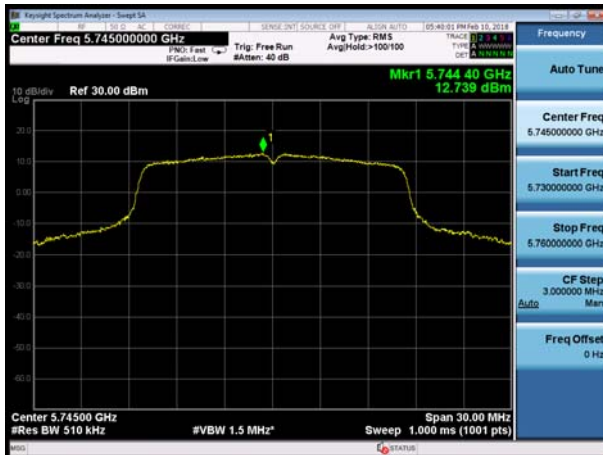




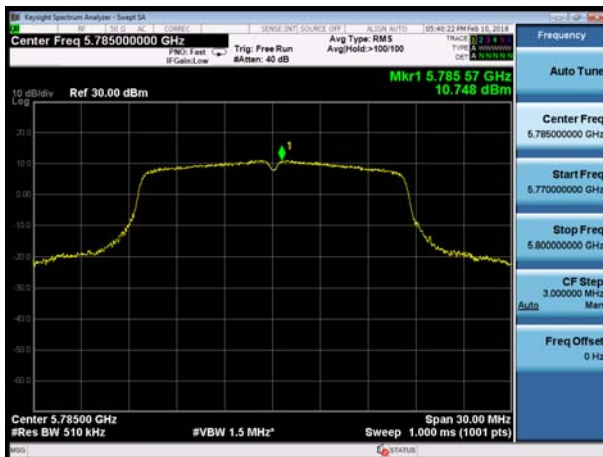
U-NII-3, 802.11a, Channel No.: 149



U-NII-3, 802.11n HT20, Channel No.: 149



U-NII-3, 802.11a, Channel No.: 157

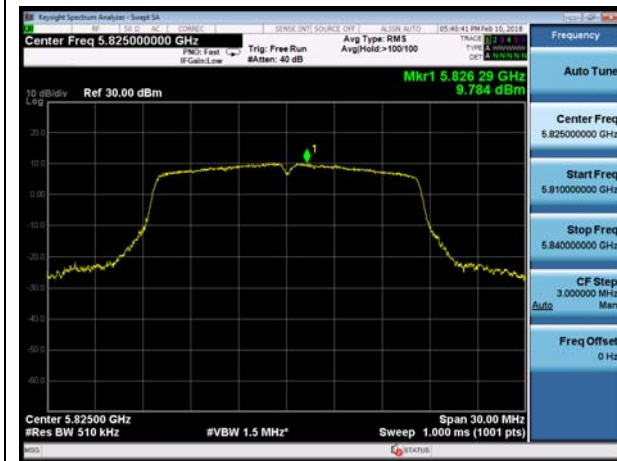


U-NII-3, 802.11n HT20, Channel No.: 157





U-NII-3, 802.11a, Channel No.: 165



U-NII-3, 802.11n HT20, Channel No.: 165

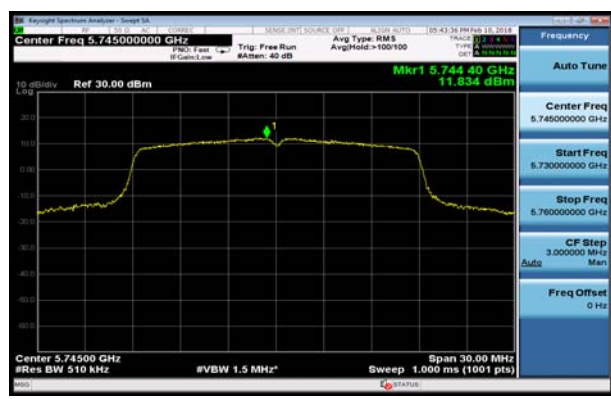




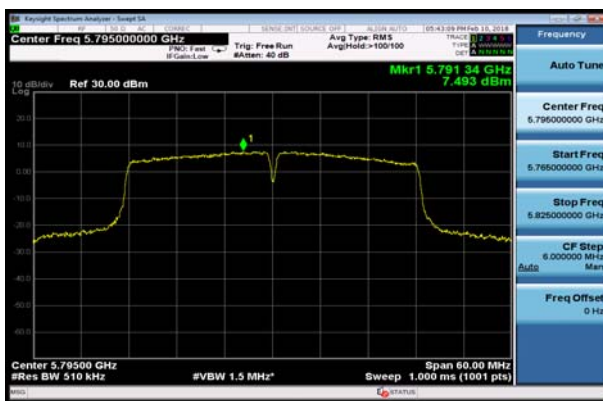
U-NII-3, 802.11n HT40, Channel No.: 151



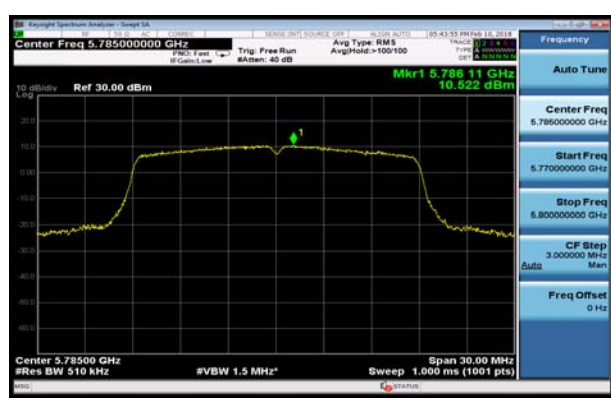
U-NII-3, 802.11ac VHT20, Channel No.: 149



U-NII-3, 802.11n HT40, Channel No.: 159



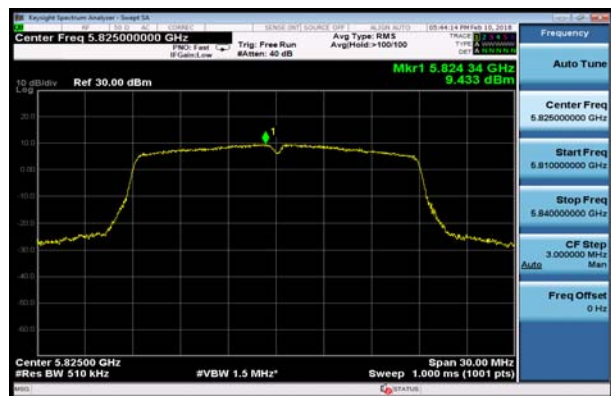
U-NII-3, 802.11ac VHT20, Channel No.: 157



U-NII-3, 802.11ac VHT40, Channel No.: 151

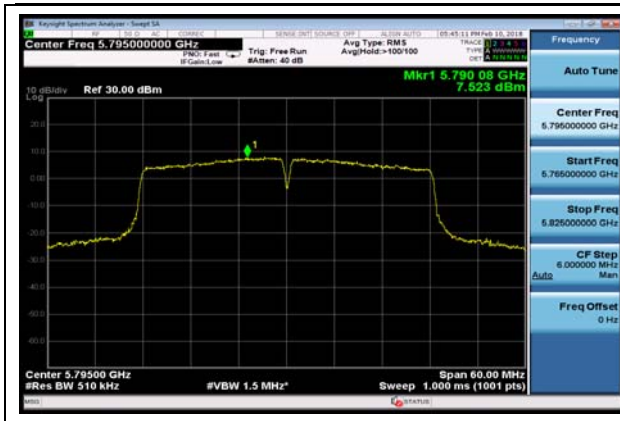


U-NII-3, 802.11ac VHT20, Channel No.: 165



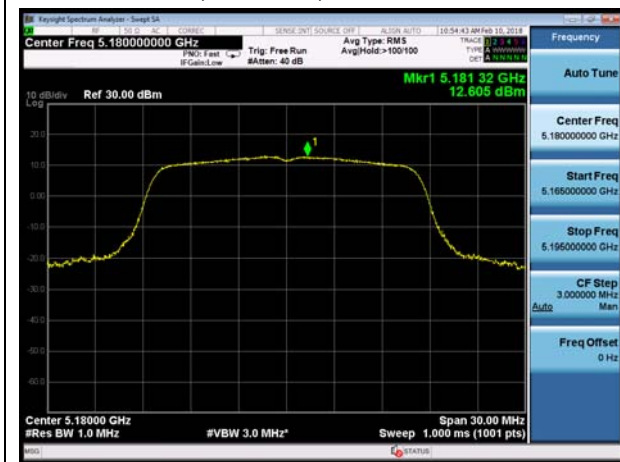
U-NII-3, 802.11ac VHT40, Channel No.: 159

U-NII-3, 802.11ac VHT80, Channel No.: 155

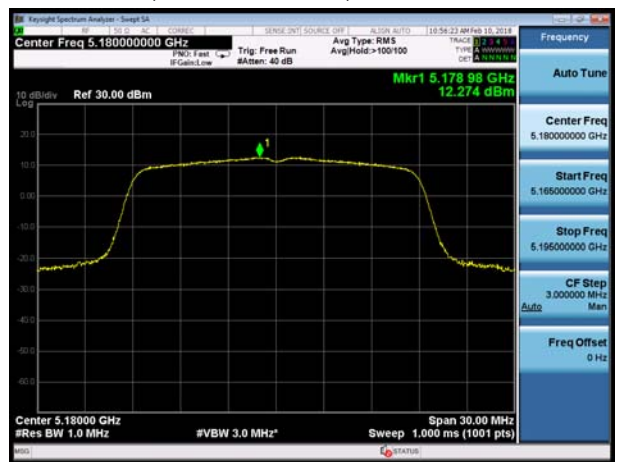


## With Beamforming Antenna 2

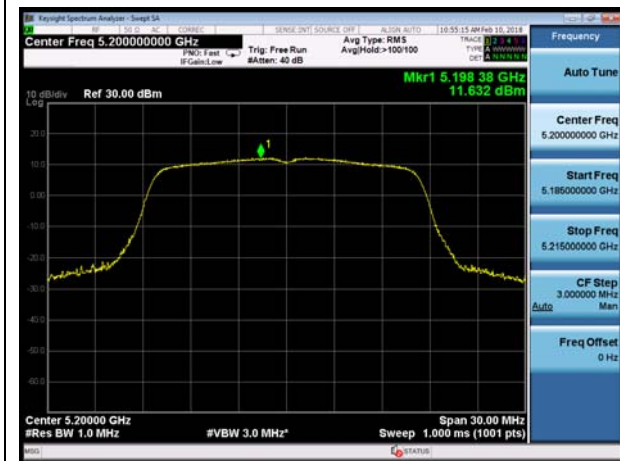
U-NII-1, 802.11a, Channel No.: 36



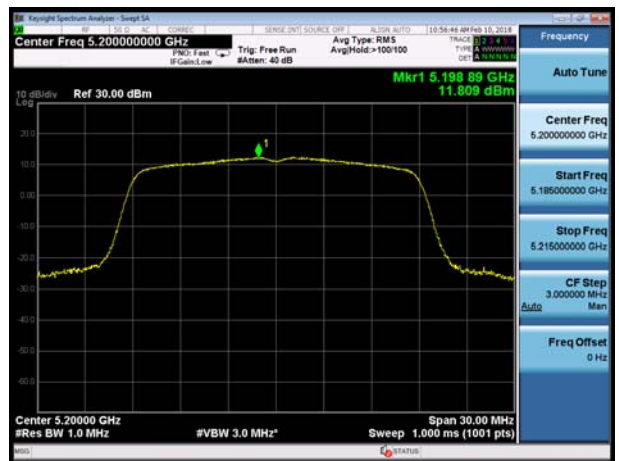
U-NII-1, 802.11n HT20, Channel No.: 36



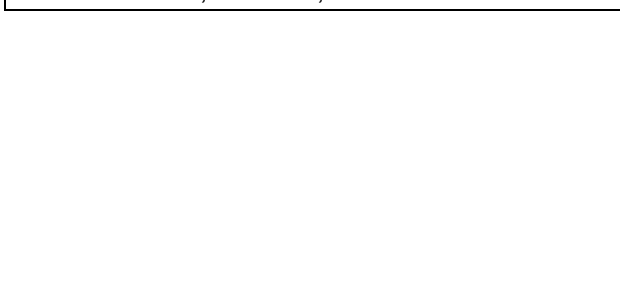
U-NII-1, 802.11a, Channel No.: 40



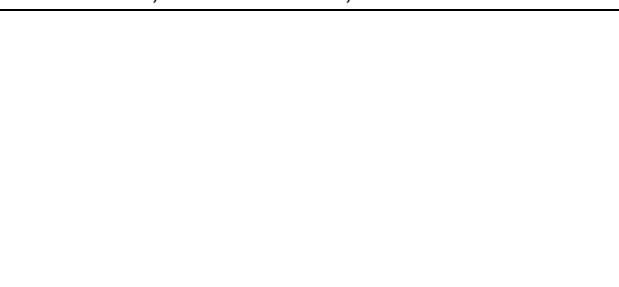
U-NII-1, 802.11n HT20, Channel No.: 40

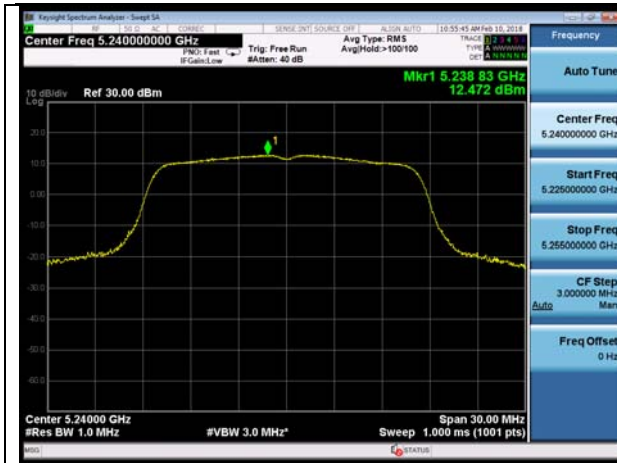


U-NII-1, 802.11a, Channel No.: 48



U-NII-1, 802.11n HT20, Channel No.: 48

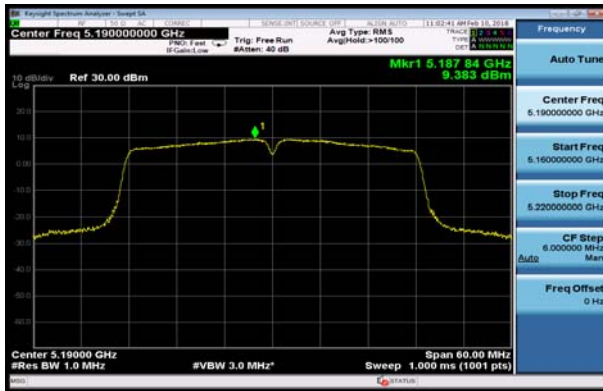




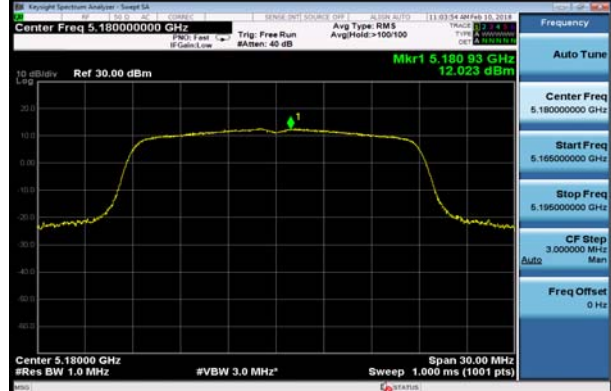




U-NII-1, 802.11n HT40, Channel No.: 38



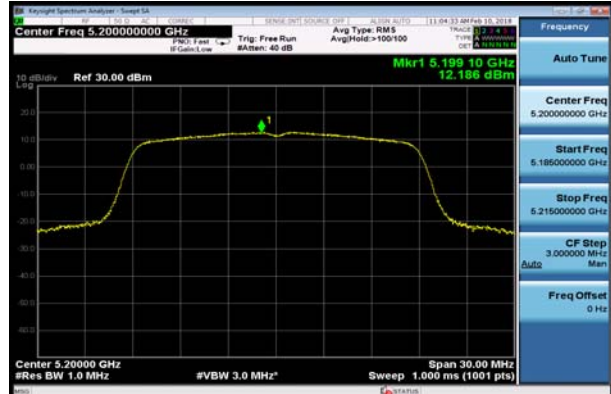
U-NII-1, 802.11ac VHT20, Channel No.: 36



