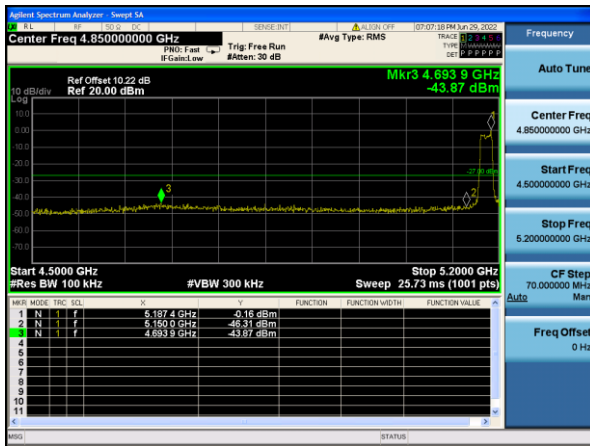


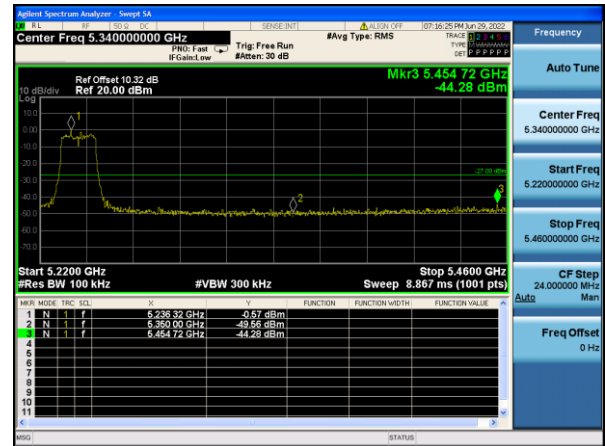


11ac20

Band edge-Left

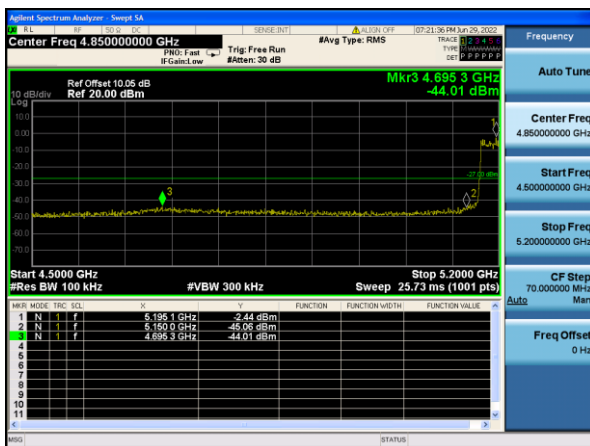


Band edge-Right

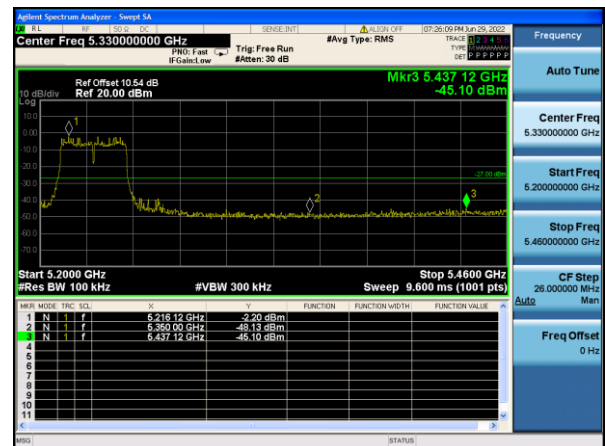


11ac40

Band edge-Left

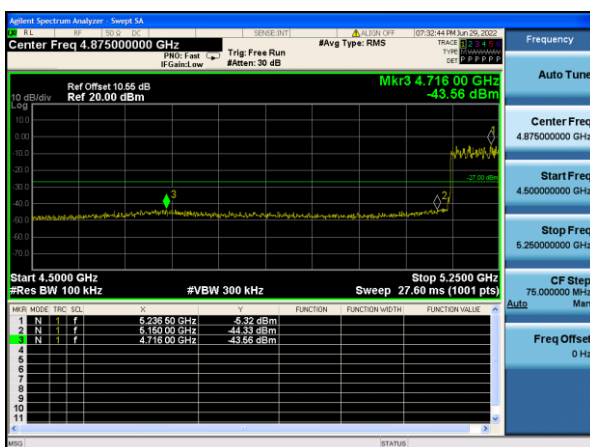


Band edge-Right

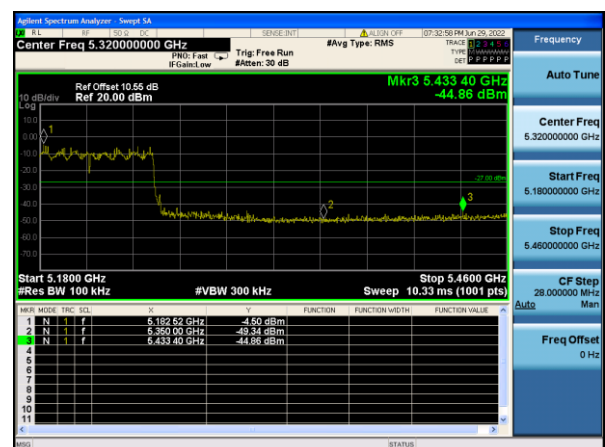


11ac80

Band edge-Left

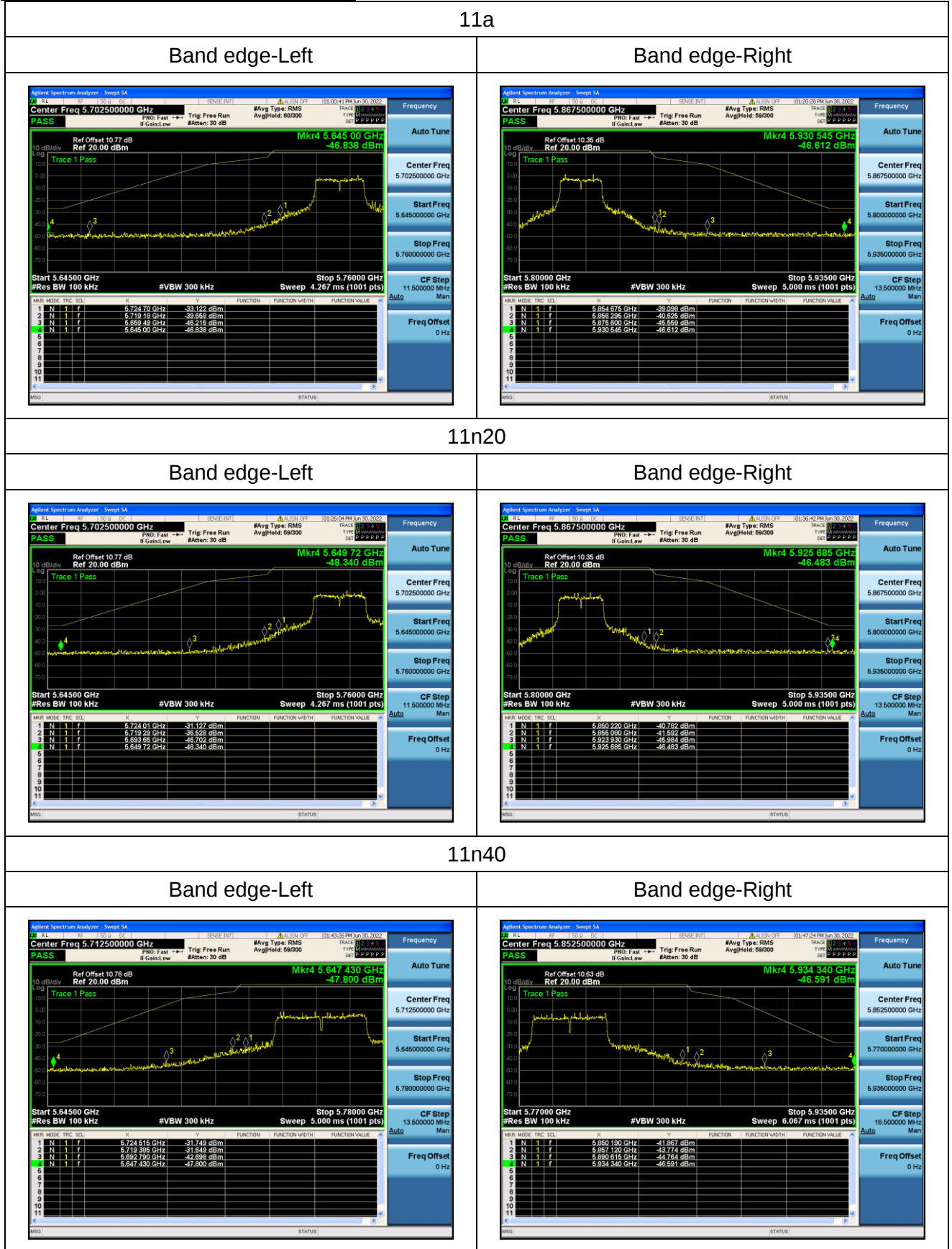


Band edge-Right





Conduction Band edge For U-NII-3





11ac20

Band edge-Left



Band edge-Right

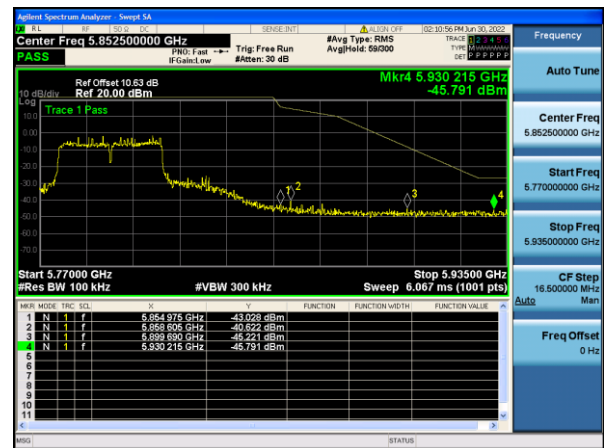


11ac40

Band edge-Left

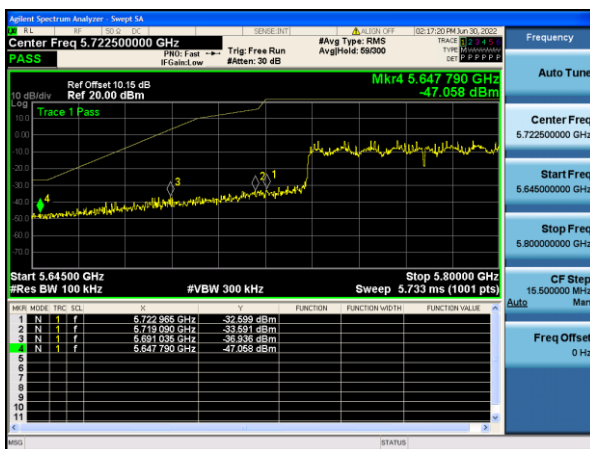


Band edge-Right



11ac80

Band edge-Left



Band edge-Right





## **5.9 Radiated spurious emission**

### **5.9.1 Radiated Emission Limits**

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.
2. For transmitters operating in the 5.25-5.35 GHz band:  
All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
3. For transmitters operating in the 5.47-5.725 GHz band:  
All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
4. For transmitters operating in the 5.725-5.85 GHz band:

(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.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.



| Frequencies<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meters) |
|----------------------|--------------------------------------|----------------------------------|
| 0.009~0.490          | 2400/F(KHz)                          | 300                              |
| 0.490~1.705          | 24000/F(KHz)                         | 30                               |
| 1.705~30.0           | 30                                   | 30                               |
| 30~88                | 100                                  | 3                                |
| 88~216               | 150                                  | 3                                |
| 216~960              | 200                                  | 3                                |
| Above 960            | 500                                  | 3                                |

| Frequency Range | RBW                                 | VBW                   | Measurement |
|-----------------|-------------------------------------|-----------------------|-------------|
| 30MHz-1GHz      | 1MHz                                | 3MHz                  | Peak        |
| Above 1GHz      | 1MHz                                | 10Hz <sup>Note1</sup> | Average     |
|                 | 1MHz                                | >1/T <sup>Note2</sup> | Average     |
| Note1           | When duty cycle is no less than 98% |                       |             |
| Note2           | When duty cycle is less than 98%    |                       |             |

| Receiver Parameter     | Setting                          |
|------------------------|----------------------------------|
| Attenuation            | Auto                             |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP    |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP    |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

### 5.9.2 Test procedure

The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the floor on a support that is RF transparent for the frequencies of interest. Final measurements for the EUT require a measurement antenna height scan of 1 m to 4 m.

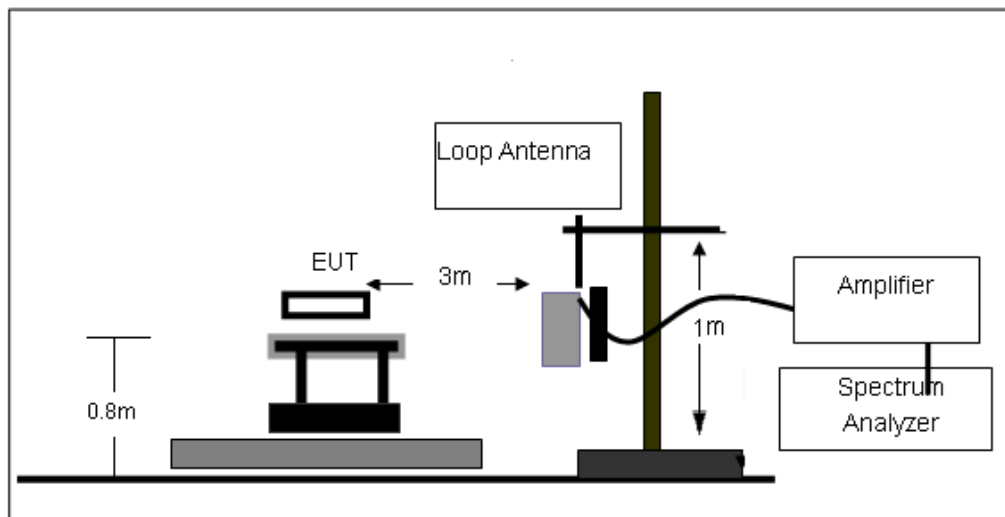
The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. For the actual test configuration, please refer to the related Item –EUT Test Photos.

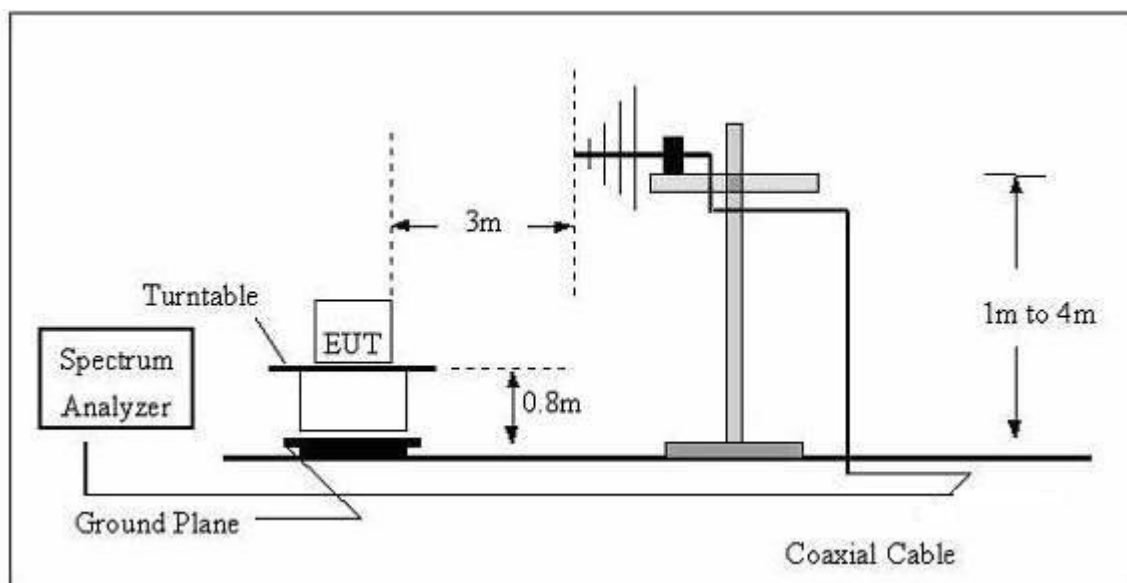
Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

### 5.9.3 Test setup

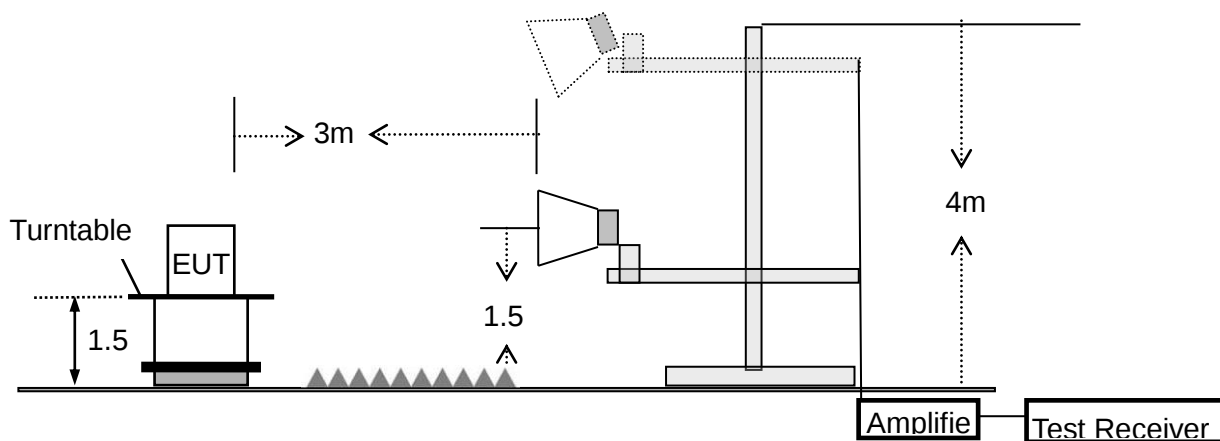
#### (A) Radiated Emission test-up Frequency Below 30MHz



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



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





#### 5.9.4 Test results

|            |                          |               |        |
|------------|--------------------------|---------------|--------|
| EUT:       | Tesla instrument display | Model Name:   | T3     |
| Pressure:  | 1010 hPa                 | Test Voltage: | DC 12V |
| Test Mode: | TX                       | Polarization: | --     |

##### Below 30MHz

| Freq. | Reading  | Limit    | Margin | State |
|-------|----------|----------|--------|-------|
| (MHz) | (dBuV/m) | (dBuV/m) | (dB)   | P/F   |
| --    | --       | --       | --     | Pass  |
| --    | --       | --       | --     | Pass  |

Note:

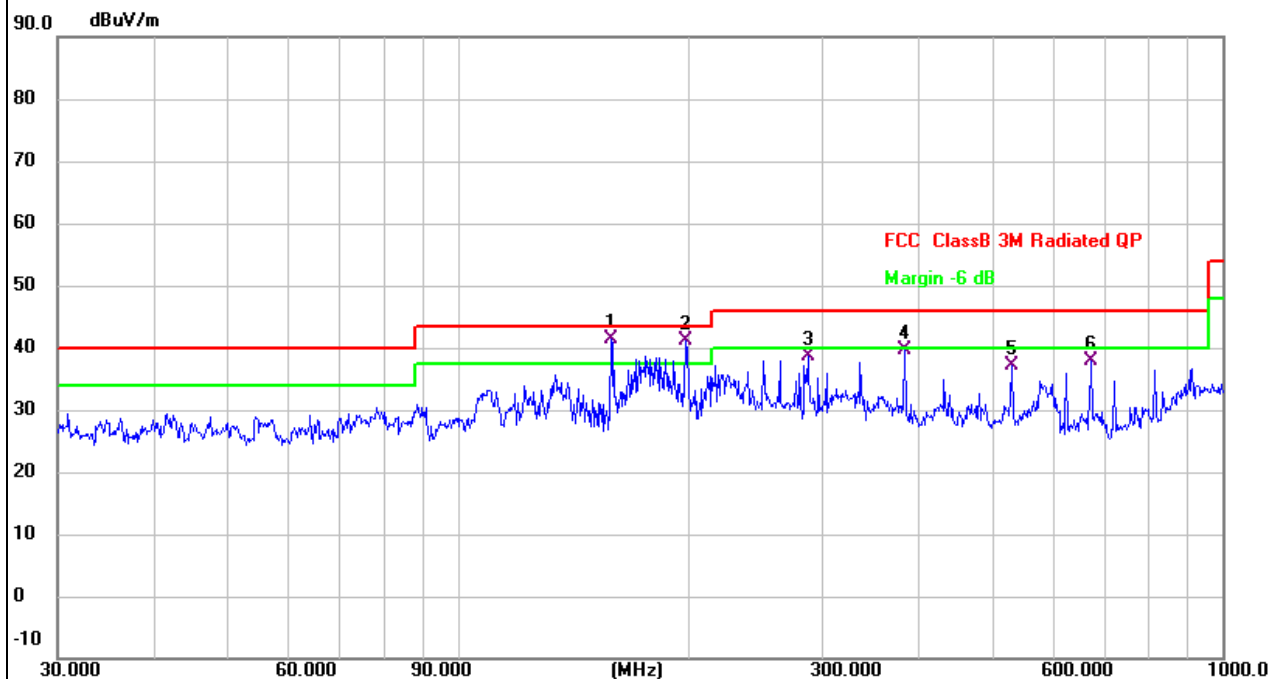
1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})$ (dB); Limit line = specific limits (dBuV) + distance extrapolation factor.



Between 30MHz – 1GHz

Main model:

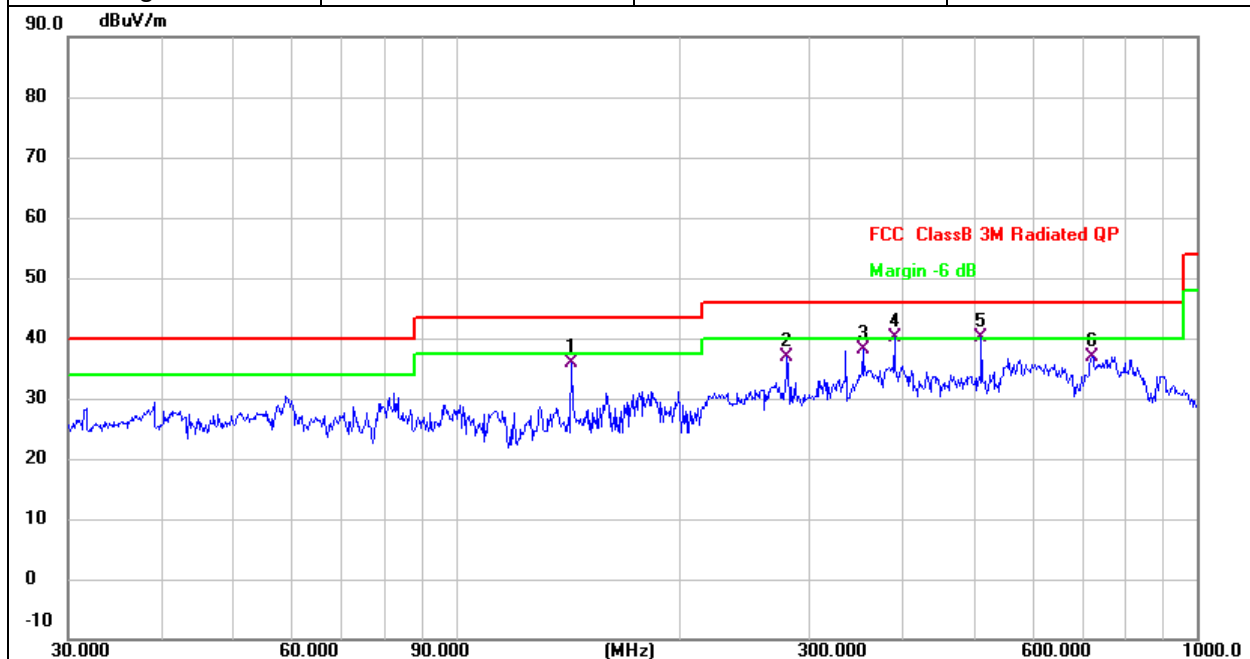
|               |                          |             |    |
|---------------|--------------------------|-------------|----|
| EUT:          | Tesla instrument display | Model Name: | T3 |
| Pressure:     | 1010 hPa                 | Phase:      | H  |
| Test Voltage: | DC 12V                   | Mode:       | TX |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 * | 158.6673        | 53.44          | -11.94        | 41.50          | 43.50          | -2.00       | QP       |
| 2 ! | 198.5877        | 51.07          | -9.90         | 41.17          | 43.50          | -2.33       | QP       |
| 3   | 286.9823        | 46.80          | -8.06         | 38.74          | 46.00          | -7.26       | QP       |
| 4   | 383.9318        | 46.60          | -6.99         | 39.61          | 46.00          | -6.39       | QP       |
| 5   | 530.1013        | 41.99          | -4.88         | 37.11          | 46.00          | -8.89       | QP       |
| 6   | 672.8442        | 41.14          | -3.27         | 37.87          | 46.00          | -8.13       | QP       |

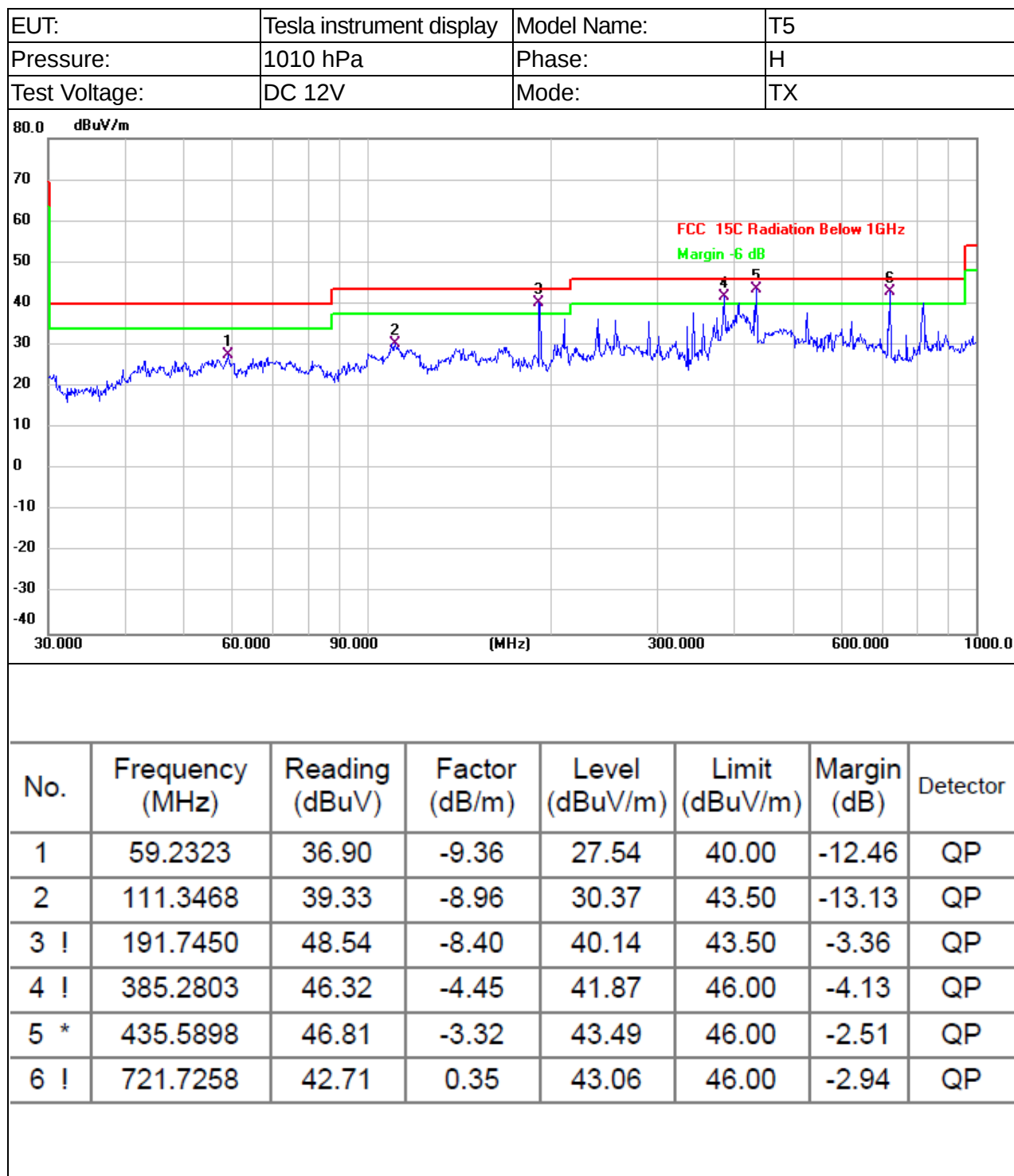


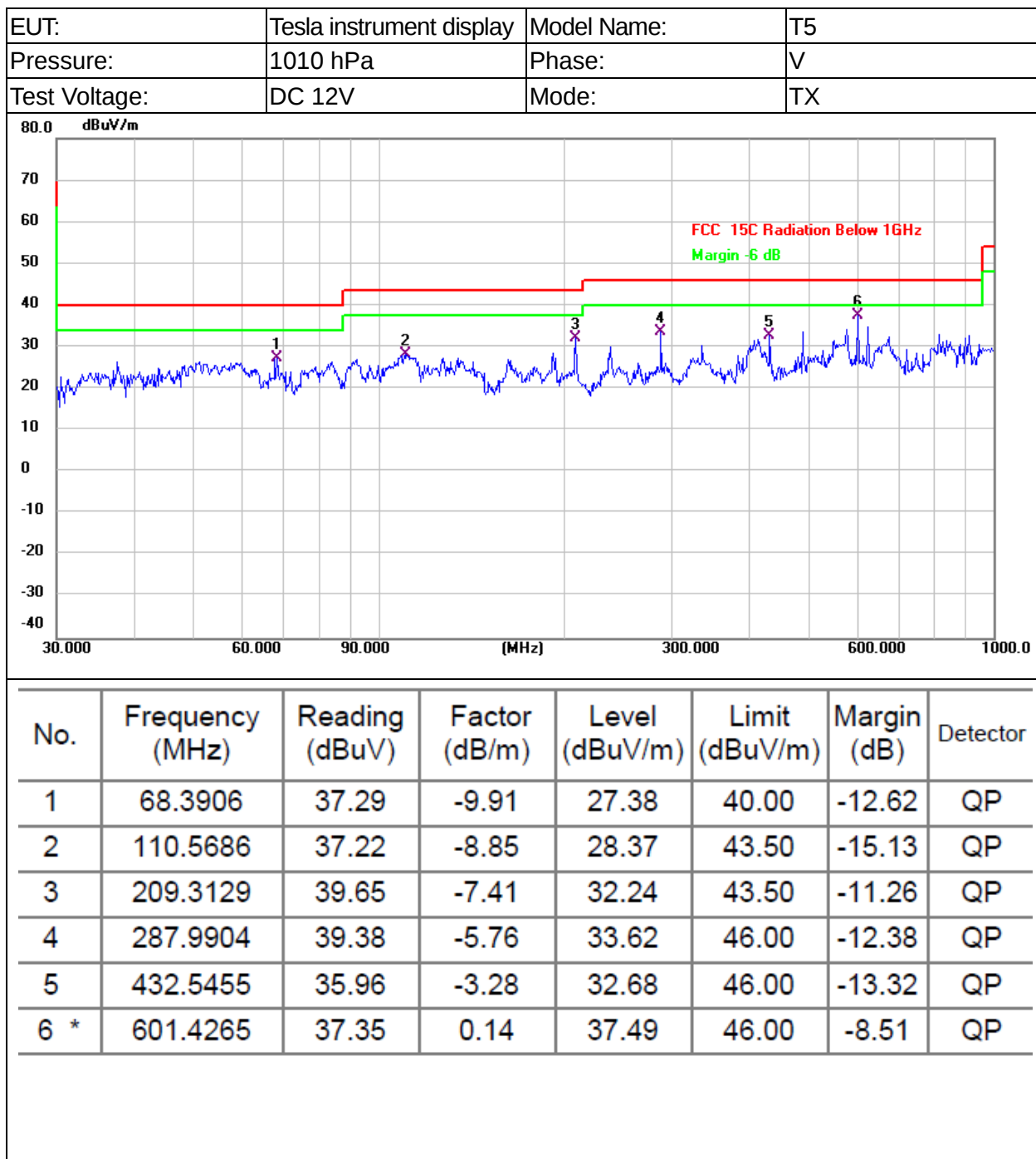
|               |                          |             |    |
|---------------|--------------------------|-------------|----|
| EUT:          | Tesla instrument display | Model Name: | T3 |
| Pressure:     | 1010 hPa                 | Phase:      | V  |
| Test Voltage: | DC 12V                   | Mode:       | TX |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 143.3257        | 48.62          | -12.71        | 35.91          | 43.50          | -7.59       | QP       |
| 2   | 280.0237        | 44.81          | -7.97         | 36.84          | 46.00          | -9.16       | QP       |
| 3   | 354.1831        | 45.20          | -7.11         | 38.09          | 46.00          | -7.91       | QP       |
| 4 ! | 390.7225        | 47.07          | -6.99         | 40.08          | 46.00          | -5.92       | QP       |
| 5 * | 511.8351        | 45.13          | -4.99         | 40.14          | 46.00          | -5.86       | QP       |
| 6   | 721.7258        | 39.66          | -2.72         | 36.94          | 46.00          | -9.06       | QP       |

Serial model:





Note:

1. All the mode has been tested for this test, the mode 11ac80 CH42 is the worst mode. Just report the worst data.
2. Emission Level = Meter Reading + Factor, Margin= Emission Level- Limit, Factor = Antenna Factor + Cable Loss – Pre-amplifier.
3. The peak value is less than the AV value, AV value is not required Factor added by measurement software automatically.



1GHz-40GHz:

For U-NII-1

| Polar               | Frequency | Meter Reading | Cable loss | Antenna Factor | Preamplifier Factor | Emission Level | Limits   | Margin | Detector Type |
|---------------------|-----------|---------------|------------|----------------|---------------------|----------------|----------|--------|---------------|
| (H/V)               | (MHz)     | (dBuV)        | (dB)       | dB/m           | (dB)                | (dBuV/m)       | (dBuV/m) | (dB)   |               |
| (5210 MHz)-Above 1G |           |               |            |                |                     |                |          |        |               |
| Vertical            | 4434.723  | 55.74         | 5.94       | 35.40          | 44.00               | 53.08          | 74.00    | -20.92 | Pk            |
| Vertical            | 4434.859  | 43.97         | 5.94       | 35.40          | 44.00               | 41.31          | 54.00    | -12.69 | AV            |
| Vertical            | 10370.551 | 58.65         | 8.46       | 39.75          | 44.50               | 62.36          | 68.20    | -5.84  | Pk            |
| Vertical            | 10370.673 | 44.87         | 8.46       | 39.75          | 44.50               | 48.58          | 54.00    | -5.42  | AV            |
| Vertical            | 15540.346 | 56.92         | 10.12      | 38.80          | 44.10               | 61.74          | 68.20    | -6.46  | Pk            |
| Vertical            | 15540.942 | 42.40         | 10.12      | 38.80          | 42.70               | 48.62          | 54.00    | -5.38  | AV            |
| Horizontal          | 4434.871  | 57.76         | 5.94       | 35.18          | 44.00               | 54.88          | 74.00    | -19.12 | Pk            |
| Horizontal          | 4435.566  | 43.64         | 5.94       | 35.18          | 44.00               | 40.76          | 54.00    | -13.24 | AV            |
| Horizontal          | 10371.762 | 60.04         | 8.46       | 38.71          | 44.50               | 62.71          | 68.20    | -5.49  | Pk            |
| Horizontal          | 10371.775 | 45.36         | 8.46       | 38.71          | 44.50               | 48.03          | 54.00    | -5.97  | AV            |
| Horizontal          | 15541.847 | 56.34         | 10.12      | 38.38          | 44.10               | 60.74          | 68.20    | -7.46  | Pk            |
| Horizontal          | 15541.829 | 42.74         | 10.12      | 38.38          | 44.10               | 47.14          | 54.00    | -6.86  | AV            |

Note: All the mode has been tested for this test, the mode 11ac80 CH42 is the worst mode. Just report the worst data.



For U-NII-3

| Polar                                  | Frequency | Meter Reading | Cable loss | Antenna Factor | Preamplifier Factor | Emission Level | Limits   | Margin | Detect or Type |
|----------------------------------------|-----------|---------------|------------|----------------|---------------------|----------------|----------|--------|----------------|
| (H/V)                                  | (MHz)     | (dBuV)        | (dB)       | dB/m           | (dB)                | (dBuV/m)       | (dBuV/m) | (dB)   |                |
| 11a Low Channel (5745 MHz)-Above 1G    |           |               |            |                |                     |                |          |        |                |
| Vertical                               | 4679.284  | 57.72         | 5.94       | 35.40          | 44.00               | 55.06          | 74.00    | -18.94 | Pk             |
| Vertical                               | 4679.936  | 46.49         | 5.94       | 35.40          | 44.00               | 43.83          | 54.00    | -10.17 | AV             |
| Vertical                               | 11491.276 | 54.94         | 8.46       | 39.75          | 44.50               | 58.65          | 74.00    | -15.35 | Pk             |
| Vertical                               | 11491.276 | 40.53         | 8.46       | 39.75          | 44.50               | 44.24          | 54.00    | -9.76  | AV             |
| Vertical                               | 17235.881 | 40.75         | 10.12      | 38.80          | 42.70               | 46.97          | 68.20    | -21.23 | Pk             |
| Vertical                               | 17235.315 | 43.88         | 10.12      | 38.80          | 44.10               | 48.70          | 54.00    | -5.30  | AV             |
| Horizontal                             | 4679.304  | 58.39         | 5.94       | 35.18          | 44.00               | 55.51          | 74.00    | -18.49 | Pk             |
| Horizontal                             | 4680.903  | 45.42         | 5.94       | 35.18          | 44.00               | 42.54          | 54.00    | -11.46 | AV             |
| Horizontal                             | 11491.203 | 60.11         | 8.46       | 38.71          | 44.50               | 62.78          | 74.00    | -11.22 | Pk             |
| Horizontal                             | 11491.221 | 45.42         | 8.46       | 38.71          | 44.50               | 48.09          | 54.00    | -5.91  | AV             |
| Horizontal                             | 17236.231 | 53.71         | 10.12      | 38.38          | 44.10               | 58.11          | 68.20    | -10.09 | Pk             |
| Horizontal                             | 17236.540 | 43.12         | 10.12      | 38.38          | 44.10               | 47.52          | 54.00    | -6.48  | AV             |
| 11a middle Channel (5785 MHz)-Above 1G |           |               |            |                |                     |                |          |        |                |
| Vertical                               | 4593.204  | 58.65         | 6.48       | 36.35          | 44.05               | 57.43          | 74.00    | -16.57 | Pk             |
| Vertical                               | 4593.402  | 43.44         | 6.48       | 36.35          | 44.05               | 42.22          | 54.00    | -11.78 | AV             |
| Vertical                               | 11571.492 | 61.15         | 8.47       | 37.88          | 44.51               | 62.99          | 74.00    | -11.01 | Pk             |
| Vertical                               | 11571.406 | 46.26         | 8.47       | 37.88          | 44.51               | 48.10          | 54.00    | -5.90  | AV             |
| Vertical                               | 17357.088 | 58.56         | 10.12      | 38.8           | 44.10               | 63.38          | 68.20    | -4.80  | Pk             |
| Vertical                               | 17355.489 | 40.57         | 10.12      | 38.8           | 42.70               | 46.79          | 54.00    | -7.21  | AV             |
| Horizontal                             | 4592.705  | 60.11         | 6.48       | 36.37          | 44.05               | 58.91          | 74.00    | -15.09 | Pk             |
| Horizontal                             | 4593.360  | 43.80         | 6.48       | 36.37          | 44.05               | 42.60          | 54.00    | -11.40 | AV             |
| Horizontal                             | 11570.442 | 47.62         | 8.47       | 38.64          | 44.50               | 50.23          | 74.00    | -23.77 | Pk             |
| Horizontal                             | 17357.146 | 59.88         | 10.12      | 38.38          | 44.10               | 64.28          | 68.20    | -3.92  | Pk             |
| Horizontal                             | 17355.967 | 44.71         | 10.12      | 38.38          | 44.10               | 49.11          | 54.00    | -4.89  | AV             |
| 11a High Channel (5825 MHz)-Above 1G   |           |               |            |                |                     |                |          |        |                |
| Vertical                               | 5039.382  | 61.55         | 7.10       | 37.24          | 43.50               | 62.39          | 74.00    | -11.61 | Pk             |
| Vertical                               | 5040.685  | 47.98         | 7.10       | 37.24          | 43.50               | 48.82          | 54.00    | -5.18  | AV             |
| Vertical                               | 11650.793 | 55.29         | 8.46       | 37.68          | 44.50               | 56.93          | 74.00    | -17.07 | Pk             |
| Vertical                               | 11650.681 | 41.66         | 8.46       | 37.68          | 44.50               | 43.30          | 54.00    | -10.70 | AV             |
| Vertical                               | 17476.555 | 59.26         | 10.12      | 38.8           | 44.10               | 64.08          | 68.20    | -4.12  | Pk             |
| Vertical                               | 17476.606 | 40.01         | 10.12      | 38.8           | 42.70               | 46.23          | 54.00    | -7.77  | AV             |
| Horizontal                             | 5040.620  | 67.11         | 7.10       | 37.24          | 43.50               | 67.95          | 74.00    | -6.05  | Pk             |



|            |           |       |       |       |       |       |       |        |    |
|------------|-----------|-------|-------|-------|-------|-------|-------|--------|----|
| Horizontal | 5040.832  | 42.99 | 7.10  | 37.24 | 43.50 | 43.83 | 54.00 | -10.17 | AV |
| Horizontal | 11650.570 | 45.42 | 8.46  | 38.57 | 44.50 | 47.95 | 74.00 | -26.05 | Pk |
| Horizontal | 17477.026 | 59.60 | 10.12 | 38.38 | 44.10 | 64.00 | 68.20 | -4.82  | Pk |
| Horizontal | 17476.427 | 46.29 | 10.12 | 38.38 | 44.10 | 50.69 | 54.00 | -3.31  | AV |

Band edge - radiated

For U-NII-1

For 802.11a mode:

| Frequency                        | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|----------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                            | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11a – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                            | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 4500.000                         | 46.93         | 0.91           | 47.84       | 74.00    | -26.16 | Peak     | V            |
| 4500.000                         | 36.42         | 0.91           | 37.33       | 54.00    | -16.67 | AVG      | V            |
| 5150.000                         | 48.71         | 2.41           | 51.12       | 74.00    | -22.88 | Peak     | V            |
| 5150.000                         | 38.92         | 2.41           | 41.33       | 54.00    | -12.67 | AVG      | V            |
| 4500.000                         | 47.30         | 0.91           | 48.21       | 74.00    | -25.79 | Peak     | H            |
| 4500.000                         | 36.46         | 0.91           | 37.37       | 54.00    | -16.63 | AVG      | H            |
| 5150.000                         | 48.34         | 2.41           | 50.75       | 74.00    | -23.25 | Peak     | H            |
| 5150.000                         | 38.26         | 2.41           | 40.67       | 54.00    | -13.33 | AVG      | H            |
| <b>802.11a – Right band-edge</b> |               |                |             |          |        |          |              |
| 5350.000                         | 48.08         | 3.05           | 51.13       | 74.00    | -22.87 | Peak     | V            |
| 5350.000                         | 37.48         | 3.05           | 40.53       | 54.00    | -13.47 | AVG      | V            |
| 5460.000                         | 47.42         | 3.41           | 50.83       | 74.00    | -23.17 | Peak     | V            |
| 5460.000                         | 37.75         | 3.41           | 41.16       | 54.00    | -12.84 | AVG      | V            |
| 5350.000                         | 47.23         | 3.05           | 50.28       | 74.00    | -23.72 | Peak     | H            |
| 5350.000                         | 37.02         | 3.05           | 40.07       | 54.00    | -13.93 | AVG      | H            |
| 5460.000                         | 47.10         | 3.41           | 50.51       | 74.00    | -23.49 | Peak     | H            |
| 5460.000                         | 37.33         | 3.41           | 40.74       | 54.00    | -13.26 | AVG      | H            |



For 802.11n20 mode:

| Frequency                          | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                              | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11n20 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                              | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 4500.000                           | 46.43         | 0.91           | 47.34       | 74.00    | -26.66 | Peak     | V            |
| 4500.000                           | 36.48         | 0.91           | 37.39       | 54.00    | -16.61 | AVG      | V            |
| 5150.000                           | 48.54         | 2.41           | 50.95       | 74.00    | -23.05 | Peak     | V            |
| 5150.000                           | 38.79         | 2.41           | 41.20       | 54.00    | -12.80 | AVG      | V            |
| 4500.000                           | 47.30         | 0.91           | 48.21       | 74.00    | -25.79 | Peak     | H            |
| 4500.000                           | 36.62         | 0.91           | 37.53       | 54.00    | -16.47 | AVG      | H            |
| 5150.000                           | 49.70         | 2.41           | 52.11       | 74.00    | -21.89 | Peak     | H            |
| 5150.000                           | 38.84         | 2.41           | 41.25       | 54.00    | -12.75 | AVG      | H            |
| <b>802.11n20 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5350.000                           | 46.44         | 3.05           | 49.49       | 74.00    | -24.51 | Peak     | V            |
| 5350.000                           | 37.56         | 3.05           | 40.61       | 54.00    | -13.39 | AVG      | V            |
| 5460.000                           | 47.70         | 3.41           | 51.11       | 74.00    | -22.89 | Peak     | V            |
| 5460.000                           | 37.42         | 3.41           | 40.83       | 54.00    | -13.17 | AVG      | V            |
| 5350.000                           | 45.94         | 3.05           | 48.99       | 74.00    | -25.01 | Peak     | H            |
| 5350.000                           | 37.12         | 3.05           | 40.17       | 54.00    | -13.83 | AVG      | H            |
| 5460.000                           | 46.32         | 3.41           | 49.73       | 74.00    | -24.27 | Peak     | H            |
| 5460.000                           | 37.36         | 3.41           | 40.77       | 54.00    | -13.23 | AVG      | H            |



For 802.11n40 mode:

| Frequency                          | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                              | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11n40 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                              | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 4500.000                           | 46.83         | 0.91           | 47.74       | 74.00    | -26.26 | Peak     | V            |
| 4500.000                           | 36.39         | 0.91           | 37.30       | 54.00    | -16.70 | AVG      | V            |
| 5150.000                           | 56.00         | 2.41           | 58.41       | 74.00    | -15.59 | Peak     | V            |
| 5150.000                           | 42.12         | 2.41           | 44.53       | 54.00    | -9.47  | AVG      | V            |
| 4500.000                           | 46.18         | 0.91           | 47.09       | 74.00    | -26.91 | Peak     | H            |
| 4500.000                           | 36.53         | 0.91           | 37.44       | 54.00    | -16.56 | AVG      | H            |
| 5150.000                           | 50.18         | 2.41           | 52.59       | 74.00    | -21.41 | Peak     | H            |
| 5150.000                           | 39.96         | 2.41           | 42.37       | 54.00    | -11.63 | AVG      | H            |
| <b>802.11n40 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5350.000                           | 47.93         | 3.05           | 50.98       | 74.00    | -23.02 | Peak     | V            |
| 5350.000                           | 37.56         | 3.05           | 40.61       | 54.00    | -13.39 | AVG      | V            |
| 5460.000                           | 47.03         | 3.41           | 50.44       | 74.00    | -23.56 | Peak     | V            |
| 5460.000                           | 37.56         | 3.41           | 40.97       | 54.00    | -13.03 | AVG      | V            |
| 5350.000                           | 45.91         | 3.05           | 48.96       | 74.00    | -25.04 | Peak     | H            |
| 5350.000                           | 36.98         | 3.05           | 40.03       | 54.00    | -13.97 | AVG      | H            |
| 5460.000                           | 47.37         | 3.41           | 50.78       | 74.00    | -23.22 | Peak     | H            |
| 5460.000                           | 37.59         | 3.41           | 41.00       | 54.00    | -13.00 | AVG      | H            |



For 802.11ac20 mode:

| Frequency                           | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|-------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11ac20 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 4500.000                            | 45.11         | 0.91           | 46.02       | 74.00    | -27.98 | Peak     | V            |
| 4500.000                            | 36.47         | 0.91           | 37.38       | 54.00    | -16.62 | AVG      | V            |
| 5150.000                            | 48.90         | 2.41           | 51.31       | 74.00    | -22.69 | Peak     | V            |
| 5150.000                            | 38.63         | 2.41           | 41.04       | 54.00    | -12.96 | AVG      | V            |
| 4500.000                            | 46.74         | 0.91           | 47.65       | 74.00    | -26.35 | Peak     | H            |
| 4500.000                            | 36.47         | 0.91           | 37.38       | 54.00    | -16.62 | AVG      | H            |
| 5150.000                            | 47.42         | 2.41           | 49.83       | 74.00    | -24.17 | Peak     | H            |
| 5150.000                            | 38.12         | 2.41           | 40.53       | 54.00    | -13.47 | AVG      | H            |
| <b>802.11ac20 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5350.000                            | 48.03         | 3.05           | 51.08       | 74.00    | -22.92 | Peak     | V            |
| 5350.000                            | 37.30         | 3.05           | 40.35       | 54.00    | -13.65 | AVG      | V            |
| 5460.000                            | 47.66         | 3.41           | 51.07       | 74.00    | -22.93 | Peak     | V            |
| 5460.000                            | 37.55         | 3.41           | 40.96       | 54.00    | -13.04 | AVG      | V            |
| 5350.000                            | 47.17         | 3.05           | 50.22       | 74.00    | -23.78 | Peak     | H            |
| 5350.000                            | 36.89         | 3.05           | 39.94       | 54.00    | -14.06 | AVG      | H            |
| 5460.000                            | 47.54         | 3.41           | 50.95       | 74.00    | -23.05 | Peak     | H            |
| 5460.000                            | 37.50         | 3.41           | 40.91       | 54.00    | -13.09 | AVG      | H            |



For 802.11ac40 mode:

| Frequency                           | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|-------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11ac40 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 4500.000                            | 46.81         | 0.91           | 47.72       | 74.00    | -26.28 | Peak     | V            |
| 4500.000                            | 36.38         | 0.91           | 37.29       | 54.00    | -16.71 | AVG      | V            |
| 5150.000                            | 53.74         | 2.41           | 56.15       | 74.00    | -17.85 | Peak     | V            |
| 5150.000                            | 41.46         | 2.41           | 43.87       | 54.00    | -10.13 | AVG      | V            |
| 4500.000                            | 46.18         | 0.91           | 47.09       | 74.00    | -26.91 | Peak     | H            |
| 4500.000                            | 36.32         | 0.91           | 37.23       | 54.00    | -16.77 | AVG      | H            |
| 5150.000                            | 49.51         | 2.41           | 51.92       | 74.00    | -22.08 | Peak     | H            |
| 5150.000                            | 39.31         | 2.41           | 41.72       | 54.00    | -12.28 | AVG      | H            |
| <b>802.11ac40 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5350.000                            | 47.56         | 3.05           | 50.61       | 74.00    | -23.39 | Peak     | V            |
| 5350.000                            | 37.79         | 3.05           | 40.84       | 54.00    | -13.16 | AVG      | V            |
| 5460.000                            | 47.02         | 3.41           | 50.43       | 74.00    | -23.57 | Peak     | V            |
| 5460.000                            | 37.66         | 3.41           | 41.07       | 54.00    | -12.93 | AVG      | V            |
| 5350.000                            | 46.00         | 3.05           | 49.05       | 74.00    | -24.95 | Peak     | H            |
| 5350.000                            | 37.06         | 3.05           | 40.11       | 54.00    | -13.89 | AVG      | H            |
| 5460.000                            | 46.66         | 3.41           | 50.07       | 74.00    | -23.93 | Peak     | H            |
| 5460.000                            | 37.48         | 3.41           | 40.89       | 54.00    | -13.11 | AVG      | H            |



For 802.11ac80 mode:

| Frequency                           | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|-------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11ac80 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 4500.000                            | 45.61         | 0.91           | 46.52       | 74.00    | -27.48 | Peak     | V            |
| 4500.000                            | 36.39         | 0.91           | 37.30       | 54.00    | -16.70 | AVG      | V            |
| 5150.000                            | 60.21         | 2.41           | 62.62       | 74.00    | -11.38 | Peak     | V            |
| 5150.000                            | 48.29         | 2.41           | 50.70       | 54.00    | -3.30  | AVG      | V            |
| 4500.000                            | 45.51         | 0.91           | 46.42       | 74.00    | -27.58 | Peak     | H            |
| 4500.000                            | 36.44         | 0.91           | 37.35       | 54.00    | -16.65 | AVG      | H            |
| 5150.000                            | 55.22         | 2.41           | 57.63       | 74.00    | -16.37 | Peak     | H            |
| 5150.000                            | 44.08         | 2.41           | 46.49       | 54.00    | -7.51  | AVG      | H            |
| <b>802.11ac80 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5350.000                            | 46.96         | 3.05           | 50.01       | 74.00    | -23.99 | Peak     | V            |
| 5350.000                            | 37.78         | 3.05           | 40.83       | 54.00    | -13.17 | AVG      | V            |
| 5460.000                            | 47.55         | 3.41           | 50.96       | 74.00    | -23.04 | Peak     | V            |
| 5460.000                            | 38.11         | 3.41           | 41.52       | 54.00    | -12.48 | AVG      | V            |
| 5350.000                            | 47.21         | 3.05           | 50.26       | 74.00    | -23.74 | Peak     | H            |
| 5350.000                            | 37.29         | 3.05           | 40.34       | 54.00    | -13.66 | AVG      | H            |
| 5460.000                            | 48.13         | 3.41           | 51.54       | 74.00    | -22.46 | Peak     | H            |
| 5460.000                            | 37.52         | 3.41           | 40.93       | 54.00    | -13.07 | AVG      | H            |

For U-NII-3

For 802.11a mode:

| Frequency                        | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|----------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                            | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11a – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                            | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 5650.000                         | 46.38         | 3.95           | 50.33       | 68.20    | -17.87 | Peak     | V            |
| 5700.000                         | 50.88         | 4.08           | 54.96       | 105.2    | -50.24 | Peak     | V            |
| 5720.000                         | 58.76         | 4.14           | 62.90       | 110.8    | -47.90 | Peak     | V            |
| 5725.000                         | 62.39         | 4.15           | 66.54       | 122.2    | -55.66 | Peak     | V            |
| 5650.000                         | 46.44         | 3.95           | 50.39       | 68.20    | -17.81 | Peak     | H            |
| 5700.000                         | 45.76         | 4.08           | 49.84       | 105.2    | -55.36 | Peak     | H            |
| 5720.000                         | 52.02         | 4.14           | 56.16       | 110.8    | -54.64 | Peak     | H            |
| 5725.000                         | 56.72         | 4.15           | 60.87       | 122.2    | -61.33 | Peak     | H            |
| <b>802.11a – Right band-edge</b> |               |                |             |          |        |          |              |
| 5850.000                         | 61.13         | 4.49           | 65.62       | 122.2    | -56.58 | Peak     | V            |
| 5855.000                         | 57.41         | 4.50           | 61.91       | 110.8    | -48.89 | Peak     | V            |
| 5875.000                         | 47.43         | 4.55           | 51.98       | 105.2    | -53.22 | Peak     | V            |
| 5925.000                         | 47.15         | 4.69           | 51.84       | 68.20    | -16.36 | Peak     | V            |
| 5850.000                         | 55.83         | 4.49           | 60.32       | 122.2    | -61.88 | Peak     | H            |
| 5855.000                         | 52.60         | 4.50           | 57.10       | 110.8    | -53.70 | Peak     | H            |
| 5875.000                         | 47.55         | 4.55           | 52.10       | 105.2    | -53.10 | Peak     | H            |
| 5925.000                         | 47.37         | 4.69           | 52.06       | 68.20    | -16.14 | Peak     | H            |



For 802.11n20 mode:

| Frequency                          | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                              | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11n20 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                              | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 5650.000                           | 47.39         | 3.95           | 51.34       | 68.20    | -16.86 | Peak     | V            |
| 5700.000                           | 49.19         | 4.08           | 53.27       | 105.2    | -51.93 | Peak     | V            |
| 5720.000                           | 59.40         | 4.14           | 63.54       | 110.8    | -47.26 | Peak     | V            |
| 5725.000                           | 62.49         | 4.15           | 66.64       | 122.2    | -55.56 | Peak     | V            |
| 5650.000                           | 46.02         | 3.95           | 49.97       | 68.20    | -18.23 | Peak     | H            |
| 5700.000                           | 45.88         | 4.08           | 49.96       | 105.2    | -55.24 | Peak     | H            |
| 5720.000                           | 52.60         | 4.14           | 56.74       | 110.8    | -54.06 | Peak     | H            |
| 5725.000                           | 56.49         | 4.15           | 60.64       | 122.2    | -61.56 | Peak     | H            |
| <b>802.11n20 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5850.000                           | 60.22         | 4.49           | 64.71       | 122.2    | -57.49 | Peak     | V            |
| 5855.000                           | 58.07         | 4.50           | 62.57       | 110.8    | -48.23 | Peak     | V            |
| 5875.000                           | 47.03         | 4.55           | 51.58       | 105.2    | -53.62 | Peak     | V            |
| 5925.000                           | 46.93         | 4.69           | 51.62       | 68.20    | -16.58 | Peak     | V            |
| 5850.000                           | 55.82         | 4.49           | 60.31       | 122.2    | -61.89 | Peak     | H            |
| 5855.000                           | 52.44         | 4.50           | 56.94       | 110.8    | -53.86 | Peak     | H            |
| 5875.000                           | 47.22         | 4.55           | 51.77       | 105.2    | -53.43 | Peak     | H            |
| 5925.000                           | 47.79         | 4.69           | 52.48       | 68.20    | -15.72 | Peak     | H            |



For 802.11n40 mode:

| Frequency                          | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                              | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11n40 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                              | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 5650.000                           | 47.75         | 3.95           | 51.70       | 68.20    | -16.50 | Peak     | V            |
| 5700.000                           | 58.23         | 4.08           | 62.31       | 105.2    | -42.89 | Peak     | V            |
| 5720.000                           | 67.00         | 4.14           | 71.14       | 110.8    | -39.66 | Peak     | V            |
| 5725.000                           | 74.64         | 4.15           | 78.79       | 122.2    | -43.41 | Peak     | V            |
| 5650.000                           | 45.83         | 3.95           | 49.78       | 68.20    | -18.42 | Peak     | H            |
| 5700.000                           | 52.42         | 4.08           | 56.50       | 105.2    | -48.70 | Peak     | H            |
| 5720.000                           | 60.02         | 4.14           | 64.16       | 110.8    | -46.64 | Peak     | H            |
| 5725.000                           | 68.40         | 4.15           | 72.55       | 122.2    | -49.65 | Peak     | H            |
| <b>802.11n40 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5850.000                           | 60.95         | 4.49           | 65.44       | 122.2    | -56.76 | Peak     | V            |
| 5855.000                           | 58.55         | 4.50           | 63.05       | 110.8    | -47.75 | Peak     | V            |
| 5875.000                           | 52.36         | 4.55           | 56.91       | 105.2    | -48.29 | Peak     | V            |
| 5925.000                           | 48.10         | 4.69           | 52.79       | 68.20    | -15.41 | Peak     | V            |
| 5850.000                           | 54.79         | 4.49           | 59.28       | 122.2    | -62.92 | Peak     | H            |
| 5855.000                           | 53.01         | 4.50           | 57.51       | 110.8    | -53.29 | Peak     | H            |
| 5875.000                           | 49.84         | 4.55           | 54.39       | 105.2    | -50.81 | Peak     | H            |
| 5925.000                           | 48.06         | 4.69           | 52.75       | 68.20    | -15.45 | Peak     | H            |



For 802.11ac20 mode: (CH155 5775MHz)

| Frequency                           | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|-------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11ac20 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 5650.000                            | 46.62         | 3.95           | 50.57       | 68.20    | -17.63 | Peak     | V            |
| 5700.000                            | 49.60         | 4.08           | 53.68       | 105.2    | -51.52 | Peak     | V            |
| 5720.000                            | 56.73         | 4.14           | 60.87       | 110.8    | -49.93 | Peak     | V            |
| 5725.000                            | 61.71         | 4.15           | 65.86       | 122.2    | -56.34 | Peak     | V            |
| 5650.000                            | 46.66         | 3.95           | 50.61       | 68.20    | -17.59 | Peak     | H            |
| 5700.000                            | 46.24         | 4.08           | 50.32       | 105.2    | -54.88 | Peak     | H            |
| 5720.000                            | 51.50         | 4.14           | 55.64       | 110.8    | -55.16 | Peak     | H            |
| 5725.000                            | 56.58         | 4.15           | 60.73       | 122.2    | -61.47 | Peak     | H            |
| <b>802.11ac20 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5850.000                            | 60.74         | 4.49           | 65.23       | 122.2    | -56.97 | Peak     | V            |
| 5855.000                            | 57.28         | 4.50           | 61.78       | 110.8    | -49.02 | Peak     | V            |
| 5875.000                            | 47.47         | 4.55           | 52.02       | 105.2    | -53.18 | Peak     | V            |
| 5925.000                            | 47.24         | 4.69           | 51.93       | 68.20    | -16.27 | Peak     | V            |
| 5850.000                            | 55.03         | 4.49           | 59.52       | 122.2    | -62.68 | Peak     | H            |
| 5855.000                            | 53.40         | 4.50           | 57.90       | 110.8    | -52.90 | Peak     | H            |
| 5875.000                            | 47.77         | 4.55           | 52.32       | 105.2    | -52.88 | Peak     | H            |
| 5925.000                            | 46.64         | 4.69           | 51.33       | 68.20    | -16.87 | Peak     | H            |



For 802.11ac40 mode: (CH155 5775MHz)

| Frequency                           | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|-------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11ac40 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 5650.000                            | 46.57         | 3.95           | 50.52       | 68.20    | -17.68 | Peak     | V            |
| 5700.000                            | 56.34         | 4.08           | 60.42       | 105.2    | -44.78 | Peak     | V            |
| 5720.000                            | 65.98         | 4.14           | 70.12       | 110.8    | -40.68 | Peak     | V            |
| 5725.000                            | 73.42         | 4.15           | 77.57       | 122.2    | -44.63 | Peak     | V            |
| 5650.000                            | 45.98         | 3.95           | 49.93       | 68.20    | -18.27 | Peak     | H            |
| 5700.000                            | 49.63         | 4.08           | 53.71       | 105.2    | -51.49 | Peak     | H            |
| 5720.000                            | 59.22         | 4.14           | 63.36       | 110.8    | -47.44 | Peak     | H            |
| 5725.000                            | 67.25         | 4.15           | 71.40       | 122.2    | -50.80 | Peak     | H            |
| <b>802.11ac40 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5850.000                            | 59.52         | 4.49           | 64.01       | 122.2    | -58.19 | Peak     | V            |
| 5855.000                            | 57.37         | 4.50           | 61.87       | 110.8    | -48.93 | Peak     | V            |
| 5875.000                            | 50.42         | 4.55           | 54.97       | 105.2    | -50.23 | Peak     | V            |
| 5925.000                            | 47.14         | 4.69           | 51.83       | 68.20    | -16.37 | Peak     | V            |
| 5850.000                            | 53.84         | 4.49           | 58.33       | 122.2    | -63.87 | Peak     | H            |
| 5855.000                            | 51.59         | 4.50           | 56.09       | 110.8    | -54.71 | Peak     | H            |
| 5875.000                            | 47.25         | 4.55           | 51.80       | 105.2    | -53.40 | Peak     | H            |
| 5925.000                            | 47.07         | 4.69           | 51.76       | 68.20    | -16.44 | Peak     | H            |

For 802.11ac80 mode: (CH155 5775MHz)

| Frequency                           | Reading Level | Correct Factor | Measurement | Limits   | Over   | Detector | Polarization |
|-------------------------------------|---------------|----------------|-------------|----------|--------|----------|--------------|
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| <b>802.11ac40 – Left band-edge</b>  |               |                |             |          |        |          |              |
| (MHz)                               | (dBμV)        | (dB/m)         | (dBμV/m)    | (dBμV/m) | (dB)   | Peak/AVG | H/V          |
| 5650.000                            | 54.69         | 3.95           | 58.64       | 68.20    | -9.56  | Peak     | V            |
| 5700.000                            | 64.94         | 4.08           | 69.02       | 105.2    | -36.18 | Peak     | V            |
| 5720.000                            | 70.58         | 4.14           | 74.72       | 110.8    | -36.08 | Peak     | V            |
| 5725.000                            | 70.45         | 4.15           | 74.60       | 122.2    | -47.60 | Peak     | V            |
| 5650.000                            | 49.78         | 3.95           | 53.73       | 68.20    | -14.47 | Peak     | H            |
| 5700.000                            | 58.45         | 4.08           | 62.53       | 105.2    | -42.67 | Peak     | H            |
| 5720.000                            | 63.56         | 4.14           | 67.70       | 110.8    | -43.10 | Peak     | H            |
| 5725.000                            | 64.30         | 4.15           | 68.45       | 122.2    | -53.75 | Peak     | H            |
| <b>802.11ac40 – Right band-edge</b> |               |                |             |          |        |          |              |
| 5850.000                            | 70.14         | 4.49           | 74.63       | 122.2    | -47.57 | Peak     | V            |
| 5855.000                            | 67.96         | 4.50           | 72.46       | 110.8    | -38.34 | Peak     | V            |
| 5875.000                            | 62.76         | 4.55           | 67.31       | 105.2    | -37.89 | Peak     | V            |
| 5925.000                            | 53.26         | 4.69           | 57.95       | 68.20    | -10.25 | Peak     | V            |
| 5850.000                            | 64.68         | 4.49           | 69.17       | 122.2    | -53.03 | Peak     | H            |
| 5855.000                            | 62.56         | 4.50           | 67.06       | 110.8    | -43.74 | Peak     | H            |
| 5875.000                            | 57.75         | 4.55           | 62.30       | 105.2    | -42.90 | Peak     | H            |
| 5925.000                            | 48.10         | 4.69           | 52.79       | 68.20    | -15.41 | Peak     | H            |



## **5.10 Power spectral density**

### **5.10.1 Limit**

#### For the band 5.15-5.25 GHz

For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### For the band 5.25-5.35 GHz and 5.47-5.725 GHz

The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### For the band 5.725-5.85 GHz

The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### **5.10.2 Test procedure**

#### For U-NII-1

1. Set analyzer center frequency to NII channel center frequency.
2. Set the RBW  $\geq 1\text{MHz}$ .
3. Set the VBW  $\geq 3 \times \text{RBW}$ .
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

#### For U-NII-3

1. Set analyzer center frequency to NII channel center frequency.
2. Set the RBW  $\geq 510\text{kHz}$ .
3. Set the VBW  $\geq 3 \times \text{RBW}$ .
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.



### 5.10.3 Test setup



### 5.10.4 Test results

For U-NII-1

| Mode        | Channel/<br>Frequency<br>(MHz) | Power spectral density<br>(dBm/MHz) |                      |            | Limit<br>(dBm/MHz) |
|-------------|--------------------------------|-------------------------------------|----------------------|------------|--------------------|
|             |                                | Meas PSD                            | Duty Cycle<br>Factor | Corr'd PSD |                    |
| 11a         | CH36 (5180)                    | 6.45                                | 0.267                | 6.717      | 11                 |
| 11a         | CH44 (5220)                    | 6.91                                | 0.267                | 7.177      | 11                 |
| 11a         | CH48 (5240)                    | 6.55                                | 0.267                | 6.817      | 11                 |
| 11n(HT20)   | CH36 (5180)                    | 6.57                                | 0.134                | 6.704      | 11                 |
| 11n(HT20)   | CH44 (5220)                    | 6.97                                | 0.134                | 7.104      | 11                 |
| 11n(HT20)   | CH48 (5240)                    | 6.29                                | 0.134                | 6.424      | 11                 |
| 11n(HT40)   | CH38 (5190)                    | 3.28                                | 0.643                | 3.923      | 11                 |
| 11n(HT40)   | CH46(5230)                     | 3.54                                | 0.643                | 4.183      | 11                 |
| 11ac(HT20)  | CH36 (5180)                    | 6.29                                | 0.262                | 6.552      | 11                 |
| 11ac (HT20) | CH40 (5200)                    | 6.34                                | 0.262                | 6.602      | 11                 |
| 11ac (HT20) | CH48 (5240)                    | 6.6                                 | 0.262                | 6.862      | 11                 |
| 11ac (HT40) | CH38(5190)                     | 3.47                                | 0.715                | 4.185      | 11                 |
| 11ac (HT40) | CH46 (5230)                    | 4.03                                | 0.715                | 4.745      | 11                 |
| 11ac (HT80) | CH42(5210)                     | 1.79                                | 1.444                | 3.234      | 11                 |

Remak: Corr'd PSD = Meas PSD + Duty Cycle Factor

## For U-NII-3

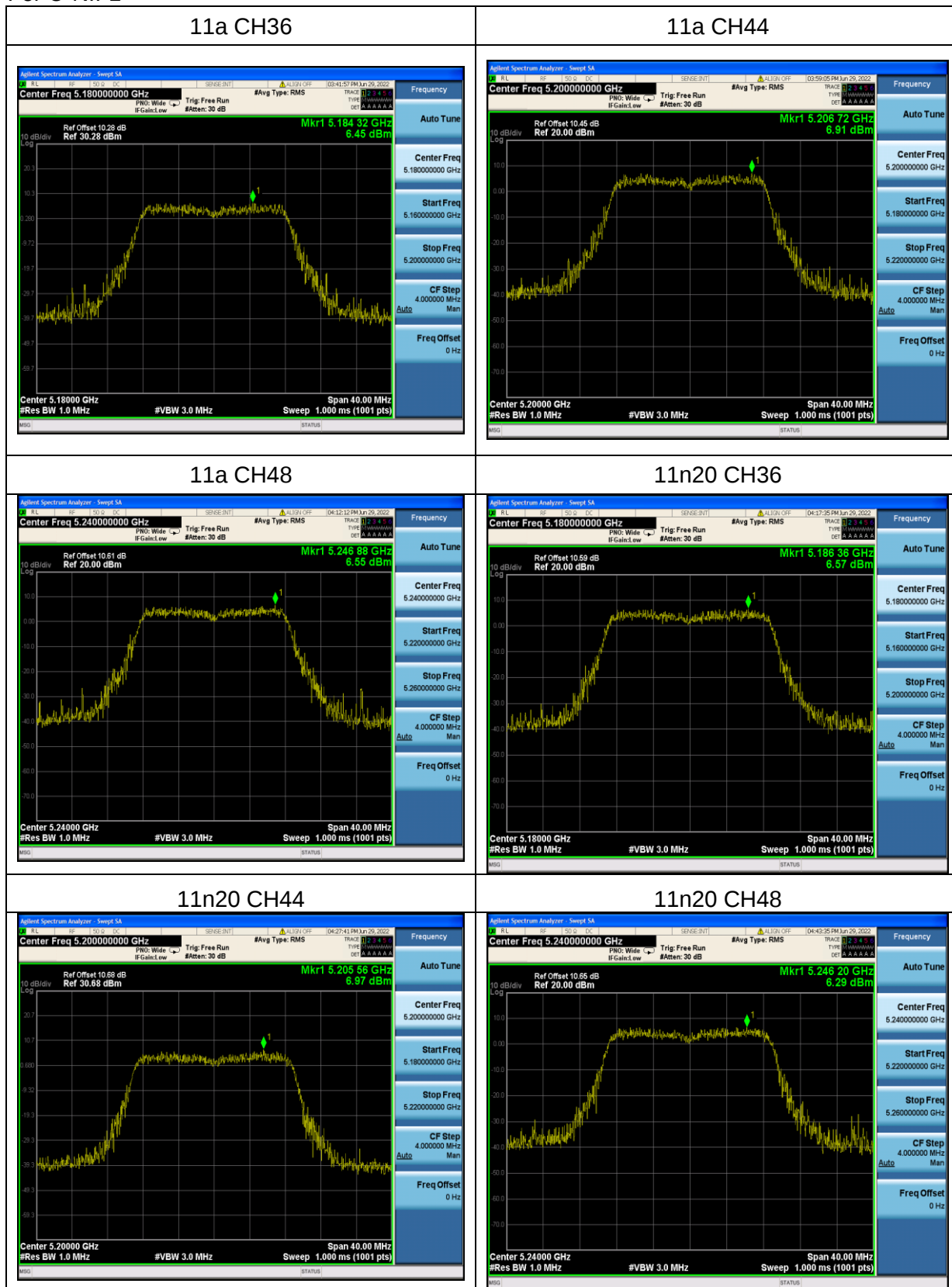
| Mode                                                                                                                                                                                           | Channel/<br>Frequency<br>(MHz) | Power spectral density<br>(dBm/500kHz) |                          |                         |               | Limit<br>(dBm/500kHz) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------|--------------------------|-------------------------|---------------|-----------------------|
|                                                                                                                                                                                                |                                | Meas PSD<br>(dBm/510kHz)               | Meas PSD<br>(dBm/500kHz) | Duty<br>Cycle<br>Factor | Corr'd<br>PSD |                       |
| 11a                                                                                                                                                                                            | CH149<br>(5745)                | 4.39                                   | 4.304                    | 0.267                   | 4.571         | 30                    |
| 11a                                                                                                                                                                                            | CH157<br>(5785)                | 4.26                                   | 4.175                    | 0.267                   | 4.442         | 30                    |
| 11a                                                                                                                                                                                            | CH165<br>(5825)                | 4.45                                   | 4.363                    | 0.267                   | 4.63          | 30                    |
| 11n20                                                                                                                                                                                          | CH149<br>(5745)                | 4.7                                    | 4.613                    | 0.134                   | 4.747         | 30                    |
| 11n20                                                                                                                                                                                          | CH157<br>(5785)                | 4.26                                   | 4.175                    | 0.134                   | 4.309         | 30                    |
| 11n20                                                                                                                                                                                          | CH165<br>(5825)                | 4.49                                   | 4.404                    | 0.134                   | 4.538         | 30                    |
| 11n40                                                                                                                                                                                          | CH151<br>(5755)                | 1.82                                   | 1.735                    | 0.643                   | 2.378         | 30                    |
| 11n40                                                                                                                                                                                          | CH159<br>(5795)                | 1.44                                   | 1.355                    | 0.643                   | 1.998         | 30                    |
| 11ac20                                                                                                                                                                                         | CH149<br>(5745)                | 4.28                                   | 4.195                    | 0.262                   | 4.457         | 30                    |
| 11ac20                                                                                                                                                                                         | CH157<br>(5785)                | 3.36                                   | 3.274                    | 0.262                   | 3.536         | 30                    |
| 11ac20                                                                                                                                                                                         | CH165<br>(5825)                | 4.12                                   | 4.035                    | 0.262                   | 4.297         | 30                    |
| 11ac40                                                                                                                                                                                         | CH151<br>(5755)                | 1.35                                   | 1.265                    | 0.715                   | 1.98          | 30                    |
| 11ac40                                                                                                                                                                                         | CH159<br>(5795)                | 1.42                                   | 1.335                    | 0.715                   | 2.05          | 30                    |
| 11ac80                                                                                                                                                                                         | CH155<br>(5775)                | -0.02                                  | -0.106                   | 1.444                   | 1.338         | 30                    |
| Note: If the measurement is X dBm/510kHz, thus X dBm/510kHz =<br>$(10^{X/10}) \times (500 / 510) \text{ mW/500kHz} = 10 \times \lg 10 \{ (10^{X/10}) \times (500 / 510) \} \text{ dBm/500kHz}$ |                                |                                        |                          |                         |               |                       |

Remak: Corr'd PSD = Meas PSD + Duty Cycle Factor



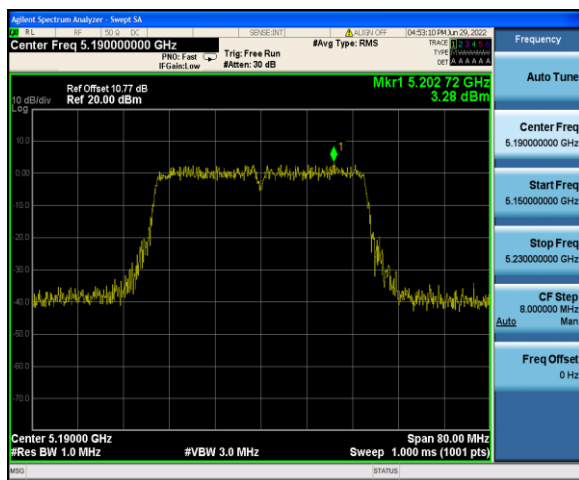
Test plots

For U-NII-1

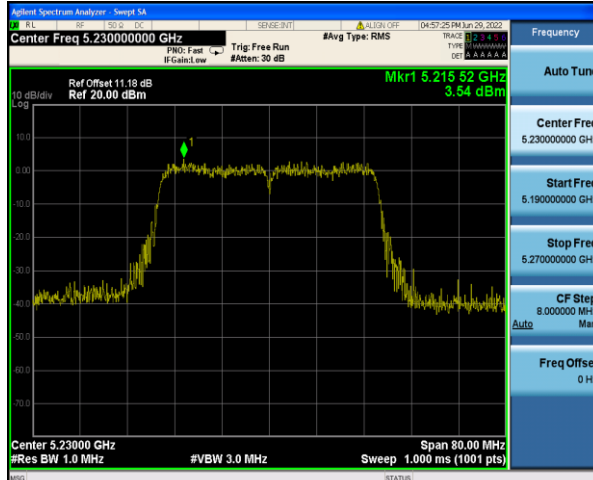




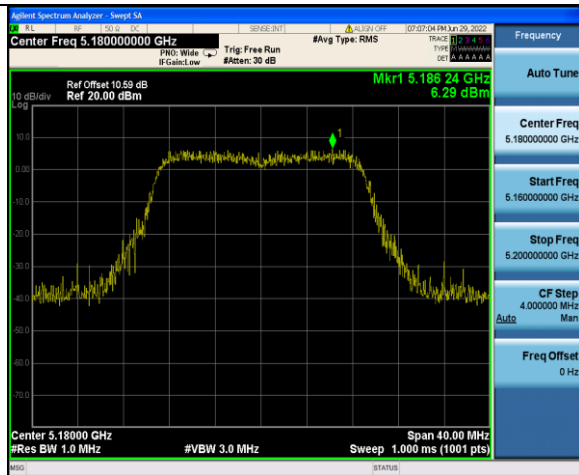
11n40 CH38



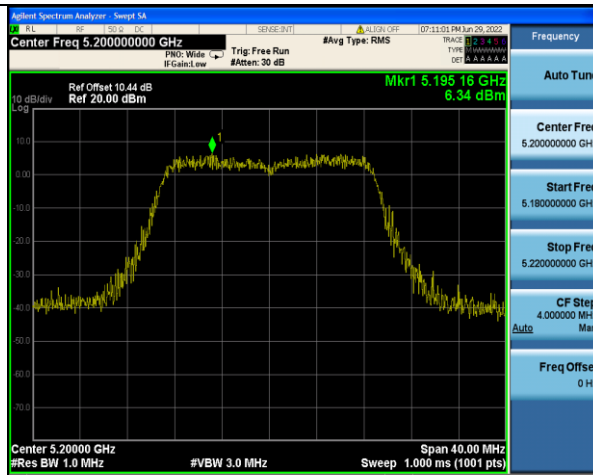
11n40 CH46



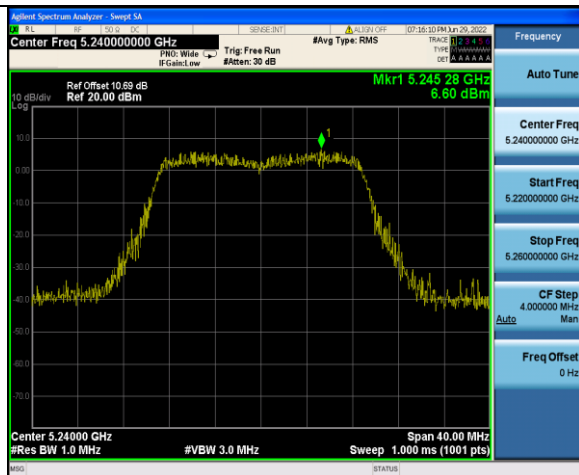
11ac20 CH36



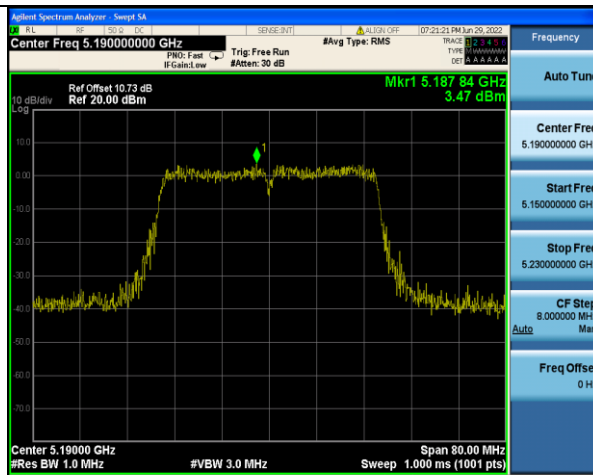
11ac20 CH40

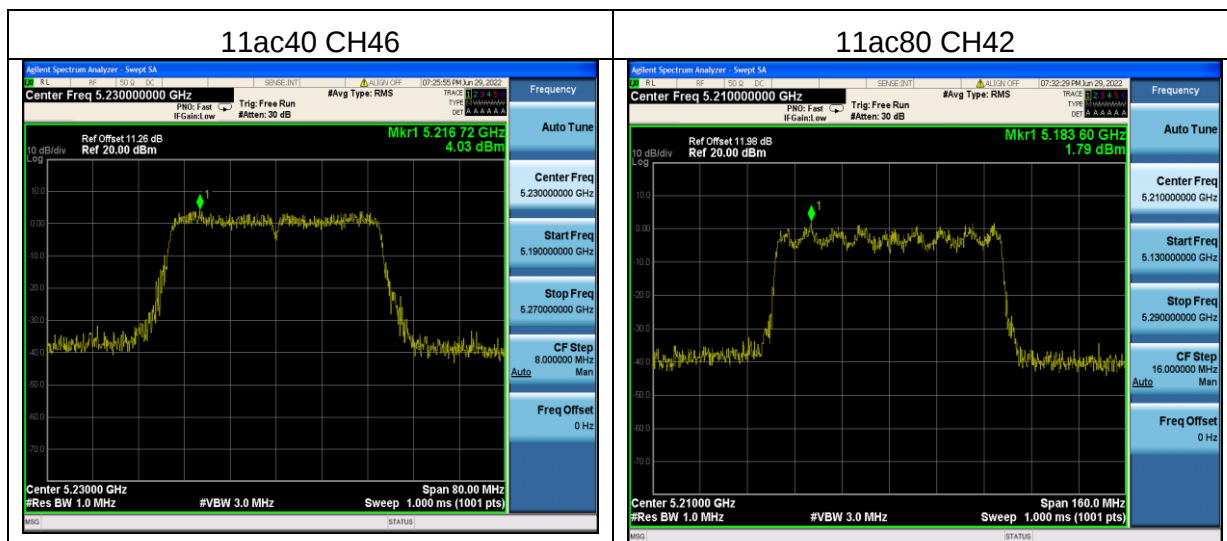


11ac20 CH48



11ac40 CH38

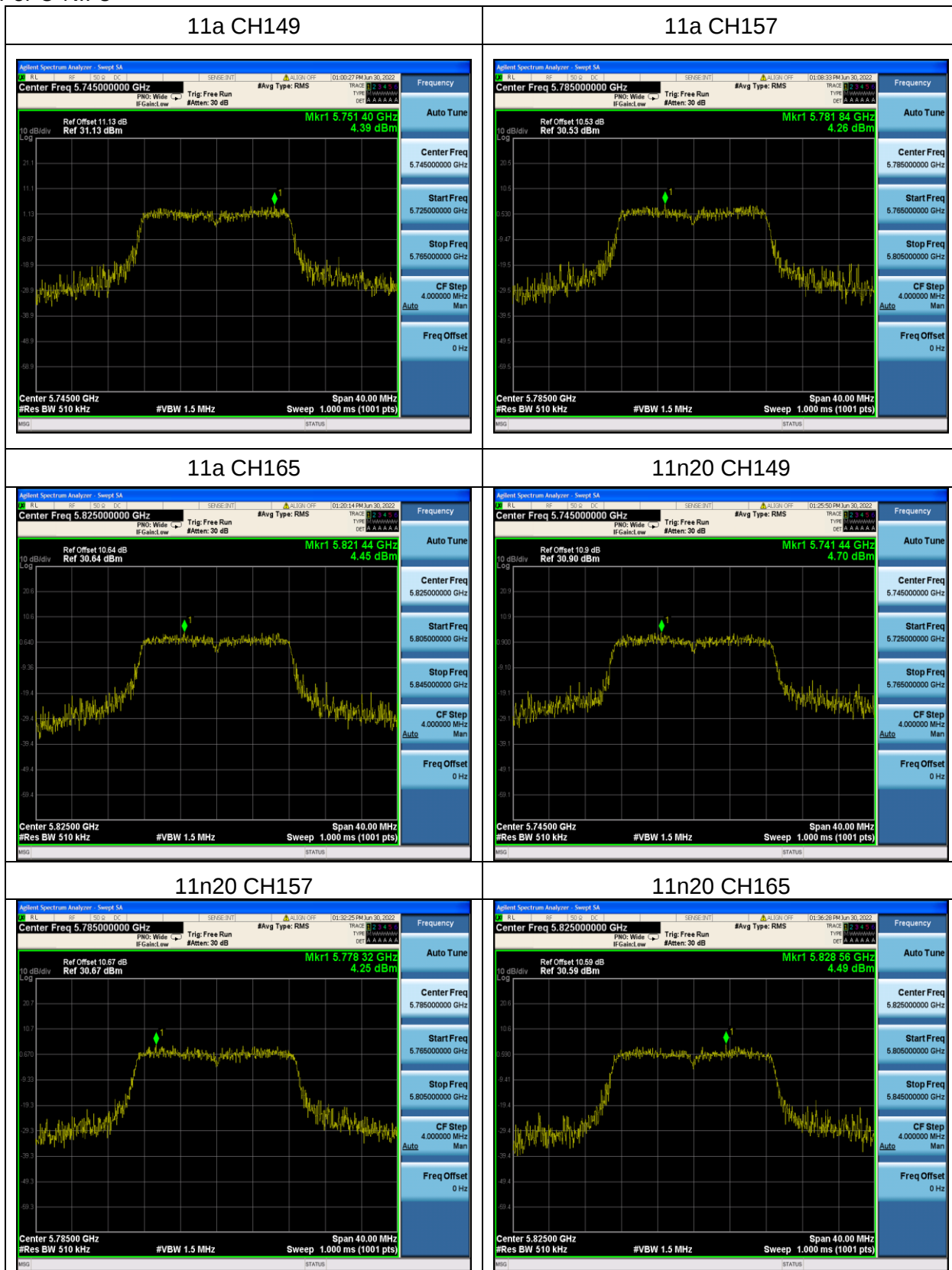


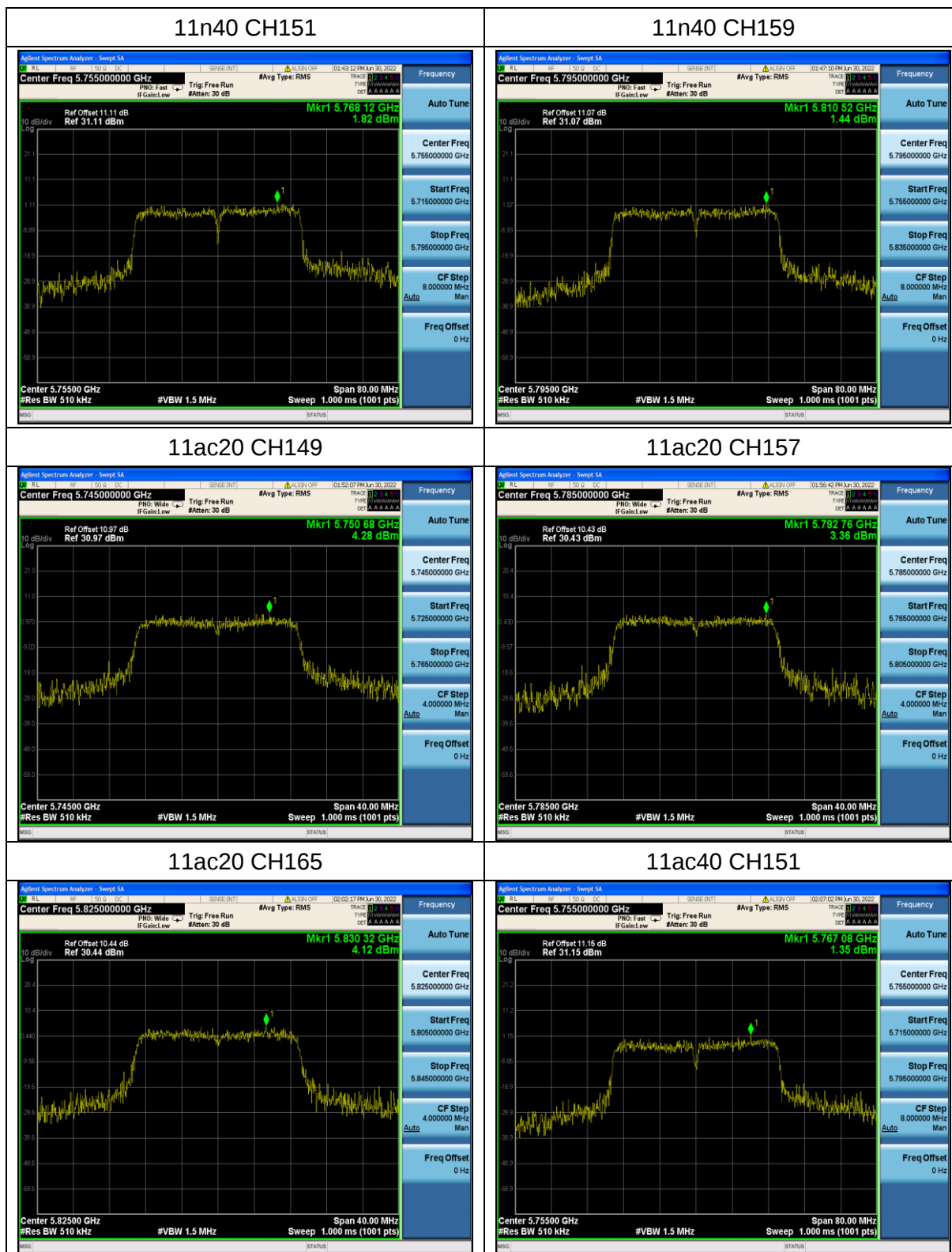


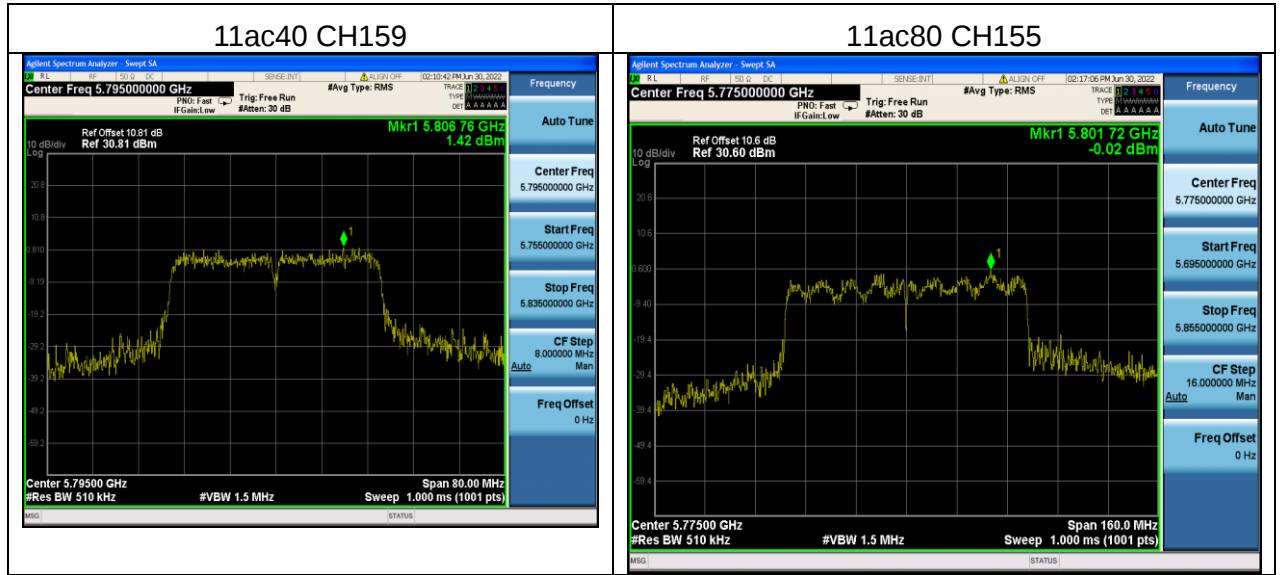


Test plots

For U-NII-3









## 5.11 Frequency Stability Measurement

### 5.11.1 TEST RESULTS

For U-NII-1

Voltage vs. Frequency Stability

| Test conditions |    |           |       | Reference Frequency:5180 |      |                            |                            |
|-----------------|----|-----------|-------|--------------------------|------|----------------------------|----------------------------|
|                 |    |           |       | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | V nom (V) | 12.00 | 5180.0185                | 5180 | 0.0185                     | -3.5714                    |
|                 |    | V max (V) | 13.80 | 5180.0177                | 5180 | 0.0177                     | -3.4170                    |
|                 |    | V min (V) | 10.20 | 5180.0169                | 5180 | 0.0169                     | -3.2625                    |
| Limit           |    |           |       | Within 5150-5250MHz      |      |                            |                            |
| Result          |    |           |       | Complies                 |      |                            |                            |

Temperature vs. Frequency Stability

| Test conditions |    |        |     | Reference Frequency:5180 |      |                            |                            |
|-----------------|----|--------|-----|--------------------------|------|----------------------------|----------------------------|
|                 |    |        |     | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | T (°C) | -20 | 5180.0165                | 5180 | 0.0165                     | -3.1853                    |
|                 |    | T (°C) | -10 | 5180.0151                | 5180 | 0.0151                     | -2.9151                    |
|                 |    | T (°C) | 0   | 5180.0136                | 5180 | 0.0136                     | -2.6255                    |
|                 |    | T (°C) | 10  | 5180.0144                | 5180 | 0.0144                     | -2.7799                    |
|                 |    | T (°C) | 20  | 5180.0152                | 5180 | 0.0152                     | -2.9344                    |
|                 |    | T (°C) | 30  | 5180.0136                | 5180 | 0.0136                     | -2.6255                    |
|                 |    | T (°C) | 40  | 5180.0152                | 5180 | 0.0152                     | -2.9344                    |
|                 |    | T (°C) | 50  | 5180.0115                | 5180 | 0.0114                     | -2.2104                    |
|                 |    | T (°C) | 60  | 5180.0133                | 5180 | 0.0133                     | -2.5676                    |
|                 |    | T (°C) | 70  | 5180.0147                | 5180 | 0.0147                     | -2.8378                    |
| Limit           |    |        |     | Within 5150-5250MHz      |      |                            |                            |
| Result          |    |        |     | Complies                 |      |                            |                            |



Voltage vs. Frequency Stability

| Test conditions |    |           |       | Reference Frequency:5200 |      |                            |                            |
|-----------------|----|-----------|-------|--------------------------|------|----------------------------|----------------------------|
|                 |    |           |       | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | V nom (V) | 12.00 | 5200.0159                | 5200 | 0.0159                     | -3.0577                    |
|                 |    | V max (V) | 13.80 | 5200.0161                | 5200 | 0.0161                     | -3.0962                    |
|                 |    | V min (V) | 10.20 | 5200.0163                | 5200 | 0.0163                     | -3.1346                    |
| Limit           |    |           |       | Within 5150-5250MHz      |      |                            |                            |
| Result          |    |           |       | Complies                 |      |                            |                            |

Temperature vs. Frequency Stability

| Test conditions |    |        |     | Reference Frequency:5200 |      |                            |                            |
|-----------------|----|--------|-----|--------------------------|------|----------------------------|----------------------------|
|                 |    |        |     | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | T (°C) | -20 | 5200.0178                | 5200 | 0.0178                     | -3.4231                    |
|                 |    | T (°C) | -10 | 5200.0166                | 5200 | 0.0166                     | -3.1923                    |
|                 |    | T (°C) | 0   | 5200.0159                | 5200 | 0.0159                     | -3.0577                    |
|                 |    | T (°C) | 10  | 5200.0155                | 5200 | 0.0155                     | -2.9808                    |
|                 |    | T (°C) | 20  | 5200.0167                | 5200 | 0.0167                     | -3.2115                    |
|                 |    | T (°C) | 30  | 5200.0171                | 5200 | 0.0171                     | -3.2885                    |
|                 |    | T (°C) | 40  | 5200.0188                | 5200 | 0.0188                     | -3.6154                    |
|                 |    | T (°C) | 50  | 5200.0174                | 5200 | 0.0174                     | -3.3462                    |
|                 |    | T (°C) | 60  | 5200.0169                | 5200 | 0.0169                     | -3.2500                    |
|                 |    | T (°C) | 70  | 5200.0165                | 5200 | 0.0165                     | -3.1731                    |
| Limit           |    |        |     | Within 5150-5250MHz      |      |                            |                            |
| Result          |    |        |     | Complies                 |      |                            |                            |



Voltage vs. Frequency Stability

| Test conditions |    |           |       | Reference Frequency:5240 |      |                            |                            |
|-----------------|----|-----------|-------|--------------------------|------|----------------------------|----------------------------|
|                 |    |           |       | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | V nom (V) | 12.00 | 5240.0187                | 5240 | 0.0187                     | -3.5687                    |
|                 |    | V max (V) | 13.80 | 5240.0175                | 5240 | 0.0175                     | -3.3397                    |
|                 |    | V min (V) | 10.20 | 5240.0159                | 5240 | 0.0159                     | -3.0344                    |
| Limit           |    |           |       | Within 5150-5250MHz      |      |                            |                            |
| Result          |    |           |       | Complies                 |      |                            |                            |

Temperature vs. Frequency Stability

| Test conditions |    |        |     | Reference Frequency:5240 |      |                            |                            |
|-----------------|----|--------|-----|--------------------------|------|----------------------------|----------------------------|
|                 |    |        |     | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | T (°C) | -20 | 5240.0165                | 5240 | 0.0165                     | -3.1489                    |
|                 |    | T (°C) | -10 | 5240.0174                | 5240 | 0.0174                     | -3.3206                    |
|                 |    | T (°C) | 0   | 5240.0162                | 5240 | 0.0162                     | -3.0916                    |
|                 |    | T (°C) | 10  | 5240.0171                | 5240 | 0.0171                     | -3.2634                    |
|                 |    | T (°C) | 20  | 5240.0168                | 5240 | 0.0168                     | -3.2061                    |
|                 |    | T (°C) | 30  | 5240.0164                | 5240 | 0.0164                     | -3.1298                    |
|                 |    | T (°C) | 40  | 5240.0161                | 5240 | 0.0161                     | -3.0725                    |
|                 |    | T (°C) | 50  | 5240.0162                | 5240 | 0.0162                     | -3.0916                    |
|                 |    | T (°C) | 60  | 5240.0159                | 5240 | 0.0159                     | -3.0344                    |
|                 |    | T (°C) | 70  | 5240.0164                | 5240 | 0.0164                     | -3.1298                    |
| Limit           |    |        |     | Within 5150-5250MHz      |      |                            |                            |
| Result          |    |        |     | Complies                 |      |                            |                            |



For U-NII-3

| Test conditions |    |           |       | Reference Frequency:5745 |      |                            |                            |
|-----------------|----|-----------|-------|--------------------------|------|----------------------------|----------------------------|
|                 |    |           |       | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | V nom (V) | 12.00 | 5745.0175                | 5745 | 0.01750                    | -3.0461                    |
|                 |    | V max (V) | 13.80 | 5745.0164                | 5745 | 0.01640                    | -2.8547                    |
|                 |    | V min (V) | 10.20 | 5745.0196                | 5745 | 0.01955                    | -3.4030                    |
| Limit           |    |           |       | Within 5725-5850MHz      |      |                            |                            |
| Result          |    |           |       | Complies                 |      |                            |                            |

### Temperature vs. Frequency Stability

| Test conditions |    |        |     | Reference Frequency:5745 |      |                            |                            |
|-----------------|----|--------|-----|--------------------------|------|----------------------------|----------------------------|
|                 |    |        |     | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | T (°C) | -20 | 5745.0168                | 5745 | 0.01680                    | -2.9243                    |
|                 |    | T (°C) | -10 | 5745.0162                | 5745 | 0.01620                    | -2.8198                    |
|                 |    | T (°C) | 0   | 5745.0171                | 5745 | 0.01710                    | -2.9765                    |
|                 |    | T (°C) | 10  | 5745.0159                | 5745 | 0.01590                    | -2.7676                    |
|                 |    | T (°C) | 20  | 5745.0158                | 5745 | 0.01580                    | -2.7502                    |
|                 |    | T (°C) | 30  | 5745.0167                | 5745 | 0.01670                    | -2.9069                    |
|                 |    | T (°C) | 40  | 5745.0164                | 5745 | 0.01640                    | -2.8547                    |
|                 |    | T (°C) | 50  | 5745.0155                | 5745 | 0.01550                    | -2.6980                    |
|                 |    | T (°C) | 60  | 5745.0188                | 5745 | 0.01880                    | -3.2724                    |
|                 |    | T (°C) | 70  | 5745.0165                | 5745 | 0.01650                    | -2.8721                    |
| Limit           |    |        |     | Within 5725-5850MHz      |      |                            |                            |
| Result          |    |        |     | Complies                 |      |                            |                            |



Voltage vs. Frequency Stability

| Test conditions |    |           |       | Reference Frequency:5785 |      |                            |                            |
|-----------------|----|-----------|-------|--------------------------|------|----------------------------|----------------------------|
|                 |    |           |       | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | V nom (V) | 12.00 | 5785.01533               | 5785 | 0.01533                    | -2.6500                    |
|                 |    | V max (V) | 13.80 | 5785.01781               | 5785 | 0.01781                    | -3.0787                    |
|                 |    | V min (V) | 10.20 | 5785.01701               | 5785 | 0.01701                    | -2.9404                    |
| Limit           |    |           |       | Within 5725-5850MHz      |      |                            |                            |
| Result          |    |           |       | Complies                 |      |                            |                            |

Temperature vs. Frequency Stability

| Test conditions |    |        |     | Reference Frequency:5785 |      |                            |                            |
|-----------------|----|--------|-----|--------------------------|------|----------------------------|----------------------------|
|                 |    |        |     | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | T (°C) | -20 | 5785.0156                | 5785 | 0.01564                    | -2.7035                    |
|                 |    | T (°C) | -10 | 5785.0177                | 5785 | 0.01765                    | -3.0510                    |
|                 |    | T (°C) | 0   | 5785.0162                | 5785 | 0.01620                    | -2.8003                    |
|                 |    | T (°C) | 10  | 5785.0157                | 5785 | 0.01570                    | -2.7139                    |
|                 |    | T (°C) | 20  | 5785.0159                | 5785 | 0.01590                    | -2.7485                    |
|                 |    | T (°C) | 30  | 5785.0168                | 5785 | 0.01680                    | -2.9041                    |
|                 |    | T (°C) | 40  | 5785.0169                | 5785 | 0.01690                    | -2.9213                    |
|                 |    | T (°C) | 50  | 5785.0159                | 5785 | 0.01590                    | -2.7485                    |
|                 |    | T (°C) | 60  | 5785.0161                | 5785 | 0.01610                    | -2.7831                    |
|                 |    | T (°C) | 70  | 5785.0165                | 5785 | 0.01650                    | -2.8522                    |
| Limit           |    |        |     | Within 5725-5850MHz      |      |                            |                            |
| Result          |    |        |     | Complies                 |      |                            |                            |



### Voltage vs. Frequency Stability

| Test conditions |    |           |       | Reference Frequency:5825 |      |                            |                            |
|-----------------|----|-----------|-------|--------------------------|------|----------------------------|----------------------------|
|                 |    |           |       | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | V nom (V) | 12.00 | 5825.0133                | 5825 | 0.01330                    | -2.2833                    |
|                 |    | V max (V) | 13.80 | 5825.0164                | 5825 | 0.01640                    | -2.8155                    |
|                 |    | V min (V) | 10.20 | 5825.0155                | 5825 | 0.01550                    | -2.6609                    |
| Limit           |    |           |       | Within 5725-5850MHz      |      |                            |                            |
| Result          |    |           |       | Complies                 |      |                            |                            |

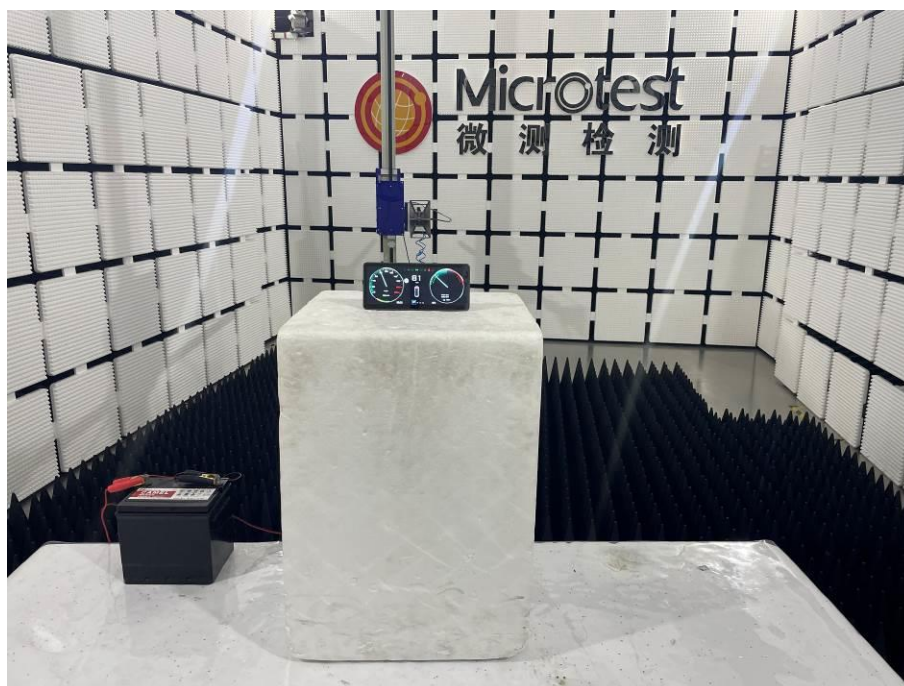
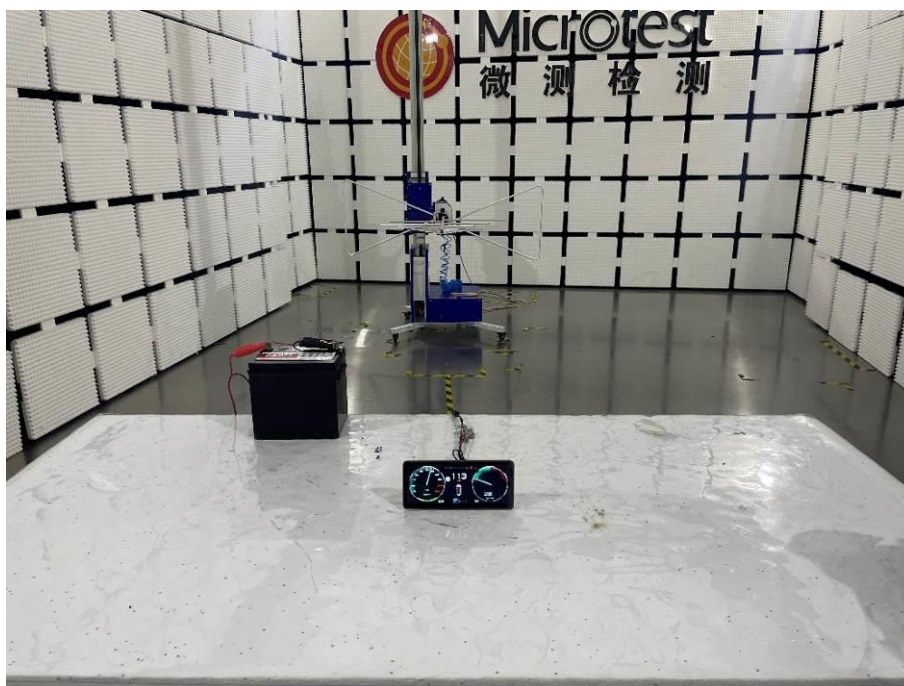
### Temperature vs. Frequency Stability

| Test conditions |    |        |     | Reference Frequency:5825 |      |                            |                            |
|-----------------|----|--------|-----|--------------------------|------|----------------------------|----------------------------|
|                 |    |        |     | f                        | fc   | Max.<br>Deviation<br>(MHz) | Max.<br>Deviation<br>(ppm) |
| T nom (°C)      | 20 | T (°C) | -20 | 5825.0162                | 5825 | 0.01620                    | -2.7811                    |
|                 |    | T (°C) | -10 | 5825.0159                | 5825 | 0.01590                    | -2.7296                    |
|                 |    | T (°C) | 0   | 5825.0171                | 5825 | 0.01710                    | -2.9356                    |
|                 |    | T (°C) | 10  | 5825.0167                | 5825 | 0.01670                    | -2.8670                    |
|                 |    | T (°C) | 20  | 5825.0162                | 5825 | 0.01620                    | -2.7811                    |
|                 |    | T (°C) | 30  | 5825.0158                | 5825 | 0.01580                    | -2.7124                    |
|                 |    | T (°C) | 40  | 5825.0163                | 5825 | 0.01630                    | -2.7983                    |
|                 |    | T (°C) | 50  | 5825.0174                | 5825 | 0.01740                    | -2.9871                    |
|                 |    | T (°C) | 60  | 5825.0159                | 5825 | 0.01590                    | -2.7296                    |
|                 |    | T (°C) | 70  | 5825.0162                | 5825 | 0.01620                    | -2.7811                    |
| Limit           |    |        |     | Within 5725-5850MHz      |      |                            |                            |
| Result          |    |        |     | Complies                 |      |                            |                            |



## Photographs of the Test Setup

### Radiated emission





## Photographs of the EUT

See the Appendix - EUT Photos.

----END OF REPORT----