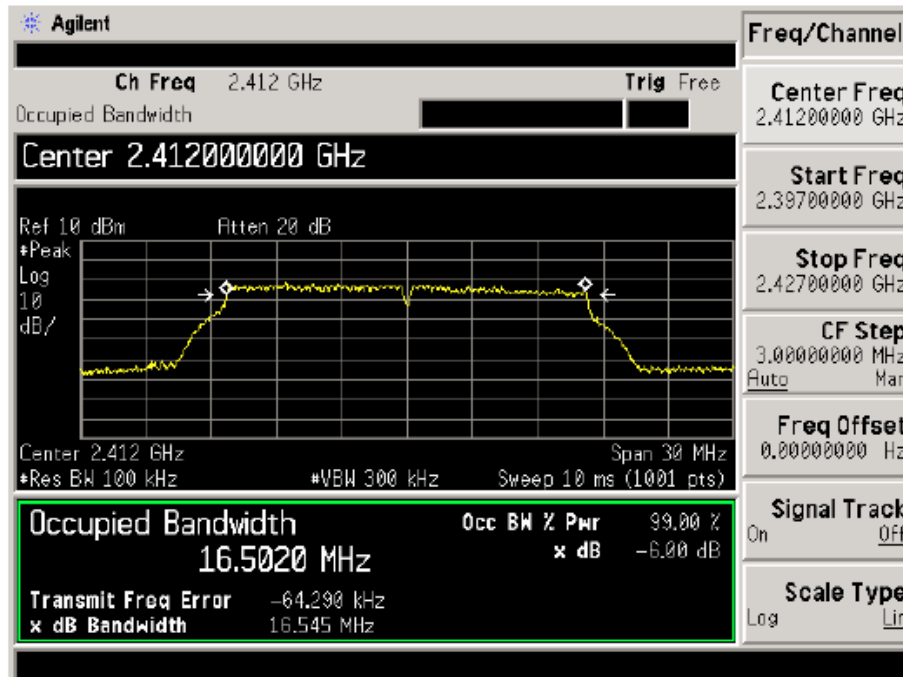
### 802.11b Channel Middle 2437MHz



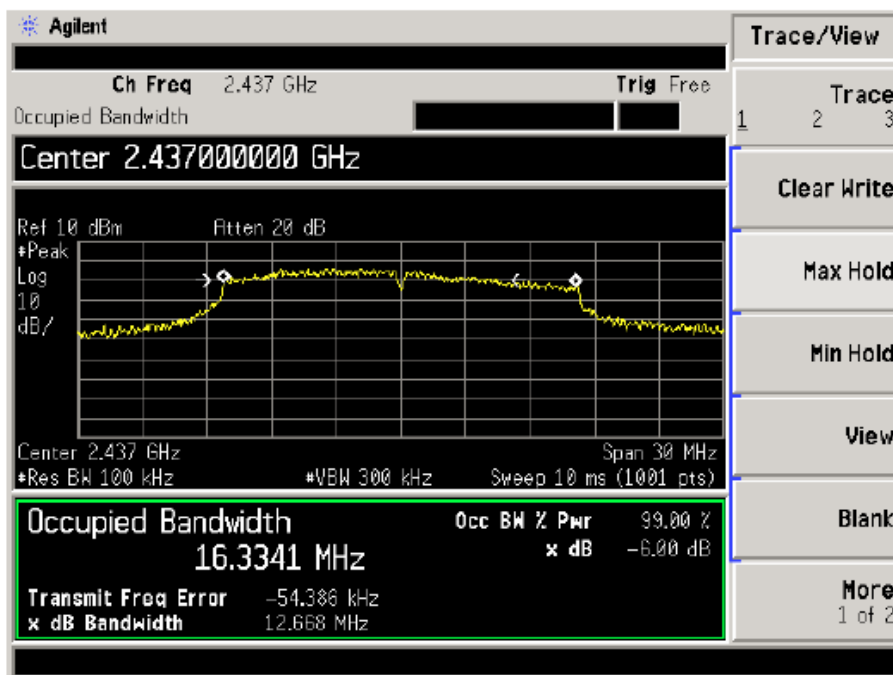
### 802.11b Channel High 2462MHz



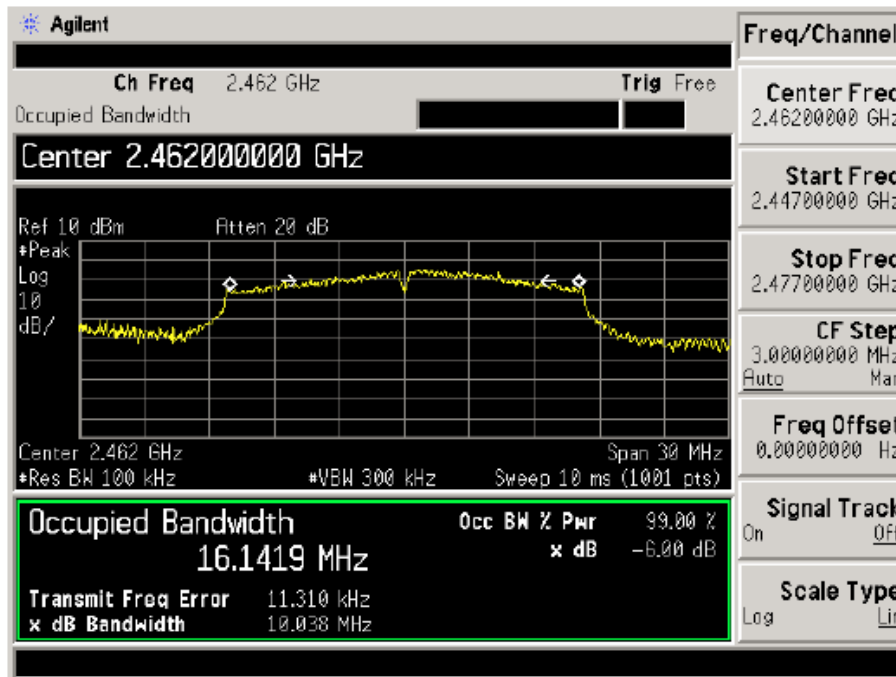
### 802.11g Channel Low 2412MHz



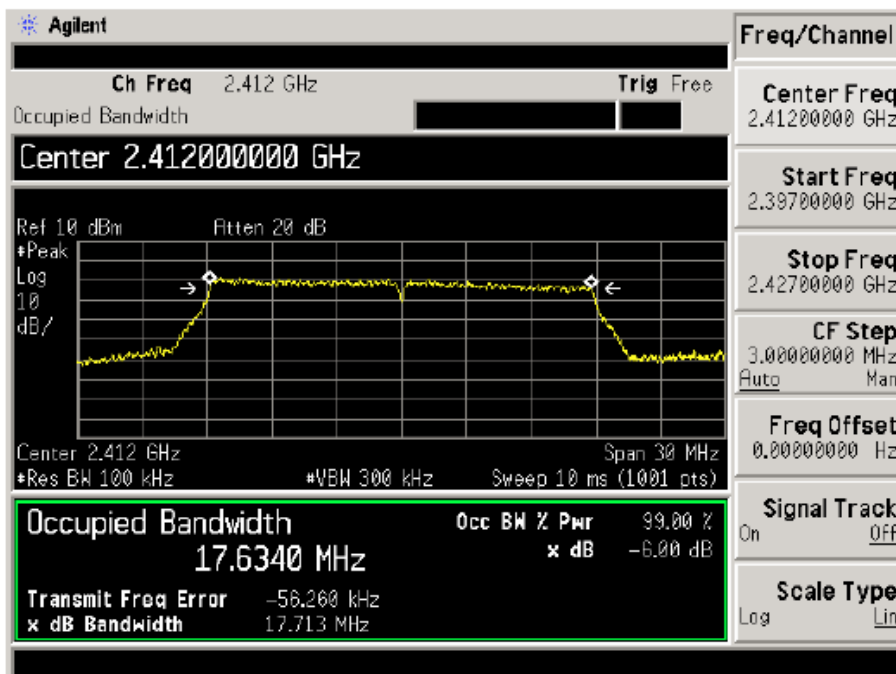
### 802.11g Channel Middle 2437MHz



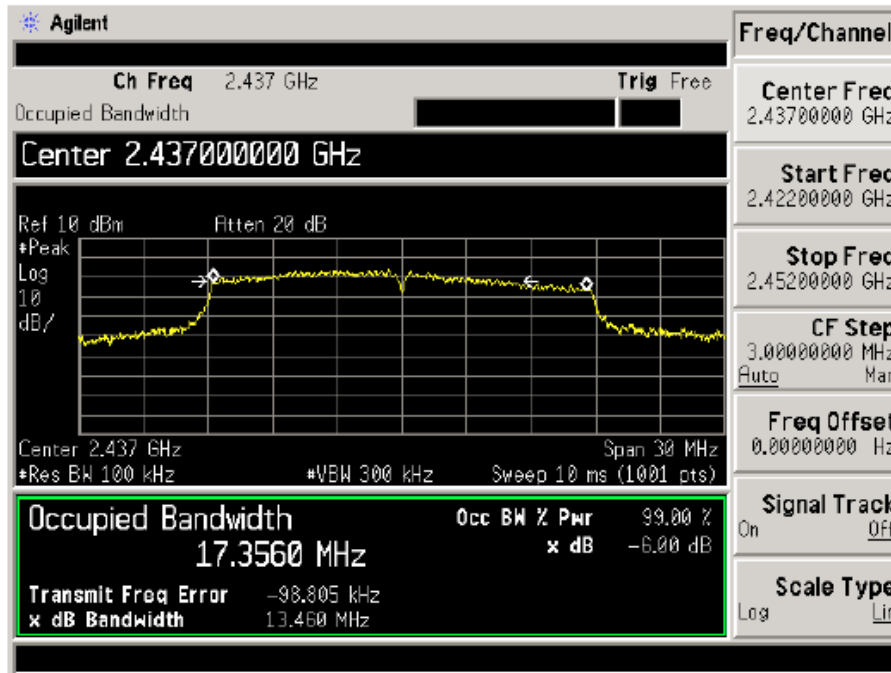
### 802.11g Channel High 2462MHz



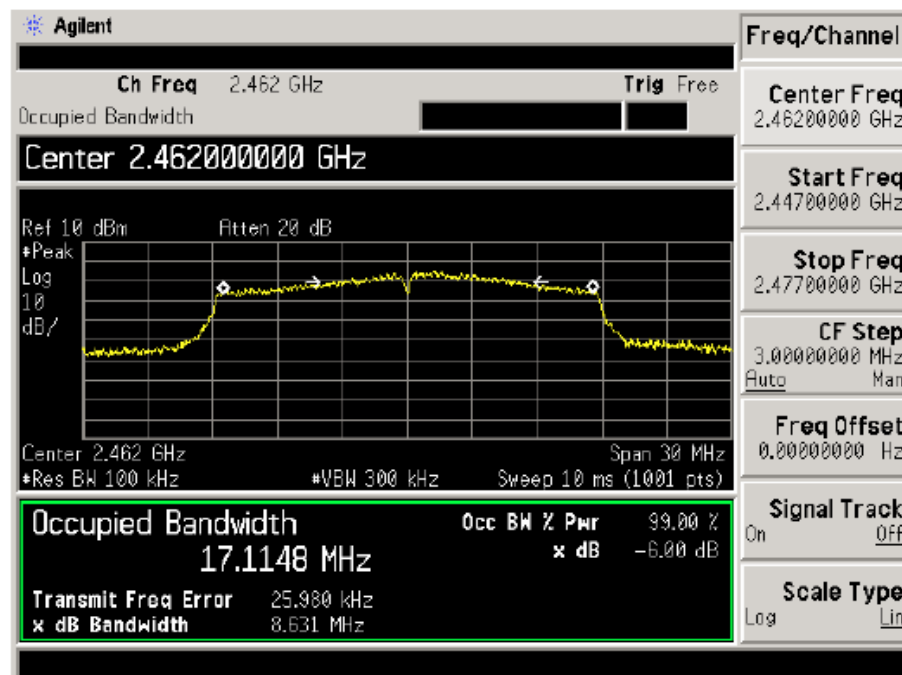
### 802.11n(HT20) Channel Low 2412MHz



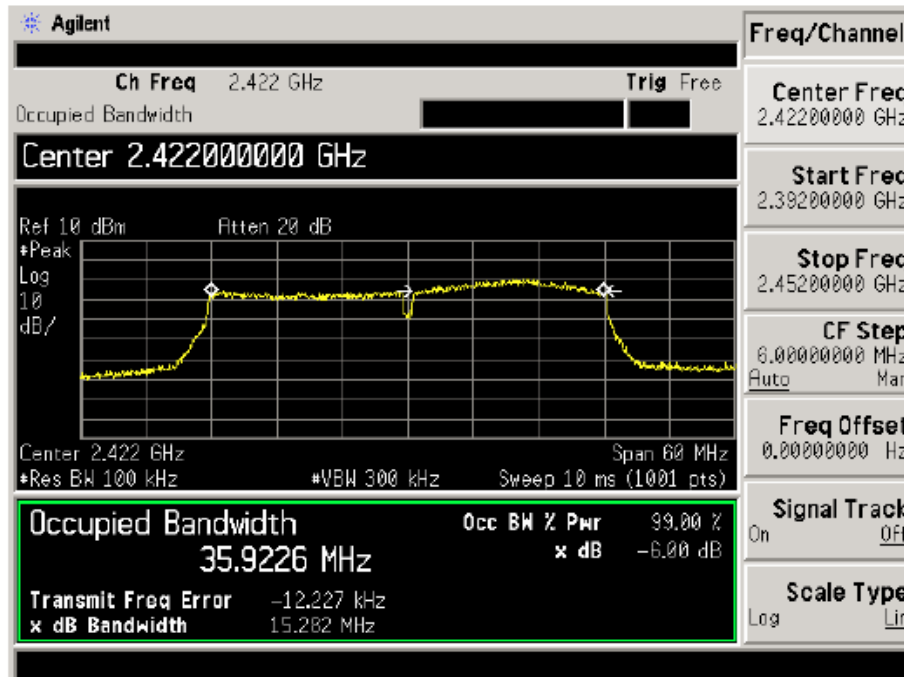
### 802.11n(HT20) Channel Middle 2437MHz