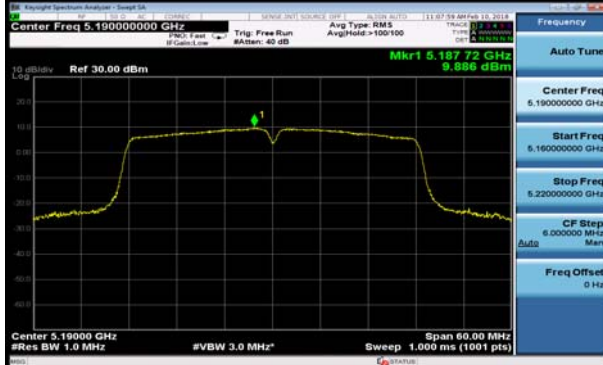
U-NII-1, 802.11n HT40, Channel No.: 46



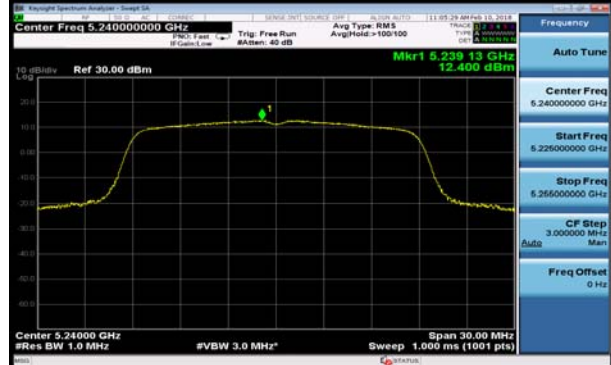
U-NII-1, 802.11ac VHT20, Channel No.: 40



U-NII-1, 802.11ac VHT40, Channel No.: 38

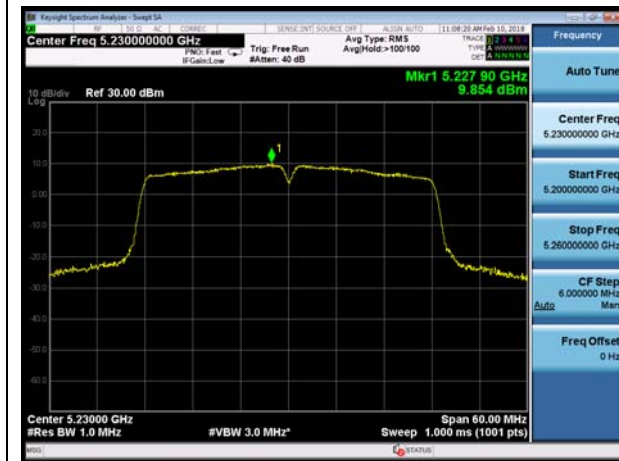


U-NII-1, 802.11ac VHT20, Channel No.: 48





U-NII-1, 802.11ac VHT40, Channel No.: 46



U-NII-1, 802.11ac VHT80, Channel No.: 42





U-NII-2A, 802.11a, Channel No.: 52



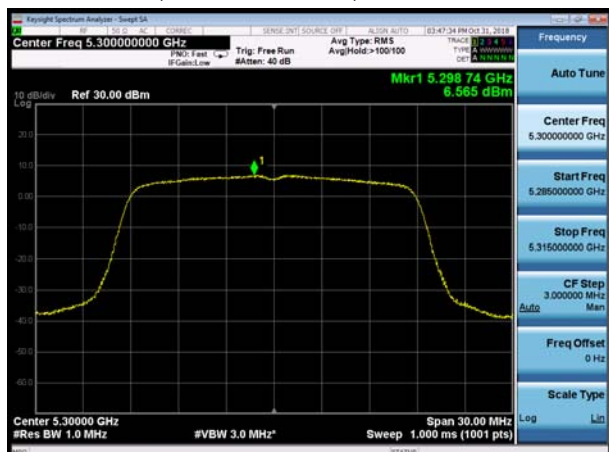
U-NII-2A, 802.11n HT20, Channel No.: 52



U-NII-2A, 802.11a, Channel No.: 60



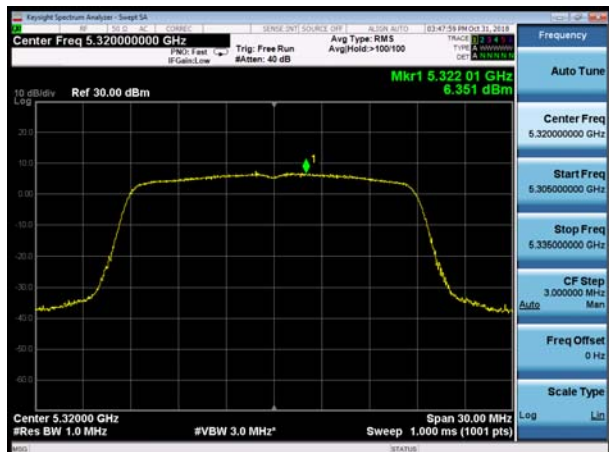
U-NII-2A, 802.11n HT20, Channel No.: 60



U-NII-2A, 802.11a, Channel No.: 64



U-NII-2A, 802.11n HT20, Channel No.: 64







U-NII-2A, 802.11n HT40, Channel No.: 54



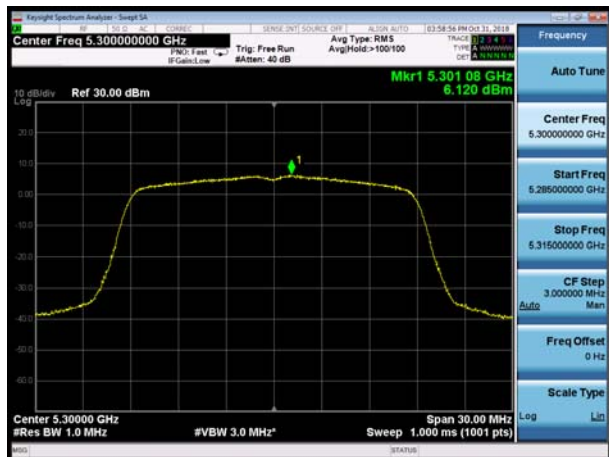
U-NII-2A, 802.11ac VHT20, Channel No.: 52



U-NII-2A, 802.11n HT40, Channel No.: 62



U-NII-2A, 802.11ac VHT20, Channel No.: 60



U-NII-2A, 802.11ac VHT40, Channel No.: 54



U-NII-2A, 802.11ac VHT20, Channel No.: 64

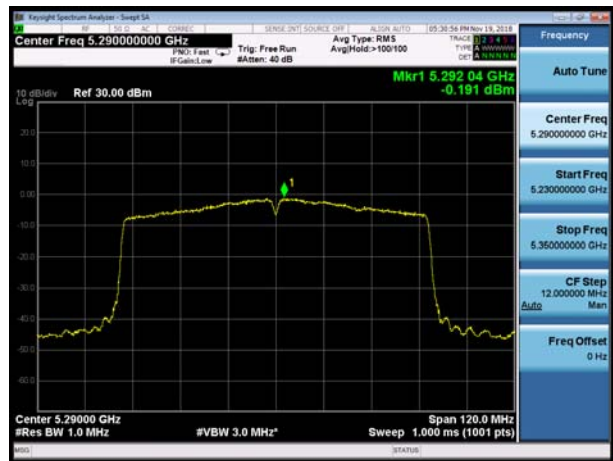




U-NII-2A, 802.11ac VHT40, Channel No.: 62



U-NII-2A, 802.11ac VHT80, Channel No.: 58





U-NII-2C, 802.11a, Channel No.: 100



U-NII-2C, 802.11n HT20, Channel No.: 100



U-NII-2C, 802.11a, Channel No.: 120



U-NII-2C, 802.11n HT20, Channel No.: 120



U-NII-2C, 802.11a, Channel No.: 140

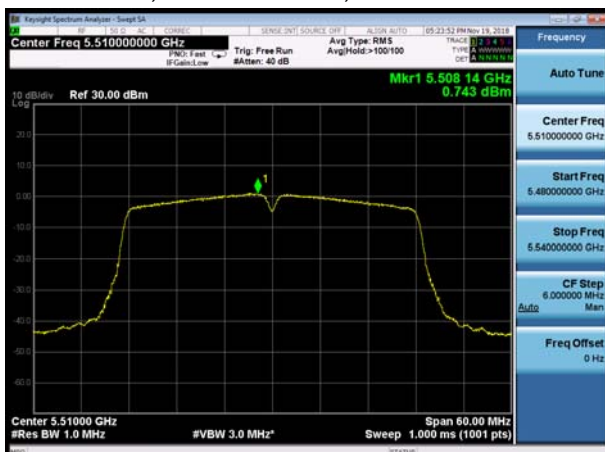


U-NII-2C, 802.11n HT20, Channel No.: 140

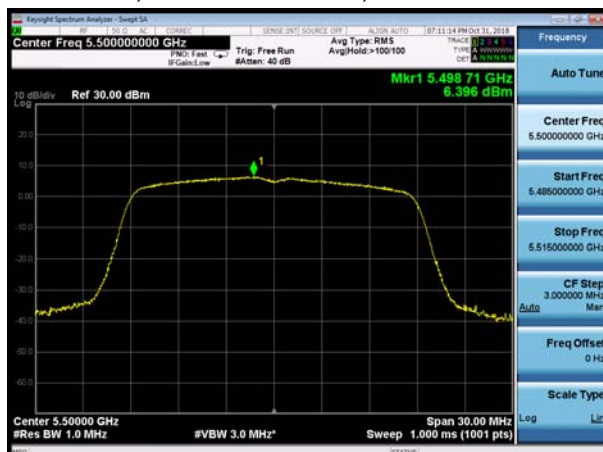




U-NII-2C, 802.11n HT40, Channel No.: 102



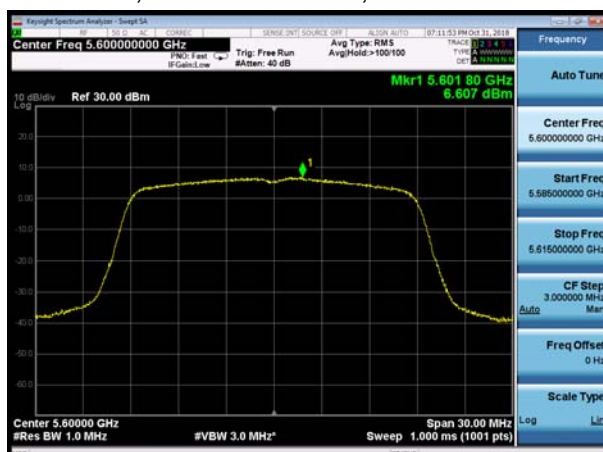
U-NII-2C, 802.11ac VHT20, Channel No.: 100



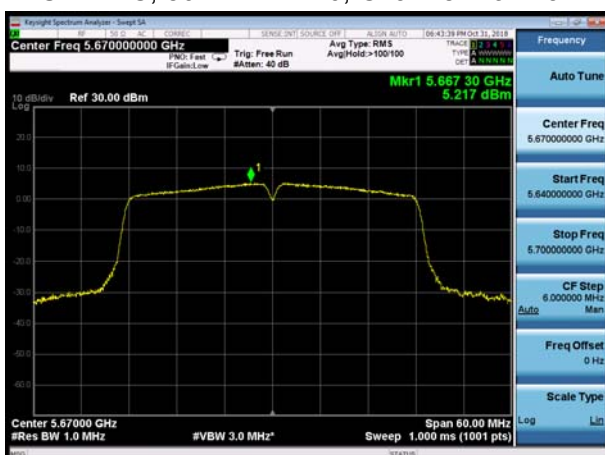
U-NII-2C, 802.11n HT40, Channel No.: 110



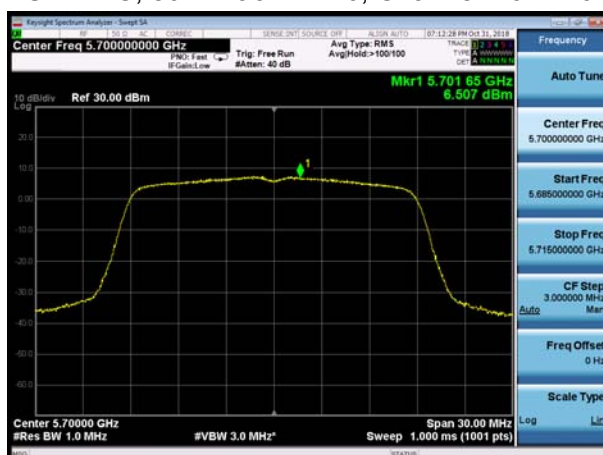
U-NII-2C, 802.11ac VHT20, Channel No.: 120



U-NII-2C, 802.11n HT40, Channel No.: 134



U-NII-2C, 802.11ac VHT20, Channel No.: 140







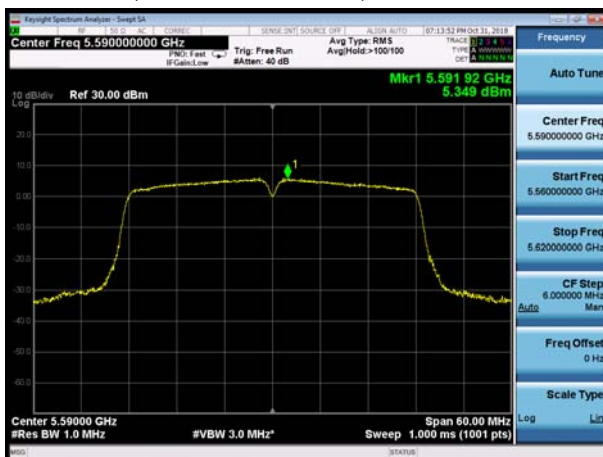
U-NII-2C, 802.11ac VHT40, Channel No.: 102



U-NII-2C, 802.11ac VHT80, Channel No.: 122



U-NII-2C, 802.11ac VHT40, Channel No.: 110



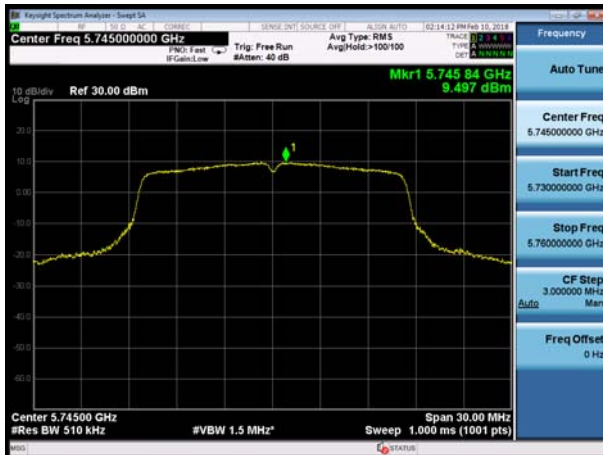
U-NII-2C, 802.11ac VHT40, Channel No.: 134



