TCT 通测检测
TESTING CENTRE TECHNOLOGY

# TEST REPORT

| | | |
|---|---|---|
| **FCC ID. ..... :** | 2BAHU2023002 | |
| **Test Report No..... :** | TCT230619E909 | |
| **Date of issue..... :** | Jun. 29, 2023 | |
| **Testing laboratory ..... :** | SHENZHEN TONGCE TESTING LAB | |
| **Testing location/ address:** | 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China | |
| **Applicant's name..... :** | DIALN PRODUCTS INC. | |
| **Address..... :** | 8312 Page Ave, Saint Louis, Missouri 63130, United States | |
| **Manufacturer's name ... :** | SHENZHEN JREN TECHNOLOGY CO., LTD | |
| **Address..... :** | B Area, 9/F, A4 Building, Tianrui Industrial Park, No. 35, Fuyuan 1st Road, Zhancheng, Fuhai, Baoan District, Shenzhen, China. | |
| **Standard(s) ..... :** | FCC CFR Title 47 Part 15 Subpart E Section 15.407<br>KDB 662911 D01 Multiple Transmitter Output v02r01<br>KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 | |
| **Product Name..... :** | LTE Tablet | |
| **Trade Mark ..... :** | DIALN | |
| **Model/Type reference..... :** | X10G, X10M | |
| **Rating(s)..... :** | Refer to EUT description of page 3 | |
| **Date of receipt of test item ..... :** | Jun. 19, 2023 | |
| **Date (s) of performance of test..... :** | Jun. 19, 2023 - Jun. 29, 2023 | |
| **Tested by (+signature) ... :** | Rleo LIU | Rleo Liu |
| **Check by (+signature).... :** | Beryl ZHAO | Beryl Zhao |
| **Approved by (+signature):** | Tomsin | Tomsin |

SHENZHEN TONGCE TESTING LAB TCT

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# 1. General Product Information

## 1.1. EUT description

| | |
|---|---|
| **Product Name.....:** | LTE Tablet |
| **Model/Type reference.....:** | X10G |
| **Sample Number.....:** | TCT230619E901-0101 |
| **Operation Frequency.....:** | Band 1: 5180 MHz ~ 5240 MHz<br>Band 3: 5745 MHz ~ 5825 MHz |
| **Channel Bandwidth.....:** | 802.11a: 20MHz<br>802.11n: 20MHz, 40MHz<br>802.11ac: 20MHz, 40MHz, 80MHz |
| **Modulation Technology.....:** | Orthogonal Frequency Division Multiplexing(OFDM) |
| **Modulation Type.....:** | 256QAM, 64QAM, 16QAM, BPSK, QPSK |
| **Antenna Type.....:** | PIFA Antenna |
| **Antenna Gain.....:** | Band 1: -1.44dBi<br>Band 3: -1.32dBi |
| **Rating(s).....:** | Adapter Information:<br>MODEL: BOS050200-01A<br>INPUT: AC 100-240V, 50/60Hz, 0.45A<br>OUTPUT: DC 5V, 2000mA<br>Rechargeable Li-ion Battery DC 3.7V |

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

## 1.2. Model(s) list

| No. | Model No. | Tested with |
|---|---|---|
| 1 | X10G | ☒ |
| Other models | X10M | ☐ |

Note: X10G is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names. So the test data of X10G can represent the remaining models.

## 1.3. Test Frequency

**Band 1**

| 20MHz | | 40MHz | | 80MHz | |
|---|---|---|---|---|---|
| Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 36 | 5180 | 38 | 5190 | 42 | 5210 |
| 40 | 5200 | 46 | 5230 | | |
| 48 | 5240 | | | | |

**Band 3**

| 20MHz | | 40MHz | | 80MHz | |
|---|---|---|---|---|---|
| Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 149 | 5745 | 151 | 5755 | 155 | 5775 |
| 157 | 5785 | 159 | 5795 | | |
| 165 | 5825 | | | | |

***Note:***

*In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:*

# 2. Test Result Summary

| Requirement | CFR 47 Section | Result |
|---|---|---|
| Antenna requirement | §15.203 | PASS |
| AC Power Line Conducted Emission | §15.207 | PASS |
| Maximum Conducted Output Power | §15.407(a) | PASS |
| 6dB Emission Bandwidth | §15.407(a) | PASS |
| 26dB Emission Bandwidth& 99% Occupied Bandwidth | §15.407(a) | PASS |
| Power Spectral Density | §15.407(a) | PASS |
| Restricted Bands around fundamental frequency | §15.407(b) | PASS |
| Radiated Emission | §15.407(b) | PASS |
| Frequency Stability | §15.407(g) | PASS |

***Note:***

*1. PASS: Test item meets the requirement.*

*2. Fail: Test item does not meet the requirement.*

*3. N/A: Test case does not apply to the test object.*

*4. The test result judgment is decided by the limit of test standard.*

*5. For the band 5.15-5.25GHz,EUT meet the requirements of 15.407(a)(ii).*

*6. Those test results (AC Power Line Conducted Emission, 6dB Emission Bandwidth, 26dB Emission Bandwidth& 99% Occupied Bandwidth, Power Spectral Density, Frequency Stability) was based on FCC ID: 2BAHU2023002; Change product model No. and shell material of EUT.*

# 3. General Information

## 3.1. Test environment and mode

| **Operating Environment:** | |
|---|---|
| Temperature: | 25.0 °C |
| Humidity: | 56 % RH |
| Atmospheric Pressure: | 1010 mbar |
| Test Software: | |
| Software Information: | Engineering Mode |
| Power Level: | 16 |
| **Test Mode:** | |
| Engineer mode: | Keep the EUT in continuous transmitting by select channel and modulations with max. duty cycle. |
| The sample was placed 0.8m/1.5m for blow/above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. | |

| We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows: | |
|---|---|
| **Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.** | |
| Mode | Data rate |
| 802.11a | 6 Mbps |
| 802.11n(HT20) | 6.5 Mbps |
| 802.11n(HT40) | 13.5 Mbps |
| 802.11ac(VHT20) | 6.5 Mbps |
| 802.11ac(VHT40) | 13.5 Mbps |
| 802.11ac(VHT80) | 29.3 Mbps |

## 3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Equipment | Model No. | Serial No. | FCC ID | Trade Name |
|---|---|---|---|---|
| / | / | / | / | / |

***Note:***

*1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*

*2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

*3. For conducted measurements (Output Power, Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.*



Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

# 4. Facilities and Accreditations

## 4.1. Facilities

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

- FCC - Registration No.: 645098
  SHENZHEN TONGCE TESTING LAB
  Designation Number: CN1205
  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.
- IC - Registration No.: 10668A-1
  SHENZHEN TONGCE TESTING LAB
  CAB identifier: CN0031
  The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

## 4.2. Location

SHENZHEN TONGCE TESTING LAB
Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China
TEL: +86-755-27673339

## 4.3. Measurement Uncertainty

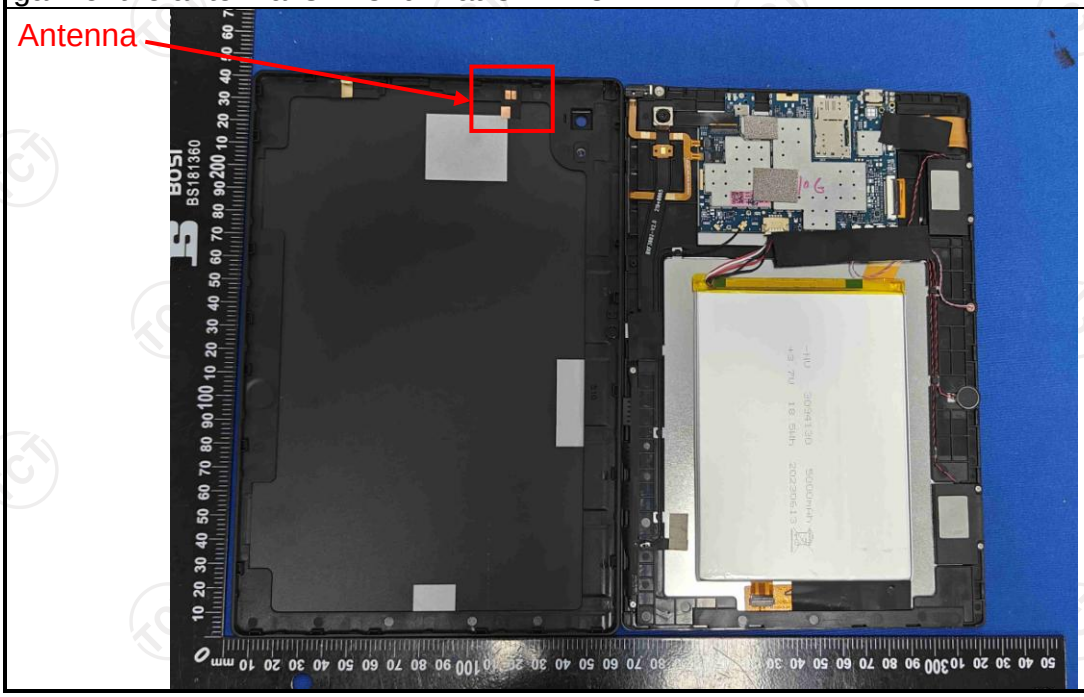
The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

| No. | Item | MU |
|---|---|---|
| 1 | Conducted Emission | ± 3.10 dB |
| 2 | RF power, conducted | ± 0.12 dB |
| 3 | Spurious emissions, conducted | ± 0.11 dB |
| 4 | All emissions, radiated(<1 GHz) | ± 4.56 dB |
| 5 | All emissions, radiated(1 GHz - 18 GHz) | ± 4.22 dB |
| 6 | All emissions, radiated(18 GHz- 40 GHz) | ± 4.36 dB |

# 5. Test Results and Measurement Data

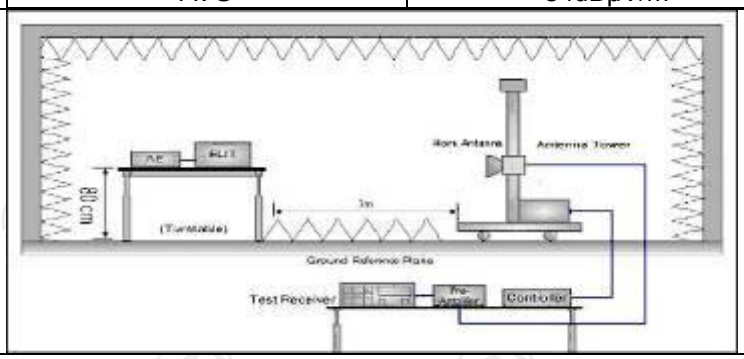
## 5.1. Antenna requirement

| **Standard requirement:** | FCC Part15 C Section 15.203 /247(c) |
|---|---|
| 15.203 requirement:<br>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. | |
| **E.U.T Antenna:** | |
| The EUT antenna is PIFA antenna which permanently attached, and the maximum gain of the antenna is -1.32dBi at UNII-B3. | |



## 5.2. Band edge

### 5.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC CFR47 Part 15E Section 15.407</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10 2013</td></tr>
<tr><td>Limit:</td><td>In un-restricted band:<br>For Band 1&2A&2C: -27dBm/MHz<br>For Band 3:
<table>
<tr><td>Frequency (MHz)</td><td>Limit (dBm/MHz)</td><td>Frequency (MHz)</td><td>Limit (dBm/MHz)</td></tr>
<tr><td>< 5650</td><td>-27</td><td>5850~5855</td><td>27~15.6</td></tr>
<tr><td>5650~5700</td><td>-27~10</td><td>5855~5875</td><td>15.6~10</td></tr>
<tr><td>5700~5720</td><td>10~15.6</td><td>5875~5925</td><td>10~-27</td></tr>
<tr><td>5720~5725</td><td>15.6~27</td><td>> 5925</td><td>-27</td></tr>
</table>
E[dBμV/m] = EIRP[dBm] + 95.2 @3m<br>In restricted band:
<table>
<tr><td>Detector</td><td>Limit@3m</td></tr>
<tr><td>Peak</td><td>74dBμV/m</td></tr>
<tr><td>AVG</td><td>54dBμV/m</td></tr>
</table></td></tr>
<tr><td>Test Setup:</td><td> 
</td></tr>
<tr><td>Test Mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold</td></tr>
</table>