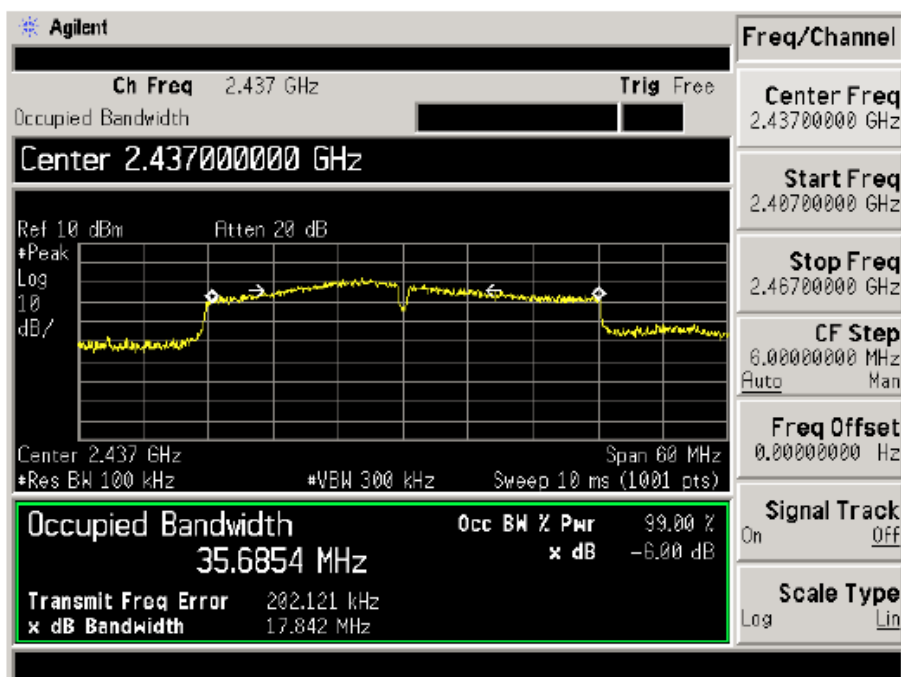
### 802.11n(HT20) Channel High 2462MHz



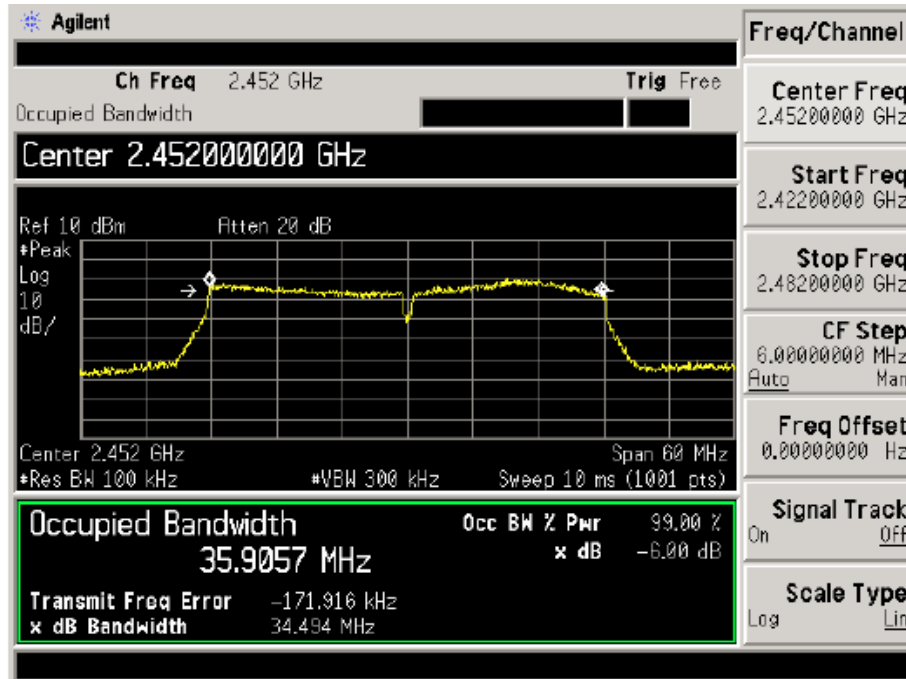
### 802.11n(HT40) Channel Low 2422MHz



### 802.11n(HT40) Channel Middle 2437MHz

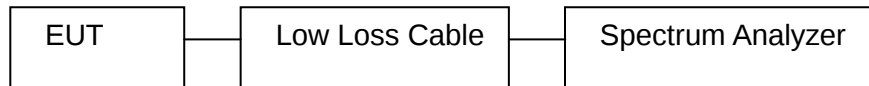


802.11n(HT40) Channel High 2452MHz



#### 4. MAXIMUM PEAK OUTPUT POWER

##### 4.1 Block diagram of test setup



##### 4.2 Limits

Part 2.1046 and Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

##### 4.3 Test procedure

- The transmitter output was connected to the spectrum analyzer through a low
- Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz
- Measurement the maximum peak output power.

##### 4.4 Test result

Pass

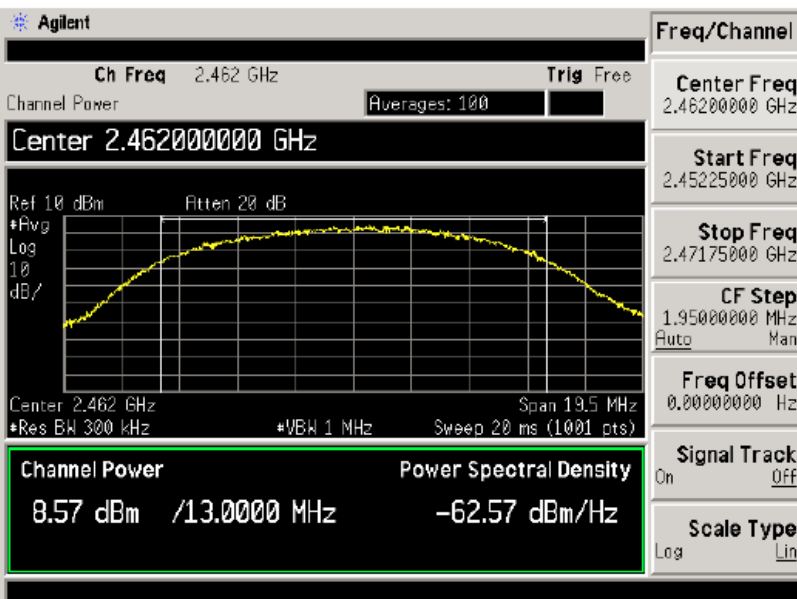
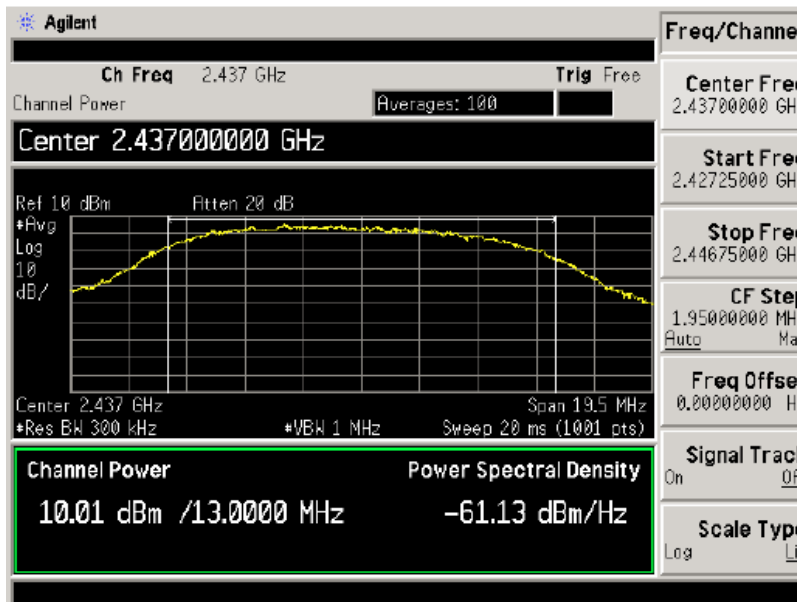
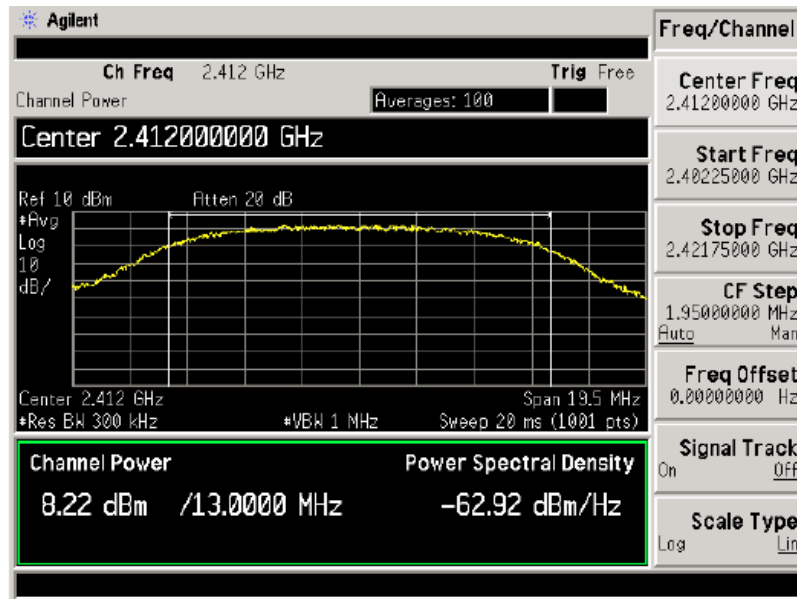
| 802.11b |                    |                            |                |
|---------|--------------------|----------------------------|----------------|
| Channel | Frequency<br>(MHz) | Peak output power<br>(dBm) | Limit<br>(dBm) |
| Low     | 2412               | 8.22                       | 30             |
| Middle  | 2437               | 10.01                      | 30             |
| High    | 2462               | 8.57                       | 30             |

| 802.11g |                    |                            |                |
|---------|--------------------|----------------------------|----------------|
| Channel | Frequency<br>(MHz) | Peak output power<br>(dBm) | Limit<br>(dBm) |
| Low     | 2412               | 3.85                       | 30             |
| Middle  | 2437               | 5.91                       | 30             |
| High    | 2462               | 5.09                       | 30             |

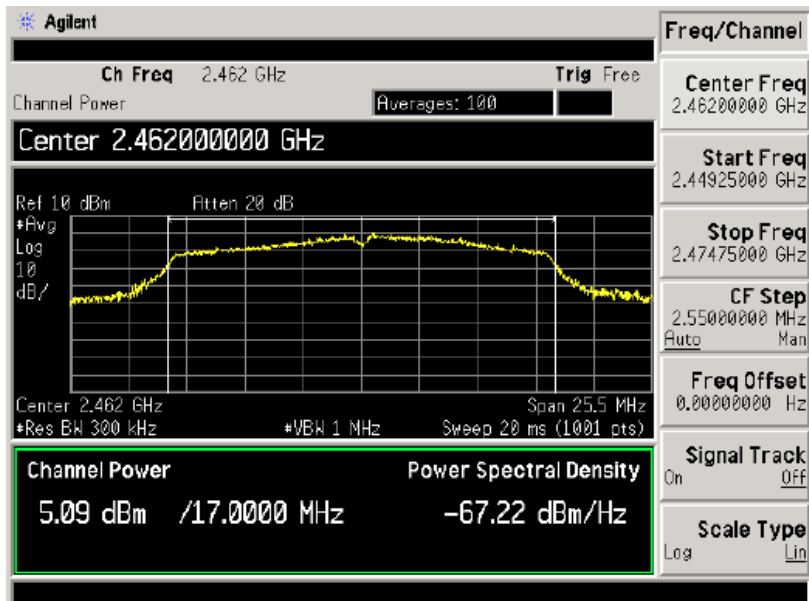
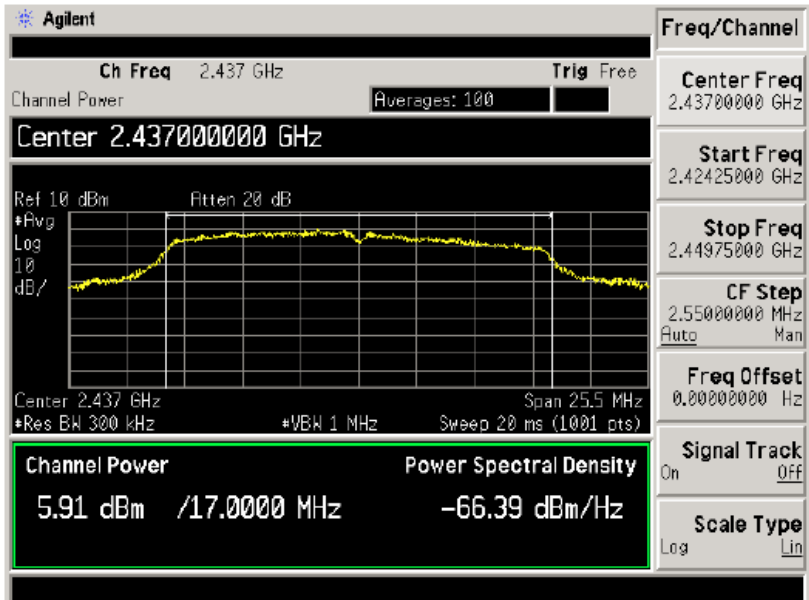
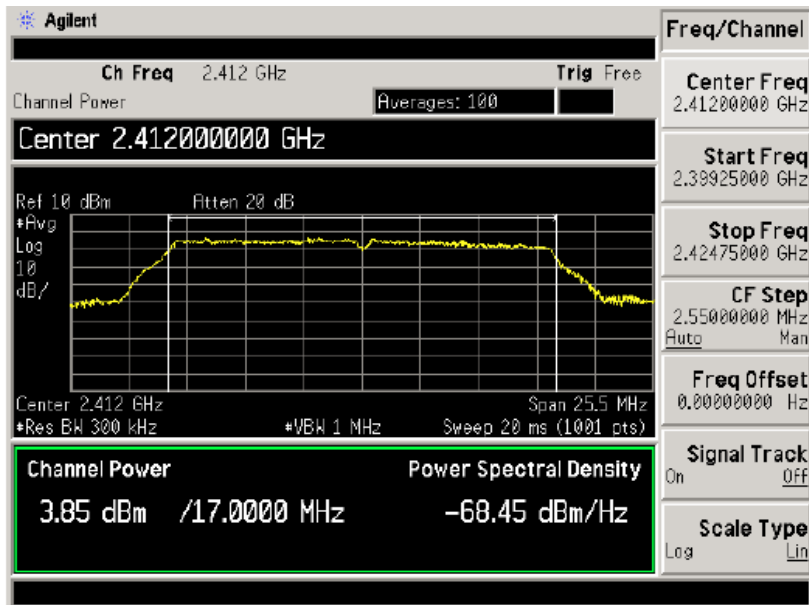
| 802.11n (HT20) |                    |                            |                |
|----------------|--------------------|----------------------------|----------------|
| Channel        | Frequency<br>(MHz) | Peak output power<br>(dBm) | Limit<br>(dBm) |
| Low            | 2412               | 3.28                       | 30             |
| Middle         | 2437               | 4.91                       | 30             |
| High           | 2462               | 4.48                       | 30             |

| 802.11n (HT40) |                    |                            |                |
|----------------|--------------------|----------------------------|----------------|
| Channel        | Frequency<br>(MHz) | Peak output power<br>(dBm) | Limit<br>(dBm) |
| Low            | 2422               | 2.94                       | 30             |
| Middle         | 2437               | 3.35                       | 30             |
| High           | 2452               | 2.85                       | 30             |

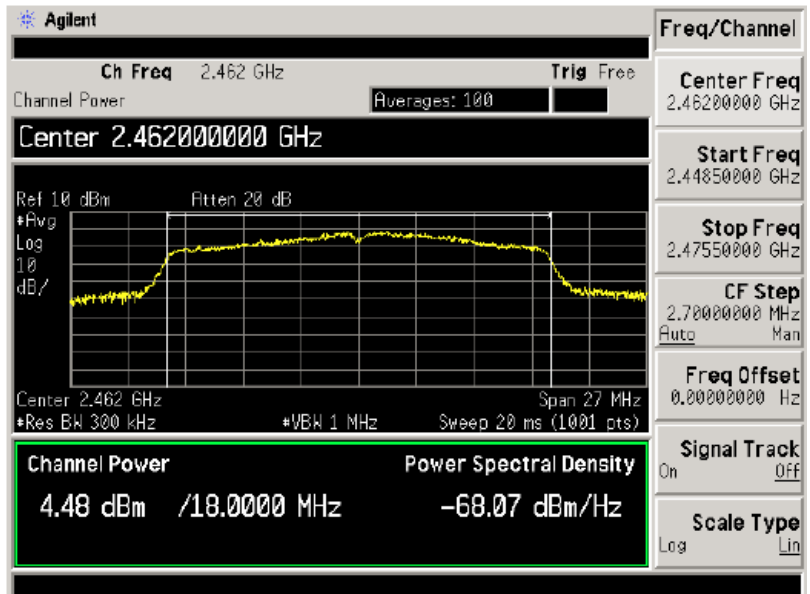
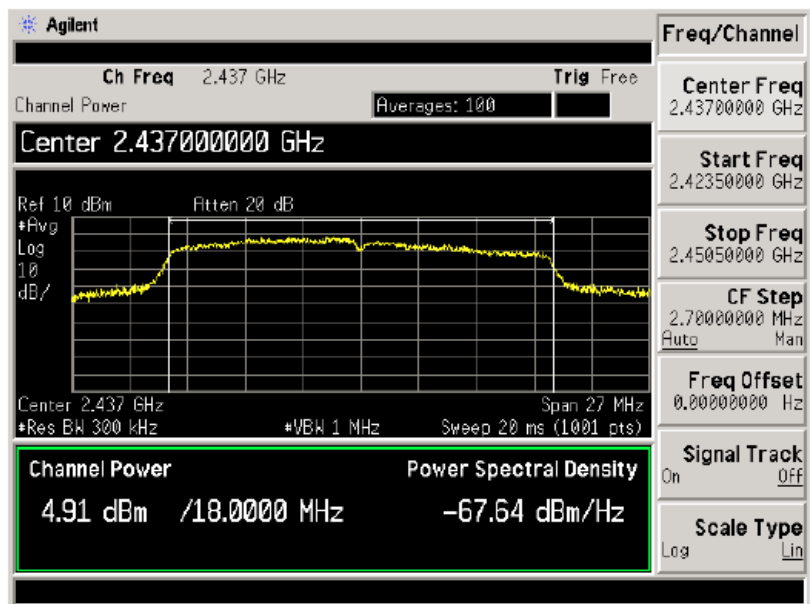
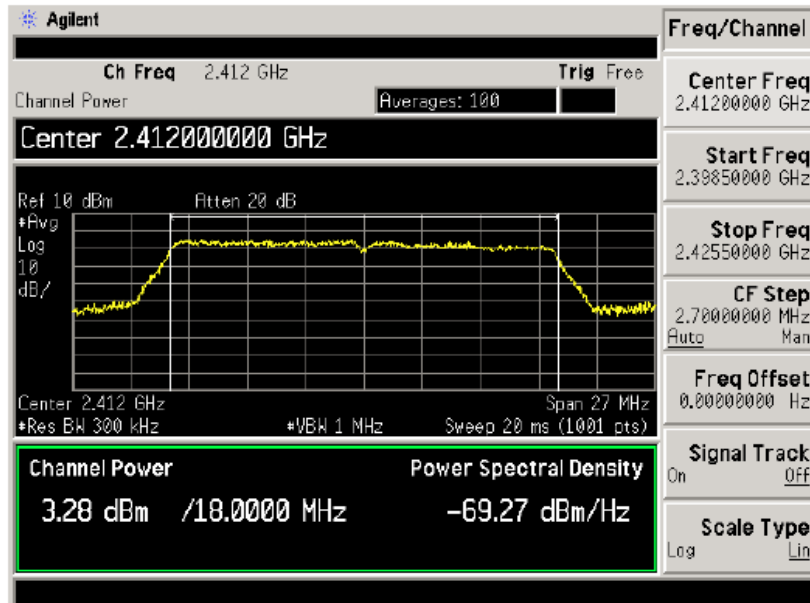
802.11b