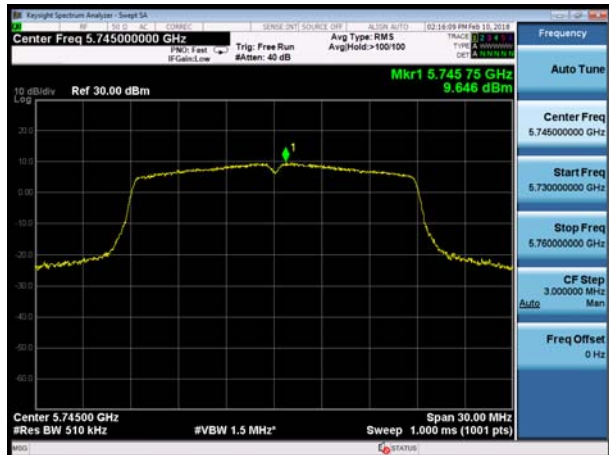




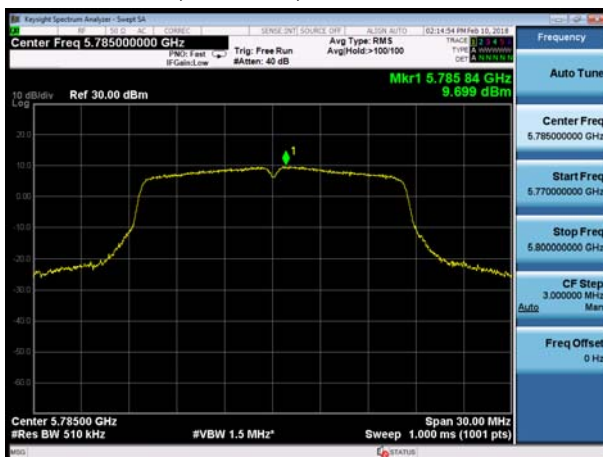
U-NII-3, 802.11a, Channel No.: 149



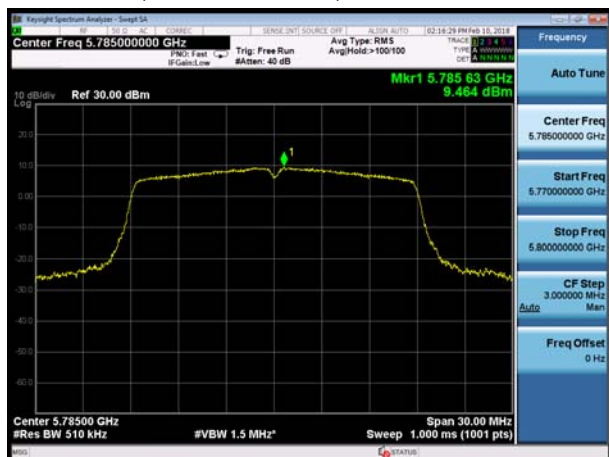
U-NII-3, 802.11n HT20, Channel No.: 149



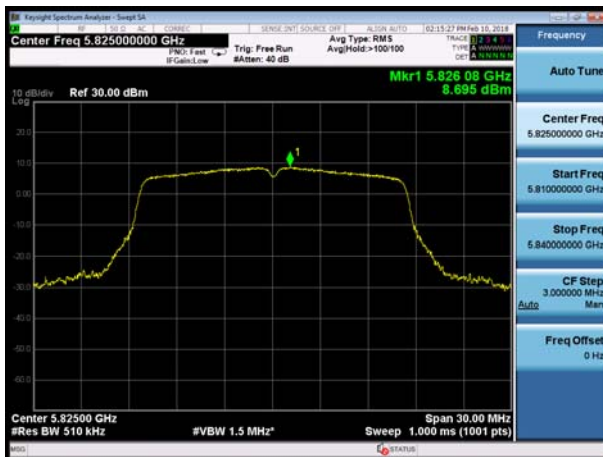
U-NII-3, 802.11a, Channel No.: 157



U-NII-3, 802.11n HT20, Channel No.: 157



U-NII-3, 802.11a, Channel No.: 165

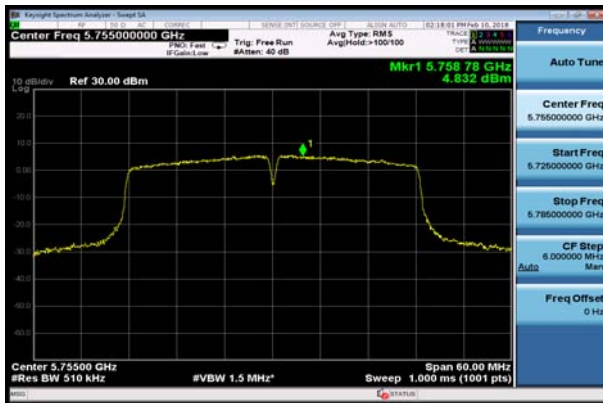


U-NII-3, 802.11n HT20, Channel No.: 165

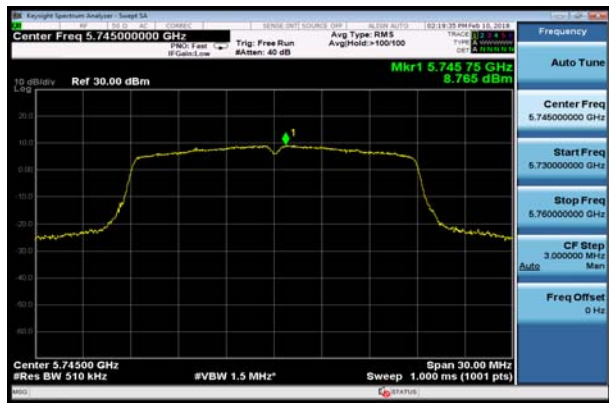




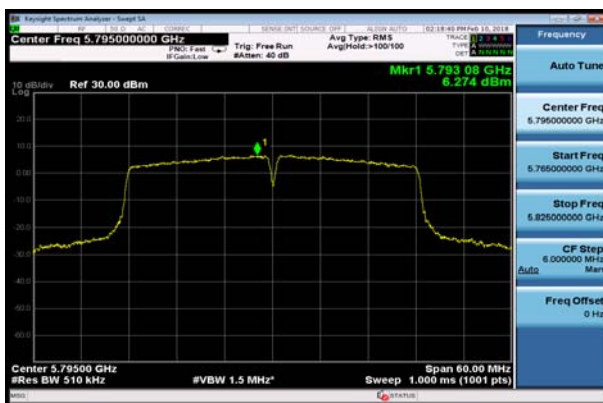
U-NII-3, 802.11n HT40, Channel No.: 151



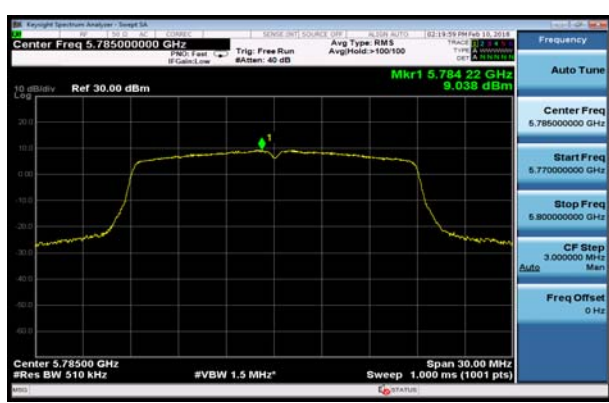
U-NII-3, 802.11ac VHT20, Channel No.: 149



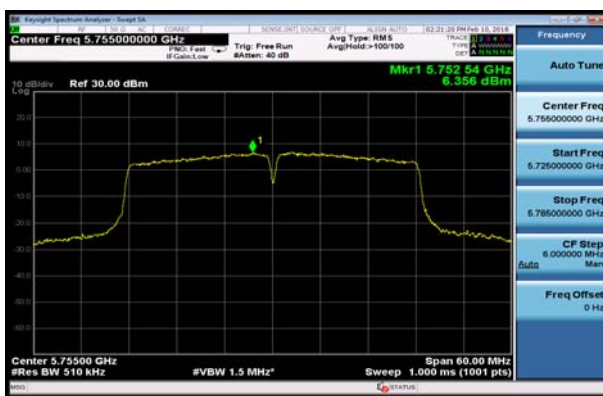
U-NII-3, 802.11n HT40, Channel No.: 159



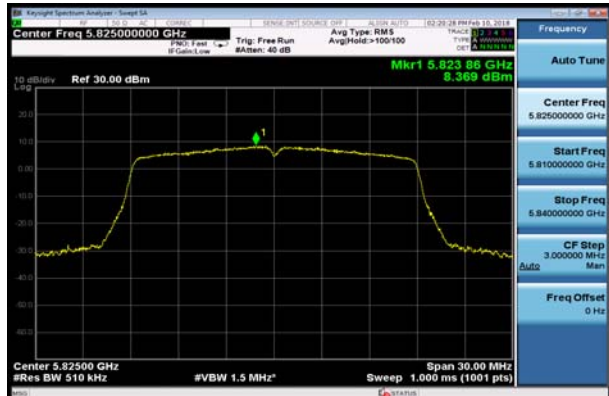
U-NII-3, 802.11ac VHT20, Channel No.: 157



U-NII-3, 802.11ac VHT40, Channel No.: 151

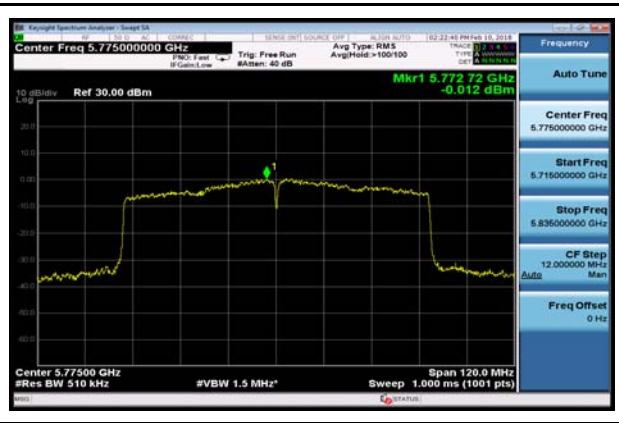
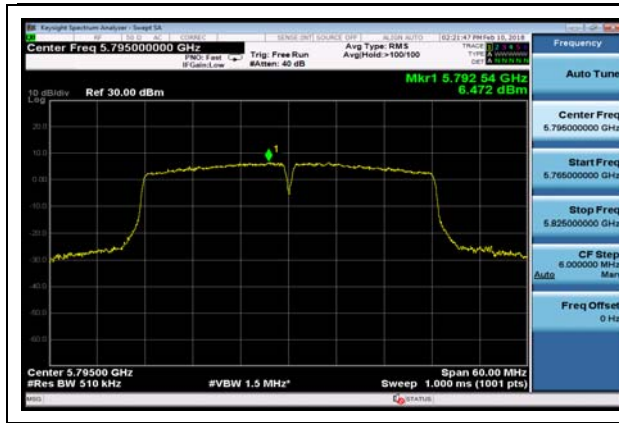


U-NII-3, 802.11ac VHT20, Channel No.: 165



U-NII-3, 802.11ac VHT40, Channel No.: 159

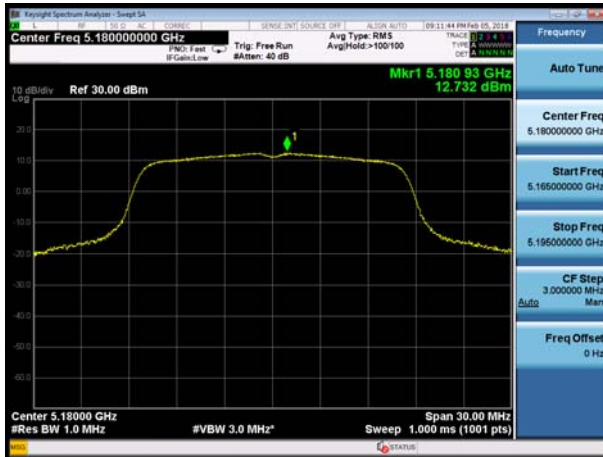
U-NII-3, 802.11ac VHT80, Channel No.: 155



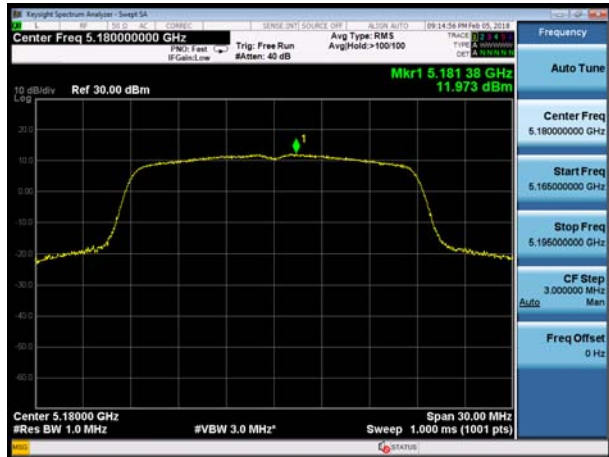


# Without Beamforming Antenna 1

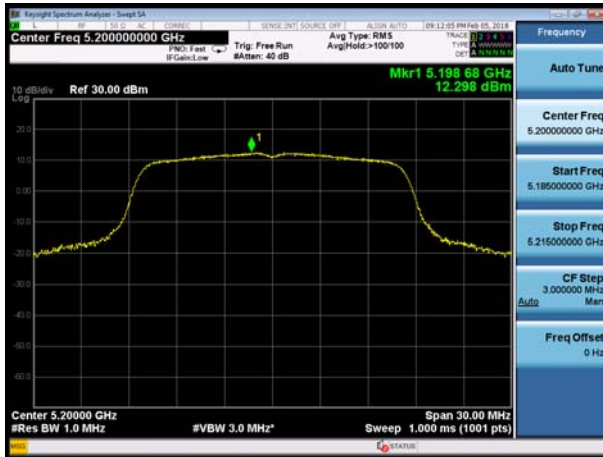
U-NII-1, 802.11a, Channel No.: 36



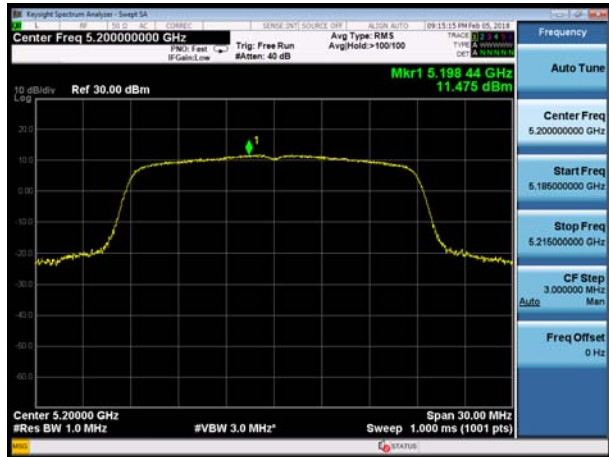
U-NII-1, 802.11n HT20, Channel No.: 36



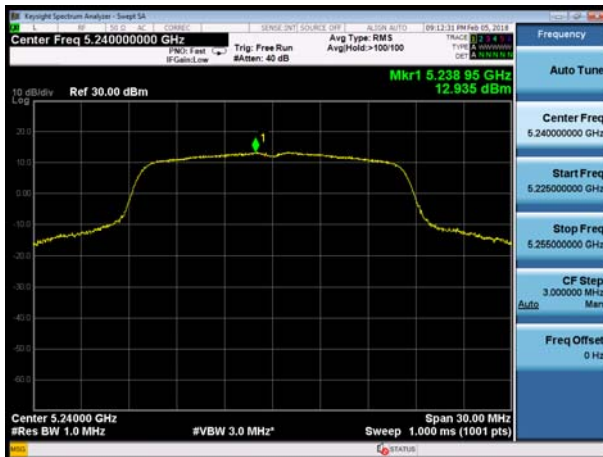
U-NII-1, 802.11a, Channel No.: 40



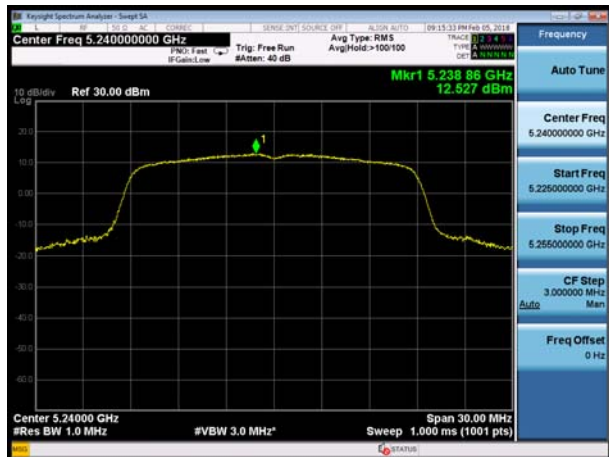
U-NII-1, 802.11n HT20, Channel No.: 40



U-NII-1, 802.11a, Channel No.: 48



U-NII-1, 802.11n HT20, Channel No.: 48







U-NII-1, 802.11n HT40, Channel No.: 38



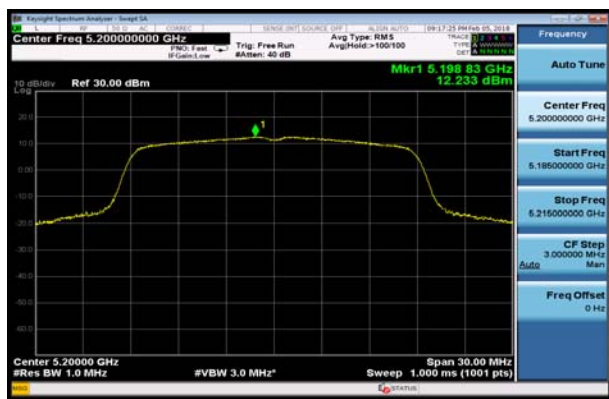
U-NII-1, 802.11ac VHT20, Channel No.: 36



