

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



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



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



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

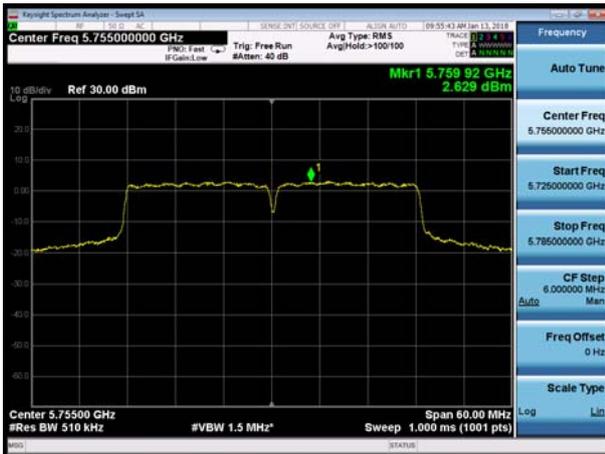


U-NII-3, 802.11ac HT20, Channel No.: 165





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



### U-NII-3, 802.11ac HT80, Channel No.: 155



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





Antenna 3

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



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



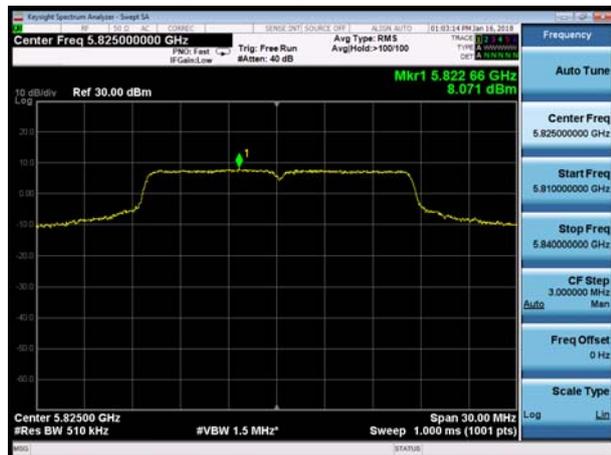
U-NII-3, 802.11a, Channel No.: 157



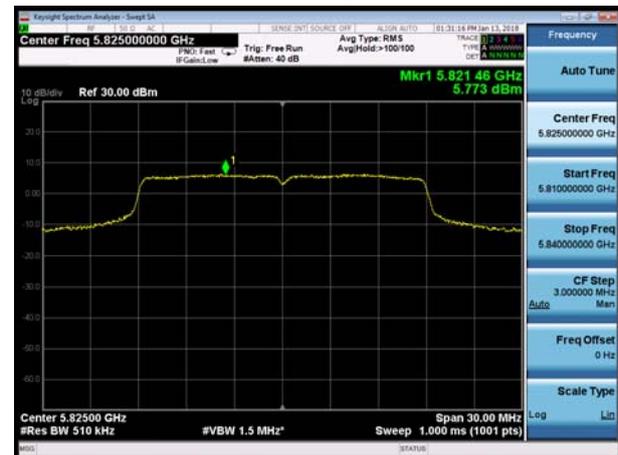
U-NII-3, 802.11n HT20, Channel No.: 157



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



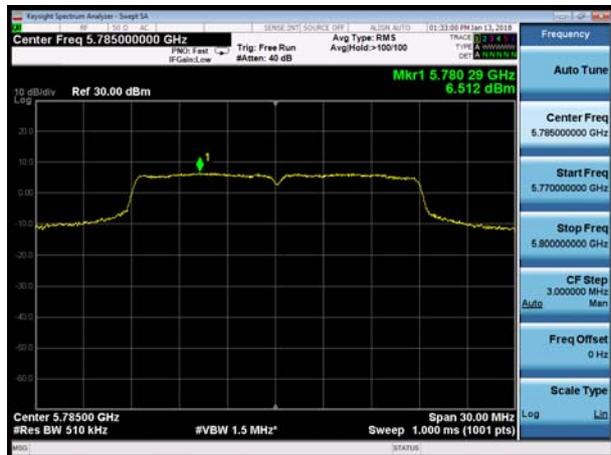
U-NII-3, 802.11ac HT20, Channel No.: 149



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



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

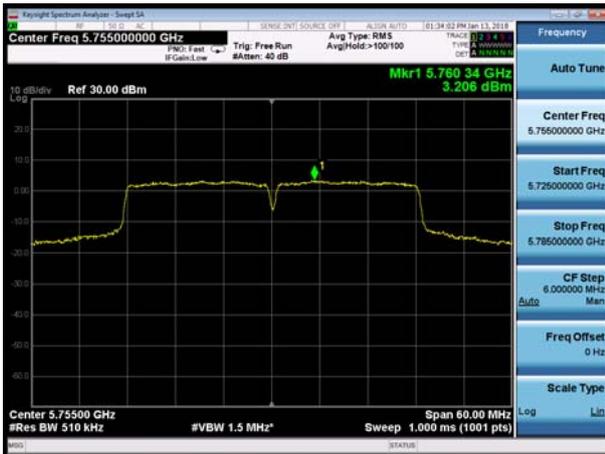


U-NII-3, 802.11ac HT20, Channel No.: 165

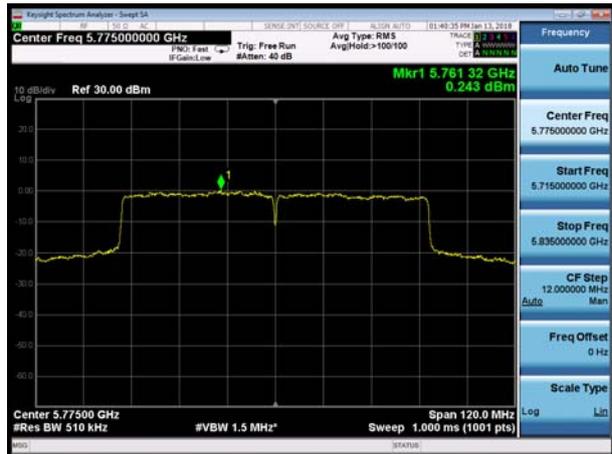




### U-NII-3, 802.11ac HT40, Channel No.: 151



### U-NII-3, 802.11ac HT80, Channel No.: 155



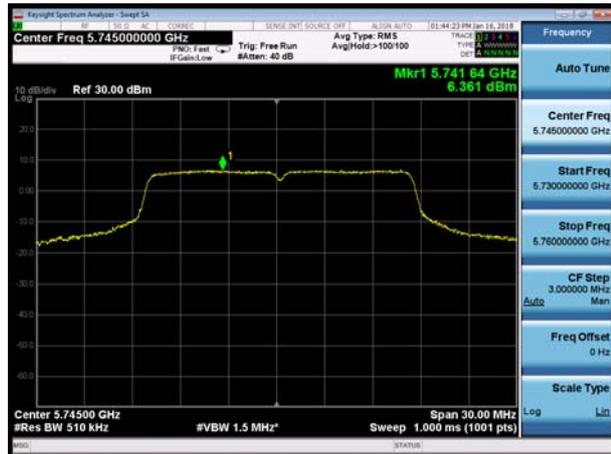
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Antenna 4

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



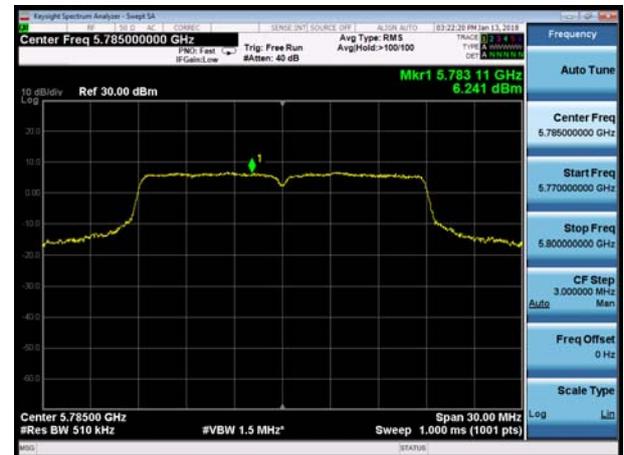
U-NII-3, 802.11n HT20, Channel No.: 149



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

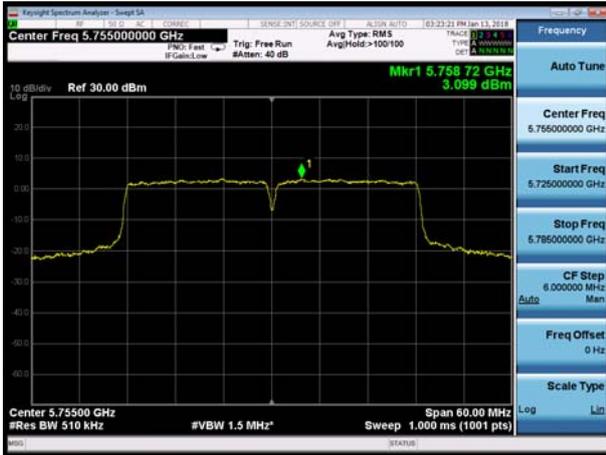


U-NII-3, 802.11n HT20, Channel No.: 165





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



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



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



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

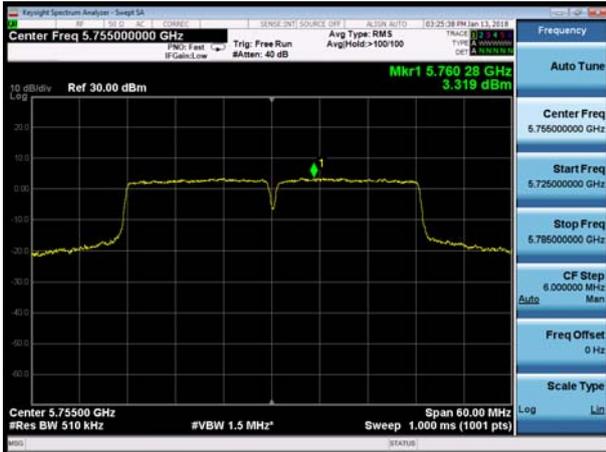


U-NII-3, 802.11ac HT20, Channel No.: 165

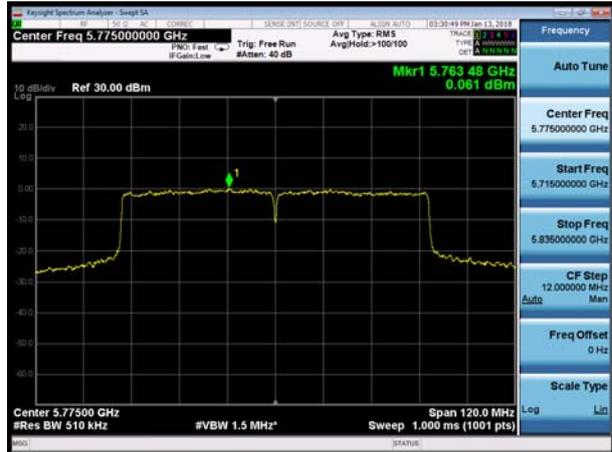




U-NII-3, 802.11ac HT40, Channel No.: 151



U-NII-3, 802.11ac HT80, Channel No.: 155



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





# MIMO with Beamforming

## Antenna 1

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



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



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



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

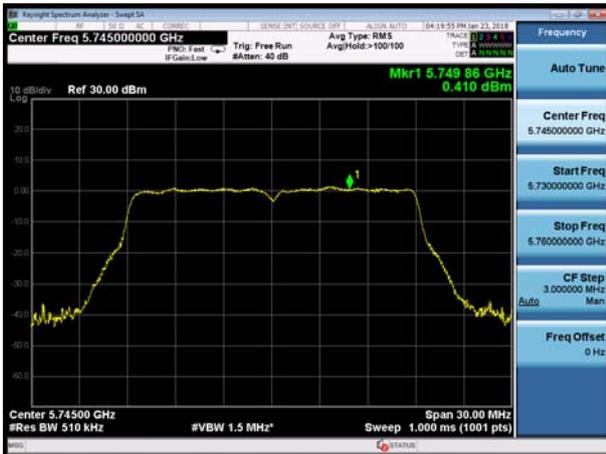


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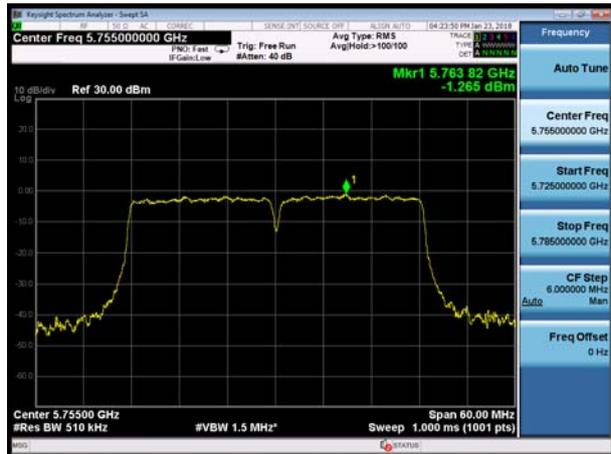




U-NII-3, 802.11ac HT20, Channel No.: 149



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



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



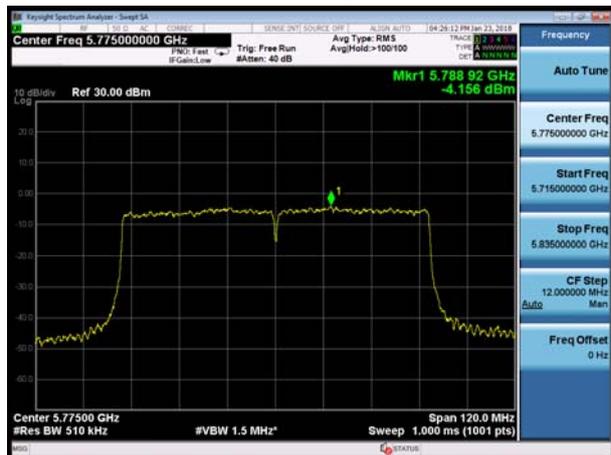
U-NII-3, 802.11ac HT40, Channel No.: 159



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



U-NII-3, 802.11ac HT80, Channel No.: 155



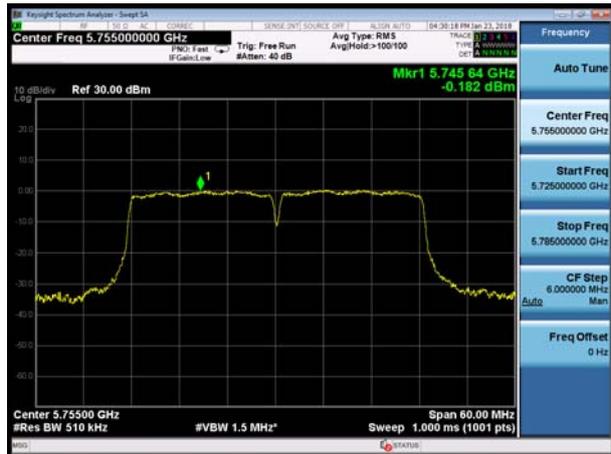


### Antenna 2

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



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



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



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



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





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



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



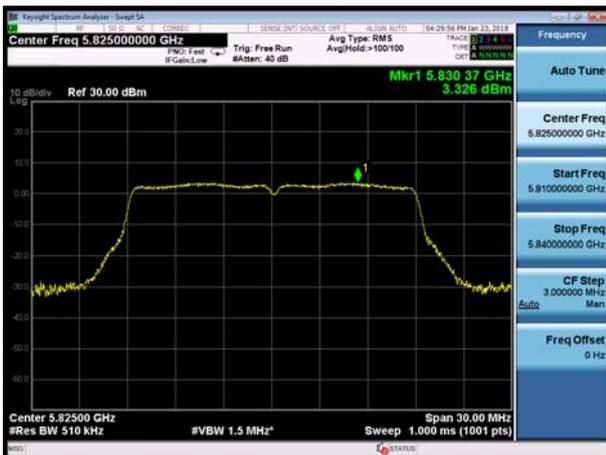
U-NII-3, 802.11ac HT20, Channel No.: 157



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



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



U-NII-3, 802.11ac HT80, Channel No.: 155





Antenna 3

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



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



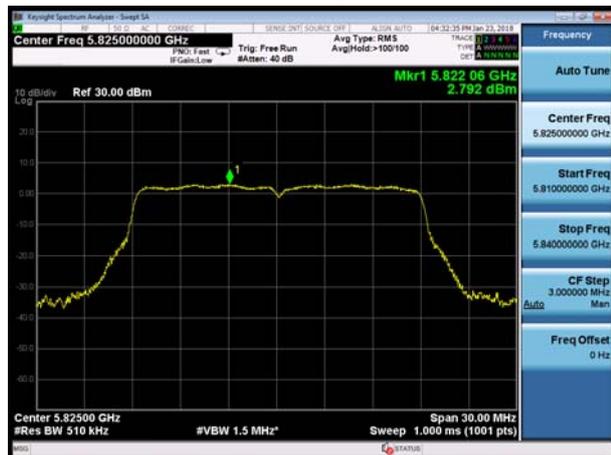
U-NII-3, 802.11n HT20, Channel No.: 157



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

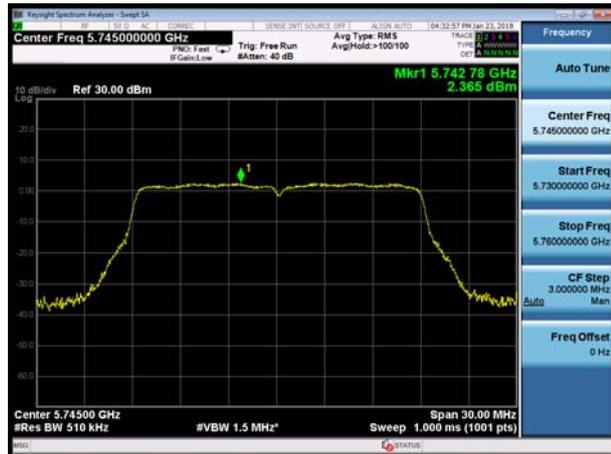


U-NII-3, 802.11n HT20, Channel No.: 165





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



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



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



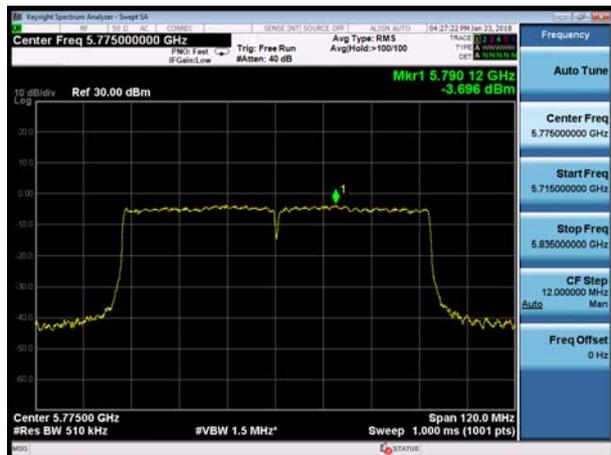
U-NII-3, 802.11ac HT40, Channel No.: 159



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



U-NII-3, 802.11ac HT80, Channel No.: 155





Antenna 4

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



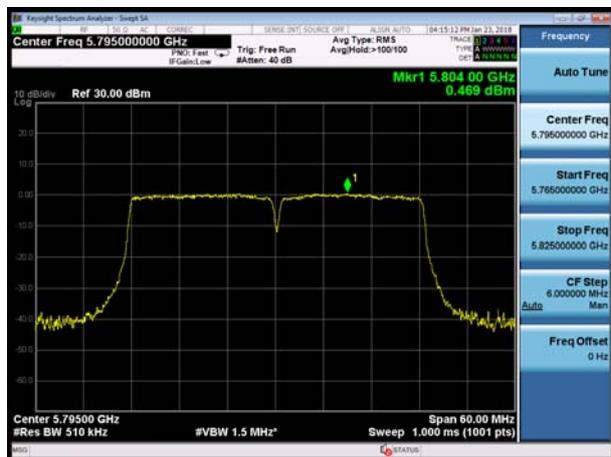
U-NII-3, 802.11n HT40, Channel No.: 151



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



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



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

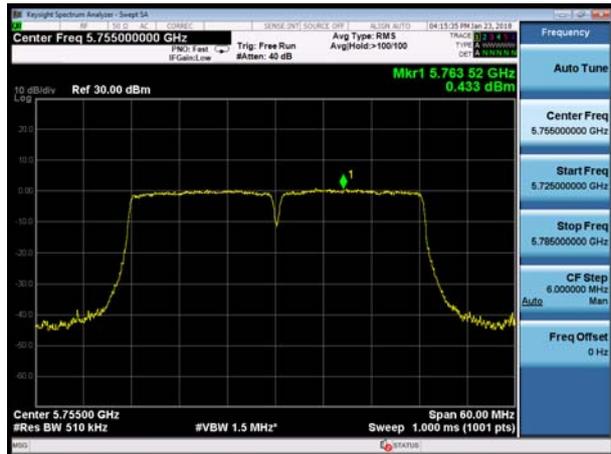




U-NII-3, 802.11ac HT20, Channel No.: 149



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



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



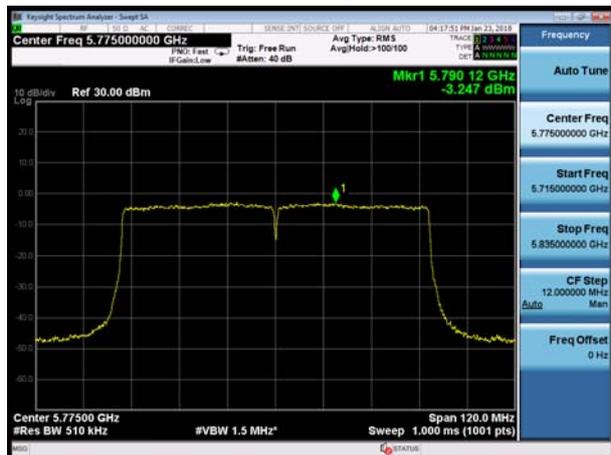
U-NII-3, 802.11ac HT40, Channel No.: 159