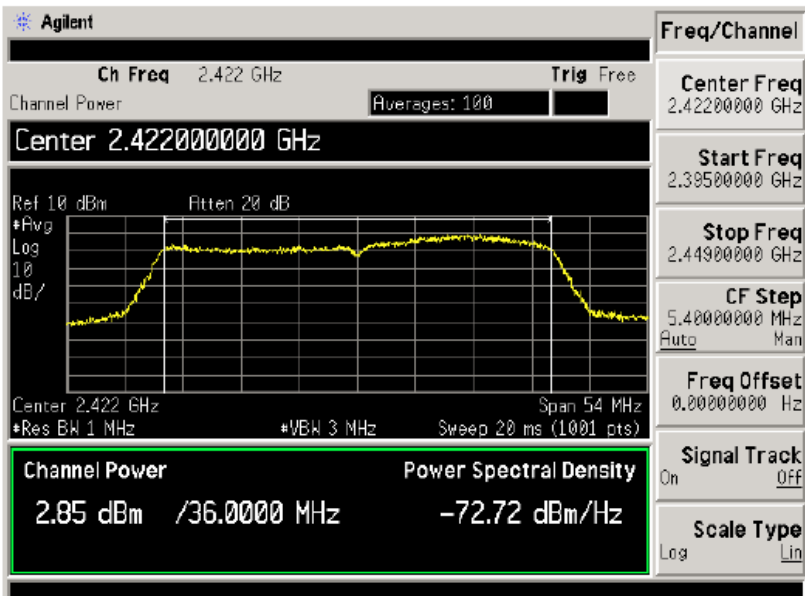
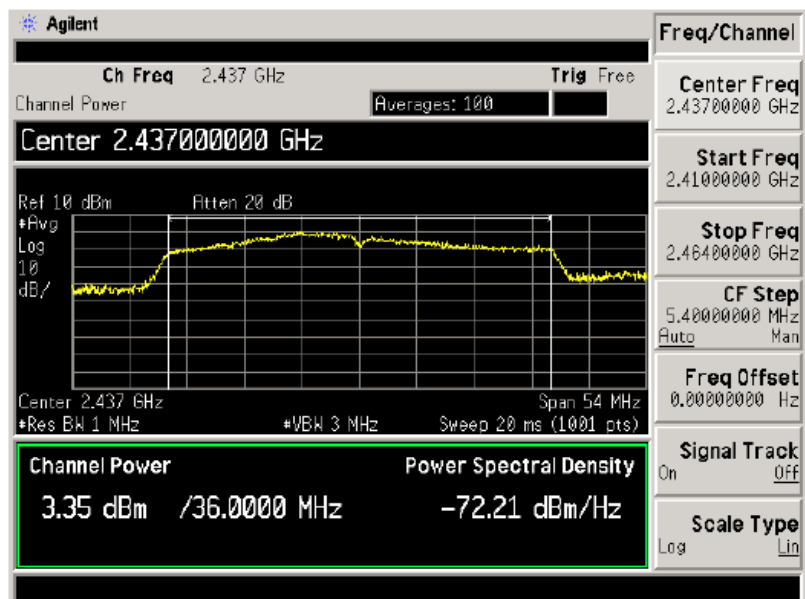
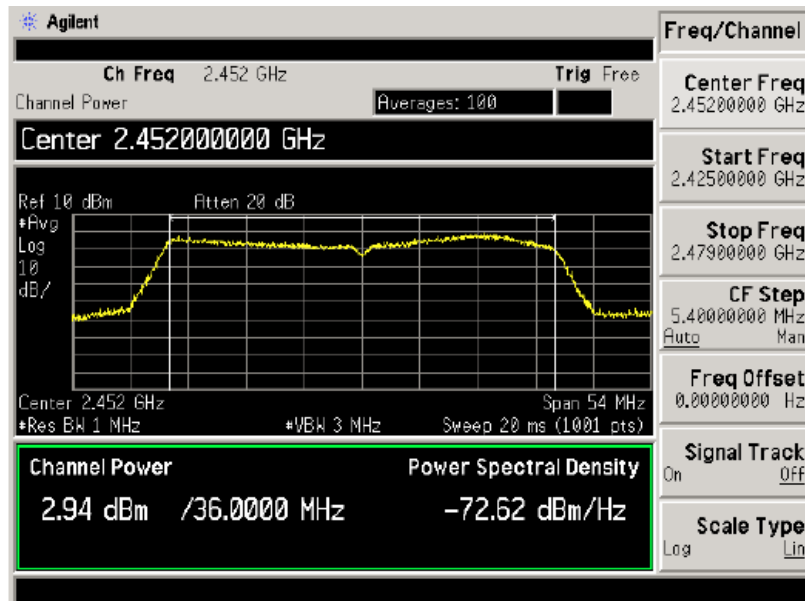
802.11g



## 802.11n HT20

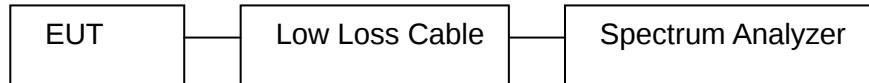


802.11n HT40



## 5. POWER SPECTRAL DENSITY TEST

### 5.1 Block diagram of test setup



### 5.2 Limits

According to 15.247(a)(1)(iii), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### 5.3 Test procedure

According to the KDB 558074 D01 V03r02, such specifications require that the same method as used to determine the conducted output power shall also be used to determine the power spectral density. The test method of power spectral density as below:

- Set instrument center frequency to DTS channel center frequency.
- Set span to at least 1.5 times the OBW.
- Set RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- Set VBW  $\geq 3 \times \text{RBW}$ .
- Detector = power averaging (RMS) or sample detector (when RMS not available)
- Ensure that the number of measurement points in the sweep  $\geq 2 \times \text{span/RBW}$ .
- Sweep time = auto couple.
- Use the peak marker function to determine the maximum amplitude level.
- Use the peak marker function to determine the maximum amplitude level.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

### 5.4 Test result

Pass

| 802.11b |                    |                                      |                     |
|---------|--------------------|--------------------------------------|---------------------|
| Channel | Frequency<br>(MHz) | Power Spectral Density<br>(dBm/3KHz) | Limit<br>(dBm/3KHz) |
| Low     | 2412               | -5.230                               | 8                   |
| Middle  | 2437               | -4.292                               | 8                   |
| High    | 2462               | -5.444                               | 8                   |

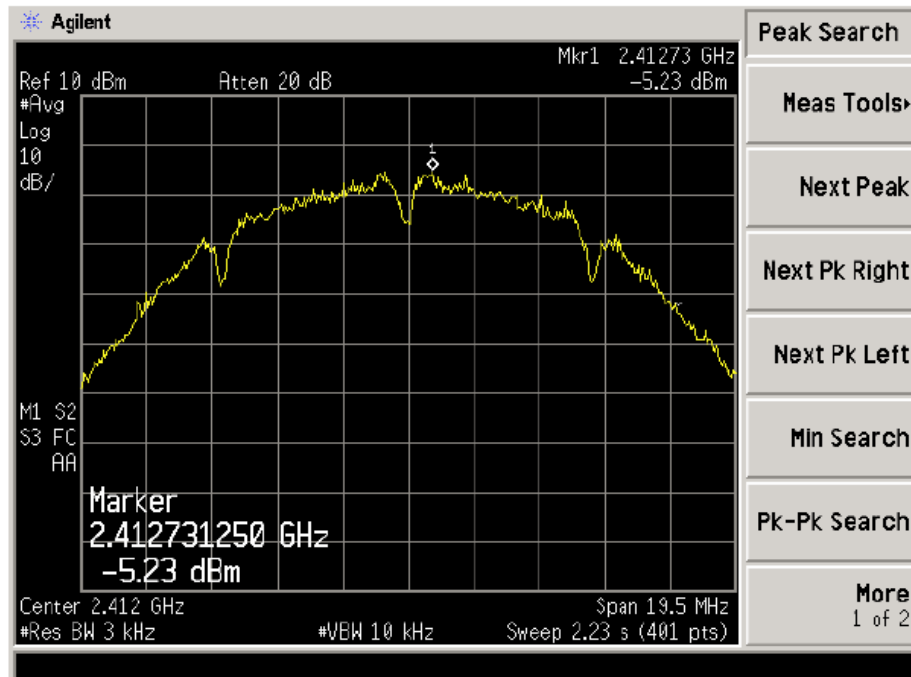
| 802.11g |                    |                                      |                     |
|---------|--------------------|--------------------------------------|---------------------|
| Channel | Frequency<br>(MHz) | Power Spectral Density<br>(dBm/3KHz) | Limit<br>(dBm/3KHz) |
| Low     | 2412               | -8.664                               | 8                   |
| Middle  | 2437               | -7.596                               | 8                   |
| High    | 2462               | -8.991                               | 8                   |

| 802.11n(HT20) |                    |                                      |                     |
|---------------|--------------------|--------------------------------------|---------------------|
| Channel       | Frequency<br>(MHz) | Power Spectral Density<br>(dBm/3KHz) | Limit<br>(dBm/3KHz) |
| Low           | 2412               | -8.340                               | 8                   |
| Middle        | 2437               | -9.620                               | 8                   |
| High          | 2462               | -8.842                               | 8                   |

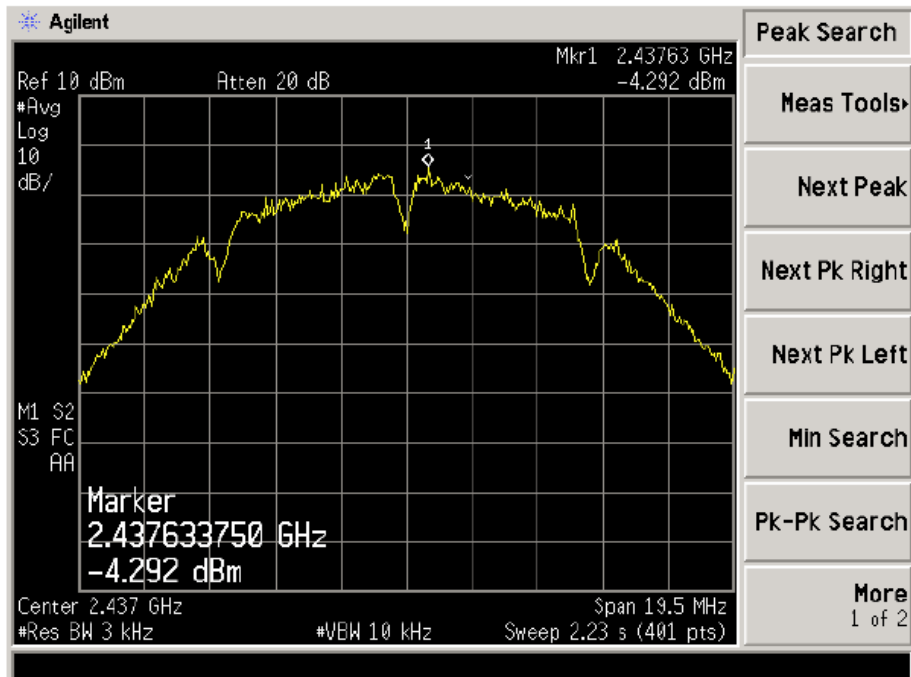
| 802.11n(HT40) |                    |                                      |                     |
|---------------|--------------------|--------------------------------------|---------------------|
| Channel       | Frequency<br>(MHz) | Power Spectral Density<br>(dBm/3KHz) | Limit<br>(dBm/3KHz) |
| Low           | 2422               | -19.66                               | 8                   |
| Middle        | 2437               | -20.44                               | 8                   |
| High          | 2452               | -20.18                               | 8                   |

The spectrum analyzer plots are attached as below.