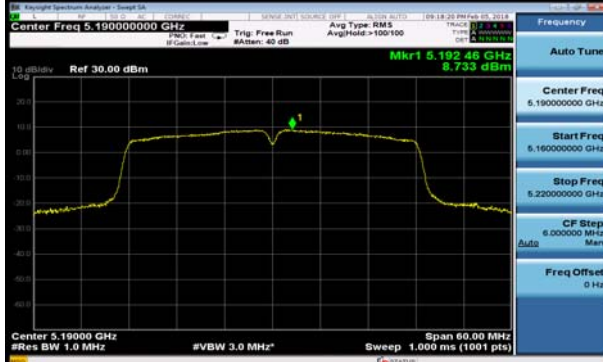
U-NII-1, 802.11n HT40, Channel No.: 46



U-NII-1, 802.11ac VHT20, Channel No.: 40



U-NII-1, 802.11ac VHT40, Channel No.: 38

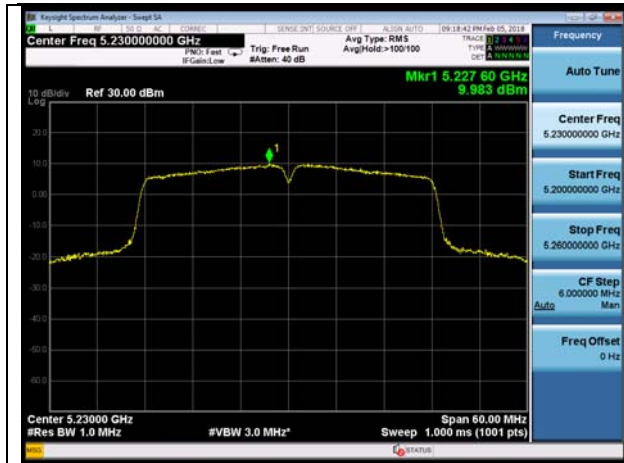


U-NII-1, 802.11ac VHT20, Channel No.: 48

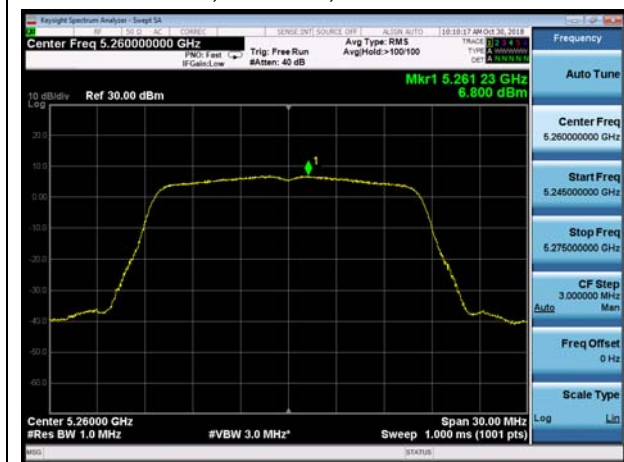


U-NII-1, 802.11ac VHT40, Channel No.: 46

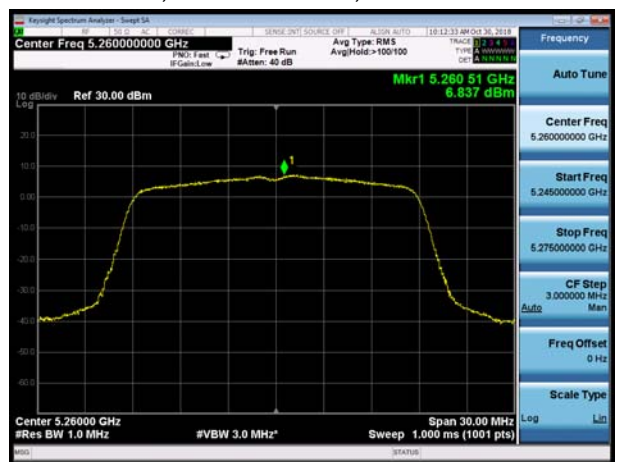
U-NII-1, 802.11ac VHT80, Channel No.: 42



U-NII-2A, 802.11a, Channel No.: 52



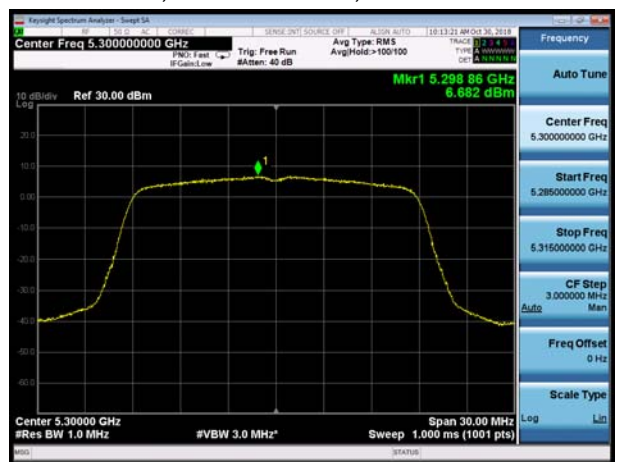
U-NII-2A, 802.11n HT20, Channel No.: 52



U-NII-2A, 802.11a, Channel No.: 60



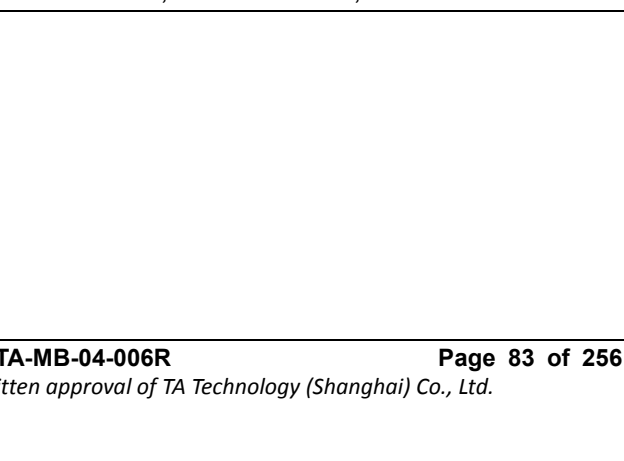
U-NII-2A, 802.11n HT20, Channel No.: 60



U-NII-2A, 802.11a, Channel No.: 64

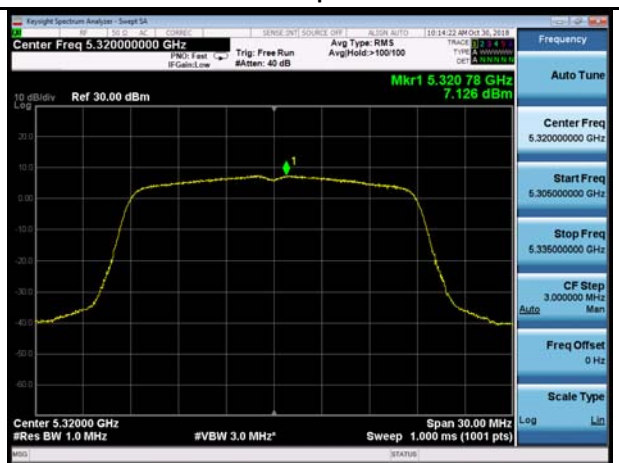


U-NII-2A, 802.11n HT20, Channel No.: 64





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U-NII-2A, 802.11n HT40, Channel No.: 54



U-NII-2A, 802.11ac VHT20, Channel No.: 52



U-NII-2A, 802.11n HT40, Channel No.: 62



U-NII-2A, 802.11ac VHT20, Channel No.: 60



U-NII-2A, 802.11ac VHT40, Channel No.: 54



U-NII-2A, 802.11ac VHT20, Channel No.: 64



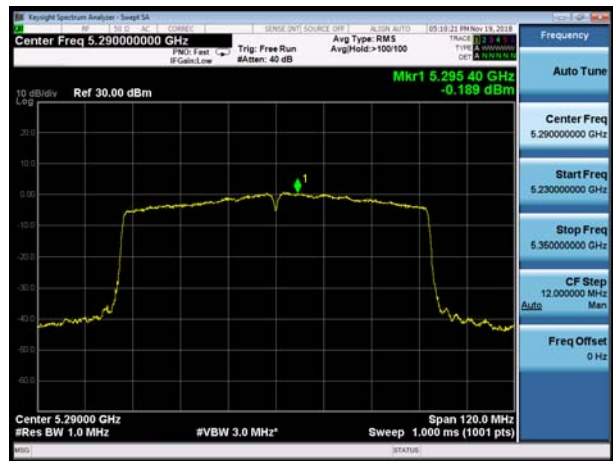




U-NII-2A, 802.11ac VHT40, Channel No.: 62



U-NII-2A, 802.11ac VHT80, Channel No.: 58





U-NII-2C, 802.11a, Channel No.: 100



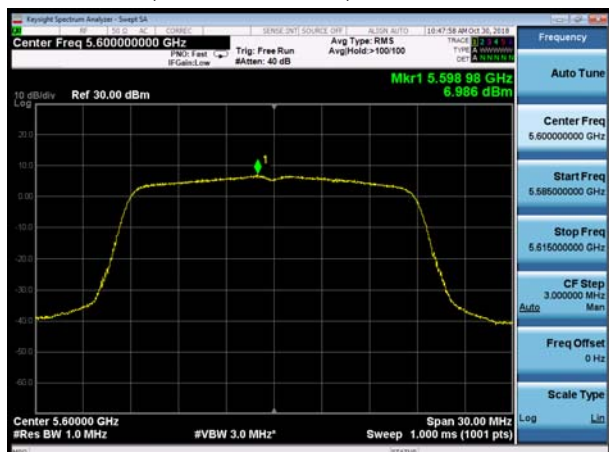
U-NII-2C, 802.11n HT20, Channel No.: 100



U-NII-2C, 802.11a, Channel No.: 116



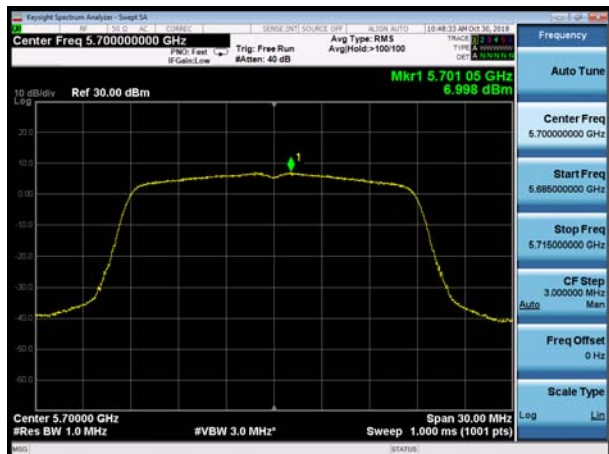
U-NII-2C, 802.11n HT20, Channel No.: 116



U-NII-2C, 802.11a, Channel No.: 140

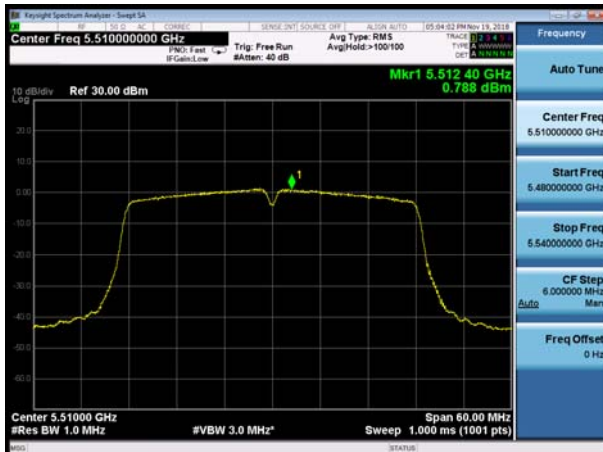


U-NII-2C, 802.11n HT20, Channel No.: 140





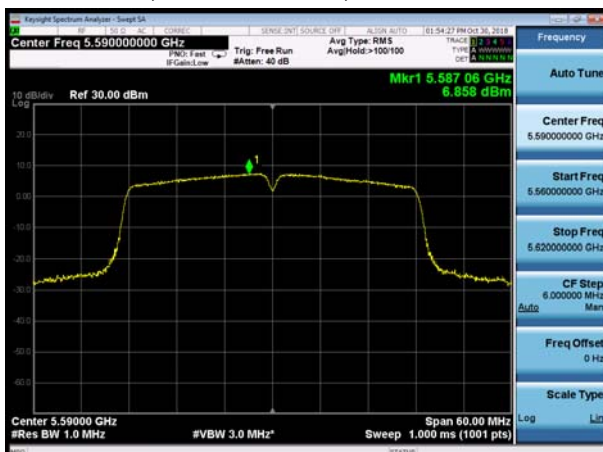
U-NII-2C, 802.11n HT40, Channel No.: 102



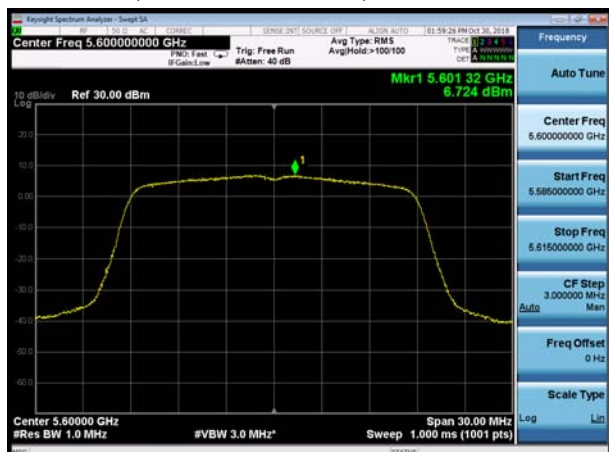
U-NII-2C, 802.11ac VHT20, Channel No.: 100



U-NII-2C, 802.11n HT40, Channel No.: 110



U-NII-2C, 802.11ac VHT20, Channel No.: 116



U-NII-2C, 802.11n HT40, Channel No.: 134



U-NII-2C, 802.11ac VHT20, Channel No.: 140





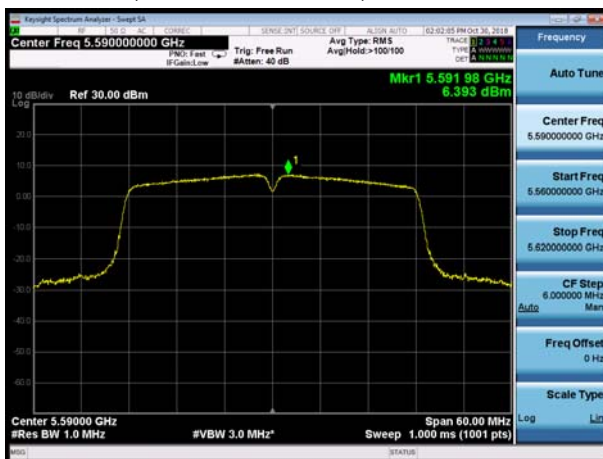
U-NII-2C, 802.11ac VHT40, Channel No.: 102