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



U-NII-3, 802.11ac HT80, 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):

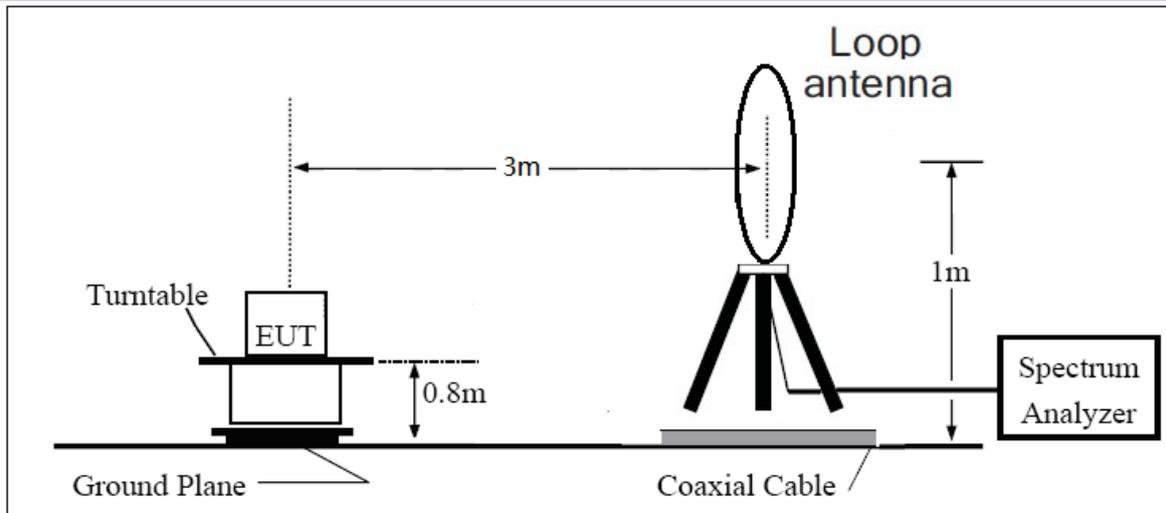
(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

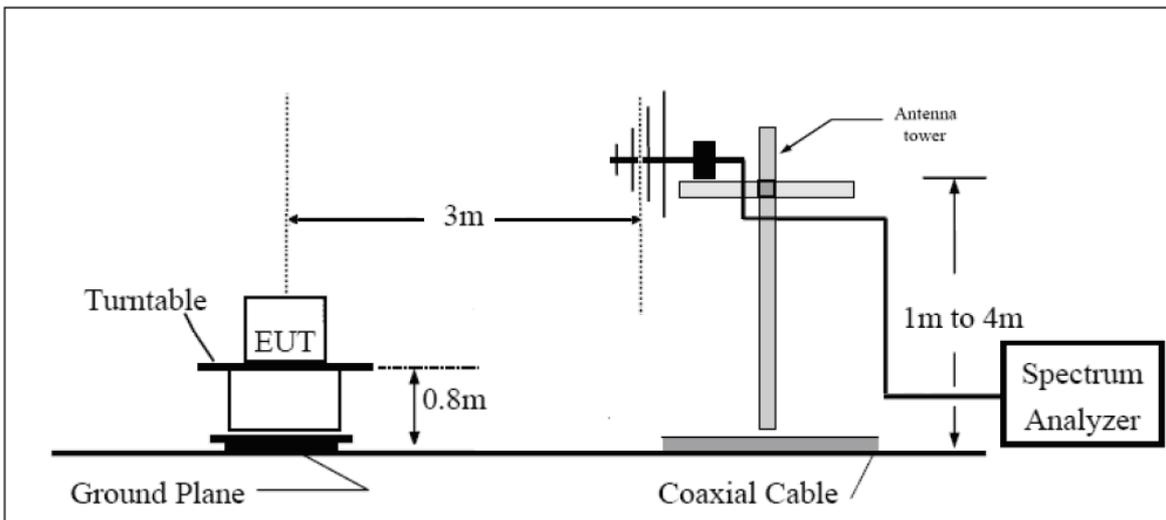
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

The test is in transmitting mode.

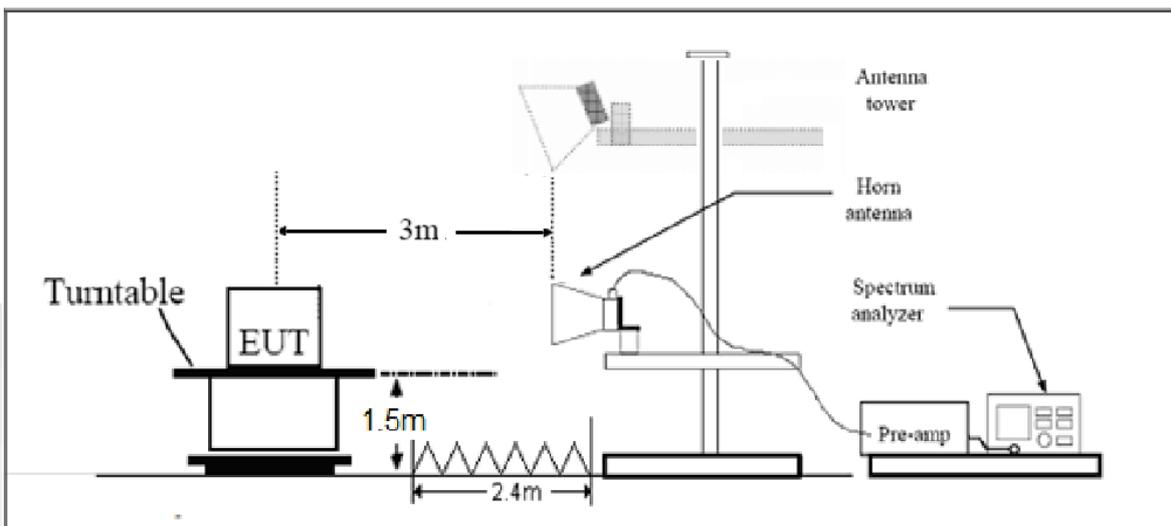
9KHz~~~30MHz



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

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

§2、  $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2$ , 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       |
| 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  $k = 1.96$ .

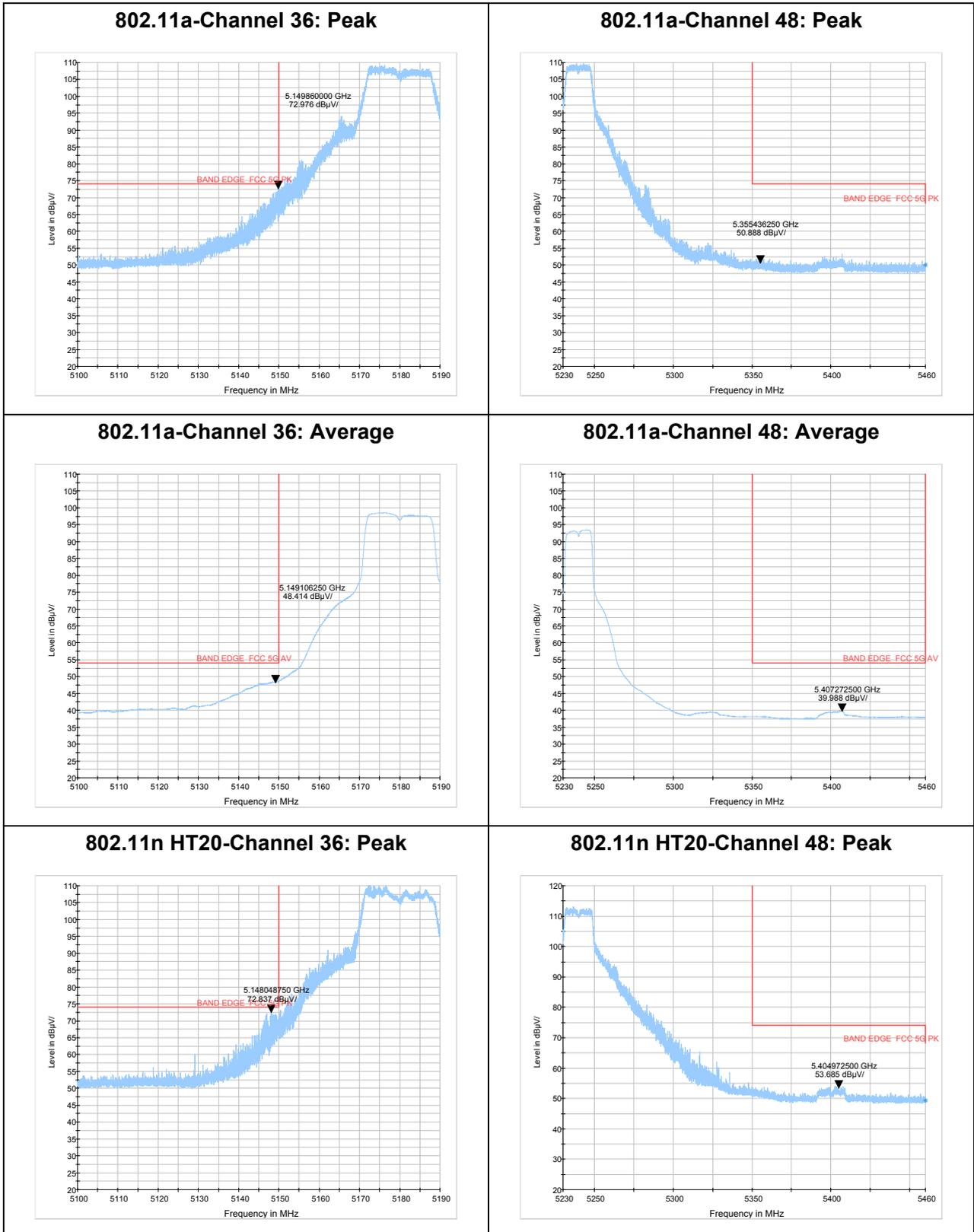
| Frequency    | Uncertainty |
|--------------|-------------|
| 9KHz-30MHz   | 3.55 dB     |
| 30MHz-200MHz | 4.19 dB     |
| 200MHz-1GHz  | 3.63 dB     |
| 1GHz-26.5G   | 3.68 dB     |
| 26.5G-40GHz  | 4.76dB      |



**Test Results:**

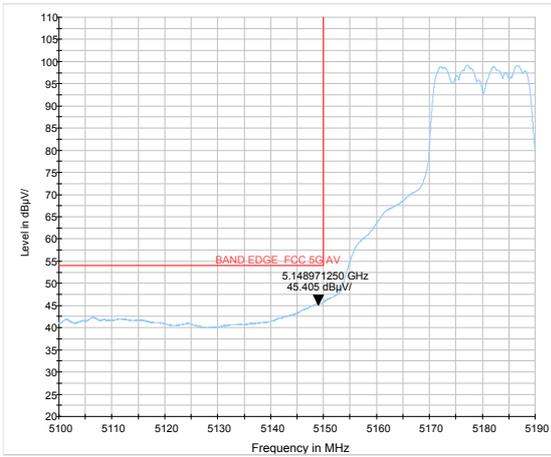
The signal beyond the limit is carrier.