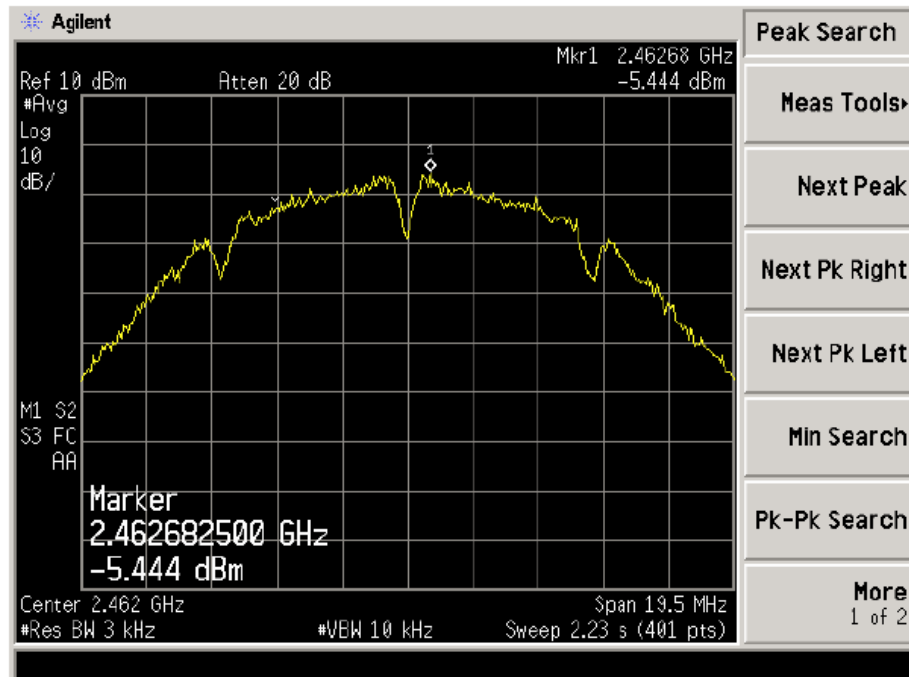
802.11b Channel Low 2412MHz



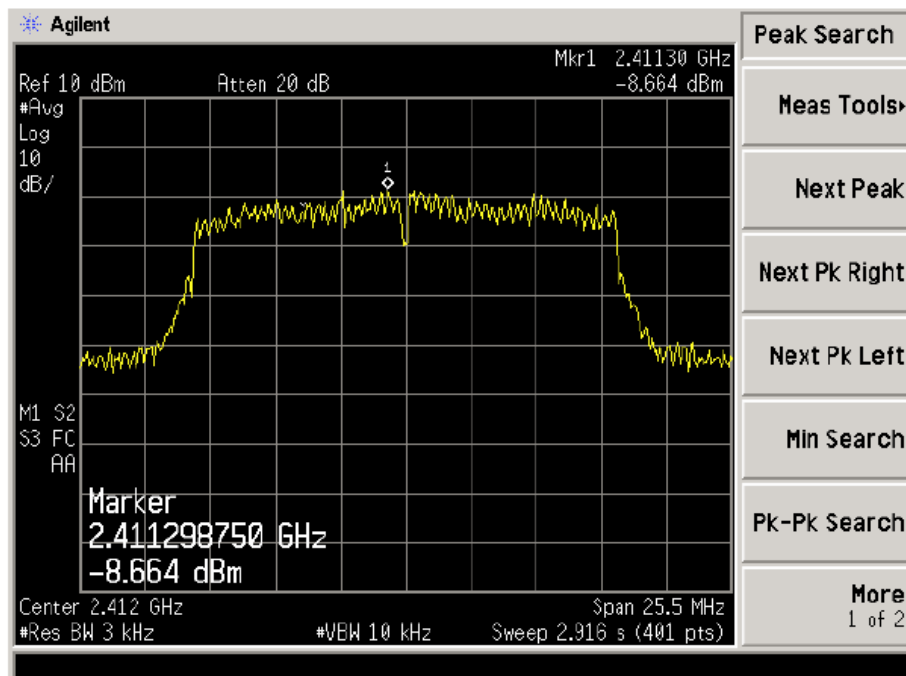
802.11b Channel Middle 2437MHz



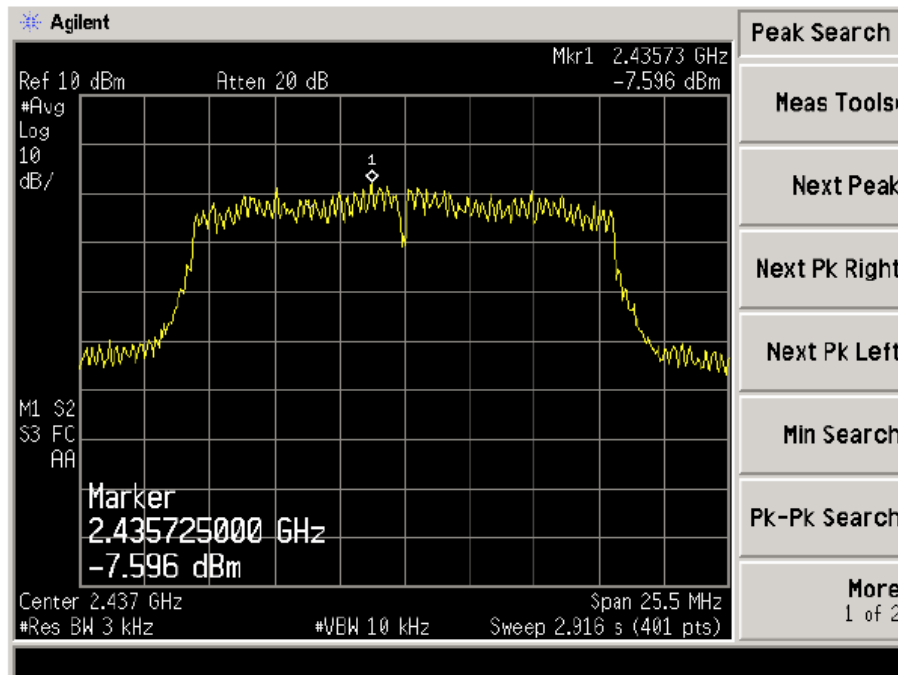
### 802.11b Channel High 2462MHz



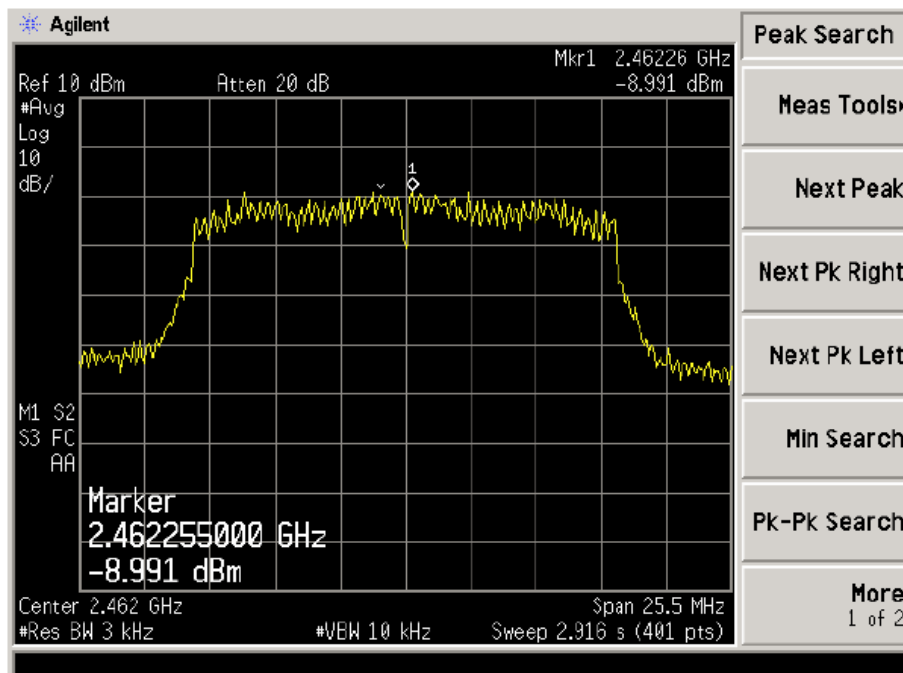
### 802.11g Channel Low 2412MHz



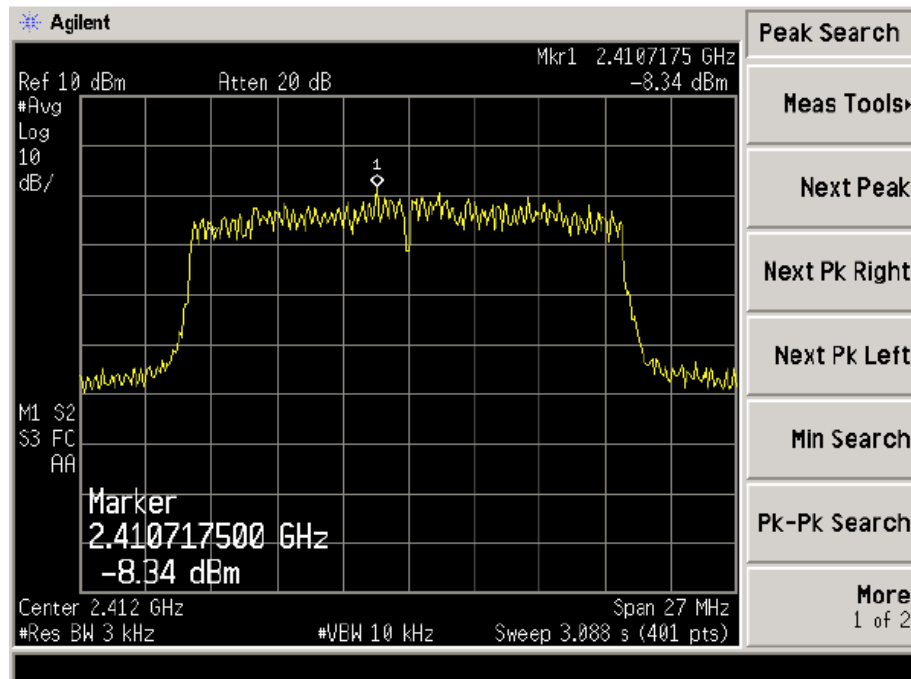
802.11g Channel Middle 2437MHz



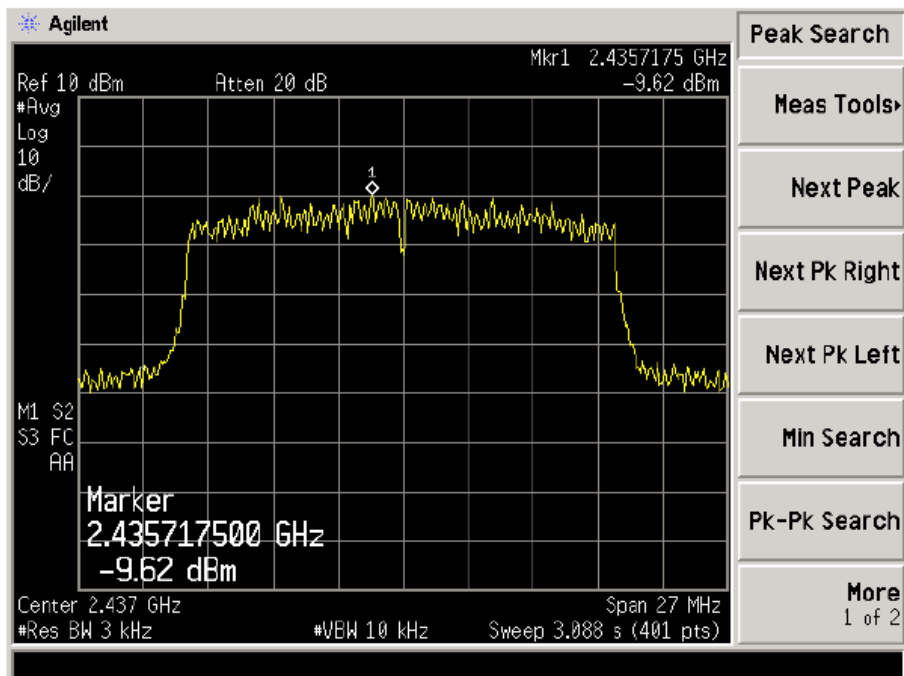
802.11g Channel High 2462MHz



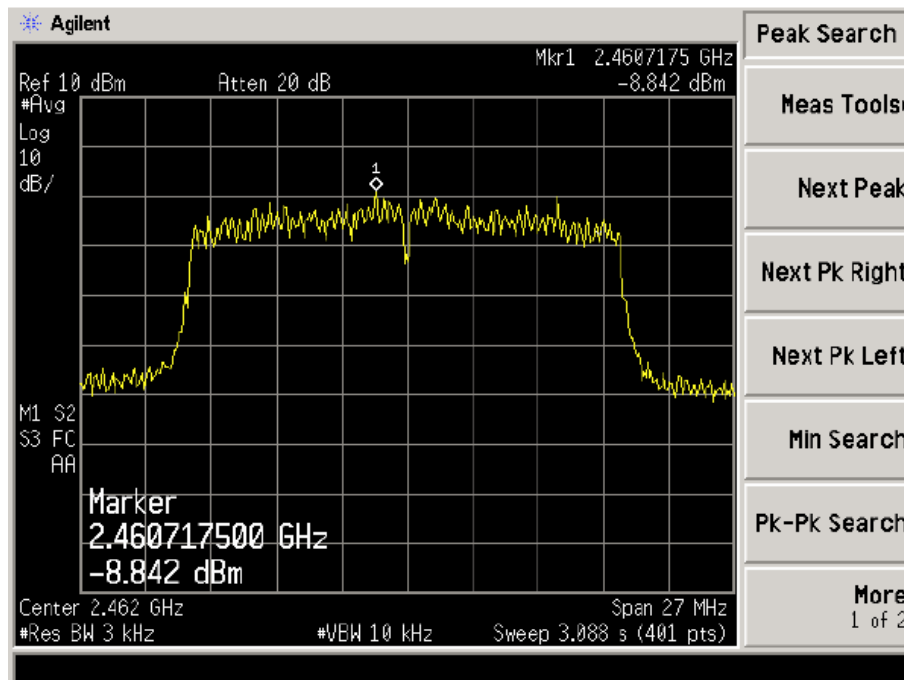
802.11n(HT20M) Channel Low 2412MHz



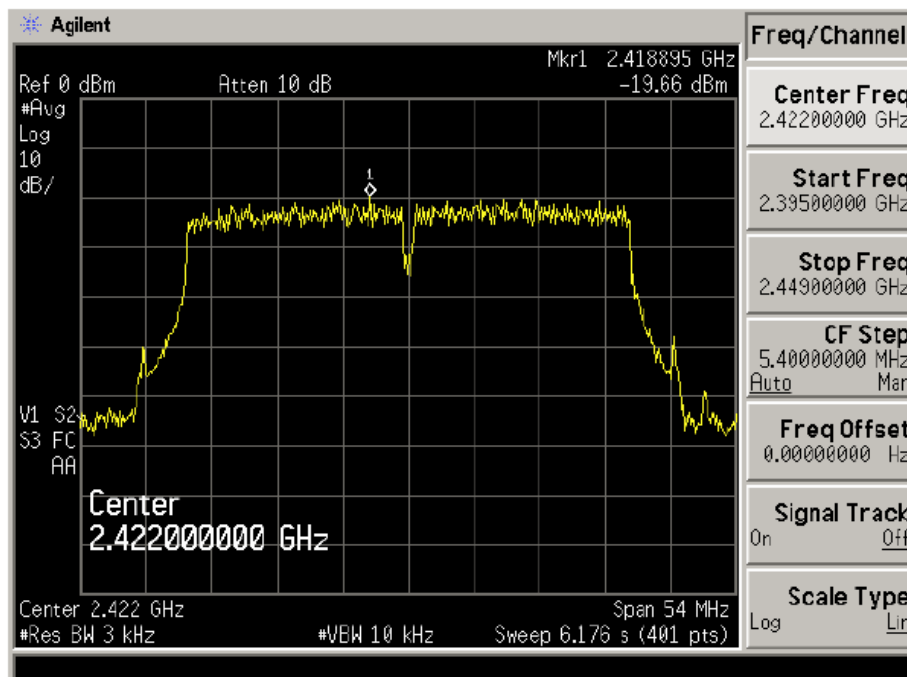
802.11n (HT20) Channel Middle 2437MHz



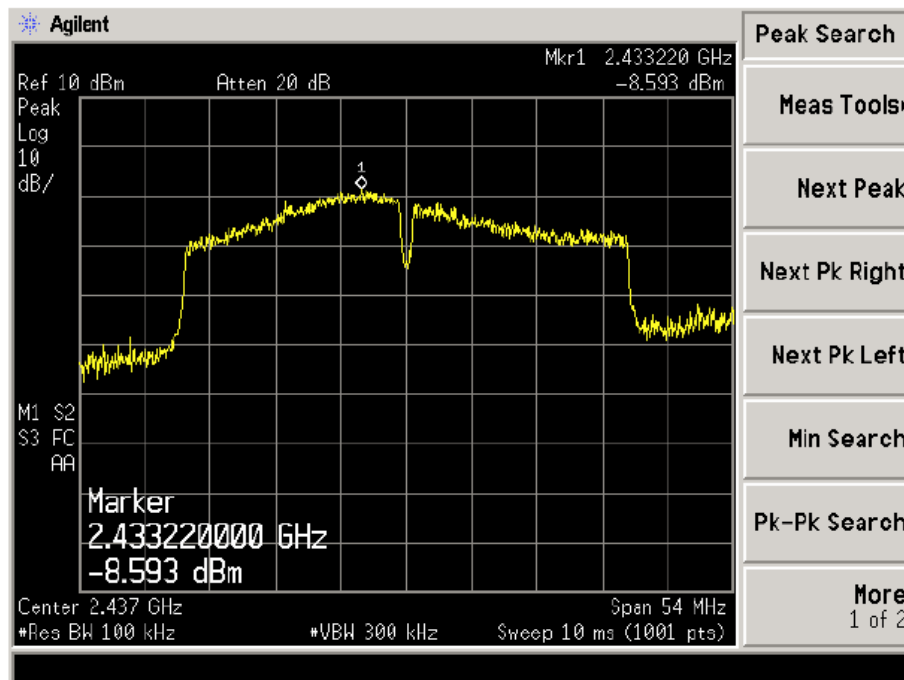
802.11n(HT20) Channel High 2462MHz



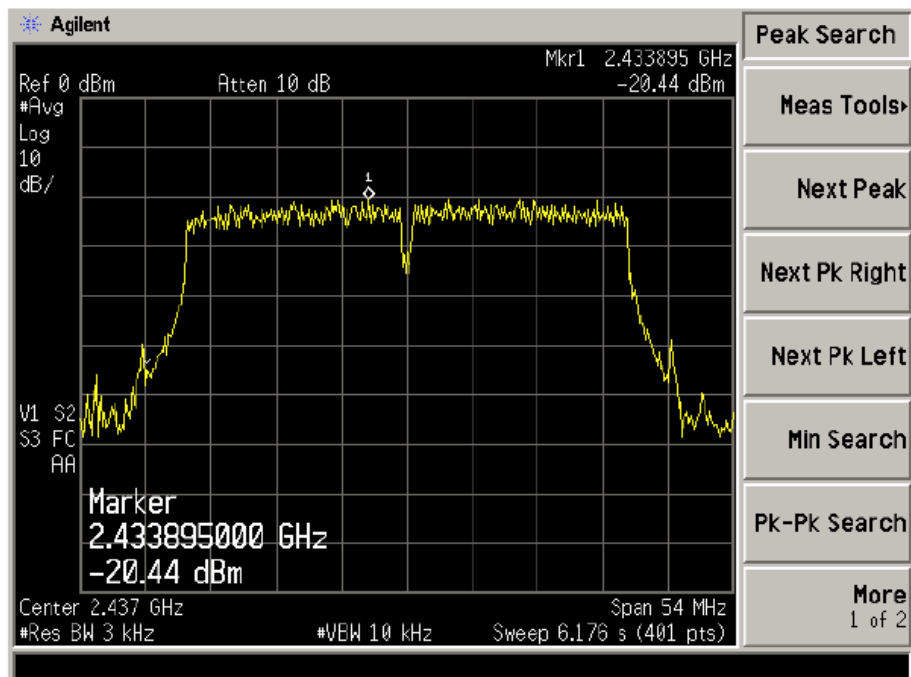
802.11n(HT40) Channel Low 2422MHz



802.11n (HT40) Middle High 2437MHz

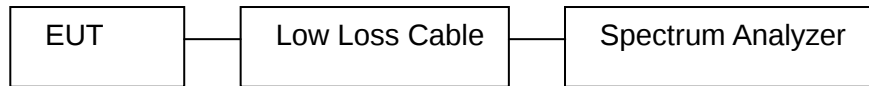


802.11n (HT40) Channel High 2452MHz



## 6. BAND EDGE COMPLIANCE TEST

### 6.1 Block diagram of test setup



### 6.2 Limits

Part 2.1051, Part 2.105 and Section 15.247(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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. 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).