U-NII-2C, 802.11ac VHT80, Channel No.: 122



U-NII-2C, 802.11ac VHT40, Channel No.: 110



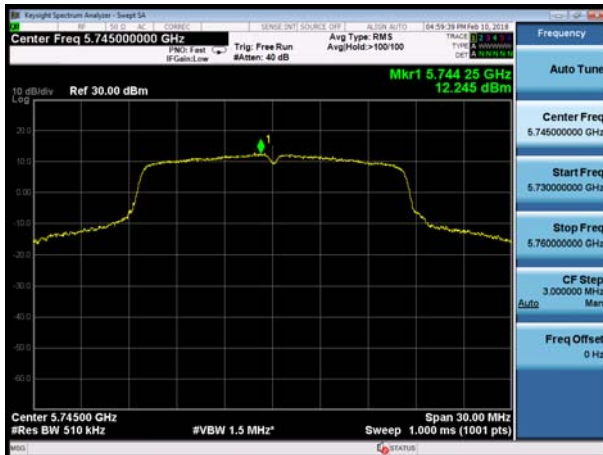
U-NII-2C, 802.11ac VHT40, Channel No.: 134



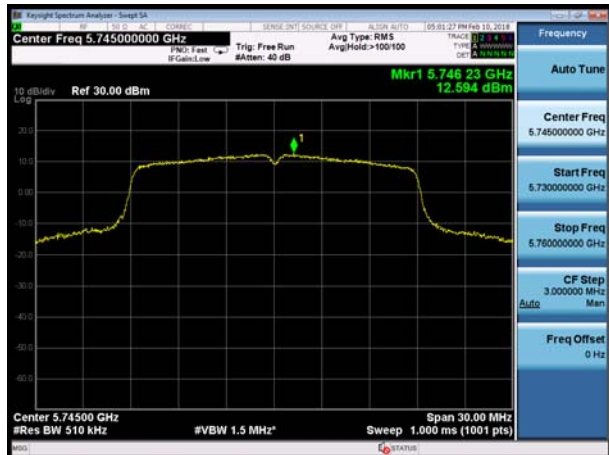




U-NII-3, 802.11a, Channel No.: 149



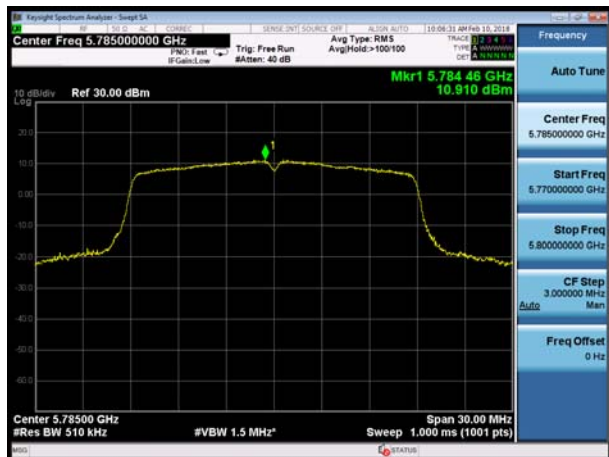
U-NII-3, 802.11n HT20, Channel No.: 149



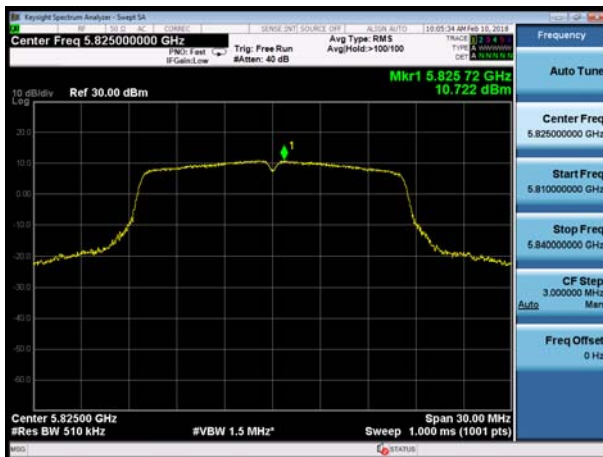
U-NII-3, 802.11a, Channel No.: 157



U-NII-3, 802.11n HT20, Channel No.: 157



U-NII-3, 802.11a, Channel No.: 165



U-NII-3, 802.11n HT20, Channel No.: 165

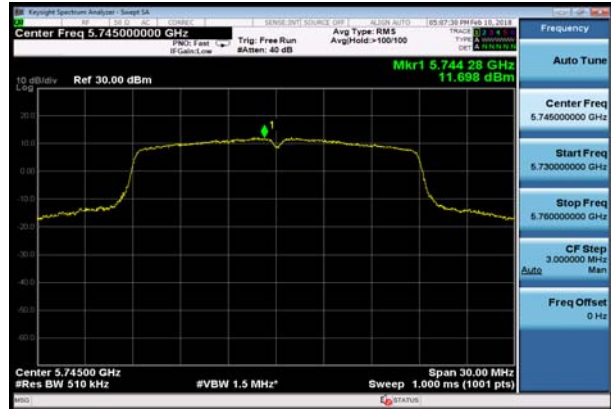




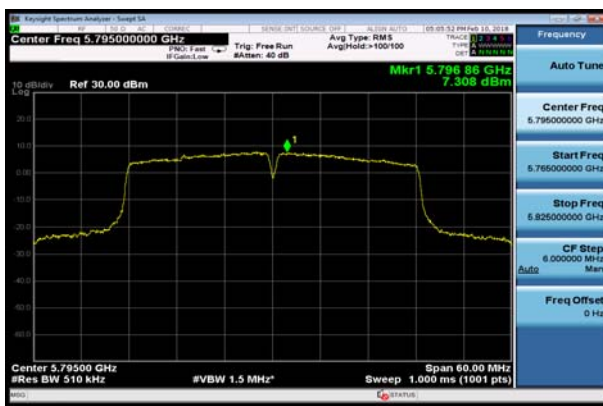
U-NII-3, 802.11n HT40, Channel No.: 151



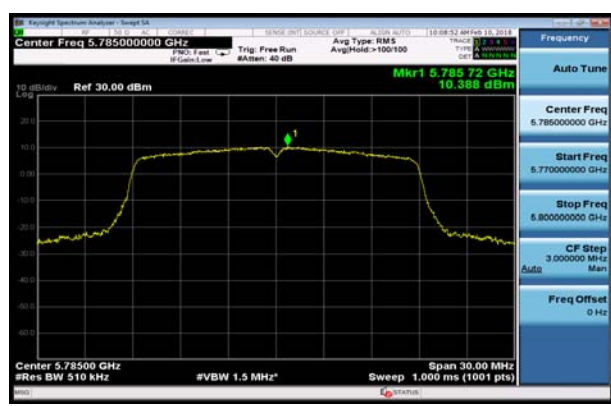
U-NII-3, 802.11ac VHT20, Channel No.: 149



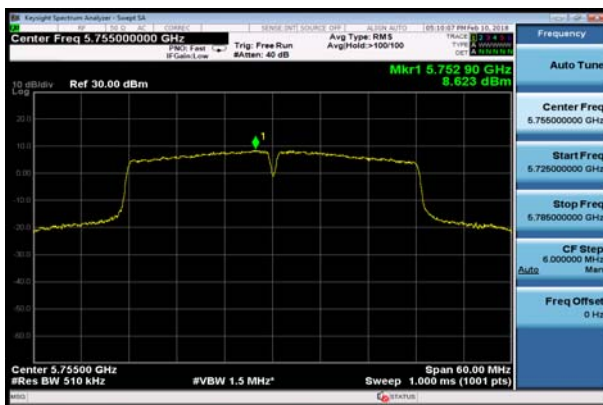
U-NII-3, 802.11n HT40, Channel No.: 159



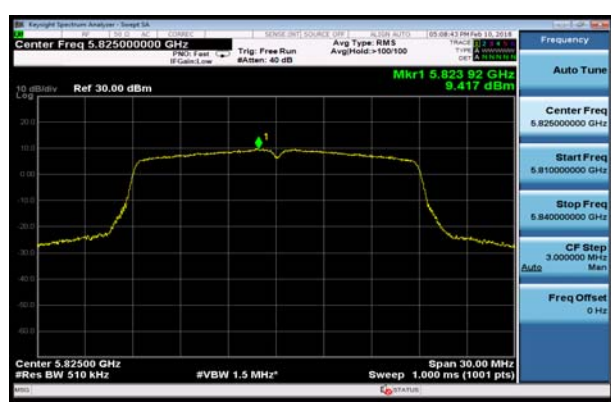
U-NII-3, 802.11ac VHT20, Channel No.: 157



U-NII-3, 802.11ac VHT40, Channel No.: 151

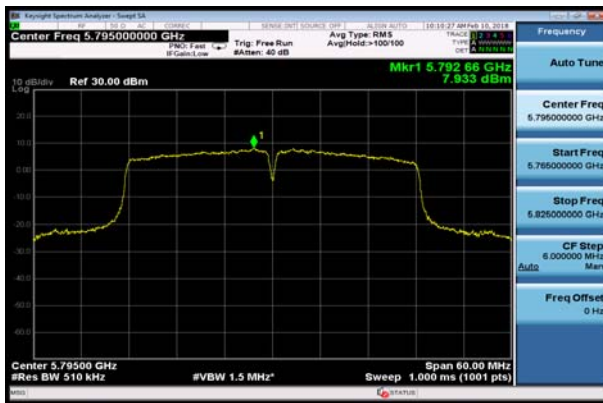


U-NII-3, 802.11ac VHT20, Channel No.: 165





U-NII-3, 802.11ac VHT40, Channel No.: 159



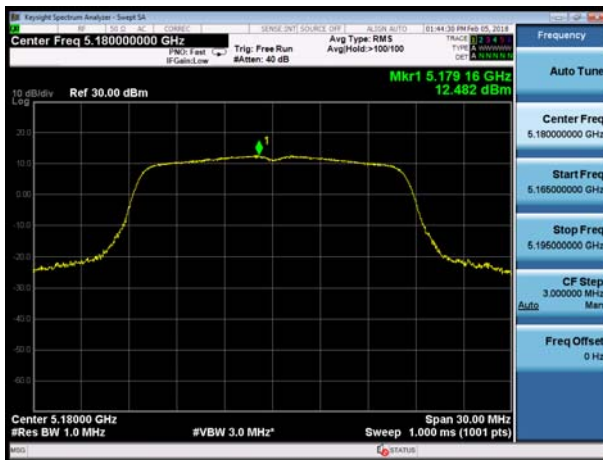
U-NII-3, 802.11ac VHT80, Channel No.: 155