**U-NII-1**

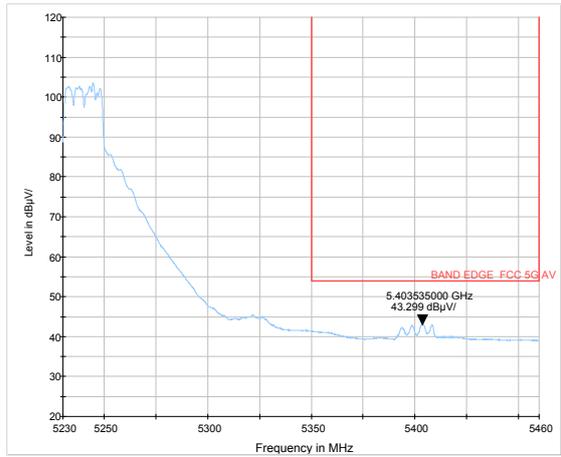




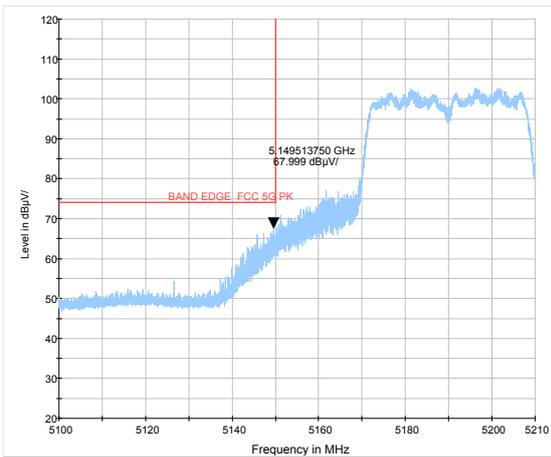
802.11n HT20-Channel 36: Average



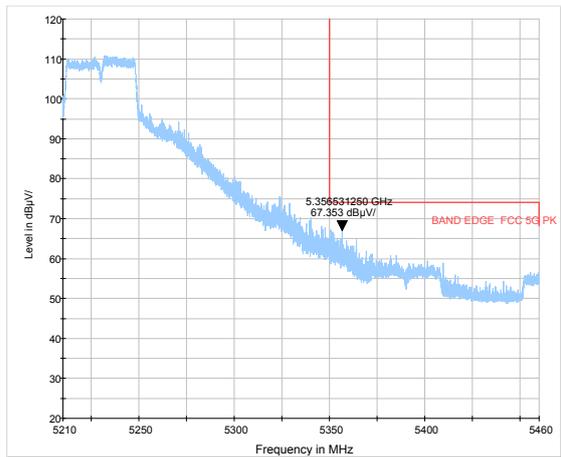
802.11n HT20-Channel 48: Average



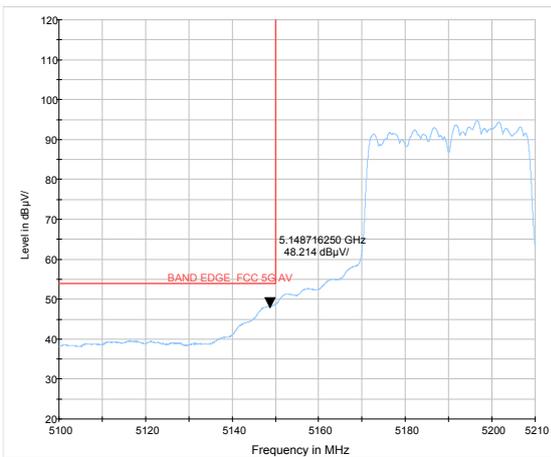
802.11n HT40-Channel 38: Peak



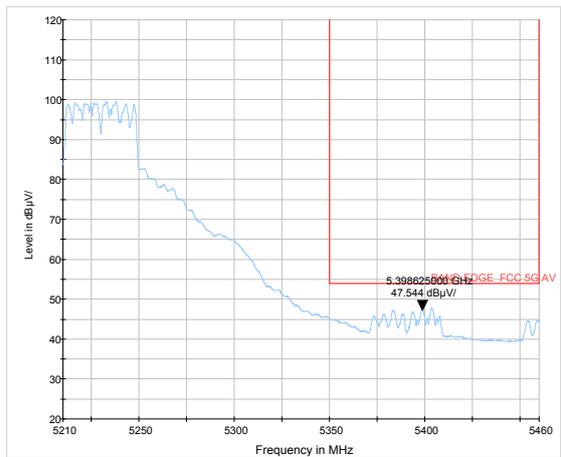
802.11n HT40-Channel 46: Peak



802.11n HT40-Channel 38: Average

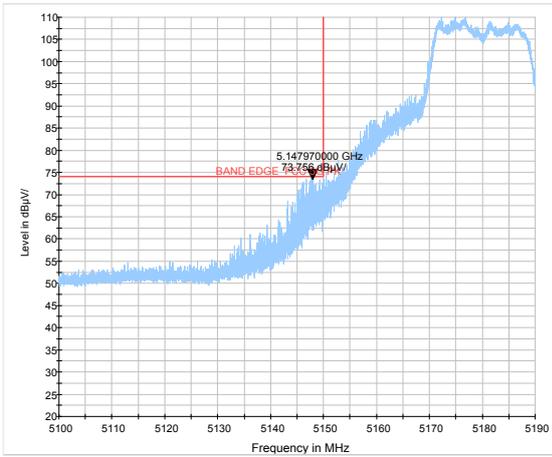


802.11n HT40-Channel 46: Average

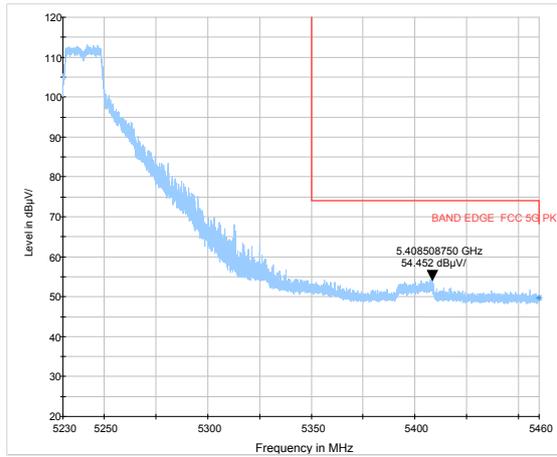




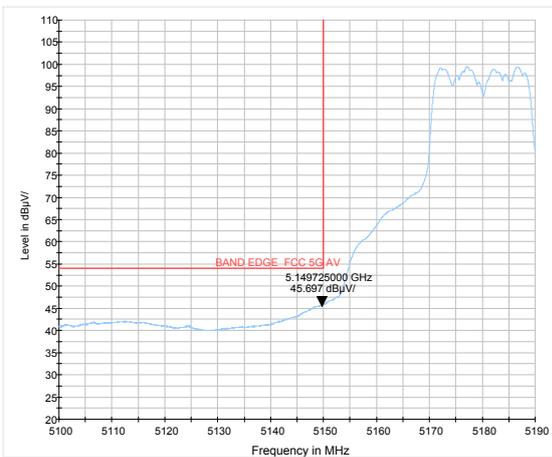
802.11ac HT20 -Channel 36: Peak



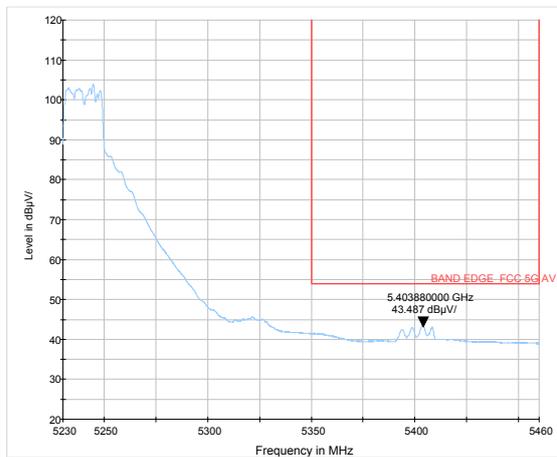
802.11ac HT20 -Channel 48: Peak



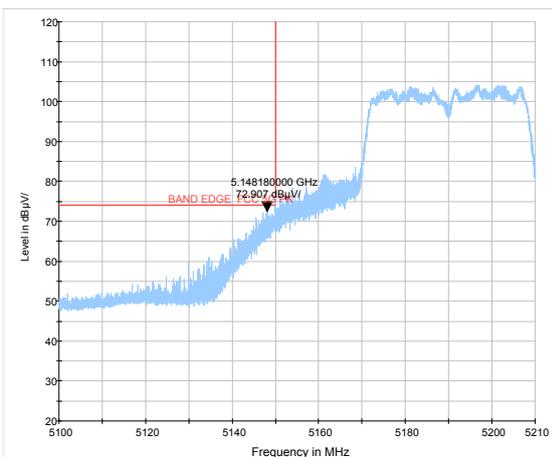
802.11ac HT20-Channel 36: Average



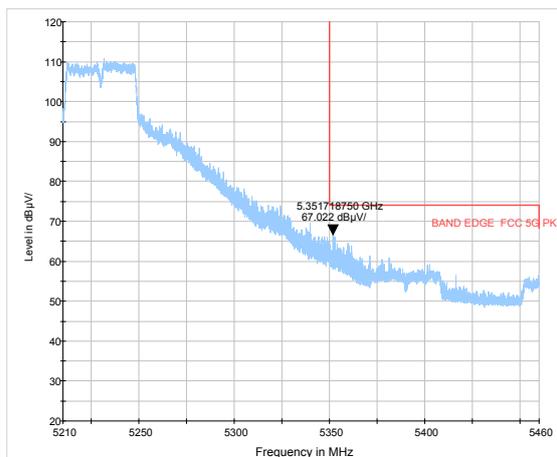
802.11ac HT20 -Channel 48: Average



802.11ac HT40-Channel 38: Peak

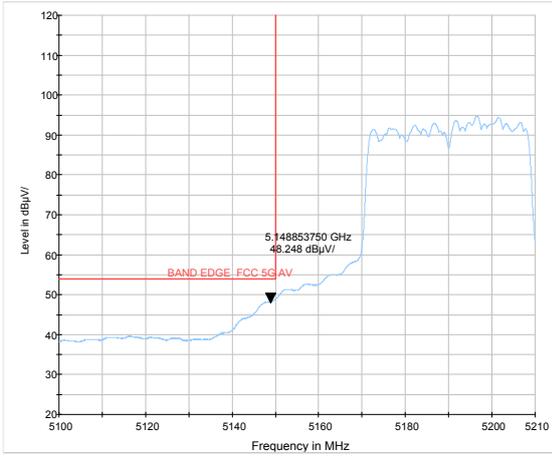


802.11ac HT40-Channel 46: Peak

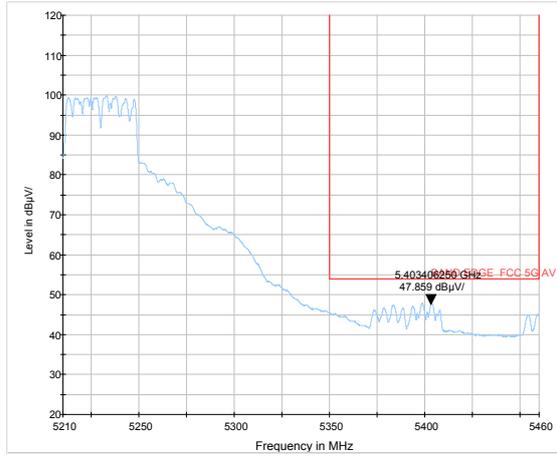




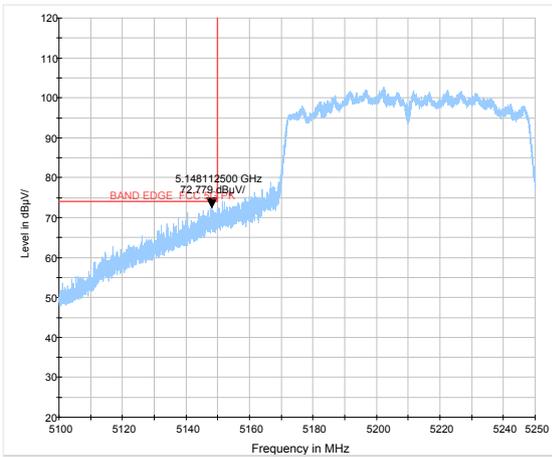
802.11ac HT40-Channel 38: Average



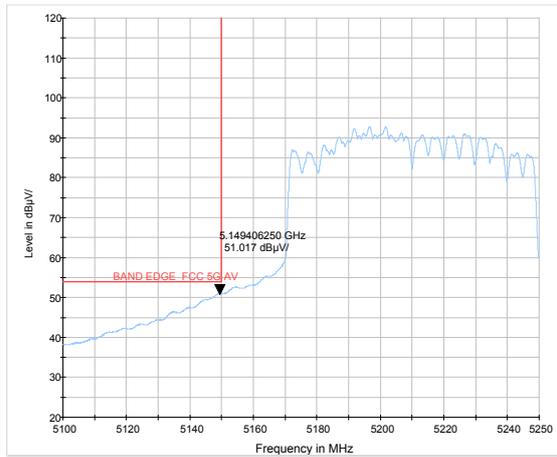
802.11ac HT40-Channel 46: Average



802.11ac HT80 -Channel 42: Peak



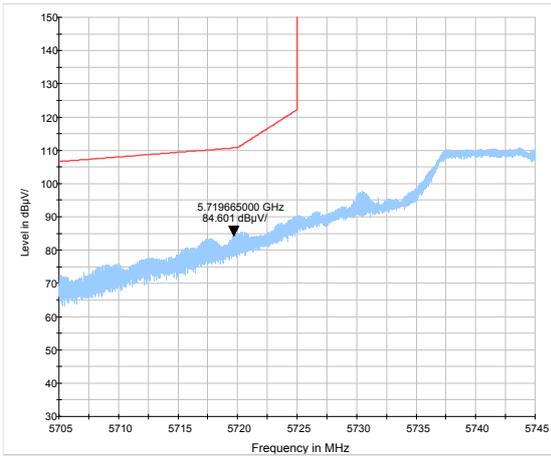
802.11ac HT80- Channel 42: Average



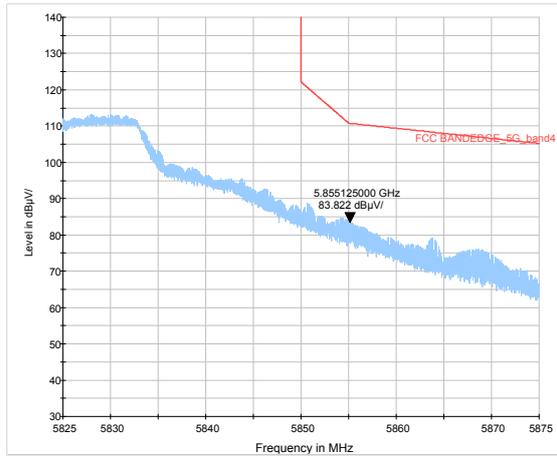


U-NII-3

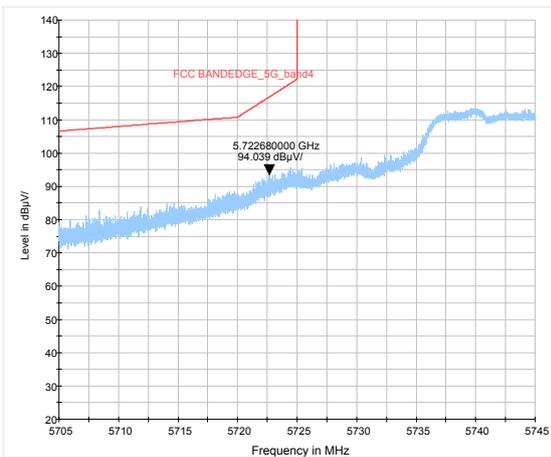
802.11a-Channel 149: Peak



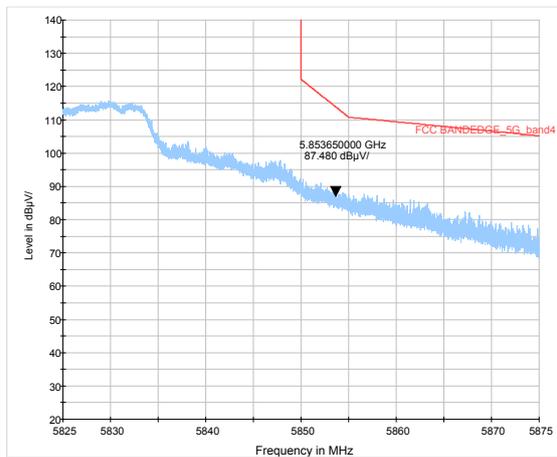
802.11a-Channel 165: Peak



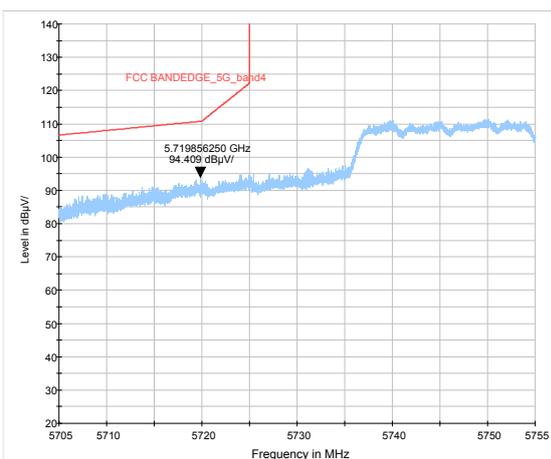
802.11n HT20-Channel 149: Peak



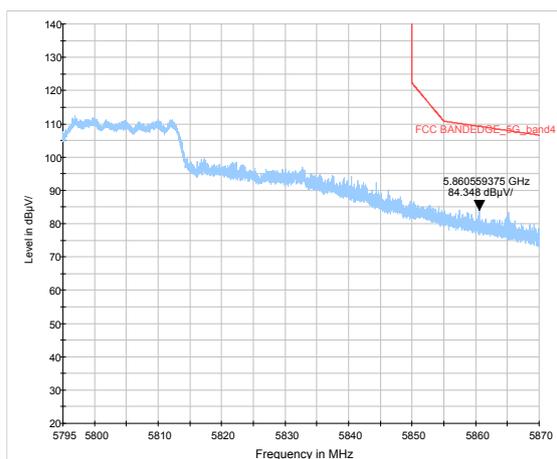
802.11n HT20-Channel 165: Peak



802.11n HT40-Channel 151: Peak

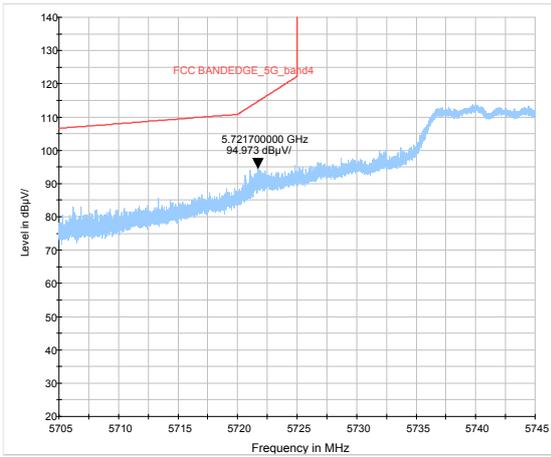


802.11n HT40-Channel 159: Peak

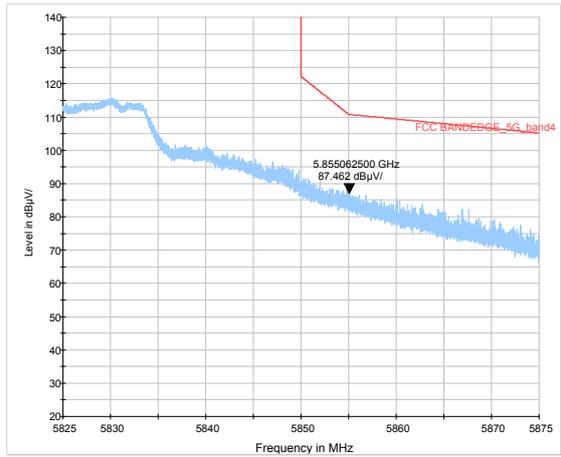




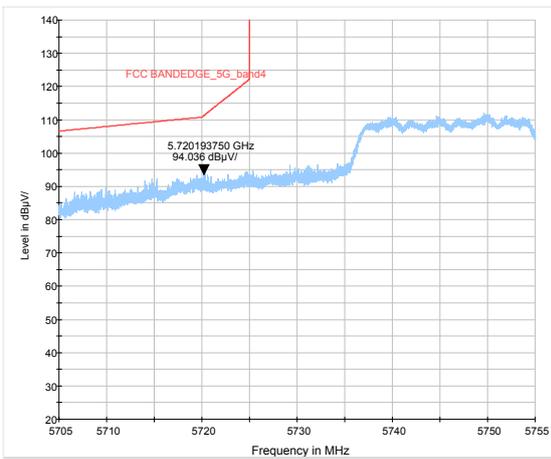
### 802.11ac HT20-Channel 149: Peak



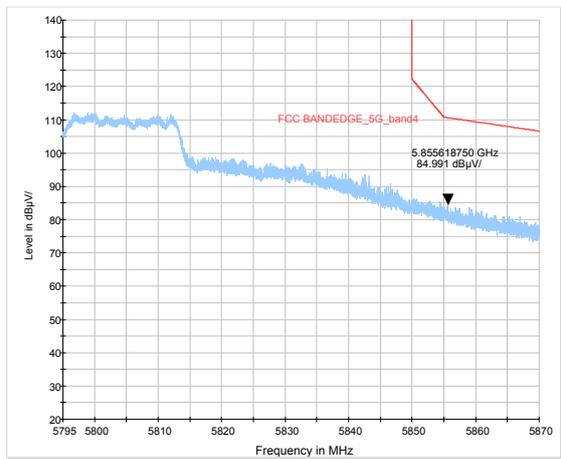
### 802.11ac HT20-Channel 165: Peak



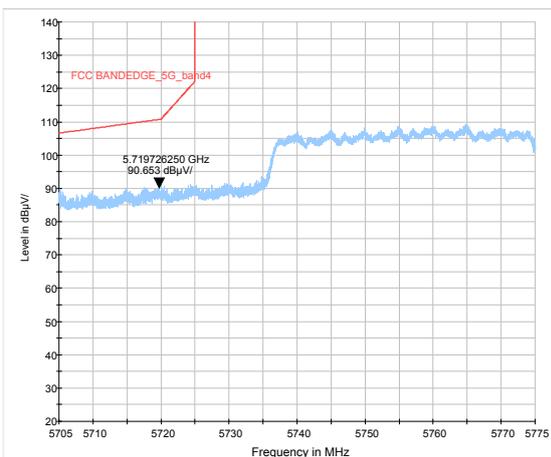
### 802.11ac HT40-Channel 151: Peak



### 802.11ac HT40-Channel 159: Peak



### 802.11ac HT80- Channel 155: Peak



**Result of RE**

**Test result**

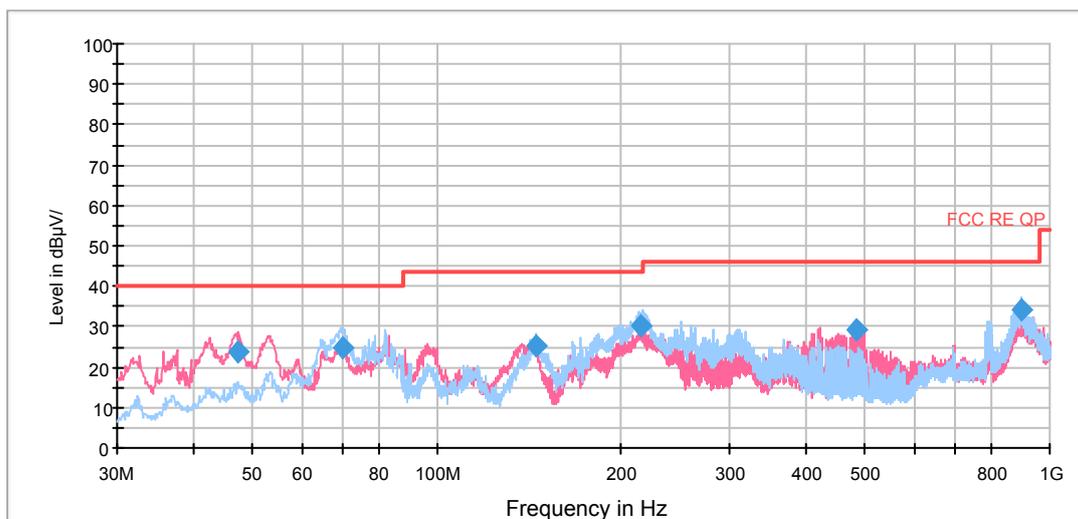
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and 9KHz-30MHz, the emissions more than 20 dB below the permissible value are not reported.

**After the pre test, Antenna 3 was selected as the worst antenna.**

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11a, Channel 36 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



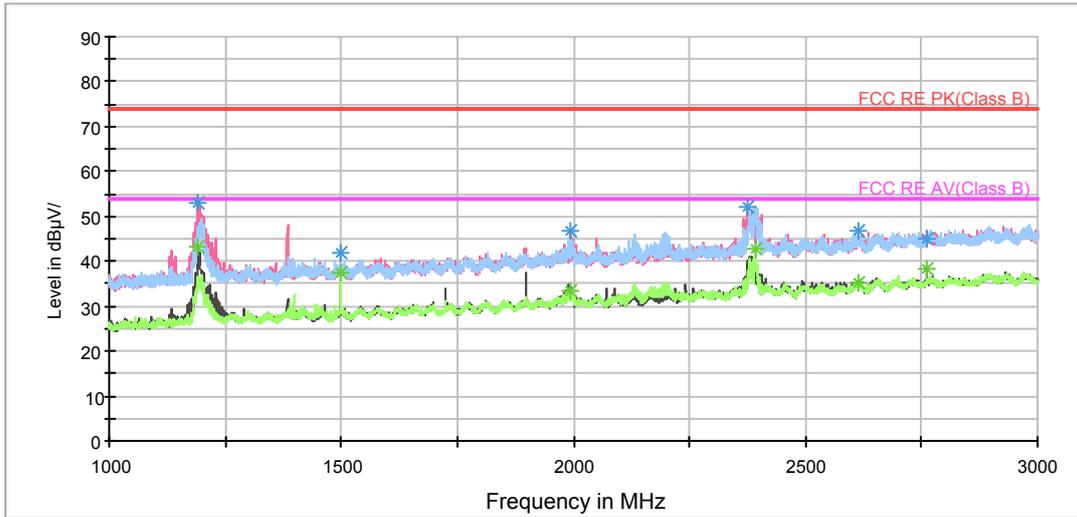
Radiates Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBuV/m) | Reading value (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------------|------------------------|-------------|--------------|---------------|---------------------|-------------|----------------|
| 47.220403       | 23.5                | 41.4                   | 100.0       | V            | 69.0          | -17.9               | 16.5        | 40.0           |
| 70.079362       | 24.6                | 51.2                   | 121.0       | H            | 40.0          | -26.6               | 15.4        | 40.0           |
| 144.499797      | 25.4                | 53.6                   | 125.0       | H            | 176.0         | -28.2               | 18.1        | 43.5           |
| 215.215500      | 30.3                | 56.0                   | 125.0       | H            | 192.0         | -25.7               | 13.2        | 43.5           |
| 483.305250      | 29.1                | 48.9                   | 100.0       | V            | 173.0         | -19.8               | 16.9        | 46.0           |
| 900.000000      | 34.3                | 47.4                   | 120.0       | H            | 125.0         | -13.1               | 11.7        | 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