### 6.3 Test procedure

#### Conducted Band Edge:

- The transmitter output was connected to the spectrum analyzer via a low loss cable.
- Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

#### Radiate Band Edge:

- The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
- The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: RBW=1MHz, VBW=1MHz
- The band edges was measured and recorded.

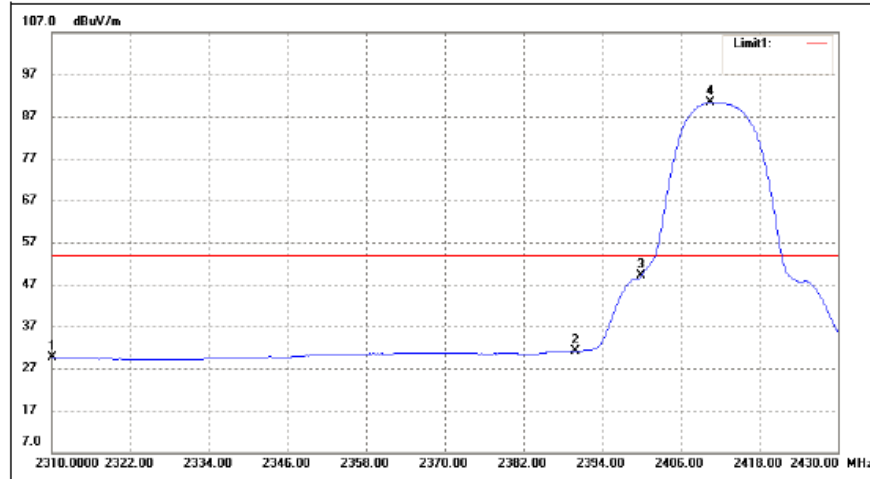
### 6.4 Test result

Pass

## Radiated Band Edge Result

802.11b Channel Low 2412MHz

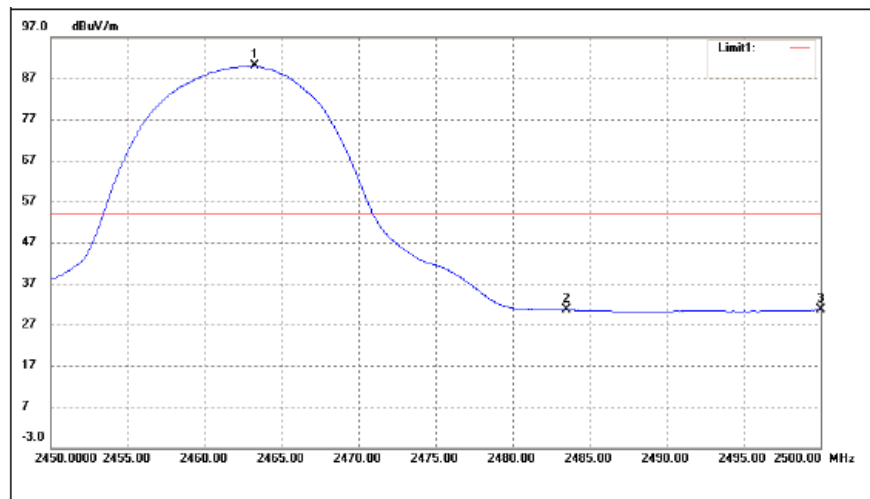
Vertical (Worst case)



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark           |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1   | 2310.000           | 33.99               | -4.42           | 29.57              | 54.00             | -24.43         | Average Detector |
|     | 2310.000           | 45.54               | -4.42           | 41.12              | 74.00             | -32.88         | Peak Detector    |
| 2   | 2390.000           | 34.92               | -3.72           | 31.20              | 54.00             | -22.80         | Average Detector |
|     | 2390.000           | 48.21               | -3.72           | 44.49              | 74.00             | -29.51         | Peak Detector    |
| 3   | 2400.000           | 52.72               | -3.64           | 49.08              | Delta =41.34dBc   |                | Average Detector |
| 4   | 2410.560           | 93.98               | -3.56           | 90.42              |                   |                | Average Detector |

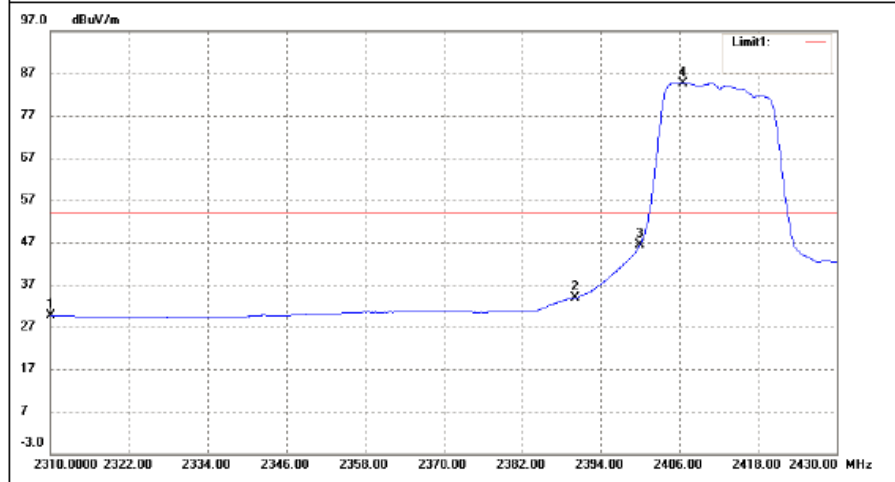
802.11b Channel High 2462MHz

Vertical (Worst case)



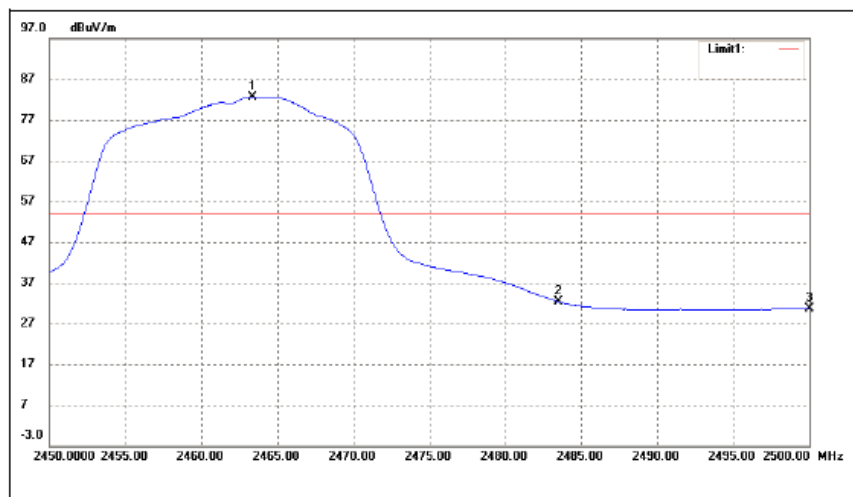
| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>Factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark           |
|-----|--------------------|---------------------|-----------------------|--------------------|-------------------|----------------|------------------|
| 1   | 2463.250           | 93.19               | -3.16                 | 90.03              | /                 | /              | Average Detector |
|     | 2463.150           | 104.73              | -3.16                 | 101.57             | /                 | /              | Peak Detector    |
| 2   | 2483.500           | 33.54               | -3.01                 | 30.53              | 54.00             | -23.47         | Average Detector |
|     | 2483.500           | 47.43               | -3.01                 | 44.42              | 74.00             | -29.58         | Peak Detector    |
| 3   | 2500.000           | 33.43               | -2.88                 | 30.55              | 54.00             | -23.45         | Average Detector |
|     | 2500.000           | 44.64               | -2.88                 | 41.76              | 74.00             | -32.24         | Peak Detector    |

### 802.11g Channel Low 2412MHz Vertical (Worst case)



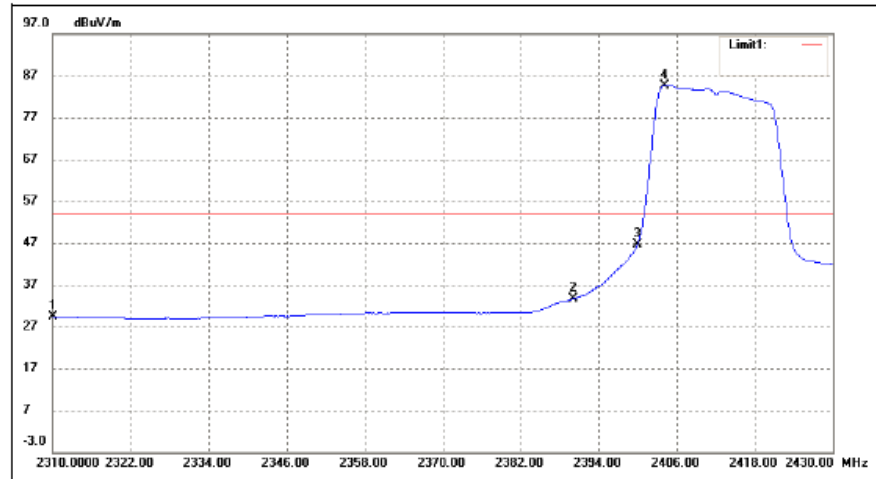
| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark           |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1   | 2310.000           | 34.06               | -4.42           | 29.64              | 54.00             | -24.36         | Average Detector |
|     | 2310.000           | 46.01               | -4.42           | 41.59              | 74.00             | -32.41         | Peak Detector    |
| 2   | 2390.000           | 37.50               | -3.72           | 33.78              | 54.00             | -20.22         | Average Detector |
|     | 2390.000           | 53.12               | -3.72           | 49.40              | 74.00             | -24.60         | Peak Detector    |
| 3   | 2400.000           | 50.07               | -3.64           | 46.43              | Delta =38.31dBc   |                | Average Detector |
| 4   | 2406.480           | 88.33               | -3.59           | 84.74              |                   |                | Average Detector |

### 802.11g Channel High 2462MHz Vertical (Worst case)



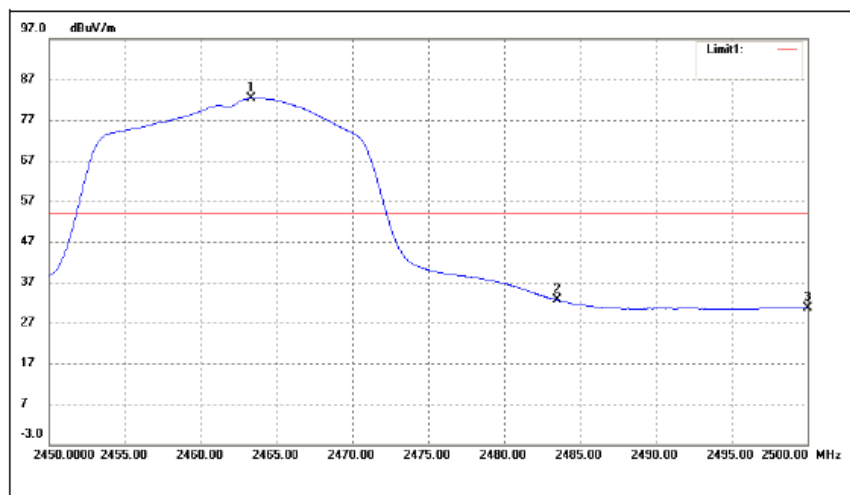
| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark           |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1   | 2463.350           | 85.83               | -3.16           | 82.67              | /                 | /              | Average Detector |
|     | 2463.700           | 98.03               | -3.16           | 94.87              | /                 | /              | Peak Detector    |
| 2   | 2483.500           | 35.33               | -3.01           | 32.32              | 54.00             | -21.68         | Average Detector |
|     | 2483.500           | 52.97               | -3.01           | 49.96              | 74.00             | -24.04         | Peak Detector    |
| 3   | 2500.000           | 33.55               | -2.88           | 30.67              | 54.00             | -23.33         | Average Detector |
|     | 2500.000           | 46.13               | -2.88           | 43.25              | 74.00             | -30.75         | Peak Detector    |

### 802.11n(20M) Channel Low 2412MHz Vertical (Worst case)



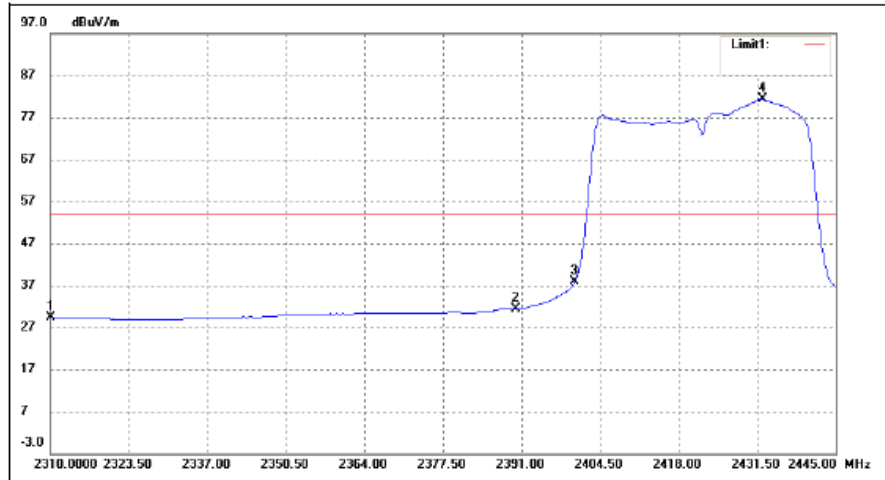
| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark           |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1   | 2310.000           | 33.81               | -4.42           | 29.39              | 54.00             | -24.61         | Average Detector |
|     | 2310.000           | 45.57               | -4.42           | 41.15              | 74.00             | -32.85         | Peak Detector    |
| 2   | 2390.000           | 37.35               | -3.72           | 33.63              | 54.00             | -20.37         | Average Detector |
|     | 2390.000           | 52.63               | -3.72           | 48.91              | 74.00             | -25.09         | Peak Detector    |
| 3   | 2400.000           | 50.36               | -3.64           | 46.72              | Delta =37.95dBc   |                | Average Detector |
| 4   | 2404.200           | 88.27               | -3.60           | 84.67              |                   |                | Average Detector |

### 802.11n(20M) Channel High 2462MHz Vertical (Worst case)



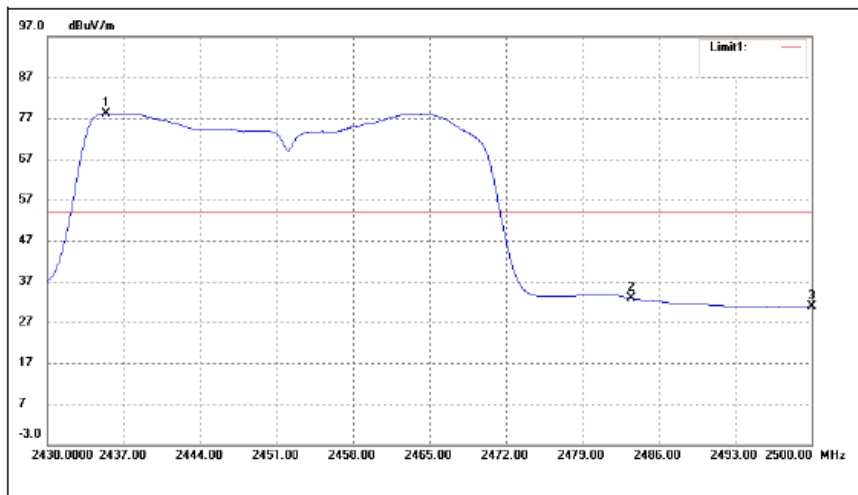
| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark           |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1   | 2463.300           | 85.49               | -3.16           | 82.33              | /                 | /              | Average Detector |
|     | 2463.300           | 96.27               | -3.16           | 93.11              | /                 | /              | Peak Detector    |
| 2   | 2483.500           | 35.60               | -3.01           | 32.59              | 54.00             | -21.41         | Average Detector |
|     | 2483.500           | 54.00               | -3.01           | 50.99              | 74.00             | -23.01         | Peak Detector    |
| 3   | 2500.000           | 33.62               | -2.88           | 30.74              | 54.00             | -23.26         | Average Detector |
|     | 2500.000           | 45.89               | -2.88           | 43.01              | 74.00             | -30.99         | Peak Detector    |

### 802.11n(HT40) Channel Low 2422MHz Vertical (Worst case)



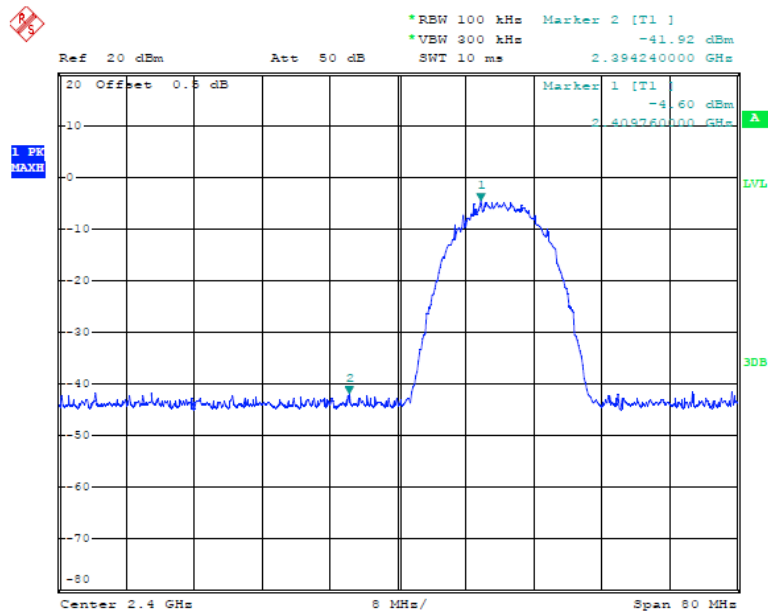
| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark           |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1   | 2310.000           | 33.80               | -4.42           | 29.38              | 54.00             | -24.62         | Average Detector |
|     | 2310.000           | 45.65               | -4.42           | 41.23              | 74.00             | -32.77         | Peak Detector    |
| 2   | 2390.000           | 35.20               | -3.72           | 31.48              | 54.00             | -22.52         | Average Detector |
|     | 2390.000           | 47.24               | -3.72           | 43.52              | 74.00             | -30.48         | Peak Detector    |
| 3   | 2400.000           | 41.49               | -3.64           | 37.85              | Delta =43.46dBc   |                | Average Detector |
| 4   | 2432.445           | 84.71               | -3.40           | 81.31              |                   |                | Average Detector |

### 802.11n(HT40) Channel High 2452MHz Vertical (Worst case)

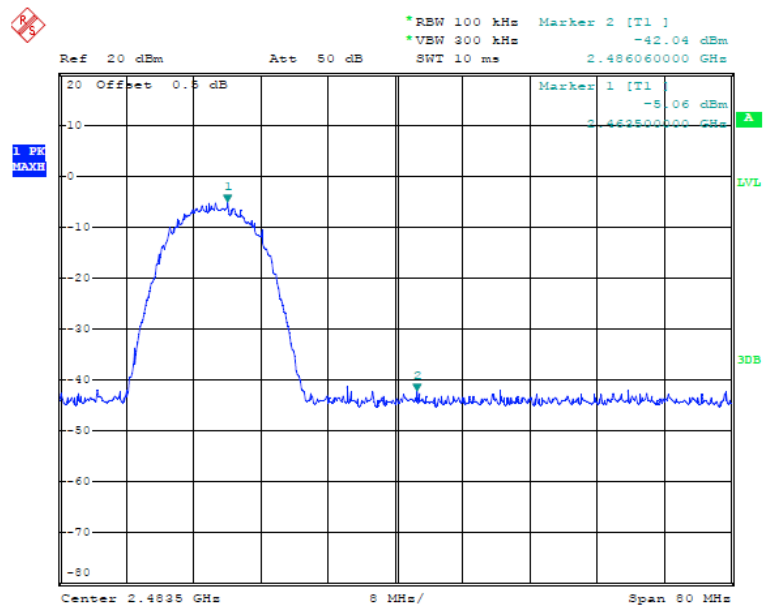


| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark           |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1   | 2435.320           | 81.62               | -3.37           | 78.25              | /                 | /              | Average Detector |
|     | 2434.760           | 92.68               | -3.38           | 89.30              | /                 | /              | Peak Detector    |
| 2   | 2483.500           | 35.87               | -3.01           | 32.86              | 54.00             | -21.14         | Average Detector |
|     | 2483.500           | 48.76               | -3.01           | 45.75              | 74.00             | -28.25         | Peak Detector    |
| 3   | 2500.000           | 33.81               | -2.88           | 30.93              | 54.00             | -23.07         | Average Detector |
|     | 2500.000           | 44.87               | -2.88           | 41.99              | 74.00             | -32.01         | Peak Detector    |

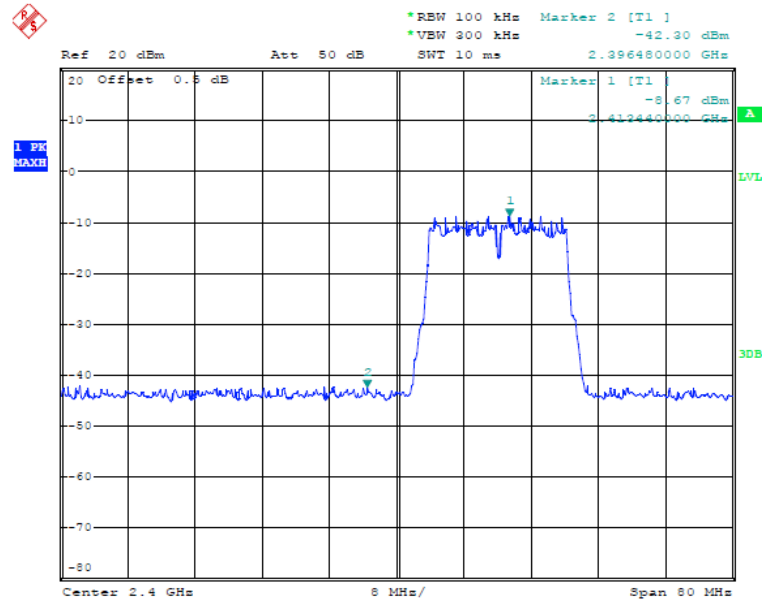
### 802.11b Channel Low 2412MHz



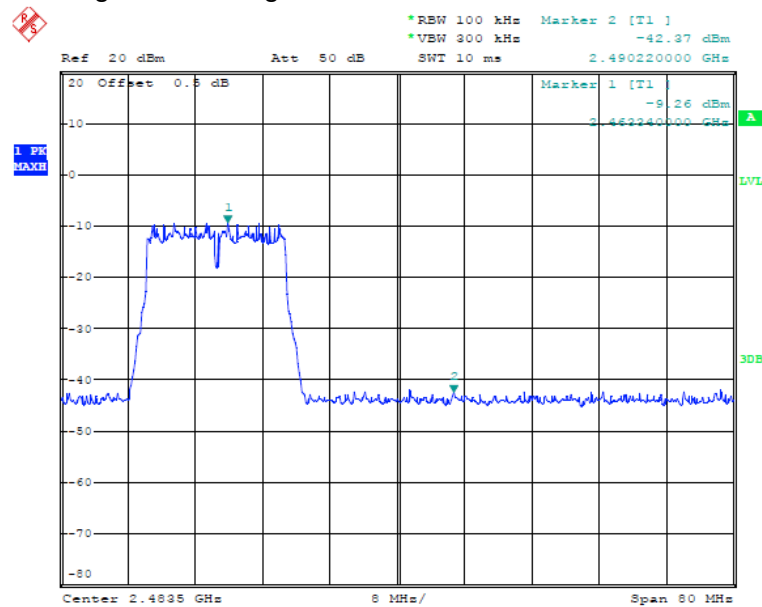
### 802.11b Channel High 2462MHz



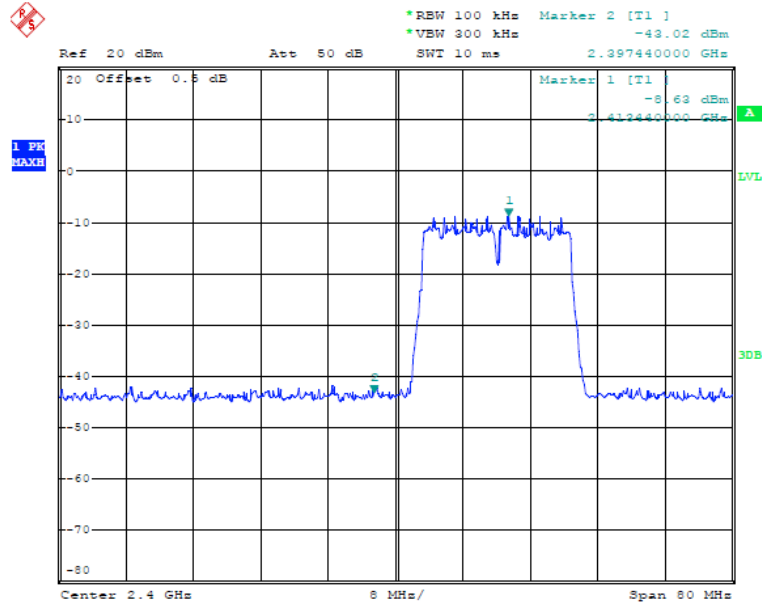
### 802.11g Channel Low 2412MHz



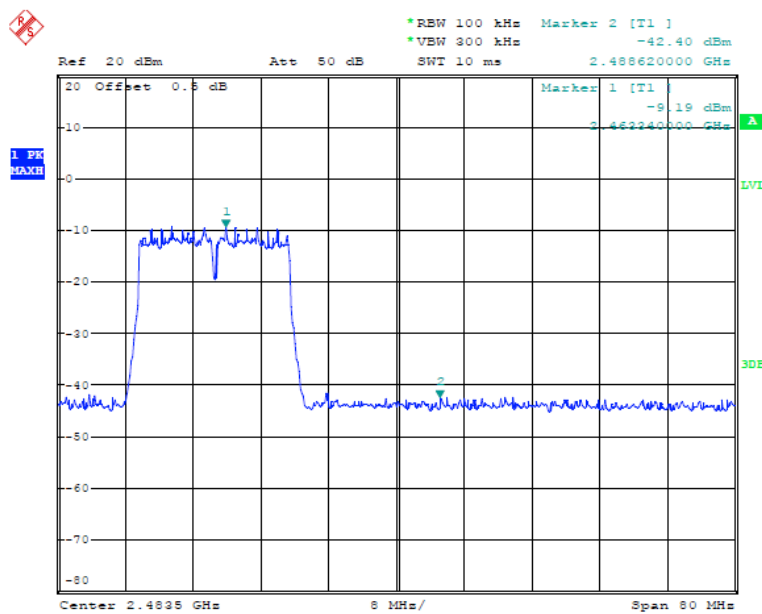
### 802.11g Channel High 2462MHz



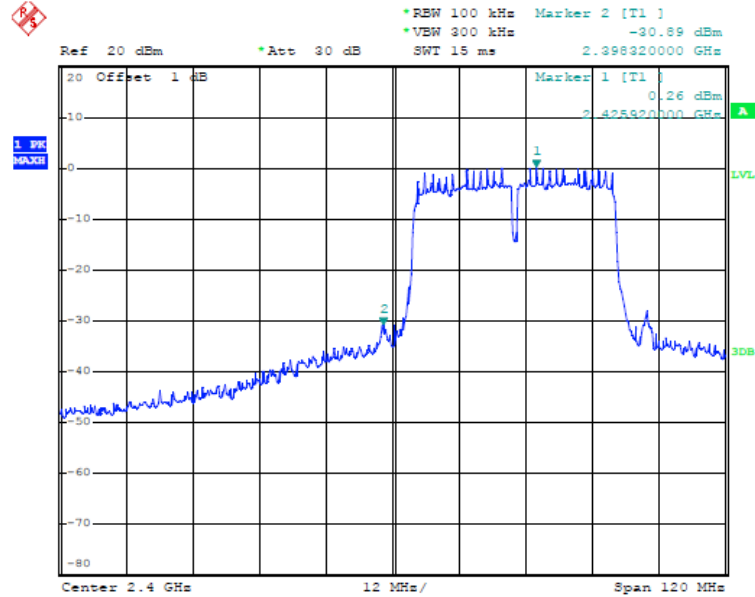
### 802.11n (HT20) Channel Low 2412MHz



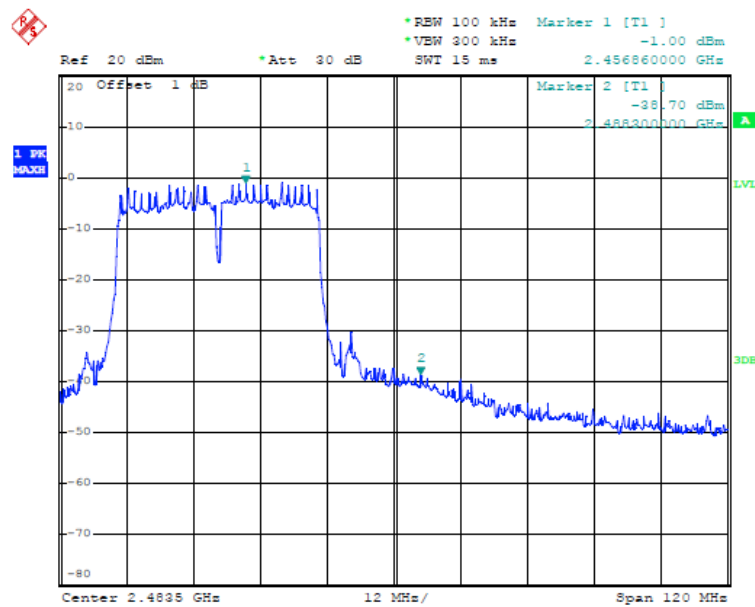
### 802.11n(HT20) Channel High 2462MHz



### 802.11n (HT40) Channel Low 2422MHz



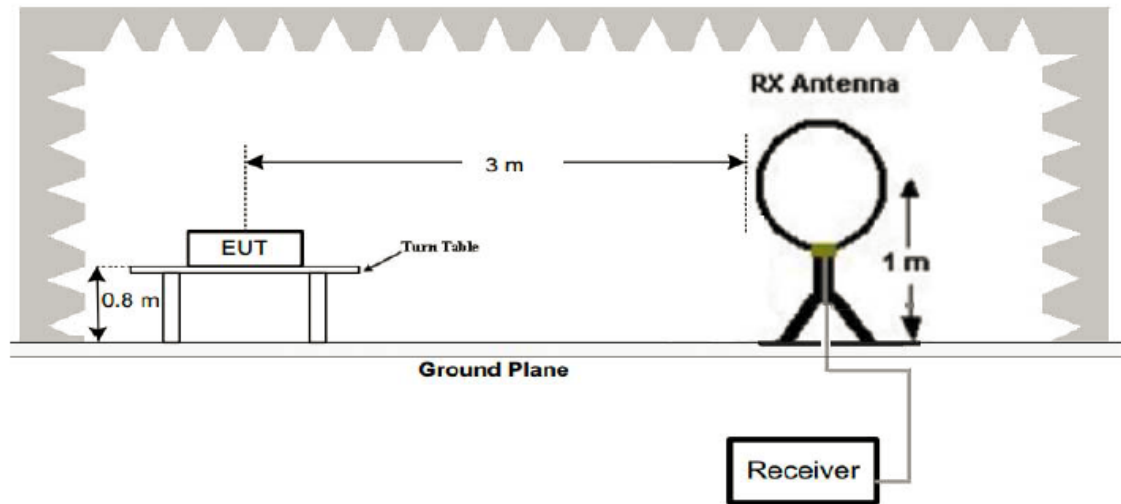
### 802.11n (HT40) Channel High 2452MHz



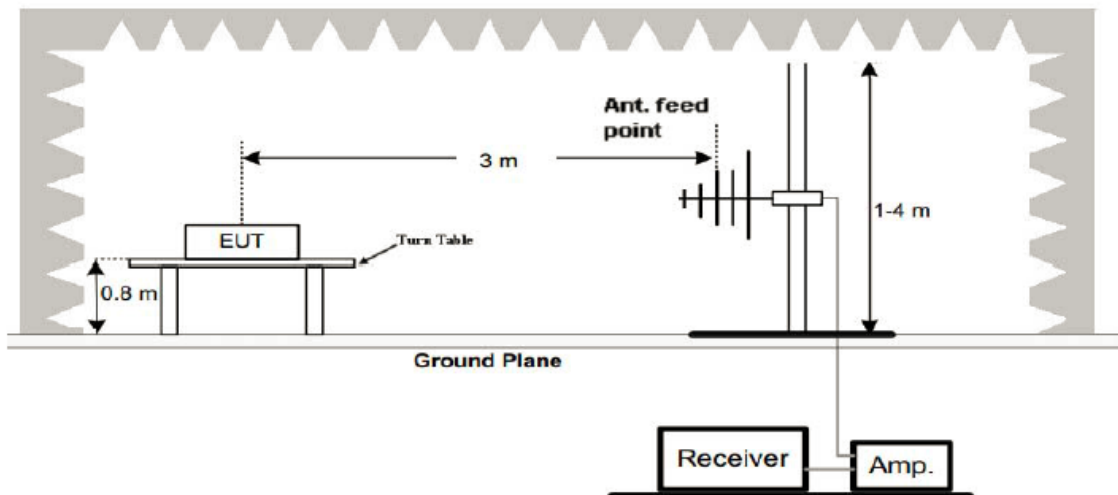
## 7. RADIATED SPURIOUS EMISSION TEST

### 7.1 Block diagram of test setup

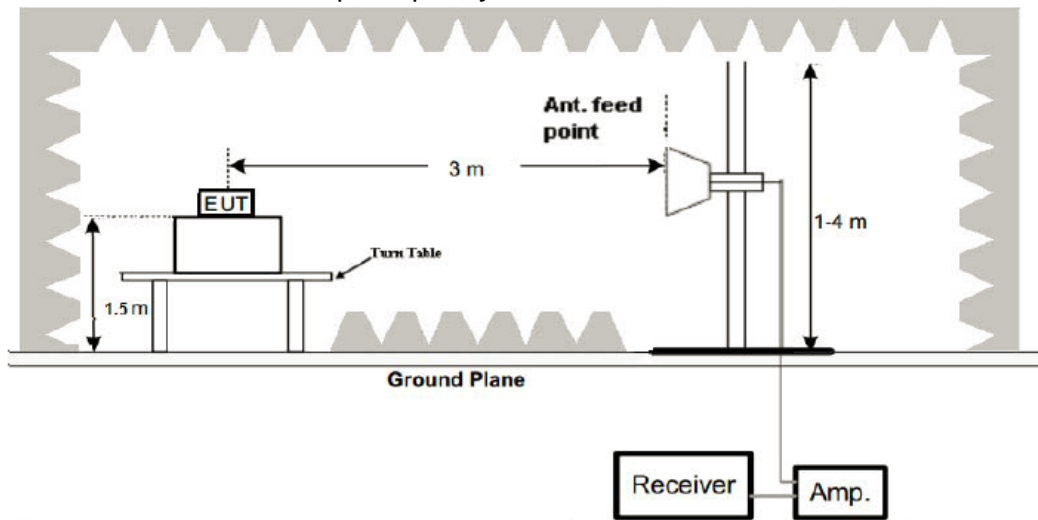
#### (1) Radiated Emission Test-Up Frequency Below 30MHz



#### (2) Radiated Emission Test-Up Frequency 30MHz~1GHz



#### (3) Radiated Emission Test-Up Frequency Above 1GHz



## 7.2 Limits

Part 2.1051, Part 2.1053, Part 2.1057 and Section 15.247(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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. 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).

## 7.3 Restricted bands of operation

FCC Part 15.205 Restricted bands of operation

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

| MHz                      | MHz                 | MHz           | GHz              |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110              | 16.42-16.423        | 399.9-410     | 4.5-5.15         |
| <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              | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4        |
| 8.37625-8.38675          | 156.7-156.9         | 2690-2900     | 22.01-23.12      |
| 8.41425-8.41475          | 162.0125-167.17     | 3260-3267     | 23.6-24.0        |
| 12.29-12.293             | 167.72-173.2        | 3332-3339     | 31.2-31.8        |
| 12.51975-12.52025        | 240-285             | 3345.8-3358   | 36.43-36.5       |
| 12.57675-12.57725        | 322-335.4           | 3600-4400     | ( <sup>2</sup> ) |
| 13.36-13.41              |                     |               |                  |

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510  
<sup>2</sup>Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

#### 7.4 Test procedure

- 1, The EUT is placed on a turntable, which is 0.8m above ground plane below 1GHz and 1.5m above ground plane above 1GHz..
- 2, The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3, EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions
- 4, For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 5, Maximum procedure was performed on the six highest emissions to ensure EUT compliance
- 6, And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical
- 7, Repeat above procedures until the measurements for all frequencies are complete.
- 8, Based on the Frequency Generator in the device include 16MHz. The test frequency range from 9KHz to 25GHz per FCC PART 15.33(a)

Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

#### 7.5 Test result

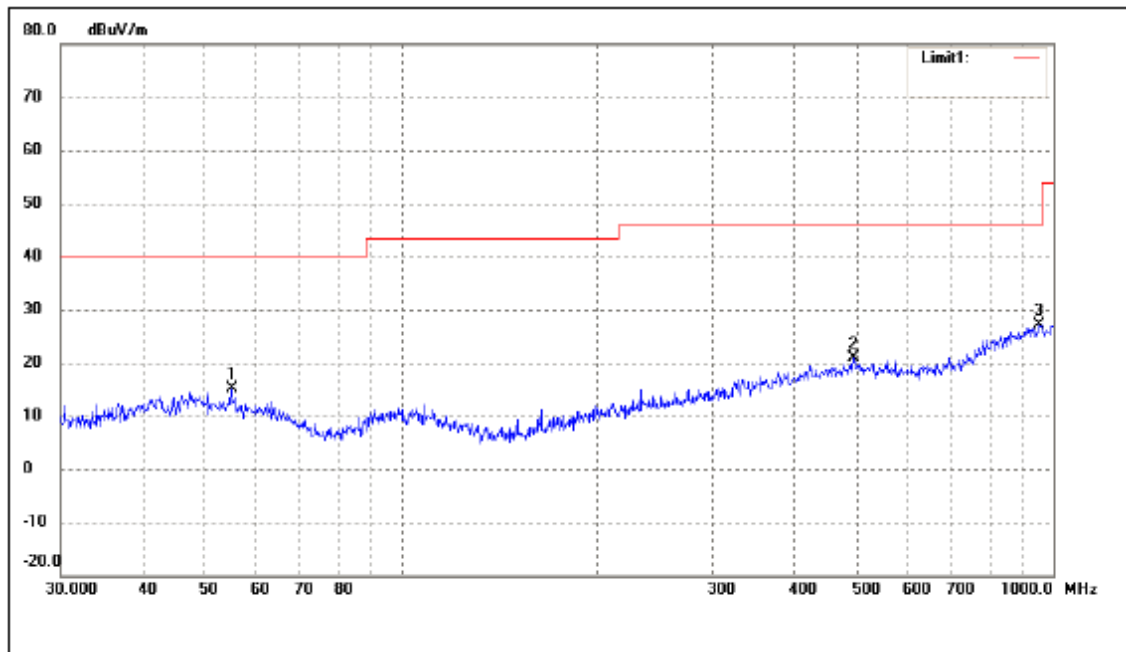
Pass

Test mode: 802.11b  
For Below 30MHz

| Freq.(MHz) | Reading<br>(dBuV/m)<br>(QP) | Factor(dB)<br>Corr. | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin(dB) |
|------------|-----------------------------|---------------------|--------------------|-------------------|------------|
| /          | /                           | /                   | /                  | /                 | /          |

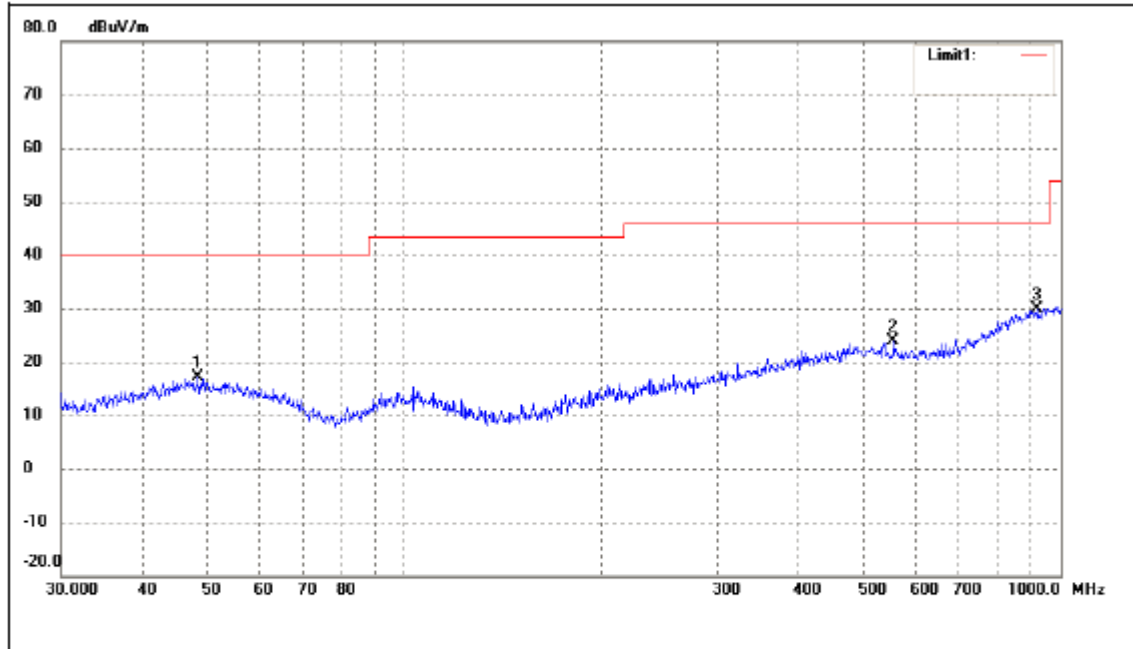
Test mode: 802.11b (Worst case)  
For 30MHz-1000MHz

H



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(°) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1   | 54.8348            | 23.04               | -7.93           | 15.11              | 40.00             | -24.89         | 162           | 100            | QP     |
| 2   | 494.1984           | 22.02               | -1.26           | 20.76              | 46.00             | -25.24         | 200           | 100            | QP     |
| 3   | 952.0937           | 21.23               | 5.96            | 27.19              | 46.00             | -18.81         | 359           | 200            | QP     |

V



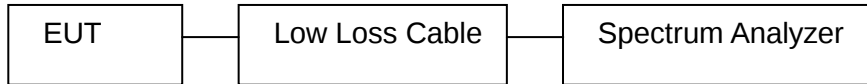
| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(°) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1   | 48.5016            | 24.70               | -7.45           | 17.25              | 40.00             | -22.75         | 240           | 100            | QP     |
| 2   | 556.7744           | 23.61               | 0.27            | 23.88              | 46.00             | -22.12         | 187           | 100            | QP     |
| 3   | 922.5157           | 24.30               | 5.63            | 29.93              | 46.00             | -16.07         | 220           | 100            | QP     |

Test mode: 802.11b (Worst case)  
For 1GHz-25GHz

| Frequency              | Reading  | Correct | Result   | Limit    | Margin | Polar | Detector |
|------------------------|----------|---------|----------|----------|--------|-------|----------|
| (MHz)                  | (dBuV/m) | dB/m    | (dBuV/m) | (dBuV/m) | (dB)   | H/V   |          |
| Low Channel-2412MHz    |          |         |          |          |        |       |          |
| 4824.000               | 42.23    | 12.37   | 54.60    | 74.00    | -19.40 | H     | PK       |
| 4824.000               | 31.60    | 12.37   | 43.97    | 54.00    | -10.03 | H     | AV       |
| 7236.000               | 34.01    | 15.49   | 49.50    | 74.00    | -24.50 | H     | PK       |
| 7236.000               | 25.20    | 15.49   | 40.69    | 54.00    | -13.31 | H     | AV       |
| 4824.000               | 42.85    | 12.37   | 55.22    | 74.00    | -18.78 | V     | PK       |
| 4824.000               | 31.59    | 12.37   | 43.96    | 54.00    | -10.04 | V     | AV       |
| 7236.000               | 33.99    | 15.49   | 49.48    | 74.00    | -24.52 | V     | PK       |
| 7236.000               | 24.34    | 15.49   | 39.83    | 54.00    | -14.17 | V     | AV       |
| Middle Channel-2437MHz |          |         |          |          |        |       |          |
| 4874.000               | 42.68    | 12.46   | 55.14    | 74.00    | -18.86 | H     | PK       |
| 4874.000               | 31.62    | 12.46   | 44.08    | 54.00    | -9.92  | H     | AV       |
| 7311.000               | 37.32    | 15.56   | 52.88    | 74.00    | -21.12 | H     | PK       |
| 7311.000               | 24.39    | 15.56   | 39.95    | 54.00    | -14.05 | H     | AV       |
| 4874.000               | 43.57    | 12.46   | 56.03    | 74.00    | -17.97 | V     | PK       |
| 4874.000               | 31.62    | 12.46   | 44.08    | 54.00    | -9.92  | V     | AV       |
| 7311.000               | 36.39    | 15.56   | 51.95    | 74.00    | -22.05 | V     | PK       |
| 7311.000               | 25.78    | 15.56   | 41.34    | 54.00    | -12.66 | V     | AV       |
| High Channel-2462MHz   |          |         |          |          |        |       |          |
| 4924.000               | 46.69    | 12.55   | 59.24    | 74.00    | -14.76 | H     | PK       |
| 4924.000               | 33.48    | 12.55   | 46.03    | 54.00    | -7.97  | H     | AV       |
| 7386.000               | 37.06    | 15.64   | 52.70    | 74.00    | -21.30 | H     | PK       |
| 7386.000               | 26.20    | 15.64   | 41.84    | 54.00    | -12.16 | H     | AV       |
| 4924.000               | 48.73    | 12.55   | 61.28    | 74.00    | -12.72 | V     | PK       |
| 4924.000               | 34.75    | 12.55   | 47.30    | 54.00    | -6.70  | V     | AV       |
| 7386.000               | 37.23    | 15.64   | 52.87    | 74.00    | -21.13 | V     | PK       |
| 7386.000               | 26.33    | 15.64   | 41.97    | 54.00    | -12.03 | V     | AV       |

## 8. CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST

### 8.1 Block diagram of test setup



### 8.2 Limits

Se Section 15.247(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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. 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).

