1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power…”.

2) Use the peak search function on the instrument to find the peak of the spectrum.

3) The result is the PPSD.
4) The above procedures make use of 500kHz resolution bandwidth to satisfy the 500kHz measurement bandwidth specified in the 15.407(a)(5). That rule section also permits use of resolution bandwidths less than 1 MHz “provided that the measured power is integrated to show the total power over the measurement bandwidth” (i.e., 1 MHz). If measurements are performed using a reduced resolution bandwidth and integrated over 500kHz bandwidth
Note: As a practical matter, it is recommended to use reduced RBW of 500 kHz for the sections 5.c) and 5.d) above, since RBW=500 kHz is available on nearly all spectrum analyzers.

8.3.5 Test Results

☒ 802.11a mode

Temperature : 28℃ Test By: King Kong
Humidity : 65 %

| Band | Channel Number | Channel Freq. (MHz) | Power Spectral Density | Limit | Verdict |
|---|---|---|---|---|---|
| | | | Ant0 | | |
| UNII Band I | CH36 | 5180 | -0.96 | ≤11dBm/1MHz | Pass |
| | CH40 | 5200 | -0.04 | ≤11dBm/1MHz | Pass |
| | CH48 | 5240 | -0.23 | ≤11dBm/1MHz | Pass |
| UNII Band III | CH149 | 5745 | -1.15 | ≤11dBm/500KHz | Pass |
| | CH157 | 5785 | -1.94 | ≤30dBm/500KHz | Pass |
| | CH165 | 5825 | -3.05 | ≤30dBm/500KHz | Pass |

☒ 802.11n(VHT20) mode

Temperature : 28℃ Test By: King Kong
Humidity : 65 %

| Band | Channel Number | Channel Freq. (MHz) | Power Spectral Density | Limit | Verdict |
|---|---|---|---|---|---|
| | | | Ant0 | | |
| UNII Band I | CH36 | 5180 | -1.00 | ≤11dBm/1MHz | Pass |
| | CH40 | 5200 | -0.86 | ≤11dBm/1MHz | Pass |
| | CH48 | 5240 | -0.11 | ≤11dBm/1MHz | Pass |
| UNII Band III | CH149 | 5745 | -2.17 | ≤30dBm/500KHz | Pass |
| | CH157 | 5785 | -2.80 | ≤30dBm/500KHz | Pass |
| | CH165 | 5825 | -3.53 | ≤30dBm/500KHz | Pass |

☒ 802.11ac(VHT20) mode

Temperature : 28℃ Test By: King Kong
Humidity : 65 %

| Band | Channel Number | Channel Freq. (MHz) | Power Spectral Density | Limit | Verdict |
|---|---|---|---|---|---|
| | | | Ant0 | | |
| UNII Band I | CH36 | 5180 | -1.61 | ≤11dBm/1MHz | Pass |
| | CH40 | 5200 | -0.33 | ≤11dBm/1MHz | Pass |
| | CH48 | 5240 | -0.42 | ≤11dBm/1MHz | Pass |
| UNII Band III | CH149 | 5745 | -2.22 | ≤30dBm/500KHz | Pass |
| | CH157 | 5785 | -2.58 | ≤30dBm/500KHz | Pass |
| | CH165 | 5825 | -3.59 | ≤30dBm/500KHz | Pass |

☒ 802.11n(VHT40) mode

Temperature : 28℃ Test By: King Kong
Humidity : 65 %

| Band | Channel Number | Channel Freq. (MHz) | Power Spectral Density | Limit | Verdict |
|---|---|---|---|---|---|
| | | | Ant0 | | |
| UNII Band I | CH38 | 5190 | -4.57 | ≤11dBm/1MHz | Pass |
| | CH46 | 5230 | -3.49 | ≤11dBm/1MHz | Pass |
| UNII Band III | CH151 | 5755 | -6.40 | ≤30dBm/500KHz | Pass |
| | CH159 | 5795 | -6.49 | ≤30dBm/500KHz | Pass |

☒ 802.11ac(VHT40) mode

Temperature : 28℃ Test Date : March 27, 2018
Humidity : 65 % Test By: King Kong

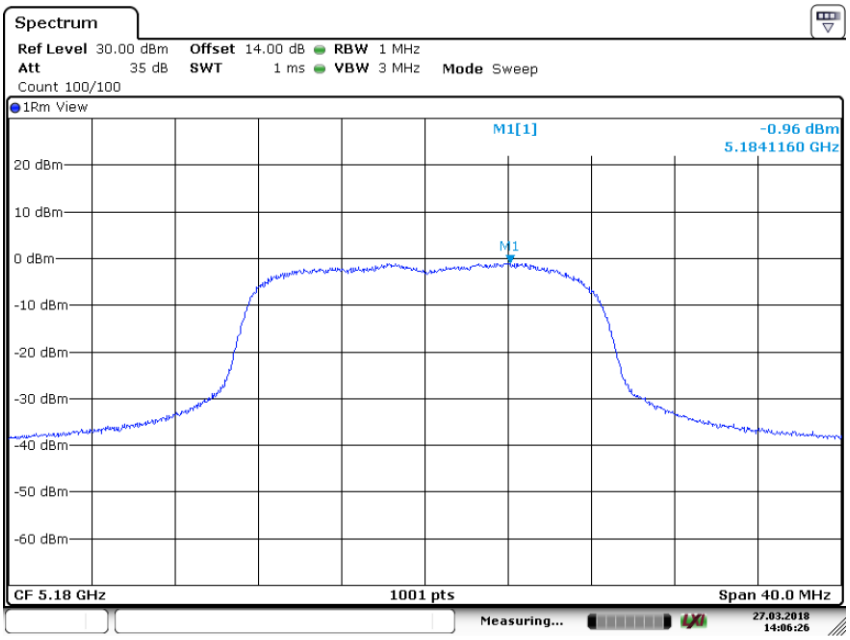
| Band | Channel Number | Channel Freq. (MHz) | Power Spectral Density | Limit | Verdict |
|---|---|---|---|---|---|
| | | | Ant0 | | |
| UNII Band I | CH38 | 5190 | -3.49 | ≤11dBm/1MHz | Pass |
| | CH46 | 5230 | -6.40 | ≤11dBm/1MHz | Pass |
| UNII Band III | CH151 | 5755 | -6.49 | ≤30dBm/500KHz | Pass |
| | CH159 | 5795 | -4.57 | ≤30dBm/500KHz | Pass |

☒ 802.11ac(VHT80) mode

Temperature : 28℃ Test Date : March 27, 2018
Humidity : 65 % Test By: King Kong

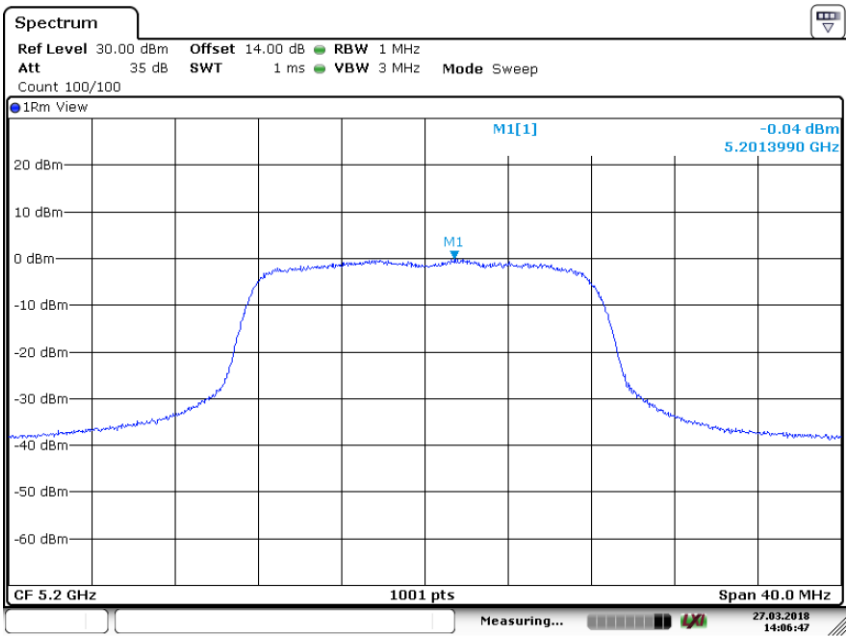
| Band | Channel Number | Channel Freq. (MHz) | Power Spectral Density | Limit | Verdict |
|---|---|---|---|---|---|
| | | | Ant0 | | |
| UNII Band I | CH42 | 5210 | -9.62 | ≤11dBm/1MHz | Pass |
| UNII Band III | CH155 | 5775 | -11.68 | ≤30dBm/500KHz | Pass |

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11a | Frequency(MHz) | 5180 |
| Ant0 | | | |



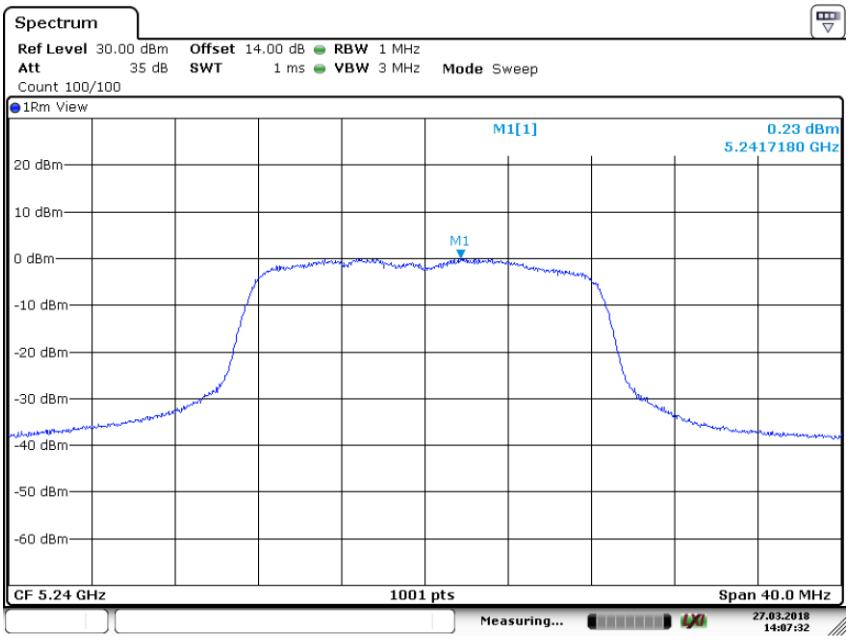

Date: 27.MAR.2018 14:06:26

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11a | Frequency(MHz) | 5200 |
| Ant0 | | | |



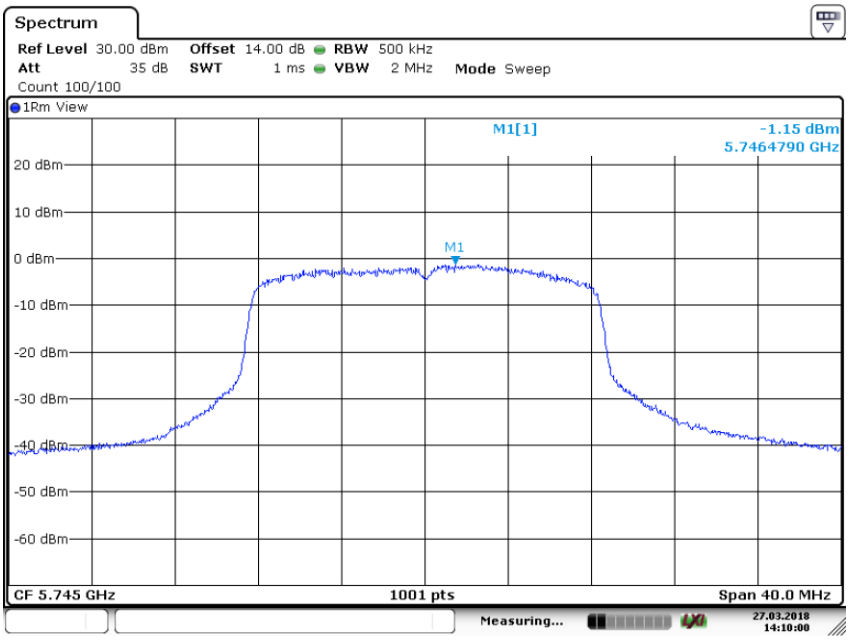

Date: 27.MAR.2018 14:06:47

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11a | Frequency(MHz) | 5240 |
| Ant0 | | | |



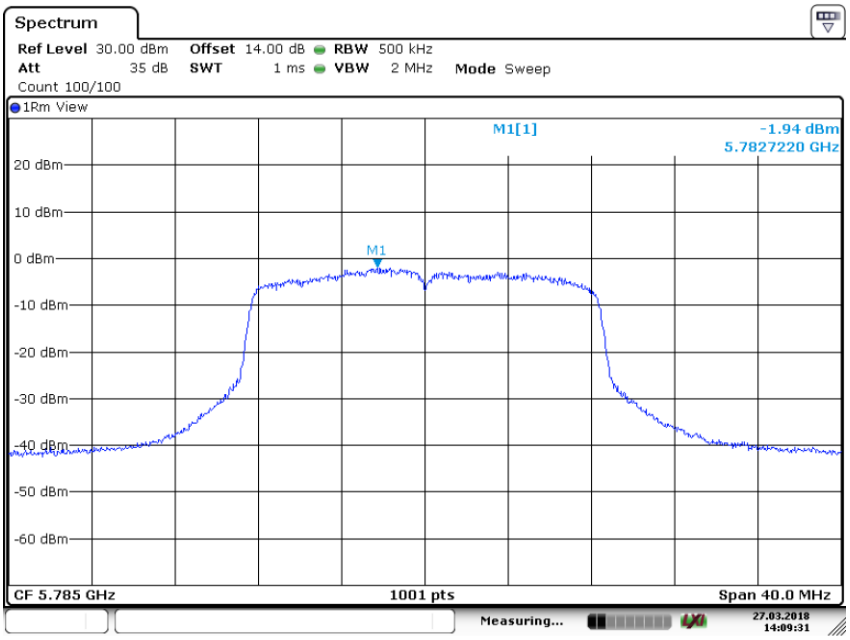

Date: 27.MAR.2018 14:07:32

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11a | Frequency(MHz) | 5745 |
| Ant0 | | | |



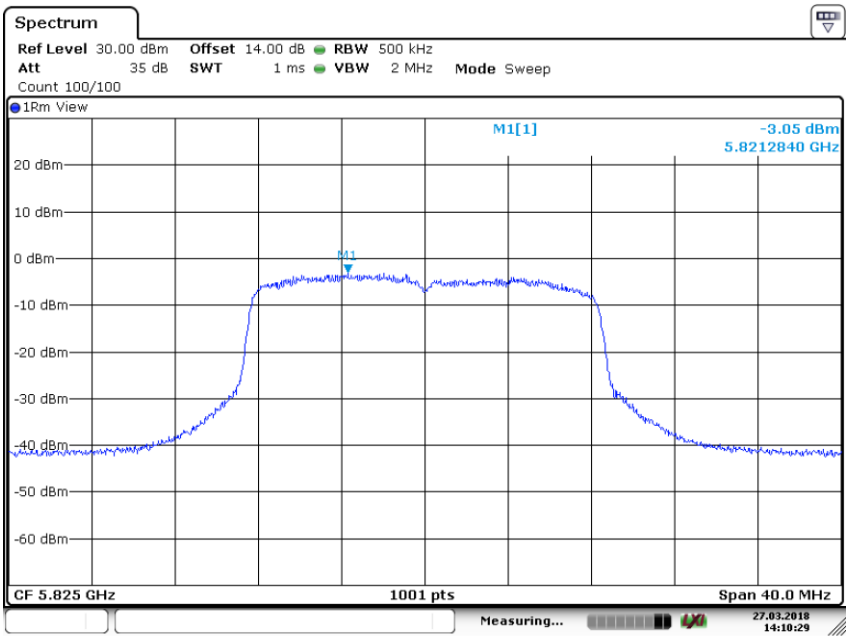

Date: 27.MAR.2018 14:09:59

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11a | Frequency(MHz) | 5785 |
| Ant0 | | | |



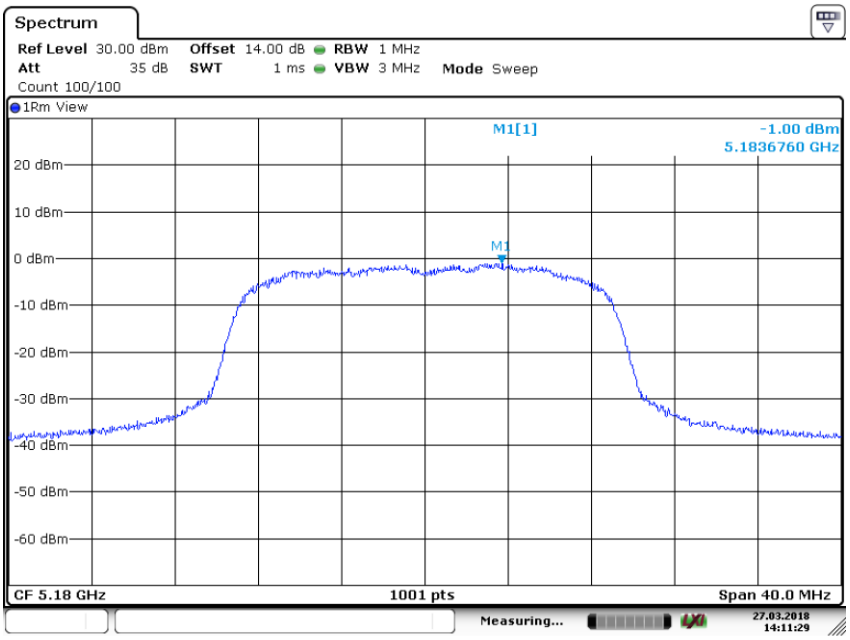

Date: 27.MAR.2018 14:09:31

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11a | Frequency(MHz) | 5825 |
| Ant0 | | | |



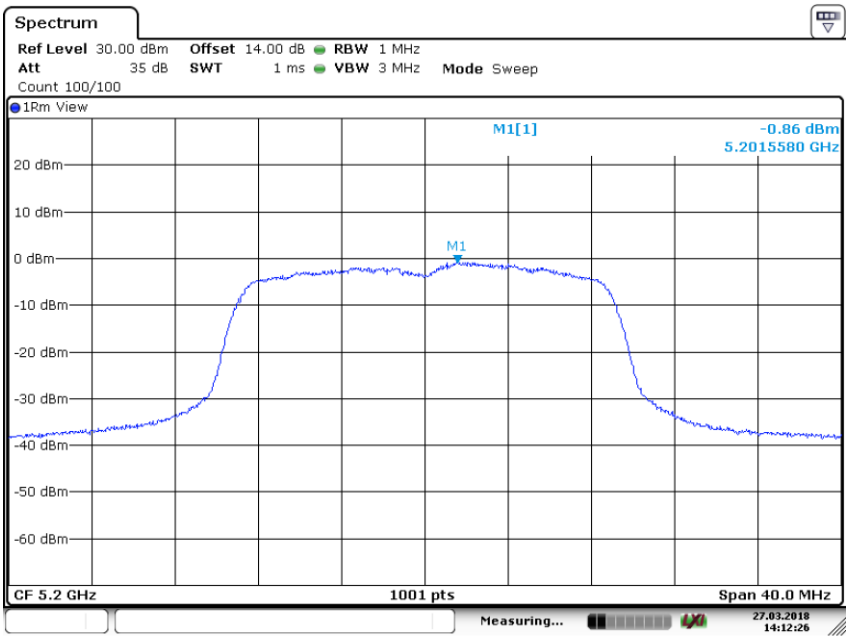

Date: 27.MAR.2018 14:10:29

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11n(VHT20) mode | Frequency(MHz) | 5180 |
| Ant0 | | | |



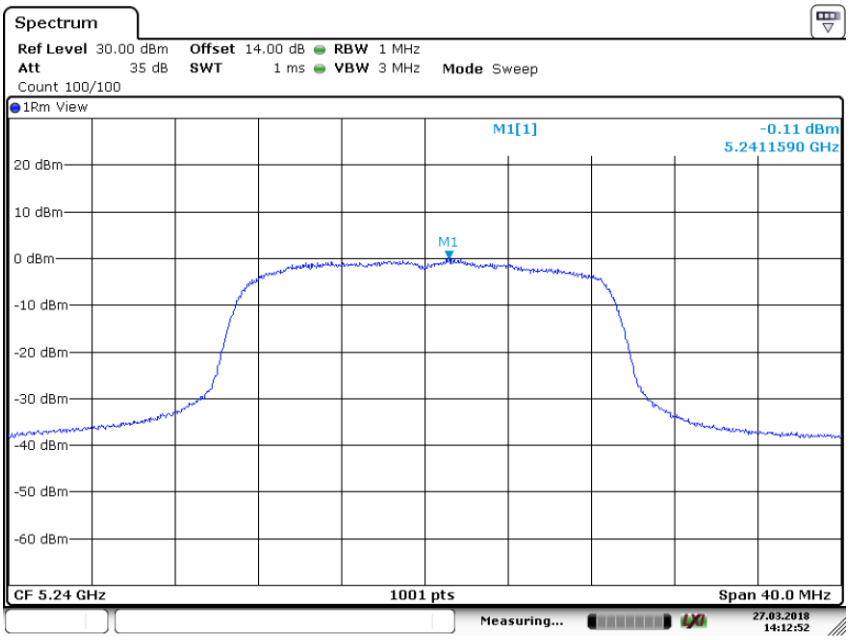

Date: 27.MAR.2018 14:11:29

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11n(VHT20) mode | Frequency(MHz) | 5200 |
| Ant0 | | | |



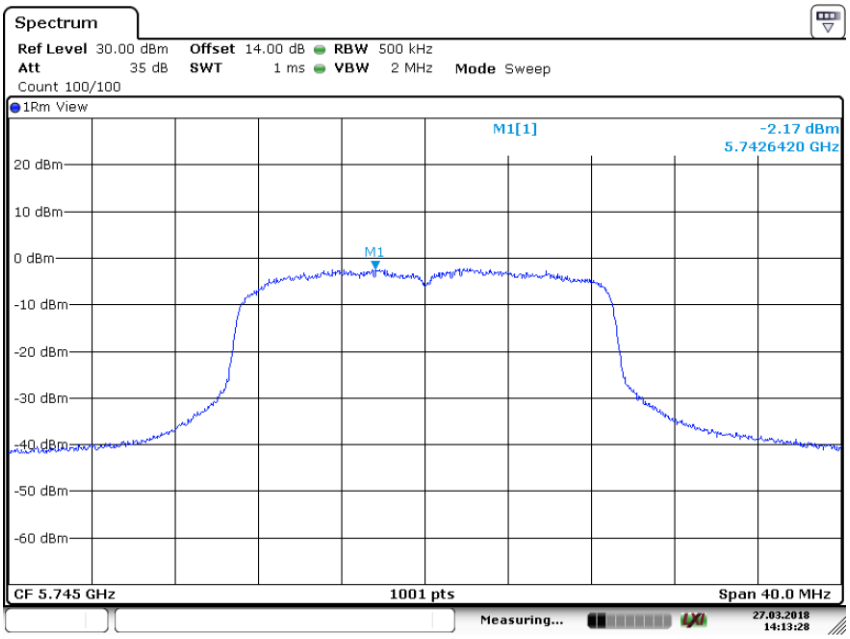

Date: 27.MAR.2018 14:12:26

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11n(VHT20) mode | Frequency(MHz) | 5240 |
| Ant0 | | | |



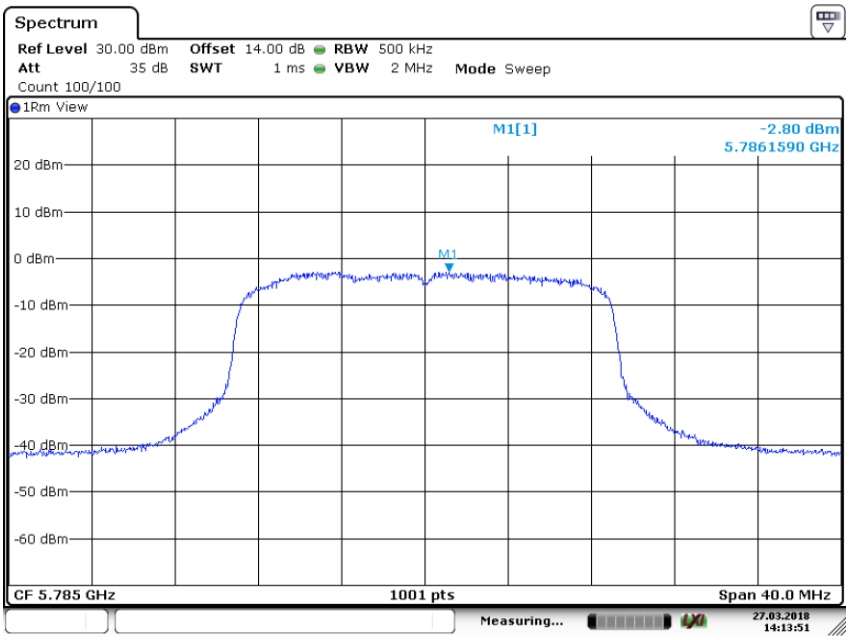

Date: 27.MAR.2018 14:12:52

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11n(VHT20) mode | Frequency(MHz) | 5745 |
| Ant0 | | | |



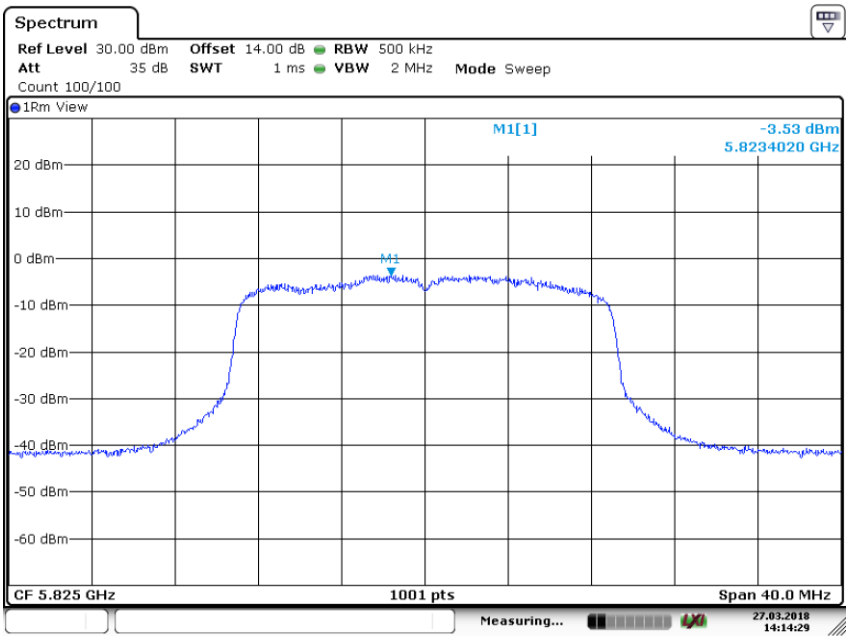

Date: 27.MAR.2018 14:13:28

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11n(VHT20) mode | Frequency(MHz) | 5785 |
| Ant0 | | | |



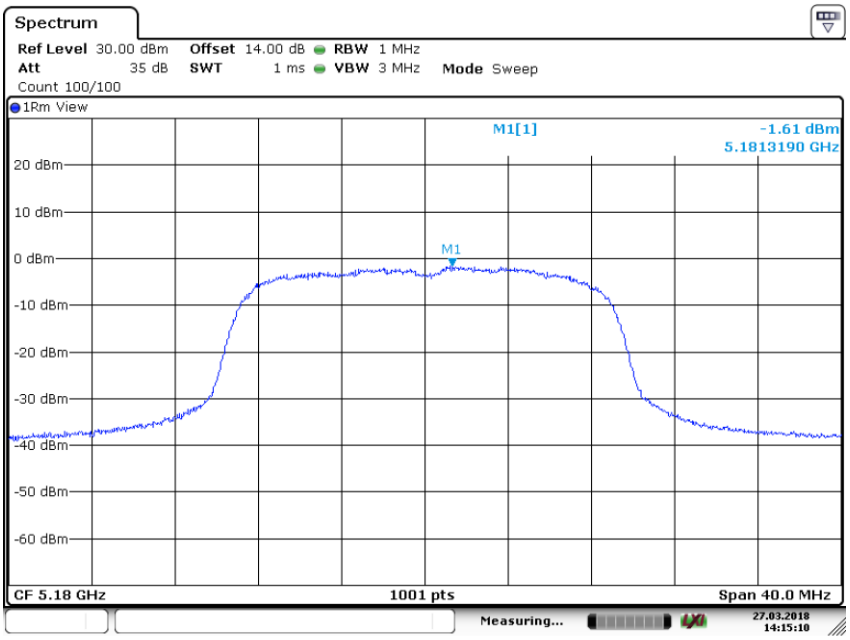

Date: 27.MAR.2018 14:13:51

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11n(VHT20) mode | Frequency(MHz) | 5825 |
| Ant0 | | | |



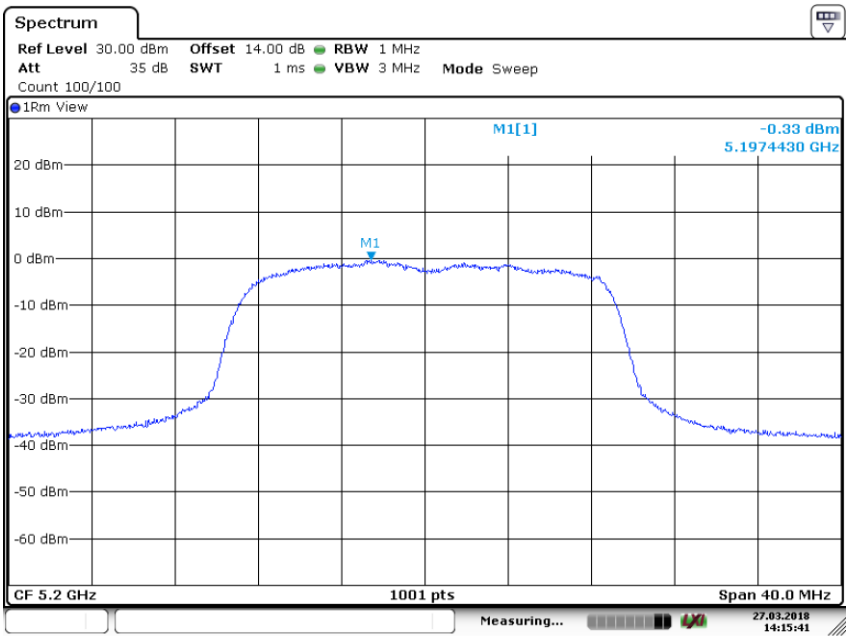

Date: 27.MAR.2018 14:14:29

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11ac(VHT20) mode | Frequency(MHz) | 5180 |
| Ant0 | | | |



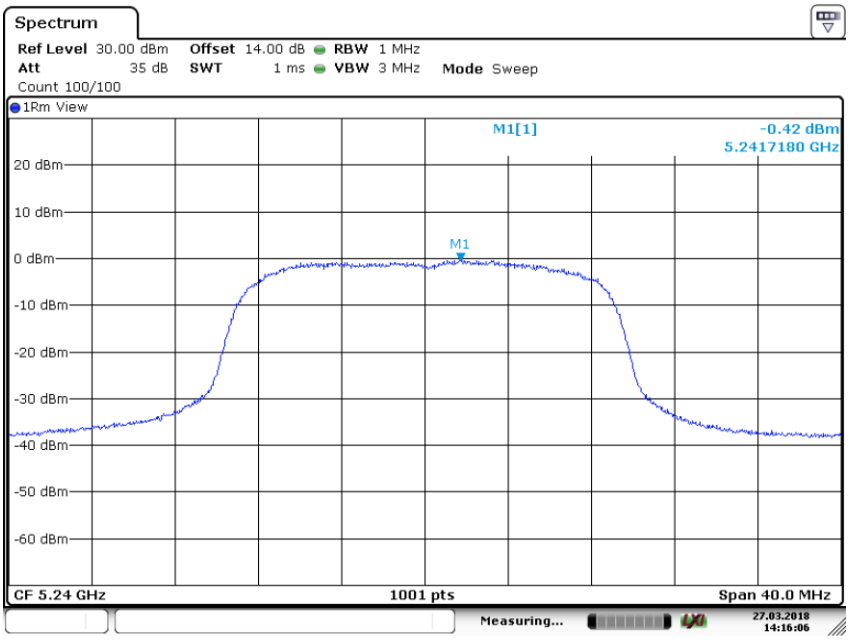

Date: 27.MAR.2018 14:15:10

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11ac(VHT20) mode | Frequency(MHz) | 5200 |
| Ant0 | | | |



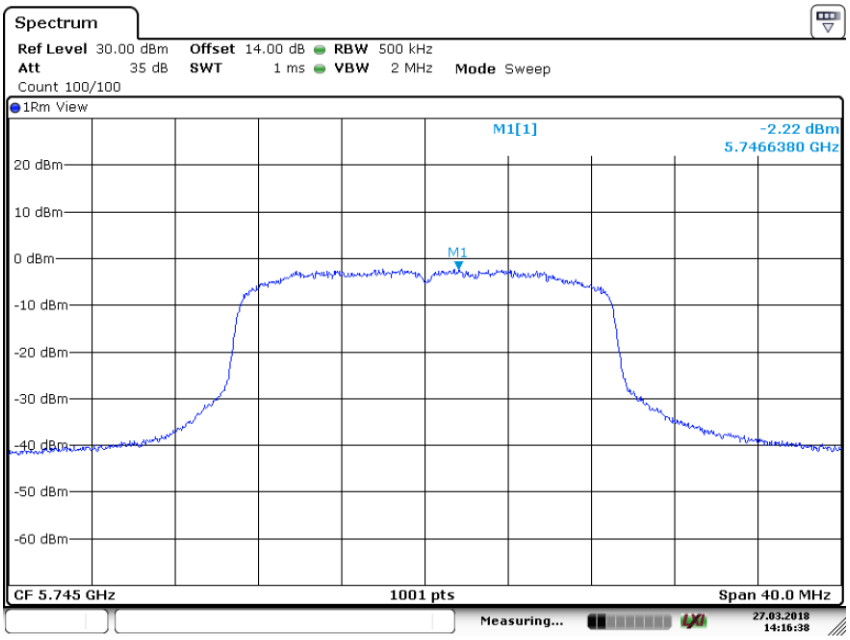

Date: 27.MAR.2018 14:15:42

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11ac(VHT20) mode | Frequency(MHz) | 5240 |
| Ant0 | | | |



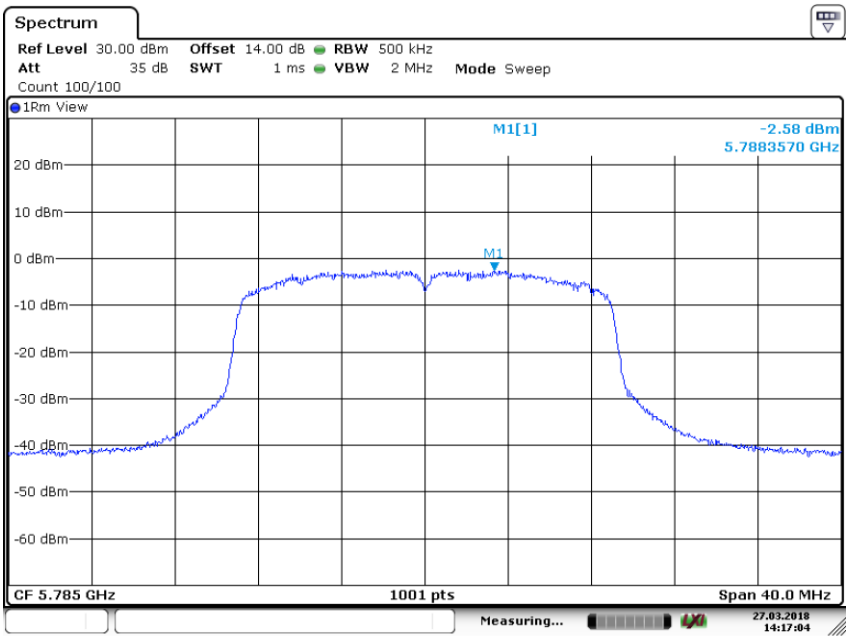

Date: 27.MAR.2018 14:16:05

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11ac(VHT20) mode | Frequency(MHz) | 5745 |
| Ant0 | | | |