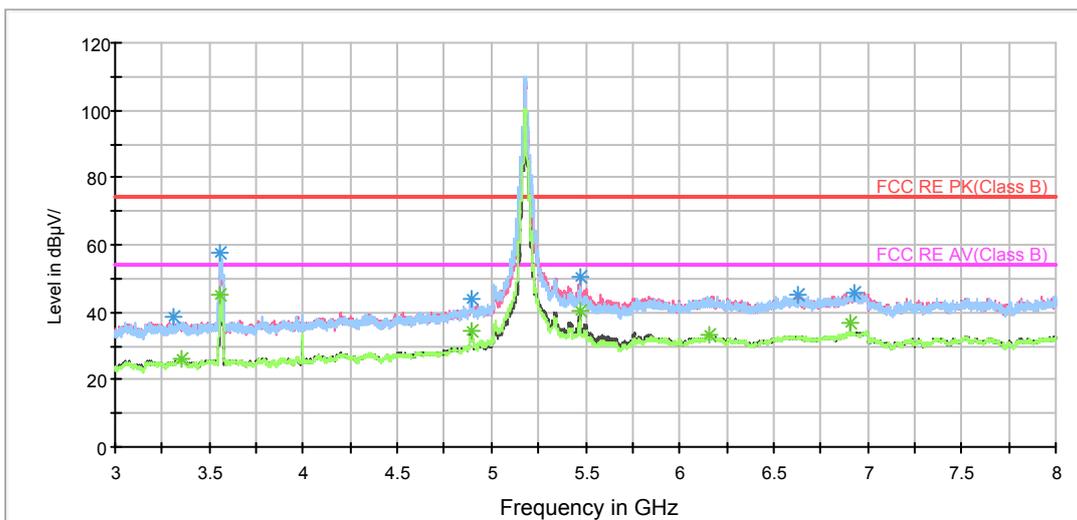
802.11a CH36

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

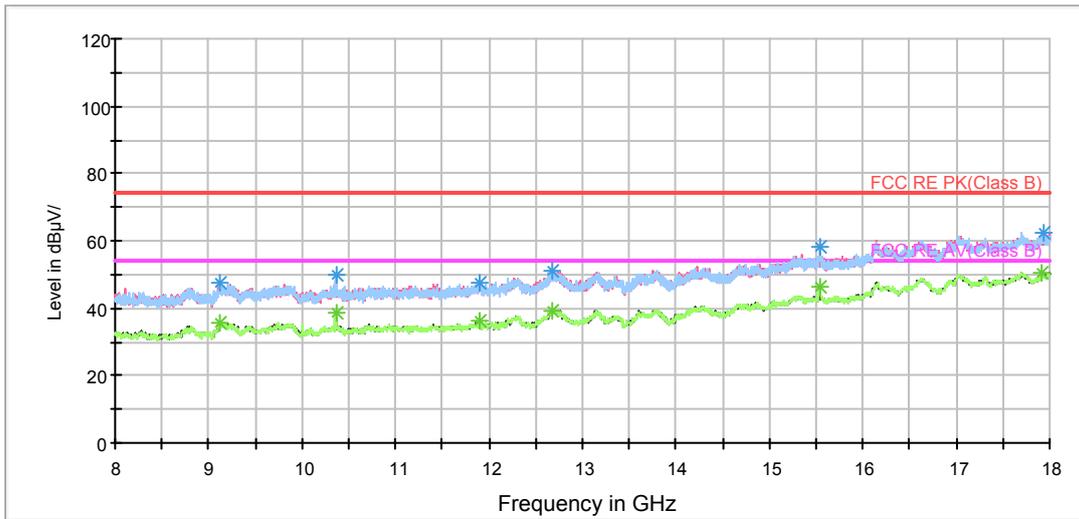
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

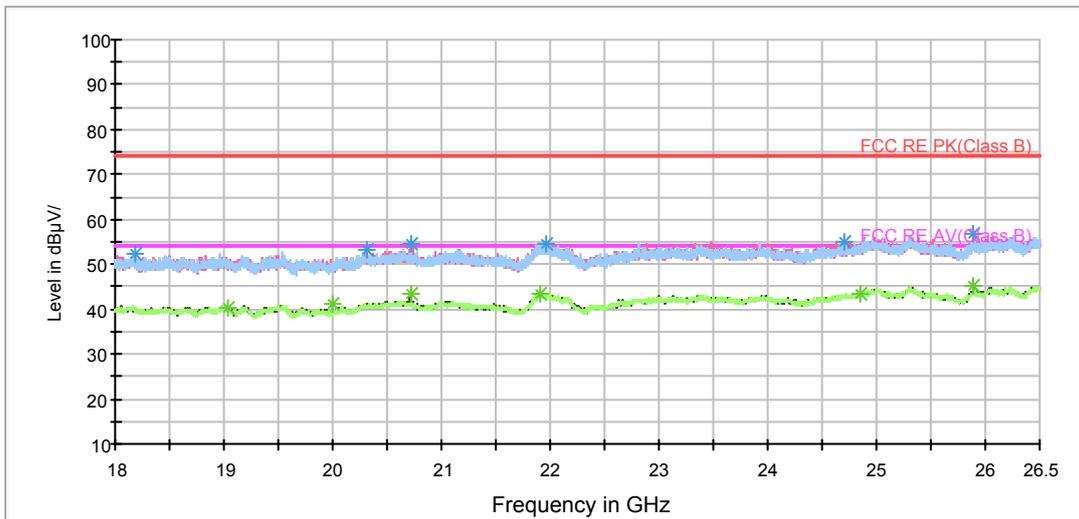
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



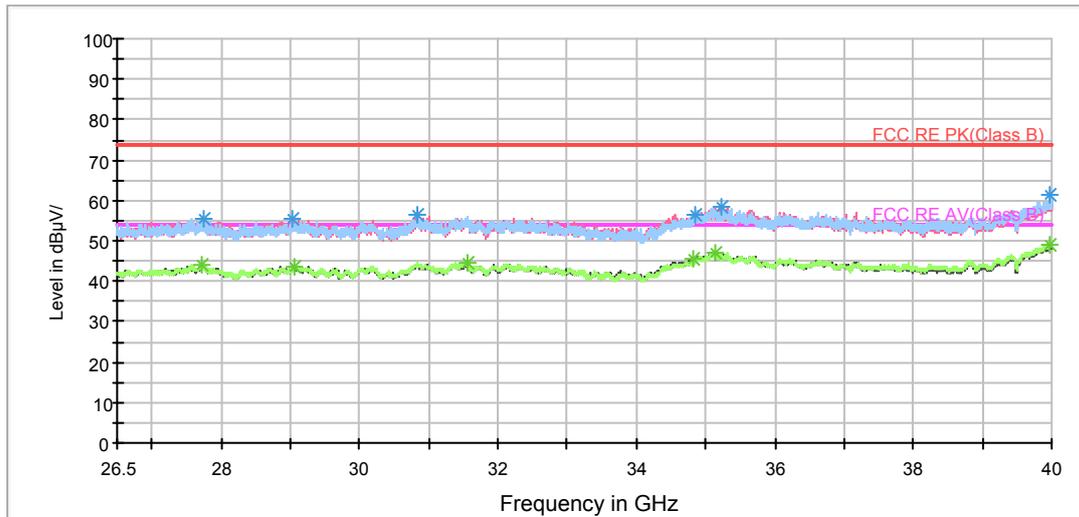
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3308.125000     | 38.3          | 200.0       | H            | 22.0          | 40.4                   | -2.1                | 35.7        | 74             |
| 3561.875000     | 57.4          | 200.0       | H            | 261.0         | 59.5                   | -2.1                | 16.6        | 74             |
| 4891.875000     | 44.0          | 200.0       | H            | 309.0         | 42.1                   | 1.9                 | 30.0        | 74             |
| 5472.500000     | 50.3          | 200.0       | V            | 0.0           | 47.3                   | 3.0                 | 23.7        | 74             |
| 6625.625000     | 44.9          | 200.0       | V            | 283.0         | 39.4                   | 5.5                 | 29.1        | 74             |
| 6925.625000     | 46.0          | 200.0       | H            | 0.0           | 39.8                   | 6.2                 | 28.0        | 74             |

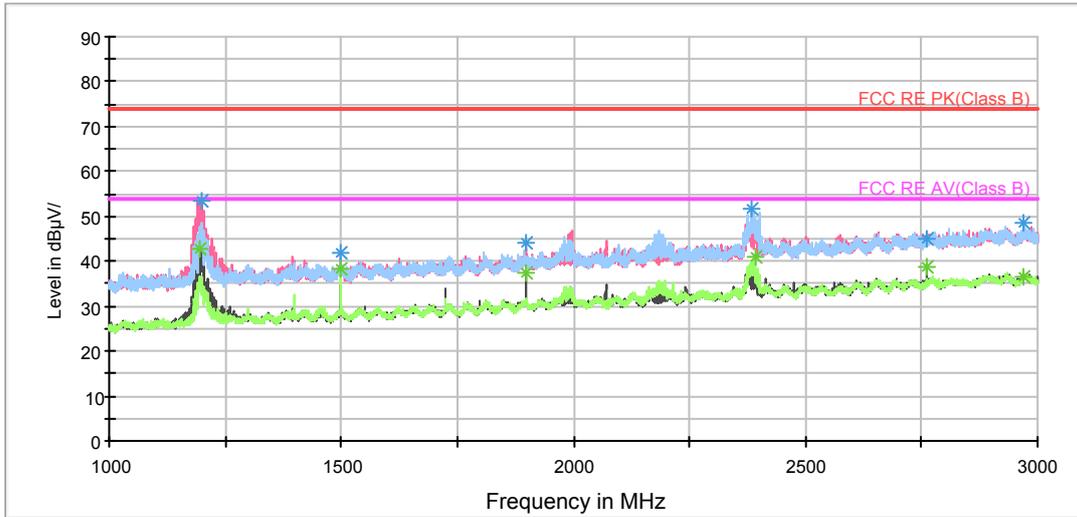
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3353.125000     | 25.9             | 200.0       | H            | 7.0           | 28.2                   | -2.3                | 28.1        | 54             |
| 3561.875000     | 45.2             | 200.0       | H            | 261.0         | 47.3                   | -2.1                | 8.8         | 54             |
| 4891.875000     | 34.2             | 200.0       | V            | 326.0         | 32.3                   | 1.9                 | 19.8        | 54             |
| 5473.125000     | 40.2             | 200.0       | V            | 0.0           | 37.2                   | 3.0                 | 13.8        | 54             |
| 6153.125000     | 33.2             | 200.0       | H            | 292.0         | 27.6                   | 5.6                 | 20.8        | 54             |
| 6906.875000     | 36.6             | 200.0       | V            | 44.0          | 30.3                   | 6.3                 | 17.4        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

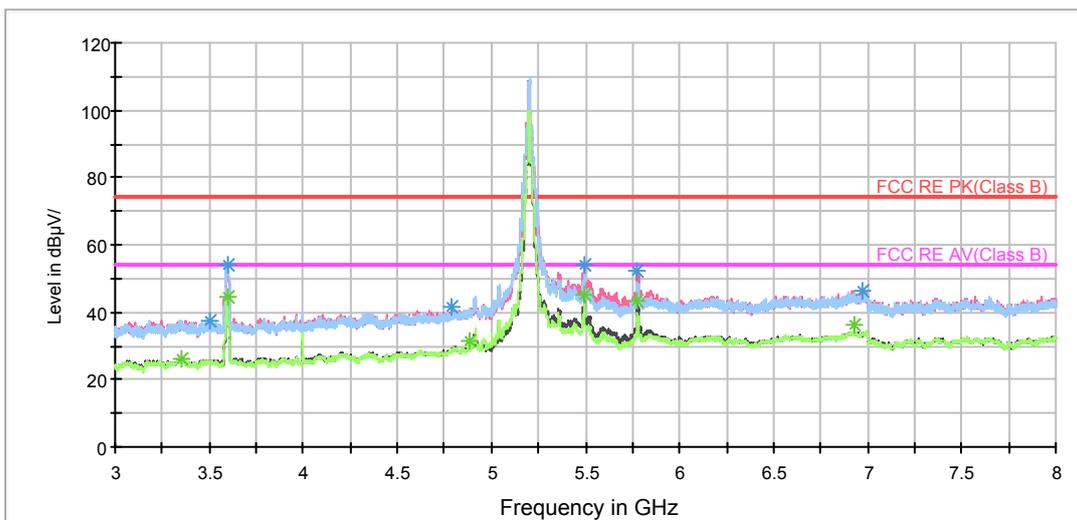
802.11a CH40

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

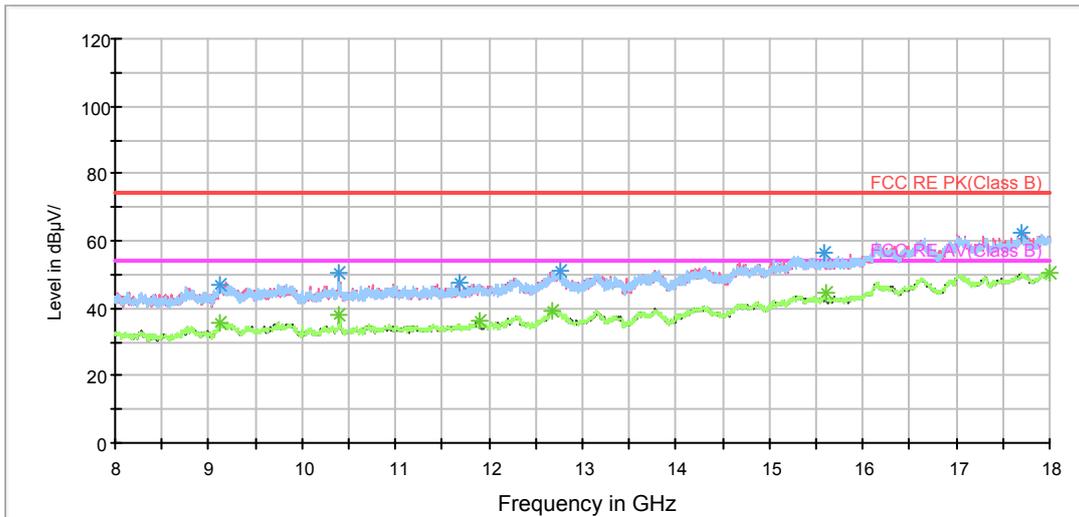
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

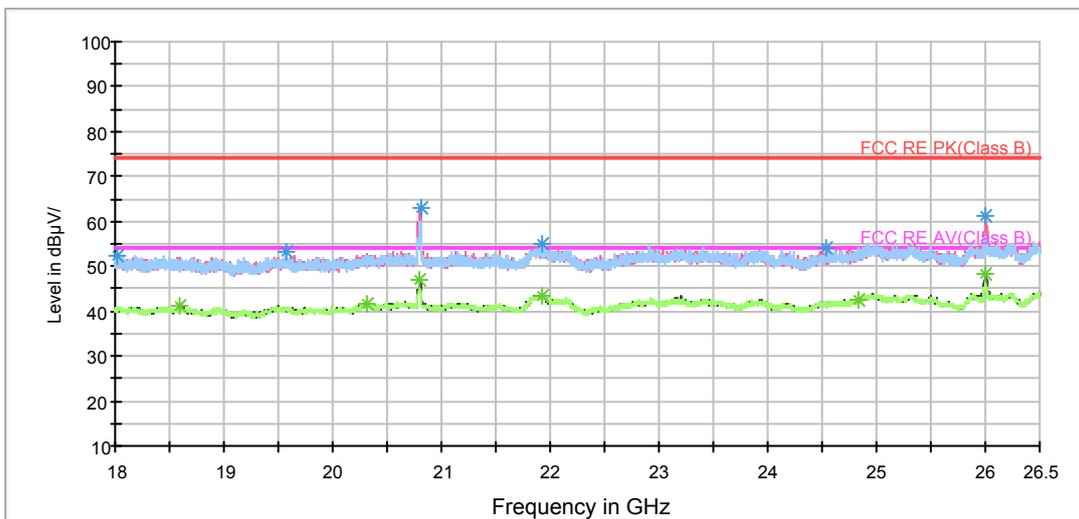
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



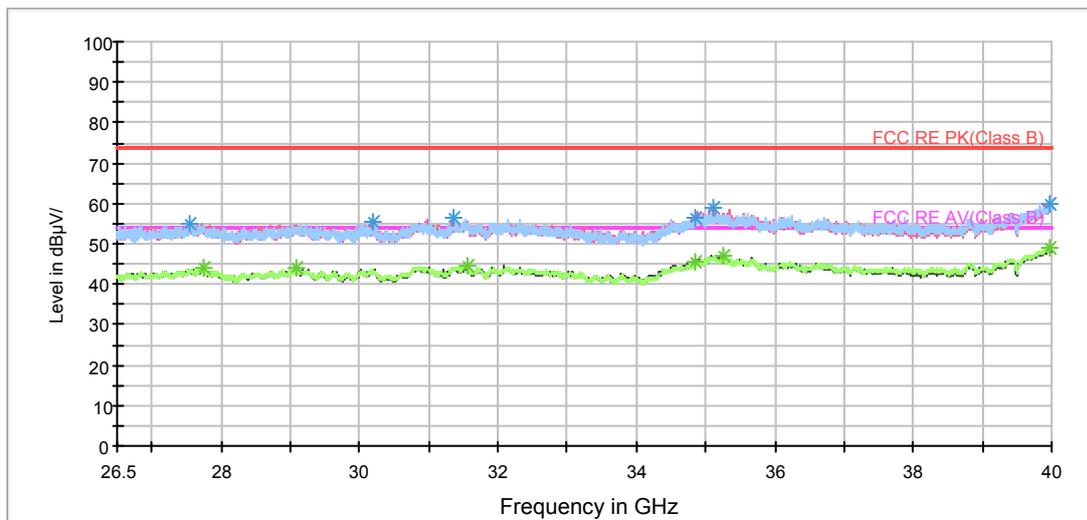
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3503.125000     | 37.4          | 200.0       | V            | 237.0         | 39.5                   | -2.1                | 36.6        | 74             |
| 3600.000000     | 54.3          | 200.0       | V            | 354.0         | 56.5                   | -2.2                | 19.7        | 74             |
| 4790.000000     | 41.5          | 200.0       | H            | 269.0         | 40.3                   | 1.2                 | 32.5        | 74             |
| 5495.000000     | 54.0          | 200.0       | V            | 0.0           | 50.9                   | 3.1                 | 20.0        | 74             |
| 5776.875000     | 52.4          | 200.0       | V            | 0.0           | 48.5                   | 3.9                 | 21.6        | 74             |
| 6977.500000     | 46.6          | 200.0       | V            | 0.0           | 40.3                   | 6.3                 | 27.4        | 74             |

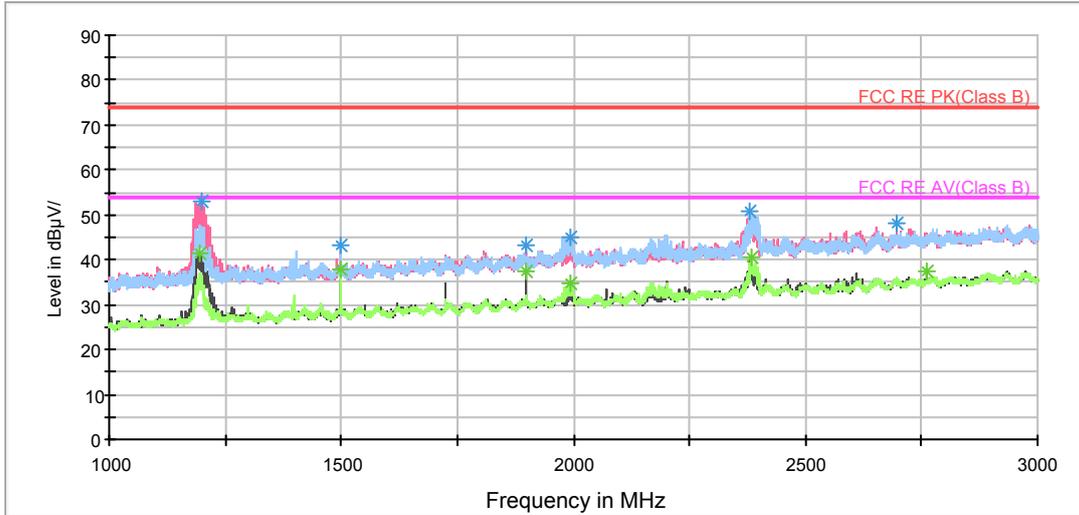
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3356.875000     | 26.1             | 200.0       | V            | 295.0         | 28.4                   | -2.3                | 27.9        | 54             |
| 3595.000000     | 44.5             | 200.0       | H            | 284.0         | 46.8                   | -2.3                | 9.5         | 54             |
| 4882.500000     | 31.2             | 200.0       | H            | 254.0         | 29.3                   | 1.9                 | 22.8        | 54             |
| 5495.625000     | 44.9             | 200.0       | V            | 0.0           | 41.8                   | 3.1                 | 9.1         | 54             |
| 5777.500000     | 43.1             | 200.0       | V            | 0.0           | 39.2                   | 3.9                 | 10.9        | 54             |
| 6933.750000     | 36.1             | 200.0       | V            | 76.0          | 29.9                   | 6.2                 | 17.9        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