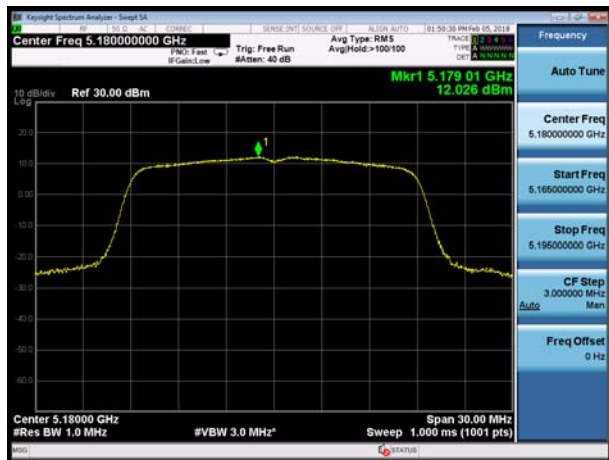


## Without Beamforming Antenna 2

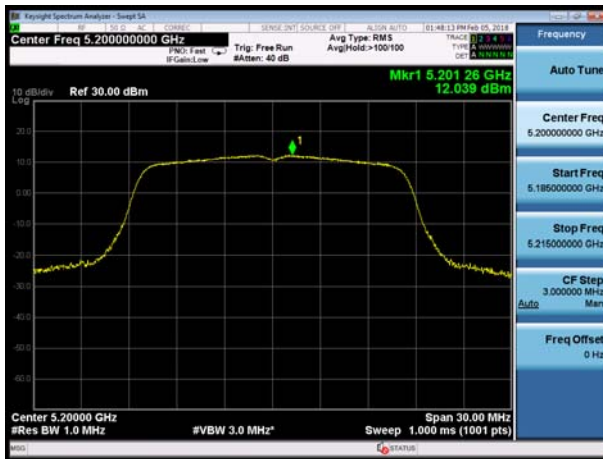
U-NII-1, 802.11a, Channel No.: 36



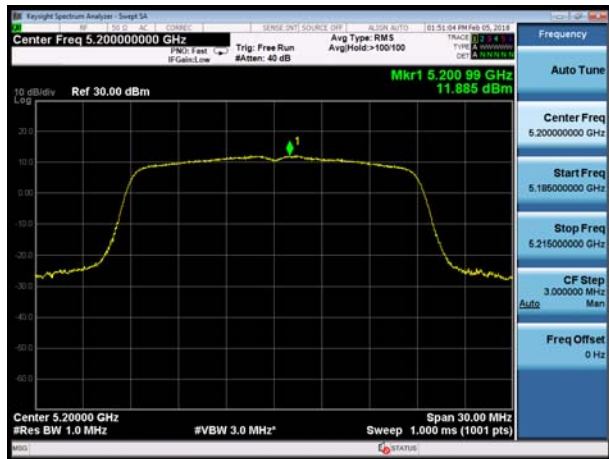
U-NII-1, 802.11n HT20, Channel No.: 36



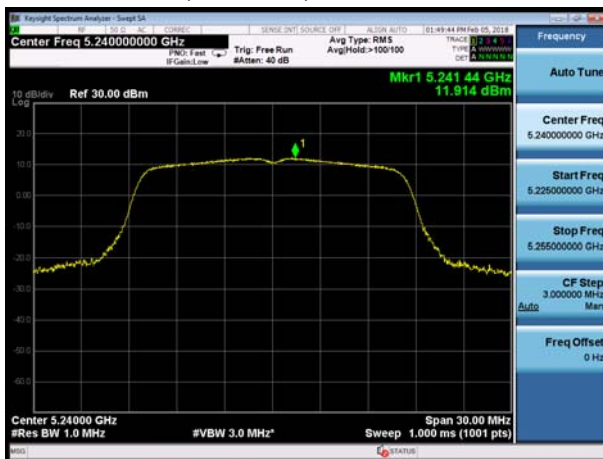
U-NII-1, 802.11a, Channel No.: 40



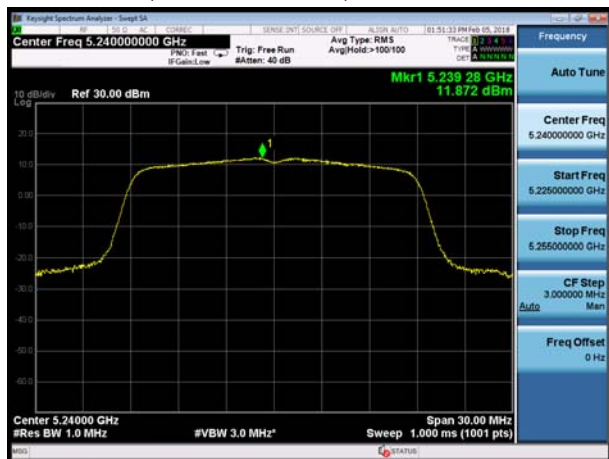
U-NII-1, 802.11n HT20, Channel No.: 40



U-NII-1, 802.11a, Channel No.: 48



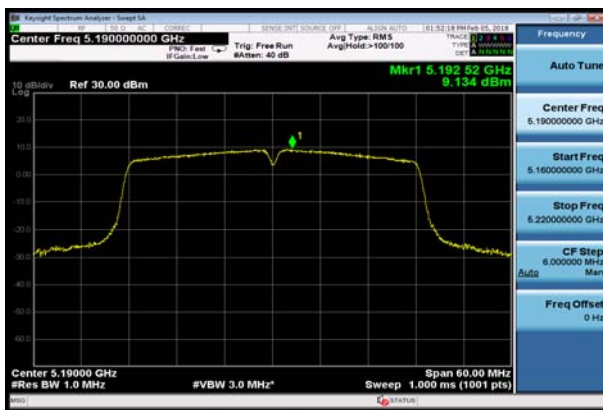
U-NII-1, 802.11n HT20, Channel No.: 48



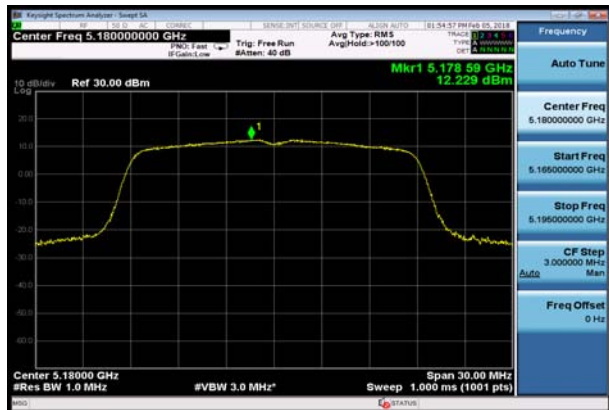




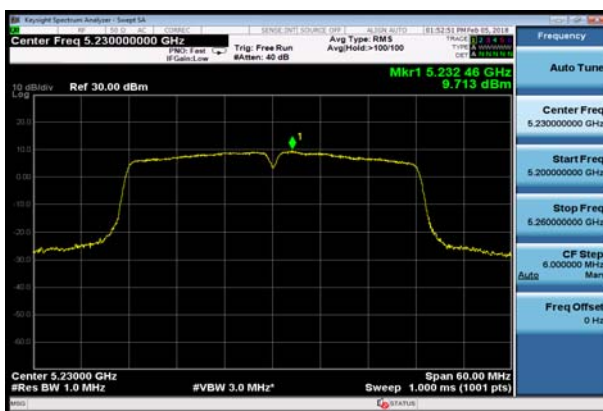
U-NII-1, 802.11n HT40, Channel No.: 38



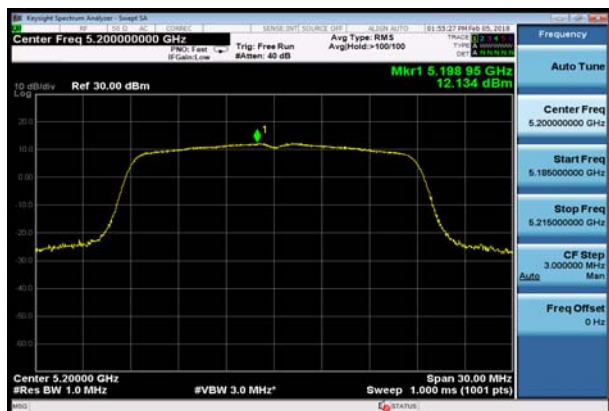
U-NII-1, 802.11ac VHT20, Channel No.: 36



U-NII-1, 802.11n HT40, Channel No.: 46



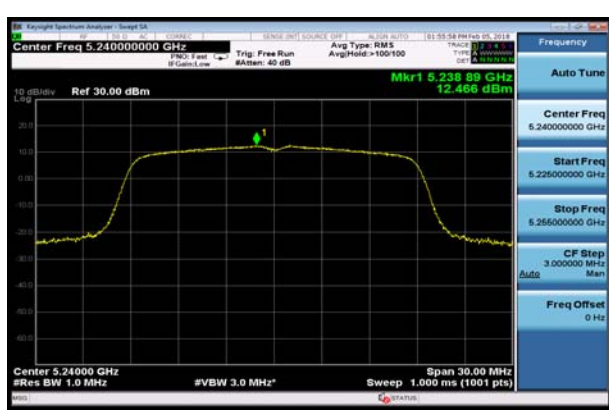
U-NII-1, 802.11ac VHT20, Channel No.: 40



U-NII-1, 802.11ac VHT40, Channel No.: 38



U-NII-1, 802.11ac VHT20, Channel No.: 48



U-NII-1, 802.11ac VHT40, Channel No.: 46



U-NII-1, 802.11ac VHT80, Channel No.: 42





U-NII-2A, 802.11a, Channel No.: 52



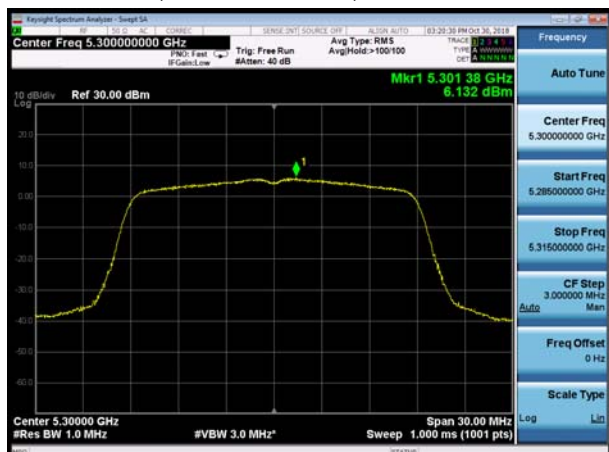
U-NII-2A, 802.11n HT20, Channel No.: 52



U-NII-2A, 802.11a, Channel No.: 60



U-NII-2A, 802.11n HT20, Channel No.: 60



U-NII-2A, 802.11a, Channel No.: 64



U-NII-2A, 802.11n HT20, Channel No.: 64





U-NII-2A, 802.11n HT40, Channel No.: 54



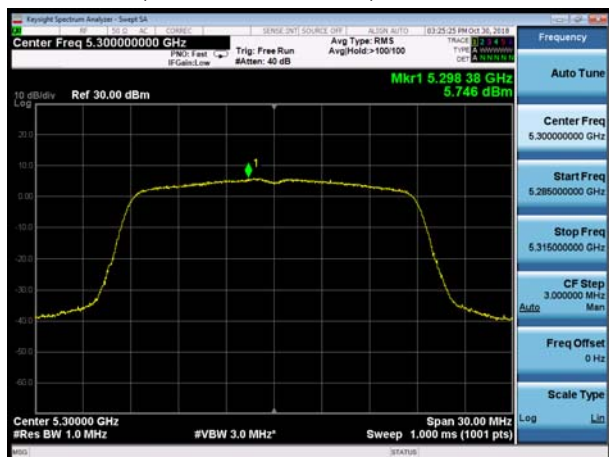
U-NII-2A, 802.11ac VHT20, Channel No.: 52



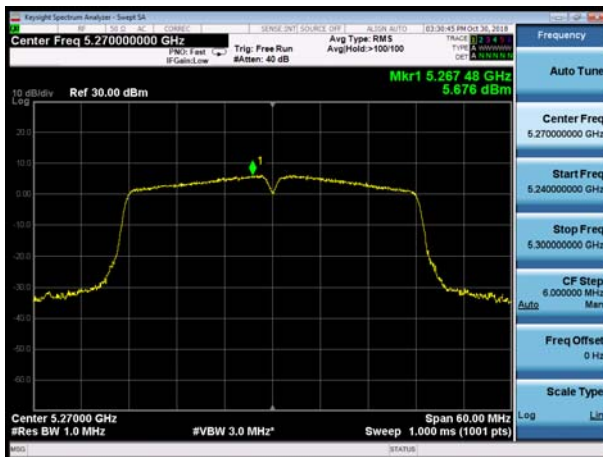
U-NII-2A, 802.11n HT40, Channel No.: 62



U-NII-2A, 802.11ac VHT20, Channel No.: 60



U-NII-2A, 802.11ac VHT40, Channel No.: 54



U-NII-2A, 802.11ac VHT20, Channel No.: 64

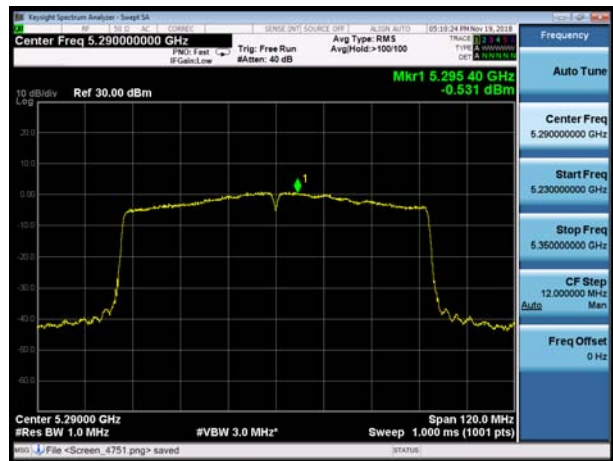




U-NII-2A, 802.11ac VHT40, Channel No.: 62



U-NII-2A, 802.11ac VHT80, Channel No.: 58







U-NII-2C, 802.11a, Channel No.: 100



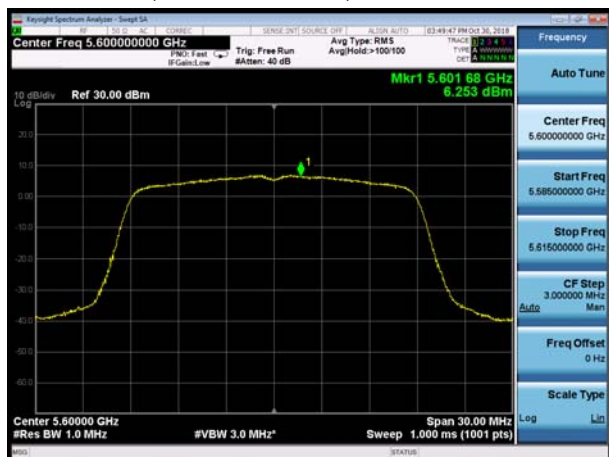
U-NII-2C, 802.11n HT20, Channel No.: 100



U-NII-2C, 802.11a, Channel No.: 116



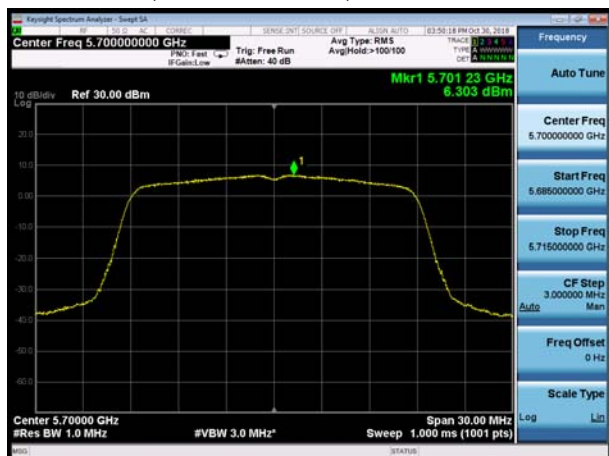
U-NII-2C, 802.11n HT20, Channel No.: 116



U-NII-2C, 802.11a, Channel No.: 140

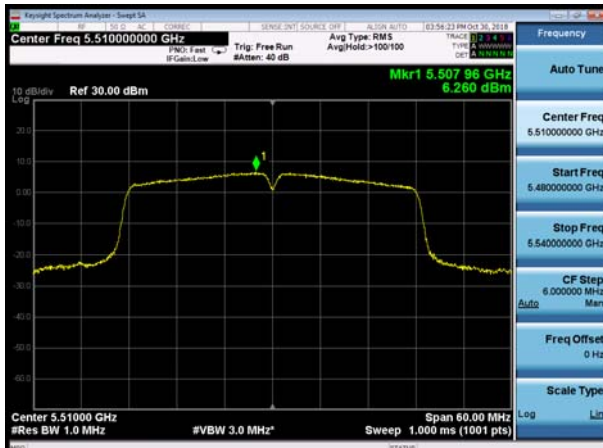


U-NII-2C, 802.11n HT20, Channel No.: 140





U-NII-2C, 802.11n HT40, Channel No.: 102



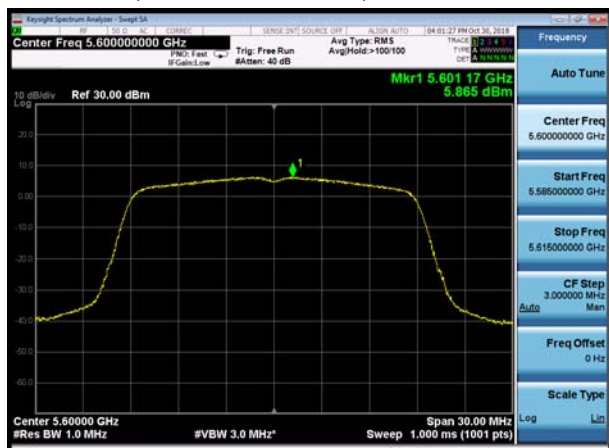
U-NII-2C, 802.11ac VHT20, Channel No.: 100



U-NII-2C, 802.11n HT40, Channel No.: 110



U-NII-2C, 802.11ac VHT20, Channel No.: 116



U-NII-2C, 802.11n HT40, Channel No.: 134



U-NII-2C, 802.11ac VHT20, Channel No.: 140





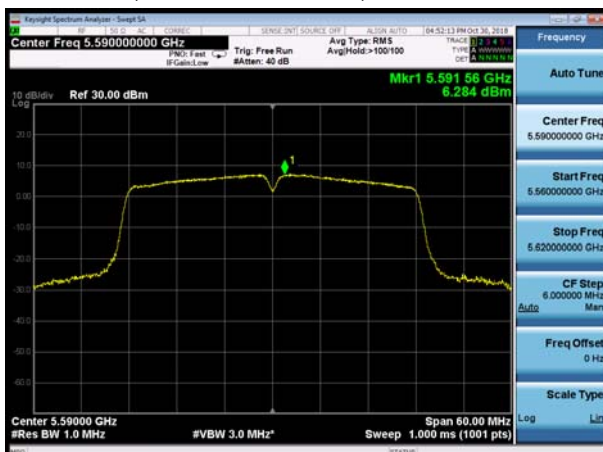
U-NII-2C, 802.11ac VHT40, Channel No.: 102



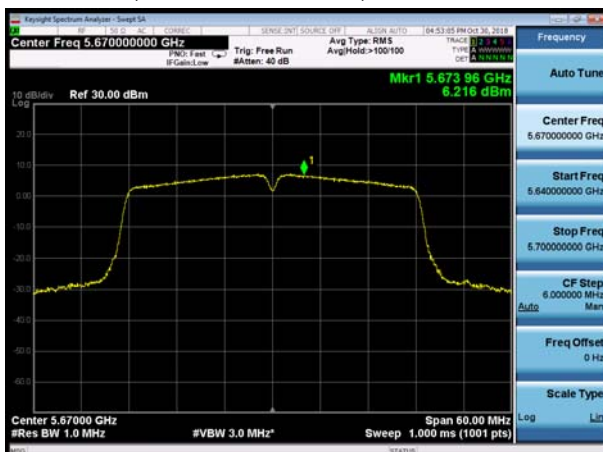
U-NII-2C, 802.11ac VHT80, Channel No.: 122



