



FCC TEST REPORT

Test report
On Behalf of
Shenzhen Zidoo Technology Co., Ltd.
For
SMART TV BOX
Model No.: H6 PRO, H6

FCC ID: 2AGN7-H6PRO

Prepared for : Shenzhen Zidoo Technology Co., Ltd.
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Date of Test: Jun. 15, 2017 ~ Jun. 26, 2017

Date of Report: Jun. 26, 2017

Report Number: HK1700615038-E



TEST RESULT CERTIFICATION

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

Address : Room 12 D, Block A CENTRAL GREAT SEARCHINGS, Xixiang Avenue, BaoAn District, Shenzhen, Guangdong, P.R.C. 518100

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

Address : Room 12 D, Block A CENTRAL GREAT SEARCHINGS, Xixiang Avenue, BaoAn District, Shenzhen, Guangdong, P.R.C. 518100

Product description

Trade Mark: zidoo

Product name : SMART TV BOX

Model and/or type reference : H6 PRO, H6

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 : Jun. 15, 2017 ~ Jun. 26, 2017

Date of Issue : Jun. 26, 2017

Test Result : **Pass**

Testing Engineer :

(Eric Xie)

Technical Manager :

(Dora Qin)

Authorized Signatory :

(Kait Chen)



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1. TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

| DESCRIPTION OF TEST | RESULT |
|-----------------------------------|-----------|
| CONDUCTED EMISSIONS TEST | COMPLIANT |
| RADIATED EMISSION TEST | COMPLIANT |
| BAND EDGE | COMPLIANT |
| OCCUPIED BANDWIDTH MEASUREMENT | COMPLIANT |
| POWER SPECTRAL DENSITY | COMPLIANT |
| PEAK OUTPUT POWER _{Peak} | COMPLIANT |
| OUT OF BAND EMISSIONS | COMPLIANT |
| ANTENNA REQUIREMENT | COMPLIANT |

1.2 TEST FACILITY

Test Firm : QTC Certification & Testing Co., Ltd.
Certificated by FCC, Registration No.: 588523
Address 2nd Floor,B1 Building,Fengyeyuan Industrial Plant, Liuxian 2st. Road,
Xin'an Street, Bao'an District, Shenzhen, China

1.3 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 | H6 PRO |
| Serial Model | H6 |
| Model Difference | All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: H6 PRO. |
| FCC ID | 2AGN7-H6PRO |
| Antenna Type | Integral Antenna |
| Antenna Gain | 2 dBi |
| BT Operation frequency | 802.11b/g/n 20:2412~2462 MHz 802.11n 40: 2422~2452MHz |
| Number of Channels | 802.11b/g/n20: 11CH 802.11n 40: 7CH |
| Modulation Type | CCK/OFDM/DBPSK/DAPSK |
| Power Source | DC5V, 2A From Adapter With AC 120V/60Hz |
| Power Rating | DC5V, 2A From Adapter With AC 120V/60Hz |



2.1.1 Carrier Frequency of Channels

| Channel List for 802.11b/g/n(20MHz) | | | | | | | |
|-------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| 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 | | | | |

Operation of EUT during testing

Operating Mode

The mode is used: **Transmitting mode for 802.11b/g/n(20MHz)**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

Transmitting mode for 802.11n(40MHz)

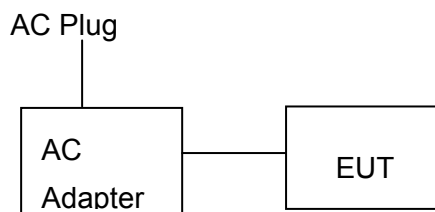
Low Channel: 2422MHz

Middle Channel: 2437MHz

High Channel: 2452MHz

2.2 DESCRIPTION OF TEST SETUP

Operation of EUT during conducted testing and Radiation and Above1GHz Radiation testing:



**2.3 MEASUREMENT INSTRUMENTS LIST**

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|------|--------------------------|----------------------|-------------|---------------|---------------|---------------|
| 1. | EMI Receiver | Rohde & Schwarz | ESCI | 100627 | Feb. 18, 2017 | Feb. 17, 2018 |
| 2. | LISN | SchwarzBeck | NSLK 8126 | 8126377 | Feb. 18, 2017 | Feb. 17, 2018 |
| 3. | RF Switching Unit | Compliance Direction | RSU-M2 | 38303 | Feb. 18, 2017 | 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 | Feb. 18, 2017 | Feb. 17, 2018 |
| 6. | Trilog Broadband Antenna | Schwarzbeck | VULB9163 | VULB 9163-289 | Feb. 18, 2017 | Feb. 17, 2018 |
| 7. | Pre-amplifier | Compliance Direction | PAP-0203 | 22008 | Feb. 18, 2017 | Feb. 17, 2018 |
| 8. | EMI Test Software EZ-EMC | SHURPLE | N/A | N/A | N/A | N/A |
| 9. | EMI Receiver | Rohde & Schwarz | ESCI | 100627 | Feb. 18, 2017 | Feb. 17, 2018 |
| 10. | LISN | SchwarzBeck | NSLK 8126 | 8126377 | Feb. 18, 2017 | Feb. 17, 2018 |
| 11. | RF Switching Unit | Compliance Direction | RSU-M2 | 38303 | Feb. 18, 2017 | Feb. 17, 2018 |
| 12. | EMI Test Software ES-K1 | Rohde & Schwarz | N/A | N/A | N/A | N/A |
| 13. | EMI Receiver | Rohde & Schwarz | ESCI | 100627 | Feb. 18, 2017 | Feb. 17, 2018 |
| 14. | EMI Receiver | Rohde & Schwarz | ESCI | 100627 | Feb. 18, 2017 | Feb. 17, 2018 |
| 15. | LISN | SchwarzBeck | NSLK 8126 | 8126377 | Feb. 18, 2017 | Feb. 17, 2018 |
| 16. | RF Switching Unit | Compliance Direction | RSU-M2 | 38303 | Feb. 18, 2017 | Feb. 17, 2018 |
| 17. | EMI Test Software ES-K1 | Rohde & Schwarz | N/A | N/A | N/A | N/A |
| 18. | Power Meter | R&S | NRVD | SEL0069 | Feb. 18, 2017 | Feb. 17, 2018 |
| 19. | Power Sensor | R&S | URV5-Z2 | SEL0071 | Feb. 18, 2017 | Feb. 17, 2018 |
| 20. | Power Sensor | R&S | URV5-Z2 | SEL0072 | Feb. 18, 2017 | Feb. 17, 2018 |
| 21. | Software EMC32 | R&S | EMC32-S | SEL0082 | N/A | N/A |
| 22. | Log-periodic Antenna | Amplifier Reasearch | APT1.580 | SEL0073 | Feb. 18, 2017 | Feb. 17, 2018 |
| 23. | Loop Antenna | Schwarz beck | FMZB 1516 | 9773 | Feb. 18, 2017 | Feb. 17, 2018 |
| 24. | Broadband Antenna | Schwarz beck | VULB9163 | 9163-333 | Feb. 18, 2017 | Feb. 17, 2018 |
| 25. | Horn Antenna | ETS | 3117 | 00086197 | Feb. 18, 2017 | Feb. 17, 2018 |
| 26. | Horn Antenna | Schwarzbeck | BBHA9170 | BBHA9170582 | Feb. 18, 2017 | Feb. 17, 2018 |
| 27. | Antenna Tripod | Amplifier Reasearch | TP1000A | SEL0074 | Feb. 18, 2017 | Feb. 17, 2018 |
| 28. | High Gain Horn Antenna | Amplifier Reasearch | AT4002A | SEL0075 | Feb. 18, 2017 | Feb. 17, 2018 |
| 29. | Spectrum analyzer | Agilent | N9020A | MY499110048 | Feb. 18, 2017 | Feb. 17, 2018 |
| 30. | Spectrum analyzer | Agilent | E4407B | MY46184326 | Feb. 18, 2017 | Feb. 17, 2018 |
| 31. | Spectrum analyzer | R&S | FSP30 | 836079/035 | Feb. 18, 2017 | Feb. 17, 2018 |
| 32. | RF Cable | Micable | C10-01-01-1 | 100309 | Feb. 18, 2017 | Feb. 17, 2018 |



3. CONDUCTED EMISSIONS TEST

3.1 Conducted Power Line Emission Limit

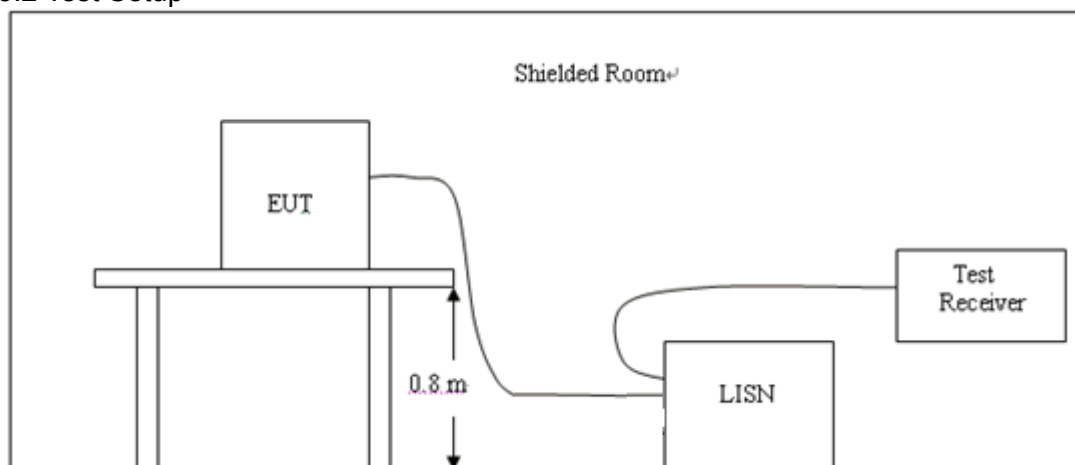
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following

| Frequency (MHz) | Maximum RF Line Voltage (dBμV) | | | |
|-----------------|--------------------------------|------|---------|--------|
| | CLASS A | | CLASS B | |
| | Q.P. | Ave. | Q.P. | Ave. |
| 0.15 - 0.50 | 79 | 66 | 66-56* | 56-46* |
| 0.50 - 5.00 | 73 | 60 | 56 | 46 |
| 5.00 - 30.0 | 73 | 60 | 60 | 50 |

* Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

3.2 Test Setup



3.3 Test Procedure

- 1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2, Support equipment, if needed, was placed as per ANSI C63.10.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5, All support equipments received AC power from a second LISN, if any.
- 6, The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7, Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

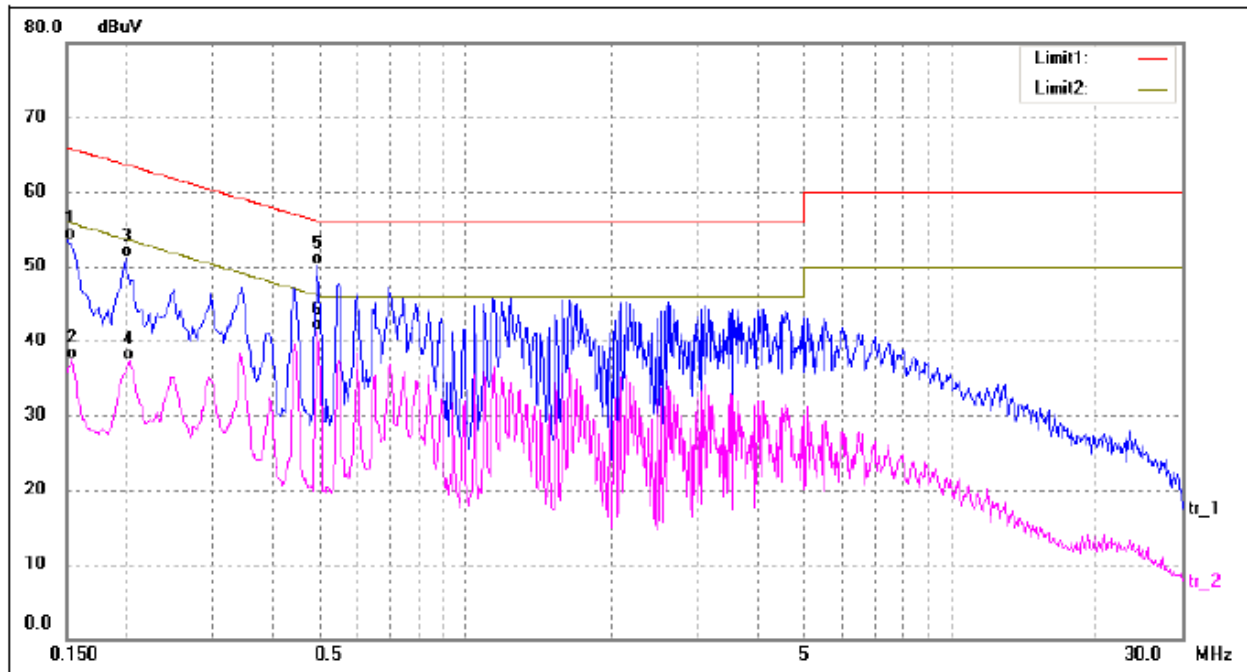
3.4 Test Result

PASS

All the test modes completed for test.



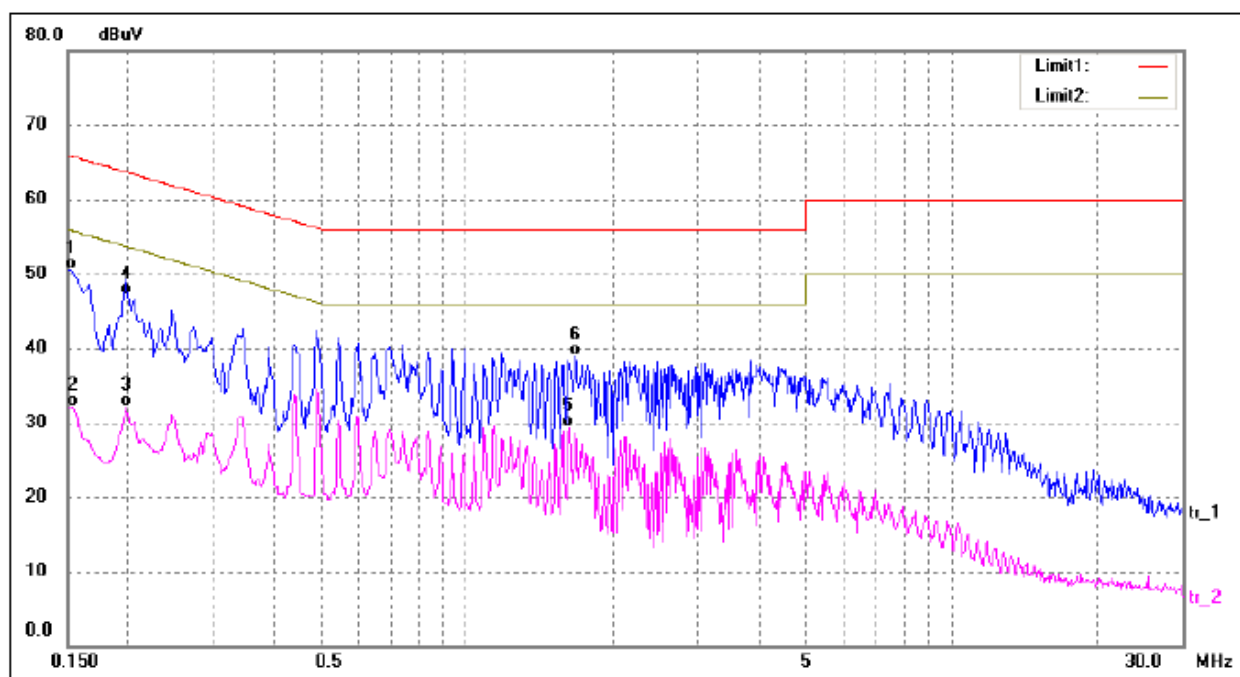
Test Specification: Line



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|--------------------|-------------------|-------------------|------------------|-----------------|----------------|----------|
| 1 | 0.1500 | 43.57 | 9.85 | 53.42 | 66.00 | -12.58 | QP |
| 2 | 0.1540 | 27.69 | 9.85 | 37.54 | 55.78 | -18.24 | AVG |
| 3 | 0.1980 | 41.30 | 9.80 | 51.10 | 63.69 | -12.59 | QP |
| 4 | 0.2020 | 27.51 | 9.80 | 37.31 | 53.53 | -16.22 | AVG |
| 5 | 0.4940 | 40.34 | 9.80 | 50.14 | 56.10 | -5.96 | QP |
| 6* | 0.4940 | 31.48 | 9.80 | 41.28 | 46.10 | -4.82 | AVG |



Test Specification: Neutral



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|--------------------|-------------------|-------------------|------------------|-----------------|----------------|----------|
| 1* | 0.1500 | 40.63 | 9.85 | 50.48 | 66.00 | -15.52 | QP |
| 2 | 0.1540 | 22.29 | 9.85 | 32.14 | 55.78 | -23.64 | AVG |
| 3 | 0.1980 | 22.30 | 9.80 | 32.10 | 53.69 | -21.59 | AVG |
| 4 | 0.1997 | 37.37 | 9.80 | 47.17 | 63.62 | -16.45 | QP |
| 5 | 1.6300 | 19.56 | 9.74 | 29.30 | 46.00 | -16.70 | AVG |
| 6 | 1.6780 | 29.08 | 9.74 | 38.82 | 56.00 | -17.18 | QP |



4 RADIATED EMISSION TEST

4.1 Radiation Limit

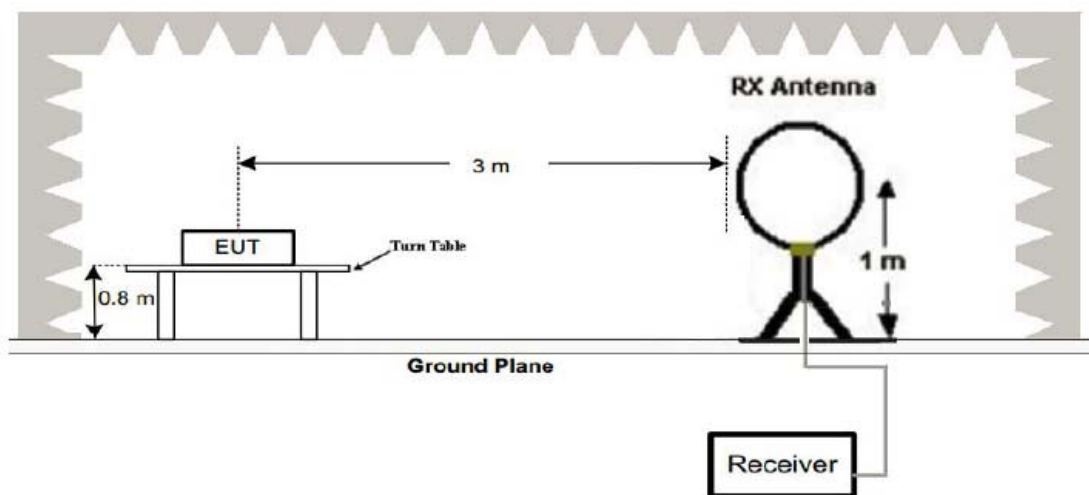
For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

| Frequency (MHz) | Distance (Meters) | Radiated (dB μ V/m) | Radiated (μ V/m) |
|-----------------|-------------------|-------------------------|-----------------------|
| 30-88 | 3 | 40 | 100 |
| 88-216 | 3 | 43.5 | 150 |
| 216-960 | 3 | 46 | 200 |
| Above 960 | 3 | 54 | 500 |