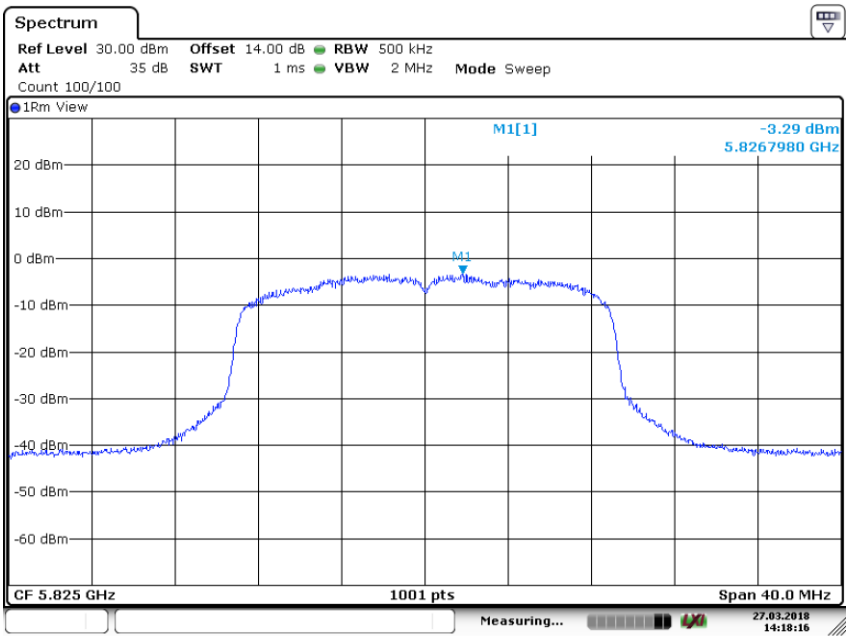

Date: 27.MAR.2018 14:16:38

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11ac(VHT20) mode | Frequency(MHz) | 5785 |
| Ant0 | | | |



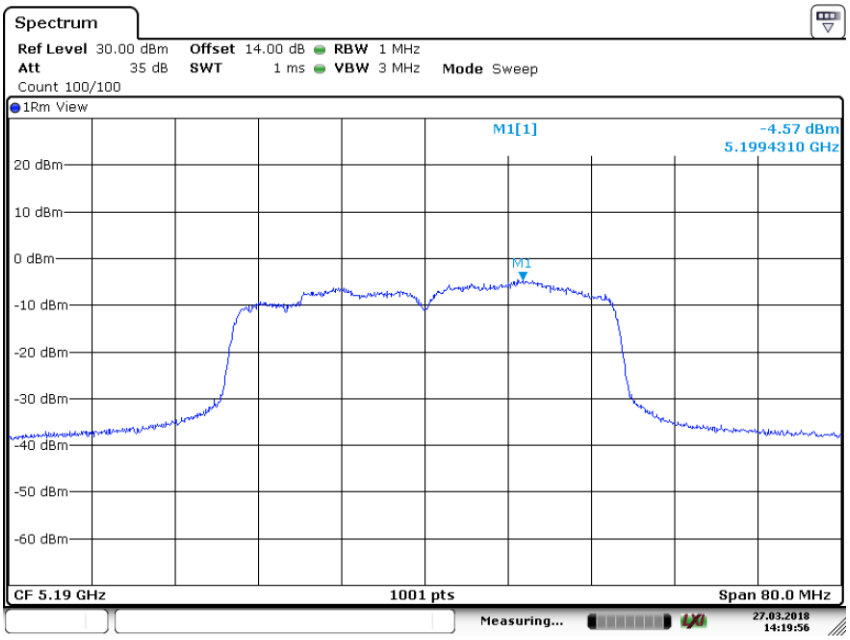

Date: 27.MAR.2018 14:17:05

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11ac(VHT20) mode | Frequency(MHz) | 5825 |
| Ant0 | | | |



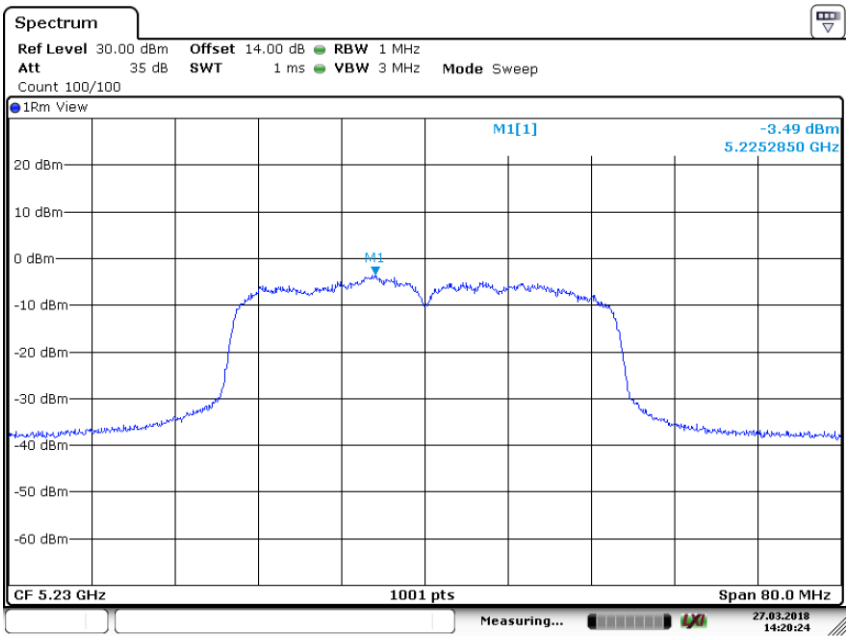

Date: 27.MAR.2018 14:18:16

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11n(VHT40) mode | Frequency(MHz) | 5190 |
| Ant0 | | | |



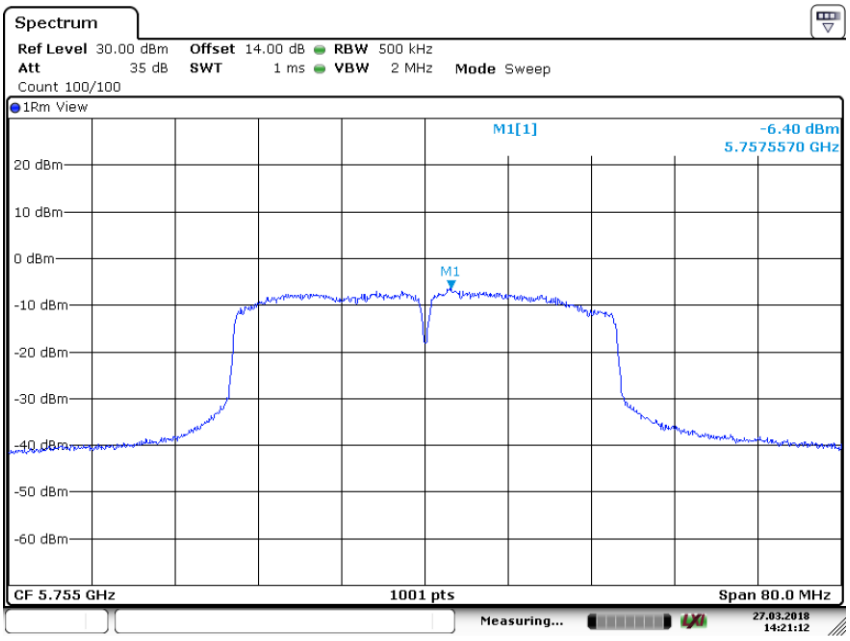

Date: 27.MAR.2018 14:19:56

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11n(VHT40) mode | Frequency(MHz) | 5230 |
| Ant0 | | | |



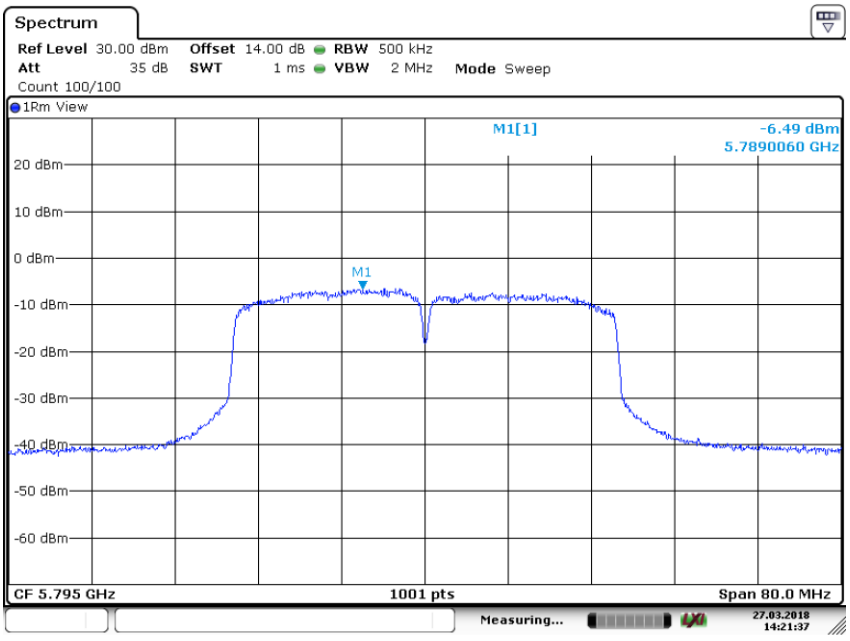

Date: 27.MAR.2018 14:20:24

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11n(VHT40) mode | Frequency(MHz) | 5755 |
| Ant0 | | | |



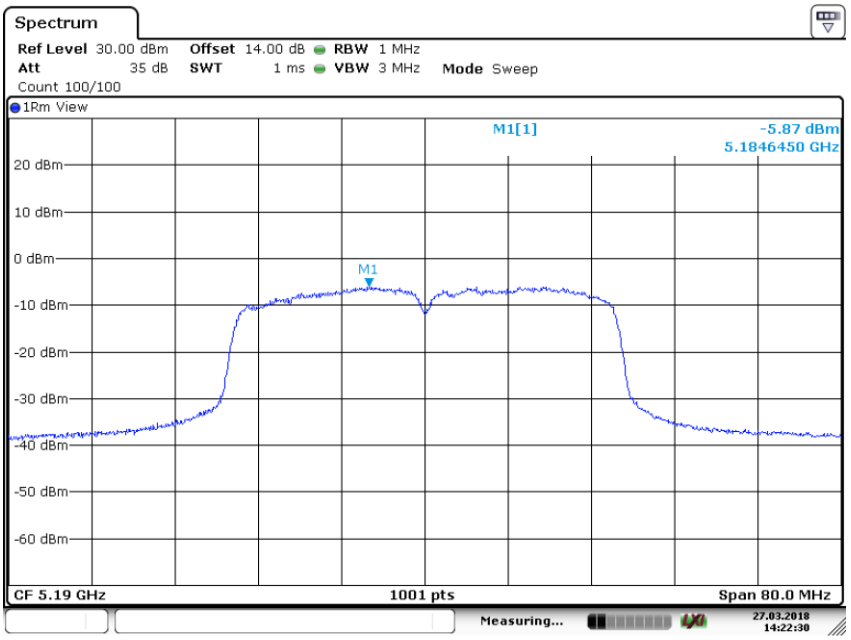

Date: 27.MAR.2018 14:21:11

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11n(VHT40) mode | Frequency(MHz) | 5795 |
| Ant0 | | | |



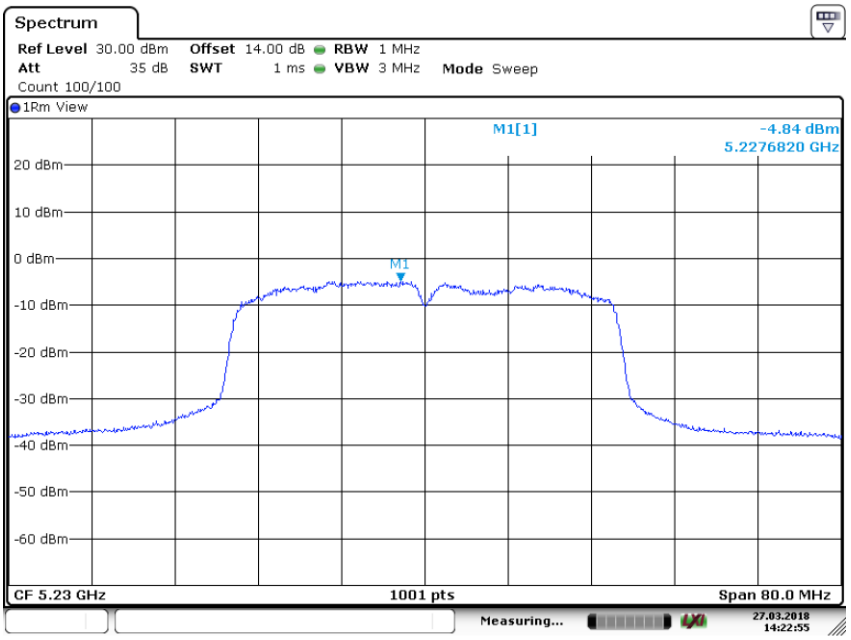

Date: 27.MAR.2018 14:21:37

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11ac(VHT40) mode | Frequency(MHz) | 5190 |
| Ant0 | | | |



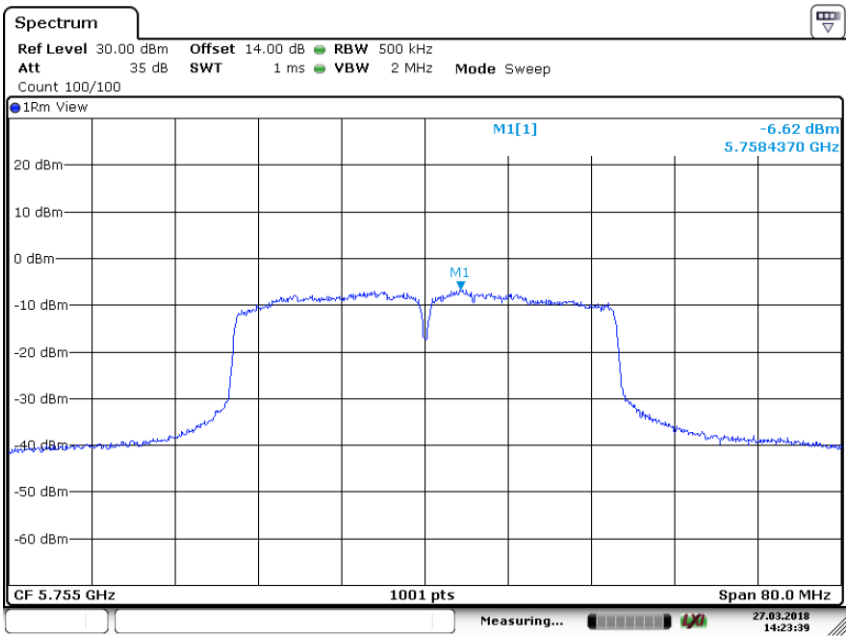

Date: 27.MAR.2018 14:22:30

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11ac(VHT40) mode | Frequency(MHz) | 5230 |
| Ant0 | | | |



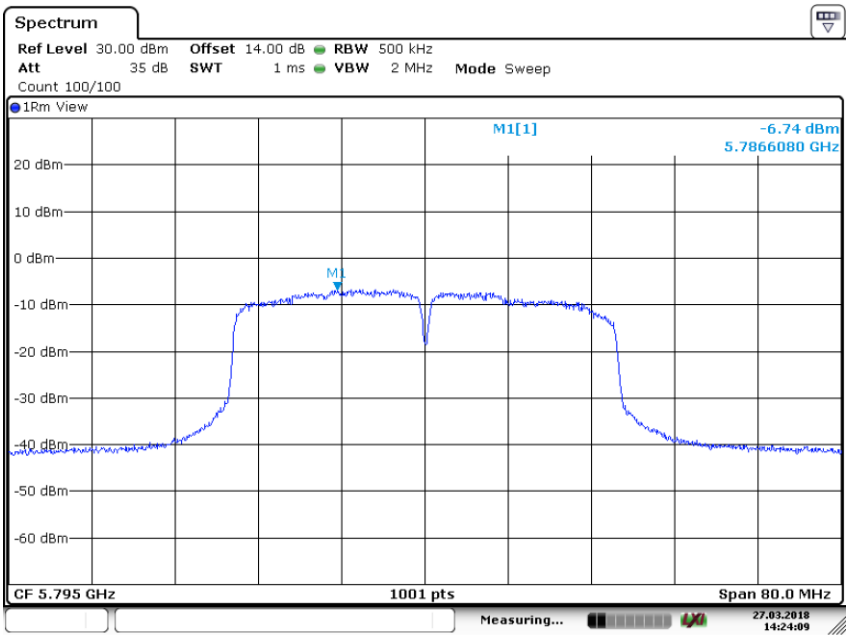

Date: 27.MAR.2018 14:22:55

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11ac(VHT40) mode | Frequency(MHz) | 5755 |
| Ant0 | | | |



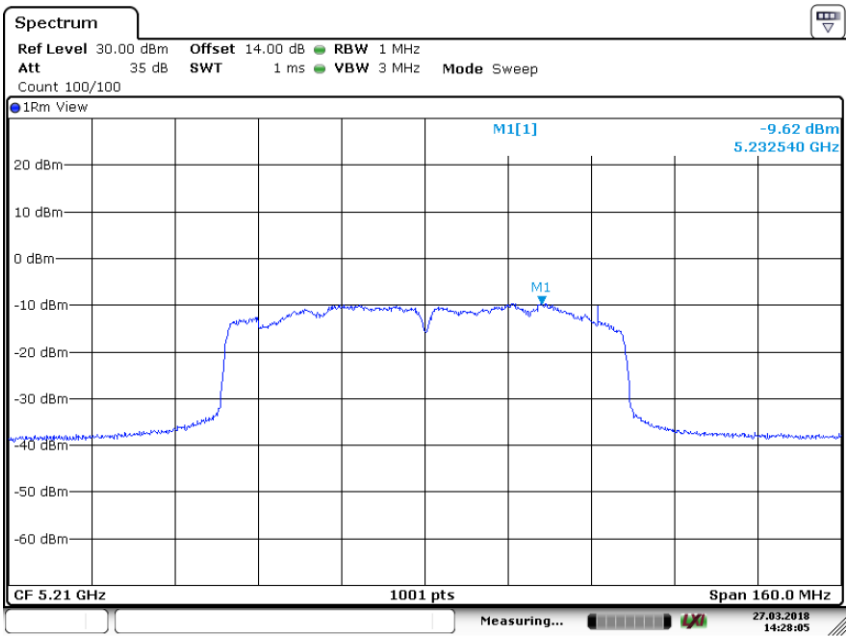

Date: 27.MAR.2018 14:23:38

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11ac(VHT40) mode | Frequency(MHz) | 5795 |
| Ant0 | | | |



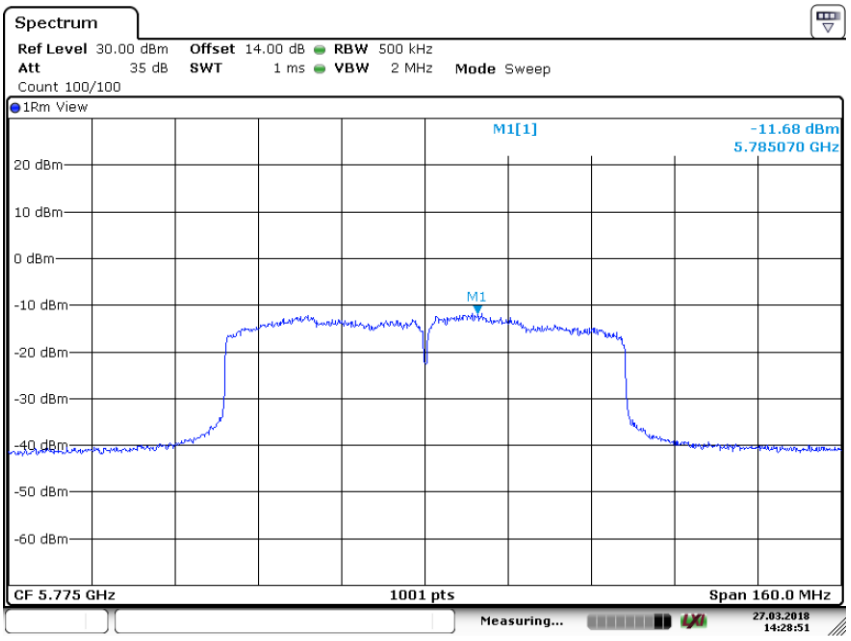

Date: 27.MAR.2018 14:24:09

| Power Spectral Density | | UNII Band I | |
|---|---|---|---|
| Test Model | 802.11ac(VHT80) mode | Frequency(MHz) | 5210 |
| Ant0 | | | |




Date: 27.MAR.2018 14:28:05

| Power Spectral Density | | UNII Band III | |
|---|---|---|---|
| Test Model | 802.11ac(VHT80) mode | Frequency(MHz) | 5775 |
| Ant0 | | | |




Date: 27.MAR.2018 14:28:51

## 8.4 FREQUENCY STABILITY

8.4.1 Applicable Standard

According to FCC Part 15.407(g)
ANSI C63.10 Section 6.8

8.4.2 Conformance Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

8.4.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.4.4 Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
Set to the maximum power setting and enable the EUT transmit continuously
Set RBW = 10 kHz.
Set the video bandwidth (VBW) =30 kHz.
Set Span= Entire absence of modulation emissions bandwidth
Set Detector = Peak.
Set Trace mode = max hold.
Set Sweep = auto couple.
Allow the trace to stabilize.
The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
Beginning at each temperature level specified in user manual, the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more than 10° centigrade above the respective beginning ambient temperature level
Measure and record the results in the test report.

8.4.5 Test Results

The modes 802.11a/n/ac has been tested and the worst result recorded as below:
The modes 802.11a/n/ac has been tested and the worst result recorded as below:
The modes 802.11a/n/ac has been tested and the worst result recorded as below:

All mode and channels have been test, and the worst result have been recorded in the report.

| | | | |
|---|---|---|---|
| 802.11a | | 5180 | |
| Temperature : | 20℃ | Test Date : | March 27, 2018 |
| Humidity : | 65 % | Test By: | King Kong |

| Voltage(V) | Temp(℃) | Test Frequency (MHz) | Max. Deviation (KHz) | Verdict |
|---|---|---|---|---|
| Vnom | -20 | 5180.0281 | 5.42 | Pass |
| | -10 | 5180.0281 | 5.42 | Pass |
| | 0 | 5180.0281 | 5.42 | Pass |
| | 10 | 5180.0281 | 5.42 | Pass |
| | 20 | 5180.0281 | 5.42 | Pass |
| | 30 | 5180.0281 | 5.42 | Pass |
| | 40 | 5180.0281 | 5.42 | Pass |
| | 50 | 5180.0281 | 5.42 | Pass |
| 85% Vnom | 20 | 5180.0281 | 5.42 | Pass |

| | | | |
|---|---|---|---|
| 802.11n20 | | 5180 | |
| Temperature : | -- | Test Date : | March 27, 2018 |
| Humidity : | 65 % | Test By: | King Kong |

| Voltage(V) | Temp(℃) | Test Frequency (MHz) | Max. Deviation (KHz) | Verdict |
|---|---|---|---|---|
| Vnom | -20 | 5180.0159 | 3.07 | Pass |
| | -10 | 5180.0159 | 3.07 | Pass |
| | 0 | 5180.0159 | 3.07 | Pass |
| | 10 | 5180.0159 | 3.07 | Pass |
| | 20 | 5180.0159 | 3.07 | Pass |
| | 30 | 5180.0159 | 3.07 | Pass |
| | 40 | 5180.0159 | 3.07 | Pass |
| | 50 | 5180.0159 | 3.07 | Pass |

| | | | |
|---|---|---|---|
| 802.11ac20 | | 5180 | |
| Temperature : | -- | Test Date : | March 27, 2018 |
| Humidity : | 65 % | Test By: | King Kong |

| Voltage(V) | Temp(℃) | Test Frequency (MHz) | Max. Deviation (KHz) | Verdict |
|---|---|---|---|---|
| Vnom | -20 | 5180.0198 | 3.82 | Pass |
| | -10 | 5180.0198 | 3.82 | Pass |
| | 0 | 5180.0198 | 3.82 | Pass |
| | 10 | 5180.0198 | 3.82 | Pass |
| | 20 | 5180.0198 | 3.82 | Pass |
| | 30 | 5180.0198 | 3.82 | Pass |
| | 40 | 5180.0198 | 3.82 | Pass |
| | 50 | 5180.0198 | 3.82 | Pass |

| | | | |
|---|---|---|---|
| 802.11n40 | | 5190 | |
| Temperature : | -- | Test Date : | May04, 2017 |
| Humidity : | 65 % | Test By: | King Kong |

| Voltage(V) | Temp(℃) | Test Frequency (MHz) | Max. Deviation (KHz) | Verdict |
|---|---|---|---|---|
| Vnom | -20 | 5190.0840 | 16.18 | Pass |
| | -10 | 5190.0840 | 16.18 | Pass |
| | 0 | 5190.0840 | 16.18 | Pass |
| | 10 | 5190.0840 | 16.18 | Pass |
| | 20 | 5190.0840 | 16.18 | Pass |
| | 30 | 5190.0840 | 16.18 | Pass |
| | 40 | 5190.0840 | 16.18 | Pass |
| | 50 | 5190.0840 | 16.18 | Pass |

| | | | |
|---|---|---|---|
| 802.11ac 40 | | 5190 | |
| Temperature : | -- | Test Date : | March 27, 2018 |
| Humidity : | 65 % | Test By: | King Kong |

| Voltage(V) | Temp(℃) | Test Frequency (MHz) | Max. Deviation (KHz) | Verdict |
|---|---|---|---|---|
| Vnom | -20 | 5190.0881 | 16.97 | Pass |
| | -10 | 5190.0881 | 16.97 | Pass |
| | 0 | 5190.0881 | 16.97 | Pass |
| | 10 | 5190.0881 | 16.97 | Pass |
| | 20 | 5190.0881 | 16.97 | Pass |
| | 30 | 5190.0881 | 16.97 | Pass |
| | 40 | 5190.0881 | 16.97 | Pass |
| | 50 | 5190.0881 | 16.97 | Pass |

| | | | |
|---|---|---|---|
| 802.11ac 80 | | 5210 | |
| Temperature : | -- | Test Date : | March 27, 2018 |
| Humidity : | 65 % | Test By: | King Kong |

| Voltage(V) | Temp(℃) | Test Frequency (MHz) | Max. Deviation (KHz) | Verdict |
|---|---|---|---|---|
| Vnom | -20 | 5210.0879 | 16.87 | Pass |
| | -10 | 5210.0879 | 16.87 | Pass |
| | 0 | 5210.0879 | 16.87 | Pass |
| | 10 | 5210.0879 | 16.87 | Pass |
| | 20 | 5210.0879 | 16.87 | Pass |
| | 30 | 5210.0879 | 16.87 | Pass |
| | 40 | 5210.0879 | 16.87 | Pass |
| | 50 | 5210.0879 | 16.87 | Pass |

## 8.5 UNDESIRABLE RADIATED SPURIOUS EMISSION

8.5.1 Applicable Standard

According to FCC Part 15.407 (b)
According to 789033 D02 Section II(G)

8.5.2 Conformance Limit

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209
The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

| Restricted Frequency(MHz) | Field Strength (μV/m) | Field Strength (dBμV/m) | Measurement Distance |
|---|---|---|---|
| 0.009-0.490 | 2400/F(KHz) | 20 log (uV/m) | 300 |
| 0.490-1.705 | 2400/F(KHz) | 20 log (uV/m) | 30 |
| 1.705-30 | 30 | 29.5 | 30 |
| 30-88 | 100 | 40 | 3 |
| 88-216 | 150 | 43.5 | 3 |
| 216-960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

The provisions of §15.205 apply to intentional radiators operating under this section,15.205 Restricted bands of operation

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| 10.495-0.505 | 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 | 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 | (2) |
| 13.36-13.41 | | | |

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

8.5.3 Test Configuration

Test according to clause 6.2 radio frequency test setup

8.5.4 Test Procedure

■ Unwanted Emissions Measurements below 1000 MHz

Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.
The EUT was placed on a turn table which is 0.8m above ground plane.
And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
Repeat above procedures until all frequency measured was complete.
We use software control the EUT, Let EUT hopping on and transmit with highest power, All the modes have been tested and the worst result was reported.
Use the following spectrum analyzer settings:
Set RBW=120kHz for f < 1 GHz(30MHz to 1GHz), 200Hz for f<150KHz(9KHz to 150KHz), 9KHz for <30MHz (150KHz to 30KHz).
Set the VBW > RBW.
Detector = Peak.
Trace mode = max hold.
Follow the guidelines in ANSI C63.10-2013 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. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.
Repeat above procedures until all frequency measured was complete.

■ Unwanted Maximum peak Emissions Measurements above 1000 MHz

Maximum emission levels are measured by setting the analyzer as follows:
RBW = 1 MHz.
VBW ≥ 3 MHz.
Detector = Peak.
Sweep time = auto.
Trace mode = max hold.
Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

■ Unwanted Average Emissions Measurements above 1000 MHz

Method VB (Averaging using reduced video bandwidth): Alternative method.
RBW = 1 MHz.
Video bandwidth. • If the EUT is configured to transmit with duty cycle ≥ 98 percent, set VBW ≤ RBW/100 (i.e., 10 kHz) but not less than 10 Hz.
• If the EUT duty cycle is < 98 percent, set VBW ≥ 1/T, where T is defined in section II.B.1.a).
Video bandwidth mode or display mode • The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).
• As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode.
Detector = Peak.
Sweep time = auto.
Trace mode = max hold.

Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of 1/x, where x is the duty cycle. For example, use at least 200 traces if the duty cycle is 25 percent. (If a specific emission is demonstrated to be continuous—i.e., 100 percent duty cycle—rather than turning on and off with the transmit cycle, at least 50 traces shall be averaged.)

■ Band edge measurements.

Unwanted band-edge emissions may be measured using either of the special band-edge measurement techniques (the marker-delta or integration methods) described below. Note that the marker-delta method is primarily a radiated measurement technique that requires the 99% occupied bandwidth edge to be within 2 MHz of the authorized band edge, whereas the integration method can be used in either a radiated or conducted measurement without any special requirement with regards to the displacement of the unwanted emission(s) relative to the authorized bandwidth.

Marker-Delta Method.

The marker-delta method, as described in ANSI C63.10, can be used to perform measurements of the radiated unwanted emissions level of emissions provided that the 99% occupied bandwidth of the fundamental is within 2 MHz of the authorized band-edge.

8.5.5 Test Results

■ ☒For Undesirable radiated Spurious Emission in UNII Band I

The modes 802.11a/n/ac has been tested and the worst result recorded as below:

- ☒Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

**Note:** (1) The the amplitude of spurious emission in the 26.5GHz-40GHz that is attenuated by more than 20dB below the permissible limit has no need to be reported.

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11ac | Frequency(MHz): | 5180 |

| Freq. (MHz) | Ant.Pol. H/V | Field Strength (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Over(dB) |
|---|---|---|---|---|---|
| 14991 | V | 51.87 | -43.36 | -27.00 | -16.36 |
| 23610 | V | 49.06 | -46.17 | -27.00 | -19.17 |
| 15382 | H | 51.30 | -43.93 | -27.00 | -16.93 |
| 25684 | H | 51.58 | -43.65 | -27.00 | -16.65 |

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11ac | Frequency(MHz): | 5220 |

| Freq. (MHz) | Ant.Pol. H/V | Field Strength (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Over(dB) |
|---|---|---|---|---|---|
| 15433 | V | 50.79 | -44.44 | -27.00 | -17.44 |
| 25888 | V | 51.99 | -43.24 | -27.00 | -16.24 |
| 15348 | H | 51.00 | -44.23 | -27.00 | -17.23 |
| 26007 | H | 52.00 | -43.23 | -27.00 | -16.23 |

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11ac | Frequency(MHz): | 5240 |

| Freq. (MHz) | Ant.Pol. H/V | Field Strength (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Over(dB) |
|---|---|---|---|---|---|
| 16011 | V | 51.70 | -43.53 | -27.00 | -16.53 |
| 24273 | V | 50.36 | -44.87 | -27.00 | -17.87 |
| 13189 | H | 51.31 | -43.92 | -27.00 | -16.92 |
| 24256 | H | 51.27 | -43.96 | -27.00 | -16.96 |

- ☒Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11a | Frequency(MHz): | 5180 |

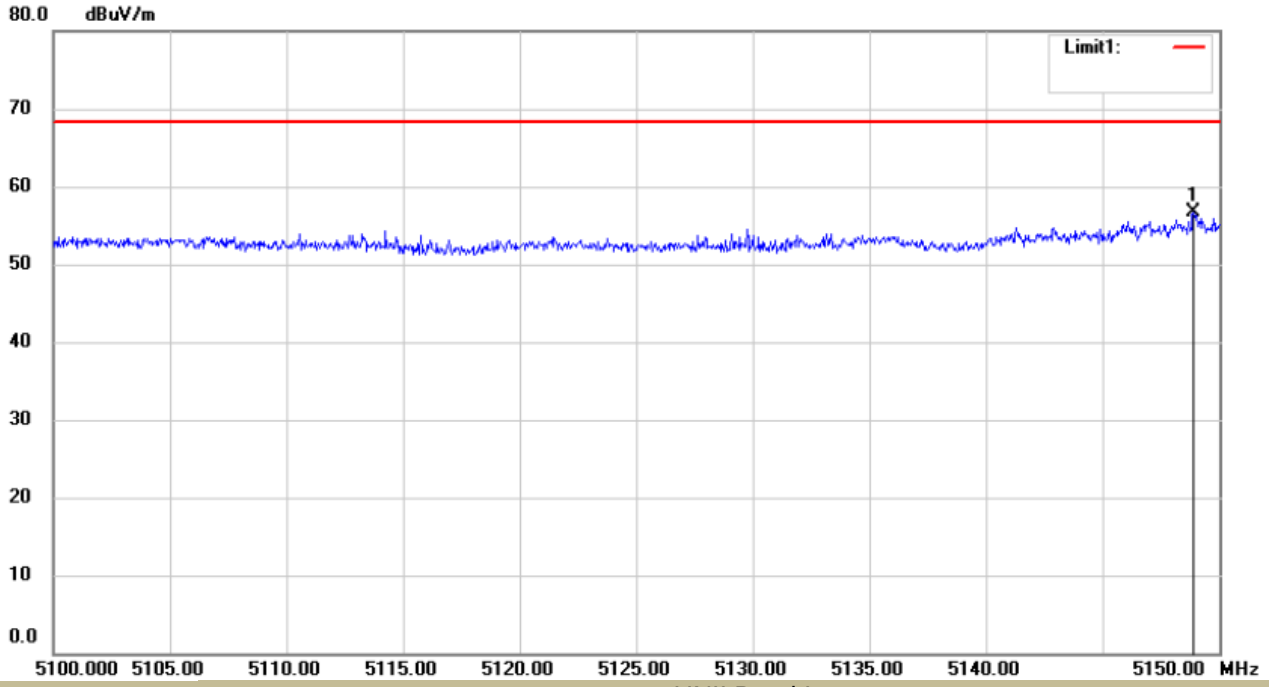
| Freq. (MHz) | Ant.Pol. H/V | Field Strength (RBW=100KHz) (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|
| 5148.65 | V | 56.23 | -39.00 | -27.00 | Pass |
| 5148.90 | H | 56.71 | -38.52 | -27.00 | Pass |

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11a | Frequency(MHz): | 5240 |

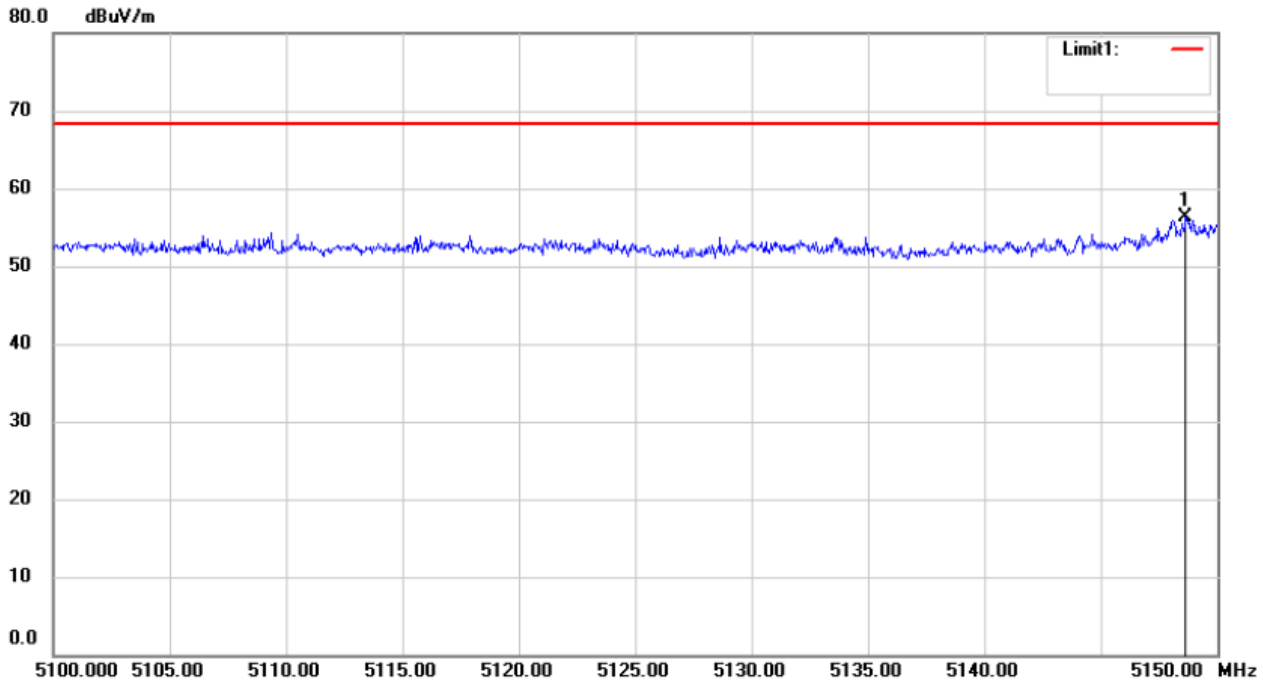
| Freq. (MHz) | Ant.Pol. H/V | Field Strength (RBW=100KHz) (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|
| 5350.0 | V | 54.30 | -40.93 | -27.00 | Pass |
| 5350.2 | H | 53.08 | -42.15 | -27.00 | Pass |

**Note:** (1) Emission Level= Reading Level+Probe Factor +Cable Loss.
(2) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

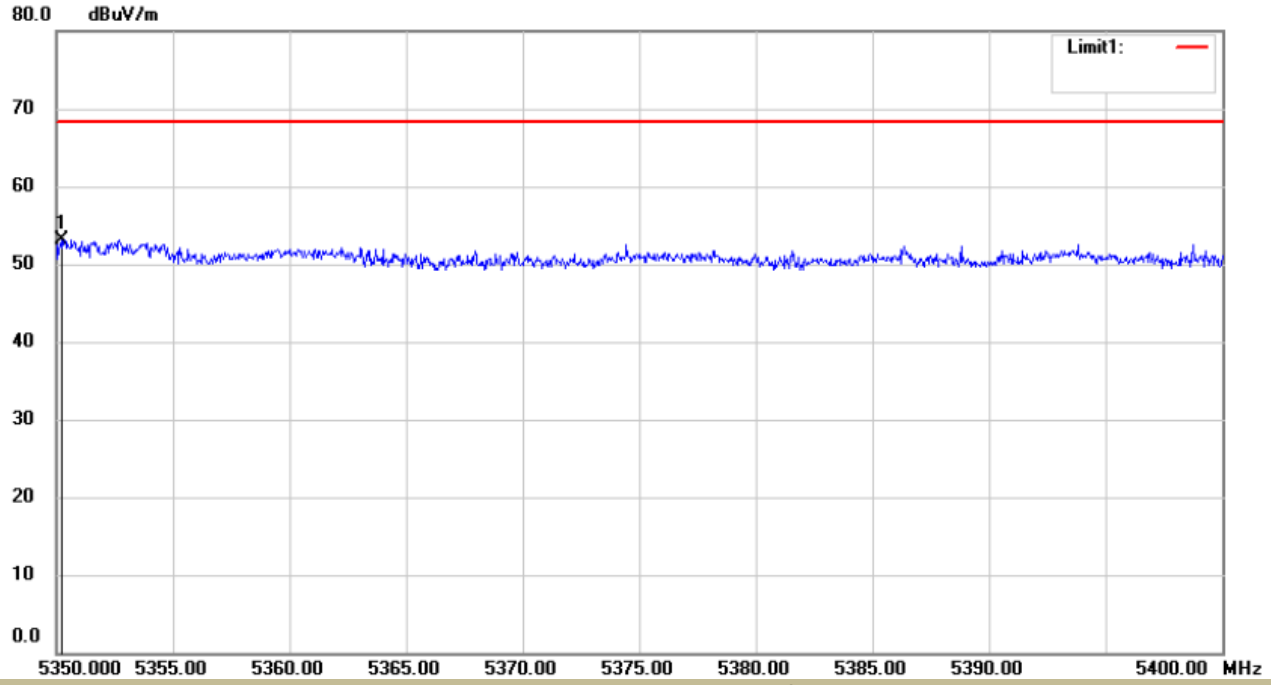
| Test Model | UNII Band I<br>Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)<br>☒802.11a ☐802.11n(HT20) ☐802.11n(HT40)<br>☒5180 ☐5200 ☐5240 Ant.Pol H |
|---|---|



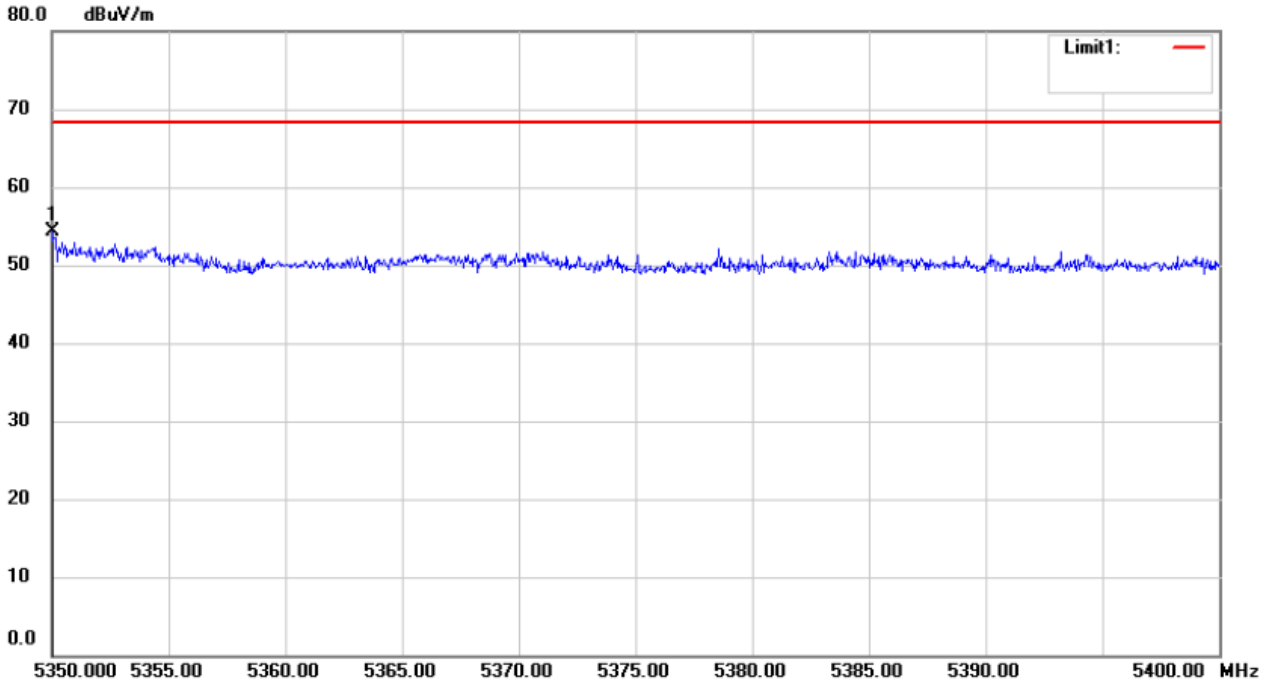

| Test Model | UNII Band I<br>Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)<br>☒802.11a ☐802.11n(HT20) ☐802.11n(HT40)<br>☒5180 ☐5200 ☐5240 Ant.Pol V |
|---|---|



| Test Model | UNII Band I<br>Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz ) | | | |
|---|---|---|---|---|
| | ☒802.11a | ☐802.11n(HT20) | ☐802.11n(HT40) | |
| | ☐5180 | ☐5200 | ☒5240 | Ant.Pol H |




| Test Model | UNII Band I<br>Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz ) | | | |
|---|---|---|---|---|
| | ☒802.11a | ☐802.11n(HT20) | ☐802.11n(HT40) | |
| | ☐5180 | ☐5200 | ☒5240 | Ant.Pol V |



■ ☒For Undesirable radiated Spurious Emission in UNII Band III

All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

- ☒Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)
  **Note:** (1) The the amplitude of spurious emission in the 26.5GHz-40GHz that is attenuated by more than 20dB below the permissible limit has no need to be reported.

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11a | Frequency(MHz): | 5745 |

| Freq. (MHz) | Ant.Pol. H/V | Field Strength (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Over(dB) |
|---|---|---|---|---|---|
| 15297 | V | 51.08 | -44.15 | -27.00 | -17.15 |
| 23618.5 | V | 50.18 | -45.05 | -27.00 | -18.05 |
| 15229 | H | 51.49 | -43.74 | -27.00 | -16.74 |
| 24965 | H | 52.23 | -43.00 | -27.00 | -16.00 |

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11a | Frequency(MHz): | 5785 |

| Freq. (MHz) | Ant.Pol. H/V | Field Strength (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Over(dB) |
|---|---|---|---|---|---|
| 14991 | V | 50.93 | -44.30 | -27.00 | -17.30 |
| 23040.5 | V | 51.11 | -44.12 | -27.00 | -17.12 |
| 14328 | H | 51.27 | -43.96 | -27.00 | -16.96 |
| 24366.5 | H | 49.81 | -45.42 | -27.00 | -18.42 |

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11a | Frequency(MHz): | 5825 |

| Freq. (MHz) | Ant.Pol. H/V | Field Strength (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Over(dB) |
|---|---|---|---|---|---|
| 12968 | V | 50.84 | -44.39 | -27.00 | -17.39 |
| 24179.5 | V | 51.85 | -43.38 | -27.00 | -16.38 |
| 16113 | H | 52.06 | -43.17 | -27.00 | -16.17 |
| 25913.5 | H | 52.29 | -42.94 | -27.00 | -15.94 |

**Note:** (1) Emission Level= Reading Level+Probe Factor +Cable Loss.
(2) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

- ☒Undesirable radiated Spurious Emission in band edge

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11a | Frequency: | 5745 |

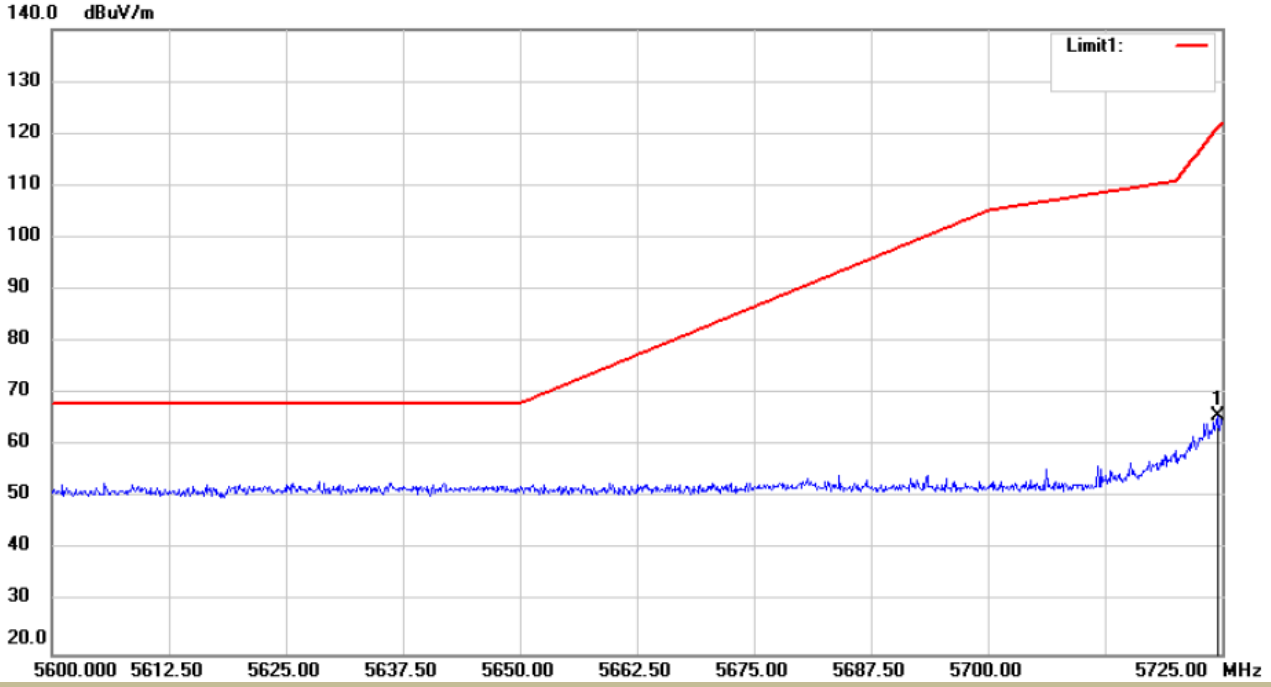
| Freq. (MHz) | Ant.Pol. H/V | Field Strength (RBW=100KHz) (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|
| 5724.38 | V | 67.32 | -27.91 | 25.58 | PASS |
| 5724.50 | H | 65.68 | -29.55 | 25.86 | PASS |

| | | | |
|---|---|---|---|
| Temperature : | 28℃ | Test Date : | April 18, 2018 |
| Humidity : | 65 % | Test By: | King Kong |
| Test mode: | 802.11a | Frequency: | 5825 |

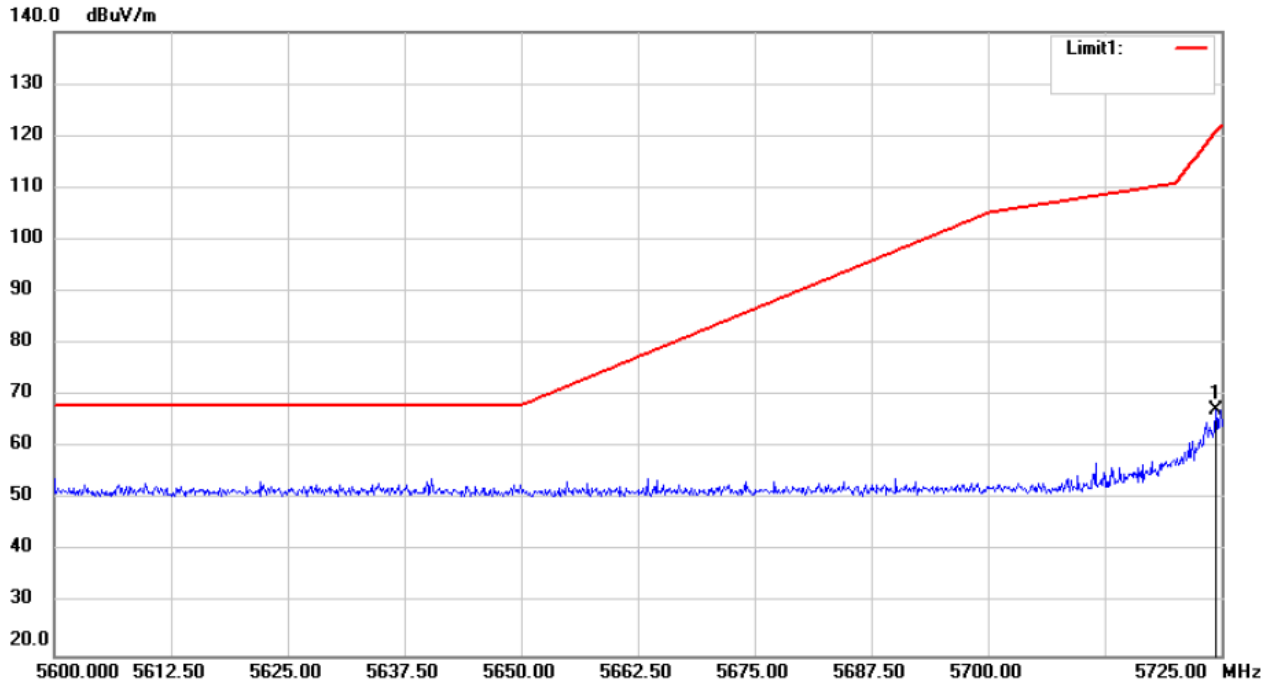
| Freq. (MHz) | Ant.Pol. H/V | Field Strength (RBW=100KHz) (dBuV/m) | E.I.R.P (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|
| 5850.0 | V | 63.14 | -32.09 | 27.00 | PASS |
| 5850.0 | H | 64.27 | -30.96 | 27.00 | PASS |

**Note:** (1) Emission Level= Reading Level+Probe Factor +Cable Loss.
(2) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

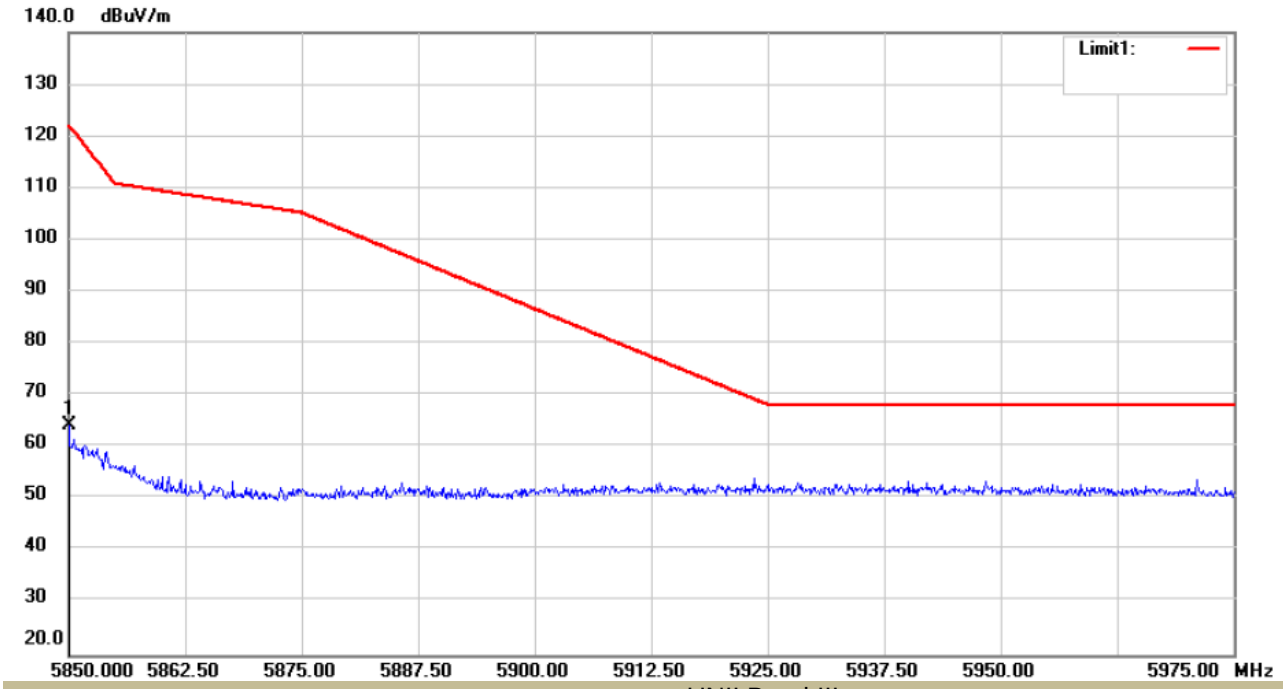
| Test Model | UNII Band III<br>Undesirable radiated Undesirable radiated Spurious Emission in Band Edge<br>☒802.11a ☐802.11n(HT20) ☐802.11n(HT40)<br>☒5745 Ant.Pol H |
|---|---|



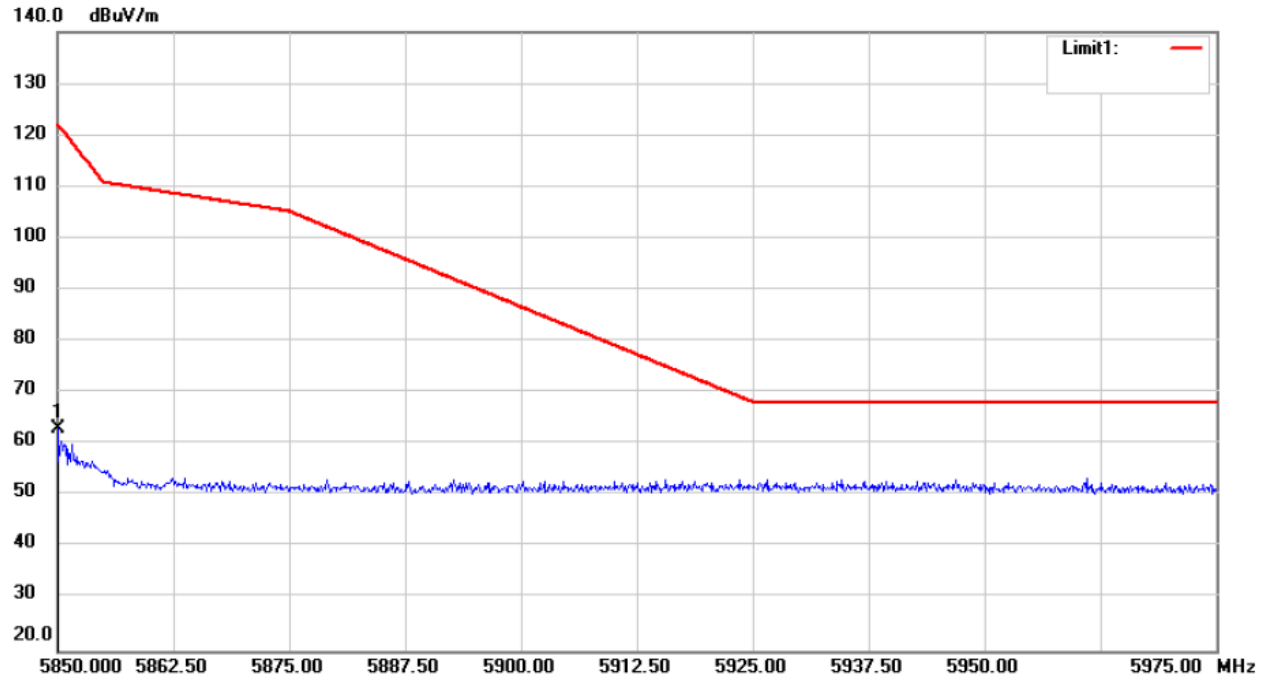

| Test Model | UNII Band III<br>Undesirable radiated Undesirable radiated Spurious Emission in Band Edge<br>☒802.11a ☐802.11n(HT20) ☐802.11n(HT40)<br>☒5745 Ant.Pol V |
|---|---|



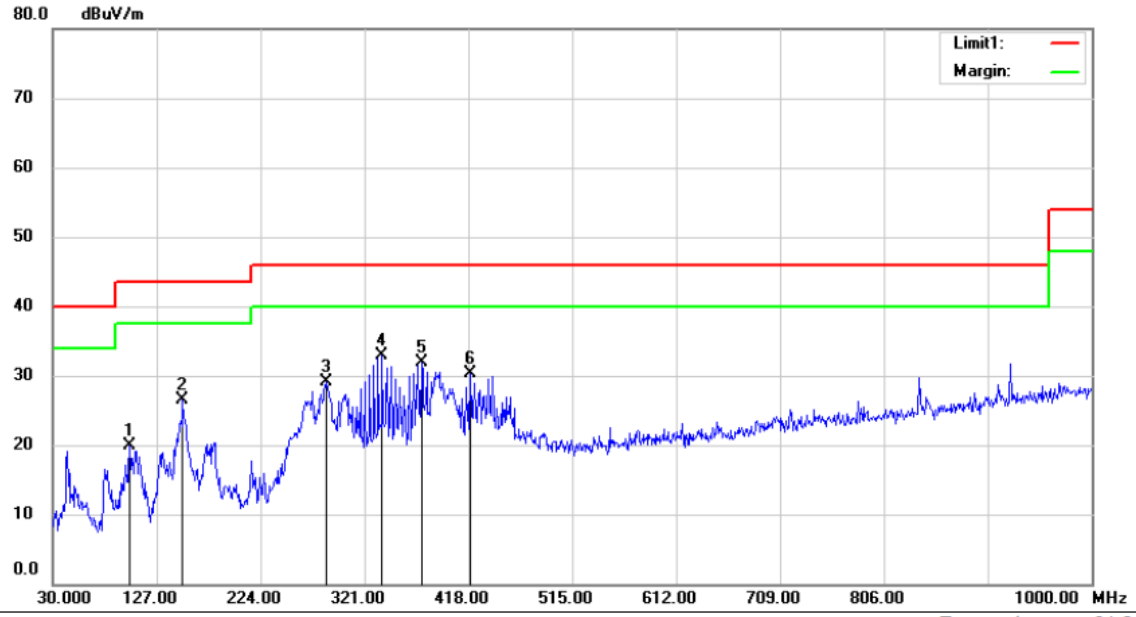
| Test Model | UNII Band III<br>Undesirable radiated Undesirable radiated Spurious Emission in Band Edge<br>☒802.11a ☐802.11n(HT20) ☐802.11n(HT40)<br>☒5825 Ant.Pol H |
|---|---|




| Test Model | UNII Band III<br>Undesirable radiated Undesirable radiated Spurious Emission in Band Edge<br>☒802.11a ☐802.11n(HT20) ☐802.11n(HT40)<br>☒5825 Ant.Pol V |
|---|---|



- Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)
  All mode have been tested, and the worst results have been recorded in the report.



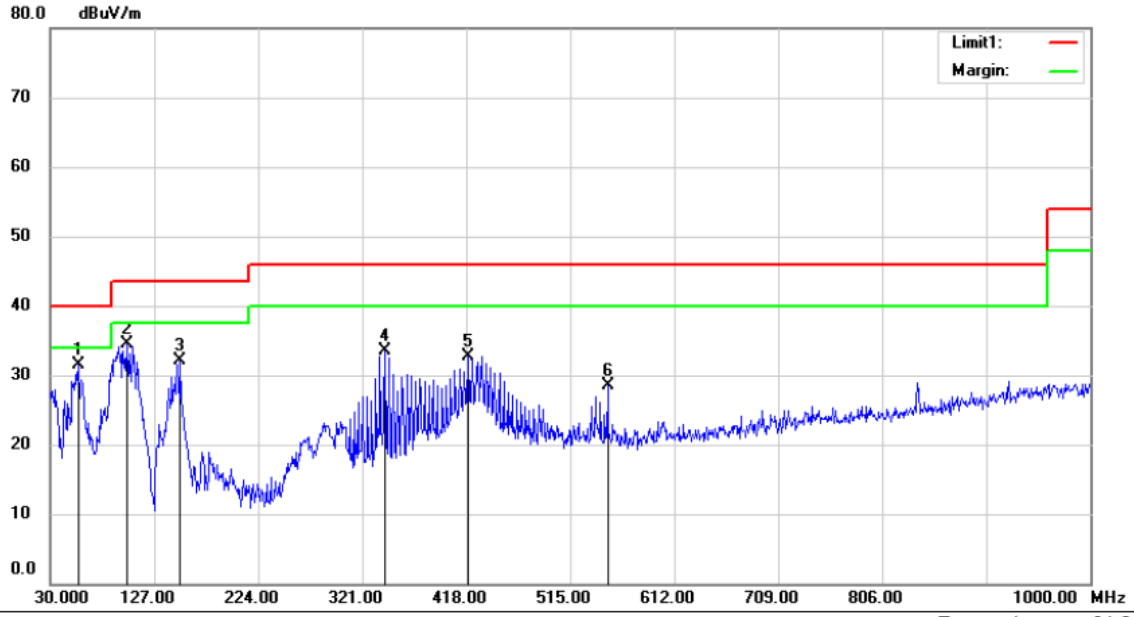

Site RE 10M Chamber #1 Polarization: ***Horizontal*** Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode:WIFI5G TX AC20 5180

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 101.7800 | 35.68 | -15.82 | 19.86 | 43.50 | -23.64 | QP | | | |
| 2 | | 151.2500 | 45.65 | -19.07 | 26.58 | 43.50 | -16.92 | QP | | | |
| 3 | | 285.1100 | 41.98 | -12.84 | 29.14 | 46.00 | -16.86 | QP | | | |
| 4 | * | 337.4900 | 43.87 | -10.92 | 32.95 | 46.00 | -13.05 | QP | | | |
| 5 | | 374.3500 | 42.19 | -10.37 | 31.82 | 46.00 | -14.18 | QP | | | |
| 6 | | 419.9400 | 39.17 | -8.85 | 30.32 | 46.00 | -15.68 | QP | | | |



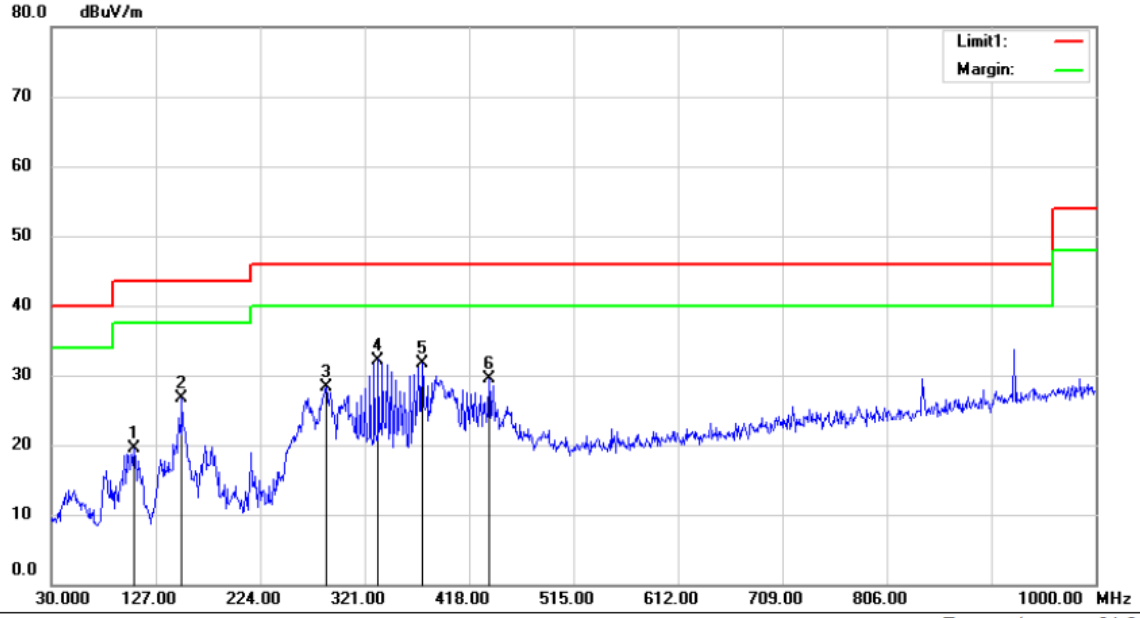

Site RE 10M Chamber #1 Polarization: *Vertical* Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode: WIFI5G TX AC20 5180

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 56.1900 | 46.32 | -14.76 | 31.56 | 40.00 | -8.44 | QP | | | |
| 2 | | 101.7800 | 50.38 | -15.82 | 34.56 | 43.50 | -8.94 | QP | | | |
| 3 | | 151.2500 | 51.19 | -19.07 | 32.12 | 43.50 | -11.38 | QP | | | |
| 4 | | 342.3400 | 44.26 | -10.72 | 33.54 | 46.00 | -12.46 | QP | | | |
| 5 | | 419.9400 | 41.50 | -8.85 | 32.65 | 46.00 | -13.35 | QP | | | |
| 6 | | 549.9200 | 35.24 | -6.66 | 28.58 | 46.00 | -17.42 | QP | | | |

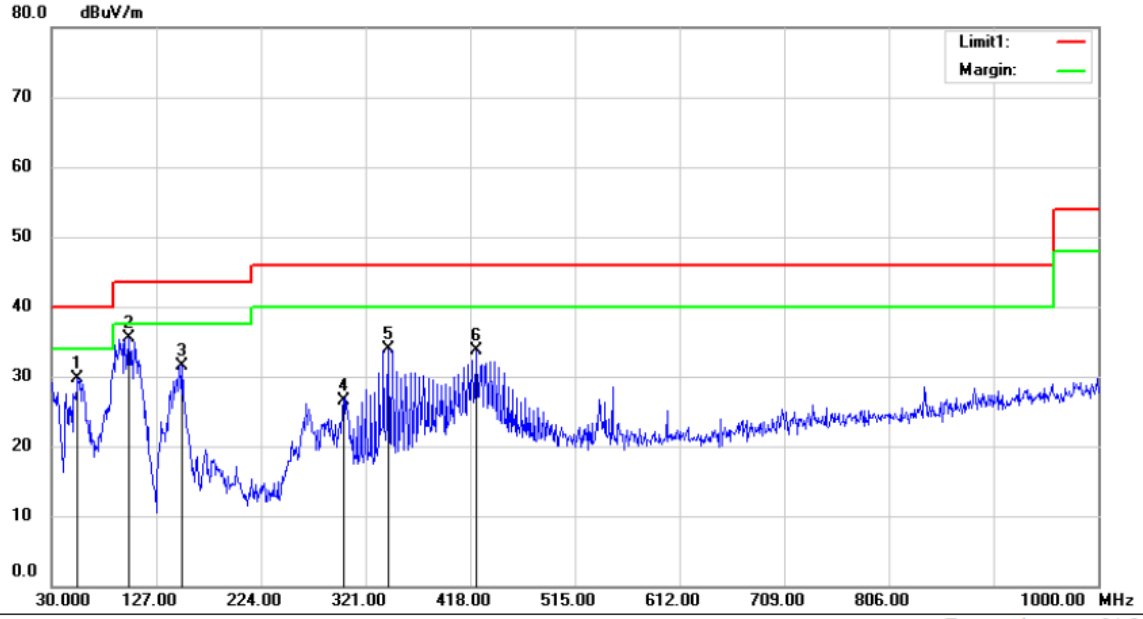



Site RE 10M Chamber #1
Limit: (RE)FCC PART 15C
Mode:WIFI5G TX AC20 5200
Note:

Polarization: ***Horizontal***
Power: AC 120V/60Hz

Temperature: 24 C
Humidity: 53 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 106.6300 | 35.07 | -15.54 | 19.53 | 43.50 | -23.97 | QP | | | |
| 2 | | 151.2500 | 45.72 | -19.07 | 26.65 | 43.50 | -16.85 | QP | | | |
| 3 | | 285.1100 | 41.10 | -12.84 | 28.26 | 46.00 | -17.74 | QP | | | |
| 4 | * | 333.6100 | 43.37 | -11.17 | 32.20 | 46.00 | -13.80 | QP | | | |
| 5 | | 374.3500 | 42.01 | -10.37 | 31.64 | 46.00 | -14.36 | QP | | | |
| 6 | | 436.4300 | 38.22 | -8.81 | 29.41 | 46.00 | -16.59 | QP | | | |



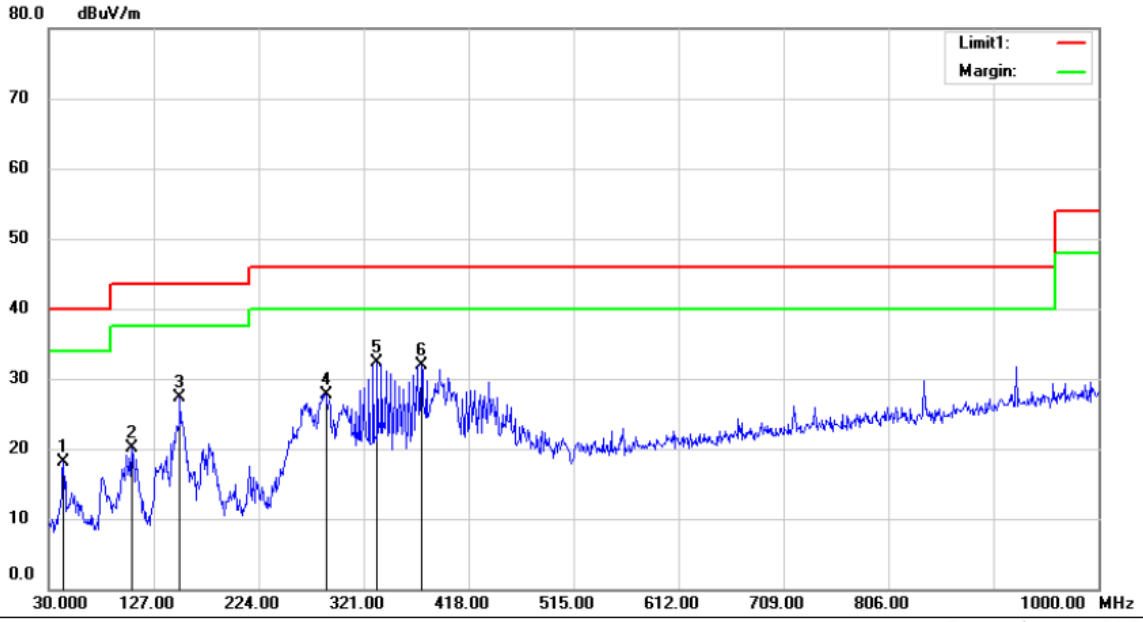

Site RE 10M Chamber #1 Polarization: ***Vertical*** Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode: WIFI5G TX AC20 5200

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 54.2500 | 43.92 | -14.28 | 29.64 | 40.00 | -10.36 | QP | | | |
| 2 | * | 101.7800 | 51.29 | -15.82 | 35.47 | 43.50 | -8.03 | QP | | | |
| 3 | | 151.2500 | 50.52 | -19.07 | 31.45 | 43.50 | -12.05 | QP | | | |
| 4 | | 300.6300 | 38.95 | -12.45 | 26.50 | 46.00 | -19.50 | QP | | | |
| 5 | | 342.3400 | 44.55 | -10.72 | 33.83 | 46.00 | -12.17 | QP | | | |
| 6 | | 423.8200 | 42.62 | -8.88 | 33.74 | 46.00 | -12.26 | QP | | | |



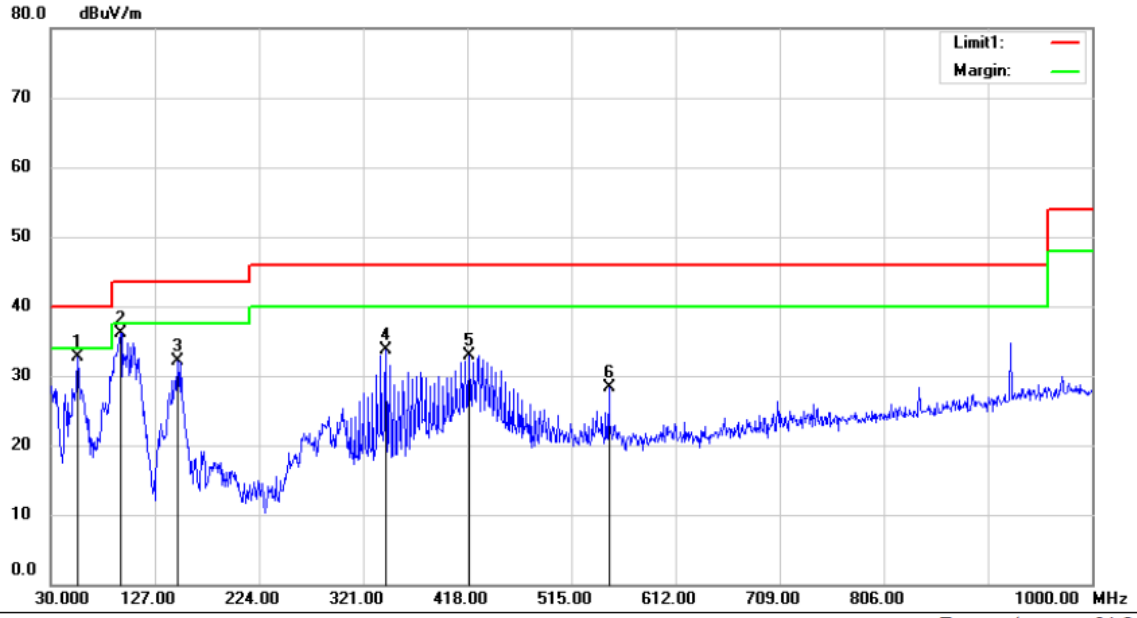

Site RE 10M Chamber #1 Polarization: ***Horizontal*** Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode:WIFI5G TX AC20 5240

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 43.5800 | 32.37 | -14.25 | 18.12 | 40.00 | -21.88 | QP | | | |
| 2 | | 106.6300 | 35.55 | -15.54 | 20.01 | 43.50 | -23.49 | QP | | | |
| 3 | | 151.2500 | 46.44 | -19.07 | 27.37 | 43.50 | -16.13 | QP | | | |
| 4 | | 286.0800 | 40.58 | -12.79 | 27.79 | 46.00 | -18.21 | QP | | | |
| 5 | * | 333.6100 | 43.43 | -11.17 | 32.26 | 46.00 | -13.74 | QP | | | |
| 6 | | 374.3500 | 42.24 | -10.37 | 31.87 | 46.00 | -14.13 | QP | | | |



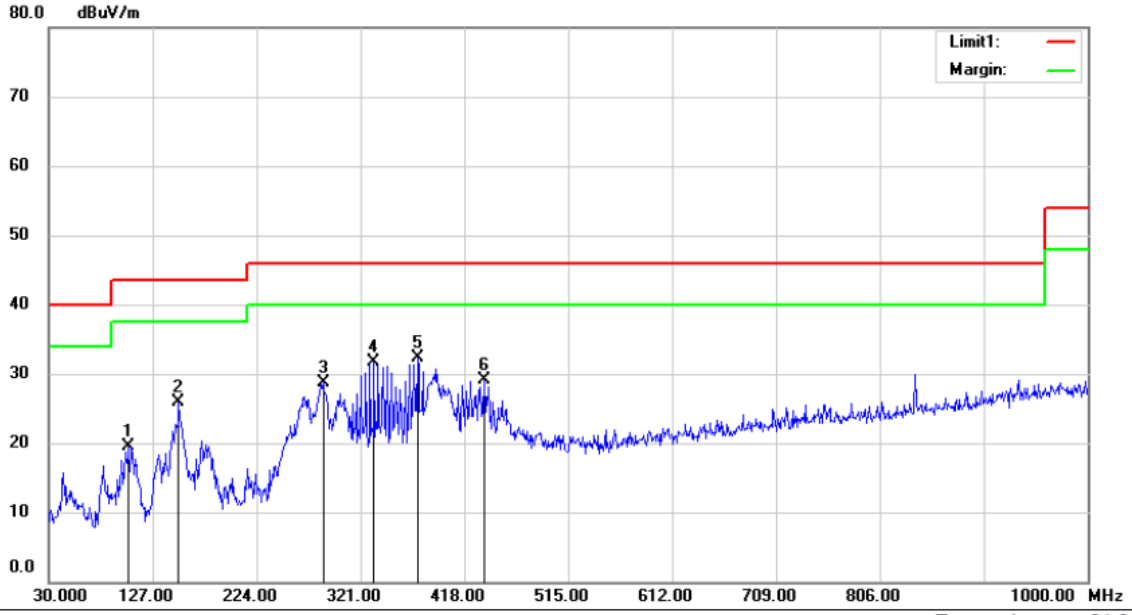

Site RE 10M Chamber #1
Polarization: *Vertical*
Temperature: 24 C

Limit: (RE)FCC PART 15C
Power: AC 120V/60Hz
Humidity: 53 %

Mode:WIFI5G TX AC20 5240

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 55.2200 | 47.30 | -14.50 | 32.80 | 40.00 | -7.20 | QP | | | |
| 2 | | 94.9900 | 52.70 | -16.62 | 36.08 | 43.50 | -7.42 | QP | | | |
| 3 | | 148.3400 | 51.33 | -19.26 | 32.07 | 43.50 | -11.43 | QP | | | |
| 4 | | 342.3400 | 44.39 | -10.72 | 33.67 | 46.00 | -12.33 | QP | | | |
| 5 | | 419.9400 | 41.78 | -8.85 | 32.93 | 46.00 | -13.07 | QP | | | |
| 6 | | 549.9200 | 34.96 | -6.66 | 28.30 | 46.00 | -17.70 | QP | | | |



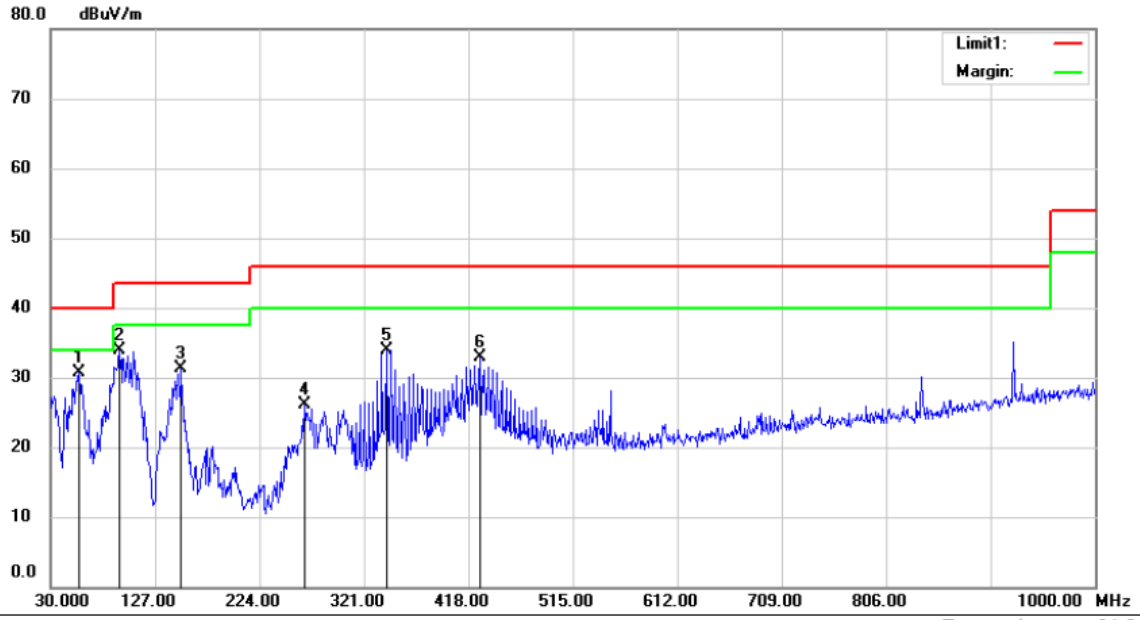

Site RE 10M Chamber #1 Polarization: ***Horizontal*** Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode:WIFI5G TX AC20 5745

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 104.6900 | 35.03 | -15.56 | 19.47 | 43.50 | -24.03 | QP | | | |
| 2 | | 151.2500 | 45.06 | -19.07 | 25.99 | 43.50 | -17.51 | QP | | | |
| 3 | | 286.0800 | 41.59 | -12.79 | 28.80 | 46.00 | -17.20 | QP | | | |
| 4 | | 333.6100 | 42.79 | -11.17 | 31.62 | 46.00 | -14.38 | QP | | | |
| 5 | * | 374.3500 | 42.62 | -10.37 | 32.25 | 46.00 | -13.75 | QP | | | |
| 6 | | 436.4300 | 37.88 | -8.81 | 29.07 | 46.00 | -16.93 | QP | | | |

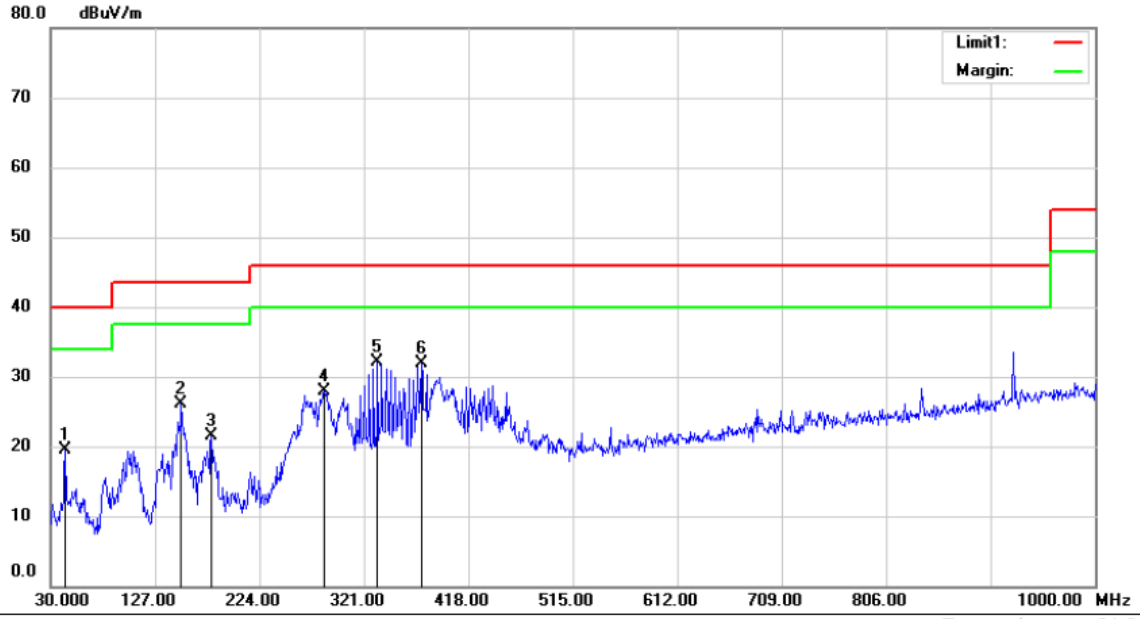



Site RE 10M Chamber #1
Limit: (RE)FCC PART 15C
Mode:WIFI5G TX AC20 5745
Note:

Polarization: *Vertical*
Power: AC 120V/60Hz

Temperature: 24 C
Humidity: 53 %

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 56.1900 | 45.55 | -14.76 | 30.79 | 40.00 | -9.21 | QP | | | |
| 2 | | 94.0200 | 50.77 | -16.84 | 33.93 | 43.50 | -9.57 | QP | | | |
| 3 | | 151.2500 | 50.31 | -19.07 | 31.24 | 43.50 | -12.26 | QP | | | |
| 4 | | 265.7100 | 39.40 | -13.26 | 26.14 | 46.00 | -19.86 | QP | | | |
| 5 | | 342.3400 | 44.68 | -10.72 | 33.96 | 46.00 | -12.04 | QP | | | |
| 6 | | 428.6700 | 41.83 | -8.90 | 32.93 | 46.00 | -13.07 | QP | | | |



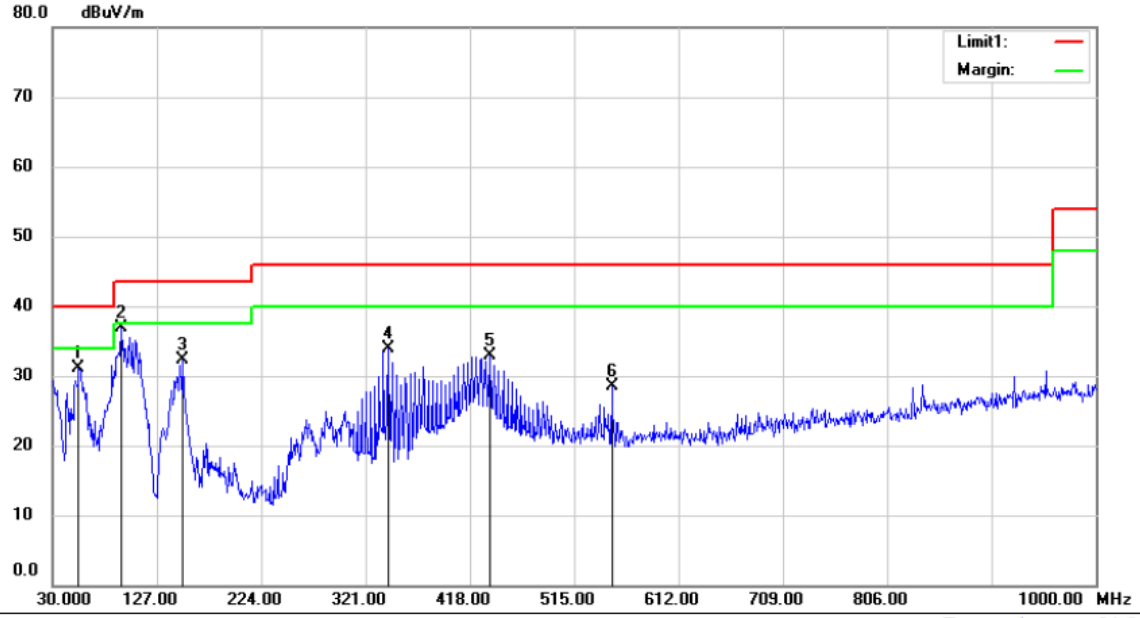

Site RE 10M Chamber #1 Polarization: ***Horizontal*** Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode:WIFI5G TX AC20 5785

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 43.5800 | 33.81 | -14.25 | 19.56 | 40.00 | -20.44 | QP | | | |
| 2 | | 151.2500 | 45.27 | -19.07 | 26.20 | 43.50 | -17.30 | QP | | | |
| 3 | | 179.3800 | 38.90 | -17.34 | 21.56 | 43.50 | -21.94 | QP | | | |
| 4 | | 284.1400 | 40.73 | -12.83 | 27.90 | 46.00 | -18.10 | QP | | | |
| 5 | * | 333.6100 | 43.18 | -11.17 | 32.01 | 46.00 | -13.99 | QP | | | |
| 6 | | 374.3500 | 42.33 | -10.37 | 31.96 | 46.00 | -14.04 | QP | | | |



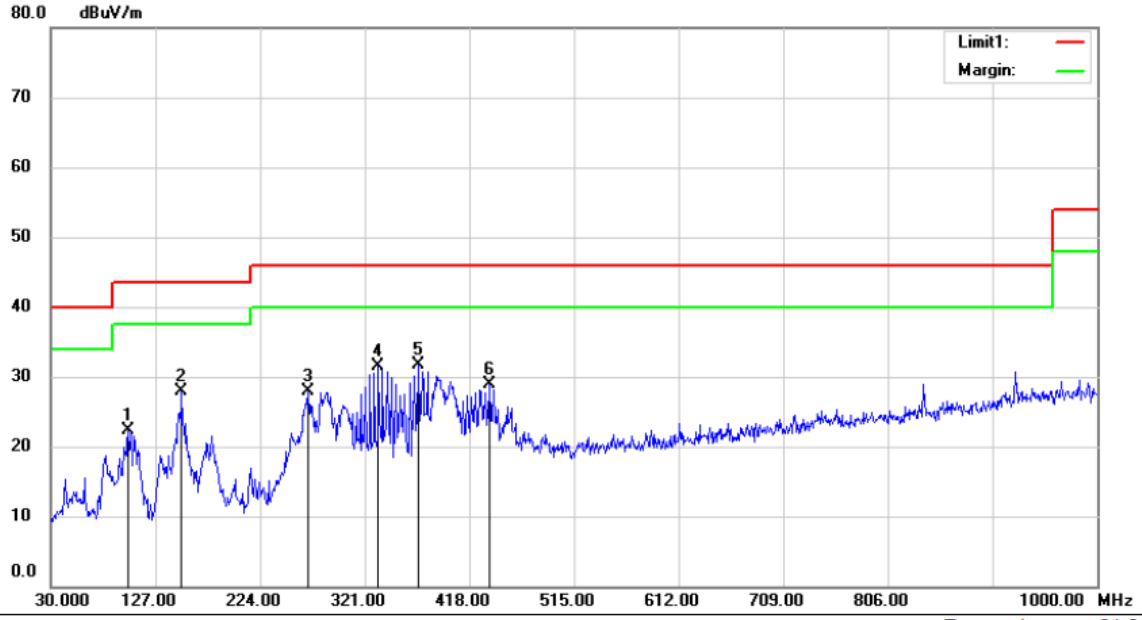

Site RE 10M Chamber #1 Polarization: *Vertical* Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode:WIFI5G TX AC20 5785

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 54.2500 | 45.33 | -14.28 | 31.05 | 40.00 | -8.95 | QP | | | |
| 2 | * | 94.0200 | 53.83 | -16.84 | 36.99 | 43.50 | -6.51 | QP | | | |
| 3 | | 151.2500 | 51.40 | -19.07 | 32.33 | 43.50 | -11.17 | QP | | | |
| 4 | | 342.3400 | 44.71 | -10.72 | 33.99 | 46.00 | -12.01 | QP | | | |
| 5 | | 436.4300 | 41.66 | -8.81 | 32.85 | 46.00 | -13.15 | QP | | | |
| 6 | | 549.9200 | 35.11 | -6.66 | 28.45 | 46.00 | -17.55 | QP | | | |



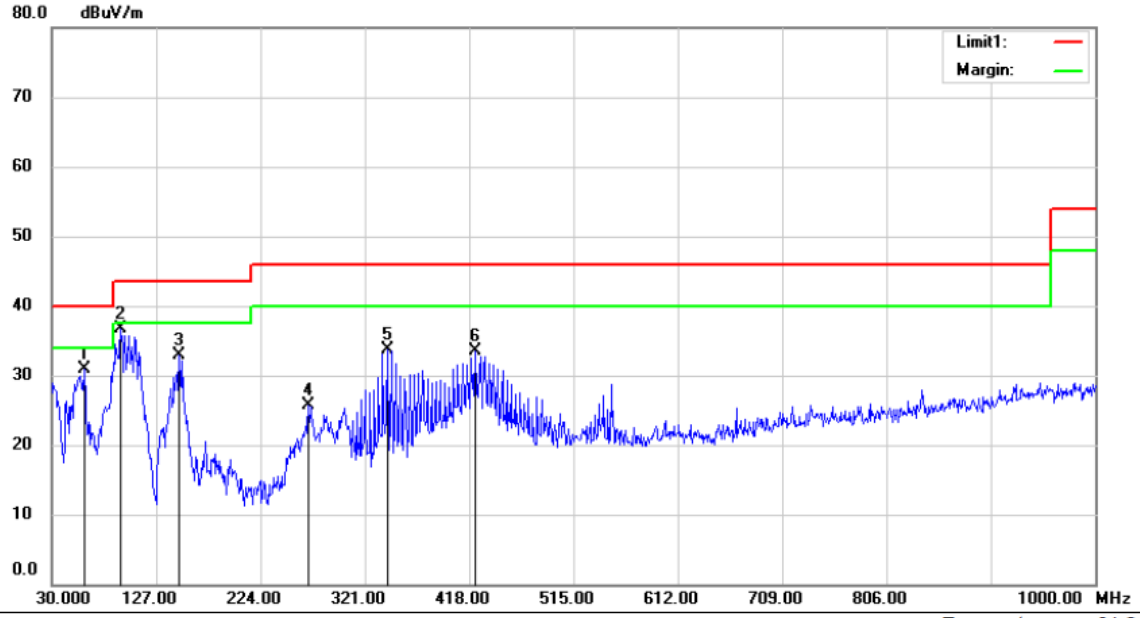

Site RE 10M Chamber #1 Polarization: ***Horizontal*** Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode:WIFI5G TX AC20 5825

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 101.7800 | 38.04 | -15.82 | 22.22 | 43.50 | -21.28 | QP | | | |
| 2 | | 151.2500 | 46.89 | -19.07 | 27.82 | 43.50 | -15.68 | QP | | | |
| 3 | | 268.6200 | 41.13 | -13.31 | 27.82 | 46.00 | -18.18 | QP | | | |
| 4 | | 333.6100 | 42.68 | -11.17 | 31.51 | 46.00 | -14.49 | QP | | | |
| 5 | * | 370.4700 | 42.43 | -10.65 | 31.78 | 46.00 | -14.22 | QP | | | |
| 6 | | 436.4300 | 37.65 | -8.81 | 28.84 | 46.00 | -17.16 | QP | | | |




Site RE 10M Chamber #1 Polarization: *Vertical* Temperature: 24 C

Limit: (RE)FCC PART 15C Power: AC 120V/60Hz Humidity: 53 %

Mode:WIFI5G TX AC20 5825

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 60.0700 | 46.61 | -15.66 | 30.95 | 40.00 | -9.05 | QP | | | |
| 2 | * | 94.0200 | 53.50 | -16.84 | 36.66 | 43.50 | -6.84 | QP | | | |
| 3 | | 148.3400 | 52.24 | -19.26 | 32.98 | 43.50 | -10.52 | QP | | | |
| 4 | | 268.6200 | 38.99 | -13.31 | 25.68 | 46.00 | -20.32 | QP | | | |
| 5 | | 342.3400 | 44.41 | -10.72 | 33.69 | 46.00 | -12.31 | QP | | | |
| 6 | | 423.8200 | 42.41 | -8.88 | 33.53 | 46.00 | -12.47 | QP | | | |

## 8.6 POWER LINE CONDUCTED EMISSIONS

8.6.1 Applicable Standard

According to FCC Part 15.207(a)

8.6.2 Conformance Limit

| Conducted Emission Limit | | |
|---|---|---|
| Frequency(MHz) | Quasi-peak | Average |
| 0.15-0.5 | 66-56 | 56-46 |
| 0.5-5.0 | 56 | 46 |
| 5.0-30.0 | 60 | 50 |

Note: 1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

8.6.3 Test Configuration

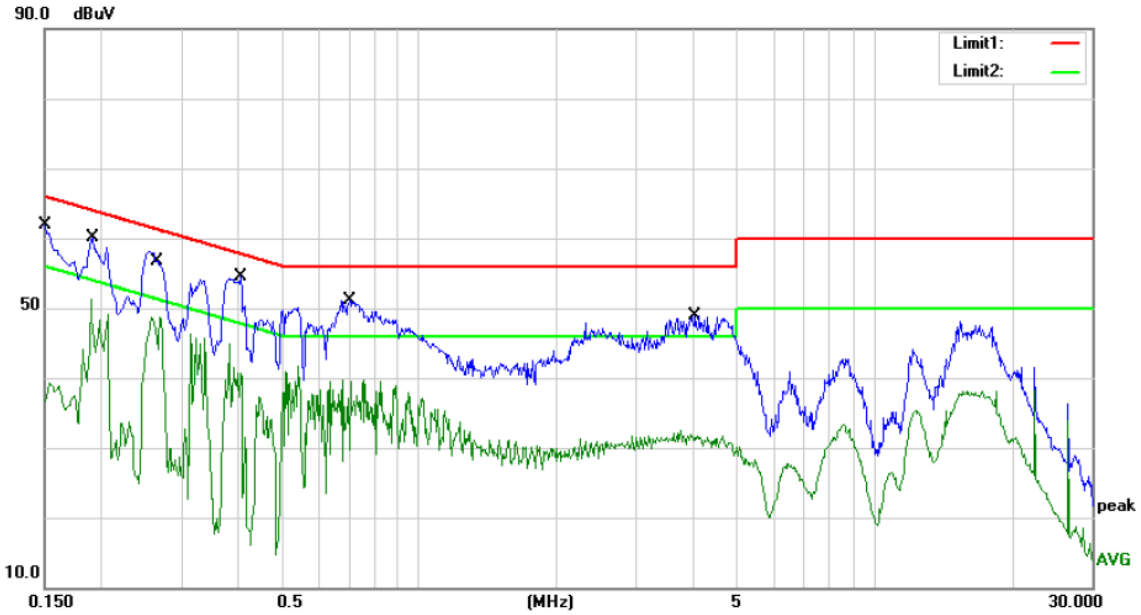
Test according to clause 6.3 conducted emission test setup

8.6.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

8.6.5 Test Results

Pass



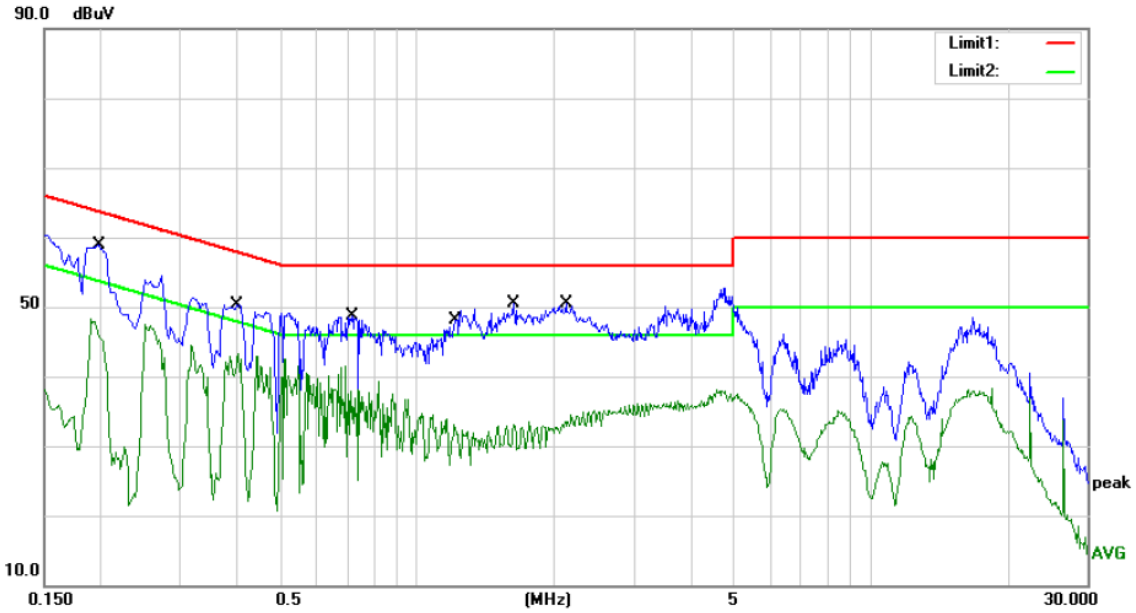

Site Conduction #2 Phase: *L1* Temperature: 24.9

Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 54 %

Mode: AP mode

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1500 | 51.96 | 9.89 | 61.85 | 66.00 | -4.15 | QP | |
| 2 | | 0.1500 | 41.38 | 9.89 | 51.27 | 56.00 | -4.73 | AVG | |
| 3 | | 0.1912 | 50.13 | 9.89 | 60.02 | 63.98 | -3.96 | QP | |
| 4 | | 0.1912 | 38.77 | 9.89 | 48.66 | 53.98 | -5.32 | AVG | |
| 5 | | 0.2700 | 48.21 | 9.90 | 58.11 | 61.12 | -3.01 | QP | |
| 6 | * | 0.2700 | 38.76 | 9.90 | 48.66 | 51.12 | -2.46 | AVG | |
| 7 | | 0.4060 | 44.58 | 9.91 | 54.49 | 57.73 | -3.24 | QP | |
| 8 | | 0.4060 | 34.89 | 9.91 | 44.80 | 47.73 | -2.93 | AVG | |
| 9 | | 0.7020 | 41.17 | 9.94 | 51.11 | 56.00 | -4.89 | QP | |
| 10 | | 0.7020 | 29.81 | 9.94 | 39.75 | 46.00 | -6.25 | AVG | |
| 11 | | 4.0340 | 38.93 | 10.00 | 48.93 | 56.00 | -7.07 | QP | |
| 12 | | 4.0340 | 22.55 | 10.00 | 32.55 | 46.00 | -13.45 | AVG | |




Site Conduction #2 Phase: N Temperature: 24.9

Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 54 %

Mode: AP mode

Note:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1980 | 49.08 | 9.89 | 58.97 | 63.69 | -4.72 | QP | |
| 2 | | 0.1980 | 38.36 | 9.89 | 48.25 | 53.69 | -5.44 | AVG | |
| 3 | | 0.3980 | 40.47 | 9.91 | 50.38 | 57.90 | -7.52 | QP | |
| 4 | | 0.3980 | 33.34 | 9.91 | 43.25 | 47.90 | -4.65 | AVG | |
| 5 | | 0.7180 | 38.78 | 9.94 | 48.72 | 56.00 | -7.28 | QP | |
| 6 | * | 0.7180 | 31.59 | 9.94 | 41.53 | 46.00 | -4.47 | AVG | |
| 7 | | 1.2140 | 38.21 | 9.96 | 48.17 | 56.00 | -7.83 | QP | |
| 8 | | 1.2140 | 25.03 | 9.96 | 34.99 | 46.00 | -11.01 | AVG | |
| 9 | | 1.6300 | 40.62 | 9.97 | 50.59 | 56.00 | -5.41 | QP | |
| 10 | | 1.6300 | 24.72 | 9.97 | 34.69 | 46.00 | -11.31 | AVG | |
| 11 | | 2.1220 | 40.60 | 9.97 | 50.57 | 56.00 | -5.43 | QP | |
| 12 | | 2.1220 | 23.53 | 9.97 | 33.50 | 46.00 | -12.50 | AVG | |

## 8.7 ANTENNA APPLICATION

8.7.1 Antenna Requirement

| Standard | Requirement |
|---|---|
| FCC CRF Part 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded. |

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 15.407 (a), 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.

For intentional device, according to RSS-Gen Issue 4 Section 8.3:
The applicant for equipment certification, as per RSP-100, must provide a list of all antenna types that may be used with the licence-exempt transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna.
Licence-exempt transmitters that have received equipment certification may operate with different types of antennas. However, it is not permissible to exceed the maximum equivalent isotropically radiated power (e.i.r.p.) limits specified in the applicable standard (RSS) for licence-exempt apparatus.

RSS-247 Section 5.4
(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

8.7.2 Result

PASS.

The EUT has a PCB antennas for WIFI 5G band, the antenna max gain is 3.42 dBi,
Note:

☒ Antenna use a permanently attached antenna which is not replaceable.
☐ Not using a standard antenna jack or electrical connector for antenna replacement
☐ The antenna has to be professionally installed (please provide method of installation)

which in accordance to section 15.203, please refer to the internal photos.