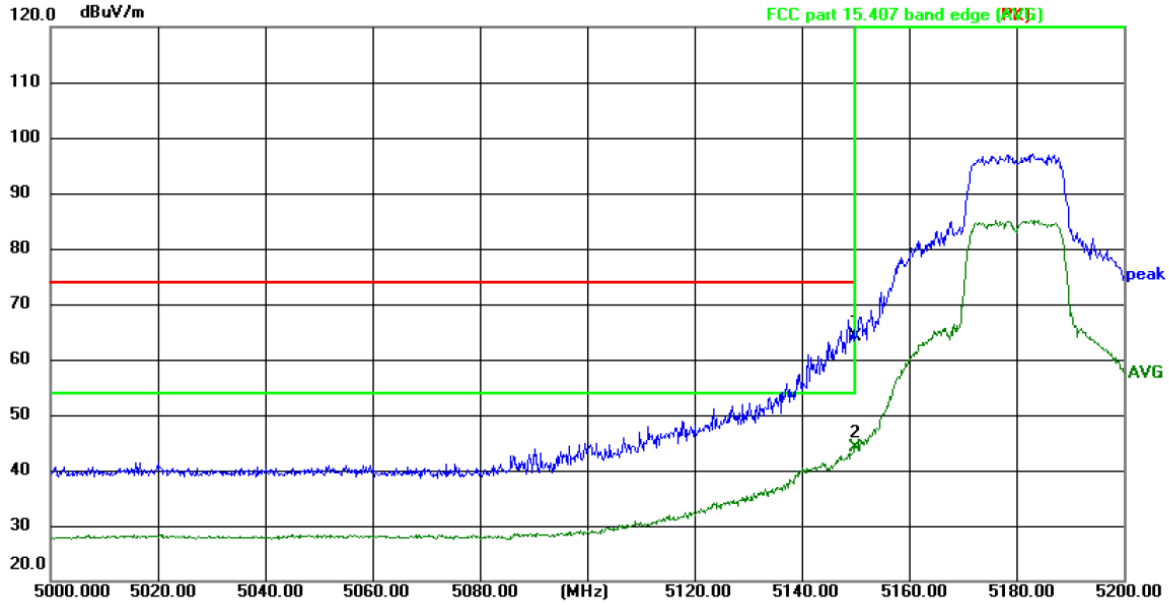
| | |
|---|---|
| | Mode.<br>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. |
| **Test Result:** | PASS |

### 5.2.2. Test Instruments

| Radiated Emission Test Site (966) | | | | |
|---|---|---|---|---|
| **Name of Equipment** | **Manufacturer** | **Model** | **Serial Number** | **Calibration Due** |
| EMI Test Receiver | R&S | ESIB7 | 100197 | Jul. 03, 2023 |
| Spectrum Analyzer | R&S | FSQ40 | 200061 | Jul. 03, 2023 |
| Spectrum Analyzer | Agilent | N9020A | MY49100619 | Jul. 04, 2023 |
| Pre-amplifier | SKET | LNPA_0118G-45 | SK2021012102 | Feb. 20, 2024 |
| Pre-amplifier | SKET | LNPA_1840G-50 | SK202109203500 | Feb. 20, 2024 |
| Pre-amplifier | HP | 8447D | 2727A05017 | Jul. 03, 2023 |
| Loop antenna | Schwarzbeck | FMZB1519B | 00191 | Jun. 11, 2024 |
| Broadband Antenna | Schwarzbeck | VULB9163 | 340 | Jul. 05, 2023 |
| Horn Antenna | Schwarzbeck | BBHA 9120D | 631 | Jul. 05, 2023 |
| Horn Antenna | Schwarzbeck | BBHA 9170 | 00956 | Feb. 24, 2024 |
| Coaxial cable | SKET | RC-18G-N-M | / | Feb. 24, 2024 |
| Coaxial cable | SKET | RC_40G-K-M | / | Feb. 24, 2024 |
| Antenna Mast | Keleto | CC-A-4M | / | / |
| EMI Test Software | Shurple Technology | EZ-EMC | / | / |

### 5.2.3. Test Data

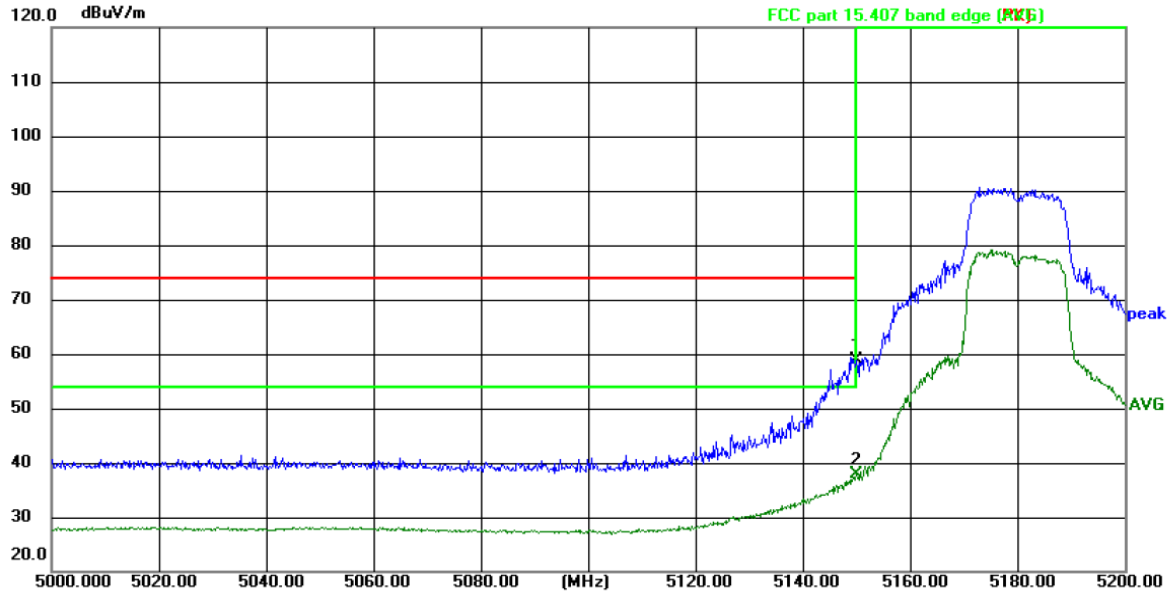
**AC20-5180**




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.000 | 72.83 | -8.63 | 64.20 | 74.00 | -9.80 | peak | P | |
| 2 * | 5150.000 | 52.84 | -8.63 | 44.21 | 54.00 | -9.79 | AVG | P | |

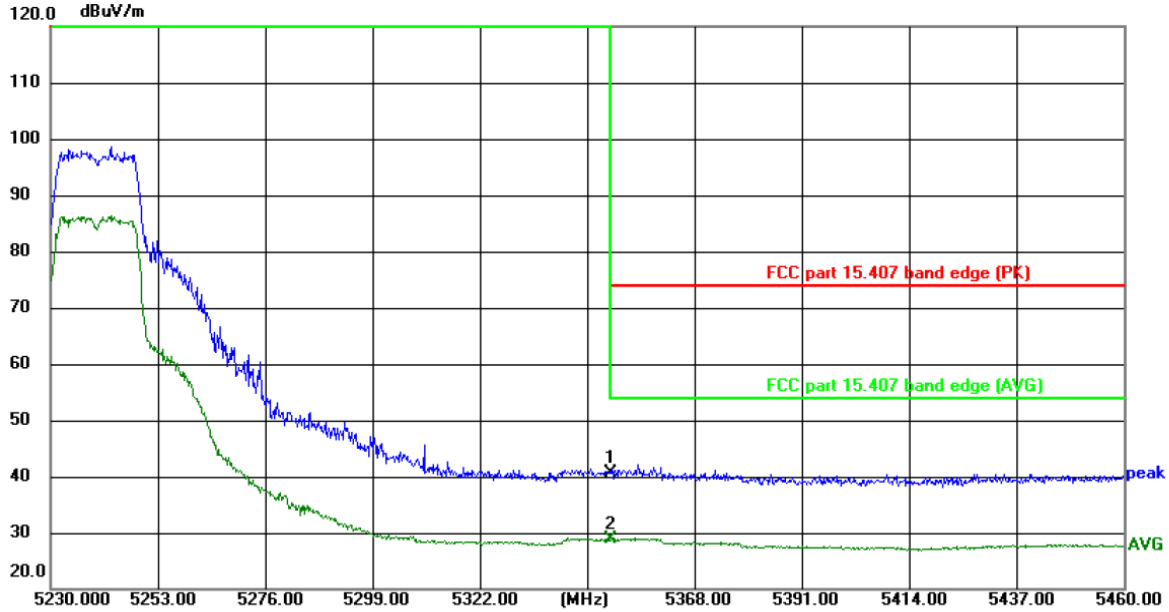



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5150.000 | 67.41 | -8.63 | 58.78 | 74.00 | -15.22 | peak | P | |
| 2 | 5150.000 | 46.54 | -8.63 | 37.91 | 54.00 | -16.09 | AVG | P | |

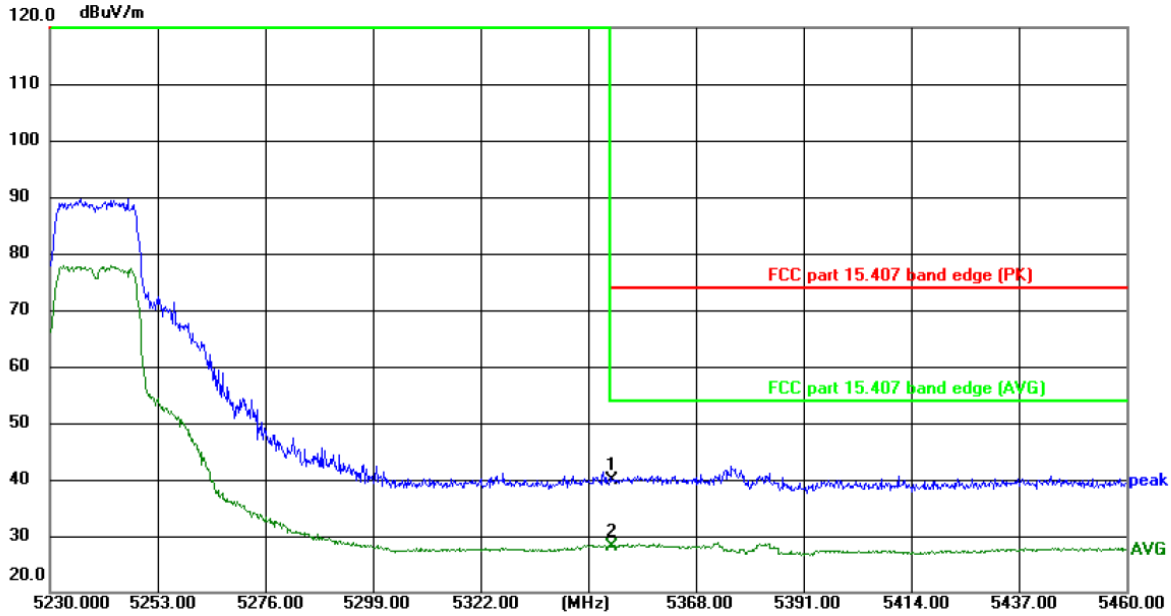
## AC20-5240




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5350.000 | 48.87 | -8.22 | 40.65 | 74.00 | -33.35 | peak | P | |
| 2 * | 5350.000 | 36.99 | -8.22 | 28.77 | 54.00 | -25.23 | AVG | P | |