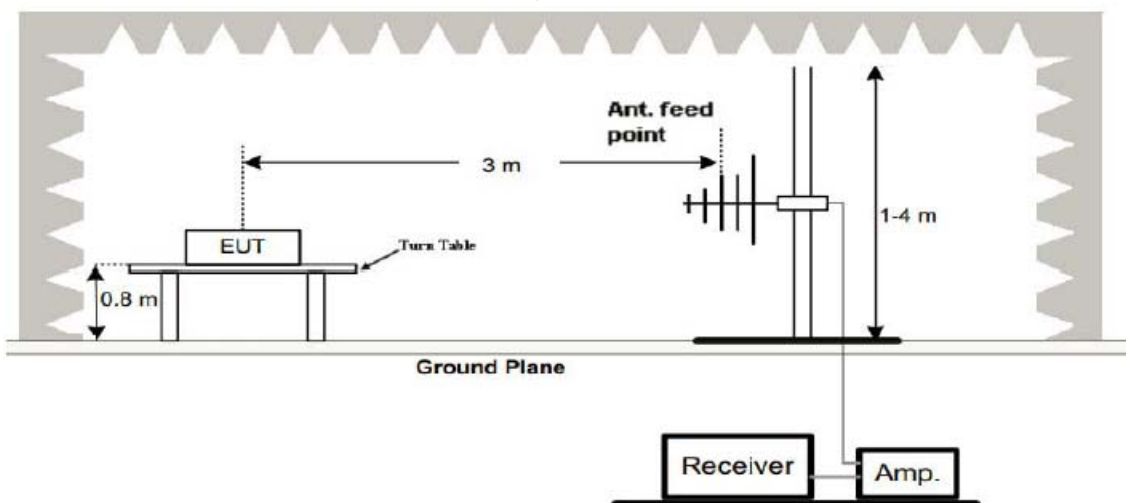
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

4.2 Test Setup

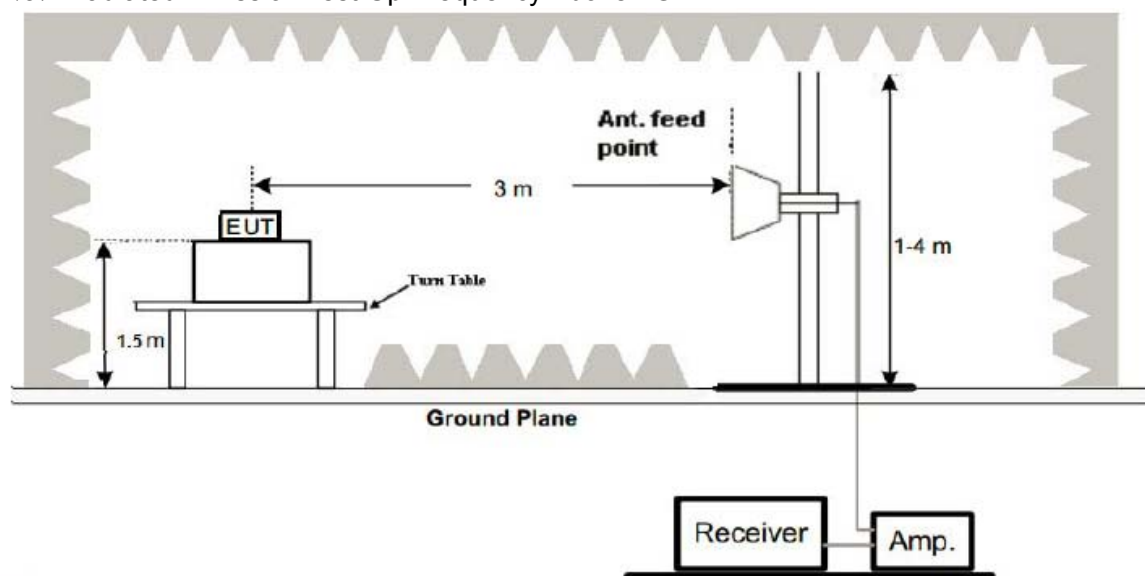
(1) Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.3 Test Procedure

- Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
- The turntable shall be 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 emissions.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Repeat above procedures until the measurements for all frequencies are complete.
- 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.

4.4 Test Result

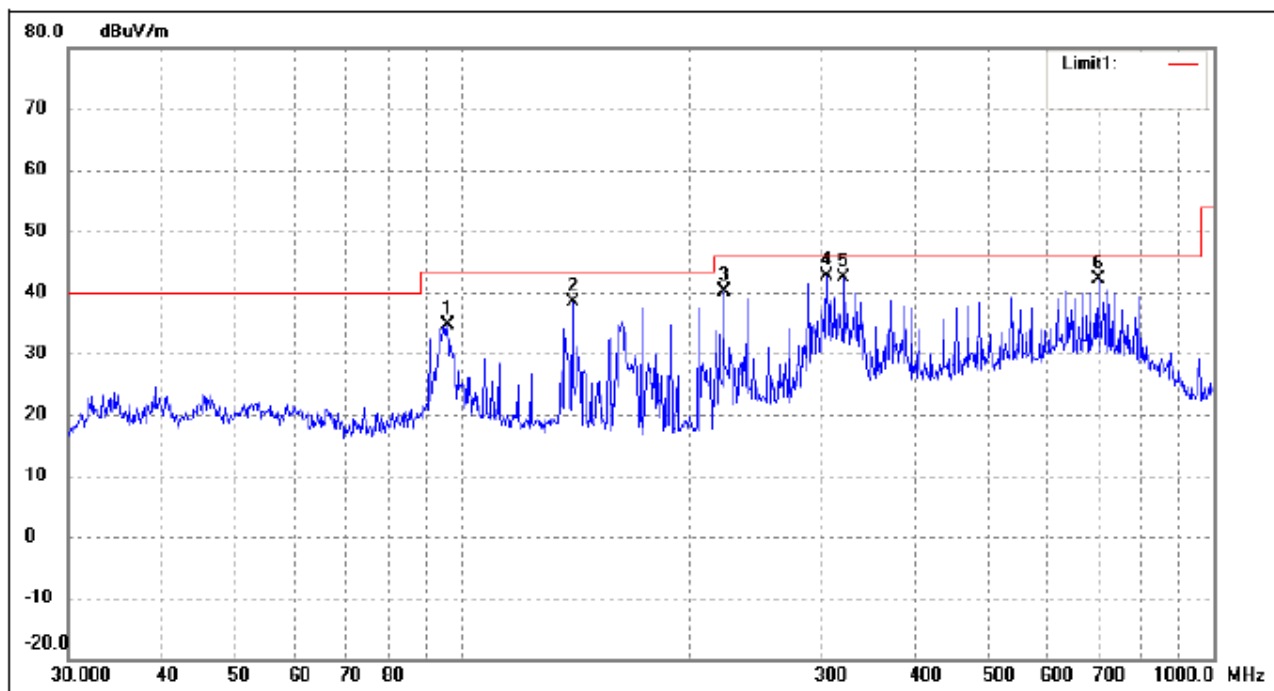
PASS

All the test modes completed for test. The worst case of Radiated Emission (802.11b Transmitting High Channel-2462MHz (worst case)); the test data of this mode was reported.



Below 1GHz Test Results:

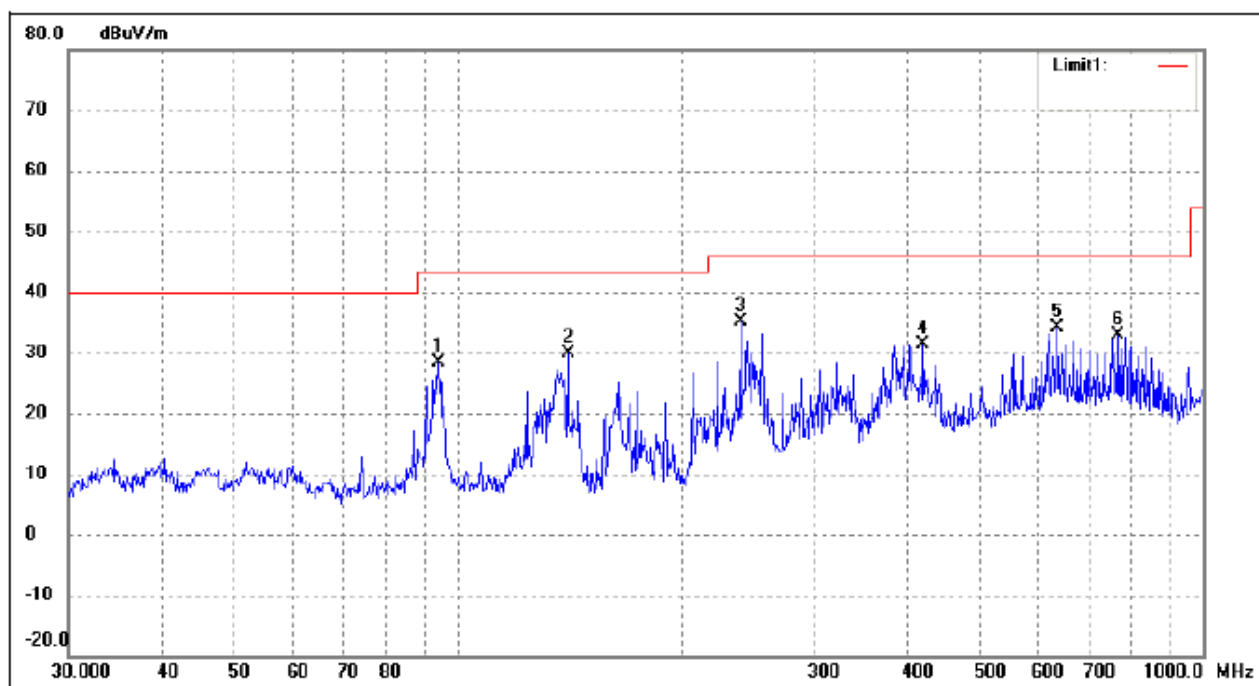
Antenna polarity: H



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree () | Height (cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1 | 95.7622 | 54.70 | -20.19 | 34.51 | 43.50 | -8.99 | 327 | 100 | peak |
| 2 | 140.3420 | 59.68 | -21.35 | 38.33 | 43.50 | -5.17 | 93 | 100 | peak |
| 3 | 222.9501 | 56.86 | -16.66 | 40.20 | 46.00 | -5.80 | 120 | 100 | peak |
| 4 | 305.6800 | 55.25 | -12.53 | 42.72 | 46.00 | -3.28 | 111 | 100 | peak |
| 5 | 322.1886 | 54.65 | -12.38 | 42.27 | 46.00 | -3.73 | 281 | 100 | peak |
| 6 | 701.7609 | 46.82 | -4.76 | 42.06 | 46.00 | -3.94 | 262 | 100 | peak |



Antenna polarity: V



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree () | Height (cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1 | 94.0979 | 48.82 | -20.44 | 28.38 | 43.50 | -15.12 | 212 | 100 | peak |
| 2 | 140.3421 | 51.33 | -21.35 | 29.98 | 43.50 | -13.52 | 100 | 100 | peak |
| 3 | 239.1473 | 50.83 | -15.60 | 35.23 | 46.00 | -10.77 | 181 | 100 | peak |
| 4 | 420.5803 | 42.75 | -11.32 | 31.43 | 46.00 | -14.57 | 95 | 100 | peak |
| 5 | 636.1340 | 38.37 | -4.15 | 34.22 | 46.00 | -11.78 | 163 | 100 | peak |
| 6 | 768.7482 | 37.05 | -4.10 | 32.95 | 46.00 | -13.05 | 274 | 100 | peak |

Remark:

- (1) Measuring frequencies from 9 KHz to the 1 GHz, Radiated emission test from 9KHz to 30MHz was verified, and no any emission was found except system noise floor.
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.



Above 1 GHz Test Results:

LOW CH1 (802.11b Mode)/2412
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4824 | 62.37 | -3.64 | 58.73 | 74 | -15.27 | peak |
| 4824 | 46.54 | -3.64 | 42.9 | 54 | -11.1 | AVG |
| 7236 | 56.26 | -0.95 | 55.31 | 74 | -18.69 | peak |
| 7236 | 42.03 | -0.95 | 41.08 | 54 | -12.92 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4824 | 61.84 | -3.64 | 58.2 | 74 | -15.8 | peak |
| 4824 | 46.51 | -3.64 | 42.87 | 54 | -11.13 | AVG |
| 7236 | 56.37 | -0.95 | 55.42 | 74 | -18.58 | peak |
| 7236 | 42.16 | -0.95 | 41.21 | 54 | -12.79 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



MID CH6 (802.11b Mode)/2437
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4874 | 61.92 | -3.51 | 58.41 | 74 | -15.59 | peak |
| 4874 | 46.15 | -3.51 | 42.64 | 54 | -11.36 | AVG |
| 7311 | 55.84 | -0.82 | 55.02 | 74 | -18.98 | peak |
| 7311 | 41.67 | -0.82 | 40.85 | 54 | -13.15 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4874 | 61.48 | -3.51 | 57.97 | 74 | -16.03 | peak |
| 4874 | 45.83 | -3.51 | 42.32 | 54 | -11.68 | AVG |
| 7311 | 56.26 | -0.82 | 55.44 | 74 | -18.56 | peak |
| 7311 | 41.55 | -0.82 | 40.73 | 54 | -13.27 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH11 (802.11b Mode)/2462
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4924 | 61.75 | -3.43 | 58.32 | 74 | -15.68 | peak |
| 4924 | 45.28 | -3.43 | 41.85 | 54 | -12.15 | AVG |
| 7386 | 55.46 | -0.75 | 54.71 | 74 | -19.29 | peak |
| 7386 | 41.03 | -0.75 | 40.28 | 54 | -13.72 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4924 | 61.34 | -3.43 | 57.91 | 74 | -16.09 | peak |
| 4924 | 45.17 | -3.43 | 41.74 | 54 | -12.26 | AVG |
| 7386 | 55.82 | -0.75 | 55.07 | 74 | -18.93 | peak |
| 7386 | 41.46 | -0.75 | 40.71 | 54 | -13.29 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "—" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

LOW CH1 (802.11g Mode)/2412
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4824 | 61.82 | -3.64 | 58.18 | 74 | -15.82 | peak |
| 4824 | 45.16 | -3.64 | 41.52 | 54 | -12.48 | AVG |
| 7236 | 55.43 | -0.95 | 54.48 | 74 | -19.52 | peak |
| 7236 | 41.64 | -0.95 | 40.69 | 54 | -13.31 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4824 | 61.24 | -3.64 | 57.6 | 74 | -16.4 | peak |
| 4824 | 45.37 | -3.64 | 41.73 | 54 | -12.27 | AVG |
| 7236 | 56.02 | -0.95 | 55.07 | 74 | -18.93 | peak |
| 7236 | 42.15 | -0.95 | 41.2 | 54 | -12.8 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



MID CH6 (802.11g Mode)/2437
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4874 | 61.11 | -3.51 | 57.6 | 74 | -16.4 | peak |
| 4874 | 45.67 | -3.51 | 42.16 | 54 | -11.84 | AVG |
| 7311 | 55.49 | -0.82 | 54.67 | 74 | -19.33 | peak |
| 7311 | 41.23 | -0.82 | 40.41 | 54 | -13.59 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4874 | 60.74 | -3.51 | 57.23 | 74 | -16.77 | peak |
| 4874 | 45.91 | -3.51 | 42.4 | 54 | -11.6 | AVG |
| 7311 | 55.62 | -0.82 | 54.8 | 74 | -19.2 | peak |
| 7311 | 41.28 | -0.82 | 40.46 | 54 | -13.54 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH11 (802.11g Mode)/2462
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4924 | 60.53 | -3.43 | 57.1 | 74 | -16.9 | peak |
| 4924 | 45.26 | -3.43 | 41.83 | 54 | -12.17 | AVG |
| 7386 | 55.84 | -0.75 | 55.09 | 74 | -18.91 | peak |
| 7386 | 41.07 | -0.75 | 40.32 | 54 | -13.68 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4924 | 60.18 | -3.43 | 56.75 | 74 | -17.25 | peak |
| 4924 | 45.32 | -3.43 | 41.89 | 54 | -12.11 | AVG |
| 7386 | 55.46 | -0.75 | 54.71 | 74 | -19.29 | peak |
| 7386 | 40.39 | -0.75 | 39.64 | 54 | -14.36 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "—" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH1 (802.11n/H20 Mode)/2412
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4824 | 61.49 | -3.64 | 57.85 | 74 | -16.15 | peak |
| 4824 | 45.25 | -3.64 | 41.61 | 54 | -12.39 | AVG |
| 7236 | 55.63 | -0.95 | 54.68 | 74 | -19.32 | peak |
| 7236 | 41.72 | -0.95 | 40.77 | 54 | -13.23 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4824 | 60.85 | -3.64 | 57.21 | 74 | -16.79 | peak |
| 4824 | 46.29 | -3.64 | 42.65 | 54 | -11.35 | AVG |
| 7236 | 55.74 | -0.95 | 54.79 | 74 | -19.21 | peak |
| 7236 | 45.36 | -0.95 | 44.41 | 54 | -9.59 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



MID CH6 (802.11n/H20 Mode)/2437

Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4874 | 60.86 | -3.51 | 57.35 | 74 | -16.65 | peak |
| 4874 | 46.24 | -3.51 | 42.73 | 54 | -11.27 | AVG |
| 7311 | 55.92 | -0.82 | 55.1 | 74 | -18.9 | peak |
| 7311 | 41.33 | -0.82 | 40.51 | 54 | -13.49 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4874 | 60.15 | -3.51 | 56.64 | 74 | -17.36 | peak |
| 4874 | 45.74 | -3.51 | 42.23 | 54 | -11.77 | AVG |
| 7311 | 55.88 | -0.82 | 55.06 | 74 | -18.94 | peak |
| 7311 | 41.09 | -0.82 | 40.27 | 54 | -13.73 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH11 (802.11n/H20 Mode)/2462
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4924 | 60.45 | -3.43 | 57.02 | 74 | -16.98 | peak |
| 4924 | 45.37 | -3.43 | 41.94 | 54 | -12.06 | AVG |
| 7386 | 55.24 | -0.75 | 54.49 | 74 | -19.51 | peak |
| 7386 | 40.69 | -0.75 | 39.94 | 54 | -14.06 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4924 | 59.78 | -3.43 | 56.35 | 74 | -17.65 | peak |
| 4924 | 45.23 | -3.43 | 41.8 | 54 | -12.2 | AVG |
| 7386 | 55.61 | -0.75 | 54.86 | 74 | -19.14 | peak |
| 7386 | 40.48 | -0.75 | 39.73 | 54 | -14.27 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



LOW CH3 (802.11n/H40 Mode)/2422
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4924 | 60.28 | -3.63 | 56.65 | 74 | -17.35 | peak |
| 4924 | 46.34 | -3.63 | 42.71 | 54 | -11.29 | AVG |
| 7386 | 55.51 | -0.94 | 54.57 | 74 | -19.43 | peak |
| 7386 | 40.47 | -0.94 | 39.53 | 54 | -14.47 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4924 | 59.62 | -3.63 | 55.99 | 74 | -18.01 | peak |
| 4924 | 45.48 | -3.63 | 41.85 | 54 | -12.15 | AVG |
| 7386 | 55.71 | -0.94 | 54.77 | 74 | -19.23 | peak |
| 7386 | 40.25 | -0.94 | 39.31 | 54 | -14.69 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