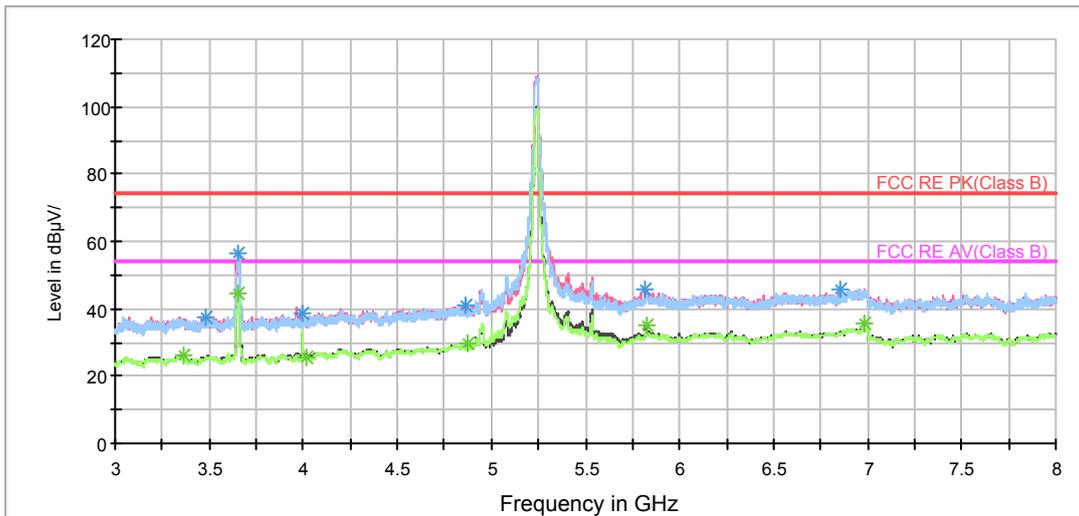
802.11a CH48

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

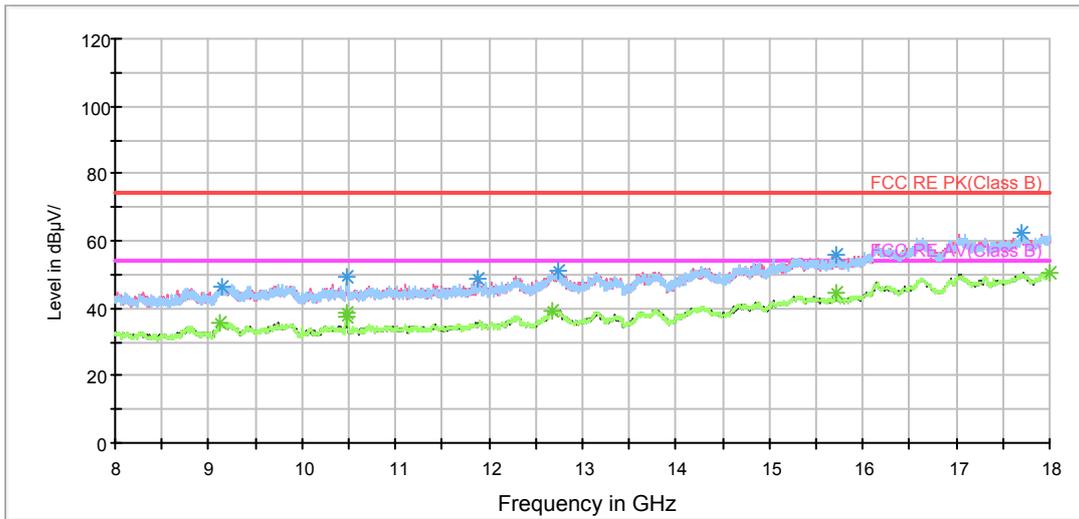
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

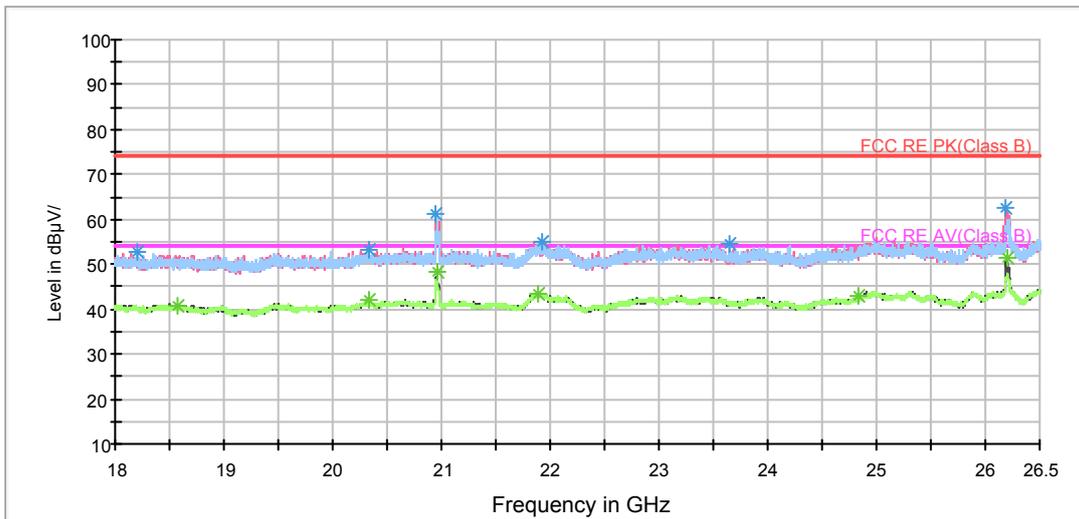
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



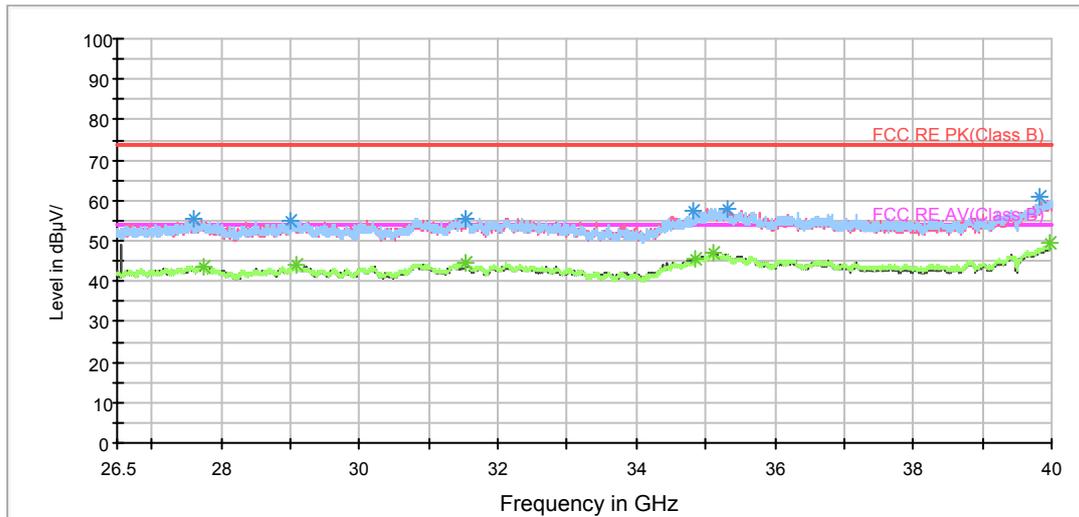
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3483.125000     | 37.7          | 200.0       | H            | 58.0          | 39.7                   | -2.0                | 36.3        | 74             |
| 3656.875000     | 56.2          | 200.0       | H            | 283.0         | 58.1                   | -1.9                | 17.8        | 74             |
| 4000.000000     | 38.8          | 200.0       | H            | 220.0         | 39.9                   | -1.1                | 35.2        | 74             |
| 4861.250000     | 41.2          | 200.0       | V            | 330.0         | 39.5                   | 1.7                 | 32.8        | 74             |
| 5814.375000     | 45.7          | 200.0       | V            | 9.0           | 41.3                   | 4.4                 | 28.3        | 74             |
| 6851.875000     | 45.9          | 200.0       | H            | 58.0          | 40.0                   | 5.9                 | 28.1        | 74             |

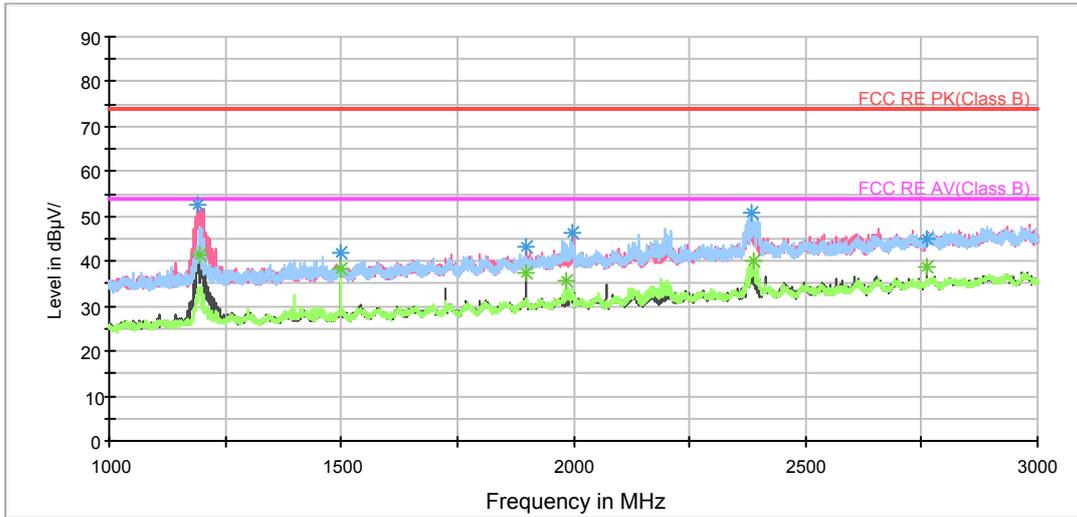
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3366.250000     | 26.0             | 200.0       | V            | 141.0         | 28.4                   | -2.4                | 28.0        | 54             |
| 3655.000000     | 44.8             | 200.0       | V            | 0.0           | 46.7                   | -1.9                | 9.2         | 54             |
| 4020.000000     | 25.4             | 200.0       | V            | 201.0         | 26.6                   | -1.2                | 28.6        | 54             |
| 4868.750000     | 29.4             | 200.0       | V            | 330.0         | 27.7                   | 1.7                 | 24.6        | 54             |
| 5826.875000     | 35.3             | 200.0       | V            | 0.0           | 30.8                   | 4.5                 | 18.7        | 54             |
| 6986.875000     | 35.7             | 200.0       | V            | 170.0         | 29.3                   | 6.4                 | 18.3        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

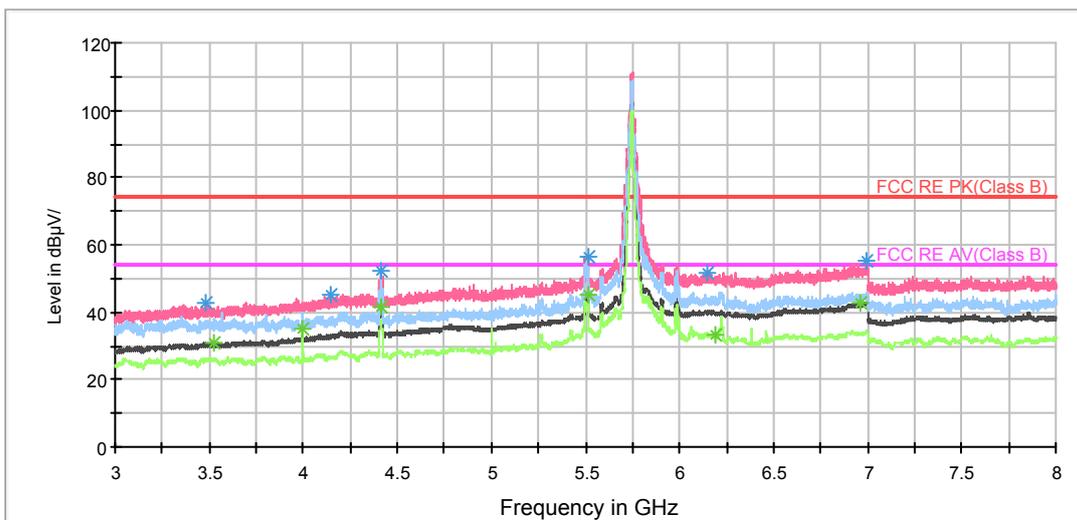
## 802.11a CH149

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

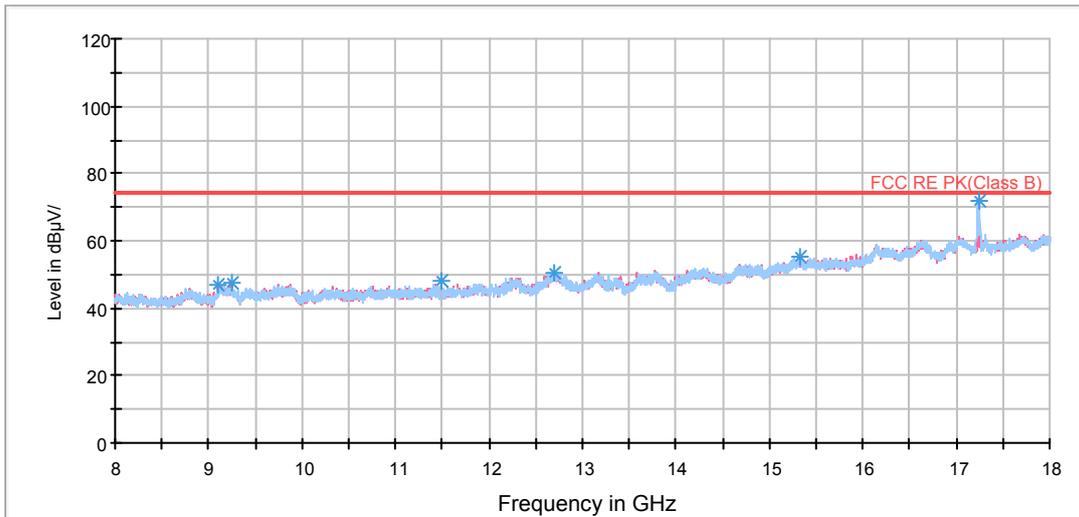
RE 3-18GHz PK+AV



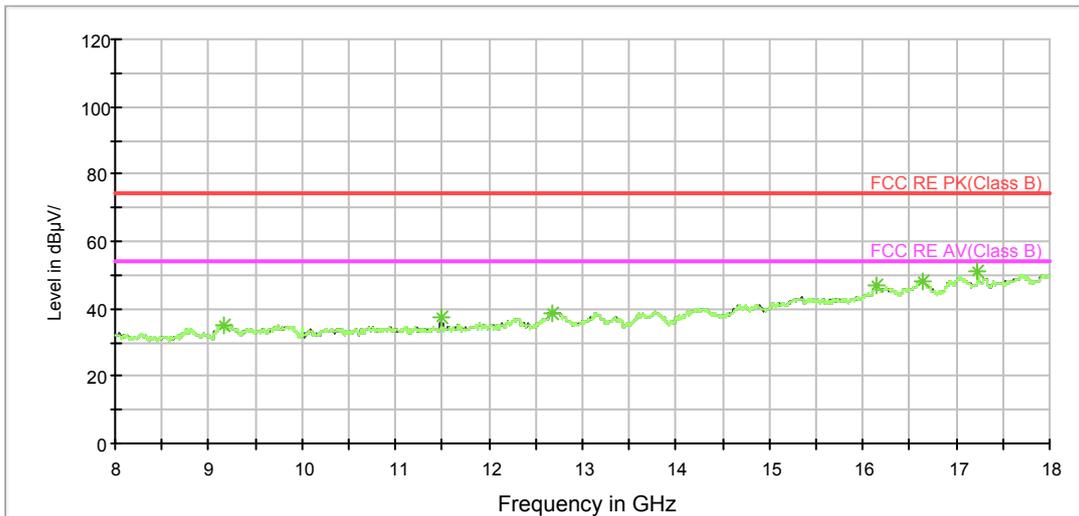
Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz



BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz



| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3482.500000     | 42.7          | 200.0       | V            | 0.0           | 44.7                   | -2.0                | 31.3        | 74             |
| 4148.125000     | 45.0          | 200.0       | V            | 0.0           | 45.2                   | -0.2                | 29.0        | 74             |
| 4417.500000     | 52.3          | 200.0       | V            | 10.0          | 52.1                   | 0.2                 | 21.7        | 74             |
| 5512.500000     | 56.3          | 200.0       | V            | 0.0           | 53.2                   | 3.1                 | 17.7        | 74             |
| 6150.000000     | 51.9          | 200.0       | V            | 0.0           | 46.4                   | 5.5                 | 22.1        | 74             |
| 6996.875000     | 55.1          | 200.0       | V            | 0.0           | 48.6                   | 6.5                 | 18.9        | 74             |

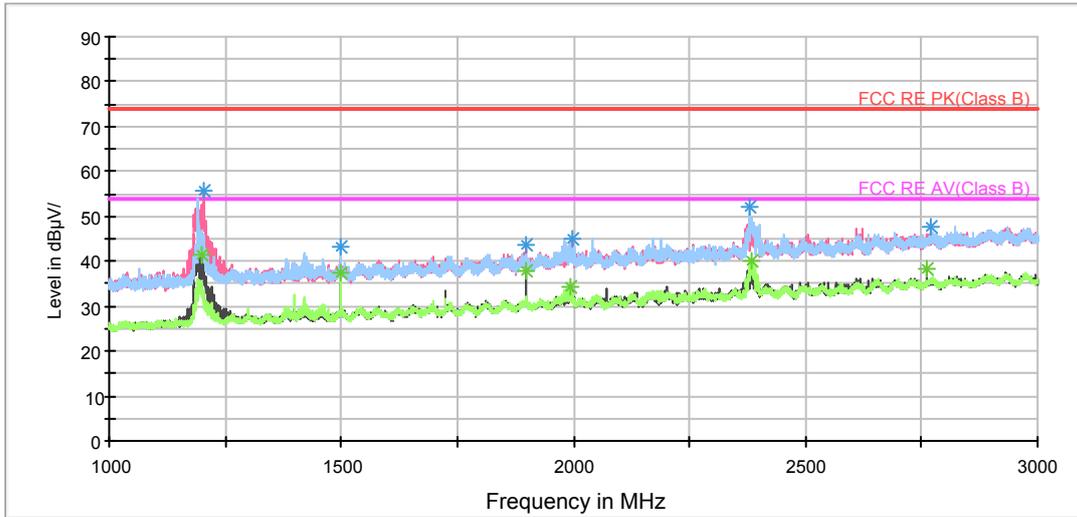
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3519.375000     | 30.7             | 200.0       | V            | 0.0           | 32.7                   | -2.0                | 23.3        | 54             |
| 4000.000000     | 35.1             | 200.0       | H            | 223.0         | 36.2                   | -1.1                | 18.9        | 54             |
| 4412.500000     | 41.6             | 200.0       | V            | 10.0          | 41.4                   | 0.2                 | 12.4        | 54             |
| 5512.500000     | 45.4             | 200.0       | V            | 0.0           | 42.3                   | 3.1                 | 8.6         | 54             |
| 6187.500000     | 33.1             | 200.0       | H            | 28.0          | 27.7                   | 5.4                 | 20.9        | 54             |
| 6960.000000     | 42.7             | 200.0       | V            | 0.0           | 36.5                   | 6.2                 | 11.3        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

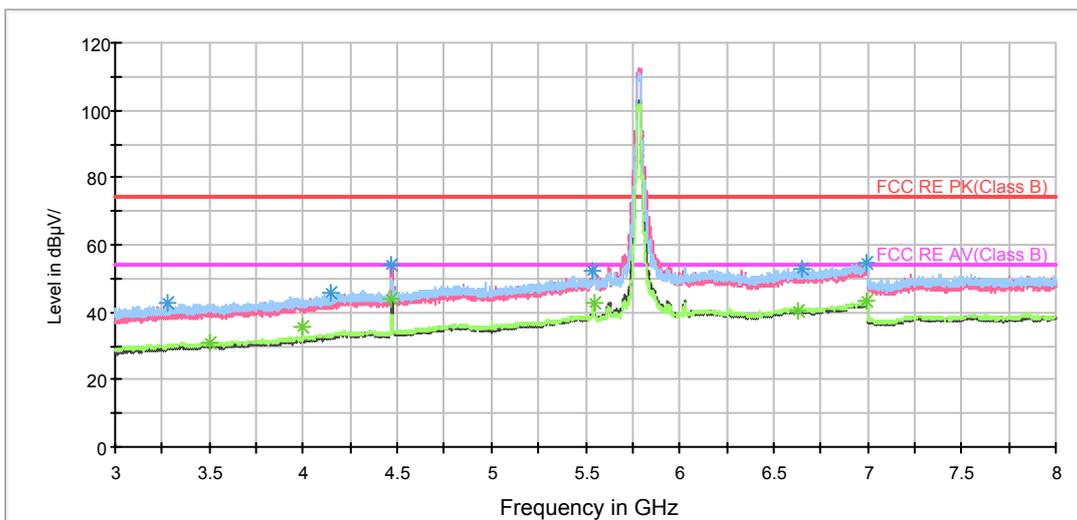
## 802.11a CH157

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

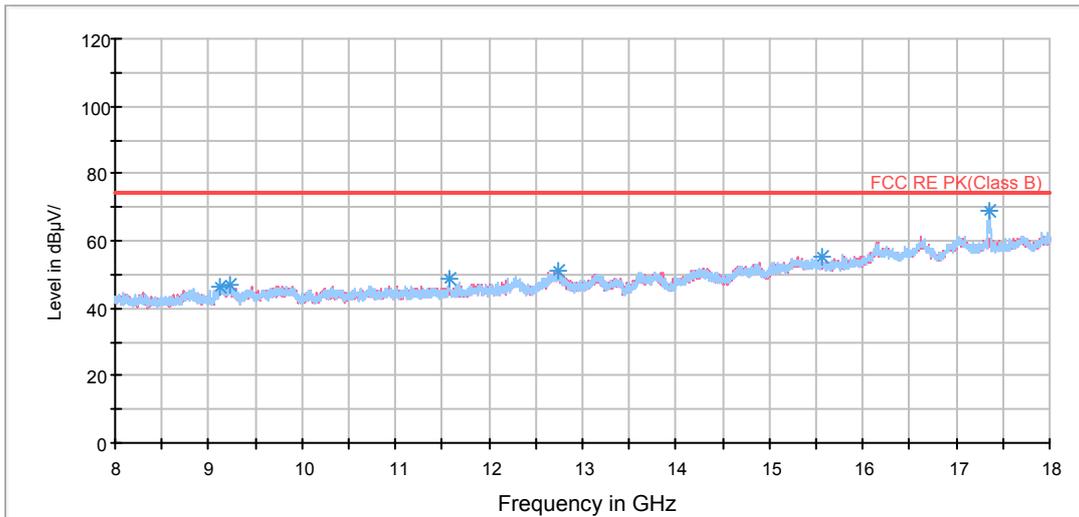
## RE 3-18GHz PK+AV



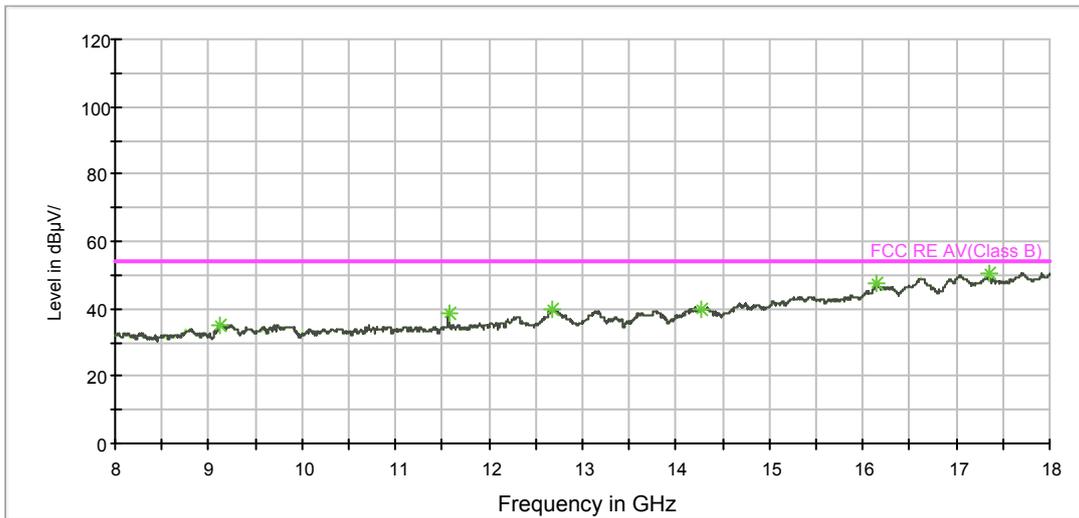
Note: The signal beyond the limit is carrier.

## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



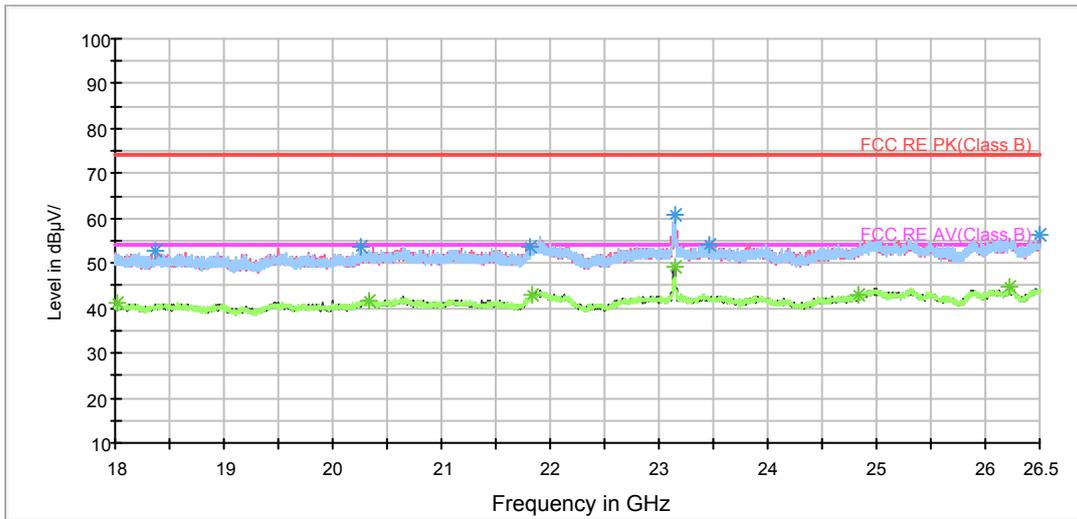
RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

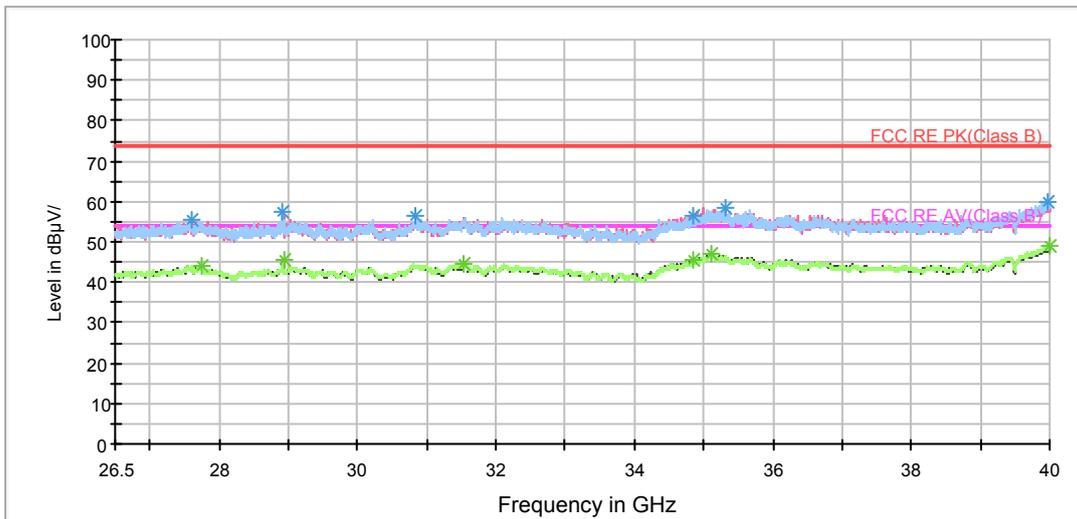


BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3281.250000     | 42.7          | 200.0       | H            | 0.0           | 44.8                   | -2.1                | 31.3        | 74             |
| 4146.250000     | 45.8          | 200.0       | V            | 0.0           | 46.0                   | -0.2                | 28.2        | 74             |
| 4471.250000     | 53.8          | 200.0       | V            | 9.0           | 53.4                   | 0.4                 | 20.2        | 74             |
| 5536.875000     | 52.5          | 200.0       | V            | 0.0           | 49.3                   | 3.2                 | 21.5        | 74             |
| 6653.125000     | 53.0          | 200.0       | H            | 0.0           | 47.5                   | 5.5                 | 21.0        | 74             |
| 6990.625000     | 54.4          | 200.0       | H            | 110.0         | 47.9                   | 6.5                 | 19.6        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

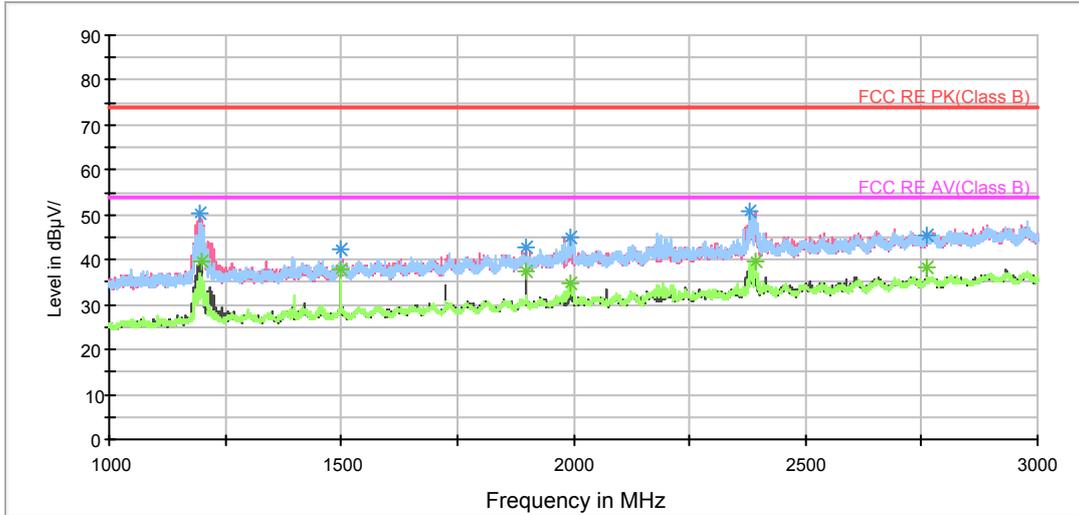


| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3506.875000     | 31.2             | 200.0       | H            | 0.0           | 33.2                   | -2.0                | 22.8        | 54             |
| 4000.000000     | 35.7             | 200.0       | H            | 212.0         | 36.8                   | -1.1                | 18.3        | 54             |
| 4471.250000     | 43.7             | 200.0       | V            | 9.0           | 43.3                   | 0.4                 | 10.3        | 54             |
| 5550.625000     | 43.0             | 200.0       | H            | 0.0           | 39.8                   | 3.2                 | 11.0        | 54             |
| 6627.500000     | 40.2             | 200.0       | V            | 0.0           | 34.7                   | 5.5                 | 13.8        | 54             |
| 6997.500000     | 43.2             | 200.0       | H            | 197.0         | 36.7                   | 6.5                 | 10.8        | 54             |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

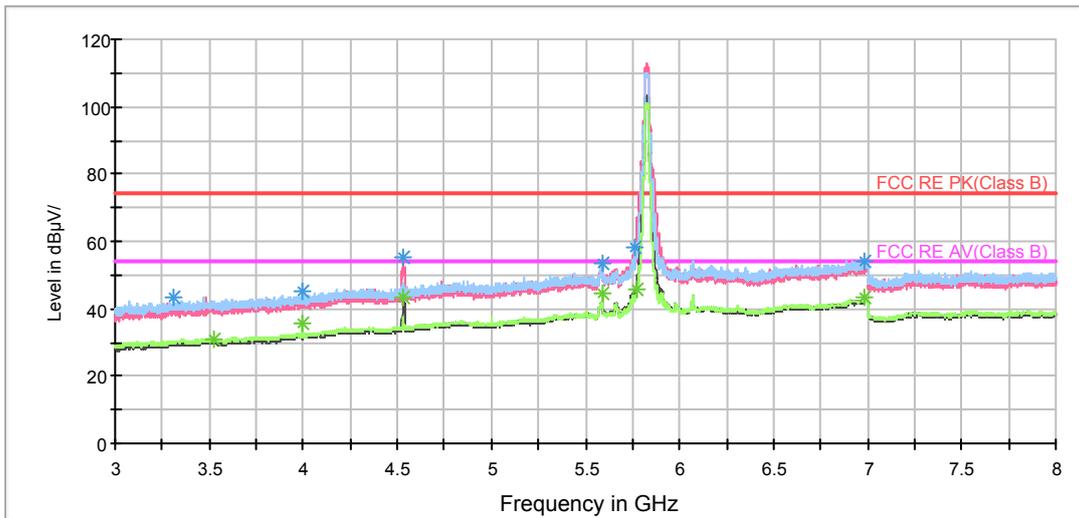
802.11a CH165

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

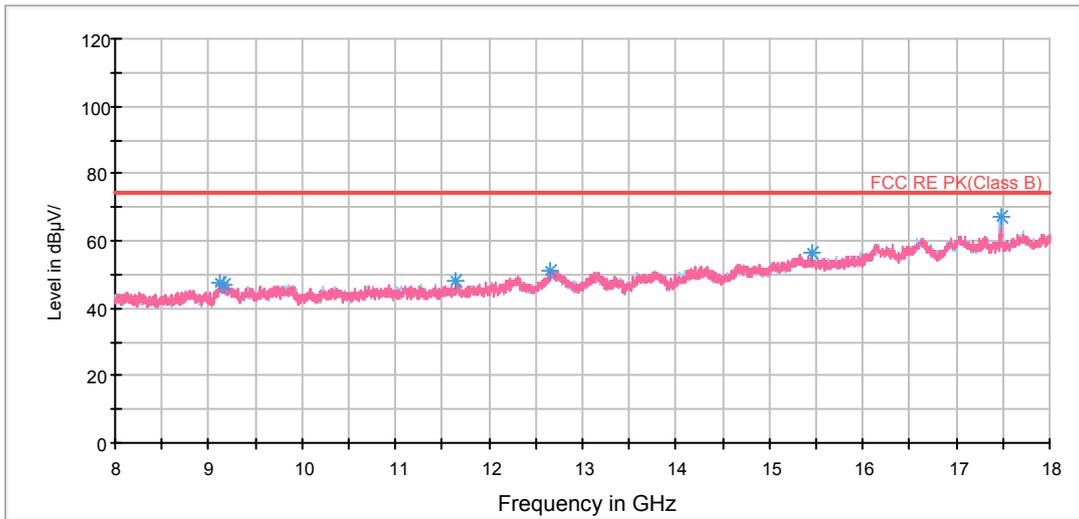
RE 3-18GHz PK+AV



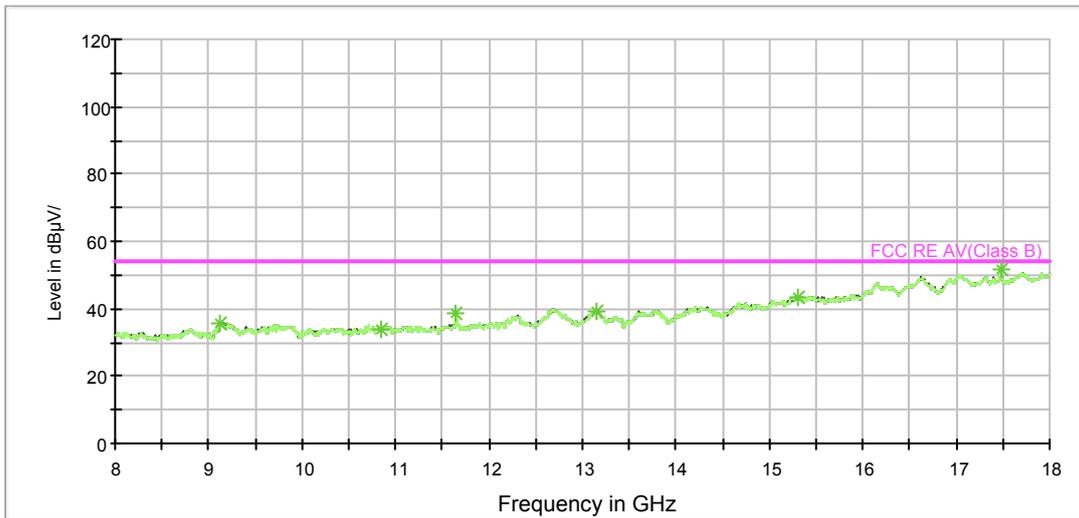
Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



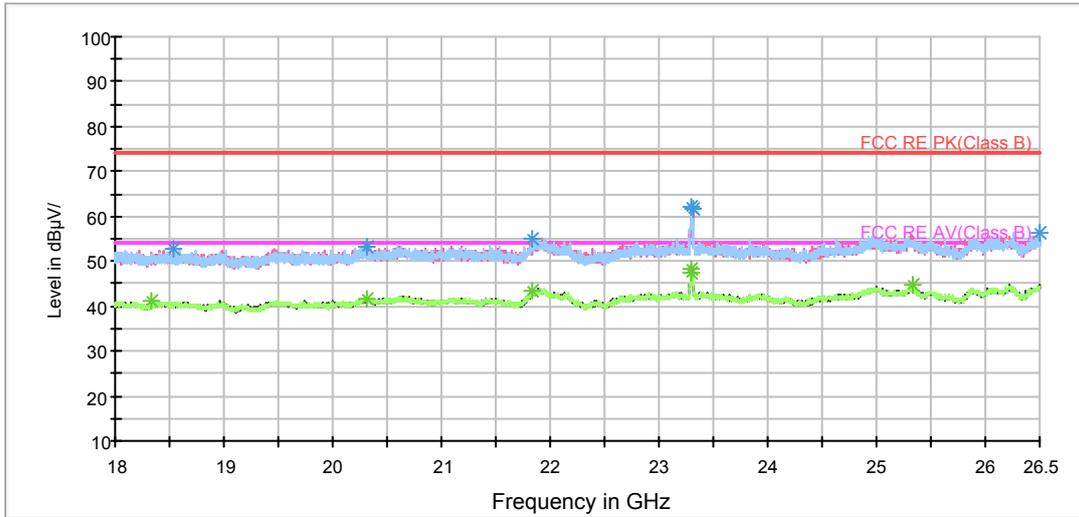
RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

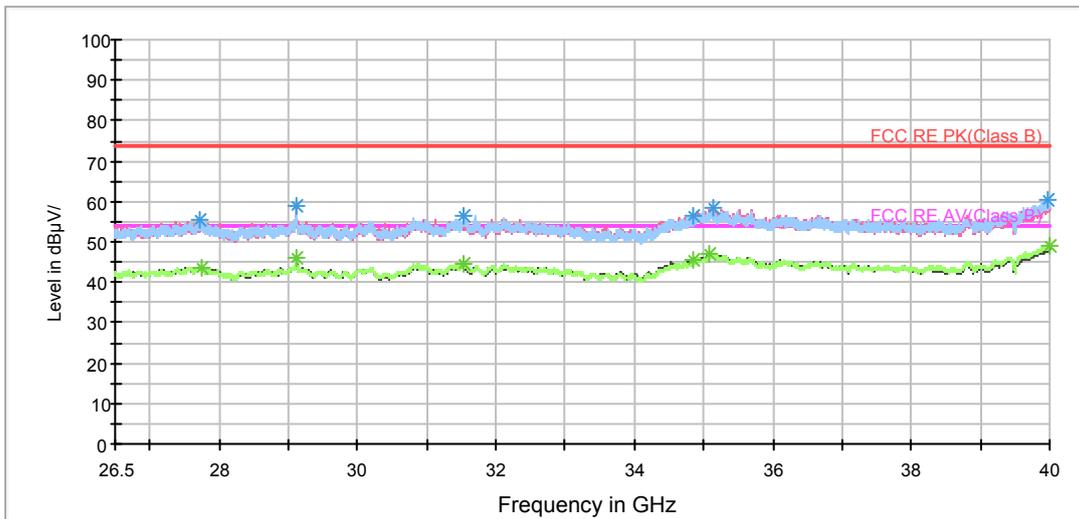


BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3308.125000     | 43.6          | 200.0       | H            | 36.0          | 45.7                   | -2.1                | 30.4        | 74             |
| 3999.375000     | 45.1          | 200.0       | H            | 215.0         | 46.2                   | -1.1                | 28.9        | 74             |
| 4533.750000     | 55.2          | 200.0       | V            | 10.0          | 54.6                   | 0.6                 | 18.8        | 74             |
| 5588.125000     | 53.5          | 200.0       | V            | 0.0           | 50.1                   | 3.4                 | 20.5        | 74             |
| 5766.875000     | 58.0          | 200.0       | H            | 7.0           | 54.3                   | 3.7                 | 16.0        | 74             |
| 6978.750000     | 54.2          | 200.0       | H            | 136.0         | 47.9                   | 6.3                 | 19.8        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