U-NII-2C, 802.11ac VHT40, Channel No.: 110



U-NII-2C, 802.11ac VHT40, Channel No.: 134







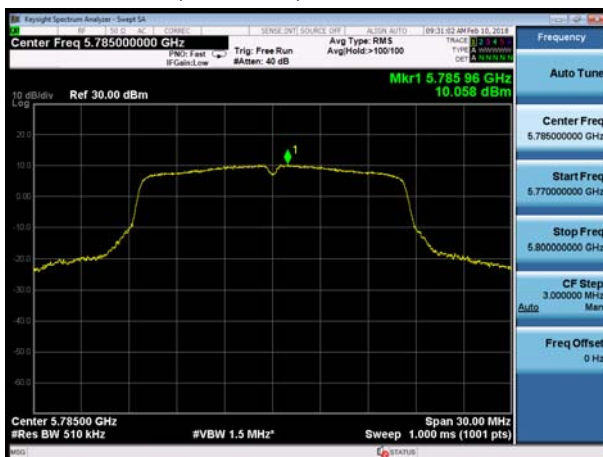
U-NII-3, 802.11a, Channel No.: 149



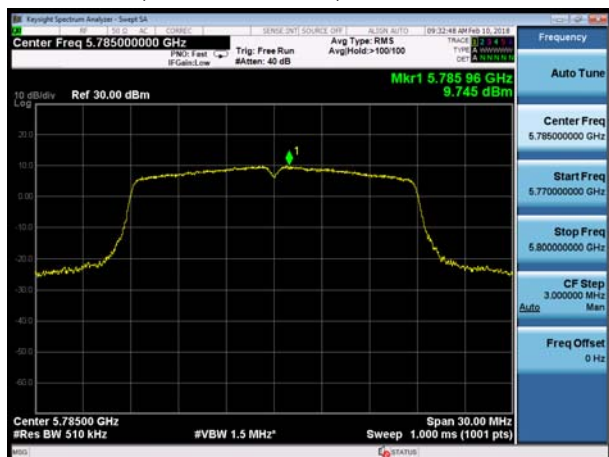
U-NII-3, 802.11n HT20, Channel No.: 149



U-NII-3, 802.11a, Channel No.: 157



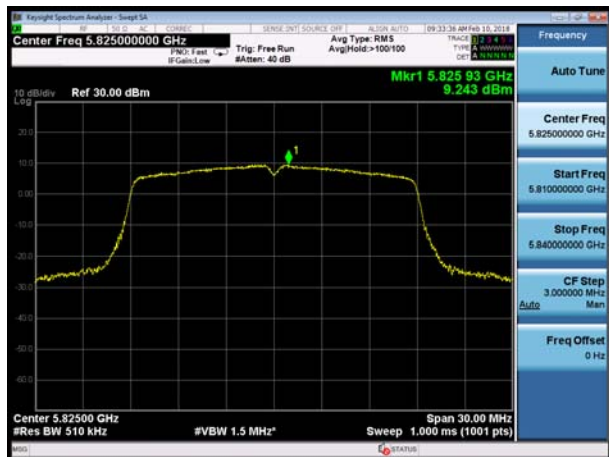
U-NII-3, 802.11n HT20, Channel No.: 157



U-NII-3, 802.11a, Channel No.: 165



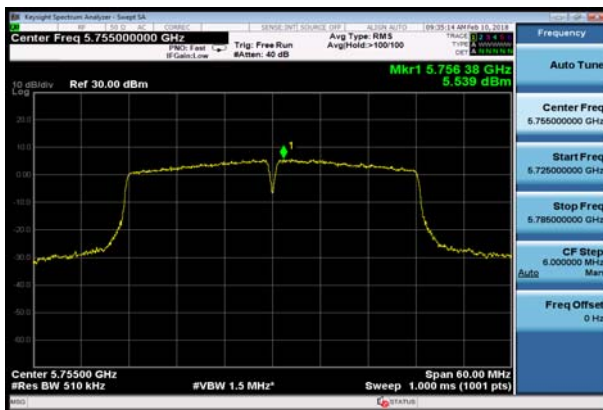
U-NII-3, 802.11n HT20, Channel No.: 165



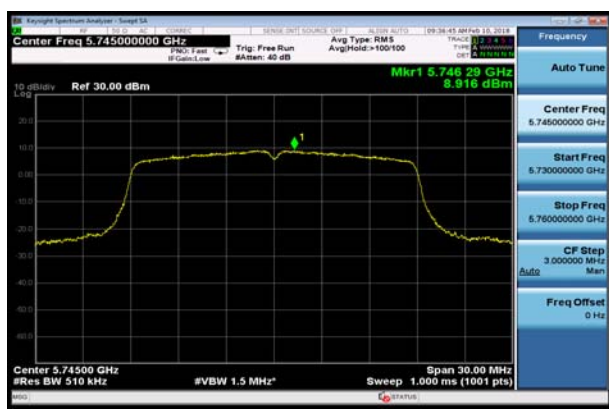




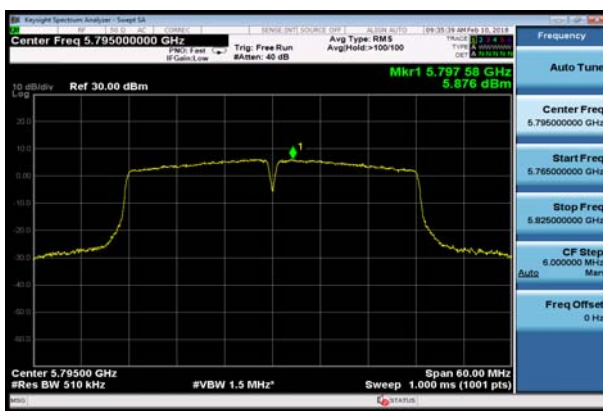
U-NII-3, 802.11n HT40, Channel No.: 151



U-NII-3, 802.11ac VHT20, Channel No.: 149



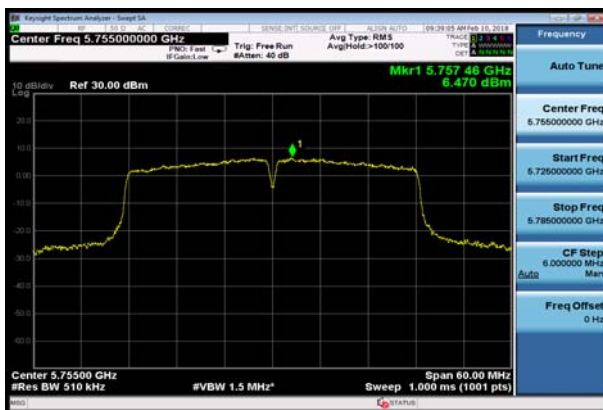
U-NII-3, 802.11n HT40, Channel No.: 159



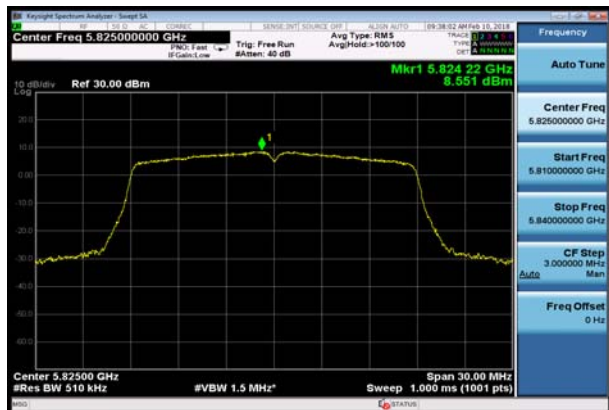
U-NII-3, 802.11ac VHT20, Channel No.: 157



U-NII-3, 802.11ac VHT40, Channel No.: 151

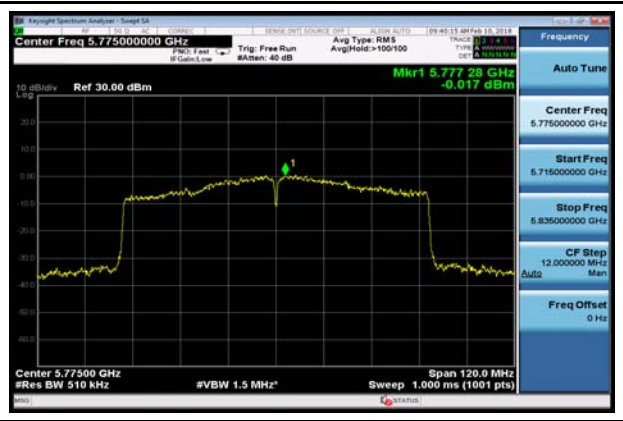
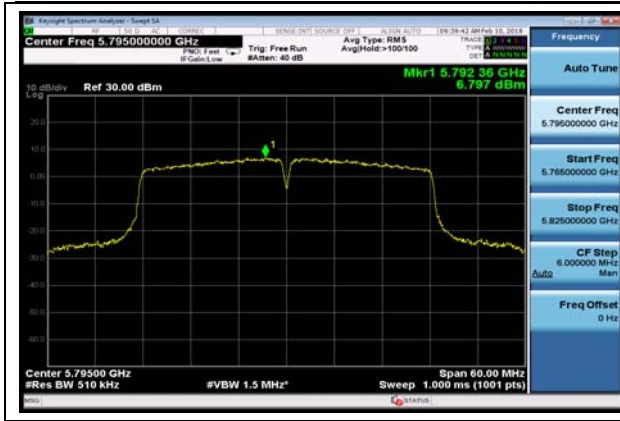


U-NII-3, 802.11ac VHT20, Channel No.: 165



U-NII-3, 802.11ac VHT40, Channel No.: 159

U-NII-3, 802.11ac VHT80, Channel No.: 155



## 5.5. Unwanted Emission

### Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

### Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10-2013. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz (detector: Peak):

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz /VBW=10Hz, when duty cycle is no less than 98%

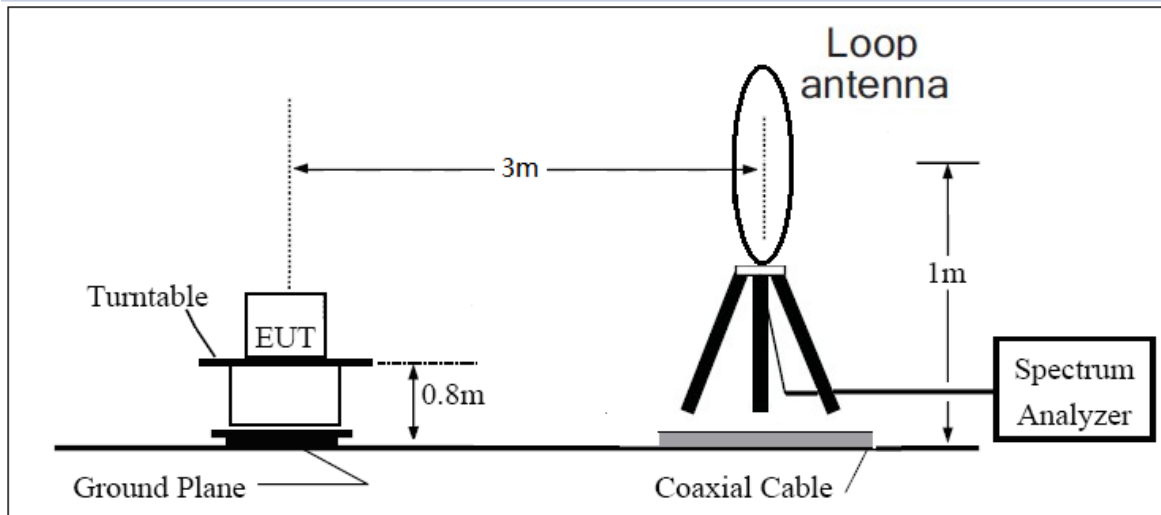
VBW $\geq$  1/T when duty cycle is less than 98%,where T is transmit on time

Sweep=AUTO

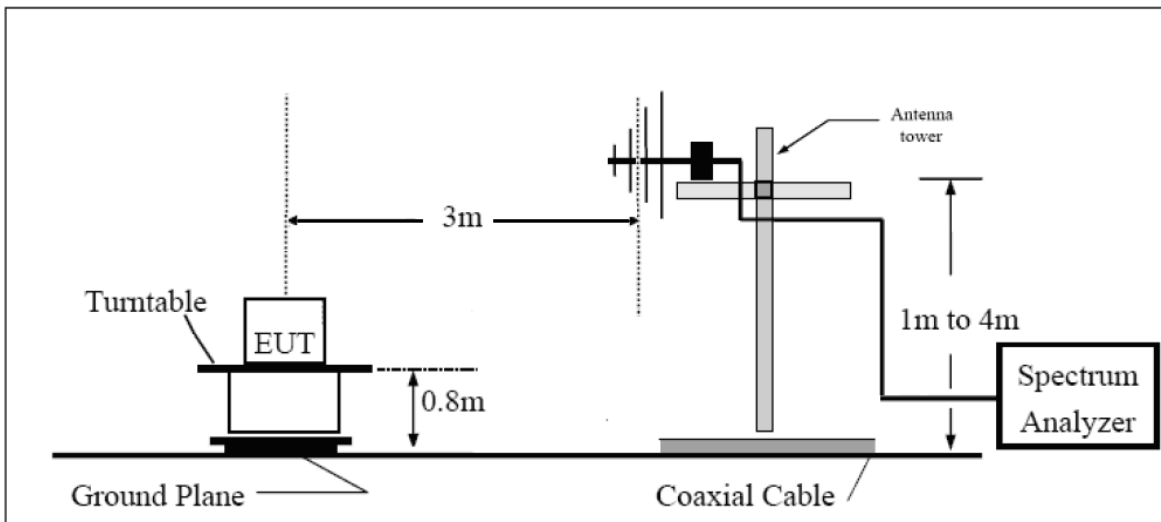
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

The test is in transmitting mode.

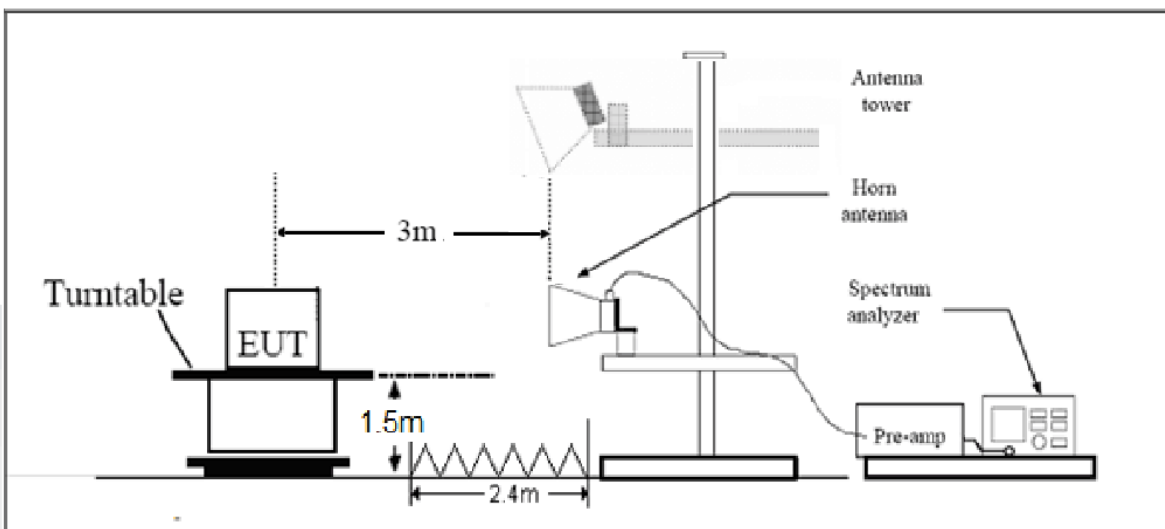
**9KHz~~~30MHz**



**30MHz~~~ 1GHz**



**Above 1GHz**



Note: Area side:2.4mX3.6m



## Limits

- (1) For transmitters operating in the 5725-5850 MHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- (2) 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(68.2dBμV/m).
- (3) 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(68.2dBμV/m).
- (4) 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(68.2dBμV/m).