MID CH6 (802.11n/H40 Mode)/2437

Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4874 | 59.78 | -3.51 | 56.27 | 74 | -17.73 | peak |
| 4874 | 45.15 | -3.51 | 41.64 | 54 | -12.36 | AVG |
| 7311 | 55.63 | -0.82 | 54.81 | 74 | -19.19 | peak |
| 7311 | 40.04 | -0.82 | 39.22 | 54 | -14.78 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4874 | 59.24 | -3.51 | 55.73 | 74 | -18.27 | peak |
| 4874 | 45.37 | -3.51 | 41.86 | 54 | -12.14 | AVG |
| 7311 | 55.32 | -0.82 | 54.5 | 74 | -19.5 | peak |
| 7311 | 40.59 | -0.82 | 39.77 | 54 | -14.23 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



HIGH CH9 (802.11n/H40 Mode)/2452
Horizontal:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4904 | 59.69 | -3.43 | 56.26 | 74 | -17.74 | peak |
| 4904 | 45.23 | -3.43 | 41.8 | 54 | -12.2 | AVG |
| 7356 | 55.57 | -0.75 | 54.82 | 74 | -19.18 | peak |
| 7356 | 40.42 | -0.75 | 39.67 | 54 | -14.33 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz) | (dBμV) | (dB) | (dBμV/m) | (dBμV/m) | (dB) | |
| 4904 | 58.66 | -3.43 | 55.23 | 74 | -18.77 | peak |
| 4904 | 45.21 | -3.43 | 41.78 | 54 | -12.22 | AVG |
| 7356 | 55.39 | -0.75 | 54.64 | 74 | -19.36 | peak |
| 7356 | 41.05 | -0.75 | 40.3 | 54 | -13.7 | AVG |
| --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Remark:

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



5 BAND EDGE

5.1 Limits

FCC PART 15.247 Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

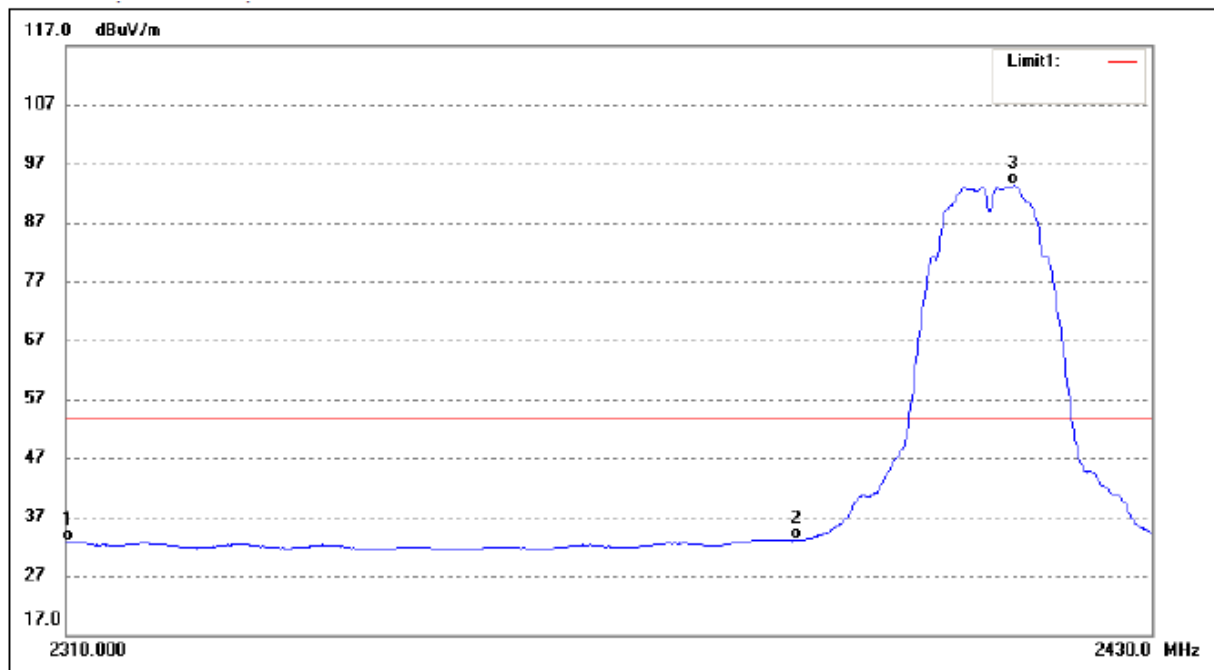
5.2 Test Procedure

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW to 100KHz and VBM to 300KHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength. The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW to 100 KHz and VBW to 300 KHz, to measure the conducted peak band edge.

5.3 Test Result

PASS

Operation Mode:
802.11b-Lowest Bandedge
Vertical (Worst case)

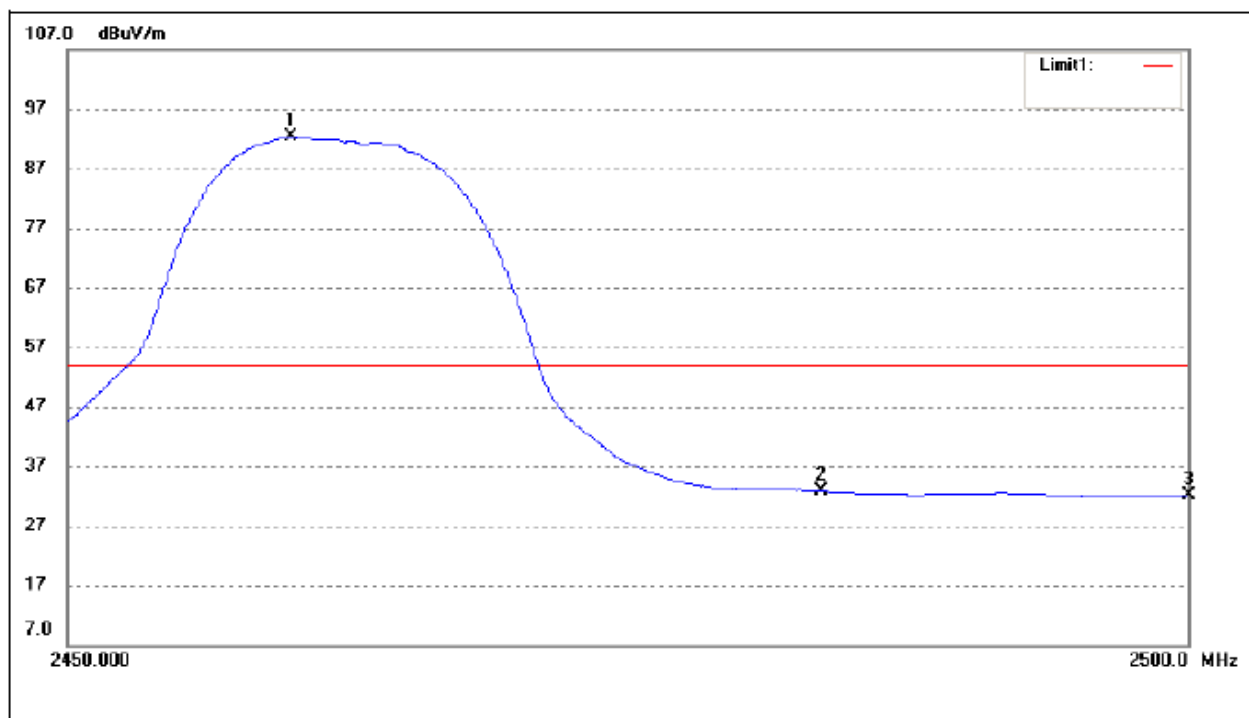


| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1 | 2310.00 | 33.11 | -0.35 | 32.76 | 54.00 | -21.24 | Average Detector |
| | 2310.00 | 44.93 | -0.35 | 44.58 | 74.00 | -29.42 | Peak Detector |
| 2 | 2390.00 | 34.36 | -1.29 | 33.07 | 54.00 | -20.93 | Average Detector |
| | 2390.00 | 46.56 | -1.29 | 45.27 | 74.00 | -28.73 | Peak Detector |
| 3 | 2414.42 | 94.80 | -1.44 | 93.36 | / | / | Average Detector |
| | 2413.20 | 99.29 | -1.44 | 97.85 | / | / | Peak Detector |



802.11b-Highest Bandedge

Vertical (Worst case)

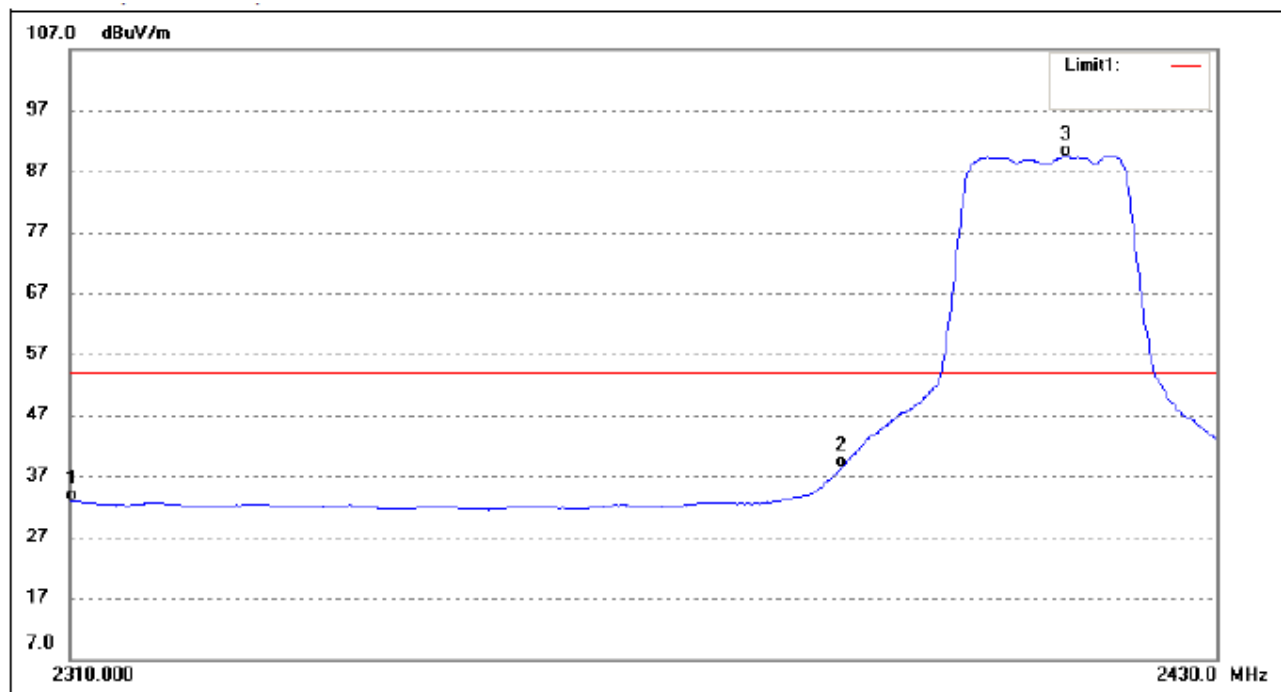


| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-----------------------|--------------------|-------------------|----------------|------------------|
| 1 | 2459.87 | 93.72 | -1.38 | 92.34 | / | / | Average Detector |
| | 2463.25 | 101.96 | -1.38 | 100.58 | / | / | Peak Detector |
| 2 | 2483.50 | 34.16 | -1.36 | 32.80 | 54.00 | -21.20 | Average Detector |
| | 2483.50 | 47.20 | -1.36 | 45.84 | 74.00 | -28.16 | Peak Detector |
| 3 | 2500.00 | 33.40 | -1.34 | 32.06 | 54.00 | -21.94 | Average Detector |
| | 2500.00 | 46.80 | -1.34 | 45.46 | 74.00 | -28.54 | Peak Detector |



802.11g-Lowest Bandedge

Vertical (Worst case)

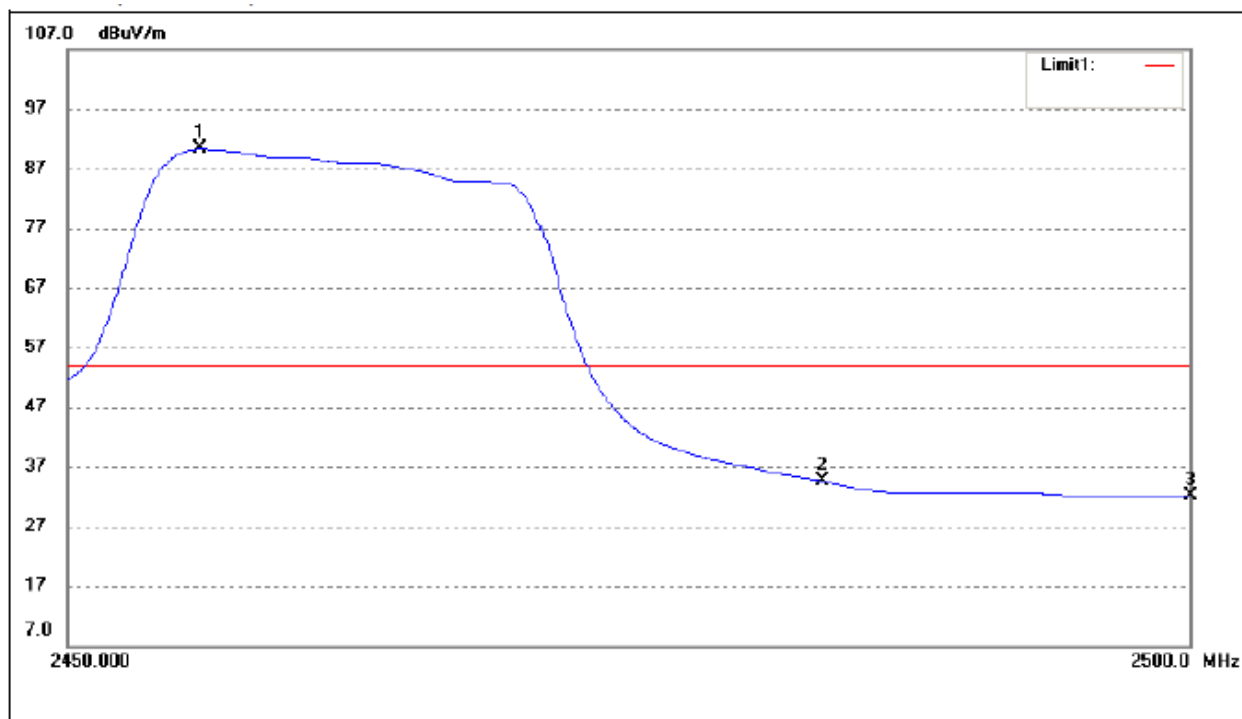


| No. | Frequency | Reading | Correct | Result | Limit | Margin | Remark |
|-----|-----------|----------|---------|----------|----------|--------|------------------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2310.00 | 33.24 | -0.35 | 32.89 | 54.00 | -21.11 | Average Detector |
| | 2310.00 | 46.29 | -0.35 | 45.94 | 74.00 | -28.06 | Peak Detector |
| 2 | 2390.00 | 39.71 | -1.29 | 38.42 | 54.00 | -15.58 | Average Detector |
| | 2390.00 | 58.97 | -1.29 | 57.68 | 74.00 | -16.32 | Peak Detector |
| 3 | 2413.93 | 90.80 | -1.44 | 89.36 | / | / | Average Detector |
| | 2414.91 | 102.66 | -1.44 | 101.22 | / | / | Peak Detector |



802.11g-Highest Bandedge

Vertical (Worst case)

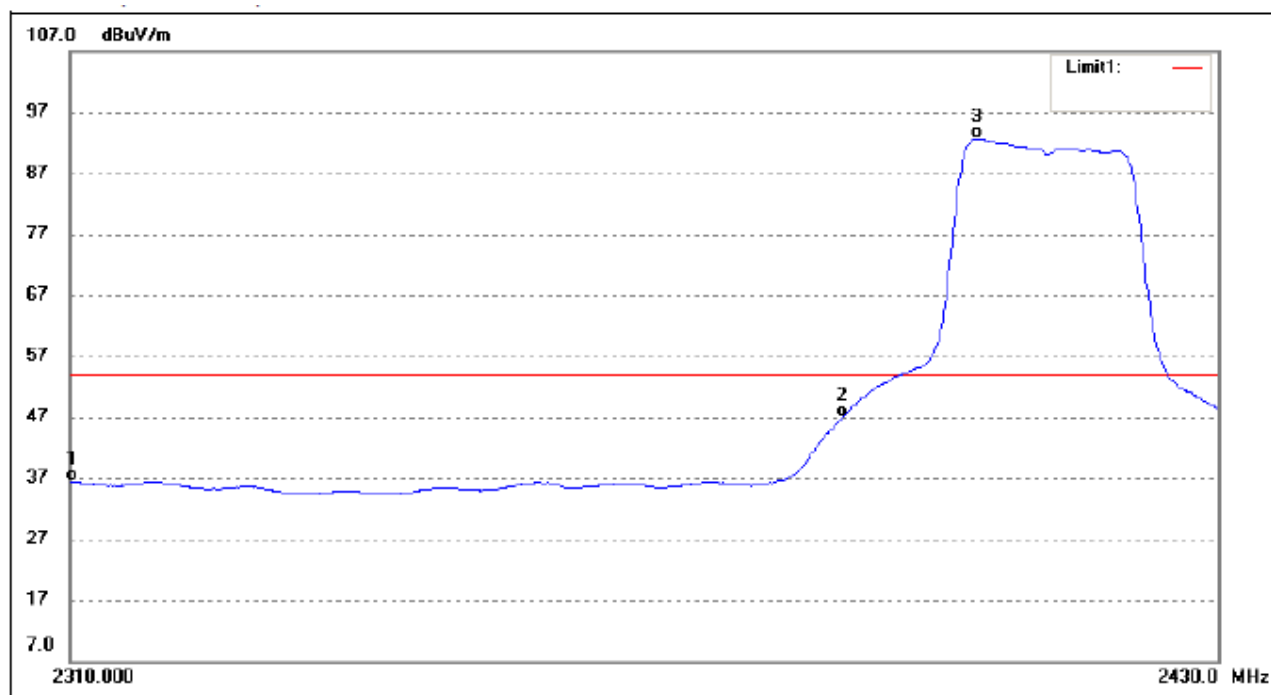


| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1 | 2455.85 | 91.68 | -1.39 | 90.29 | / | / | Average Detector |
| | 2455.10 | 104.43 | -1.39 | 103.04 | / | / | Peak Detector |
| 2 | 2483.50 | 35.95 | -1.36 | 34.59 | 54.00 | -19.41 | Average Detector |
| | 2483.50 | 51.53 | -1.36 | 50.17 | 74.00 | -23.83 | Peak Detector |
| 3 | 2500.00 | 33.40 | -1.34 | 32.06 | 54.00 | -21.94 | Average Detector |
| | 2500.00 | 45.67 | -1.34 | 44.33 | 74.00 | -29.67 | Peak Detector |



802.11n-HT20-Lowest Bandedge

Vertical (Worst case)

