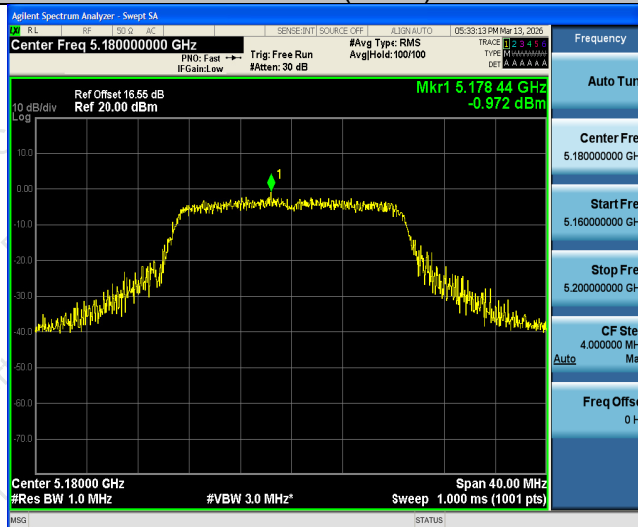
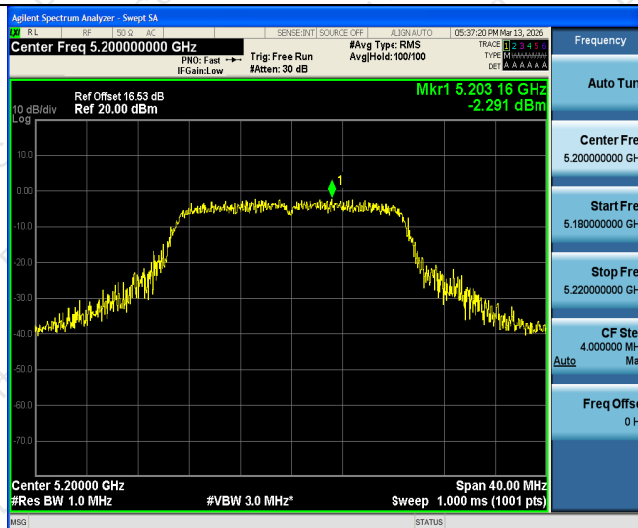




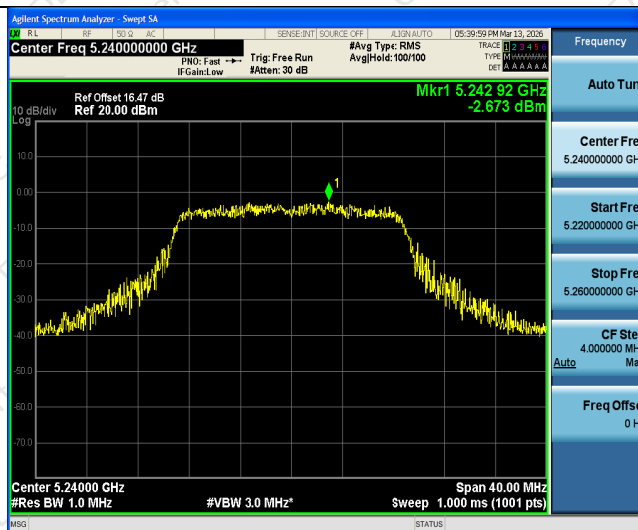
## 802.11ac(HT20)



Low



Mid



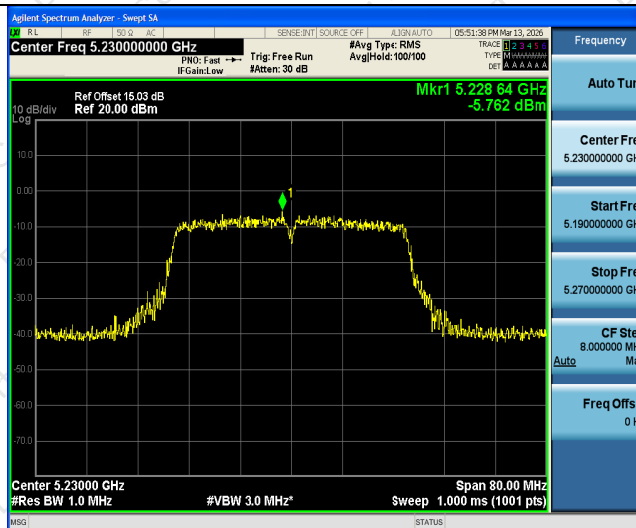
High



## 802.11ac(HT40)



Low



High

## 802.11ac(HT80)

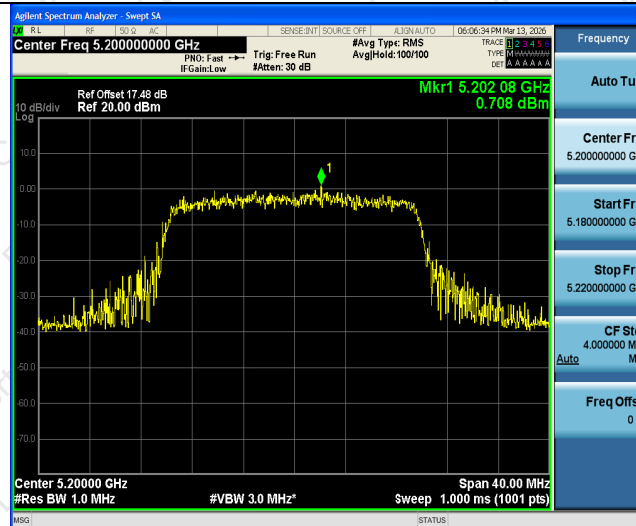




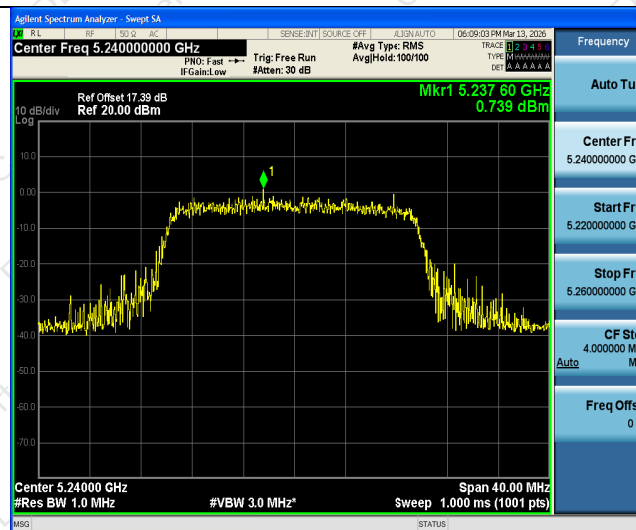
## 802.11ax(HE20)