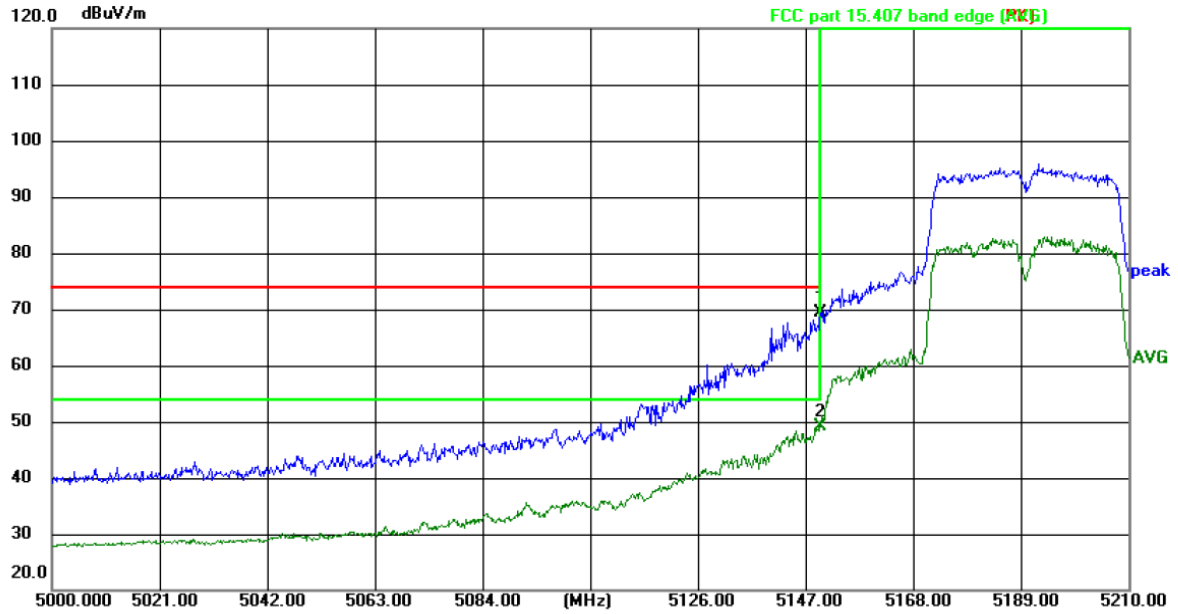



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5350.000 | 48.06 | -8.22 | 39.84 | 74.00 | -34.16 | peak | P | |
| 2 * | 5350.000 | 36.39 | -8.22 | 28.17 | 54.00 | -25.83 | AVG | P | |

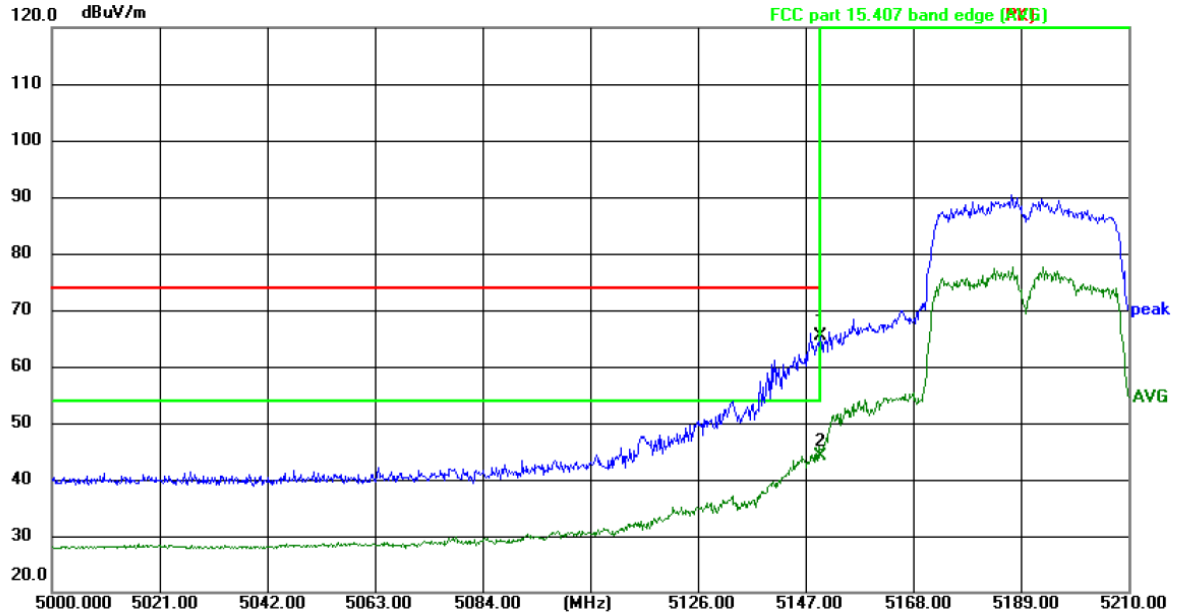
## AC40-5190




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5150.000 | 78.05 | -8.63 | 69.42 | 74.00 | -4.58 | peak | P | |
| 2 | 5150.000 | 57.70 | -8.63 | 49.07 | 54.00 | -4.93 | AVG | P | |

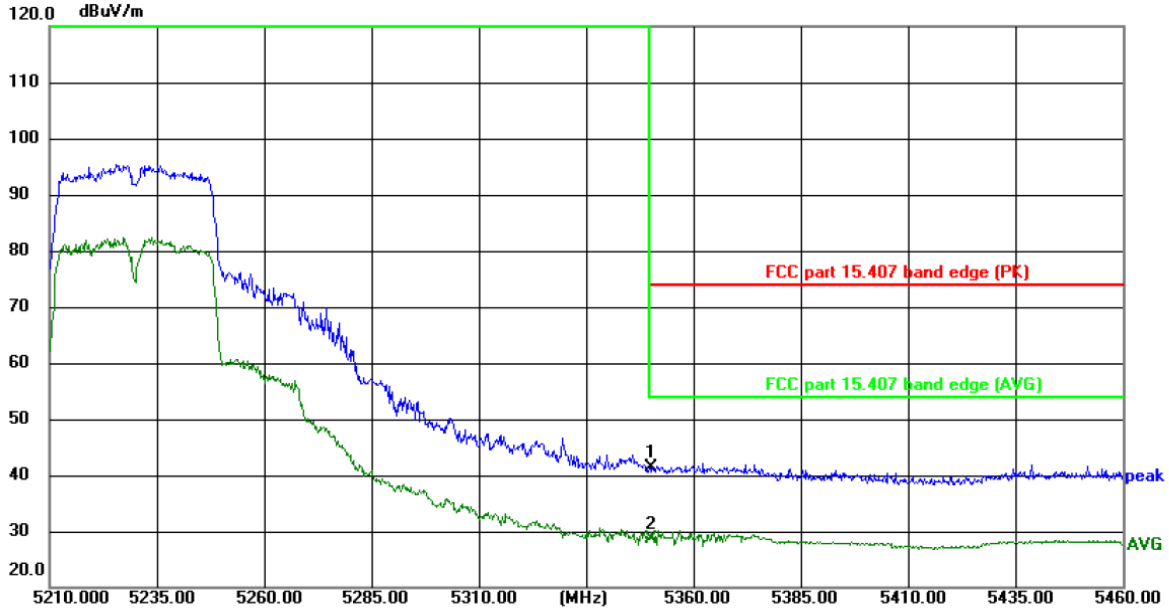



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5150.000 | 74.08 | -8.63 | 65.45 | 74.00 | -8.55 | peak | P | |
| 2 | 5150.000 | 52.67 | -8.63 | 44.04 | 54.00 | -9.96 | AVG | P | |

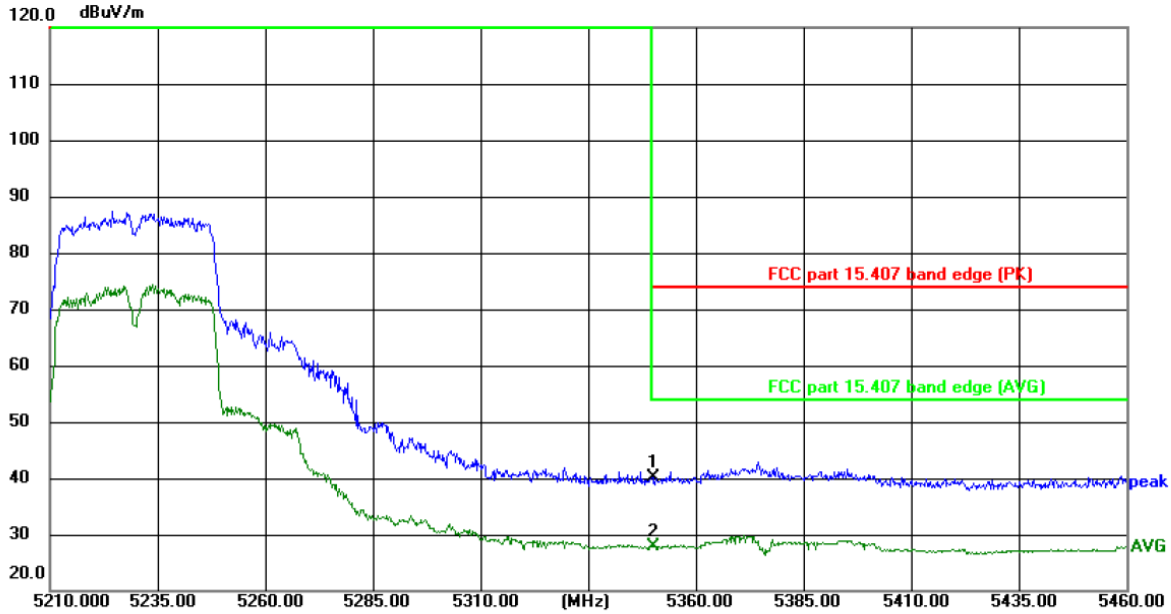
## AC40-5230




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5350.000 | 49.51 | -8.22 | 41.29 | 74.00 | -32.71 | peak | P | |
| 2 * | 5350.000 | 36.88 | -8.22 | 28.66 | 54.00 | -25.34 | AVG | P | |

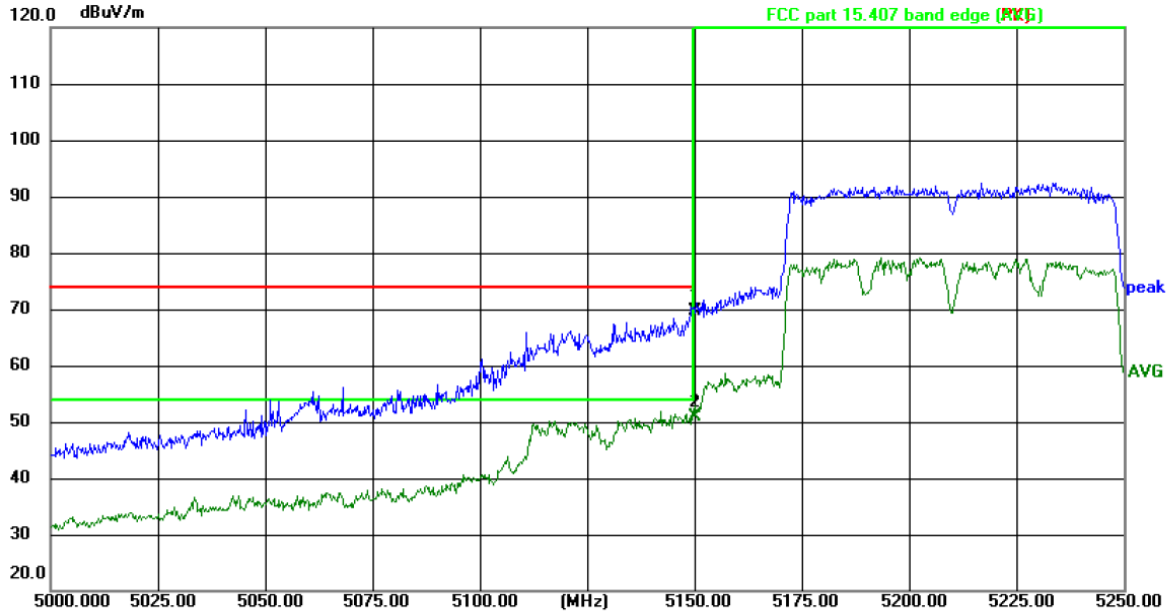



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5350.000 | 48.34 | -8.22 | 40.12 | 74.00 | -33.88 | peak | P | |
| 2 * | 5350.000 | 36.00 | -8.22 | 27.78 | 54.00 | -26.22 | AVG | P | |

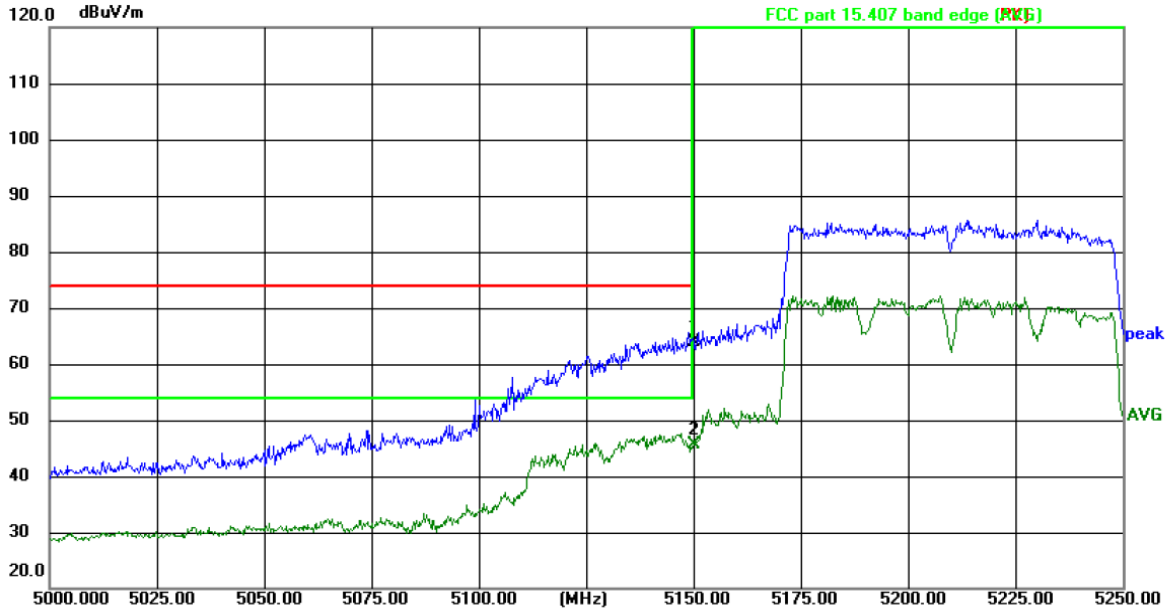
## AC80-5210




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.000 | 78.38 | -8.63 | 69.75 | 74.00 | -4.25 | peak | P | |
| 2 * | 5150.000 | 59.62 | -8.63 | 50.99 | 54.00 | -3.01 | AVG | P | |

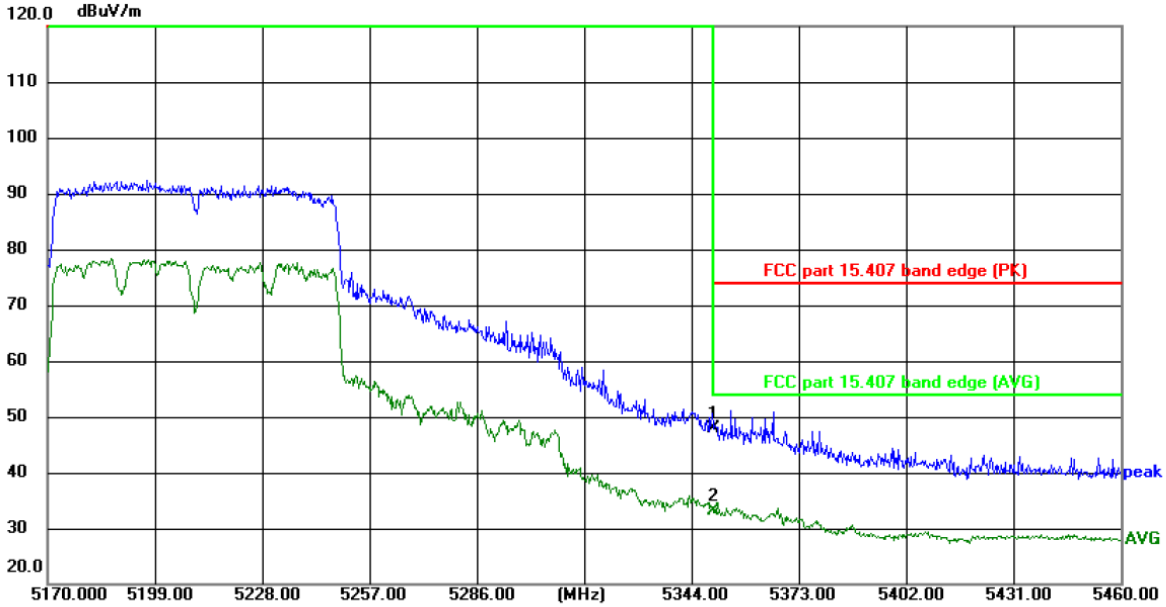



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5150.000 | 72.61 | -8.63 | 63.98 | 74.00 | -10.02 | peak | P | |
| 2 * | 5150.000 | 54.25 | -8.63 | 45.62 | 54.00 | -8.38 | AVG | P | |

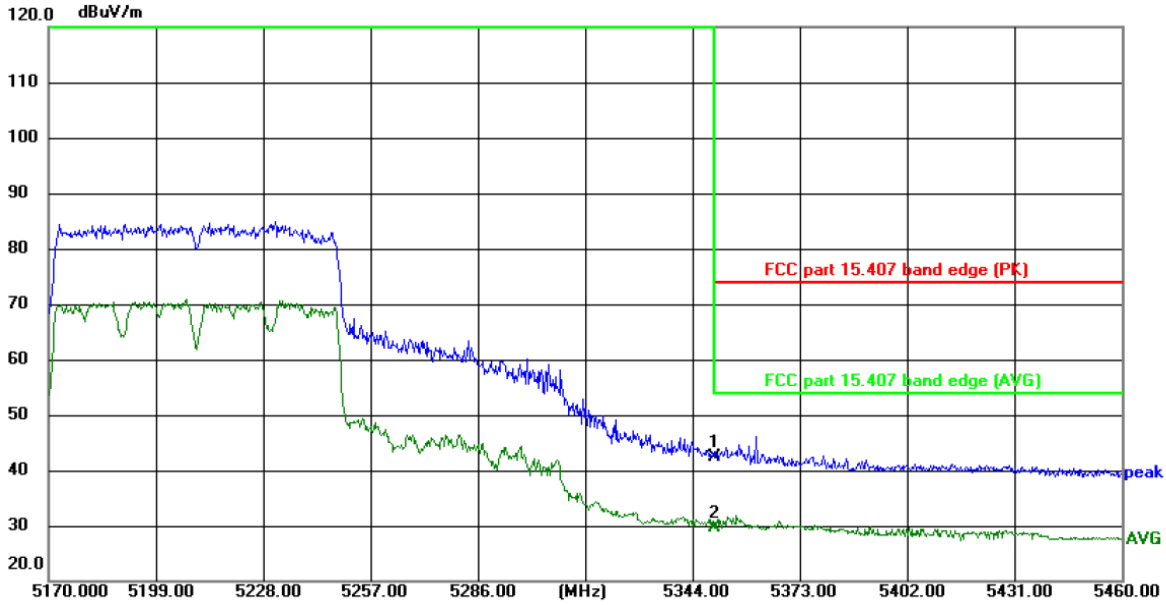
## AC80-5210




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5350.000 | 56.19 | -8.22 | 47.97 | 74.00 | -26.03 | peak | P | |
| 2 * | 5350.000 | 41.23 | -8.22 | 33.01 | 54.00 | -20.99 | AVG | P | |

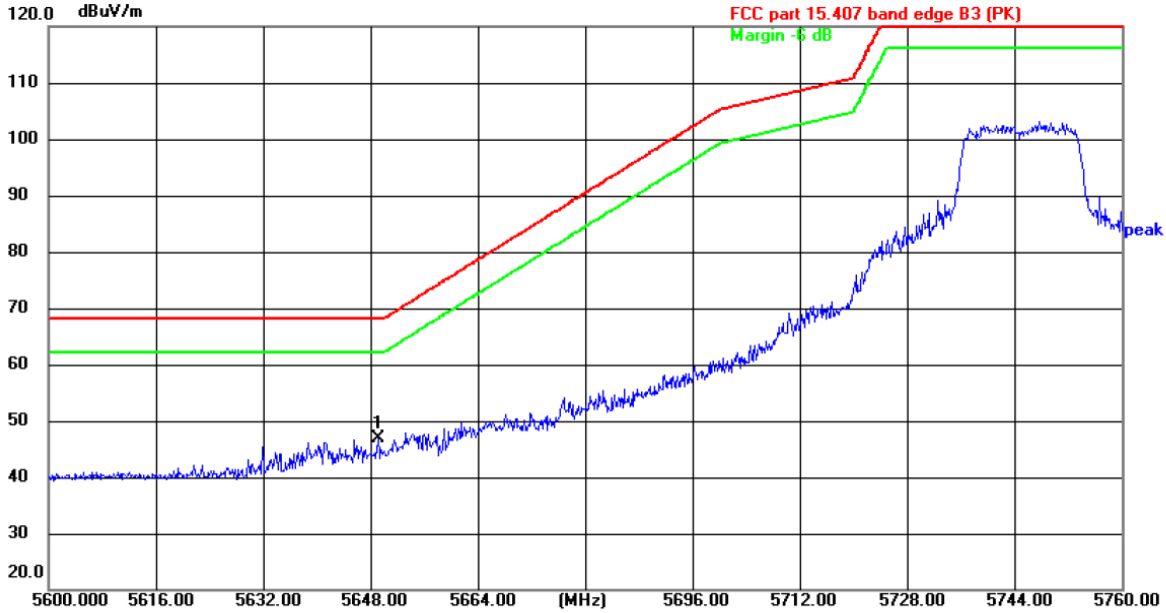



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5350.000 | 50.55 | -8.22 | 42.33 | 74.00 | -31.67 | peak | P | |
| 2 * | 5350.000 | 37.97 | -8.22 | 29.75 | 54.00 | -24.25 | AVG | P | |

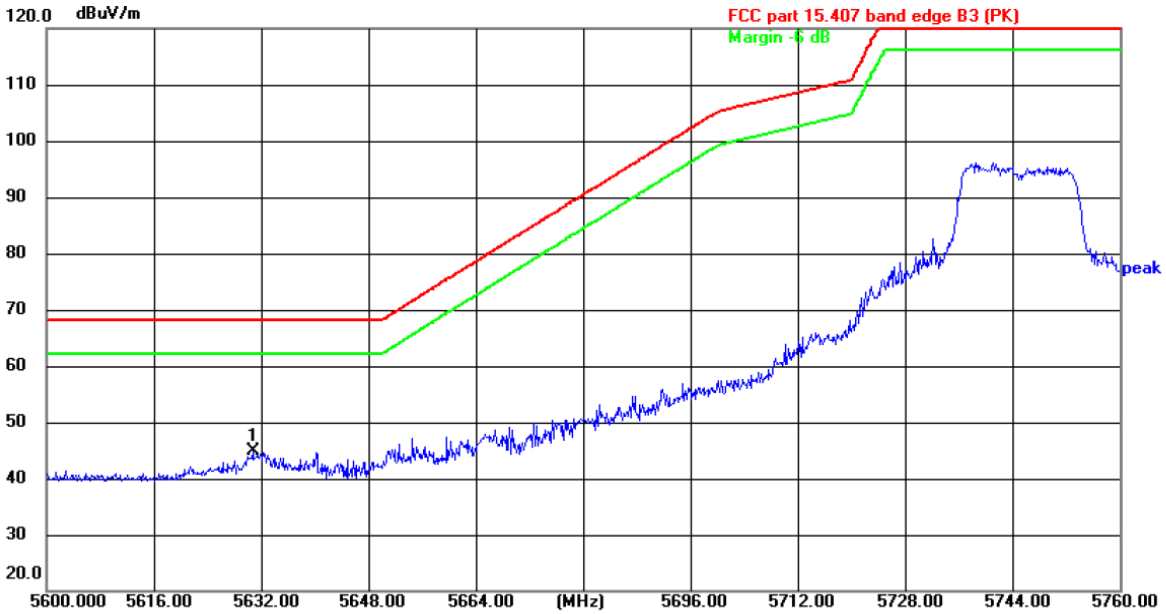
## AC20-5745




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5649.120 | 54.37 | -7.56 | 46.81 | 68.20 | -21.39 | peak | P | |

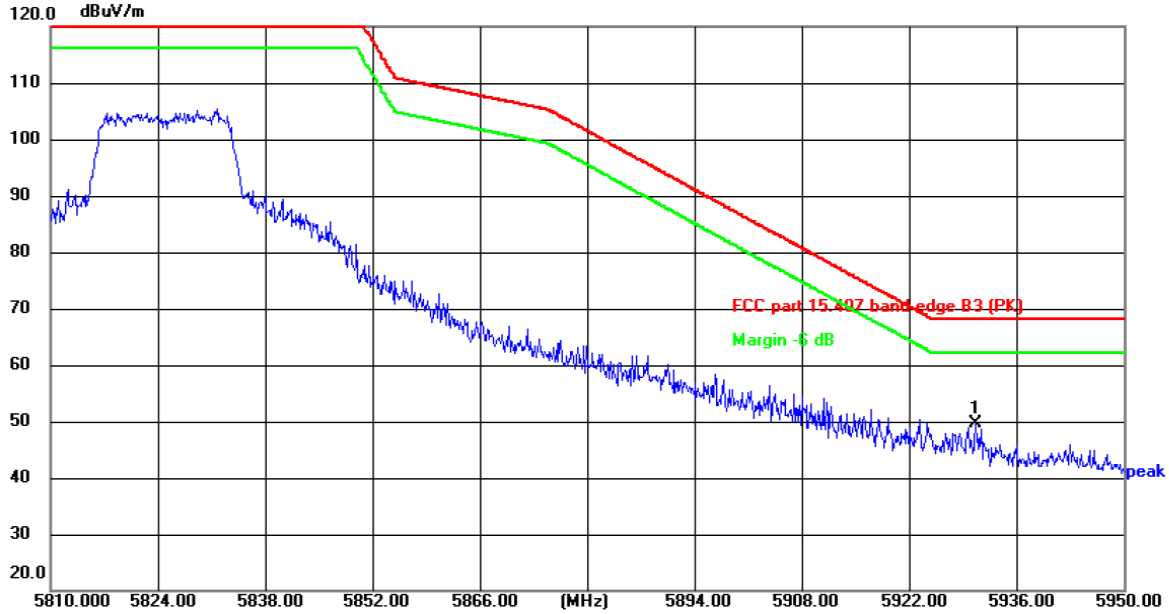



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5630.800 | 52.37 | -7.61 | 44.76 | 68.20 | -23.44 | peak | P | |

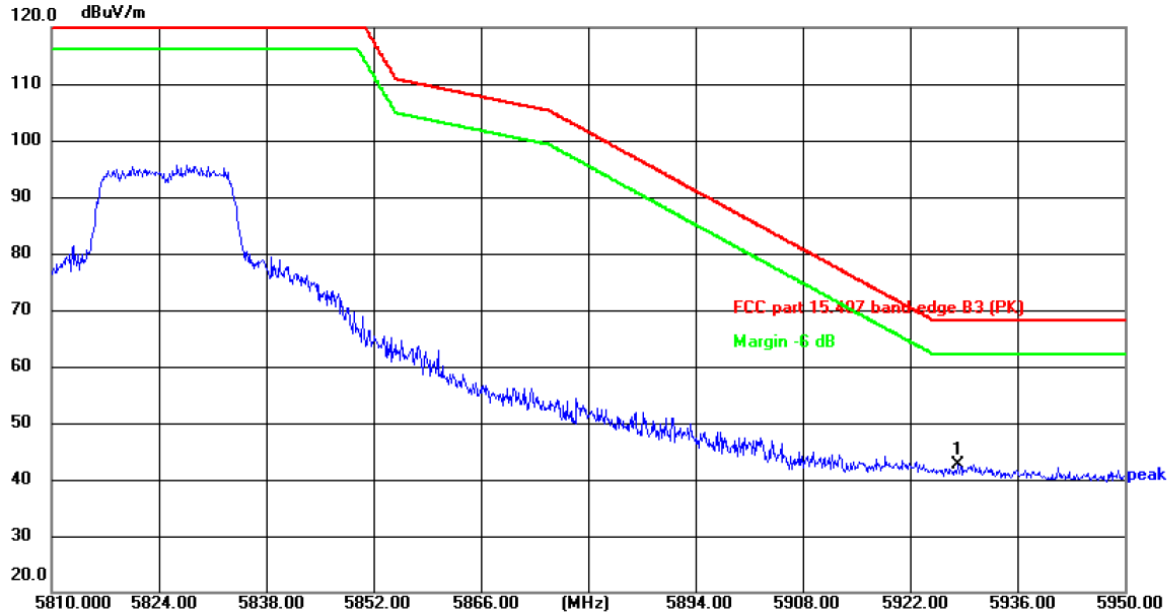
## AC20-5825




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5930.750 | 56.57 | -6.87 | 49.70 | 68.20 | -18.50 | peak | P | |

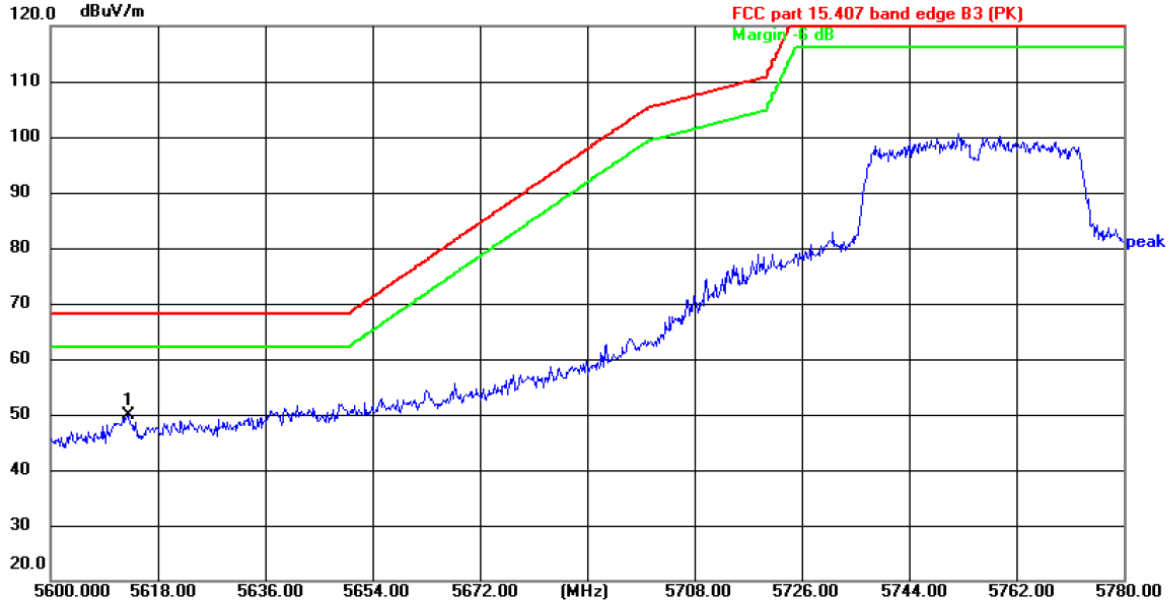



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5928.370 | 49.40 | -6.87 | 42.53 | 68.20 | -25.67 | peak | P | |

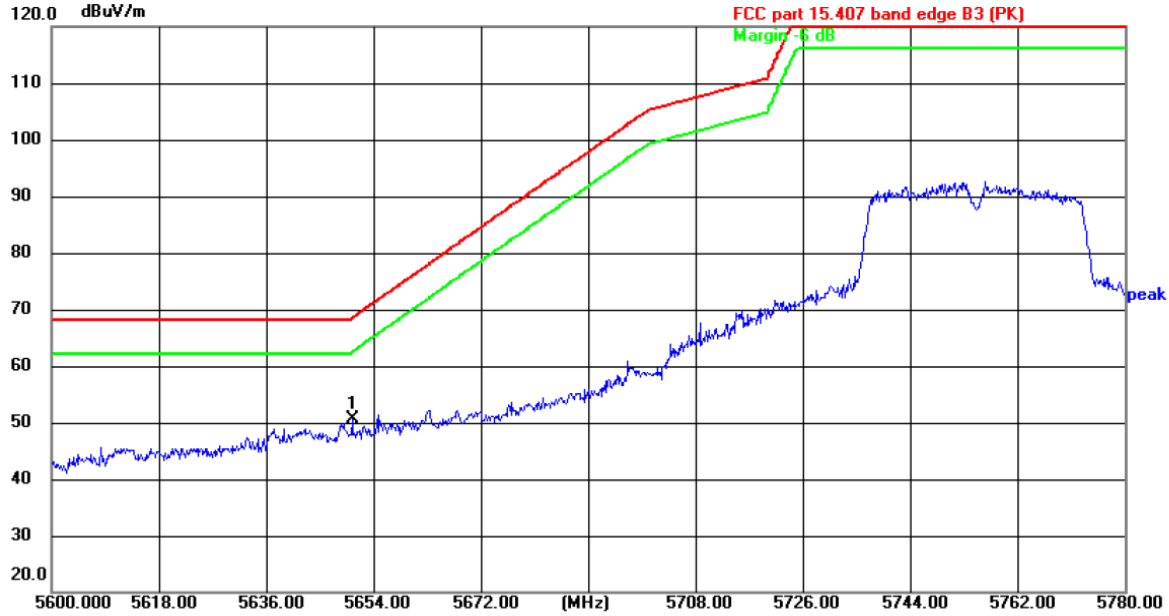
## AC40-5755




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5612.960 | 57.45 | -7.64 | 49.81 | 68.20 | -18.39 | peak | P | |