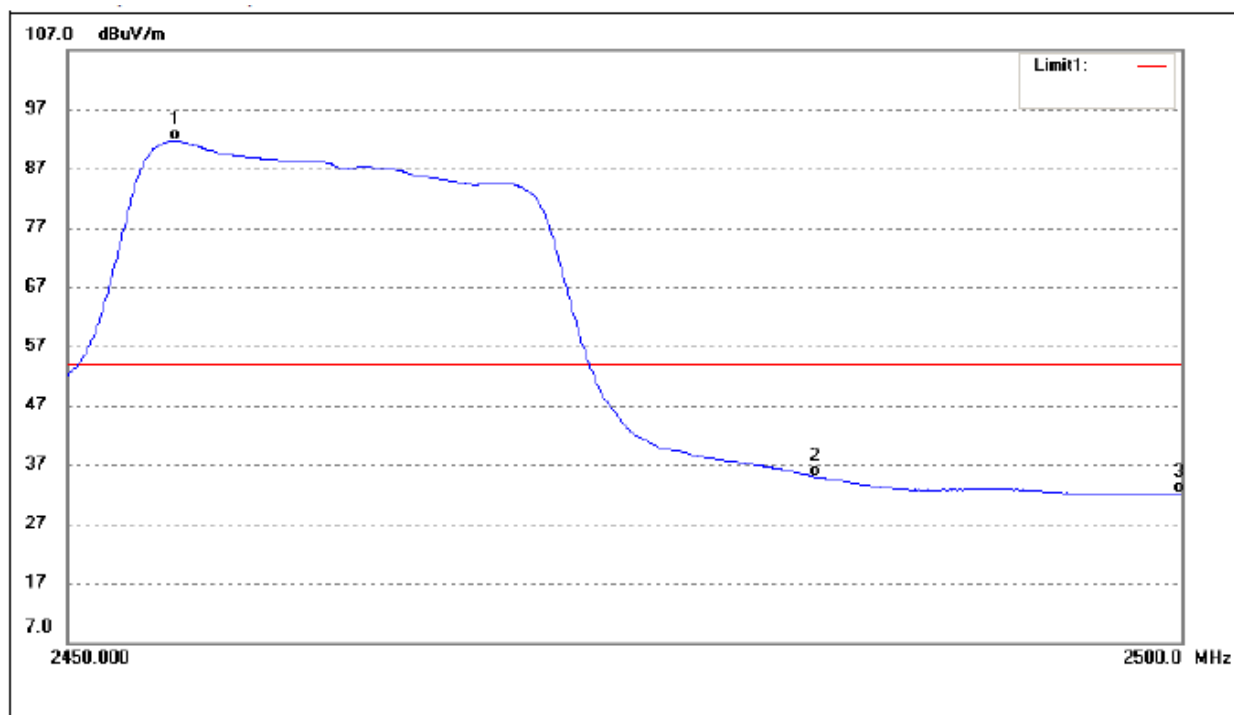


| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1 | 2310.00 | 36.77 | -0.35 | 36.42 | 54.00 | -17.58 | Average Detector |
| | 2310.00 | 49.42 | -0.35 | 49.07 | 74.00 | -24.93 | Peak Detector |
| 2 | 2390.00 | 48.23 | -1.29 | 46.94 | 54.00 | -7.06 | Average Detector |
| | 2390.00 | 69.85 | -1.29 | 68.56 | 74.00 | -5.44 | Peak Detector |
| 3 | 2404.29 | 94.18 | -1.44 | 92.74 | / | / | Average Detector |
| | 2404.66 | 104.98 | -1.45 | 103.53 | / | / | Peak Detector |



802.11n-HT20-Highest Bandedge

Vertical (Worst case)

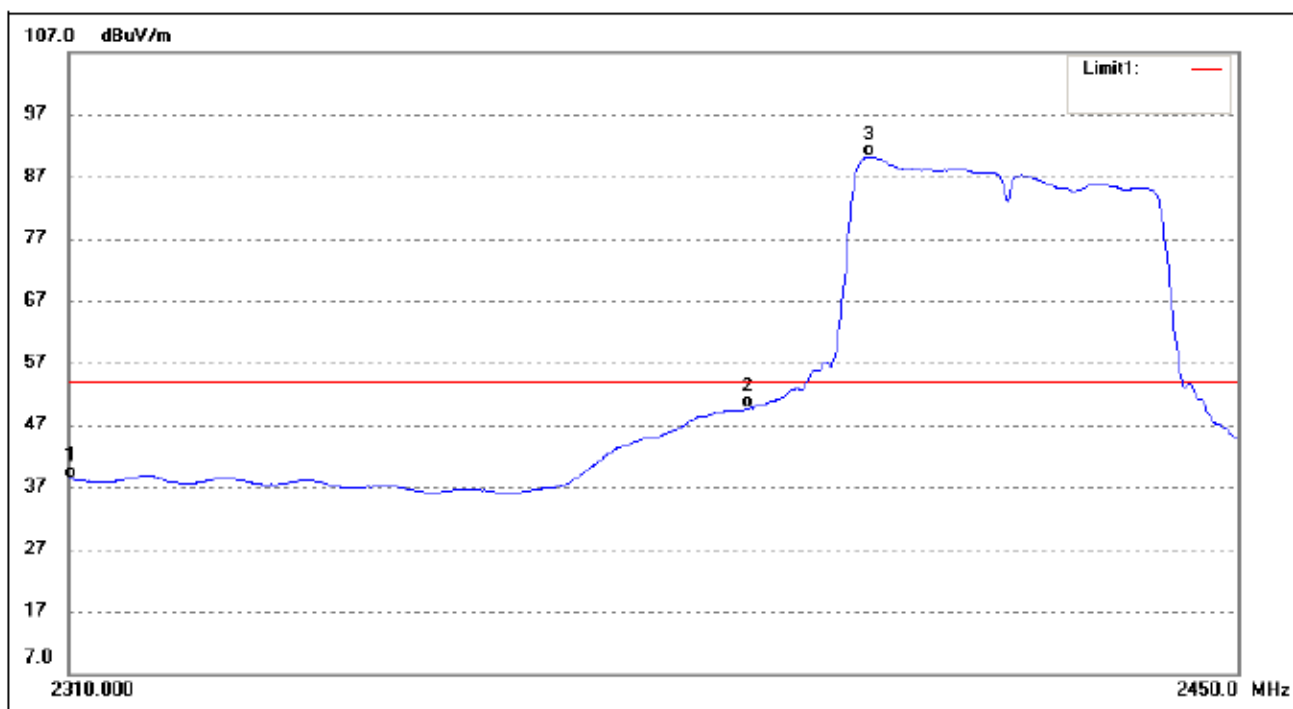


| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1 | 2454.71 | 93.04 | -1.39 | 91.65 | / | / | Average Detector |
| | 2454.86 | 103.83 | -1.39 | 102.44 | / | / | Peak Detector |
| 2 | 2483.50 | 36.28 | -1.36 | 34.92 | 54.00 | -19.08 | Average Detector |
| | 2483.50 | 53.70 | -1.36 | 52.34 | 74.00 | -21.66 | Peak Detector |
| 3 | 2500.00 | 33.49 | -1.34 | 32.15 | 54.00 | -21.85 | Average Detector |
| | 2500.00 | 44.91 | -1.34 | 43.57 | 74.00 | -30.43 | Peak Detector |



802.11n-HT40-Lowest Bandedge

Vertical (Worst case)

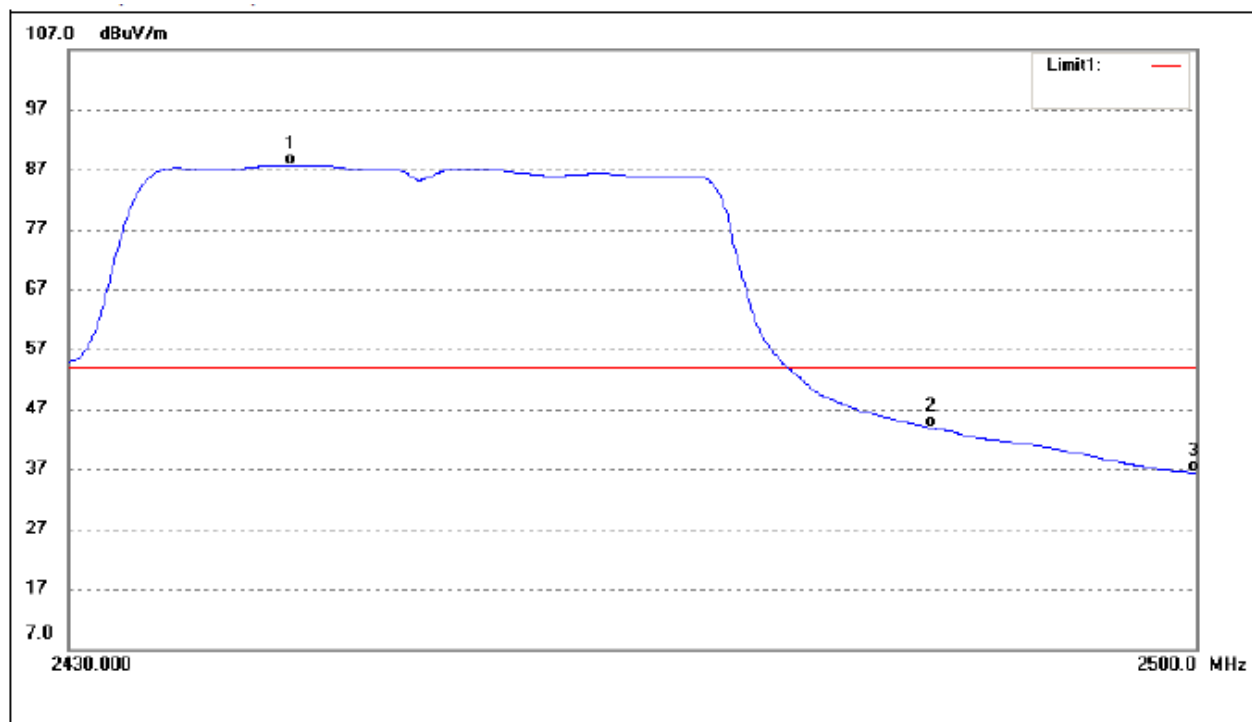


| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1 | 2310.00 | 38.61 | -0.35 | 38.26 | 54.00 | -15.74 | Average Detector |
| | 2310.00 | 51.20 | -0.35 | 50.85 | 74.00 | -23.15 | Peak Detector |
| 2 | 2390.00 | 50.83 | -1.29 | 49.54 | 54.00 | -4.46 | Average Detector |
| | 2390.00 | 65.56 | -1.29 | 64.27 | 74.00 | -9.73 | Peak Detector |
| 3 | 2405.01 | 91.55 | -1.45 | 90.10 | / | / | Average Detector |
| | 2405.29 | 103.45 | -1.45 | 102.00 | / | / | Peak Detector |



802.11n-HT40-Highest Bandedge

Vertical (Worst case)



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|------------------|
| 1 | 2443.63 | 89.12 | -1.41 | 87.71 | / | / | Average Detector |
| | 2435.67 | 98.06 | -1.42 | 96.64 | / | / | Peak Detector |
| 2 | 2483.50 | 45.17 | -1.36 | 43.81 | 54.00 | -10.19 | Average Detector |
| | 2483.50 | 50.31 | -1.36 | 48.95 | 74.00 | -25.05 | Peak Detector |
| 3 | 2500.00 | 37.67 | -1.34 | 36.33 | 54.00 | -17.67 | Average Detector |
| | 2500.00 | 44.60 | -1.34 | 43.26 | 74.00 | -30.74 | Peak Detector |



6 OCCUPIED BANDWIDTH MEASUREMENT

6.1 Test Limit

| FCC Part15 (15.247) , Subpart C | | | | |
|---------------------------------|-----------|---|--------------------------|--------|
| Section | Test Item | Limit | Frequency Range (MHz) | Result |
| 15.247(a)(2) | Bandwidth | $\geq 500\text{KHz}$ (6dB bandwidth) | 2400-2483.5 | PASS |

6.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation.
3. Based on FCC Part15 C Section 15.247: RBW= 100KHz. VBW= 300 KHz.
4. The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector.

6.3 Measurement Equipment Used

Same as Radiated Emission Measurement

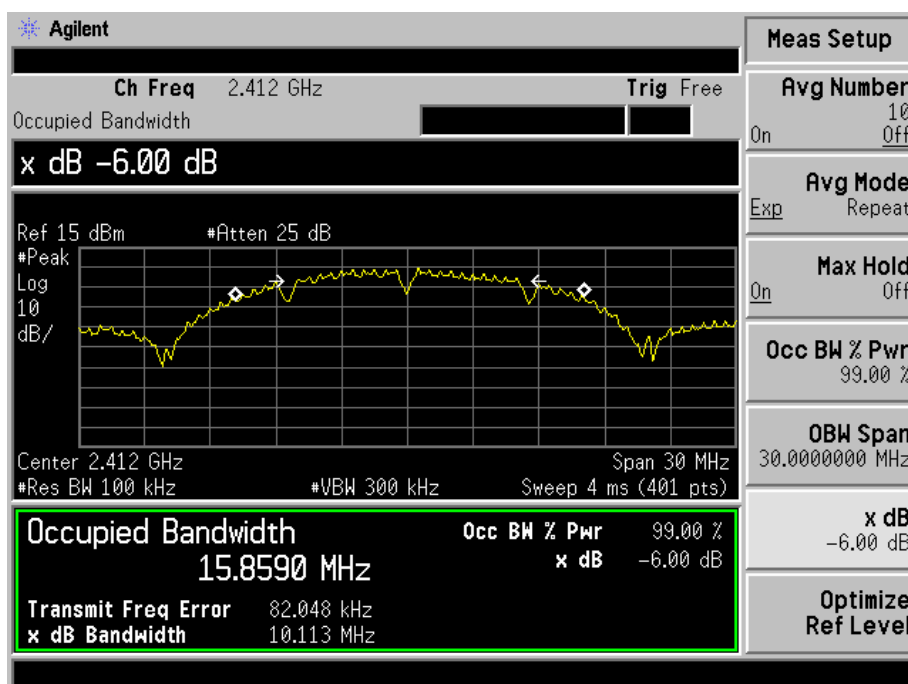
6.4 Test Result

PASS



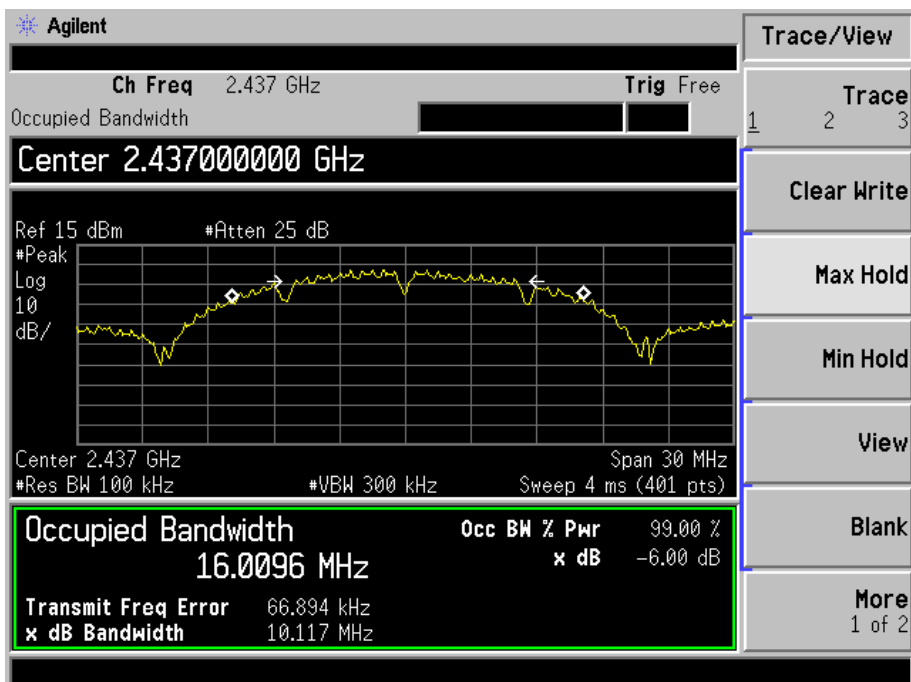
| TX 802.11b Mode | | | |
|-----------------|---------------------|--------------------------|--------|
| Frequency | 6dB Bandwidth (MHz) | Channel Separation (MHz) | Result |
| 2412 MHz | 10.113 | >=500KHz | PASS |
| 2437 MHz | 10.117 | >=500KHz | PASS |
| 2462 MHz | 10.131 | >=500KHz | PASS |