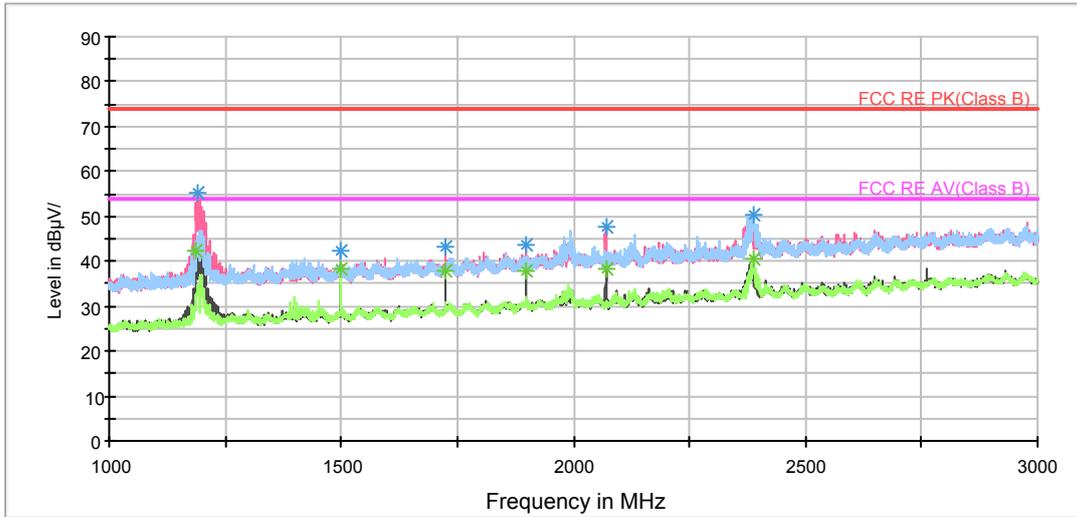


| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3529.375000     | 31.0             | 200.0       | H            | 0.0           | 33.1                   | -2.1                | 23.0        | 54             |
| 4000.000000     | 35.7             | 200.0       | H            | 247.0         | 36.8                   | -1.1                | 18.3        | 54             |
| 4532.500000     | 43.1             | 200.0       | V            | 10.0          | 42.5                   | 0.6                 | 10.9        | 54             |
| 5589.375000     | 44.3             | 200.0       | V            | 0.0           | 40.9                   | 3.4                 | 9.7         | 54             |
| 5768.125000     | 45.9             | 200.0       | V            | 0.0           | 42.2                   | 3.7                 | 8.1         | 54             |
| 6987.500000     | 43.2             | 200.0       | H            | 0.0           | 36.8                   | 6.4                 | 10.8        | 54             |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

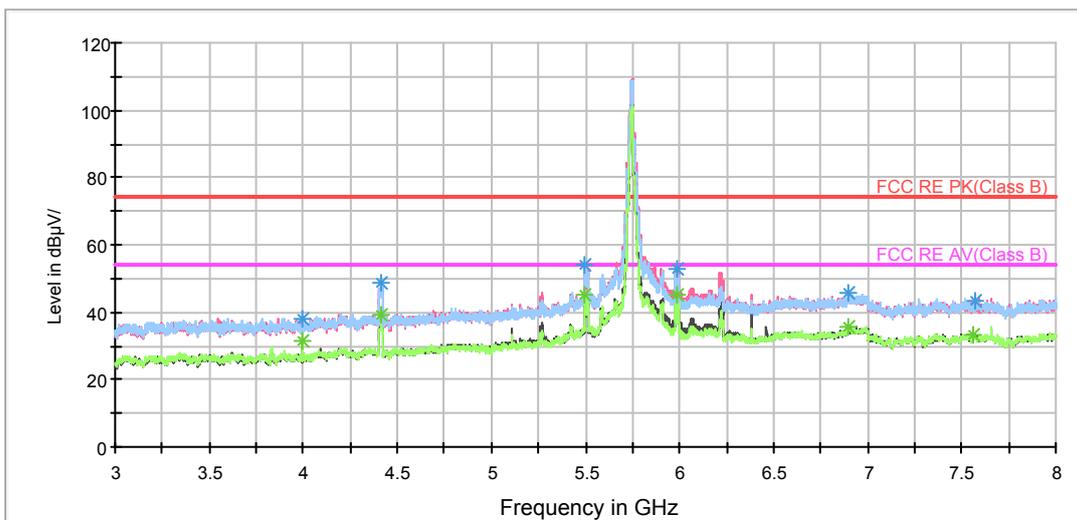
802.11n (HT20) CH36

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

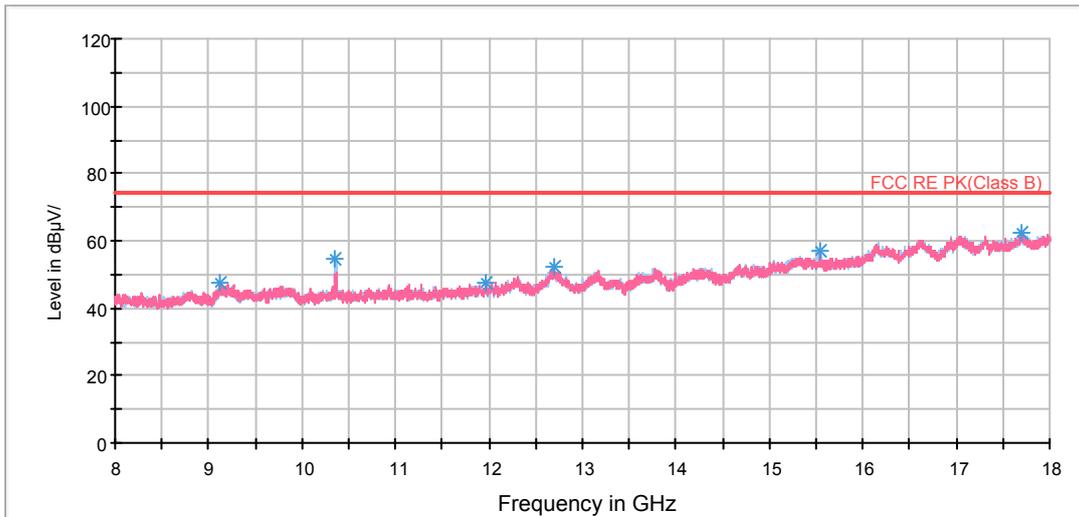
RE 3-18GHz PK+AV



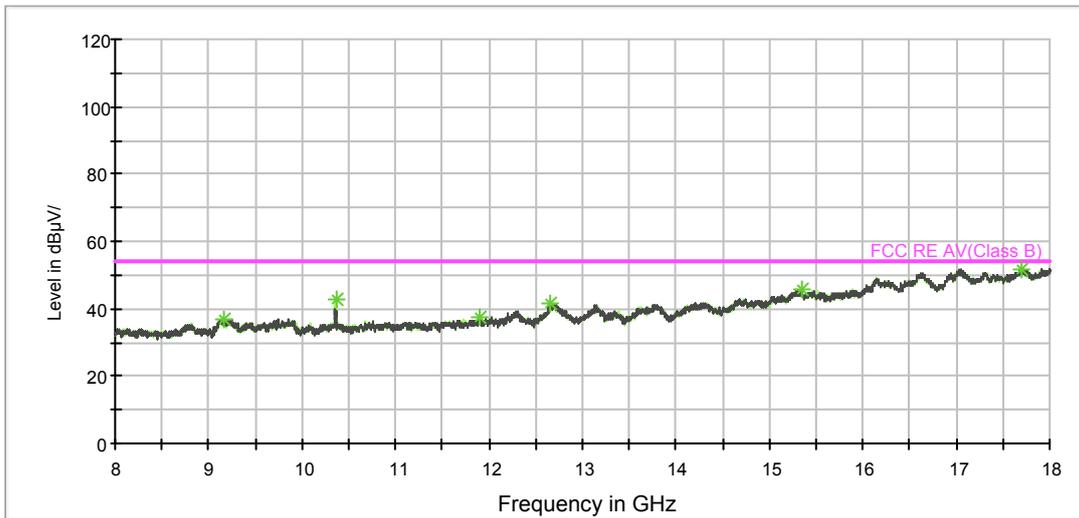
Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV

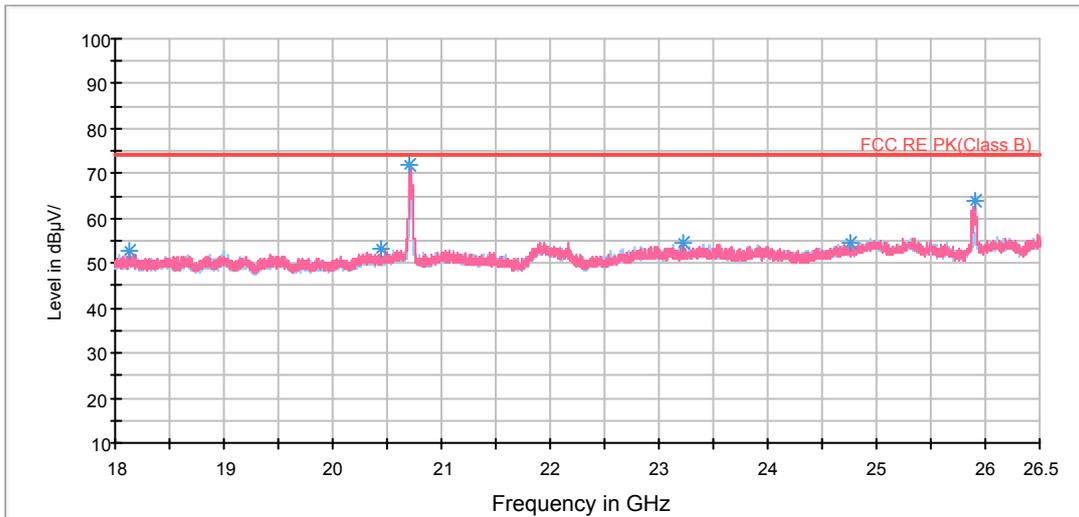


RE 3-18GHz PK+AV

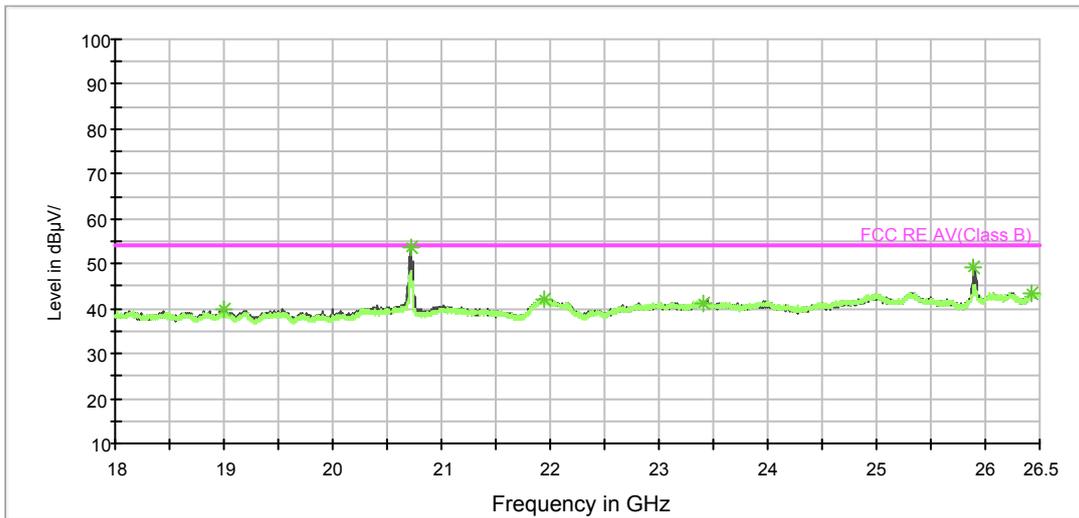


Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV

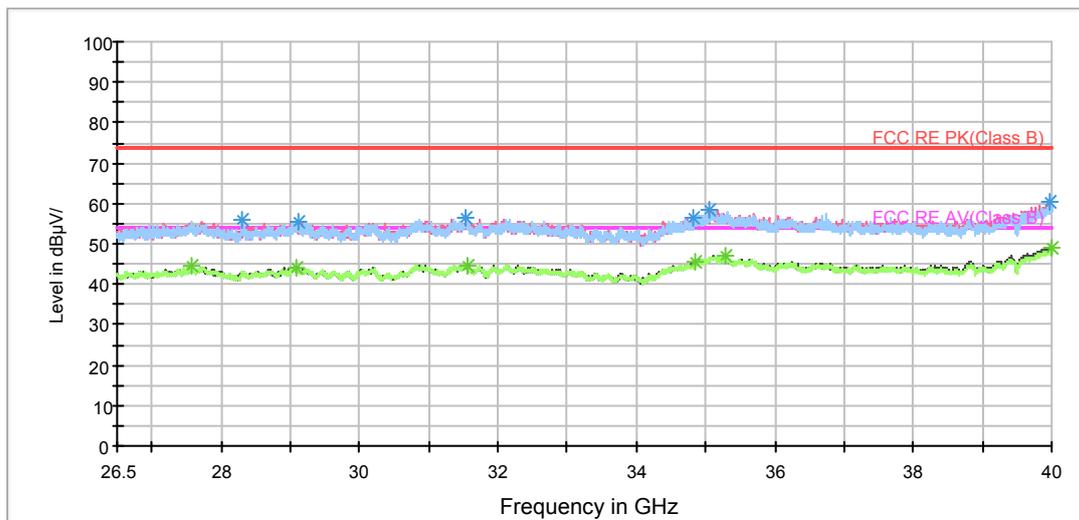


BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 4000.000000     | 38.1          | 200.0       | H            | 65.0          | 39.2                   | -1.1                | 35.9        | 74             |
| 4411.875000     | 48.5          | 200.0       | H            | 0.0           | 48.3                   | 0.2                 | 25.5        | 74             |
| 5497.500000     | 54.2          | 200.0       | H            | 0.0           | 51.1                   | 3.1                 | 19.8        | 74             |
| 5990.625000     | 52.7          | 200.0       | V            | 204.0         | 47.9                   | 4.8                 | 21.3        | 74             |
| 6898.125000     | 45.6          | 200.0       | H            | 159.0         | 39.4                   | 6.2                 | 28.4        | 74             |
| 7572.500000     | 43.4          | 200.0       | V            | 346.0         | 36.3                   | 7.1                 | 30.6        | 74             |

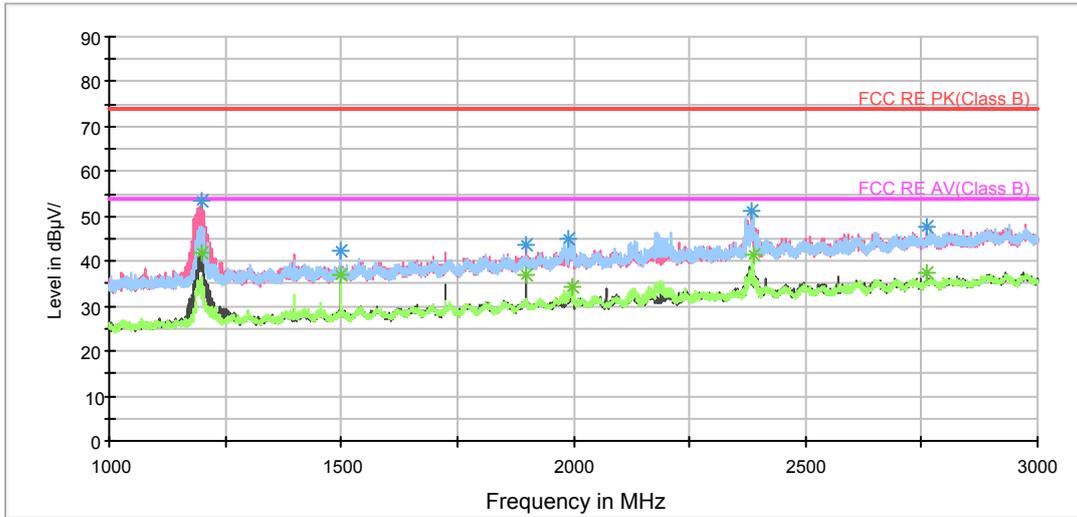
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 4000.000000     | 31.6             | 200.0       | H            | 65.0          | 32.7                   | -1.1                | 22.4        | 54             |
| 4413.750000     | 39.4             | 200.0       | V            | 315.0         | 39.2                   | 0.2                 | 14.6        | 54             |
| 5497.500000     | 45.0             | 200.0       | H            | 0.0           | 41.9                   | 3.1                 | 9.0         | 54             |
| 5990.625000     | 45.4             | 200.0       | V            | 204.0         | 40.6                   | 4.8                 | 8.6         | 54             |
| 6900.625000     | 35.6             | 200.0       | V            | 96.0          | 29.3                   | 6.3                 | 18.4        | 54             |
| 7563.125000     | 33.0             | 200.0       | H            | 190.0         | 26.0                   | 7.0                 | 21.0        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

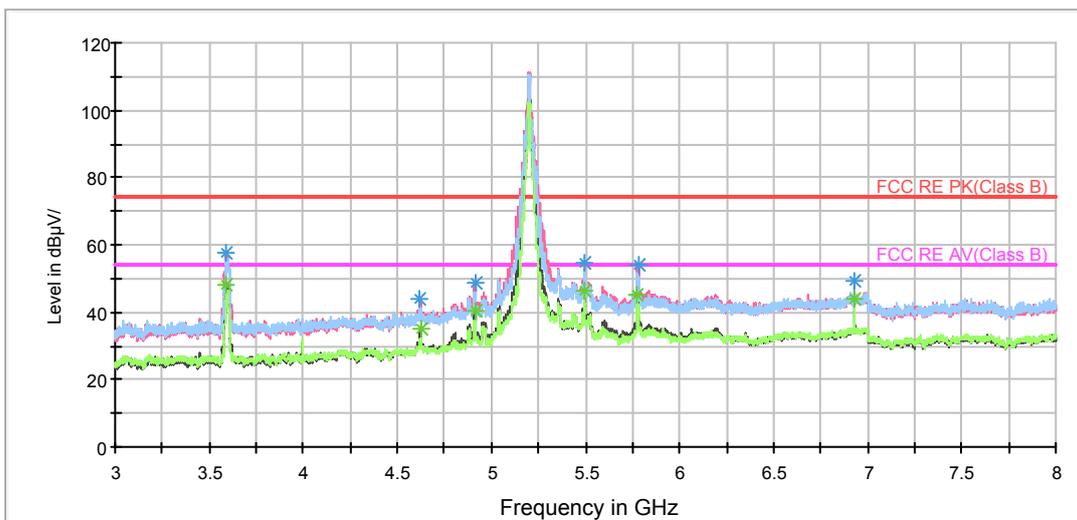
802.11n (HT20) CH40

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

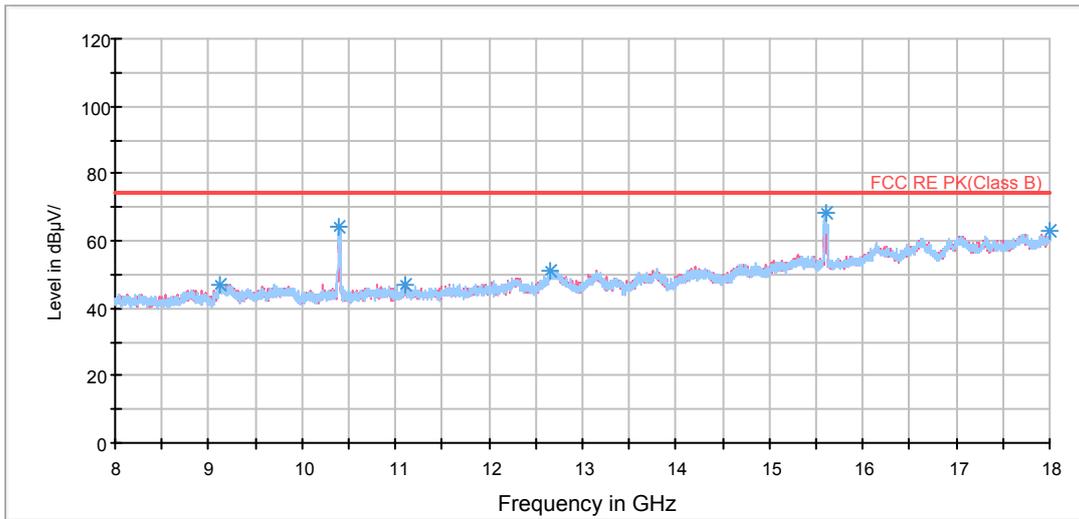
RE 3-18GHz PK+AV



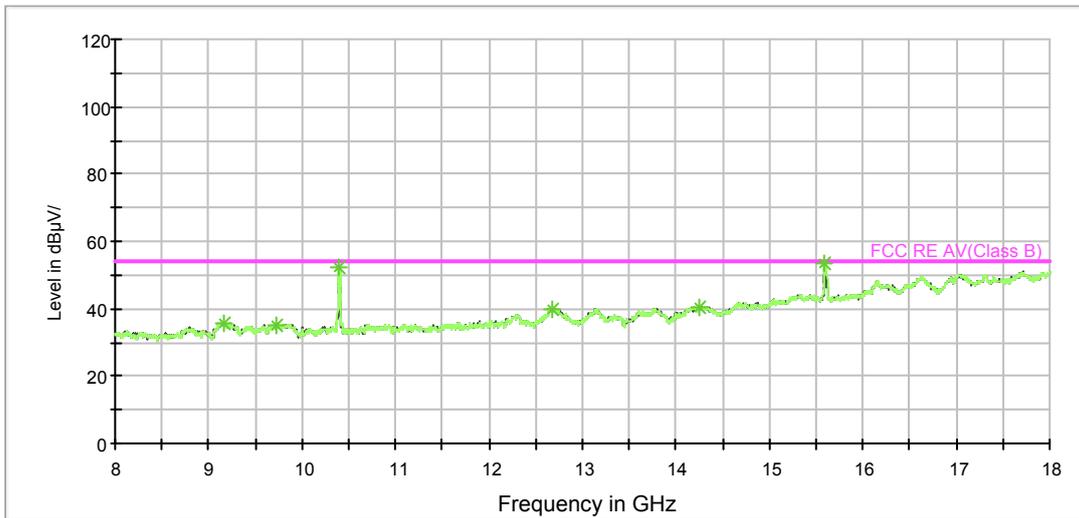
Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