### 8.3 Test procedure

- The transmitter output was connected to the spectrum analyzer via a low loss cable.
- Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.
- The Conducted Spurious Emission was measured and recorded.

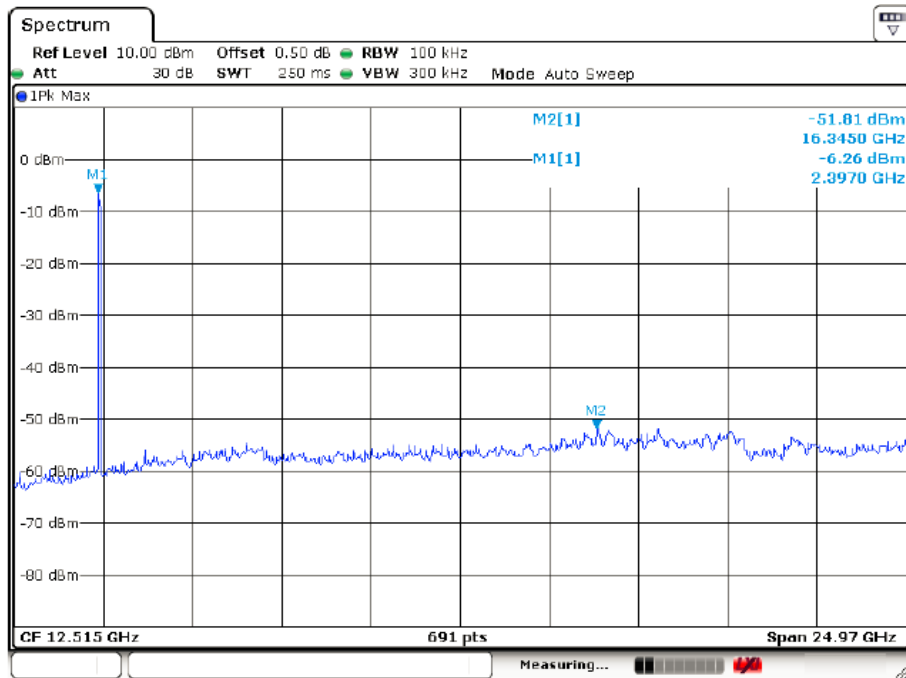
### 8.4 Test Result

Pass

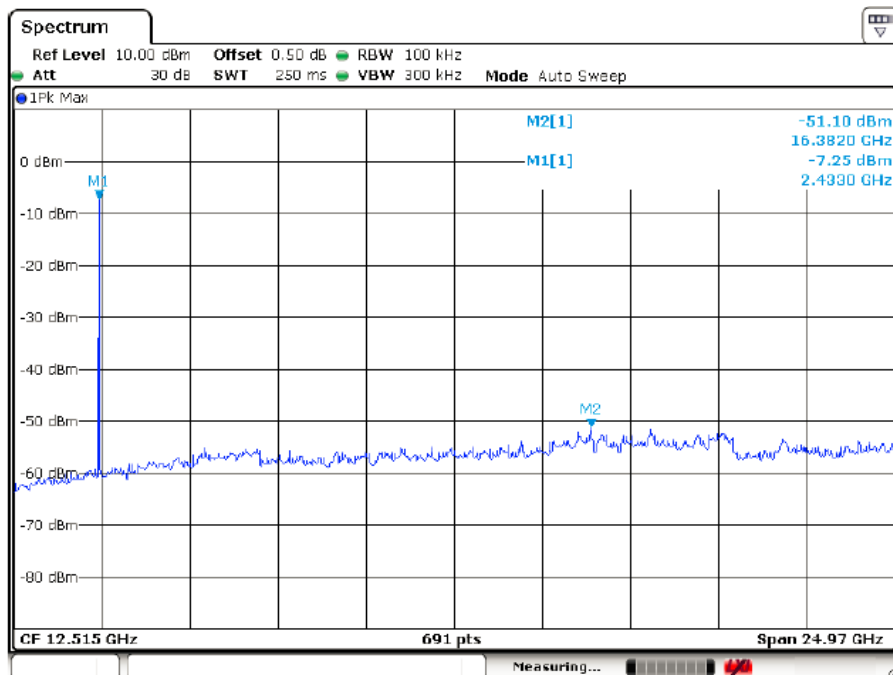
The spectrum analyzer plots are attached as below.

The worst test mode: 802.11b

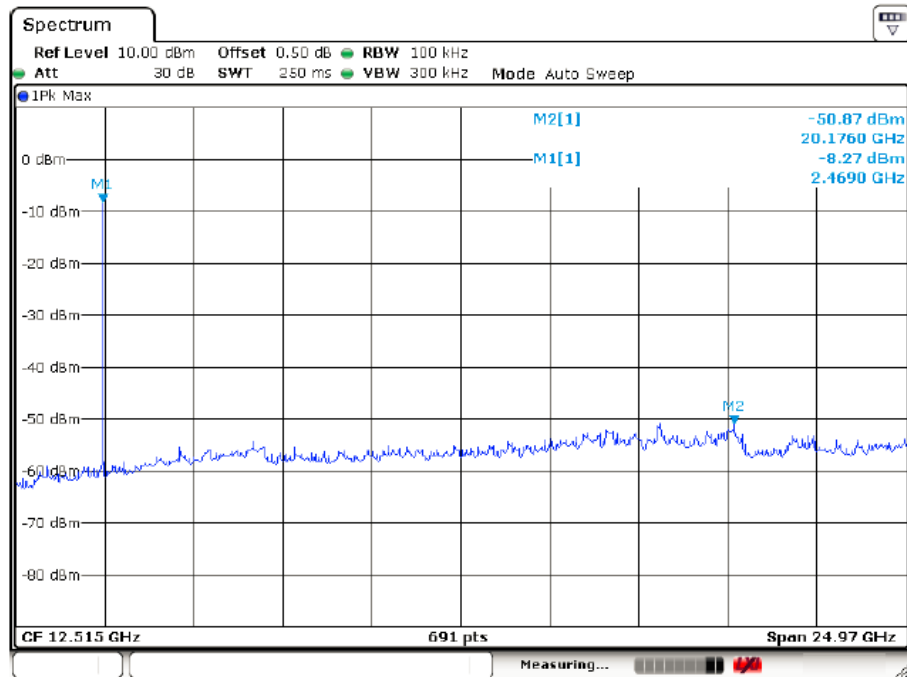
TX 802.11b Channel Low 2412MHz



TX 802.11b Channel Middle 2437MHz

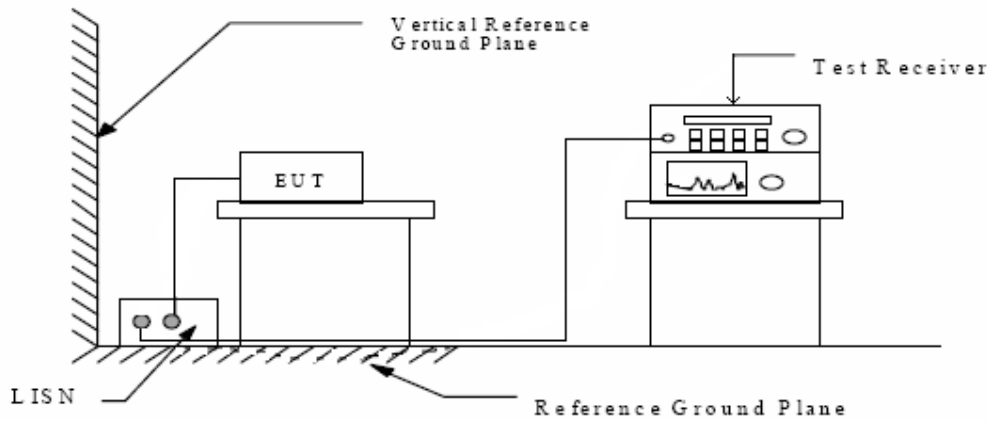


## TX 802.11b Channel High 2462MHz



## 9. AC POWER LINE CONDUCTED EMISSION

### 9.1 Block diagram of test setup



### 9.2 Limits

Conducted Emission Measurement Limits According to Section 15.207(a)

| Frequency<br>MHz | Limits (dB $\mu$ V) |               |
|------------------|---------------------|---------------|
|                  | Quasi-peak Level    | Average Level |
| 0.15 ~ 0.50      | 66 ~ 56*            | 56 ~ 46*      |
| 0.50 ~ 5.00      | 56                  | 46            |
| 5.00 ~ 30.00     | 60                  | 50            |

\* Decreases with the logarithm of the frequency.

### 9.3 Test procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Measurement.

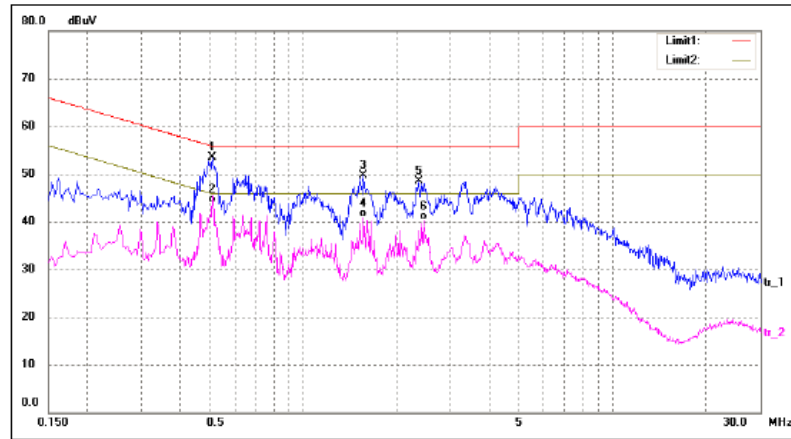
The bandwidth of test receiver (R & S ESPI) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

### 9.4 Test Result

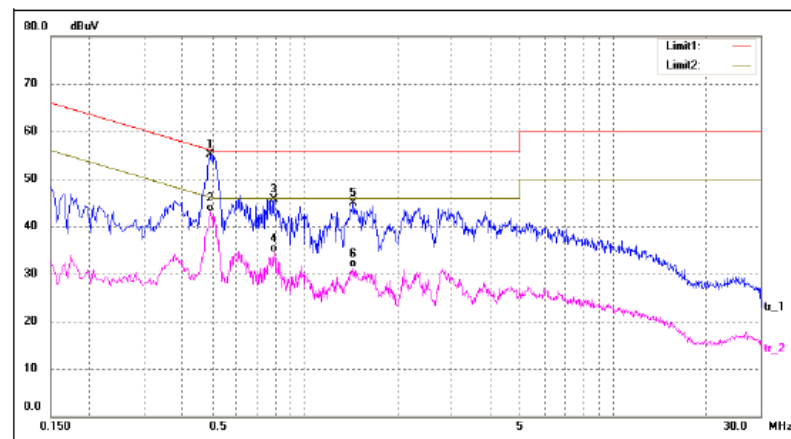
PASS

L



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Detector |
|-----|--------------------|-------------------|-------------------|------------------|-----------------|----------------|----------|
| 1   | 0.5100             | 40.96             | 12.51             | 53.47            | 56.00           | -2.53          | peak     |
| 2*  | 0.5100             | 31.40             | 12.51             | 43.91            | 46.00           | -2.09          | AVG      |
| 3   | 1.5660             | 36.73             | 13.00             | 49.73            | 56.00           | -6.27          | peak     |
| 4   | 1.5660             | 27.90             | 13.00             | 40.90            | 46.00           | -5.10          | AVG      |
| 5   | 2.3780             | 35.55             | 13.00             | 48.55            | 56.00           | -7.45          | peak     |
| 6   | 2.4540             | 27.30             | 13.00             | 40.30            | 46.00           | -5.70          | AVG      |

N



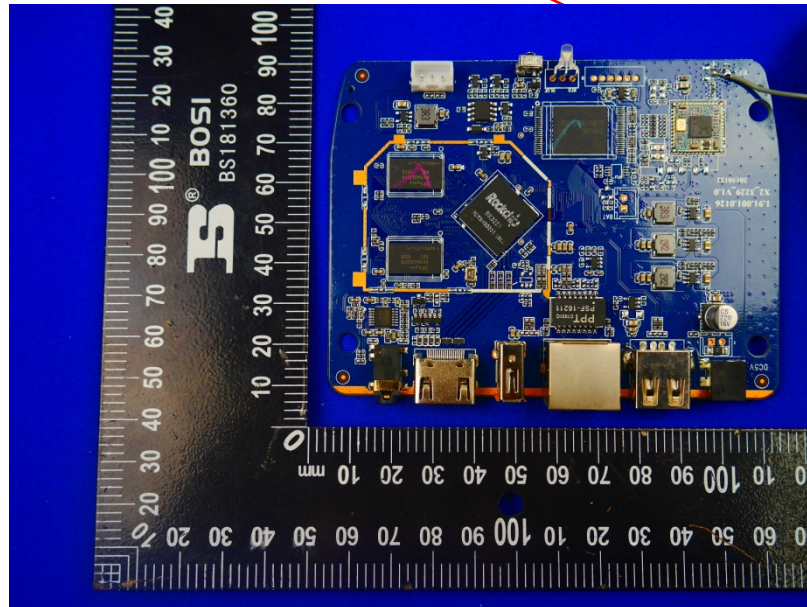
| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Detector |
|-----|--------------------|-------------------|-------------------|------------------|-----------------|----------------|----------|
| 1*  | 0.4940             | 42.68             | 12.50             | 55.18            | 56.10           | -0.92          | peak     |
| 2   | 0.4940             | 30.51             | 12.50             | 43.01            | 46.10           | -3.09          | AVG      |
| 3   | 0.7940             | 32.91             | 12.79             | 45.70            | 56.00           | -10.30         | peak     |
| 4   | 0.7940             | 21.71             | 12.79             | 34.50            | 46.00           | -11.50         | AVG      |
| 5   | 1.4340             | 31.98             | 13.00             | 44.98            | 56.00           | -11.02         | peak     |
| 6   | 1.4340             | 18.24             | 13.00             | 31.24            | 46.00           | -14.76         | AVG      |

## 10. ANTENNA REQUIREMENT

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

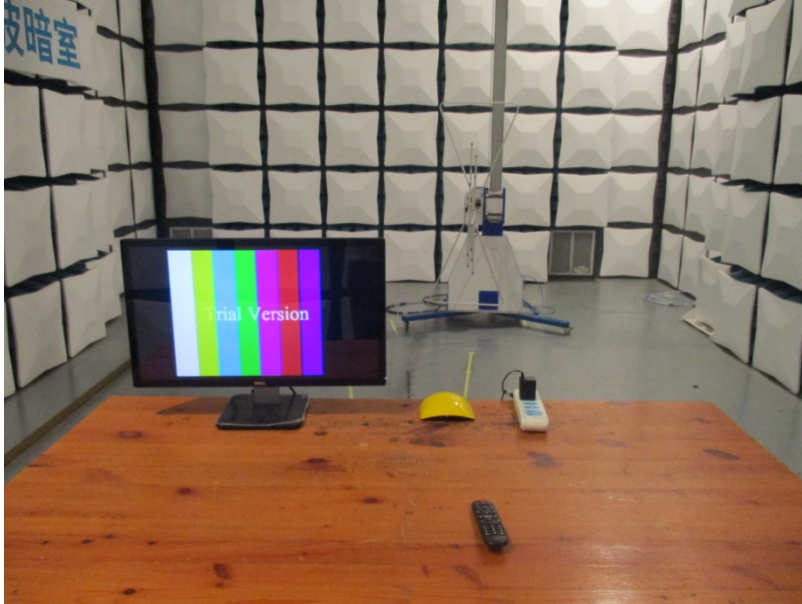
Antenna is fixed by enclosure, can not be changed except take apart the product.

Antenna



## 11. POTOGRAPH OF TEST

### 11.1 Radiated Emission



## 11.2 Conducted Emission