CH: 2412MHz

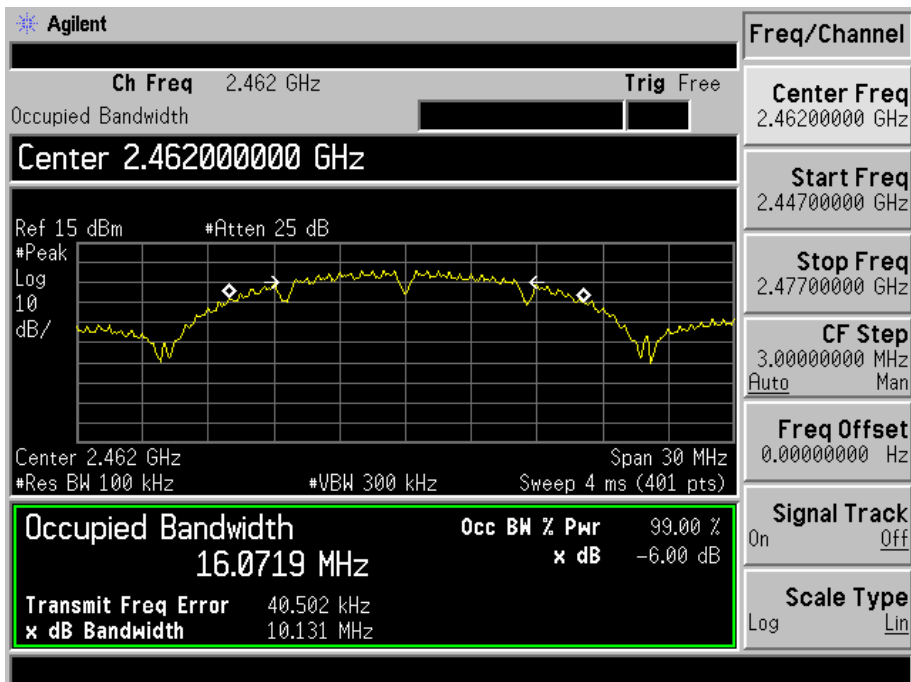




CH: 2437MHz



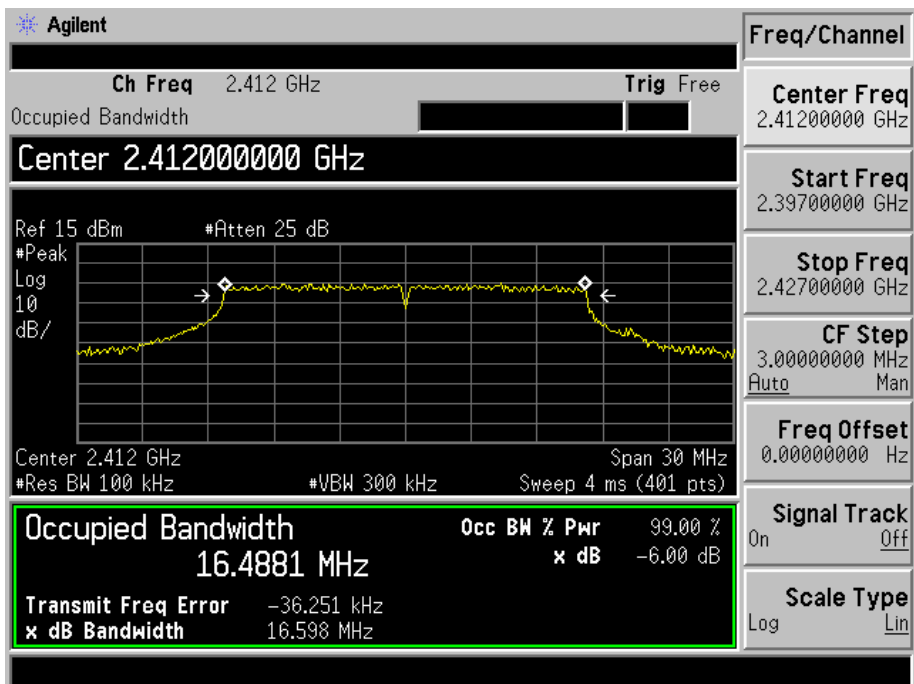
CH: 2462MHz





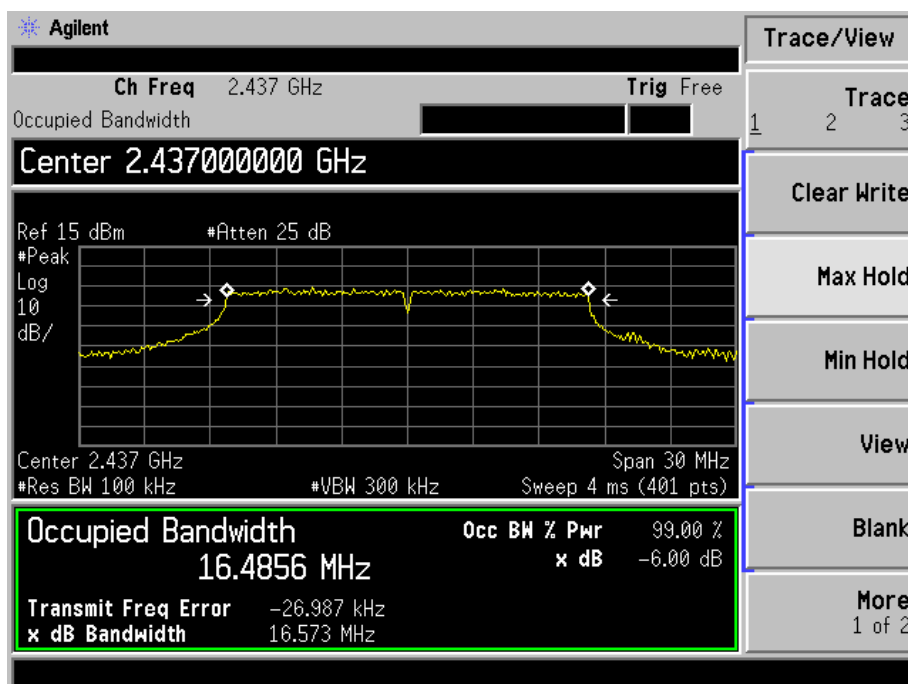
| TX 802.11g Mode | | | |
|-----------------|---------------------|--------------------------|--------|
| Frequency | 6dB Bandwidth (MHz) | Channel Separation (MHz) | Result |
| 2412 MHz | 16.598 | >=500KHz | PASS |
| 2437 MHz | 16.573 | >=500KHz | PASS |
| 2462 MHz | 16.530 | >=500KHz | PASS |

CH: 2412MHz

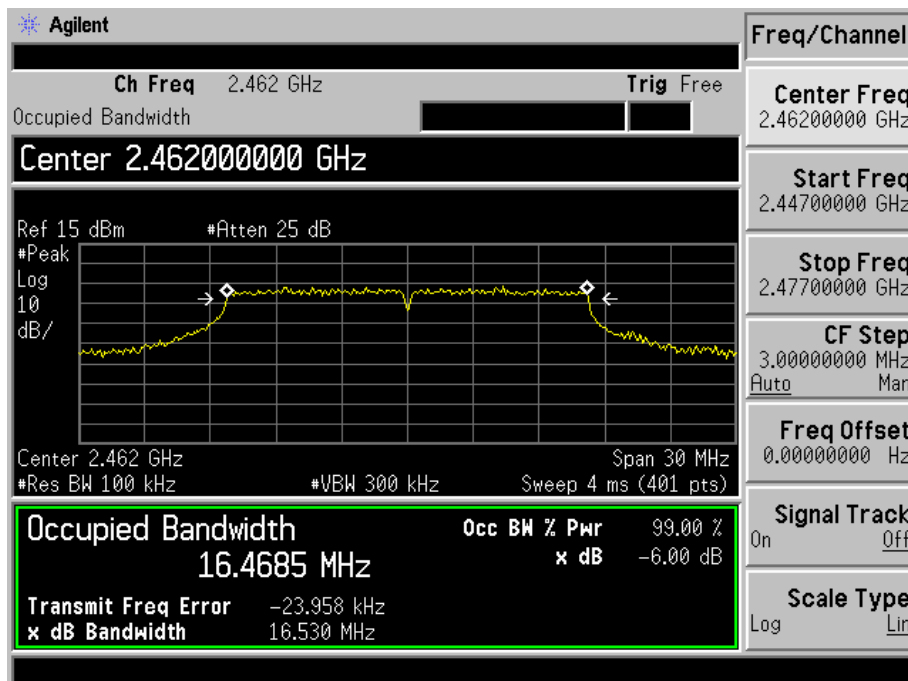




CH: 2437MHz



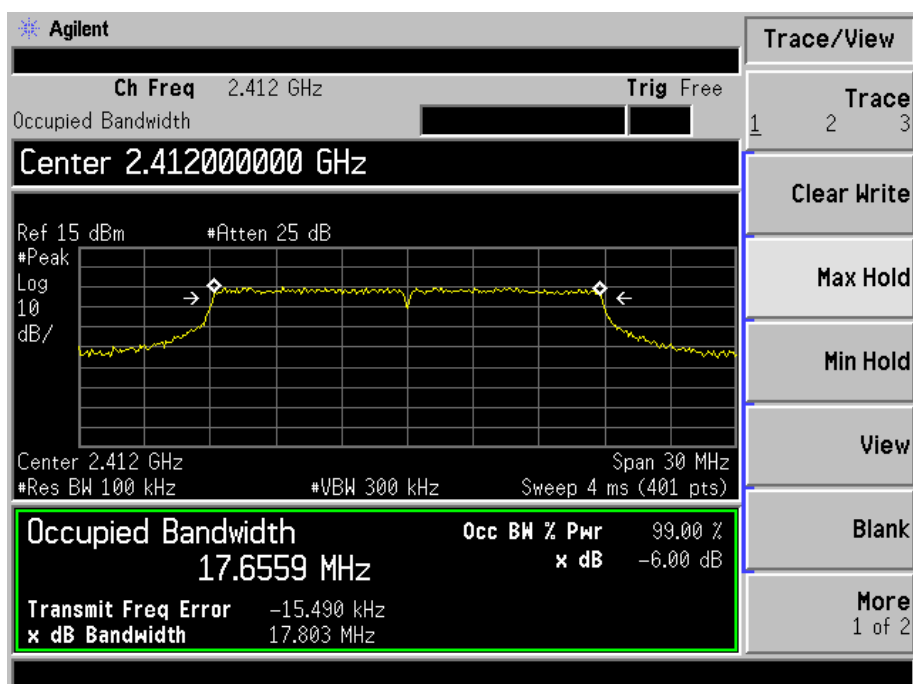
CH: 2462MHz





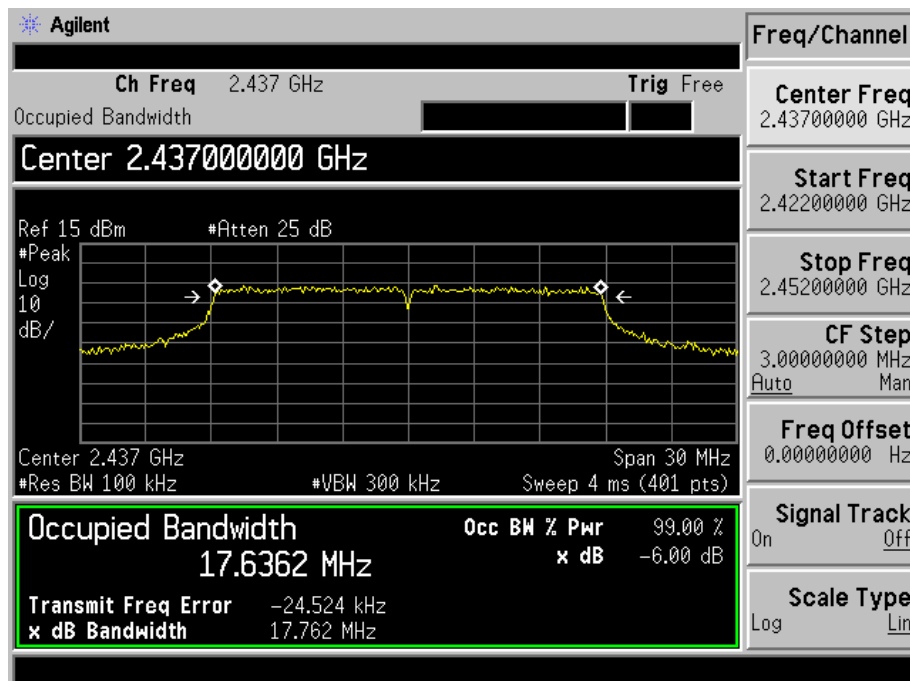
| TX 802.11n/HT20 Mode | | | |
|----------------------|---------------------|--------------------------|--------|
| Frequency | 6dB Bandwidth (MHz) | Channel Separation (MHz) | Result |
| 2412 MHz | 17.803 | >=500KHz | PASS |
| 2437 MHz | 17.762 | >=500KHz | PASS |
| 2462 MHz | 17.797 | >=500KHz | PASS |

CH: 2412MHz

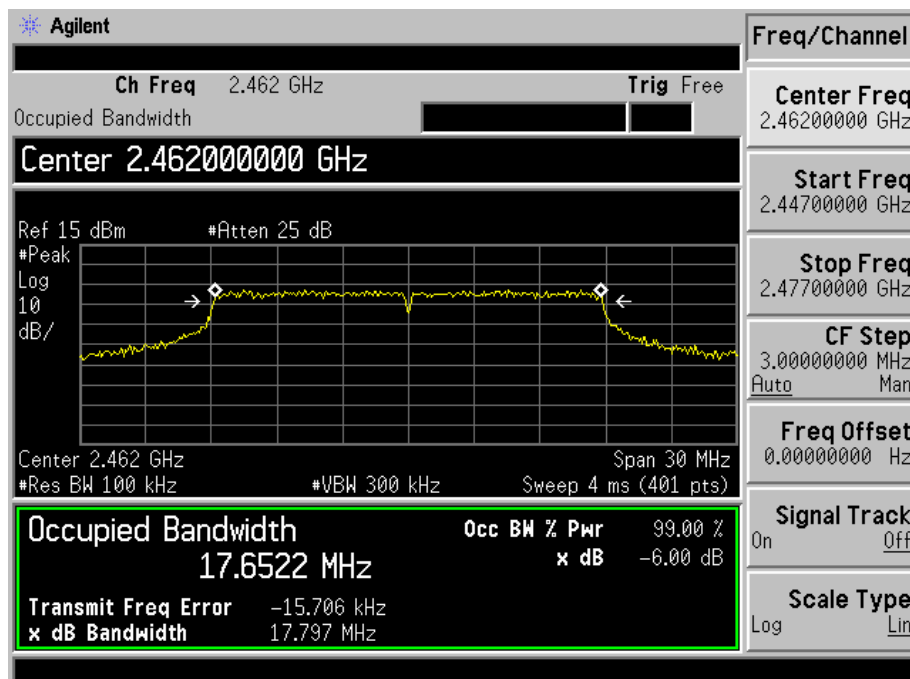




CH: 2437MHz



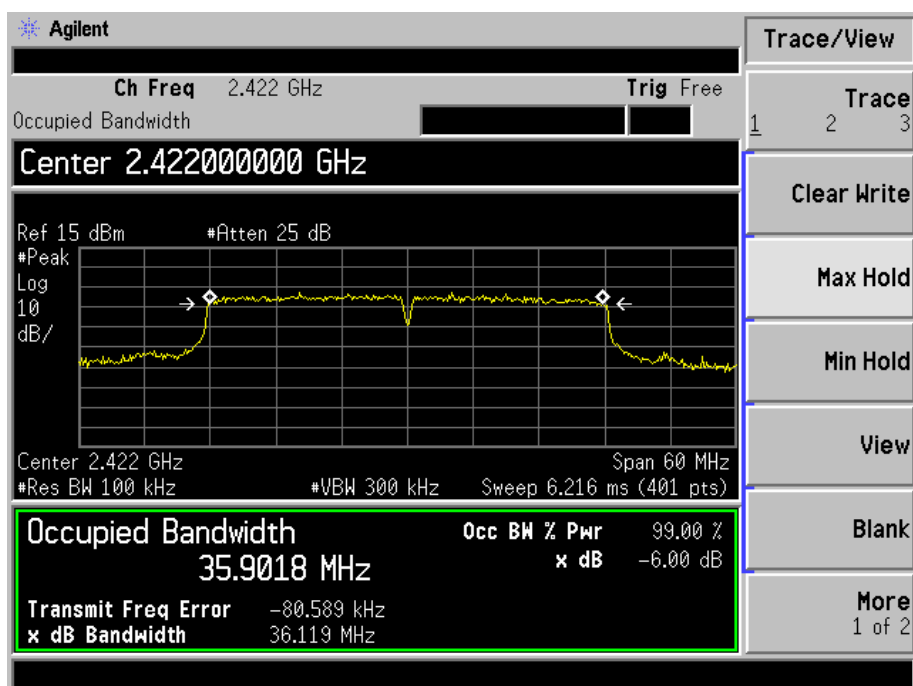
CH: 2462MHz





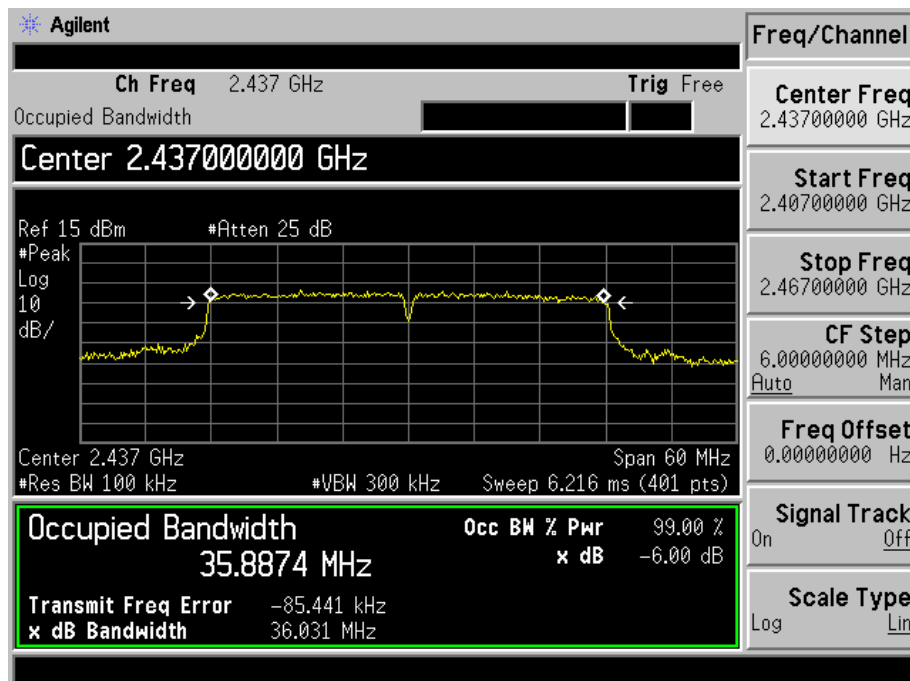
| TX 802.11n/HT40 Mode | | | |
|----------------------|---------------------|--------------------------|--------|
| Frequency | 6dB Bandwidth (MHz) | Channel Separation (MHz) | Result |
| 2422 MHz | 36.119 | >=500KHz | PASS |
| 2437 MHz | 36.031 | >=500KHz | PASS |
| 2452 MHz | 36.367 | >=500KHz | PASS |

CH: 2422MHz

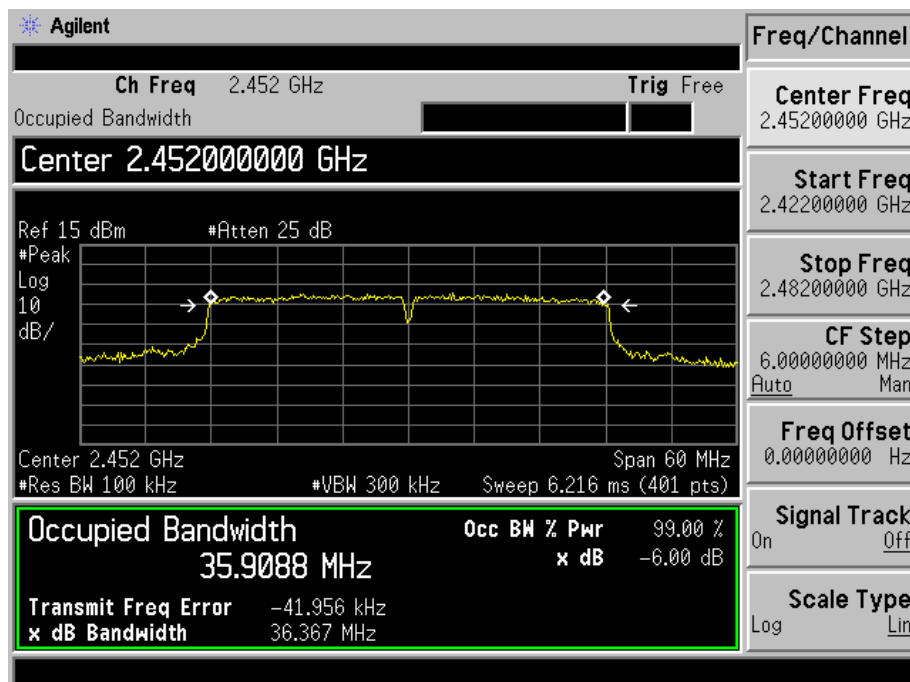




CH: 2437MHz



CH: 2452MHz





7 POWER SPECTRAL DENSITY TEST

7.1 Test Limit

| FCC Part15 (15.247) , Subpart C | | | | |
|---------------------------------|---------------------------|------------------------|--------------------------|--------|
| Section | Test Item | Limit | Frequency Range (MHz) | Result |
| 15.247 | Power Spectral Density | 8 dBm (in any 3KHz) | 2400-2483.5 | PASS |

7.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation.
3. Based on FCC Part15 C Section 15.247: RBW= 3KHz. VBW= 10 KHz, Span=3MHz.
4. The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector.