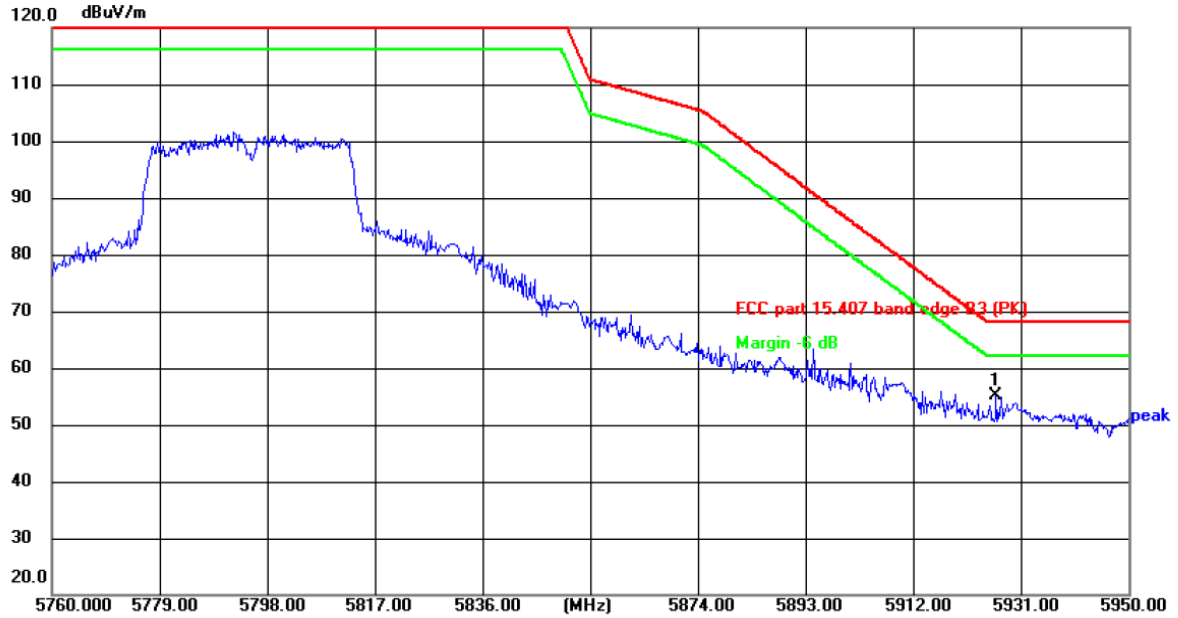



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5650.490 | 58.11 | -7.55 | 50.56 | 68.56 | -18.00 | peak | P | |

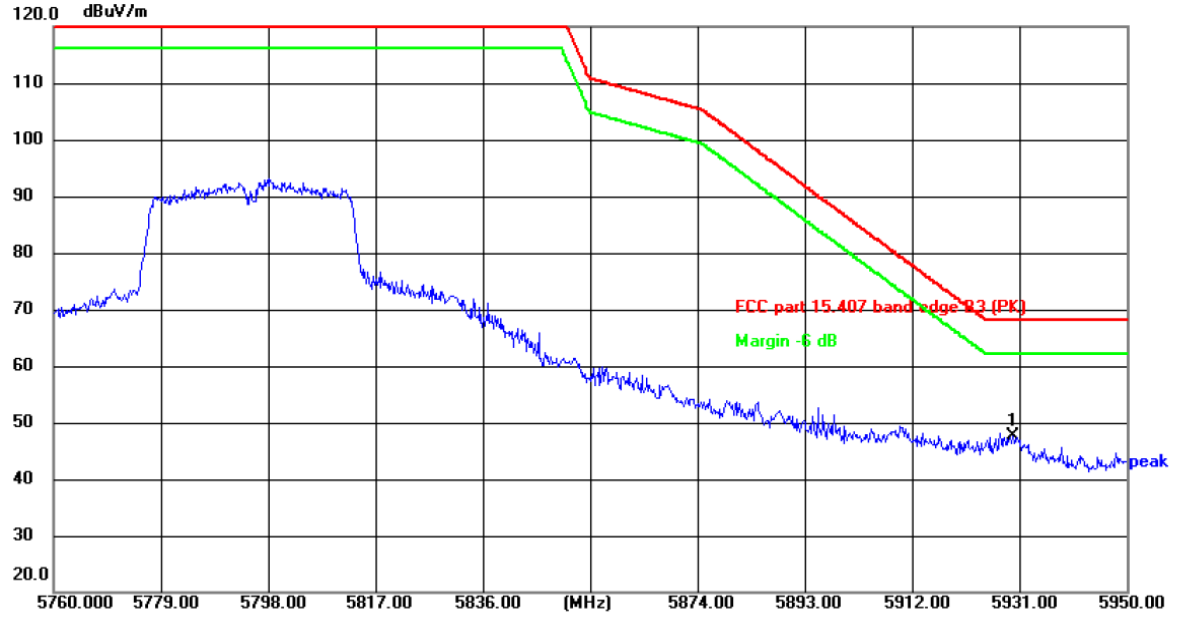
## AC40-5795




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5926.630 | 61.98 | -6.88 | 55.10 | 68.20 | -13.10 | peak | P | |

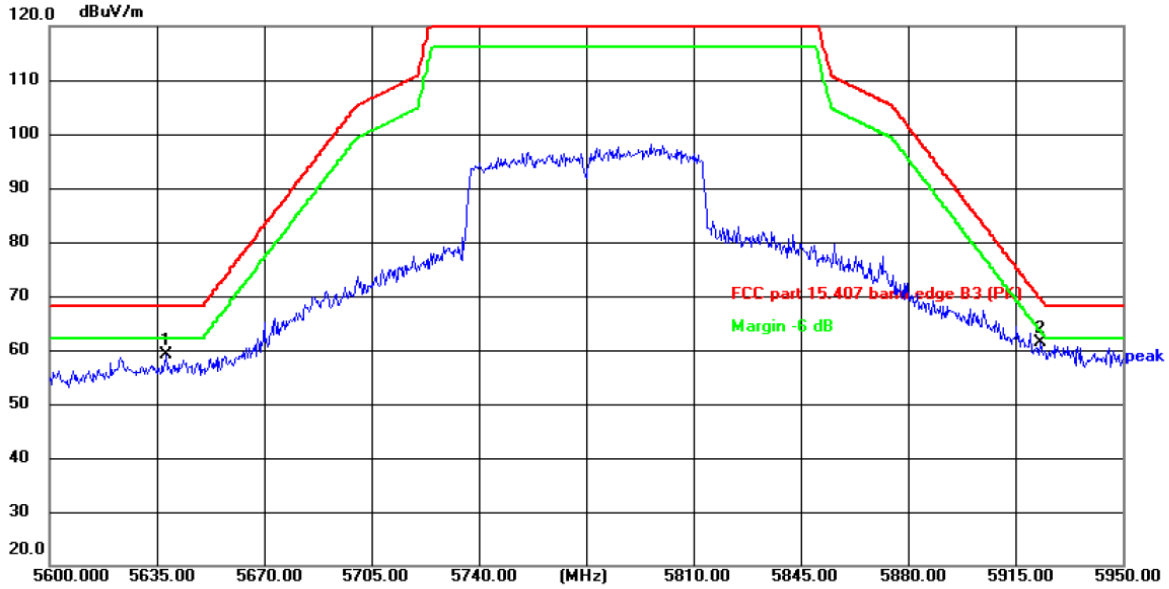



Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5929.860 | 54.45 | -6.87 | 47.58 | 68.20 | -20.62 | peak | P | |

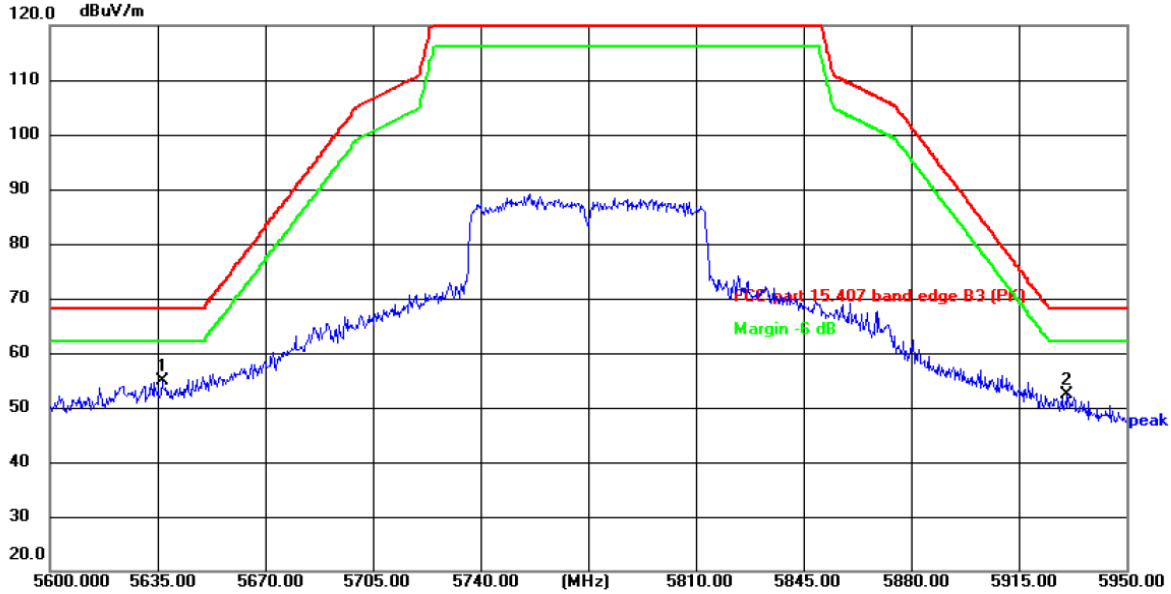
## AC80-5775




Site: #3 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5638.150 | 66.67 | -7.58 | 59.09 | 68.20 | -9.11 | peak | P | |
| 2 * | 5923.050 | 68.37 | -6.89 | 61.48 | 69.64 | -8.16 | peak | P | |




Site: #3 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 23.8(℃) Humidity: 54 %

Limit: FCC part 15.407 band edge B3 (PK) Power:DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 * | 5636.400 | 62.49 | -7.58 | 54.91 | 68.20 | -13.29 | peak | P | |
| 2 | 5930.925 | 59.35 | -6.87 | 52.48 | 68.20 | -15.72 | peak | P | |

Note: *All modulation (802.11a, 802.11n, 802.11ac) have been tested, only the worst case in 802.11ac be reported.*

## 5.3. Unwanted Emissions

### 5.3.1. Test Specification

| | |
|---|---|
| **Test Requirement:** | FCC CFR47 Part 15 Section 15.407 & 15.209 & 15.205 |
| **Test Method:** | KDB 789033 D02 v02r01 |
| **Frequency Range:** | 9kHz to 40GHz |
| **Measurement Distance:** | 3 m |
| **Antenna Polarization:** | Horizontal & Vertical |
| **Operation mode:** | Transmitting mode with modulation |
| **Receiver Setup:** | |

| Frequency | Detector | RBW | VBW | Remark |
|---|---|---|---|---|
| 9kHz- 150kHz | Quasi-peak | 200Hz | 1kHz | Quasi-peak Value |
| 150kHz-30MHz | Quasi-peak | 9kHz | 30kHz | Quasi-peak Value |
| 30MHz-1GHz | Quasi-peak | 120KHz | 300KHz | Quasi-peak Value |
| Above 1GHz | Peak | 1MHz | 3MHz | Peak Value |
| | Peak | 1MHz | 10Hz | Average Value |

**Limit:**

Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

In restricted bands:

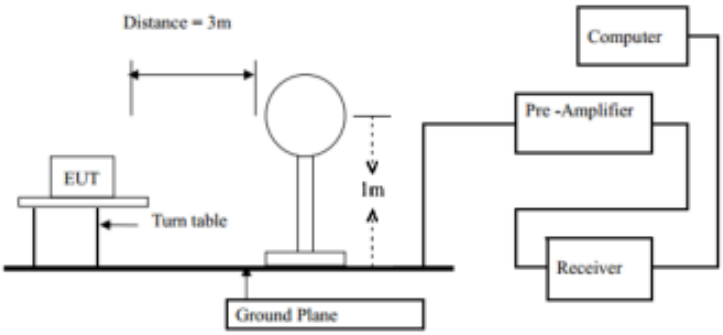
| Frequency | Detector | Limit@3m |
|---|---|---|
| Above 1G | Peak | 74dBμV/m |
| | AVG | 54dBμV/m |

| Frequency | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009-0.490 | 2400/F(KHz) | 300 |
| 0.490-1.705 | 24000/F(KHz) | 3 |
| 1.705-30 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |

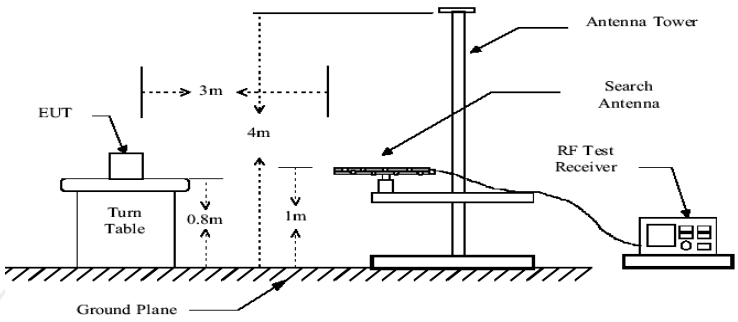
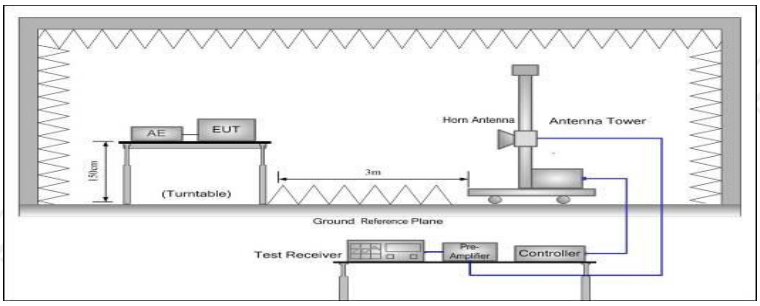
In un-restricted bands: 68.2dBuV/m

**Test setup:**

For radiated emissions below 30MHz




30MHz to 1GHz

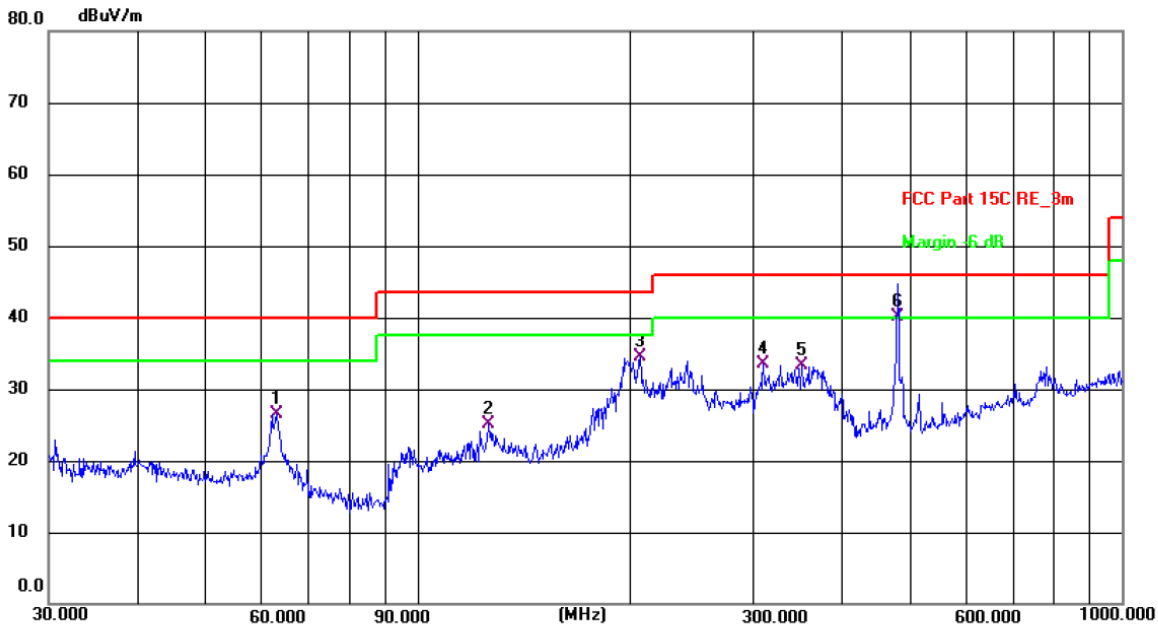
| | |
|---|---|
| |  <br>Above 1GHz<br>  |
| **Test Procedure:** | 1. The EUT was placed on the top of a rotating table 0.8 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.<br>2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.<br>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.<br>5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.<br>6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet. |
| **Test results:** | PASS |

## 5.3.2. Test Data

**Please refer to following diagram for individual**

**Below 1GHz**

Horizontal:

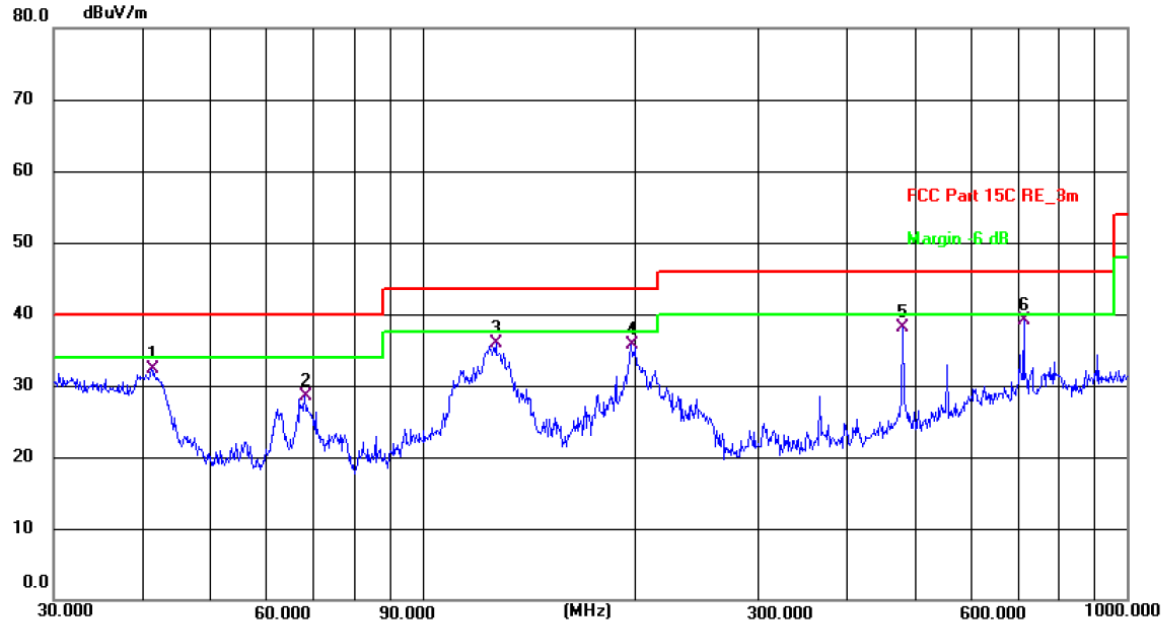



Site #2 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 24.1(C) Humidity: 54 %

Limit: FCC Part 15C RE_3m Power: DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 63.0915 | 13.63 | 12.81 | 26.44 | 40.00 | -13.56 | QP | P | |
| 2 | 126.3285 | 11.53 | 13.67 | 25.20 | 43.50 | -18.30 | QP | P | |
| 3 | 207.1225 | 23.34 | 11.15 | 34.49 | 43.50 | -9.01 | QP | P | |
| 4 | 309.9977 | 18.57 | 15.02 | 33.59 | 46.00 | -12.41 | QP | P | |
| 5 | 351.7078 | 17.53 | 15.85 | 33.38 | 46.00 | -12.62 | QP | P | |
| 6 * | 480.5276 | 21.14 | 18.96 | 40.10 | 46.00 | -5.90 | QP | P | |

Vertical:




Site #2 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 24.1(C) Humidity: 54 %

Limit: FCC Part 15C RE_3m Power: DC 3.7 V

| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | P/F | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 41.2765 | 18.03 | 14.22 | 32.25 | 40.00 | -7.75 | QP | P | |
| 2 | 68.1514 | 17.05 | 11.53 | 28.58 | 40.00 | -11.42 | QP | P | |
| 3 | 127.2176 | 22.31 | 13.62 | 35.93 | 43.50 | -7.57 | QP | P | |
| 4 | 197.8928 | 24.81 | 10.85 | 35.66 | 43.50 | -7.84 | QP | P | |
| 5 | 480.5276 | 19.16 | 18.96 | 38.12 | 46.00 | -7.88 | QP | P | |
| 6 * | 714.1733 | 15.99 | 23.09 | 39.08 | 46.00 | -6.92 | QP | P | |

***Note:*** *1.The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported*

*2. Measurements were conducted in all three channels (high, middle, low) and all modulation (802.11a, 802.11n(HT20), 802.11n(HT40), 802.11ac(VHT20), 802.11ac(VHT40), 802.11ac(VHT80) and the worst case Mode (Lowest channel and 802.11ac(VHT20)) was submitted only.*

*3.Measurement (dBμV) = Reading level + Correction Factor , correction Factor= Antenna Factor + Cable loss – Pre-amplifier.*

| Modulation Type: Band 1 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 11a CH36: 5180MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10360 | H | 38.36 | --- | 8.02 | 46.38 | --- | 68.2 | --- | -21.82 |
| 15540 | H | 38.9 | --- | 9.87 | 48.77 | --- | 74 | 54 | -5.23 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10360 | V | 38.27 | --- | 8.02 | 46.29 | --- | 68.2 | --- | -21.91 |
| 15540 | V | 38.15 | --- | 9.87 | 48.02 | --- | 74 | 54 | -5.98 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |
| 11a CH40: 5200MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10400 | H | 39.04 | --- | 7.97 | 47.01 | --- | 68.2 | --- | -21.19 |
| 15600 | H | 38.37 | --- | 9.83 | 48.2 | --- | 74 | 54 | -5.8 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10400 | V | 40.85 | --- | 7.97 | 48.82 | --- | 68.2 | --- | -19.38 |
| 15600 | V | 38.61 | --- | 9.83 | 48.44 | --- | 74 | 54 | -5.56 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |
| 11a CH48: 5240MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10480 | H | 38.57 | --- | 7.97 | 46.54 | --- | 68.2 | --- | -21.66 |
| 15720 | H | 37.93 | --- | 9.83 | 47.76 | --- | 74 | 54 | -6.24 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10480 | V | 38.16 | --- | 7.97 | 46.13 | --- | 68.2 | --- | -22.07 |
| 15720 | V | 36.27 | --- | 9.83 | 46.1 | --- | 74 | 54 | -7.9 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |
| 11n(HT20) CH36: 5180MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10360 | H | 41.45 | --- | 8.02 | 49.47 | --- | 68.2 | --- | -18.73 |
| 15540 | H | 37.8 | --- | 9.87 | 47.67 | --- | 74 | 54 | -6.33 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10360 | V | 42.74 | --- | 8.02 | 50.76 | --- | 68.2 | --- | -17.44 |
| 15540 | V | 37.51 | --- | 9.87 | 47.38 | --- | 74 | 54 | -6.62 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11n(HT20) CH40: 5200MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10400 | H | 40.48 | --- | 7.97 | 48.45 | --- | 68.2 | --- | -19.75 |
| 15600 | H | 38.02 | --- | 9.83 | 47.85 | --- | 74 | 54 | -6.15 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10400 | V | 40.27 | --- | 7.97 | 48.24 | --- | 68.2 | --- | -19.96 |
| 15600 | V | 37.13 | --- | 9.83 | 46.96 | --- | 74 | 54 | -7.04 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11n(HT20) CH48: 5240MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10480 | H | 41.26 | --- | 7.97 | 49.23 | --- | 68.2 | --- | -18.97 |
| 15720 | H | 39.83 | --- | 9.83 | 49.66 | --- | 74 | 54 | -4.34 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10480 | V | 40.69 | --- | 7.97 | 48.66 | --- | 68.2 | --- | -19.54 |
| 15720 | V | 39.38 | --- | 9.83 | 49.21 | --- | 74 | 54 | -4.79 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11n(HT40) CH38: 5190MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10380 | H | 39.85 | --- | 7.75 | 47.6 | --- | 68.2 | --- | -20.6 |
| 15570 | H | 37.31 | --- | 9.87 | 47.18 | --- | 74 | 54 | -6.82 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10380 | V | 40.72 | --- | 7.75 | 48.47 | --- | 68.2 | --- | -19.73 |
| 15570 | V | 37.49 | --- | 9.87 | 47.36 | --- | 74 | 54 | -6.64 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11n(HT40) CH46: 5230MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10460 | H | 41.92 | --- | 7.97 | 49.89 | --- | 68.2 | --- | -18.31 |
| 15690 | H | 38.03 | --- | 9.83 | 47.86 | --- | 74 | 54 | -6.14 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10460 | V | 41.56 | --- | 7.97 | 49.53 | --- | 68.2 | --- | -18.67 |
| 15690 | V | 38.71 | --- | 9.83 | 48.54 | --- | 74 | 54 | -5.46 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT20) CH36: 5180MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10360 | H | 40.27 | --- | 8.02 | 48.29 | --- | 68.2 | --- | -19.91 |
| 15540 | H | 37.63 | --- | 9.87 | 47.5 | --- | 74 | 54 | -6.5 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10360 | V | 38.95 | --- | 8.02 | 46.97 | --- | 68.2 | --- | -21.23 |
| 15540 | V | 39.5 | --- | 9.87 | 49.37 | --- | 74 | 54 | -4.63 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT20) CH40: 5200MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10400 | H | 39.27 | --- | 7.97 | 47.24 | --- | 68.2 | --- | -20.96 |
| 15600 | H | 38.49 | --- | 9.83 | 48.32 | --- | 74 | 54 | -5.68 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10400 | V | 39.62 | --- | 7.97 | 47.59 | --- | 68.2 | --- | -20.61 |
| 15600 | V | 38.34 | --- | 9.83 | 48.17 | --- | 74 | 54 | -5.83 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT20) CH48:5240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10480 | H | 37.6 | --- | 7.97 | 45.57 | --- | 68.2 | --- | -22.63 |
| 15720 | H | 37.91 | --- | 9.83 | 47.74 | --- | 74 | 54 | -6.26 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10480 | V | 38.27 | --- | 7.97 | 46.24 | --- | 68.2 | --- | -21.96 |
| 15720 | V | 38.58 | --- | 9.83 | 48.41 | --- | 74 | 54 | -5.59 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT40) CH38:5190 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10380 | H | 40.25 | --- | 7.75 | 48 | --- | 68.2 | --- | -20.2 |
| 15570 | H | 39.70 | --- | 9.87 | 49.57 | --- | 74 | 54 | -4.43 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10380 | V | 38.14 | --- | 7.75 | 45.89 | --- | 68.2 | --- | -22.31 |
| 15570 | V | 38.62 | --- | 9.87 | 48.49 | --- | 74 | 54 | -5.51 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT40) CH46:5230 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10460 | H | 38.24 | --- | 7.97 | 46.21 | --- | 68.2 | --- | -21.99 |
| 15690 | H | 38.37 | --- | 9.83 | 48.2 | --- | 74 | 54 | -5.8 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10460 | V | 39.45 | --- | 7.97 | 47.42 | --- | 68.2 | --- | -20.78 |
| 15690 | V | 37.62 | --- | 9.83 | 47.45 | --- | 74 | 54 | -6.55 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT80) CH42:5210 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 10420 | H | 41.82 | --- | 7.96 | 49.78 | --- | 68.2 | --- | -18.42 |
| 15630 | H | 39.67 | --- | 9.84 | 49.51 | --- | 74 | 54 | -4.49 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 10420 | V | 41.39 | --- | 7.96 | 49.35 | --- | 68.2 | --- | -18.85 |
| 15630 | V | 39.86 | --- | 9.84 | 49.7 | --- | 74 | 54 | -4.3 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

***Note:***

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.*
5. *Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*



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| Modulation Type: Band 3 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 11a CH149: 5745MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11490 | H | 37.49 | --- | 8.09 | 45.58 | --- | 74 | 54 | -8.42 |
| 17235 | H | 37.86 | --- | 9.67 | 47.53 | --- | 68.2 | --- | -20.67 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11490 | V | 40.37 | --- | 8.09 | 48.46 | --- | 74 | 54 | -5.54 |
| 17235 | V | 38.05 | --- | 9.67 | 47.72 | --- | 68.2 | --- | -20.48 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |
| 11a CH157: 5785MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11570 | H | 39.72 | --- | 8.10 | 47.82 | --- | 74 | 54 | -6.18 |
| 17355 | H | 38.16 | --- | 9.65 | 47.81 | --- | 68.2 | --- | -20.39 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11570 | V | 38.94 | --- | 8.10 | 47.04 | --- | 74 | 54 | -6.96 |
| 17355 | V | 39.05 | --- | 9.65 | 48.7 | --- | 68.2 | --- | -19.5 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |
| 11a CH165: 5825MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11650 | H | 37.68 | --- | 8.12 | 45.8 | --- | 74 | 54 | -8.2 |
| 17475 | H | 36.13 | --- | 9.62 | 45.75 | --- | 68.2 | --- | -22.45 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11650 | V | 38.72 | --- | 8.12 | 46.84 | --- | 74 | 54 | -7.16 |
| 17475 | V | 38.46 | --- | 9.62 | 48.08 | --- | 68.2 | --- | -20.12 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |
| 11n(HT20) CH149: 5745MHz | | | | | | | | | |
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11490 | H | 38.92 | --- | 8.09 | 47.01 | --- | 74 | 54 | -6.99 |
| 17235 | H | 38.54 | --- | 9.67 | 48.21 | --- | 68.2 | --- | -19.99 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11490 | V | 39.88 | --- | 8.09 | 47.97 | --- | 74 | 54 | -6.03 |
| 17235 | V | 37.21 | --- | 9.67 | 46.88 | --- | 68.2 | --- | -21.32 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11n(HT20) CH157: 5785MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11570 | H | 38.46 | --- | 8.10 | 46.56 | --- | 74 | 54 | -7.44 |
| 17355 | H | 39.73 | --- | 9.65 | 49.38 | --- | 68.2 | --- | -18.82 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11570 | V | 38.11 | --- | 8.10 | 46.21 | --- | 74 | 54 | -7.79 |
| 17355 | V | 39.59 | --- | 9.65 | 49.24 | --- | 68.2 | --- | -18.96 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11n(HT20) CH165: 5825MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11650 | H | 38.67 | --- | 8.12 | 46.79 | --- | 74 | 54 | -7.21 |
| 17475 | H | 37.13 | --- | 9.62 | 46.75 | --- | 68.2 | --- | -21.45 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11650 | V | 38.92 | --- | 8.12 | 47.04 | --- | 74 | 54 | -6.96 |
| 17475 | V | 39.46 | --- | 9.62 | 49.08 | --- | 68.2 | --- | -19.12 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11n(HT40) CH151: 5755MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11510 | H | 40.03 | --- | 8.09 | 48.12 | --- | 74 | 54 | -5.88 |
| 17265 | H | 37.16 | --- | 9.67 | 46.83 | --- | 68.2 | --- | -21.37 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11510 | V | 41.28 | --- | 8.09 | 49.37 | --- | 74 | 54 | -4.63 |
| 17265 | V | 38.94 | --- | 9.67 | 48.61 | --- | 68.2 | --- | -19.59 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11n(HT40) CH159: 5795MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11590 | H | 38.53 | --- | 8.10 | 46.63 | --- | 74 | 54 | -7.37 |
| 17385 | H | 38.78 | --- | 9.65 | 48.43 | --- | 68.2 | --- | -19.77 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11590 | V | 38.16 | --- | 8.10 | 46.26 | --- | 74 | 54 | -7.74 |
| 17385 | V | 37.22 | --- | 9.65 | 46.87 | --- | 68.2 | --- | -21.33 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT20) CH149: 5745MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11490 | H | 40.12 | --- | 8.09 | 48.21 | --- | 74 | 54 | -5.79 |
| 17235 | H | 37.48 | --- | 9.67 | 47.15 | --- | 68.2 | --- | -21.05 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11490 | V | 40.29 | --- | 8.09 | 48.38 | --- | 74 | 54 | -5.62 |
| 17235 | V | 38.61 | --- | 9.67 | 48.28 | --- | 68.2 | --- | -19.92 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT20) CH157: 5785MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11570 | H | 38.39 | --- | 8.10 | 46.49 | --- | 74 | 54 | -7.51 |
| 17355 | H | 36.88 | --- | 9.65 | 46.53 | --- | 68.2 | --- | -21.67 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11570 | V | 37.57 | --- | 8.10 | 45.67 | --- | 74 | 54 | -8.33 |
| 17355 | V | 38.91 | --- | 9.65 | 48.56 | --- | 68.2 | --- | -19.64 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT20) CH165: 5825MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11650 | H | 40.64 | --- | 8.12 | 48.76 | --- | 74 | 54 | -5.24 |
| 17475 | H | 38.13 | --- | 9.62 | 47.75 | --- | 68.2 | --- | -20.45 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11650 | V | 38.72 | --- | 8.12 | 46.84 | --- | 74 | 54 | -7.16 |
| 17475 | V | 40.06 | --- | 9.62 | 49.68 | --- | 68.2 | --- | -18.52 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT40) CH151: 5755MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11510 | H | 39.42 | --- | 8.09 | 47.51 | --- | 74 | 54 | -6.49 |
| 17265 | H | 37.85 | --- | 9.67 | 47.52 | --- | 68.2 | --- | -20.68 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11510 | V | 40.77 | --- | 8.09 | 48.86 | --- | 74 | 54 | -5.14 |
| 17265 | V | 36.14 | --- | 9.67 | 45.81 | --- | 68.2 | --- | -22.39 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT40) CH159: 5795MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11590 | H | 40.36 | --- | 8.10 | 48.46 | --- | 74 | 54 | -5.54 |
| 17385 | H | 37.05 | --- | 9.65 | 46.7 | --- | 68.2 | --- | -21.5 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11590 | V | 39.72 | --- | 8.10 | 47.82 | --- | 74 | 54 | -6.18 |
| 17385 | V | 38.49 | --- | 9.65 | 48.14 | --- | 68.2 | --- | -20.06 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

| 11ac(VHT80) CH155: 5775MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Ant. Pol. H/V | Peak reading (dBμV) | AV reading (dBμV) | Correction Factor (dB/m) | Emission Level | | Peak limit (dBμV/m) | AV limit (dBμV/m) | Margin (dB) |
| | | | | | Peak (dBμV/m) | AV (dBμV/m) | | | |
| 11550 | H | 40.61 | --- | 8.09 | 48.7 | --- | 74 | 54 | -5.3 |
| 17325 | H | 38.99 | --- | 9.66 | 48.65 | --- | 68.2 | --- | -19.55 |
| --- | H | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| 11550 | V | 41.00 | --- | 8.09 | 49.09 | --- | 74 | 54 | -4.91 |
| 17325 | V | 38.58 | --- | 9.66 | 48.24 | --- | 68.2 | --- | -19.96 |
| --- | V | --- | --- | --- | --- | ---- | --- | --- | --- |

***Note:***

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.*
5. *Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*



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## Appendix B: Photographs of Test Setup

Refer to the test report No. TCT230619E901

## Appendix C: Photographs of EUT

Refer to the test report No. TCT230619E901

*******END OF REPORT*******