Low



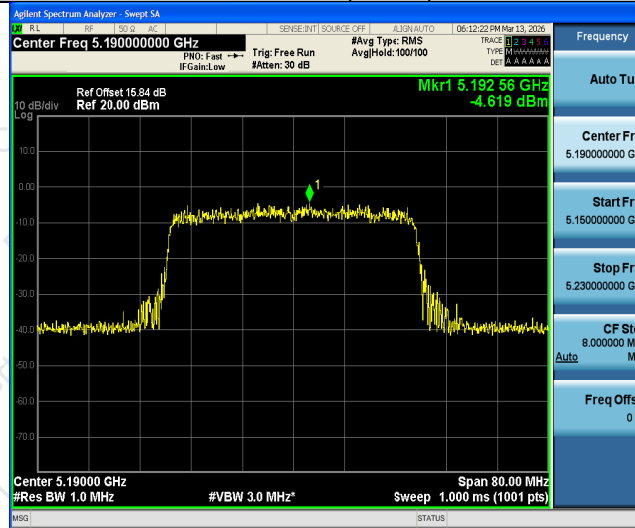
Mid



High



## 802.11ax(HE40)

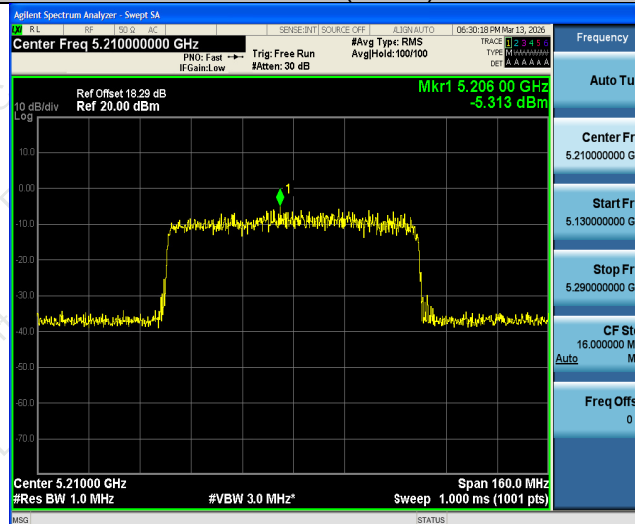


Low



High

## 802.11ax(HE80)





## 5.5. Spurious Emission

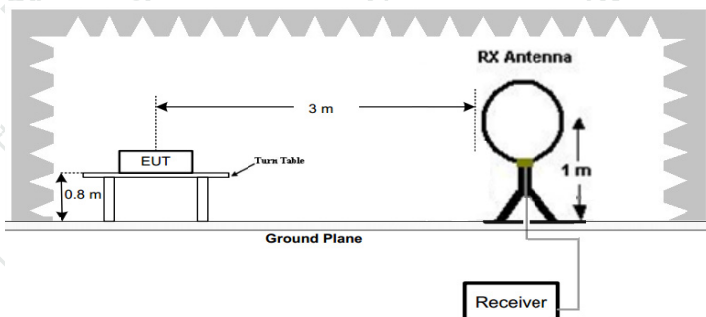
### 5.5.1. Test Specification

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |        |        |                  |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------|--------|------------------|
| <b>Test Requirement:</b>     | FCC CFR47 Part 15 Section 15.407                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |        |        |                  |
| <b>Test Method:</b>          | KDB 789033 D02 v02r01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |        |        |                  |
| <b>Frequency Range:</b>      | 9kHz to 40GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |        |        |                  |
| <b>Measurement Distance:</b> | 3 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |        |        |                  |
| <b>Antenna Polarization:</b> | Horizontal & Vertical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |        |        |                  |
| <b>Operation mode:</b>       | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |        |        |                  |
| <b>Receiver Setup:</b>       | 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    |
| <b>Limit:</b>                | <p>(1) 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.</p> <p>(i) 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.</p> <p>The limit of frequency below 1GHz and which fall in restricted bands should complies 15.209.</p> |            |        |        |                  |

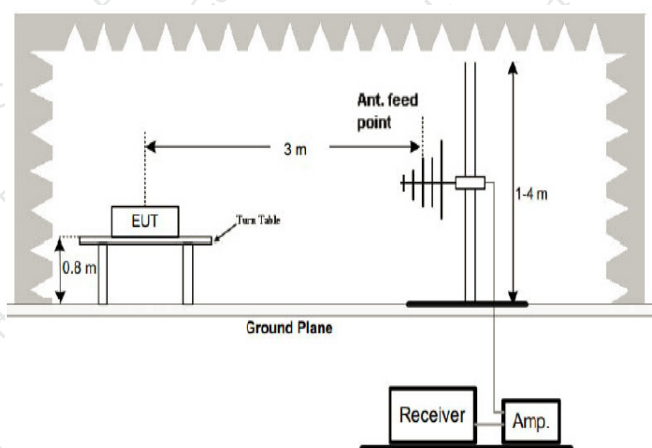


**Test Setup:**

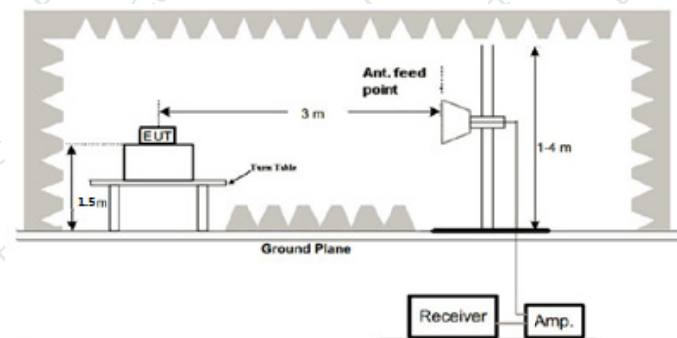
For Radiated Emissions below 30MHz



30MHz to 1GHz



Above 1GHz



**Test Procedure:**

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.
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.
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.
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 rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
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, quasi-peak or average method as specified and then reported in a data sheet.

**Test Results:**

PASS

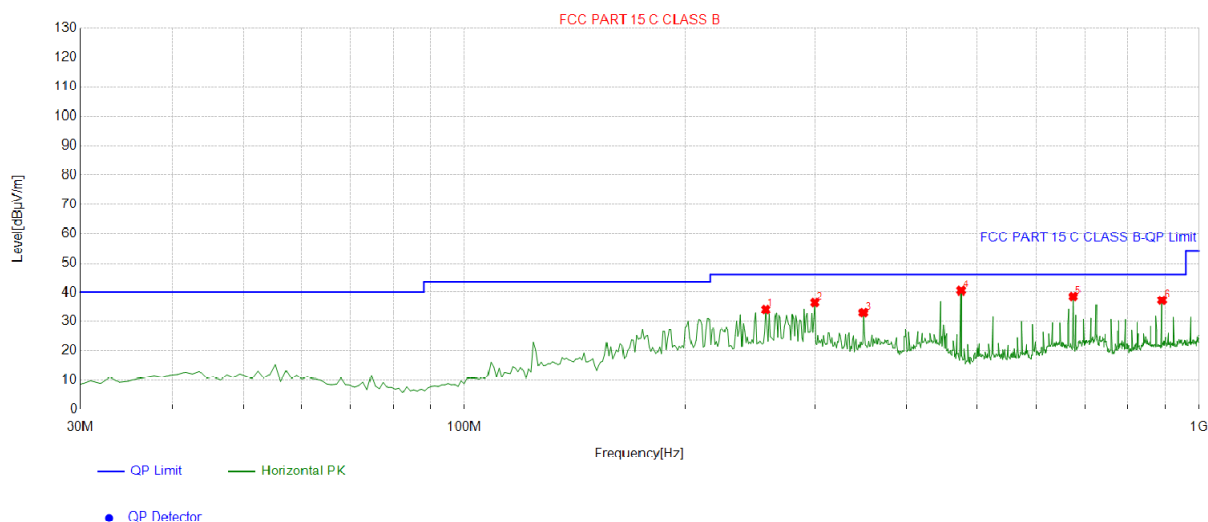


## 5.5.2. Test Data

### Below 1GHz Test Results

All the test modes completed for test. Only the worst result was reported as below:

Antenna polarity: Horizontal

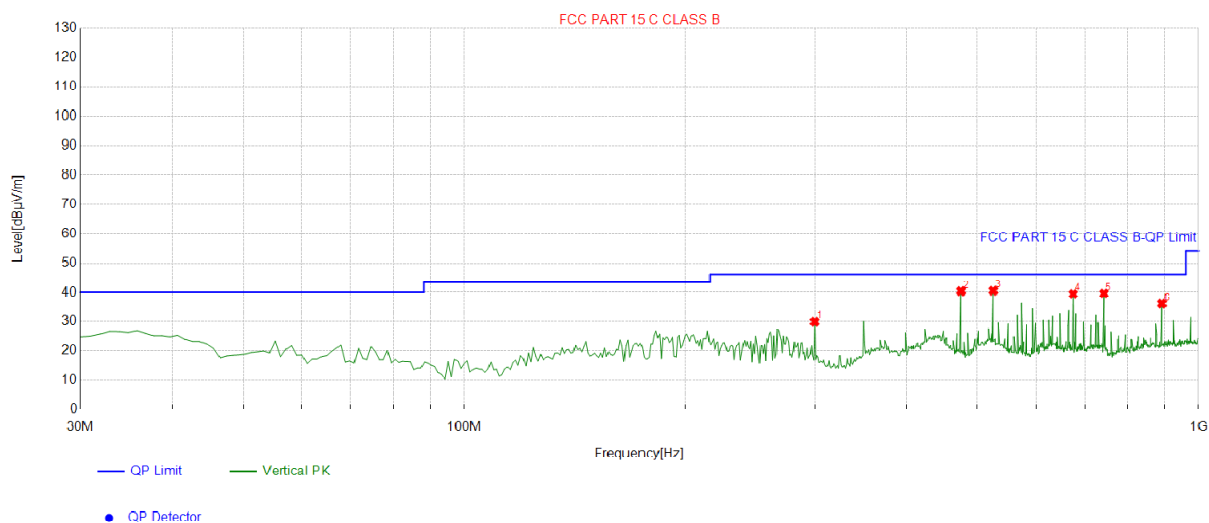


| Suspected List |             |             |                  |                |                |             |             |           |            |
|----------------|-------------|-------------|------------------|----------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Factor [dB] | Reading [dBμV/m] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 257.207     | -13.50      | 47.58            | 34.08          | 46.00          | 11.92       | 100         | 351       | Horizontal |
| 2              | 299.930     | -11.71      | 48.17            | 36.46          | 46.00          | 9.54        | 100         | 1         | Horizontal |
| 3              | 349.449     | -10.04      | 43.07            | 33.03          | 46.00          | 12.97       | 100         | 14        | Horizontal |
| 4              | 474.705     | -8.23       | 48.85            | 40.62          | 46.00          | 5.38        | 100         | 10        | Horizontal |
| 5              | 674.725     | -4.70       | 43.19            | 38.49          | 46.00          | 7.51        | 100         | 330       | Horizontal |
| 6              | 891.251     | -1.49       | 38.82            | 37.33          | 46.00          | 8.67        | 100         | 262       | Horizontal |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



| Suspected List |             |             |                  |                |                |             |             |           |          |
|----------------|-------------|-------------|------------------|----------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Factor [dB] | Reading [dBμV/m] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 299.930     | -11.71      | 41.68            | 29.97          | 46.00          | 16.03       | 100         | 89        | Vertical |
| 2              | 474.705     | -8.23       | 48.69            | 40.46          | 46.00          | 5.54        | 100         | 129       | Vertical |
| 3              | 525.195     | -6.94       | 47.52            | 40.58          | 46.00          | 5.42        | 100         | 322       | Vertical |
| 4              | 674.725     | -4.70       | 44.11            | 39.41          | 46.00          | 6.59        | 100         | 333       | Vertical |
| 5              | 742.693     | -3.41       | 42.99            | 39.58          | 46.00          | 6.42        | 100         | 182       | Vertical |
| 6              | 891.251     | -1.49       | 37.61            | 36.12          | 46.00          | 9.88        | 100         | 147       | Vertical |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

### Harmonics and Spurious Emissions Frequency Range (9kHz-30MHz)

| Frequency (MHz) | Level@3m (dBμV/m) | Limit@3m (dBμV/m) |
|-----------------|-------------------|-------------------|
| --              | --                | --                |
| --              | --                | --                |
| --              | --                | --                |
| --              | --                | --                |

**Note:** 1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor.

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.

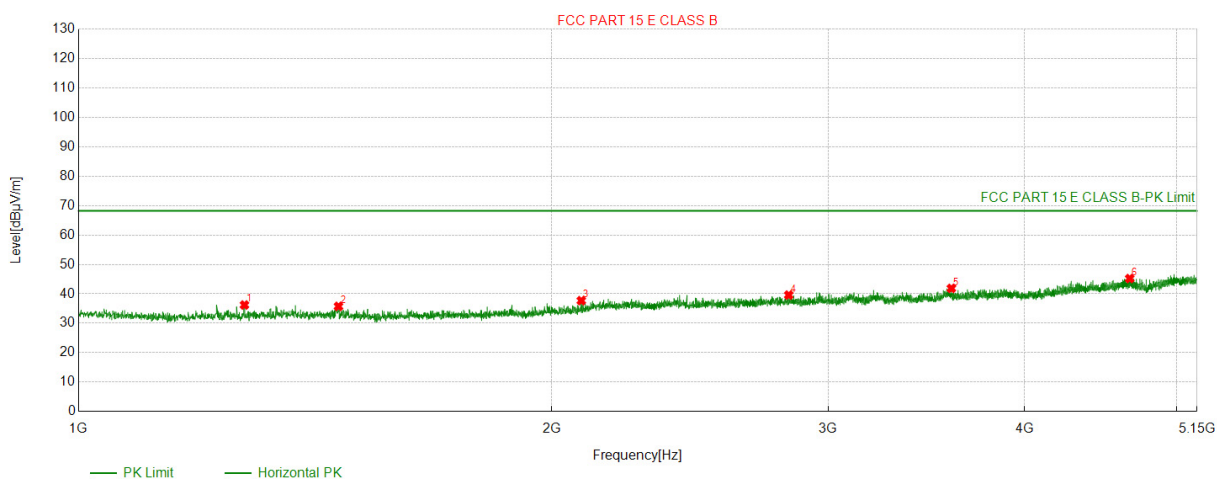


## Above 1GHz Test Results

All the test modes completed for test. Only the worst result was reported as below:

For 1GHz to 5.15GHz

Antenna polarity: Horizontal

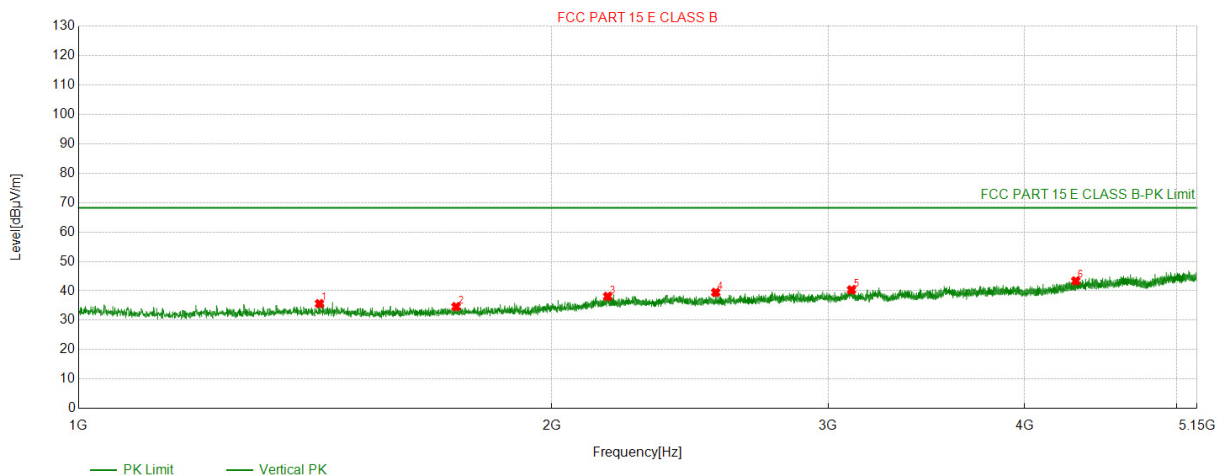


| Suspected Data List |             |                  |                   |             |                   |                |             |           |            |
|---------------------|-------------|------------------|-------------------|-------------|-------------------|----------------|-------------|-----------|------------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | PK Level [dBμV/m] | Factor [dB] | PK Limit [dBμV/m] | PK Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1                   | 1275.173    | 54.74            | 36.22             | -18.52      | 68.20             | 31.98          | 150         | 230       | Horizontal |
| 2                   | 1463.601    | 54.04            | 35.76             | -18.28      | 68.20             | 32.44          | 150         | 150       | Horizontal |
| 3                   | 2089.069    | 53.82            | 37.70             | -16.12      | 68.20             | 30.50          | 150         | 50        | Horizontal |
| 4                   | 2831.163    | 53.09            | 39.60             | -13.49      | 68.20             | 28.60          | 150         | 150       | Horizontal |
| 5                   | 3593.179    | 52.65            | 41.87             | -10.78      | 68.20             | 26.33          | 150         | 240       | Horizontal |
| 6                   | 4666.062    | 51.71            | 45.21             | -6.50       | 68.20             | 22.99          | 150         | 150       | Horizontal |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



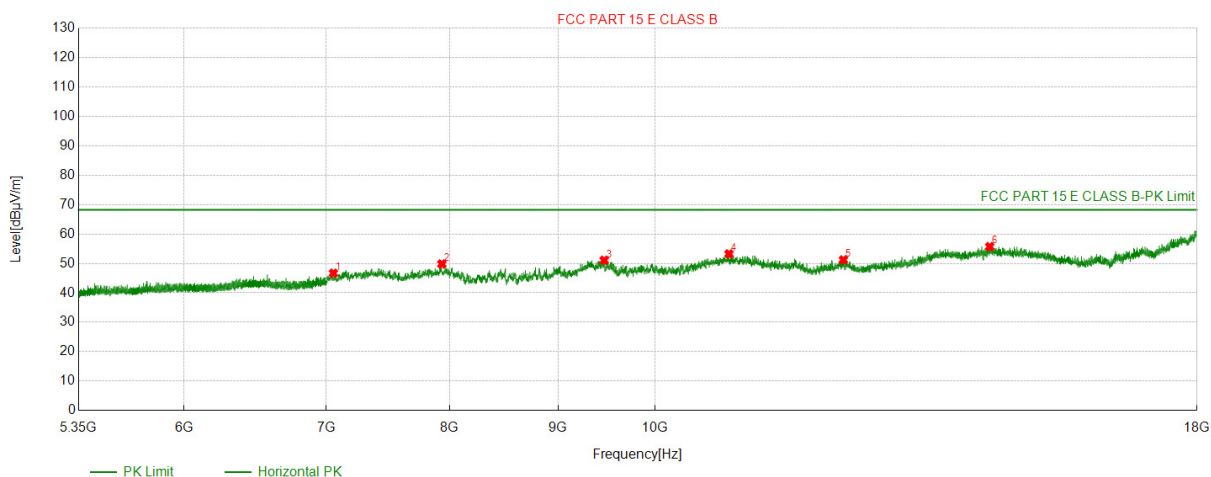
| Suspected Data List |             |                  |                   |             |                   |                |             |           |          |
|---------------------|-------------|------------------|-------------------|-------------|-------------------|----------------|-------------|-----------|----------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | PK Level [dBμV/m] | Factor [dB] | PK Limit [dBμV/m] | PK Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1                   | 1423.342    | 53.75            | 35.64             | -18.11      | 68.20             | 32.56          | 150         | 140       | Vertical |
| 2                   | 1738.774    | 52.81            | 34.60             | -18.21      | 68.20             | 33.60          | 150         | 180       | Vertical |
| 3                   | 2171.247    | 53.09            | 38.09             | -15.00      | 68.20             | 30.11          | 150         | 90        | Vertical |
| 4                   | 2543.954    | 54.07            | 39.46             | -14.61      | 68.20             | 28.74          | 150         | 40        | Vertical |
| 5                   | 3103.845    | 52.93            | 40.33             | -12.60      | 68.20             | 27.87          | 150         | 130       | Vertical |
| 6                   | 4311.616    | 51.50            | 43.37             | -8.13       | 68.20             | 24.83          | 150         | 100       | Vertical |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



For 5.35GHz to 18GHz

Antenna polarity: Horizontal

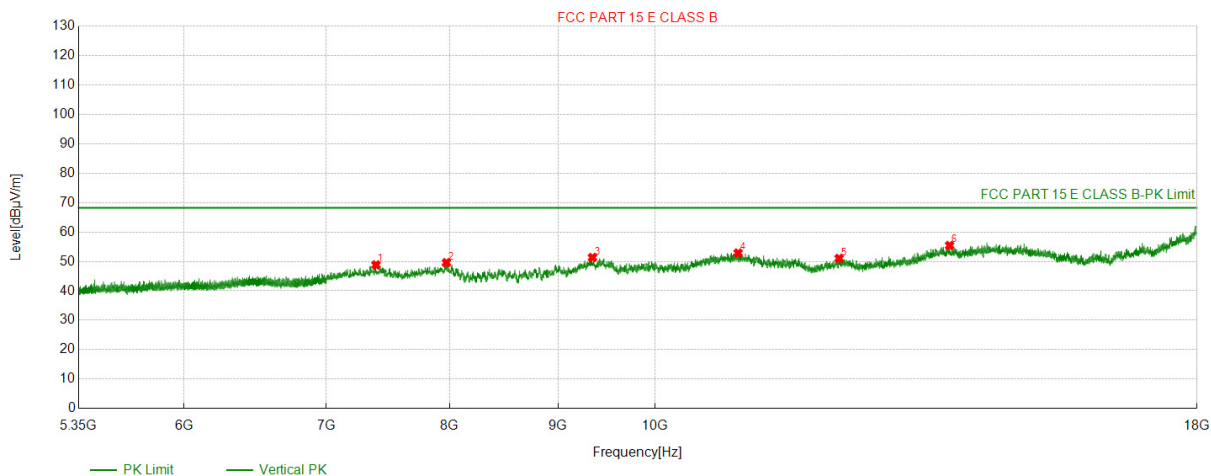


| Suspected Data List |             |                  |                   |             |                   |                |             |           |            |
|---------------------|-------------|------------------|-------------------|-------------|-------------------|----------------|-------------|-----------|------------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | PK Level [dBμV/m] | Factor [dB] | PK Limit [dBμV/m] | PK Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1                   | 7053.905    | 50.83            | 46.68             | -4.15       | 68.20             | 21.52          | 150         | 358       | Horizontal |
| 2                   | 7933.993    | 52.27            | 49.81             | -2.46       | 68.20             | 18.39          | 150         | 212       | Horizontal |
| 3                   | 9462.046    | 50.79            | 51.07             | 0.28        | 68.20             | 17.13          | 150         | 26        | Horizontal |
| 4                   | 10833.883   | 51.00            | 53.22             | 2.22        | 68.20             | 14.98          | 150         | 230       | Horizontal |
| 5                   | 12265.127   | 48.26            | 51.21             | 2.95        | 68.20             | 16.99          | 150         | 76        | Horizontal |
| 6                   | 14375.138   | 48.39            | 55.71             | 7.32        | 68.20             | 12.49          | 150         | 360       | Horizontal |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



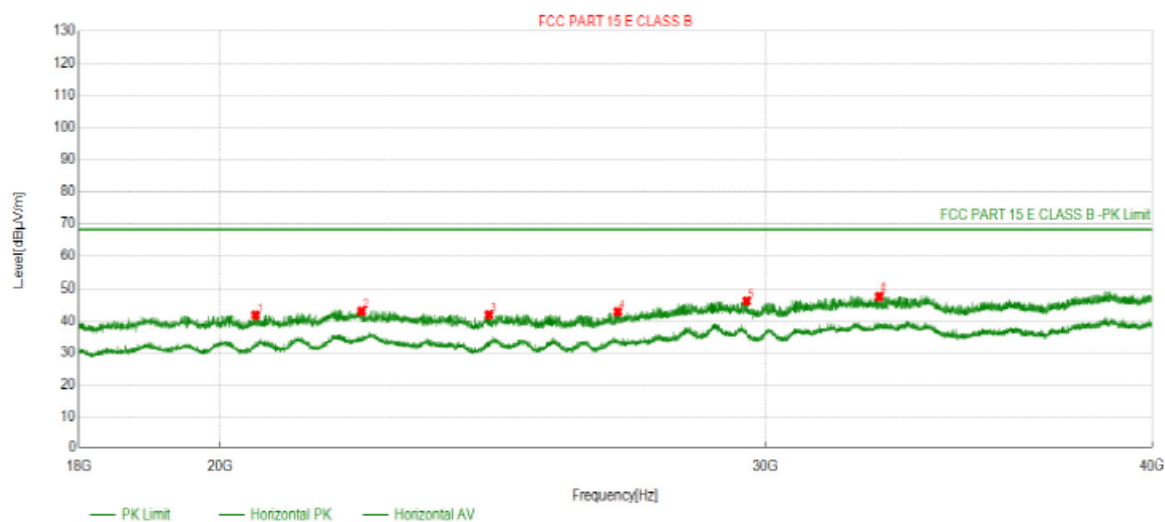
| Suspected Data List |             |                  |                   |             |                   |                |             |           |          |
|---------------------|-------------|------------------|-------------------|-------------|-------------------|----------------|-------------|-----------|----------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | PK Level [dBμV/m] | Factor [dB] | PK Limit [dBμV/m] | PK Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1                   | 7387.239    | 51.91            | 48.82             | -3.09       | 68.20             | 19.38          | 150         | 72        | Vertical |
| 2                   | 7973.597    | 51.56            | 49.57             | -1.99       | 68.20             | 18.63          | 150         | 48        | Vertical |
| 3                   | 9342.134    | 51.58            | 51.32             | -0.26       | 68.20             | 16.88          | 150         | 76        | Vertical |
| 4                   | 10941.694   | 50.21            | 52.84             | 2.63        | 68.20             | 15.36          | 150         | 16        | Vertical |
| 5                   | 12207.921   | 48.27            | 51.03             | 2.76        | 68.20             | 17.17          | 150         | 58        | Vertical |
| 6                   | 13762.376   | 49.56            | 55.41             | 5.85        | 68.20             | 12.79          | 150         | 181       | Vertical |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



For 18GHz to 40GHz

Antenna polarity: Horizontal

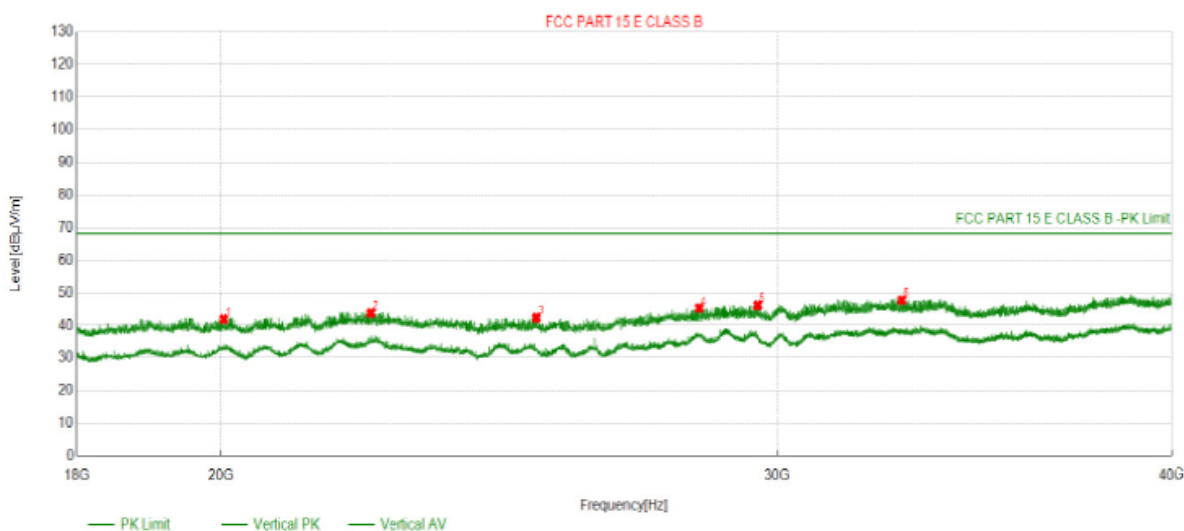
**Suspected Data List**

| NO. | Freq. [MHz] | Reading [dBμV/m] | PK Level [dBμV/m] | Factor [dB] | PK Limit [dBμV/m] | PK Margin [dB] | Height [cm] | Angle [°] | Polarity   |
|-----|-------------|------------------|-------------------|-------------|-------------------|----------------|-------------|-----------|------------|
| 1   | 20589.659   | 40.03            | 45.91             | 5.88        | 68.20             | 22.29          | 150         | 320       | Horizontal |
| 2   | 22264.026   | 42.54            | 48.27             | 5.73        | 68.20             | 19.93          | 150         | 270       | Horizontal |
| 3   | 24448.845   | 41.35            | 47.02             | 5.67        | 68.20             | 21.18          | 150         | 110       | Horizontal |
| 4   | 26792.079   | 39.60            | 46.92             | 7.32        | 68.20             | 21.28          | 150         | 200       | Horizontal |
| 5   | 29493.949   | 41.88            | 50.79             | 8.91        | 68.20             | 17.41          | 150         | 270       | Horizontal |
| 6   | 32732.673   | 41.41            | 52.00             | 10.59       | 68.20             | 16.20          | 150         | 360       | Horizontal |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



| Suspected Data List |                |                     |                      |                |                      |                   |                |              |          |
|---------------------|----------------|---------------------|----------------------|----------------|----------------------|-------------------|----------------|--------------|----------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | PK Level<br>[dBμV/m] | Factor<br>[dB] | PK Limit<br>[dBμV/m] | PK Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                   | 19982.398      | 40.72               | 46.92                | 6.20           | 68.20                | 21.28             | 150            | 100          | Vertical |
| 2                   | 22290.429      | 43.06               | 48.78                | 5.72           | 68.20                | 19.42             | 150            | 100          | Vertical |
| 3                   | 25097.910      | 40.77               | 47.13                | 6.36           | 68.20                | 21.07             | 150            | 230          | Vertical |
| 4                   | 28301.430      | 41.85               | 50.50                | 8.65           | 68.20                | 17.70             | 150            | 20           | Vertical |
| 5                   | 29498.350      | 42.11               | 51.02                | 8.91           | 68.20                | 17.18             | 150            | 80           | Vertical |
| 6                   | 32921.892      | 41.16               | 52.01                | 10.85          | 68.20                | 16.19             | 150            | 120          | Vertical |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



## 5.6. Band Edge

### 5.6.1. Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC CFR47 Part 15E Section 15.407                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Test Method:</b>      | ANSI C63.10: 2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Limit:</b>            | <p>For band I&amp;II&amp;III: <math>E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2 = 68.2 \text{ dB}\mu\text{V}/\text{m}</math>, for <math>\text{EIRP}(\text{dBm}) = -27 \text{ dBm}</math></p> <p>For transmitters operating in the 5.725-5.85 GHz band:</p> <p>All emissions shall be limited to a level of <math>-27 \text{ dBm}/\text{MHz}</math> at 75 MHz or more above or below the band edge increasing linearly to <math>10 \text{ dBm}/\text{MHz}</math> 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 <math>15.6 \text{ dBm}/\text{MHz}</math> 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 <math>27 \text{ dBm}/\text{MHz}</math> at the band edge.</p> <p>For band IV(5715-5725MHz&amp;5850-5860MHz): <math>E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2 = 78.2 \text{ dB}\mu\text{V}/\text{m}</math>, for <math>\text{EIRP}(\text{dBm}) = -27 \text{ dBm}</math>;</p> <p>For band IV(other un-restricted band): <math>E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2 = 68.2 \text{ dB}\mu\text{V}/\text{m}</math>, for <math>\text{EIRP}(\text{dBm}) = -27 \text{ dBm}</math></p> |
| <b>Test Setup:</b>       | <p>The diagram illustrates the test setup for band edge testing. It shows an Equipment Under Test (EUT) placed on a turntable at a height of 1.5m. The turntable is on a stand. An antenna feed point is positioned 3m away from the EUT. The antenna is mounted on a vertical pole at a height of 1.4m. The entire setup is on a ground plane. A receiver and amplifier (Amp.) are connected to the antenna feed point.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Test Mode:</b>        | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**Test Procedure:**

1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
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.
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.
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.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
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, quasi peak or average method as specified and then reported in a data sheet.

**Test Result:**

PASS

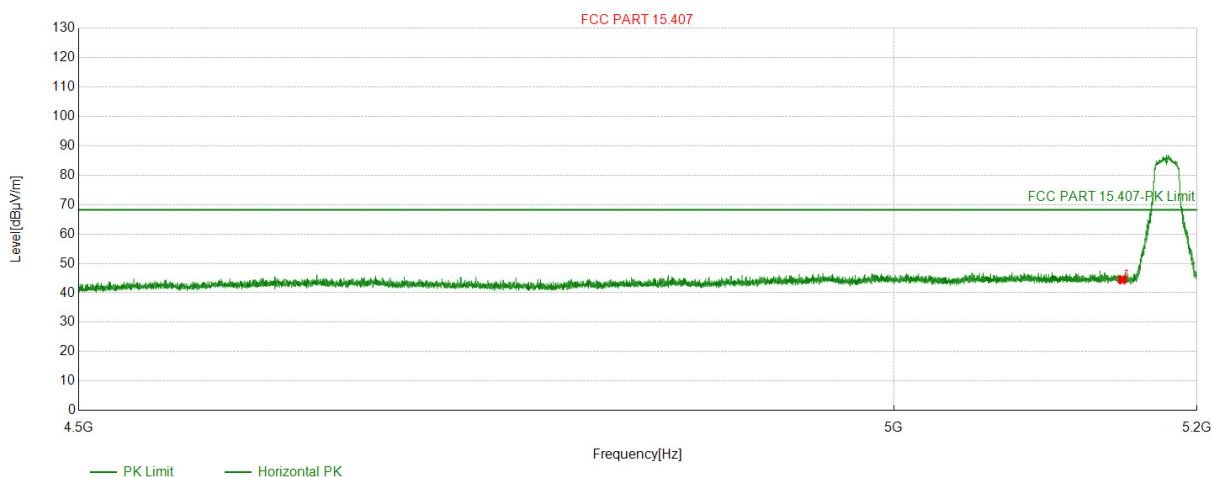


### 5.6.2. Test Data

All the test modes completed for test. Only the worst result was reported as below:

802.11n(HT20)-5180

Antenna polarity: Horizontal

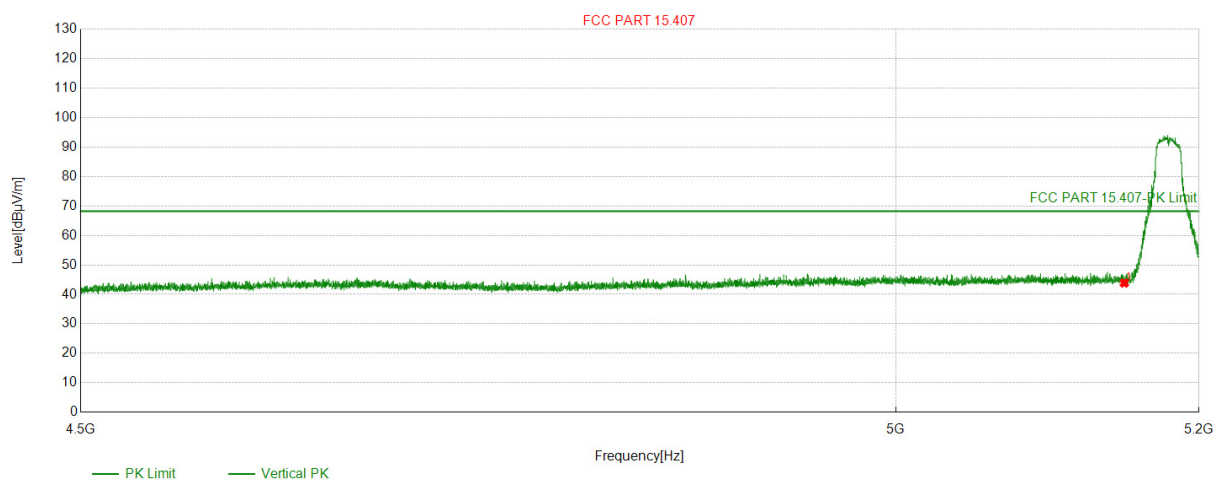


| Suspected Data List |             |                  |                   |             |                   |                |             |           |            |
|---------------------|-------------|------------------|-------------------|-------------|-------------------|----------------|-------------|-----------|------------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | PK Level [dBμV/m] | Factor [dB] | PK Limit [dBμV/m] | PK Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1                   | 5150.000    | 48.74            | 44.46             | -4.28       | 68.20             | 23.74          | 150         | 50        | Horizontal |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



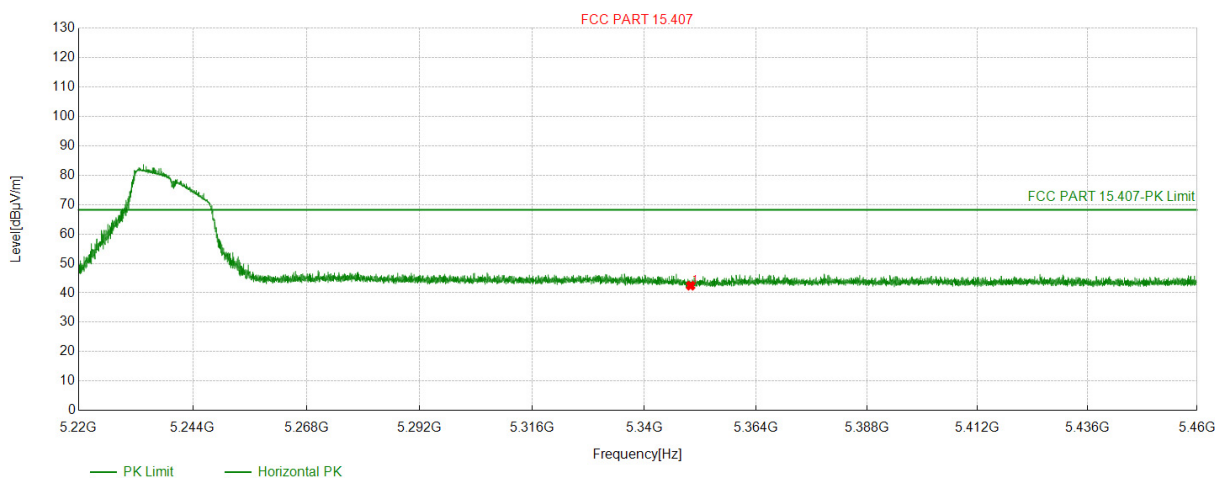
| Suspected Data List |                |                     |                      |                |                      |                   |                |              |          |
|---------------------|----------------|---------------------|----------------------|----------------|----------------------|-------------------|----------------|--------------|----------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | PK Level<br>[dBμV/m] | Factor<br>[dB] | PK Limit<br>[dBμV/m] | PK Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                   | 5150.000       | 48.15               | 43.87                | -4.28          | 68.20                | 24.33             | 150            | 280          | Vertical |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



## 802.11n(HT20)-5240

Antenna polarity: Horizontal



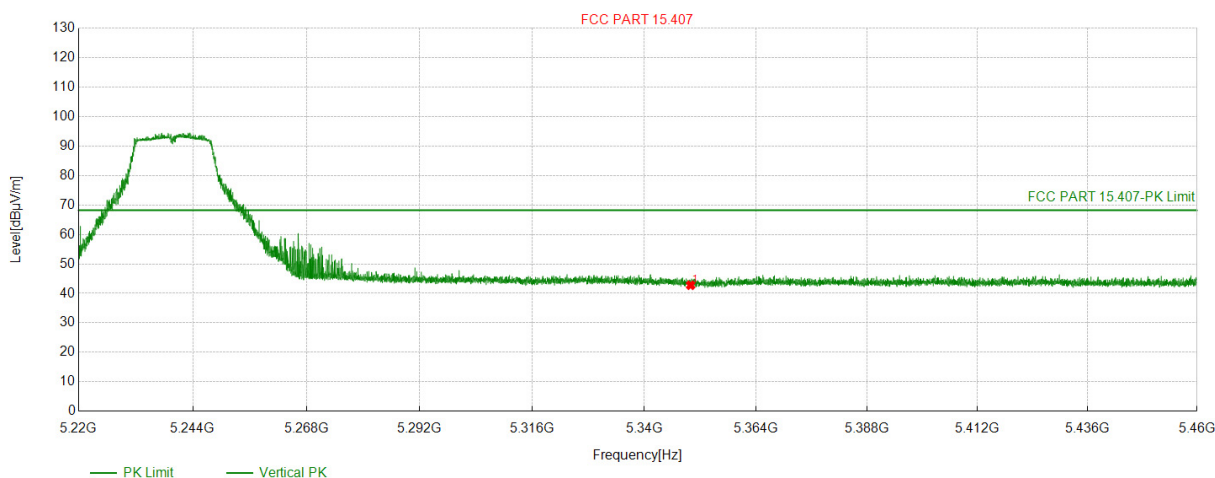
Suspected Data List

| NO. | Freq.<br>[MHz] | Reading<br>[dBμV/m] | PK Level<br>[dBμV/m] | Factor<br>[dB] | PK Limit<br>[dBμV/m] | PK Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity   |
|-----|----------------|---------------------|----------------------|----------------|----------------------|-------------------|----------------|--------------|------------|
| 1   | 5350.000       | 47.57               | 42.43                | -5.14          | 68.20                | 25.77             | 150            | 220          | Horizontal |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



| Suspected Data List |             |                  |                   |             |                   |                |             |           |          |
|---------------------|-------------|------------------|-------------------|-------------|-------------------|----------------|-------------|-----------|----------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | PK Level [dBμV/m] | Factor [dB] | PK Limit [dBμV/m] | PK Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1                   | 5350.000    | 47.91            | 42.77             | -5.14       | 68.20             | 25.43          | 150         | 300       | Vertical |

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



## 5.7. Frequency Stability Measurement

### 5.7.1. Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC Part15 Section 15.407(g)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Test Method:</b>      | ANSI C63.10: 2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Limit:</b>            | The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 35 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Test Setup:</b>       | <pre>graph LR; SA[Spectrum Analyzer] --- EUT[EUT]; EUT --- TCh[Temperature Chamber]; TCh --- P[AC/DC Power supply];</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"><li>The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage.</li><li>Turn the EUT on and couple its output to a spectrum analyzer.</li><li>Turn the EUT off and set the chamber to the highest temperature specified.</li><li>Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize.</li><li>Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.</li><li>The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.</li></ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



### 5.7.2. Test Result

| Mode      | Voltage (V) | FHL (5180MHz) | Deviation (KHz) | FHH (5240MHz) | Deviation (KHz) |
|-----------|-------------|---------------|-----------------|---------------|-----------------|
| 5.2G Band | 4.25V       | 5179.989      | -11             | 5239.990      | -10             |
|           | 5.0V        | 5180.010      | 10              | 5240.020      | 20              |
|           | 5.75V       | 5180.013      | 13              | 5239.980      | -20             |

| Mode      | Temperature (°C) | FHL (5180MHz) | Deviation (KHz) | FHH (5240MHz) | Deviation (KHz) |
|-----------|------------------|---------------|-----------------|---------------|-----------------|
| 5.2G Band | -30              | 5179.980      | -20             | 5239.980      | -20             |
|           | -20              | 5180.017      | 17              | 5240.017      | 17              |
|           | -10              | 5179.985      | -15             | 5239.980      | -20             |
|           | 0                | 5180.013      | 13              | 5239.975      | -25             |
|           | 10               | 5179.977      | -23             | 5239.966      | -34             |
|           | 20               | 5179.980      | -20             | 5240.030      | 30              |
|           | 30               | 5180.015      | 15              | 5239.982      | -18             |
|           | 40               | 5179.973      | -27             | 5239.970      | -30             |
|           | 50               | 5179.982      | -18             | 5240.010      | 10              |



## 5.8. Antenna Requirement

### Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

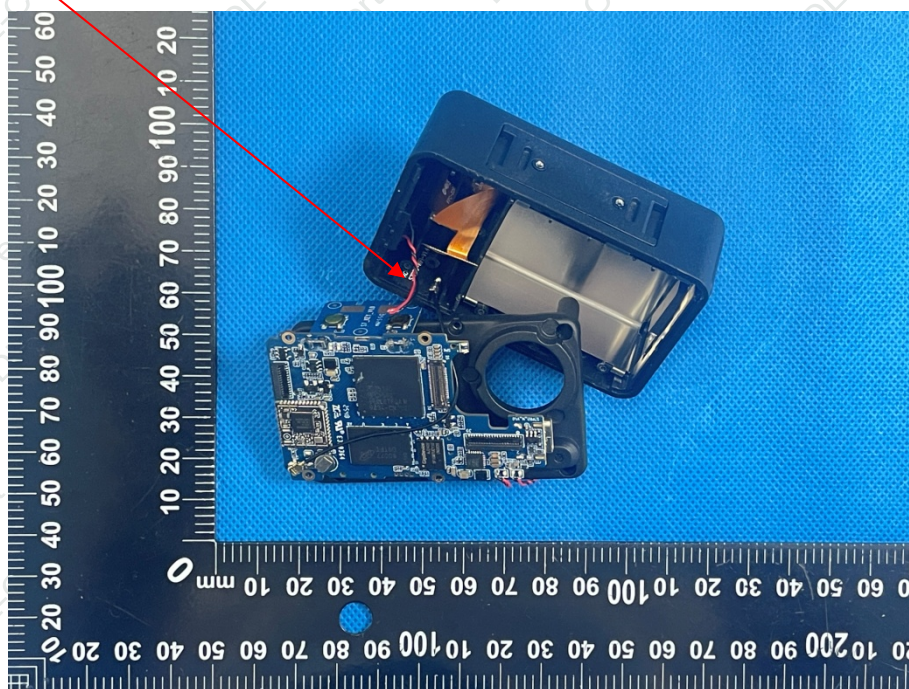
### Refer to statement below for compliance.

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

### Antenna Connected Construction

The antenna used in this product is a FPC antenna, need professional installation, not easy to remove. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 0.93dBi.

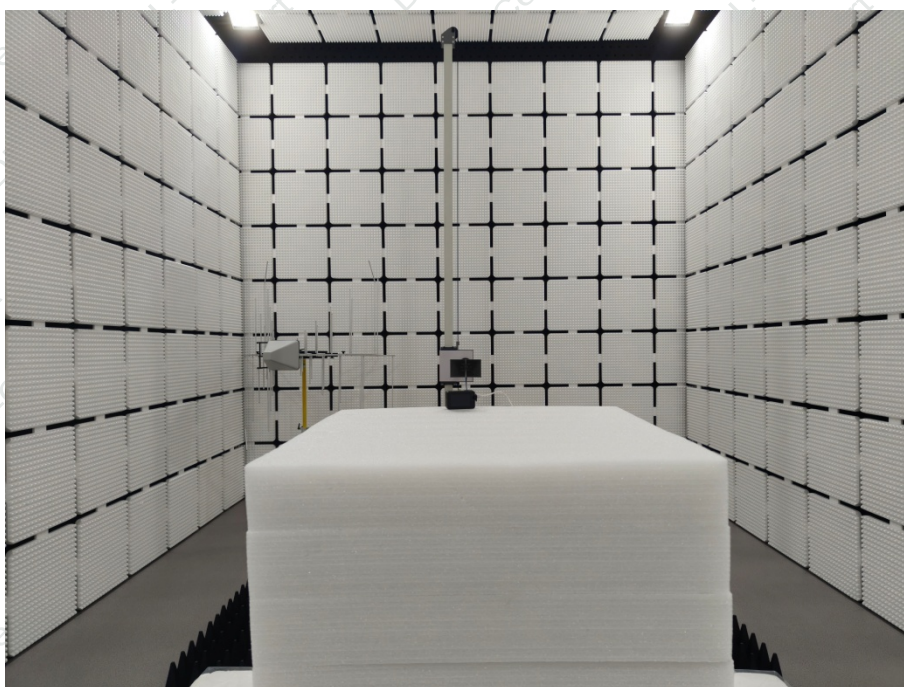
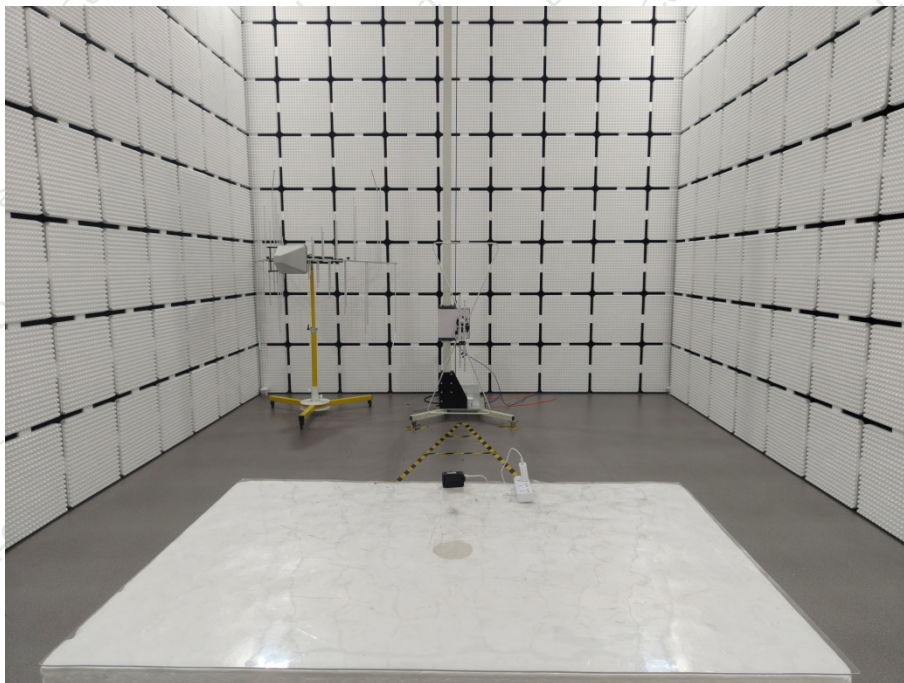
### WIFI Antenna





## 6. Test Setup Photos of the EUT

### Radiated Emissions

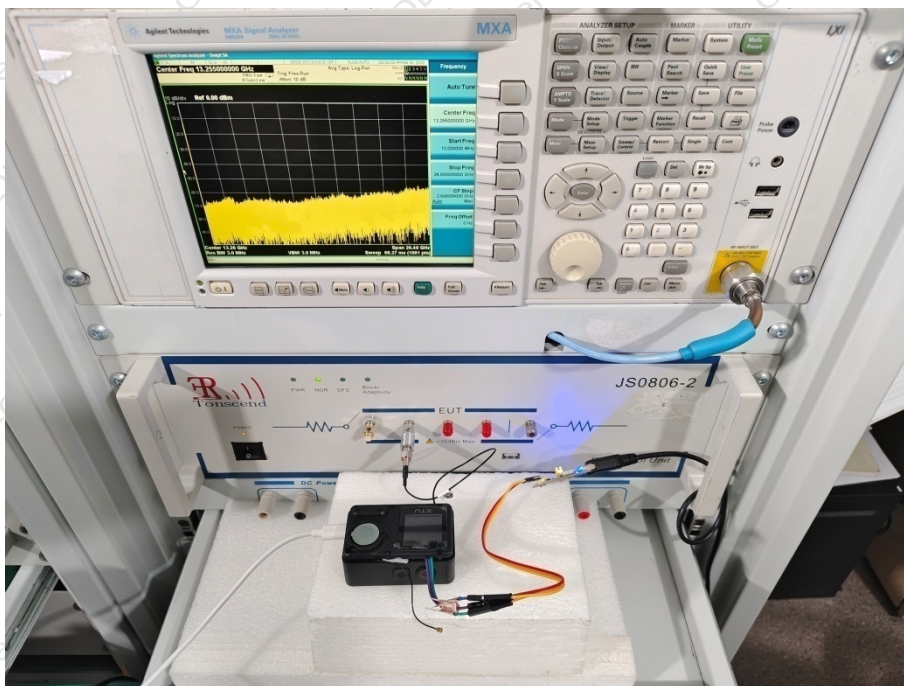




### AC Conducted Emission



### RF Conducted Emission





## 7. Photos of the EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos

-----End of Test Report-----