7.3 Measurement Equipment Used

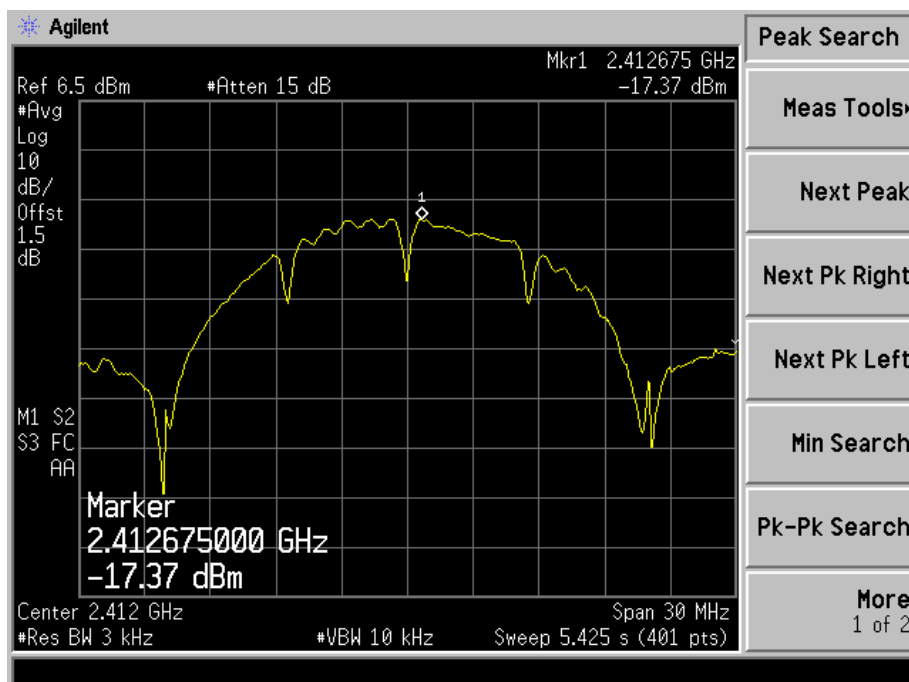
Same as Radiated Emission Measurement

7.4 Test Result

PASS

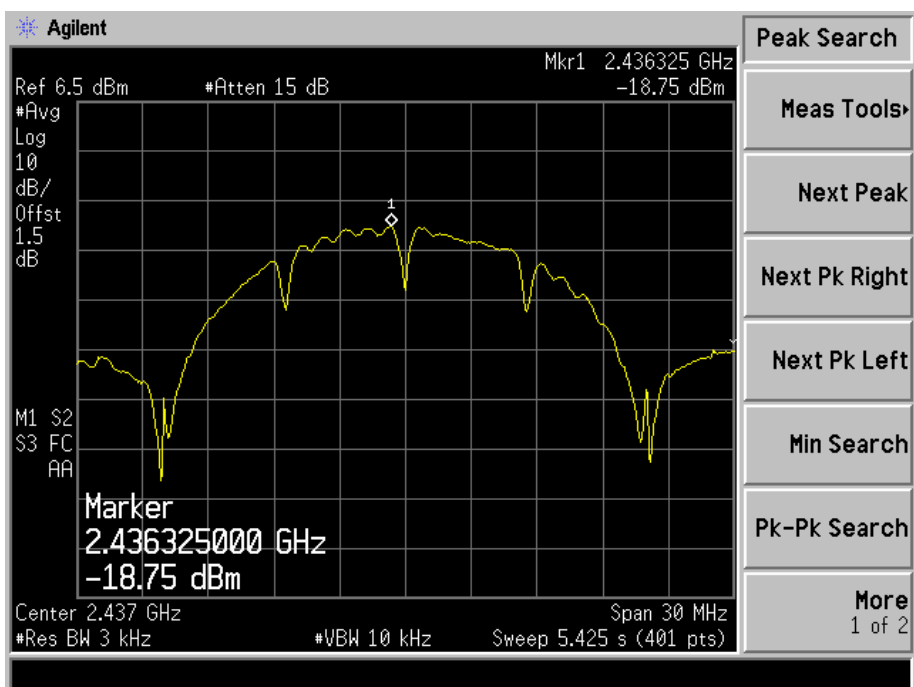
| TX 802.11b Mode | | | |
|-----------------|-----------------------------|----------------|--------|
| Frequency | Power Density (dBm/3KHz) | Limit (dBm) | Result |
| 2412 MHz | -17.37 | 8 | PASS |
| 2437 MHz | -18.75 | 8 | PASS |
| 2462 MHz | -19.54 | 8 | PASS |

CH: 2412MHz

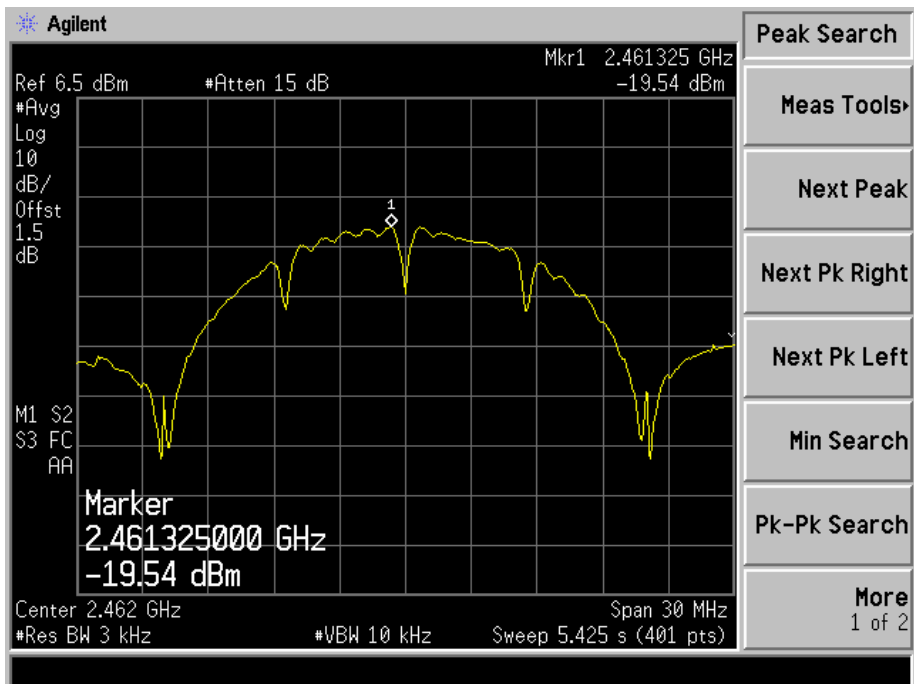




CH: 2437MHz



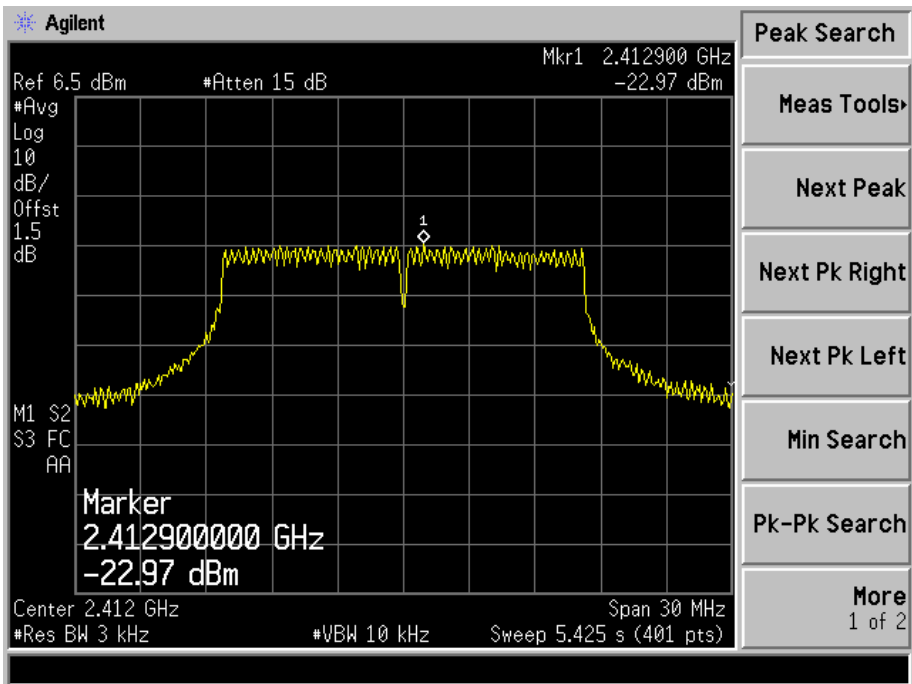
CH: 2462MHz





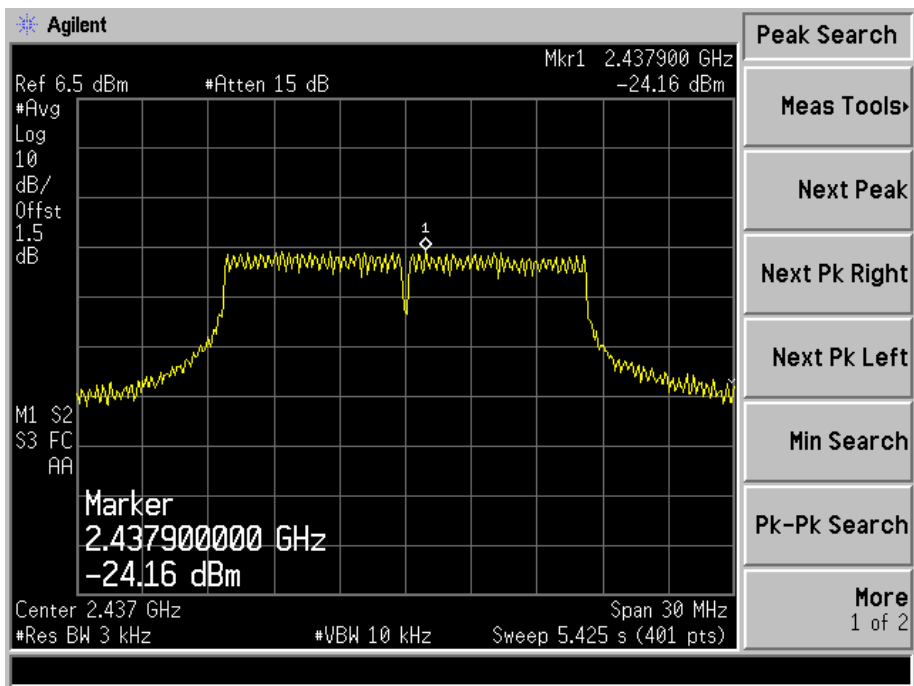
| TX 802.11g Mode | | | |
|-----------------|-----------------------------|----------------|--------|
| Frequency | Power Density (dBm/3KHz) | Limit (dBm) | Result |
| 2412 MHz | -22.97 | 8 | PASS |
| 2437 MHz | -24.16 | 8 | PASS |
| 2462 MHz | -24.45 | 8 | PASS |

CH: 2412MHz

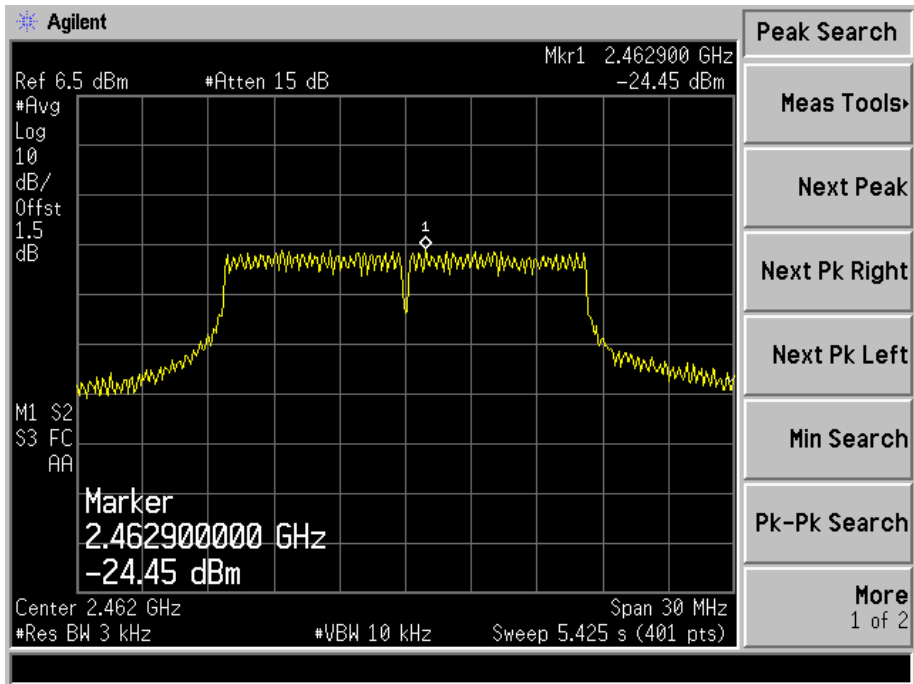




CH: 2437MHz



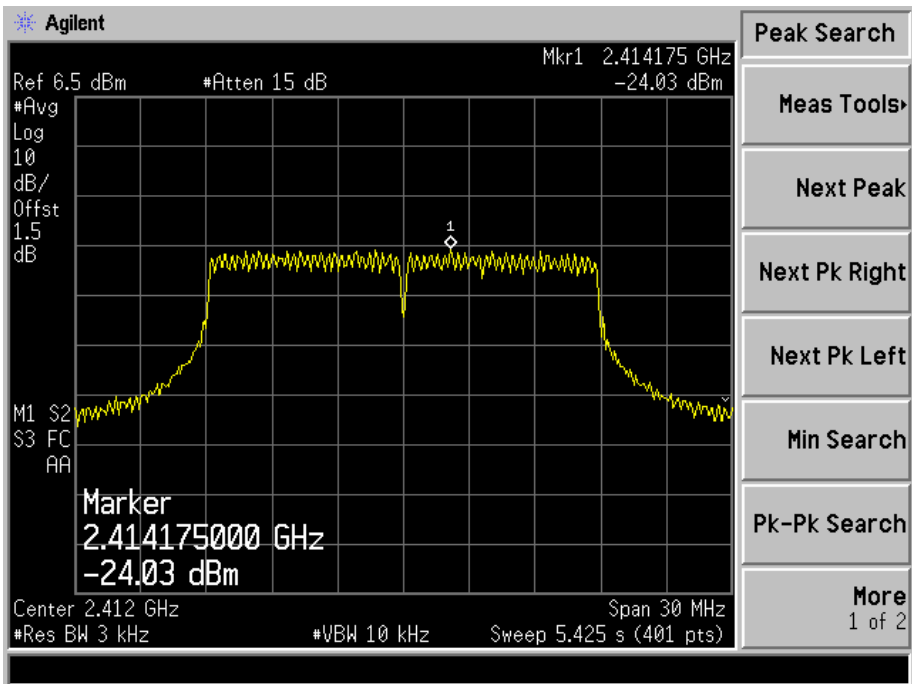
CH: 2462MHz





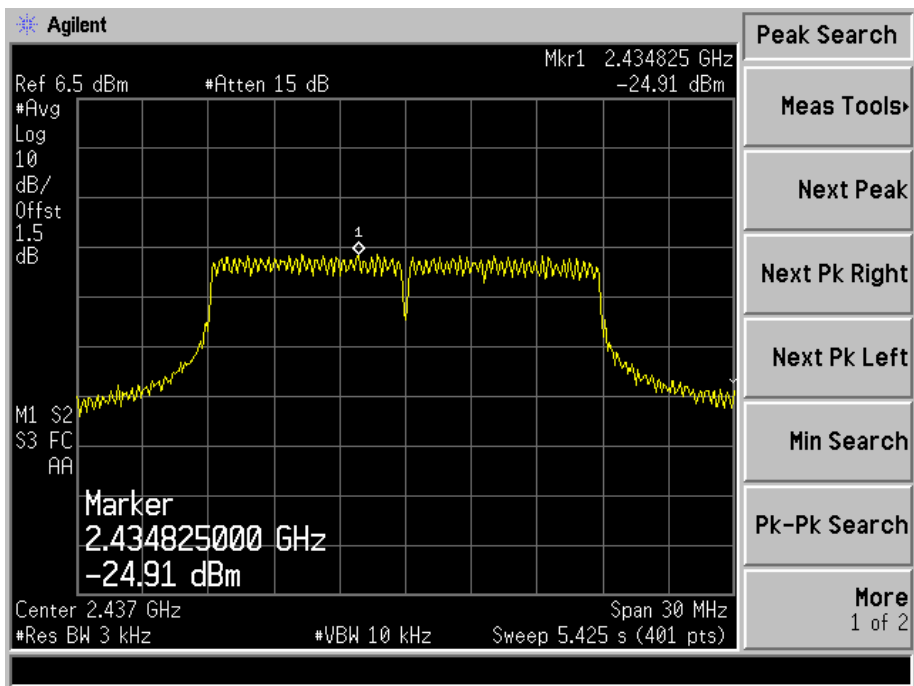
| TX 802.11n/HT20 Mode | | | |
|----------------------|-----------------------------|----------------|--------|
| Frequency | Power Density (dBm/3KHz) | Limit (dBm) | Result |
| 2412 MHz | -24.03 | 8 | PASS |
| 2437 MHz | -24.91 | 8 | PASS |
| 2462 MHz | -24.95 | 8 | PASS |

CH: 2412MHz

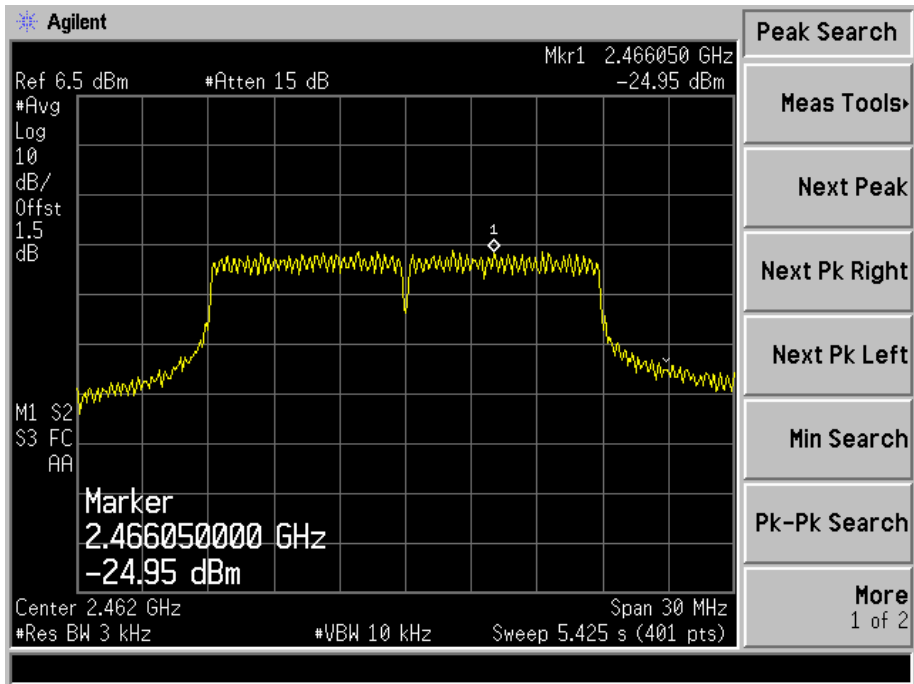




CH: 2437MHz



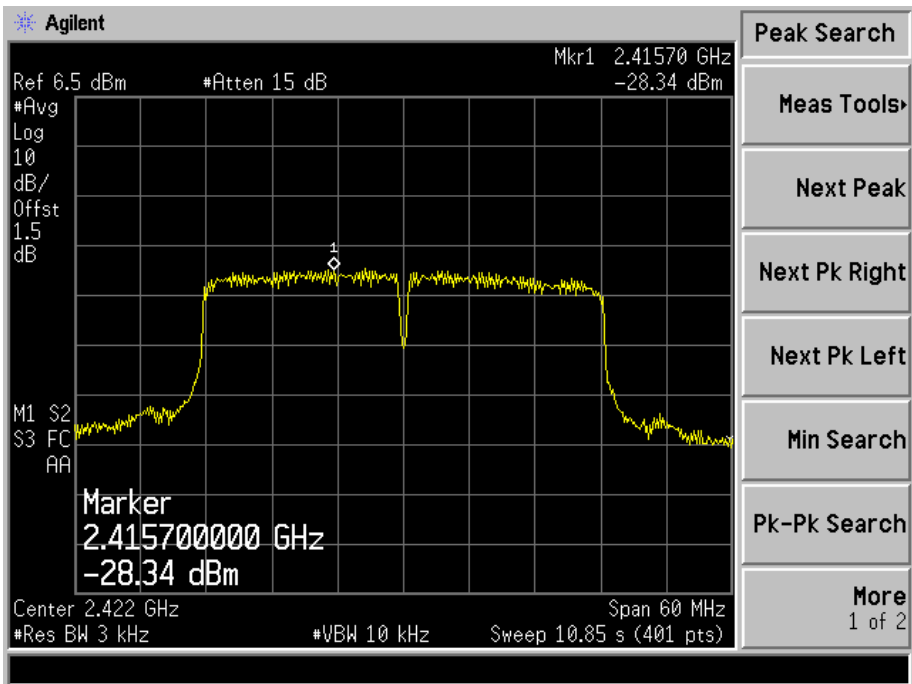
CH: 2462MHz





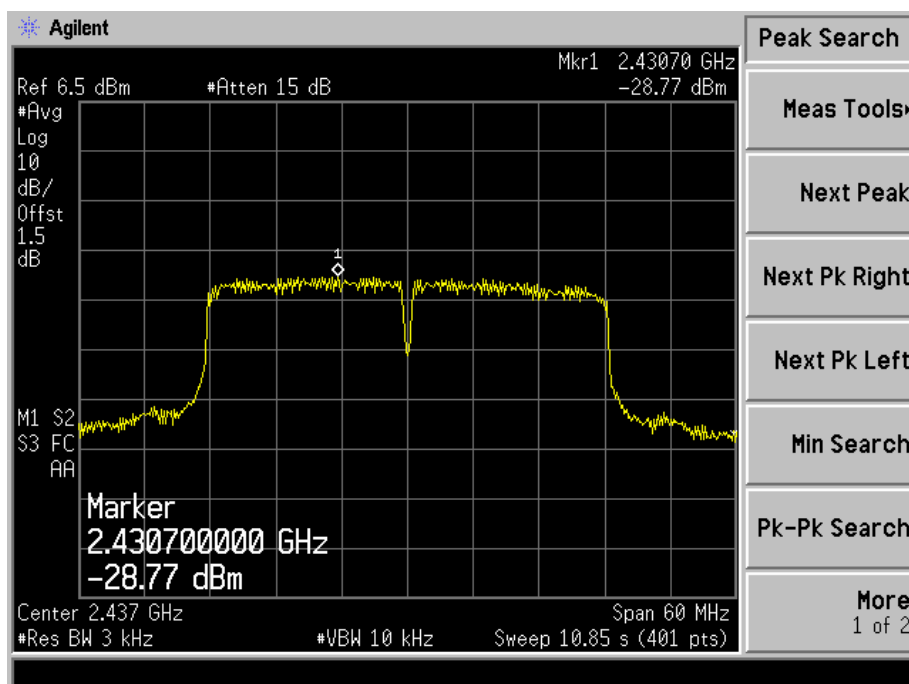
| TX 802.11n/HT40 Mode | | | |
|----------------------|-----------------------------|----------------|--------|
| Frequency | Power Density (dBm/3KHz) | Limit (dBm) | Result |
| 2422 MHz | -28.34 | 8 | PASS |
| 2437 MHz | -28.77 | 8 | PASS |
| 2452 MHz | -29.18 | 8 | PASS |

CH: 2422MHz

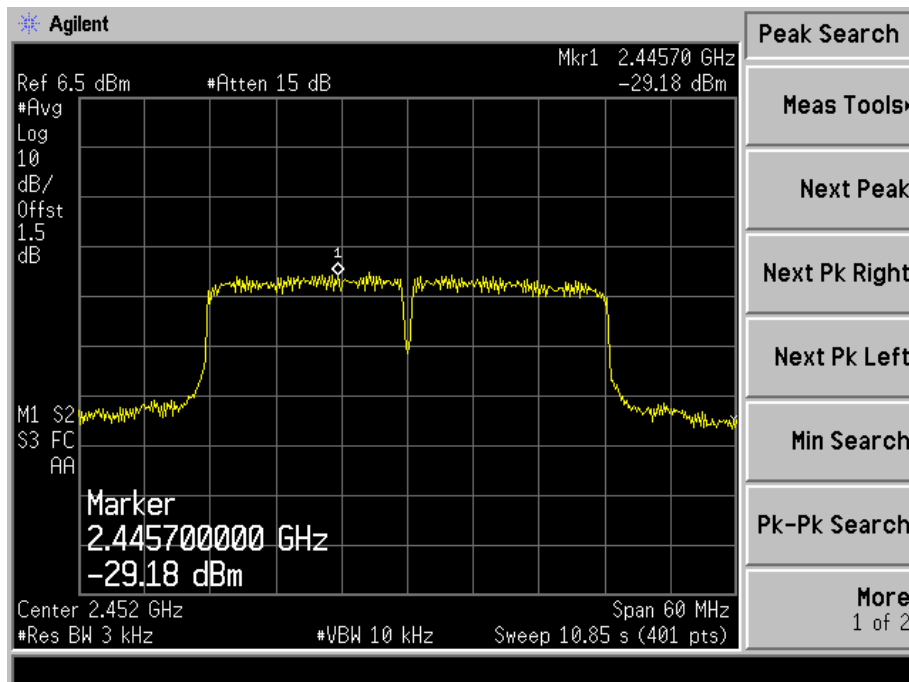




CH: 2437MHz



CH: 2452MHz





8 PEAK OUTPUT POWER TEST

8.1 Test Limit

| FCC Part15 (15.247) , Subpart C | | | | |
|---------------------------------|-------------------|-----------------|-----------------------|--------|
| Section | Test Item | Limit | Frequency Range (MHz) | Result |
| 15.247(b)(3) | Peak Output Power | 1 watt or 30dBm | 2400-2483.5 | PASS |

8.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The EUT was directly connected to the Power meter.

8.3 Measurement Equipment Used

Same as Radiated Emission Measurement

8.4 Test Result

PASS

All the test modes completed for test.

| TX 802.11b Mode | | | |
|-------------------|-----------|-------------------------------------|-------|
| Test | Frequency | Maximum Peak Conducted Output Power | LIMIT |
| Channe | (MHz) | (dBm) | dBm |
| CH01 | 2412 | 14.43 | 30 |
| CH06 | 2437 | 14.26 | 30 |
| CH11 | 2462 | 14.18 | 30 |
| TX 802.11g Mode | | | |
| CH01 | 2412 | 13.57 | 30 |
| CH06 | 2437 | 13.41 | 30 |
| CH11 | 2462 | 13.24 | 30 |
| TX 802.11n20 Mode | | | |
| CH01 | 2412 | 13.28 | 30 |
| CH06 | 2437 | 13.35 | 30 |
| CH11 | 2462 | 13.16 | 30 |
| TX 802.11n40 Mode | | | |
| CH03 | 2422 | 11.22 | 30 |
| CH06 | 2437 | 11.29 | 30 |
| CH09 | 2452 | 11.13 | 30 |



9 OUT OF BAND EMISSIONS TEST

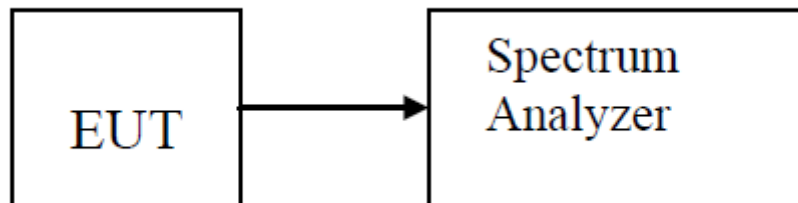
9.1 Test Limit

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.

9.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as TX operation and connect directly to the spectrum analyzer.
3. Set spectrum analyzer RBW= 100KHz. VBW= 300 KHz
4. Set detected by the spectrum analyser with peak detector.

9.3 Test Setup



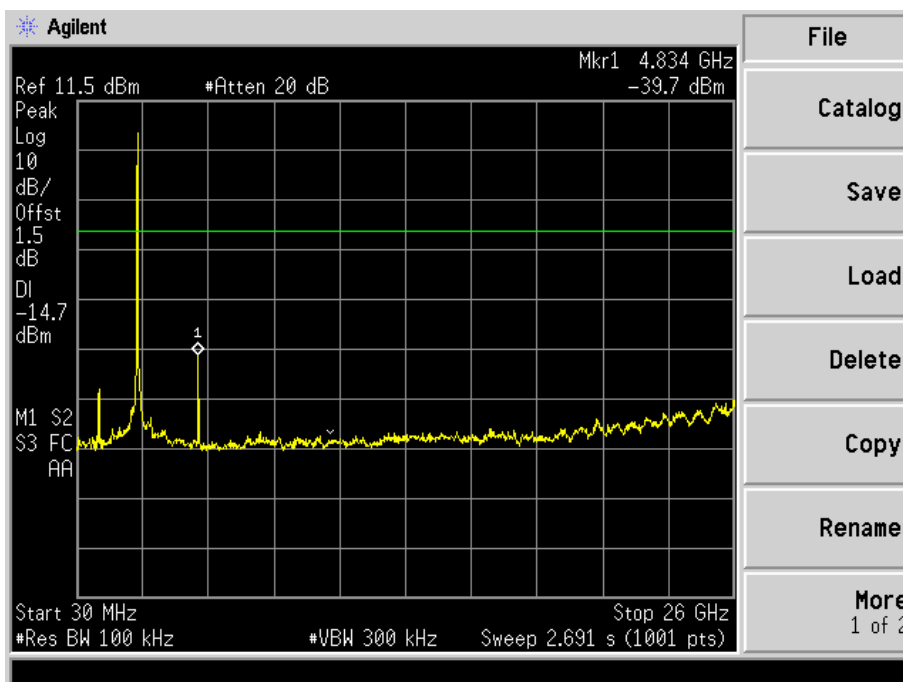
9.4 Test Result

PASS

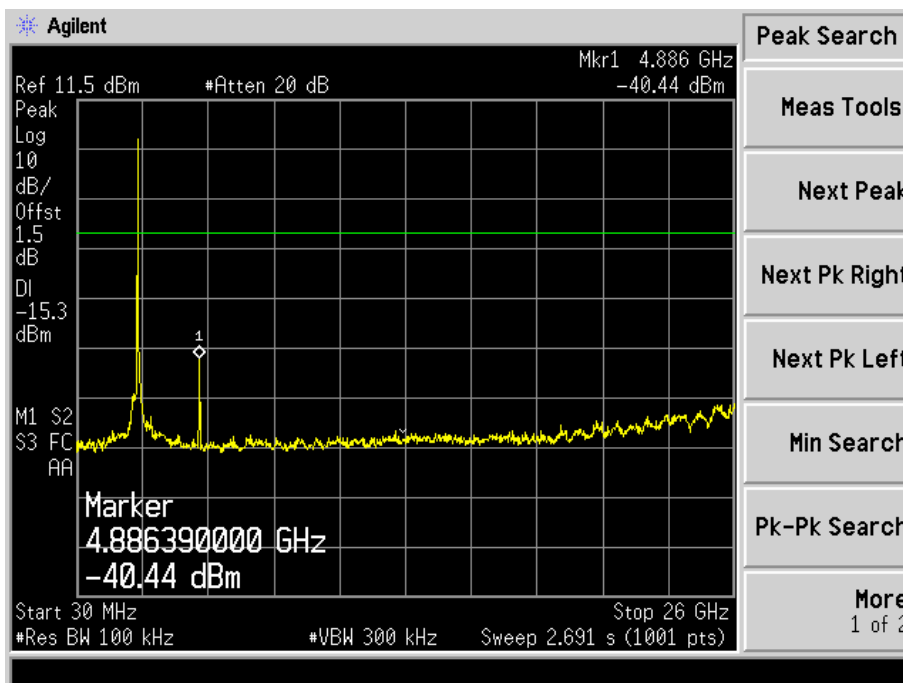


TX 802.11b Mode

Lowest

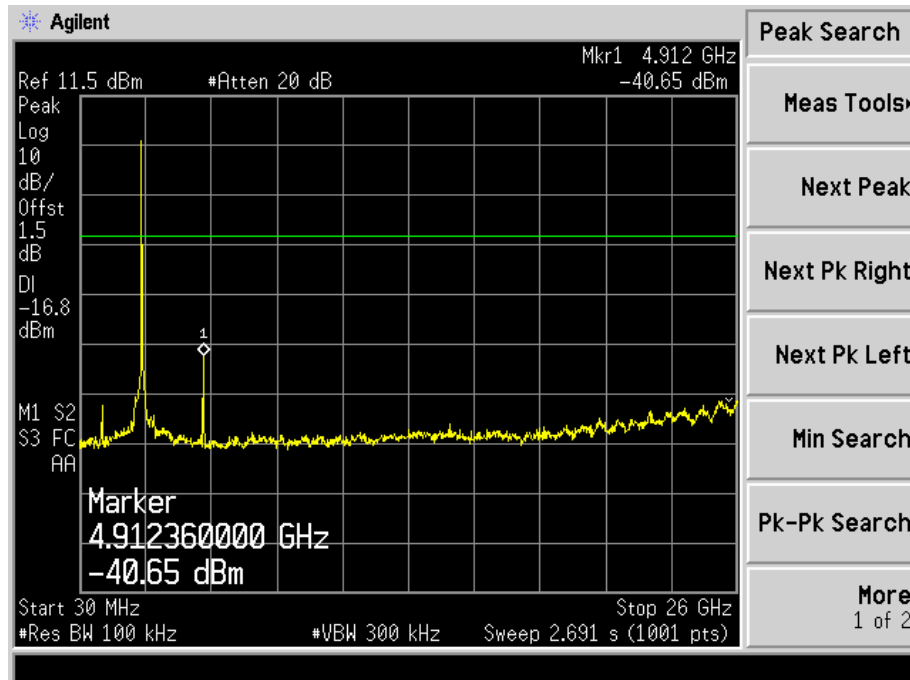


Middle



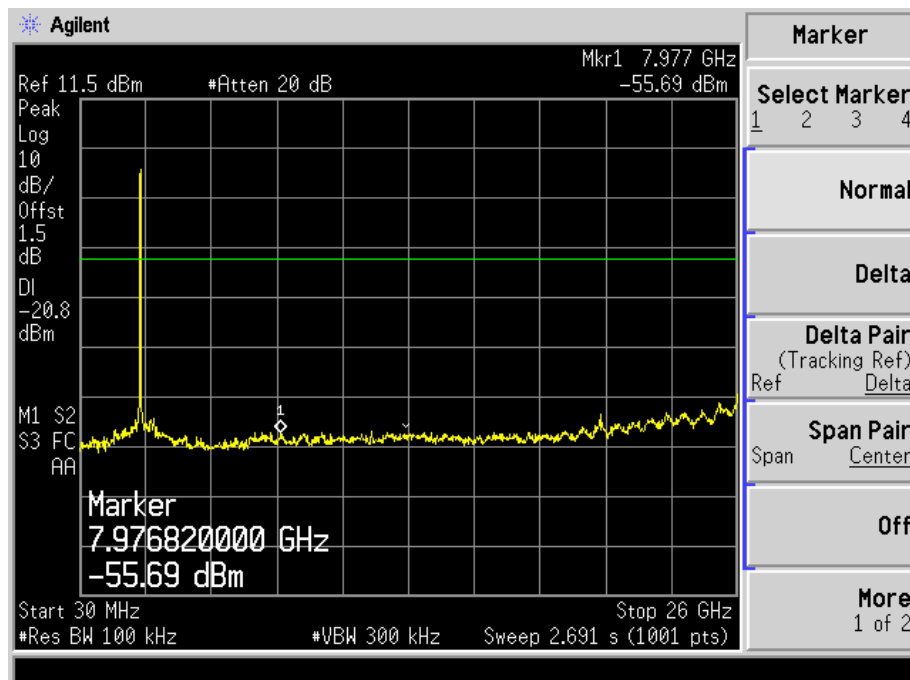


Highest



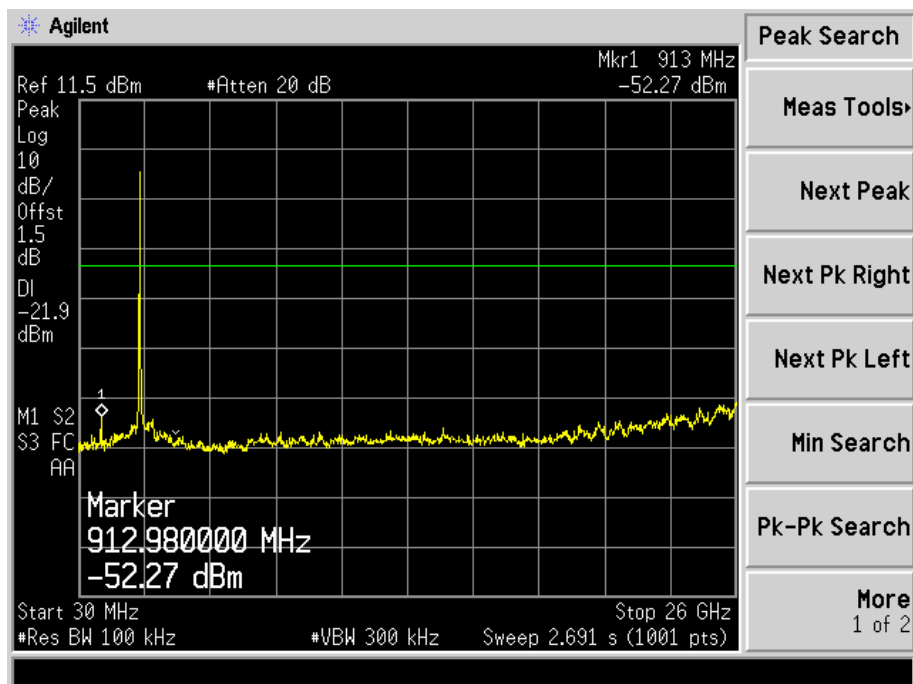
TX 802.11g Mode

Lowest

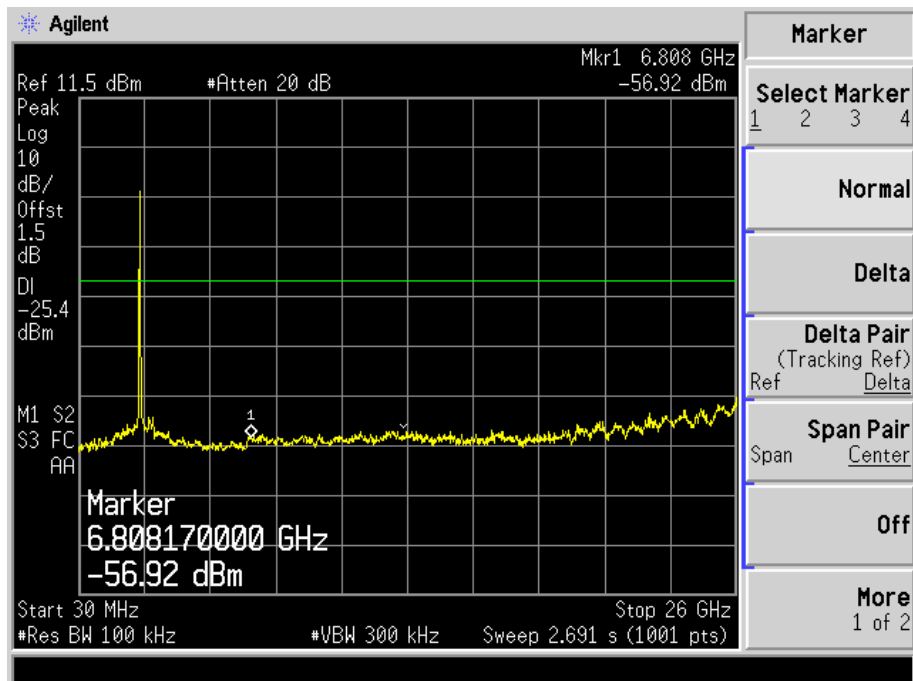




Middle



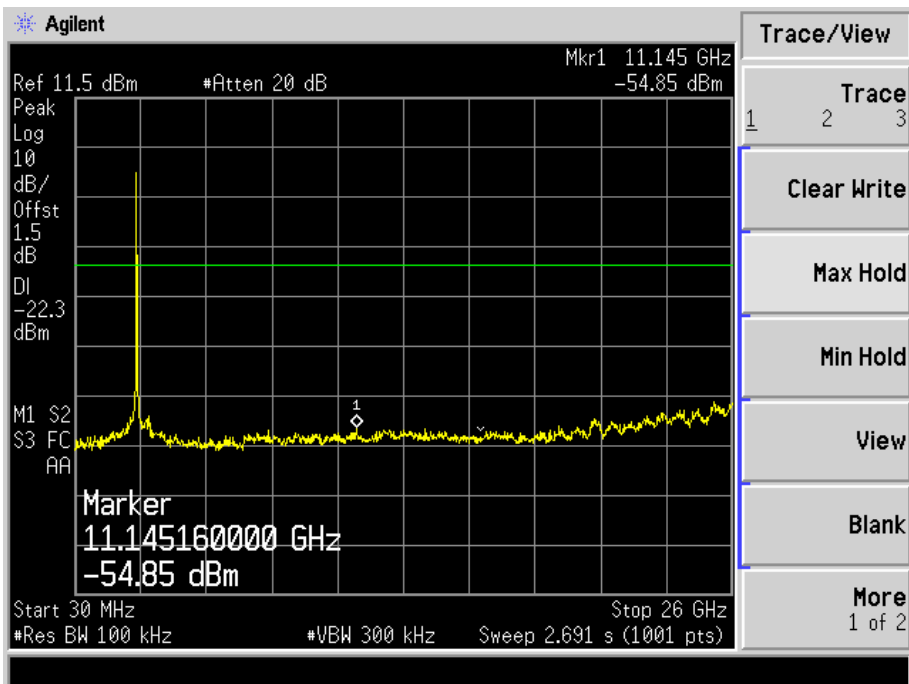
Highest



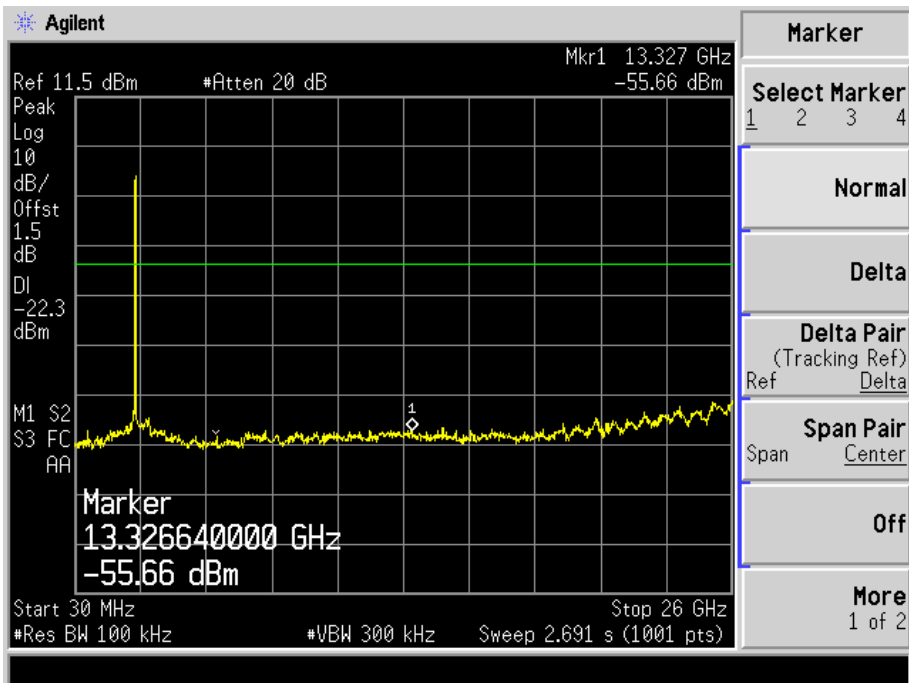


TX 802.11n/HT20 Mode

Lowest

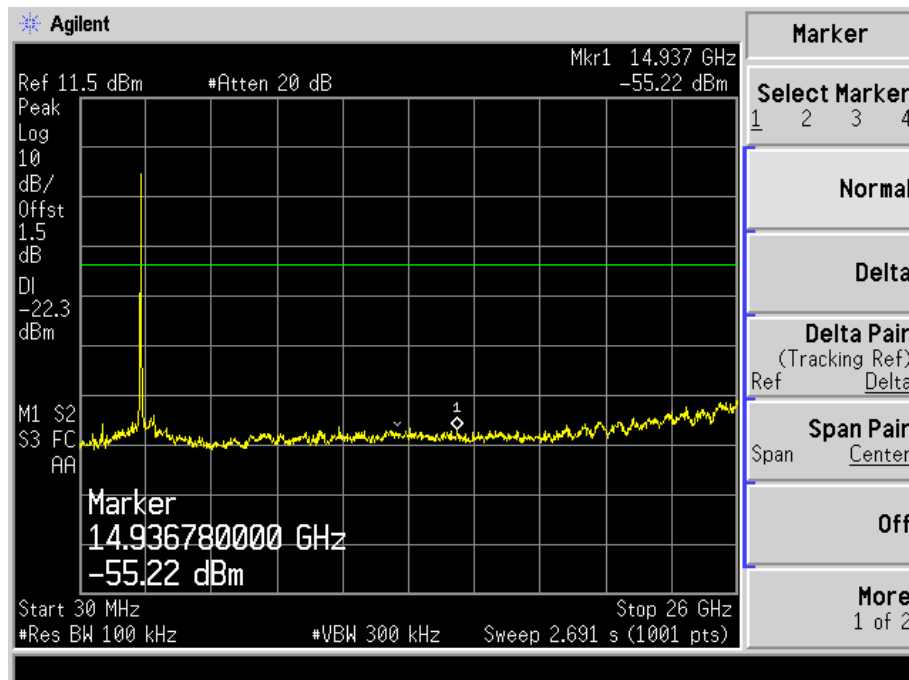


Middle



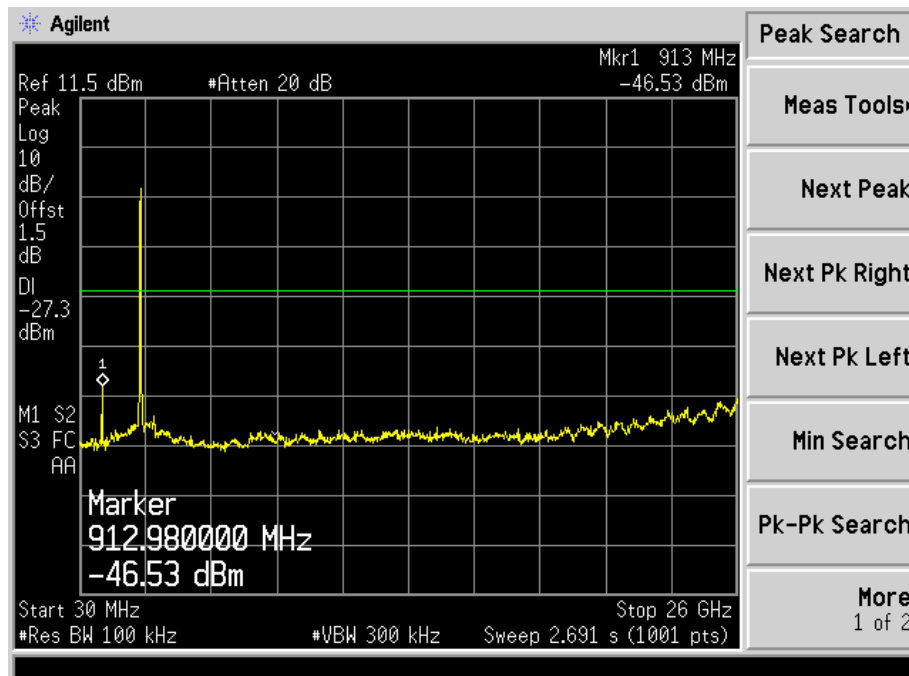


Highest



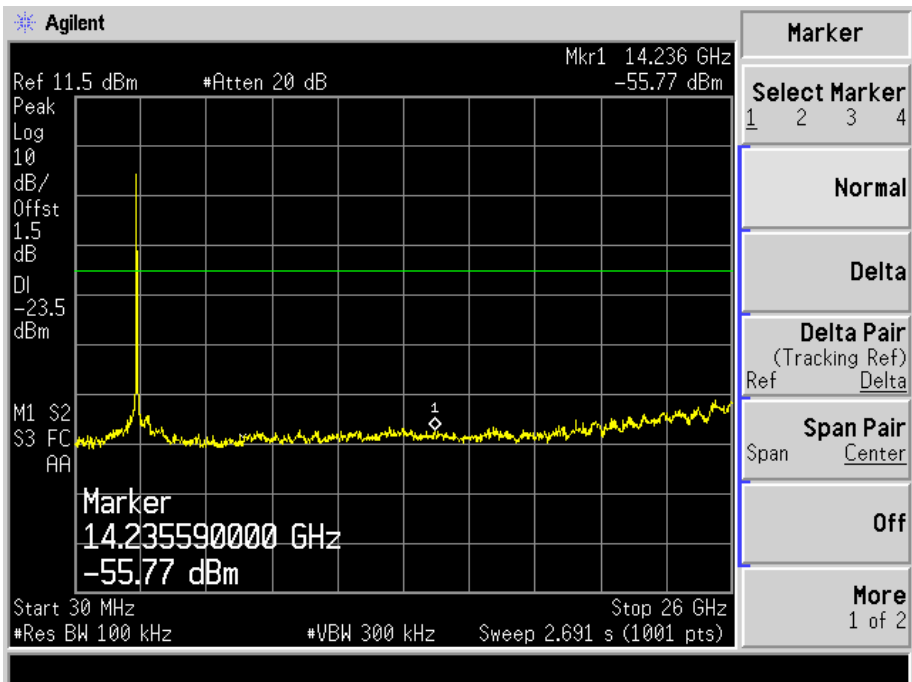
TX 802.11n/HT40 Mode

Lowest

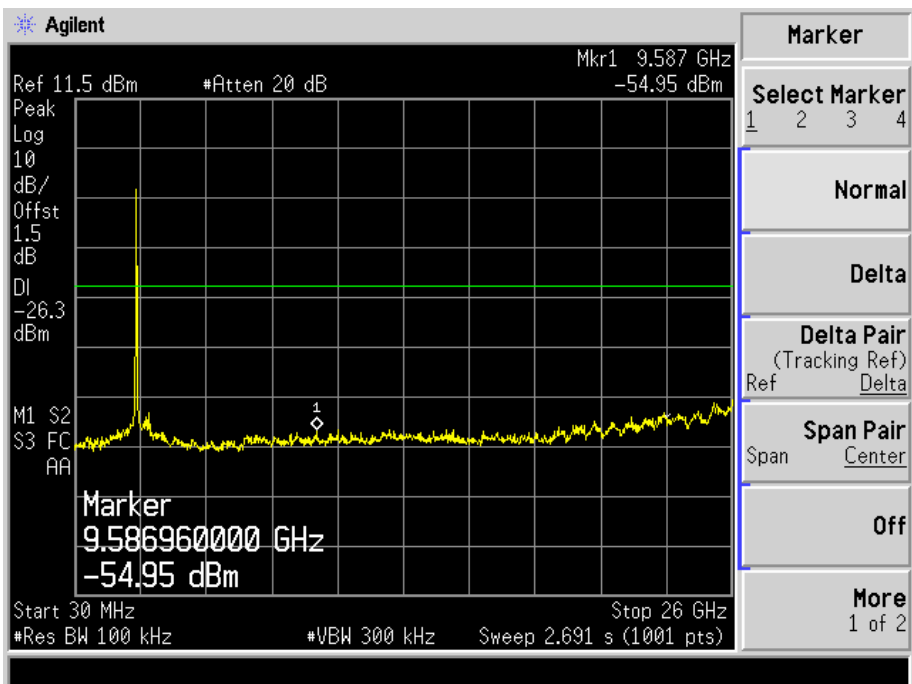




Middle



Highest





10 ANTENNA REQUIREMENT

Standard Applicable

For intentional device, according to FCC 47 CFR 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. And according to FCC 47 CFR Section 15.249, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

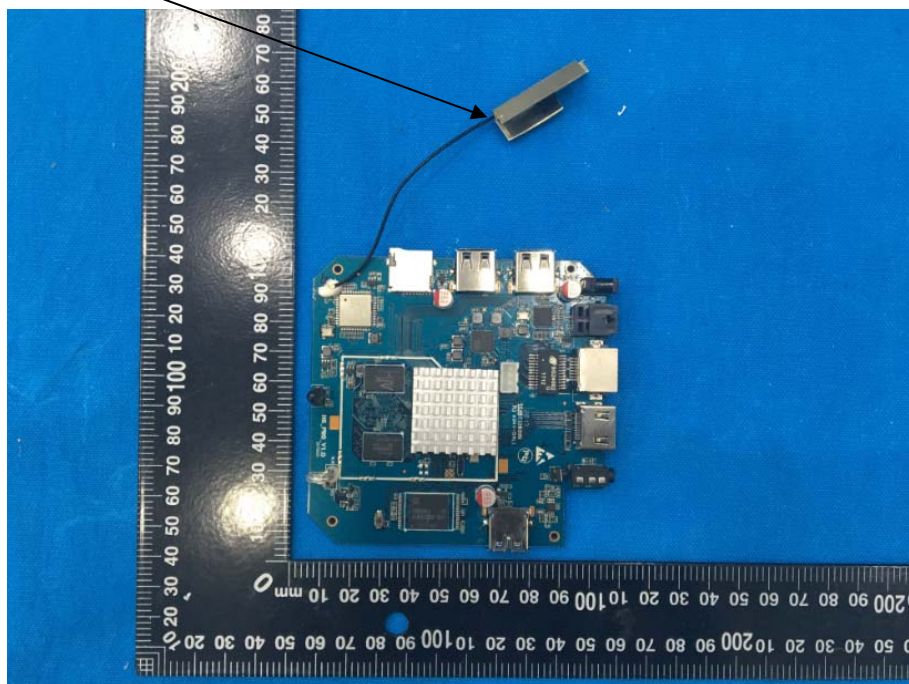
Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

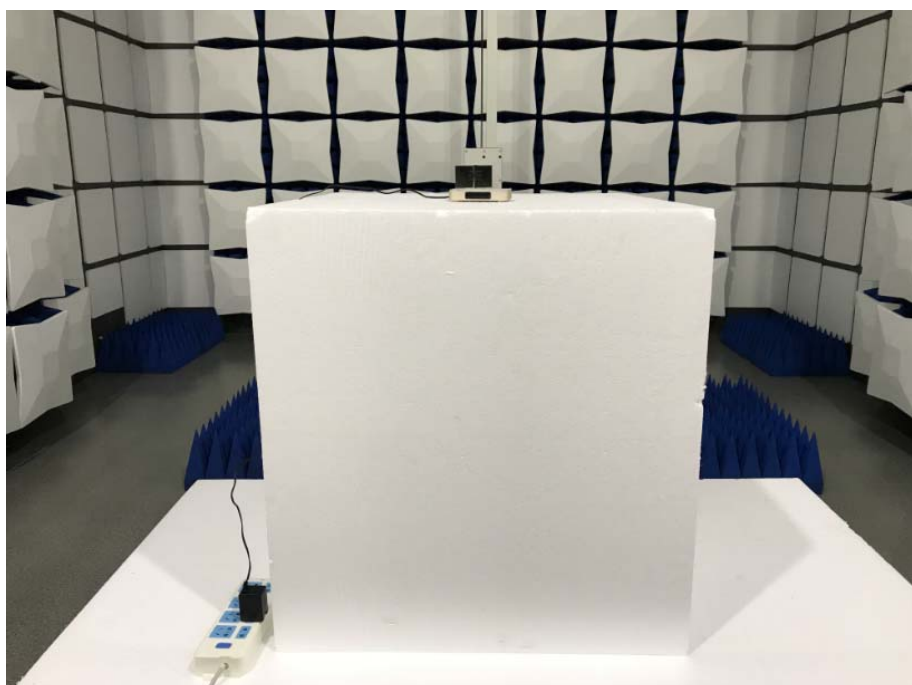
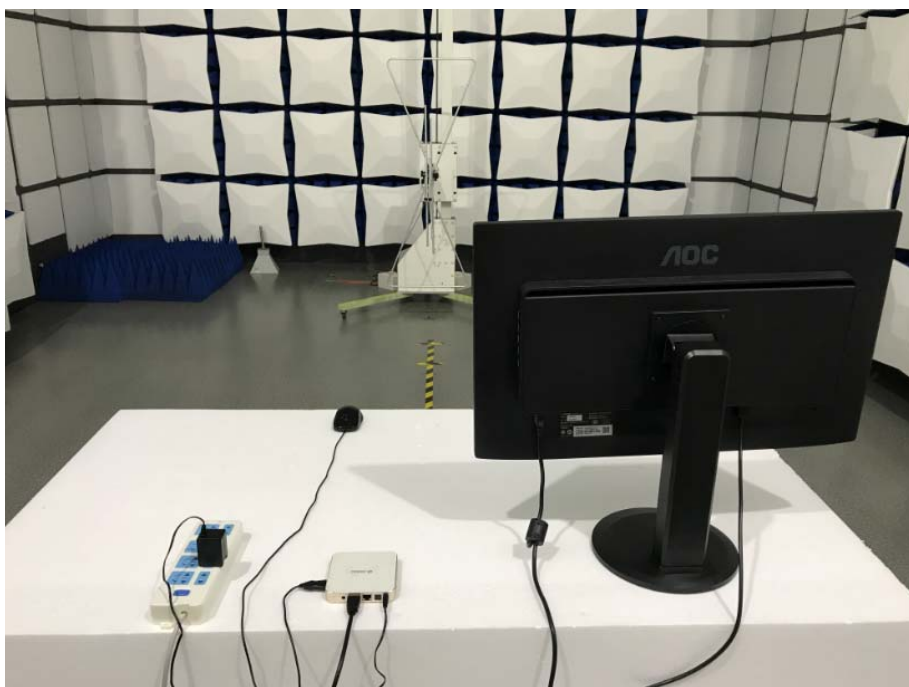
The antenna used in this product is a Integral Antenna, The directional gains of antenna used for transmitting is 2dBi.

Antenna



11 PHOTOGRAPH OF TEST

11.1 Radiated Emission



11.2 Conducted Emission