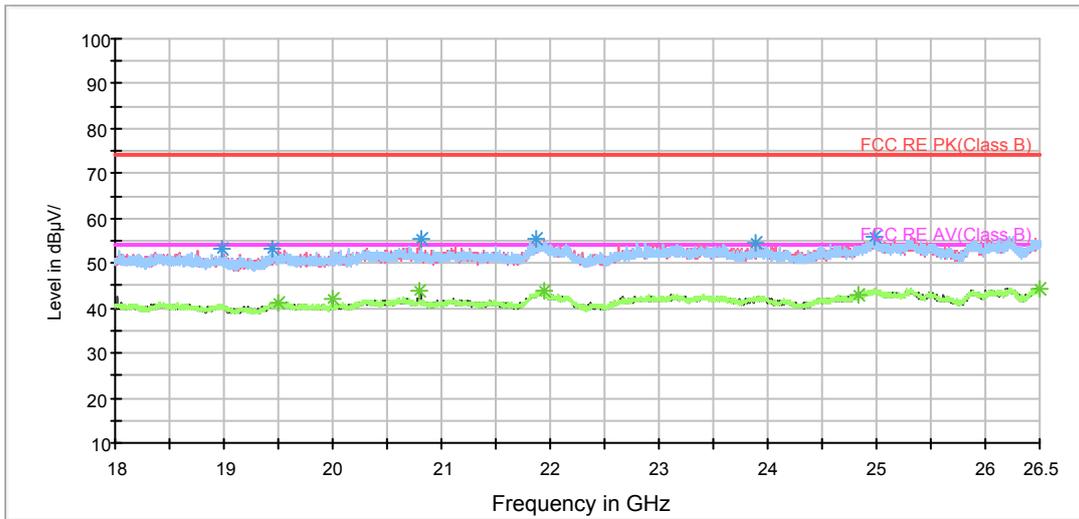
RE 3-18GHz PK+AV



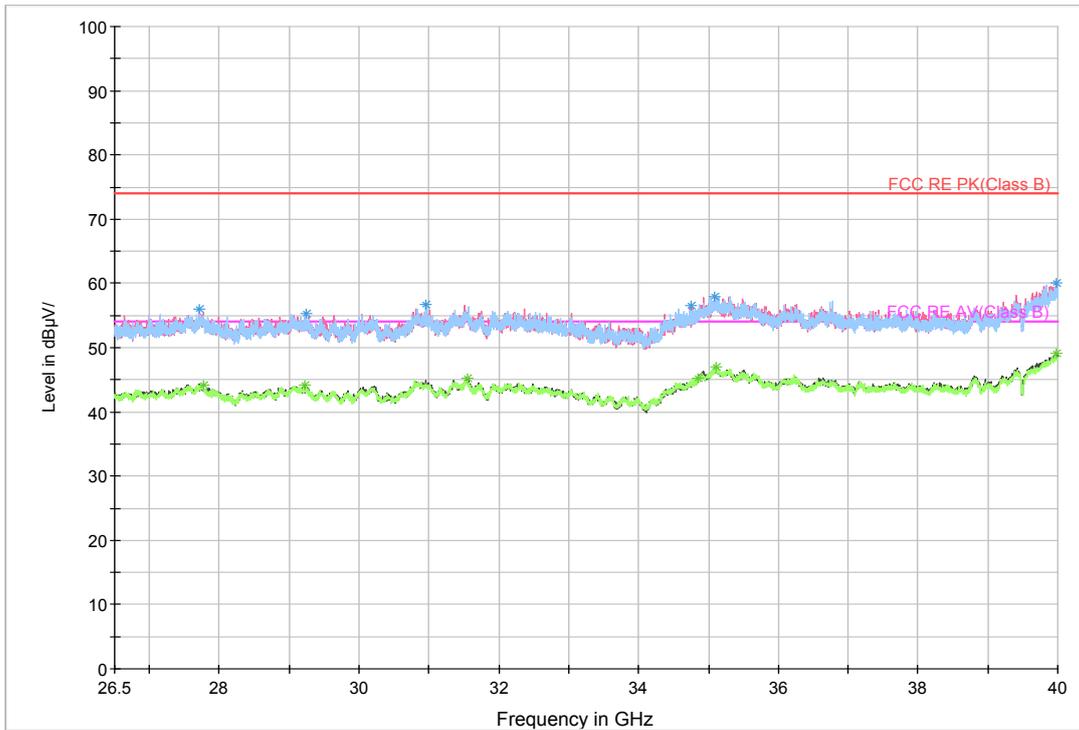
Radiates Emission from 8GHz to 18GHz



BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



Radiates Emission from 26.5GHz to 40GHz



| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3591.875000     | 57.8          | 200.0       | V            | 0.0           | 60.1                   | -2.3                | 16.2        | 74             |
| 4620.625000     | 44.0          | 200.0       | V            | 248.0         | 43.1                   | 0.9                 | 30.0        | 74             |
| 4918.750000     | 48.6          | 200.0       | V            | 298.0         | 46.7                   | 1.9                 | 25.4        | 74             |
| 5496.875000     | 54.9          | 200.0       | V            | 177.0         | 51.8                   | 3.1                 | 19.1        | 74             |
| 5780.000000     | 54.2          | 200.0       | V            | 194.0         | 50.2                   | 4.0                 | 19.8        | 74             |
| 6933.125000     | 49.5          | 200.0       | V            | 298.0         | 43.3                   | 6.2                 | 24.5        | 74             |

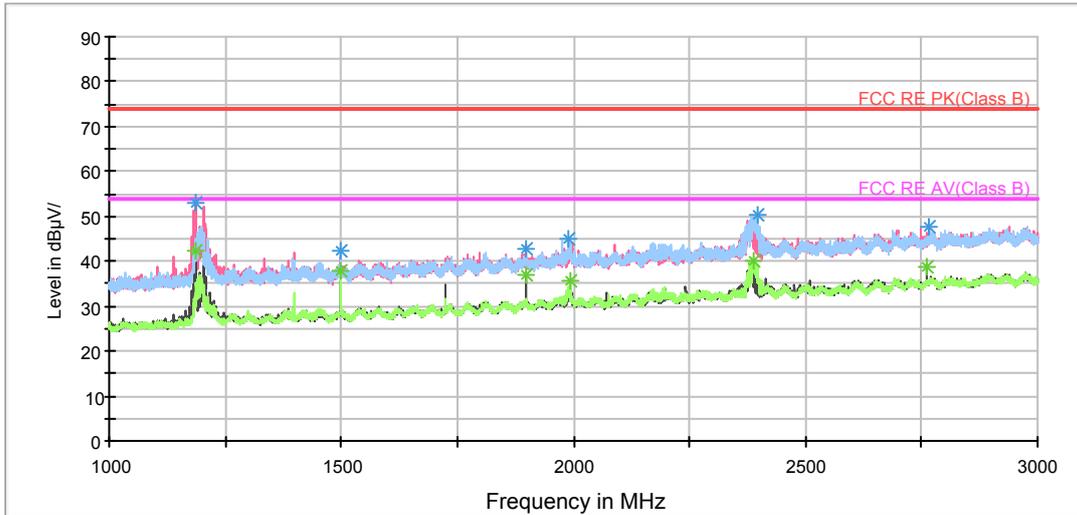
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3593.750000     | 48.3             | 200.0       | V            | 354.0         | 50.6                   | -2.3                | 5.7         | 54             |
| 4626.250000     | 34.8             | 200.0       | V            | 322.0         | 33.9                   | 0.9                 | 19.2        | 54             |
| 4918.750000     | 40.5             | 200.0       | V            | 298.0         | 38.6                   | 1.9                 | 13.5        | 54             |
| 5496.875000     | 46.3             | 200.0       | V            | 177.0         | 43.2                   | 3.1                 | 7.7         | 54             |
| 5777.500000     | 45.0             | 200.0       | V            | 298.0         | 41.1                   | 3.9                 | 9.0         | 54             |
| 6933.750000     | 43.8             | 200.0       | V            | 298.0         | 37.6                   | 6.2                 | 10.2        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

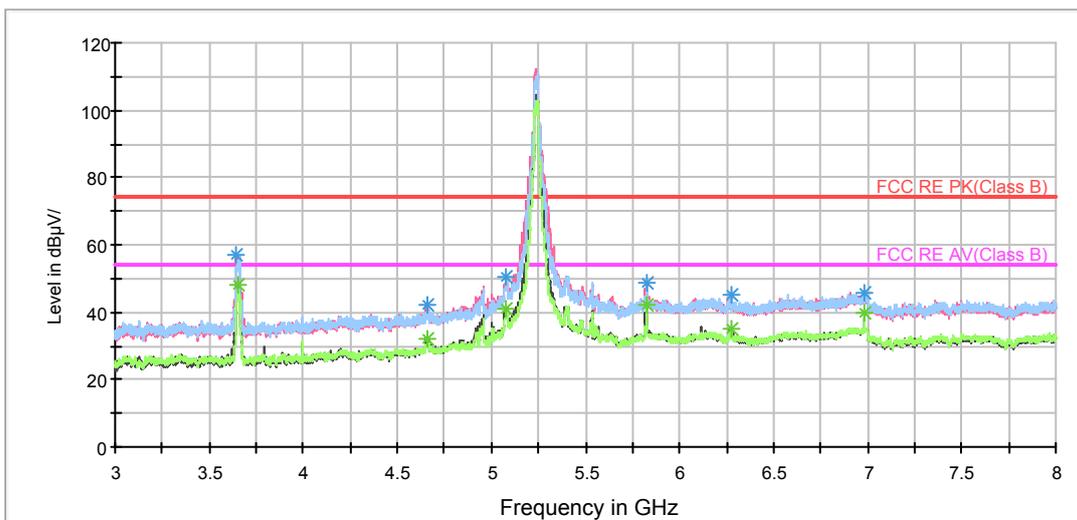
## 802.11n (HT20) CH48

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

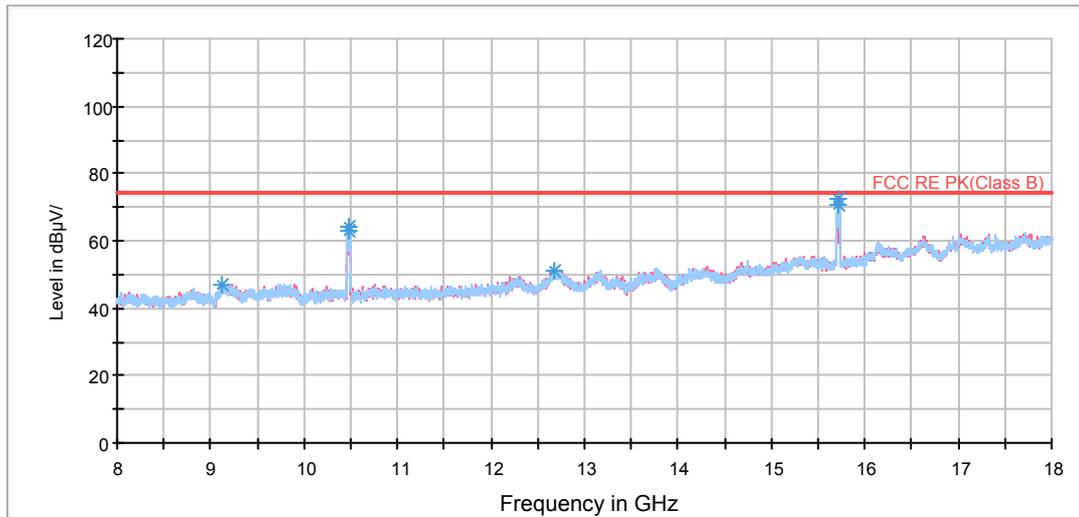
RE 3-18GHz PK+AV



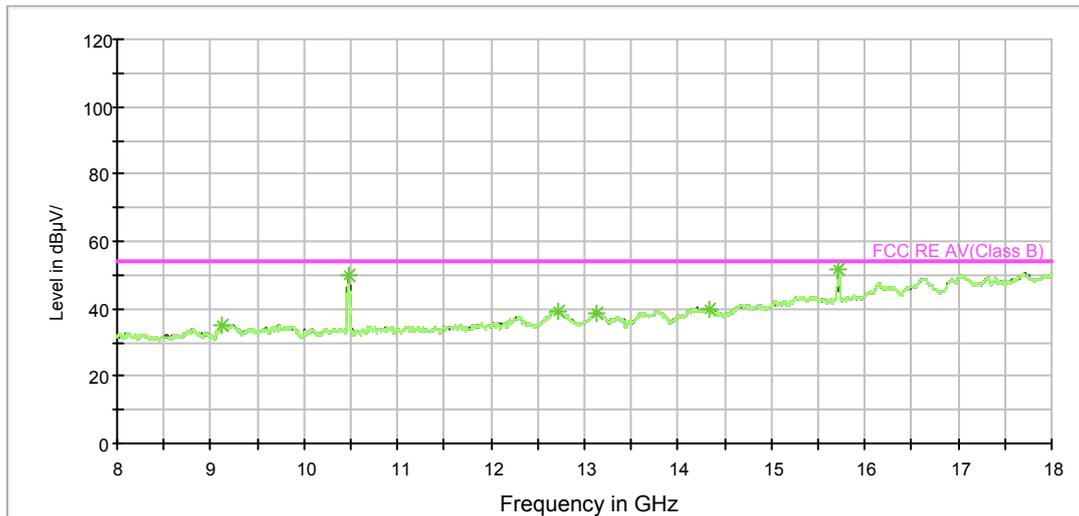
Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV

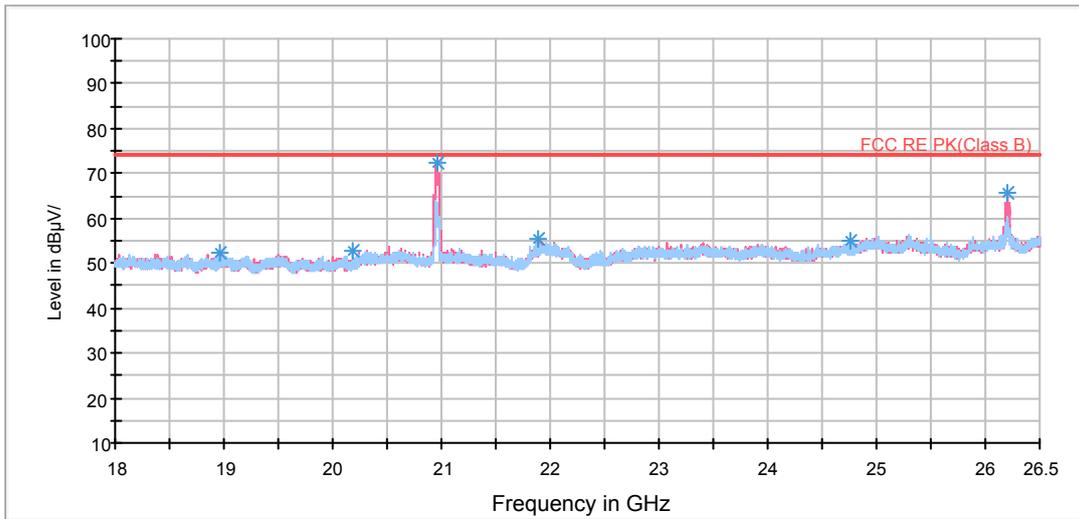


RE 3-18GHz PK+AV

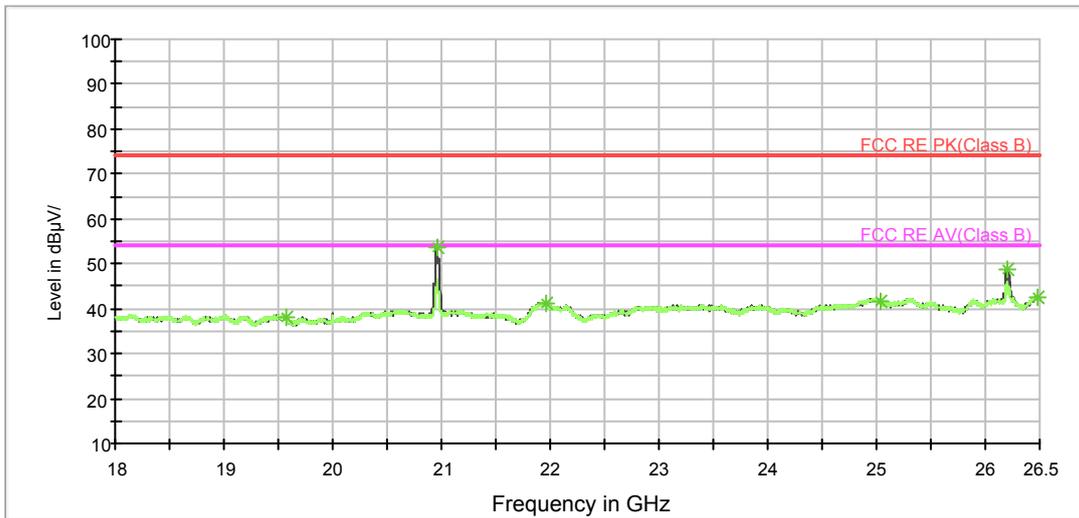


Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV

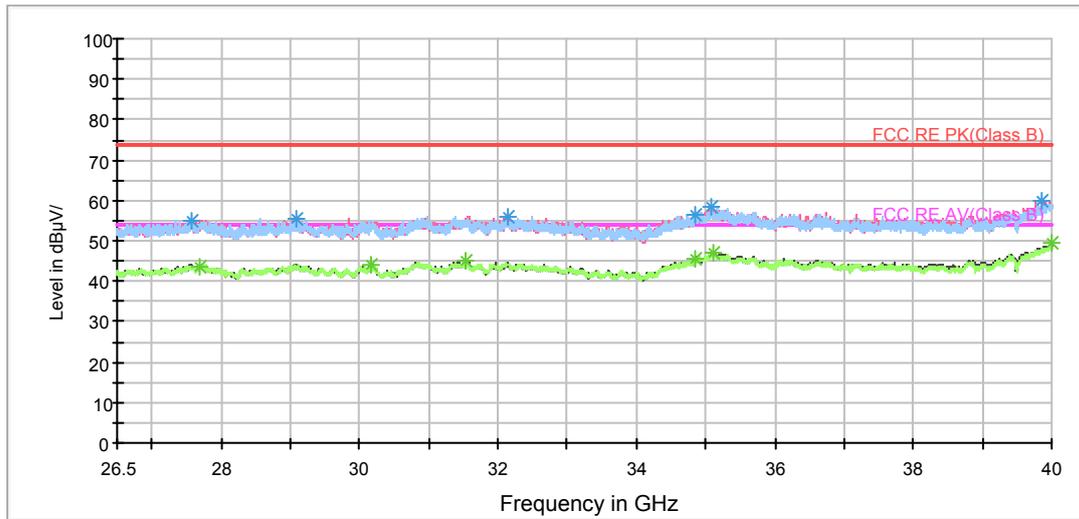


BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3647.500000     | 57.3          | 200.0       | V            | 0.0           | 59.2                   | -1.9                | 16.7        | 74             |
| 4663.125000     | 42.3          | 200.0       | V            | 303.0         | 41.6                   | 0.7                 | 31.7        | 74             |
| 5076.250000     | 50.5          | 200.0       | V            | 2.0           | 48.9                   | 1.6                 | 23.5        | 74             |
| 5822.500000     | 48.5          | 200.0       | V            | 326.0         | 44.0                   | 4.5                 | 25.5        | 74             |
| 6275.000000     | 44.9          | 200.0       | V            | 0.0           | 39.5                   | 5.4                 | 29.1        | 74             |
| 6986.875000     | 45.8          | 200.0       | H            | 16.0          | 39.4                   | 6.4                 | 28.2        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3653.125000     | 47.9             | 200.0       | V            | 0.0           | 49.8                   | -1.9                | 6.1         | 54             |
| 4662.500000     | 32.3             | 200.0       | V            | 56.0          | 31.6                   | 0.7                 | 21.7        | 54             |
| 5076.250000     | 41.3             | 200.0       | V            | 2.0           | 39.7                   | 1.6                 | 12.7        | 54             |
| 5822.500000     | 42.2             | 200.0       | V            | 326.0         | 37.7                   | 4.5                 | 11.8        | 54             |
| 6273.750000     | 35.2             | 200.0       | V            | 350.0         | 29.8                   | 5.4                 | 18.8        | 54             |
| 6986.875000     | 40.0             | 200.0       | H            | 16.0          | 33.6                   | 6.4                 | 14.0        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)