Note: the following formula is used to convert the EIRP to field strength

§1、  $E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{meters}]) + 104.77$ , where E = field strength and

d = distance at which field strength limit is specified in the rules;

§2、  $E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2$ , for d = 3 meters

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

| Frequency of emission (MHz) | Field strength(uV/m) | Field strength(dBuV/m) |
|-----------------------------|----------------------|------------------------|
| 0.009–0.490                 | 2400/F(kHz)          | /                      |
| 0.490–1.705                 | 24000/F(kHz)         | /                      |
| 1.705–30.0                  | 30                   | /                      |
| 30-88                       | 100                  | 40                     |
| 88-216                      | 150                  | 43.5                   |
| 216-960                     | 200                  | 46                     |
| Above960                    | 500                  | 54                     |

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46      |
| 2.1735 - 2.1905            | 16.80425 - 16.80475   | 960 - 1240      | 7.25 - 7.75      |
| 4.125 - 4.128              | 25.5 - 25.67          | 1300 - 1427     | 8.025 - 8.5      |
| 4.17725 - 4.17775          | 37.5 - 38.25          | 1435 - 1626.5   | 9.0 - 9.2        |
| 4.20725 - 4.20775          | 73 - 74.6             | 1645.5 - 1646.5 | 9.3 - 9.5        |
| 6.215 - 6.218              | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7      |
| 6.26775 - 6.26825          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 123 - 138             | 2200 - 2300     | 14.47 - 14.5     |
| 8.291 - 8.294              | 149.9 - 150.05        | 2310 - 2390     | 15.35 - 16.2     |
| 8.362 - 8.366              | 156.52475 - 156.52525 | 2483.5 - 2500   | 17.7 - 21.4      |
| 8.37625 - 8.38675          | 156.7 - 156.9         | 2690 - 2900     | 22.01 - 23.12    |
| 8.41425 - 8.41475          | 162.0125 - 167.17     | 3260 - 3267     | 23.6 - 24.0      |
| 12.29 - 12.293             | 167.72 - 173.2        | 3332 - 3339     | 31.2 - 31.8      |
| 12.51975 - 12.52025        | 240 - 285             | 3345.8 - 3358   | 36.43 - 36.5     |
| 12.57675 - 12.57725        | 322 - 335.4           | 3600 - 4400     | ( <sup>2</sup> ) |
| 13.36 - 13.41              |                       |                 |                  |

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

| Frequency    | Uncertainty |
|--------------|-------------|
| 9KHz-30MHz   | 3.55 dB     |
| 30MHz-200MHz | 4.19 dB     |
| 200MHz-1GHz  | 3.63 dB     |
| 1GHz-26.5G   | 3.68 dB     |
| 26.5G-40GHz  | 4.76dB      |

**Test Results:**

The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ac mode for V20MHz/V40MHz, therefore investigated worst case to representative mode in test report.

The signal beyond the limit is carrier.

| Band                                                                   | T <sub>on</sub> (ms) | T <sub>(on+off)</sub> (ms) | Duty cycle | Duty cycle correction Factor(dB) |
|------------------------------------------------------------------------|----------------------|----------------------------|------------|----------------------------------|
| 802.11a                                                                | 1.39                 | 1.45                       | 0.96       | 0.17                             |
| 802.11n HT20                                                           | 1.28                 | 1.35                       | 0.95       | 0.24                             |
| 802.11n HT40                                                           | 0.63                 | 0.69                       | 0.91       | 0.40                             |
| 802.11ac VHT20                                                         | 0.68                 | 0.73                       | 0.93       | 0.29                             |
| 802.11ac VHT40                                                         | 0.35                 | 0.40                       | 0.87       | 0.60                             |
| 802.11ac VHT80                                                         | 0.19                 | 0.52                       | 0.36       | 4.40                             |
| Note: when Duty cycle>0.98, Duty cycle correction Factor not required. |                      |                            |            |                                  |

**U-NII-1****802.11a-Channel 36**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5149            | 64.807        | --               | 150         | V            | 135           | 0.17                             | 64.977                    | 9.023       | 74             |
| 5149            | --            | 49.260           | 150         | V            | 135           | 0.17                             | 49.43                     | 4.57        | 54             |

**802.11a-Channel 48**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5358            | 59.775        | --               | 150         | V            | 135           | 0.17                             | 59.945                    | 14.055      | 74             |
| 5358            | --            | 47.989           | 150         | V            | 135           | 0.17                             | 48.159                    | 5.841       | 54             |

**802.11n HT20-Channel 36**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5148            | 65.941        | --               | 200.0       | V            | 135           | 0.24                             | 66.181                    | 7.819       | 74             |
| 5148            | --            | 49.676           | 200.0       | V            | 135           | 0.24                             | 49.916                    | 4.084       | 54             |

**802.11n HT20-Channel 48**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5358            | 59.832        | --               | 200.0       | V            | 135           | 0.24                             | 60.072                    | 13.928      | 74             |
| 5354            | --            | 47.998           | 200.0       | V            | 135           | 0.24                             | 48.238                    | 5.762       | 54             |

**802.11n HT40-Channel 38**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5149            | 71.252        | --               | 150         | V            | 135           | 0.40                             | 71.652                    | 2.348       | 74             |
| 5149            | --            | 51.593           | 150         | V            | 135           | 0.40                             | 51.993                    | 2.007       | 54             |

**802.11n HT40-Channel 46**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5358            | 60.458        | --               | 150         | V            | 135           | 0.40                             | 60.858                    | 13.142      | 74             |
| 5355            | --            | 47.878           | 150         | V            | 135           | 0.40                             | 48.278                    | 5.722       | 54             |

**802.11ac VHT80 –Channel 42**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5148            | 67.410        | --               | 200.0       | V            | 135           | 4.40                             | 71.810                    | 2.190       | 74             |
| 5149            | --            | 47.444           | 200.0       | V            | 135           | 4.40                             | 51.844                    | 2.156       | 54             |





## U-NII-2A

## 802.11a-Channel 52

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5149            | 56.218        | --               | 150         | V            | 135           | 0.17                             | 56.388                    | 17.612      | 74             |
| 5149            | --            | 41.432           | 150         | V            | 135           | 0.17                             | 41.602                    | 12.398      | 54             |

## 802.11a-Channel 64

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5350            | 64.228        | --               | 150         | V            | 135           | 0.17                             | 64.398                    | 9.602       | 74             |
| 5350            | --            | 41.357           | 150         | V            | 135           | 0.17                             | 41.527                    | 12.473      | 54             |

## 802.11n HT20-Channel 52

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5149            | 57.114        | --               | 200.0       | V            | 135           | 0.24                             | 57.354                    | 16.646      | 74             |
| 5149            | --            | 39.359           | 200.0       | V            | 135           | 0.24                             | 39.599                    | 14.401      | 54             |

## 802.11n HT20-Channel 64

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5350            | 64.528        | --               | 200.0       | V            | 135           | 0.24                             | 64.768                    | 9.232       | 74             |
| 5350            | --            | 42.561           | 200.0       | V            | 135           | 0.24                             | 42.801                    | 11.199      | 54             |

## 802.11n HT40-Channel 54

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5149            | 58.977        | --               | 150         | V            | 135           | 0.40                             | 59.377                    | 14.623      | 74             |
| 5149            | --            | 41.124           | 150         | V            | 135           | 0.40                             | 41.524                    | 12.476      | 54             |

## 802.11n HT40-Channel 62

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5350            | 65.171        | --               | 150         | V            | 135           | 0.40                             | 65.571                    | 8.429       | 74             |
| 5350            | --            | 41.385           | 150         | V            | 135           | 0.40                             | 41.785                    | 12.215      | 54             |

**802.11ac VHT80 –Channel 58**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5350            | 69.348        | --               | 200.0       | V            | 135           | 4.40                             | 73.748                    | 0.252       | 74             |
| 5350            | --            | 39.742           | 200.0       | V            | 135           | 4.40                             | 44.142                    | 9.858       | 54             |

**U-NII-2C****802.11a-Channel 100**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5459            | 62.061        | --               | 150         | V            | 135           | 0.17                             | 62.231                    | 11.769      | 74             |
| 5459            | --            | 40.207           | 150         | V            | 135           | 0.17                             | 40.377                    | 13.623      | 54             |

**802.11a-Channel 140**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5726            | 61.580        | --               | 150         | V            | 135           | 0.17                             | 61.750                    | 12.250      | 74             |

**802.11n HT20-Channel 100**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5459            | 61.660        | --               | 200.0       | V            | 135           | 0.24                             | 61.900                    | 12.100      | 74             |
| 5459            | --            | 40.882           | 200.0       | V            | 135           | 0.24                             | 41.122                    | 12.878      | 54             |

**802.11n HT20-Channel 140**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5725            | 67.075        | --               | 200.0       | V            | 135           | 0.24                             | 67.315                    | 6.685       | 74             |

**802.11n HT40-Channel 102**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5459            | 67.452        | --               | 150         | V            | 135           | 0.40                             | 67.852                    | 6.148       | 74             |
| 5459            | --            | 37.111           | 150         | V            | 135           | 0.40                             | 37.511                    | 16.489      | 54             |

**802.11n HT40-Channel 134**

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5725            | 66.011        | --               | 150         | V            | 135           | 0.40                             | 66.411                    | 7.589       | 74             |



## U-NII-3

## 802.11a-Channel 149

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5646            | 62.362        | --               | 200.0       | V            | 135           | 0.17                             | 62.532                    | 11.468      | 74             |

## 802.11a-Channel165

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5925            | 62.495        | --               | 200.0       | V            | 135           | 0.17                             | 62.665                    | 11.335      | 74             |

## 802.11n HT20-Channel 149

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5647            | 61.588        | --               | 150         | V            | 135           | 0.24                             | 61.828                    | 12.172      | 74             |

## 802.11n HT20-Channel 165

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5928            | 62.533        | --               | 150         | V            | 135           | 0.24                             | 62.773                    | 11.227      | 74             |

## 802.11n HT40-Channel 151

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5645            | 61.149        | --               | 200.0       | V            | 135           | 0.40                             | 61.549                    | 12.451      | 74             |

## 802.11n HT40-Channel 159

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5929            | 62.391        | --               | 200.0       | V            | 135           | 0.40                             | 62.791                    | 11.209      | 74             |

## 802.11ac VHT80- Channel 155

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Duty cycle correction Factor(dB) | conclusion value (dBuV/m) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------|-------------|--------------|---------------|----------------------------------|---------------------------|-------------|----------------|
| 5649            | 60.253        | --               | 200.0       | V            | 135           | 4.40                             | 64.653                    | 9.347       | 74             |

## Result of RE

### Test result

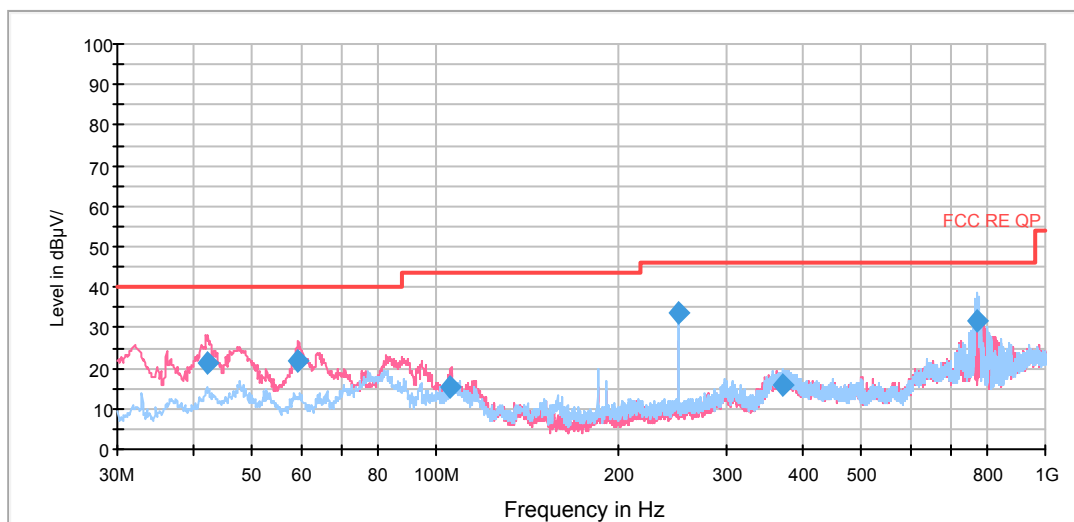
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the Emissions in the frequency band 9kHz-30MHz and 26.5GHz-40GHz are more than 20dB below the limit are not reported.

**After the pre test, Antenna 1 was selected as the worst antenna.**

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11ac(HT20), Channel 165 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

### Continuous TX mode:

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBuV/m) | Reading value (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------------|------------------------|-------------|--------------|---------------|---------------------|-------------|----------------|
| 42.108760       | 21.5                | 39.6                   | 100.0       | V            | 306.0         | -18.1               | 18.5        | 40.0           |
| 59.475090       | 21.6                | 43.2                   | 100.0       | V            | 220.0         | -21.6               | 18.4        | 40.0           |
| 105.797744      | 15.1                | 39.8                   | 121.0       | V            | 7.0           | -24.7               | 28.4        | 43.5           |
| 250.003750      | 33.5                | 58.5                   | 119.0       | H            | 82.0          | -25.0               | 12.5        | 46.0           |
| 370.860750      | 15.7                | 34.9                   | 100.0       | H            | 263.0         | -19.2               | 30.3        | 46.0           |
| 774.252250      | 31.5                | 47.5                   | 100.0       | H            | 107.0         | -16.0               | 14.5        | 46.0           |

**Remark: 1. Quasi-Peak = Reading value + Correction factor**

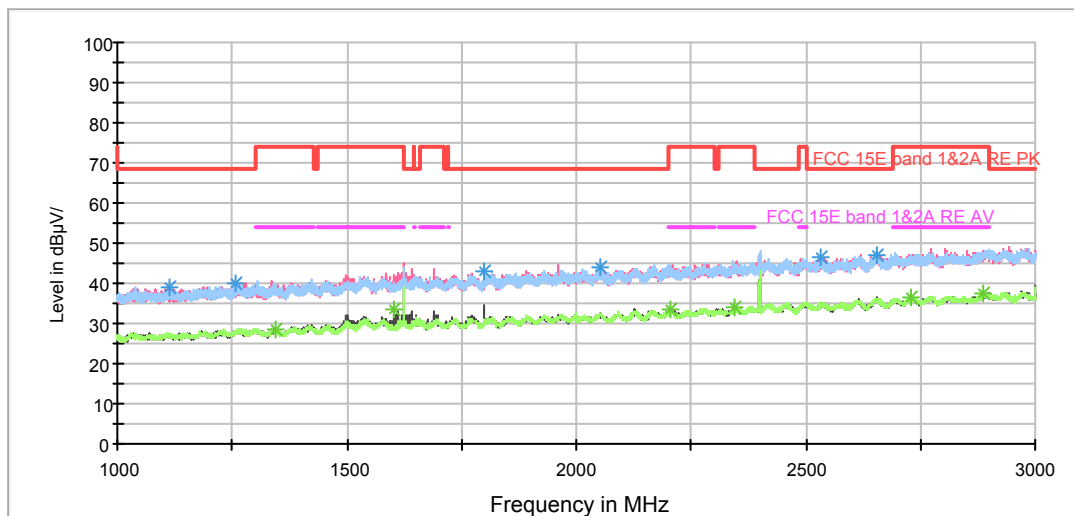
**2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)**

**3. Margin = Limit – Quasi-Peak**



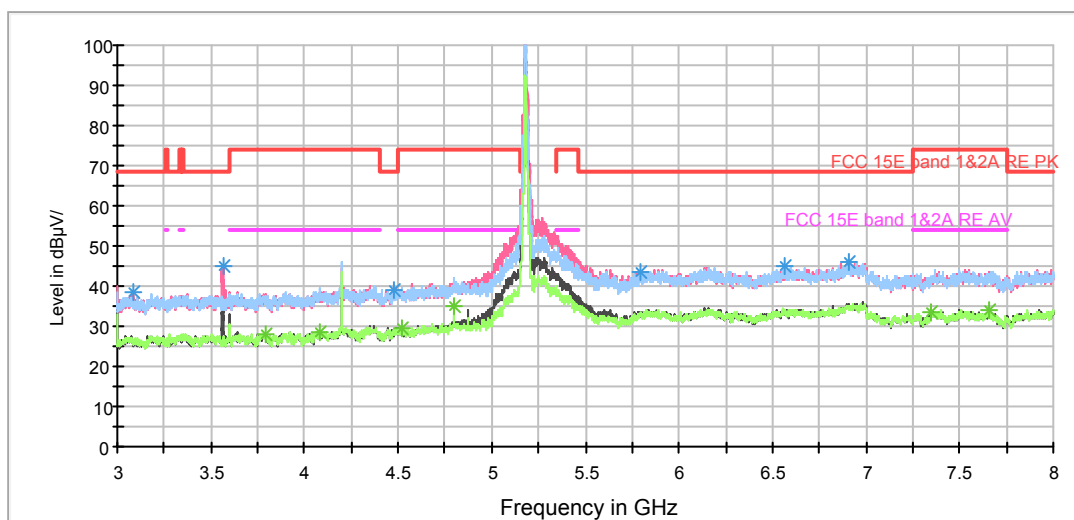
802.11a CH36

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz