

## 8.5 Frequency Stability

### ■ Test requirements

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

### ■ Test Procedure

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between 0 °C and +60 °C. The temperature was incremented by 10 °C intervals and the unit was allowed to stabilize at each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

### ■ Test Results: **Comply**

U-NII-1 : (5150 MHz ~ 5250 MHz)\_ANT 1

| 26 dB Bandwidth Reference |                |
|---------------------------|----------------|
| Low edge(MHz)             | High edge(MHz) |
| 5170.268750               | 5249.350000    |

| Supply Voltage (V DC) | TEMP (°C) | Operating Frequency     |               |                                       |                         |               |                                       |
|-----------------------|-----------|-------------------------|---------------|---------------------------------------|-------------------------|---------------|---------------------------------------|
|                       |           | 5180 MHz                |               |                                       | 5240 MHz -              |               |                                       |
|                       |           | Measured Frequency (Hz) | Deviation (%) | 26dBc low edge <sup>Note 1</sup> (Hz) | Measured Frequency (Hz) | Deviation (%) | 26dBc low edge <sup>Note 1</sup> (Hz) |
| 7.400                 | +25(Ref)  | 5,179,933,312           | -0.001287     | 5,170,202,062                         | 5,239,939,207           | -0.001160     | 5,249,289,207                         |
|                       | +60       | 5,179,926,080           | -0.001427     | 5,170,194,830                         | 5,239,931,258           | -0.001312     | 5,249,281,258                         |
|                       | +50       | 5,179,926,843           | -0.001412     | 5,170,195,593                         | 5,239,932,506           | -0.001288     | 5,249,282,506                         |
|                       | +40       | 5,179,929,308           | -0.001365     | 5,170,198,058                         | 5,239,935,003           | -0.001240     | 5,249,285,003                         |
|                       | +30       | 5,179,930,549           | -0.001341     | 5,170,199,299                         | 5,239,938,636           | -0.001171     | 5,249,288,636                         |
|                       | +20       | 5,179,948,355           | -0.000997     | 5,170,217,105                         | 5,239,943,202           | -0.001084     | 5,249,293,202                         |
|                       | +10       | 5,179,951,846           | -0.000930     | 5,170,220,596                         | 5,239,944,963           | -0.001050     | 5,249,294,963                         |
|                       | 0         | 5,179,954,315           | -0.000882     | 5,170,223,065                         | 5,239,949,034           | -0.000973     | 5,249,299,034                         |
|                       | -         | -                       | -             | -                                     | -                       | -             | -                                     |
| 6.290                 | +25       | 5,179,932,945           | -0.001295     | 5,170,201,695                         | 5,239,398,685           | -0.011477     | 5,248,748,685                         |
| 8.510                 | +25       | 5,179,933,547           | -0.001283     | 5,170,202,297                         | 5,239,939,361           | -0.001157     | 5,249,289,361                         |

Note 1: 26 dB Bandwidth Reference Low edge (Hz) + (Measured Frequency (Hz) - Operating Frequency (Hz)) = 26dBc low edge (Hz)

Note 2: ANT1 is worst case in U-NII-1 band

**U-NII-3 : (5725 MHz ~ 5850 MHz)\_ANT 1**

| 6 dB Bandwidth Reference |             |
|--------------------------|-------------|
| Low edge                 | High edge   |
| 5736.800000              | 5833.093750 |

| Supply Voltage (V DC) | TEMP (°C) | Operating Frequency     |               |                                       |                         |               |                                        |
|-----------------------|-----------|-------------------------|---------------|---------------------------------------|-------------------------|---------------|----------------------------------------|
|                       |           | 5745 MHz                |               |                                       | 5825 MHz                |               |                                        |
|                       |           | Measured Frequency (Hz) | Deviation (%) | 26dBc low edge <sup>Note 1</sup> (Hz) | Measured Frequency (Hz) | Deviation (%) | 26dBc High edge <sup>Note 2</sup> (Hz) |
| 7.400                 | +25(Ref)  | 5,744,926,886           | -0.001273     | 5,736,726,886                         | 5,824,927,272           | -0.001249     | 5,833,021,022                          |
|                       | +60       | 5,744,922,048           | -0.001357     | 5,736,722,048                         | 5,824,920,845           | -0.001359     | 5,833,014,595                          |
|                       | +50       | 5,744,923,148           | -0.001338     | 5,736,723,148                         | 5,824,922,236           | -0.001335     | 5,833,015,986                          |
|                       | +40       | 5,744,924,854           | -0.001308     | 5,736,724,854                         | 5,824,925,316           | -0.001282     | 5,833,019,066                          |
|                       | +30       | 5,744,925,316           | -0.001300     | 5,736,725,316                         | 5,824,926,120           | -0.001268     | 5,833,019,870                          |
|                       | +20       | 5,744,926,648           | -0.001277     | 5,736,726,648                         | 5,824,928,037           | -0.001235     | 5,833,021,787                          |
|                       | +10       | 5,744,928,348           | -0.001247     | 5,736,728,348                         | 5,824,934,365           | -0.001127     | 5,833,028,115                          |
|                       | 0         | 5,744,940,541           | -0.001035     | 5,736,740,541                         | 5,824,942,365           | -0.000989     | 5,833,036,115                          |
|                       | -         | -                       | -             | -                                     | -                       | -             | -                                      |
| 6.290                 | +25       | 5,744,927,052           | -0.001270     | 5,736,727,052                         | 5,824,927,955           | -0.001237     | 5,833,021,705                          |
| 8.510                 | +25       | 5,744,926,514           | -0.001279     | 5,736,726,514                         | 5,824,928,032           | -0.001236     | 5,833,021,782                          |

Note 1: **6 dB Bandwidth Reference Low edge (Hz) + (Measured Frequency (Hz) - Operating Frequency (Hz)) = 6dBc low edge (Hz)**

Note 2: **26 dB Bandwidth Reference High edge (Hz) + (Measured Frequency (Hz) - Operating Frequency (Hz)) = 26dBc High edge (Hz)**

Note 2: **ANT1 is worst case in U-NII-3 band**

## 8.6 Radiated Spurious Emission Measurements

### ■ Test Procedure

#### • FCC Part 15.209(a) and (b)

| Frequency (MHz) | Limit (uV/m) | Measurement Distance (meter) |
|-----------------|--------------|------------------------------|
| 0.009 – 0.490   | 2400/F(KHz)  | 300                          |
| 0.490 – 1.705   | 24000/F(KHz) | 30                           |
| 1.705 – 30.0    | 30           | 30                           |
| 30 ~ 88         | 100 **       | 3                            |
| 88 ~ 216        | 150 **       | 3                            |
| 216 ~ 960       | 200 **       | 3                            |
| Above 960       | 500          | 3                            |

\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

#### • FCC Part 15.205 (a): Only spurious emissions are permitted in any of the frequency bands listed below:

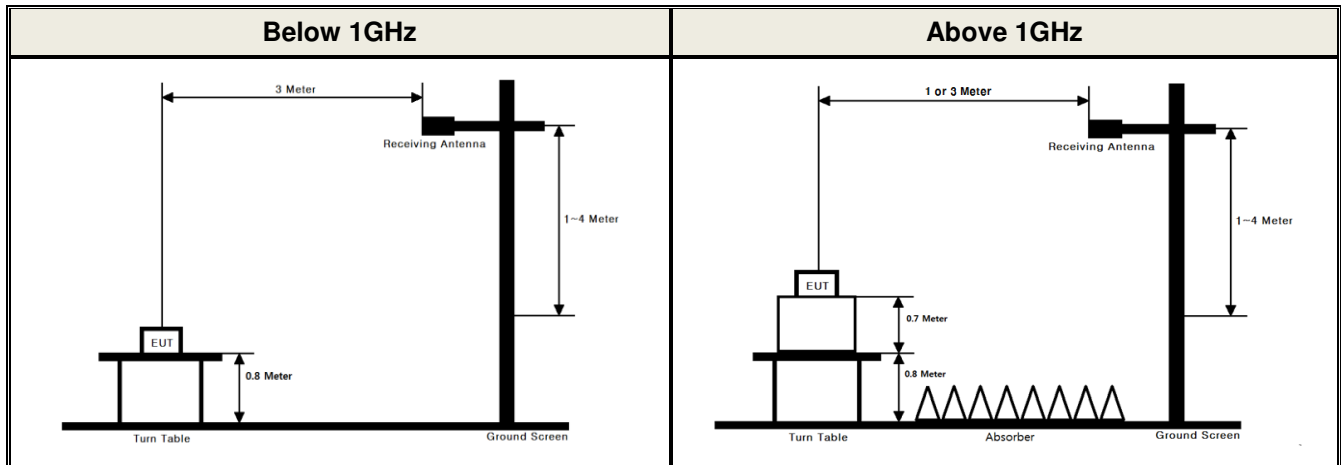
| MHz               | MHz               | MHz               | MHz             | GHz          | GHz           |
|-------------------|-------------------|-------------------|-----------------|--------------|---------------|
| 0.009 ~ 0.110     | 8.41425 ~ 8.41475 | 108 ~ 121.94      | 1300 ~ 1427     | 4.5 ~ 5.15   | 14.47 ~ 14.5  |
| 0.495 ~ 0.505     | 12.29 ~ 12.293    | 123 ~ 138         | 1435 ~ 1626.5   | 5.35 ~ 5.46  | 15.35 ~ 16.2  |
| 2.1735 ~ 2.1905   | 12.51975 ~        | 149.9 ~ 150.05    | 1645.5 ~ 1646.5 | 7.25 ~ 7.75  | 17.7 ~ 21.4   |
| 4.125 ~ 4.128     | 12.52025          | 160.52475 ~       | 1660 ~ 1710     | 8.025 ~ 8.5  | 22.01 ~ 23.12 |
| 4.17725 ~ 4.17775 | 12.57675 ~        | 160.52525         | 1718.8 ~ 1722.2 | 9.0 ~ 9.2    | 23.6 ~ 24.0   |
| 4.20725 ~ 4.20775 | 12.57725          | 160.7 ~ 160.9     | 2200 ~ 2300     | 9.3 ~ 9.5    | 31.2 ~ 31.8   |
| 6.215 ~ 6.218     | 13.36 ~ 13.41     | 162.0125 ~ 167.17 | 2310 ~ 2390     | 10.6 ~ 12.7  | 36.43 ~ 36.5  |
| 6.26775 ~ 6.26825 | 16.42 ~ 16.423    | 167.72 ~ 173.2    | 2483.5 ~ 2500   | 13.25 ~ 13.4 | Above 38.6    |
| 6.31175 ~ 6.31225 | 16.69475 ~        | 240 ~ 285         | 2655 ~ 2900     |              |               |
| 8.291 ~ 8.294     | 16.69525          | 322 ~ 335.4       | 3260 ~ 3267     |              |               |
| 8.362 ~ 8.366     | 16.80425 ~        | 399.90 ~ 410      | 3332 ~ 3339     |              |               |
| 8.37625 ~ 8.38675 | 16.80475          | 608 ~ 614         | 3345.8 ~ 3358   |              |               |
|                   | 25.5 ~ 25.67      | 960 ~ 1240        | 3600 ~ 4000     |              |               |
|                   | 37.5 ~ 38.25      |                   |                 |              |               |
|                   | 73 ~ 74.6         |                   |                 |              |               |
|                   | 74.8 ~ 75.2       |                   |                 |              |               |

• **FCC Part 15.205(b):** The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

• **FCC Part 15.407 (b):** Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the **5.15-5.25 GHz band**: all emissions outside of the **5.15-5.35 GHz band** shall not exceed an **EIRP of -27 dBm/MHz**.
- (2) For transmitters operating in the **5.25-5.35 GHz band**: all emissions outside of the **5.15-5.35 GHz band** shall not exceed an **EIRP of -27 dBm/MHz**.
- (3) For transmitters operating in the **5.47-5.725 GHz band**: all emissions outside of the **5.47-5.725 GHz band** shall not exceed an **EIRP of -27 dBm/MHz**.
- (4) For transmitters operating in the **5.725-5.85 GHz 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.
- (5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- (6) Unwanted emissions **below 1 GHz** must comply with the general field strength limits set forth in **Section 15.209**. Further, any U-NII devices using an **AC power line** are required to comply also with the conducted limits set forth in **Section 15.207**.
- (7) The provisions of §15.205 apply to intentional radiators operating under this section
- (8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

## ■ Test Procedure



## ■ Test Procedure

1. The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements above 1 GHz, the table height is 1.5 m.
2. The turn table shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 1m or 3 m away from the receiving antenna, which is varied from 1m to 4 m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

Radiated spurious emission measured using following Measurement Procedure of KDB789033 D02

### ► General Requirements for Unwanted Emissions Measurements

The following requirements apply to all unwanted emissions measurements, both in and outside of the restricted bands:

#### ■ EUT Duty Cycle

- (1) The EUT shall be configured or modified to **transmit continuously** except as stated in (ii), below. The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle (**to no lower than 98 percent**) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.
- (2) If **continuous transmission (or at least 98 percent duty cycle) cannot be achieved** due to hardware limitations of the EUT (e.g., overheating), the following additions to the measurement and reporting procedures are required:
  - The EUT shall be configured to operate at the maximum achievable duty cycle.
  - Measure the duty cycle, x, of the transmitter output signal.
  - Adjustments to measurement procedures (e.g., increasing test time and number of traces averaged) shall be performed as described in the procedures below.
  - The test report shall include the following additional information:
    - The reason for the duty cycle limitation.
    - The duty cycle achieved for testing and the associated transmit duration and interval between transmissions.
    - The sweep time and the amount of time used for trace stabilization during max-hold measurements for peak emission measurements.
- (3) **Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.**

### ► Measurements below 1000 MHz

- a) Follow the requirements in section II.G.3, "General Requirements for Unwanted Emissions Measurements".
- b) Compliance shall be demonstrated using **CISPR quasi-peak detection**; however, **peak detection** is permitted as an alternative to quasi-peak detection.

► **Measurements Above 1000 MHz (Peak)**

- a) Follow the requirements in section II.G.3, “General Requirements for Unwanted Emissions Measurements”.
- b) Peak emission levels are measured by setting the analyzer as follows:
  - (i) **RBW = 1 MHz.**
  - (ii) **VBW ≥ 3 MHz.**
  - (iii) **Detector = Peak.**
  - (iv) Sweep time = Auto.
  - (v) Trace mode = Max hold.
  - (vi) Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately  $1/x$ , where  $x$  is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

► **Measurements Above 1000 MHz (Method AD)**

- (i) **RBW = 1 MHz.**
- (ii) **VBW ≥ 3 MHz.**
- (iii) **Detector = RMS**, if  $\text{span} / (\# \text{ of points in sweep}) \leq \text{RBW} / 2$ . Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, the detector mode shall be set to peak.
- (iv) Averaging type = power (i.e., RMS)
  - As an alternative, the detector and averaging type may be set for linear voltage averaging. Some analyzers require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
- (v) Sweep time = Auto.
- (vi) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, the number of traces shall be increased by a factor of  $1/x$ , where  $x$  is the duty cycle. For example, with 50 percent duty cycle, at least 200 traces shall be averaged.
- (vii) If tests are performed with the EUT transmitting at a duty cycle less than 98 percent, a correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
  - **If power averaging (RMS) mode was used in step (iv) above, the correction factor is  $10 \log(1/x)$ , where  $x$  is the duty cycle.** For example, if the transmit duty cycle was 50 percent, then 3 dB must be added to the measured emission levels.
  - If linear voltage averaging mode was used in step (iv) above, the correction factor is  $20 \log(1/x)$ , where  $x$  is the duty cycle. For example, if the transmit duty cycle was 50 percent, then 6 dB must be added to the measured emission levels.
  - If a specific emission is demonstrated to be continuous (100 percent duty cycle) rather than turning on and off with the transmit cycle, no duty cycle correction is required for that emission.

Please refer to Appendix II for the duty correction factor

# Measurement Data:

## Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : 802.11a

| Band    | Tested Channel    | Freq. (MHz) | ANT Pol | EUT Position (Axis) | Detector Mode | Reading (dBuV) | T.F (dB/m) | DCCF (dB) | DCF (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|---------|-------------------|-------------|---------|---------------------|---------------|----------------|------------|-----------|----------|-----------------|----------------|-------------|
| U-NII 1 | 36<br>(5180 MHz)  | 5126.930    | H       | Z                   | PK            | 46.55          | 7.82       | N/A       | N/A      | 54.37           | 74.00          | 19.63       |
|         |                   | 5127.600    | H       | Z                   | AV            | 37.77          | 7.82       | 0.61      | N/A      | 46.20           | 54.00          | 7.80        |
|         |                   | 10359.383   | V       | Z                   | PK            | 49.40          | 12.18      | N/A       | -9.54    | 52.04           | 68.20          | 16.16       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 40<br>(5200 MHz)  | 10399.733   | V       | Z                   | PK            | 48.90          | 12.35      | N/A       | -9.54    | 51.71           | 68.20          | 16.49       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 48<br>(5240 MHz)  | 5350.800    | H       | Z                   | PK            | 42.52          | 7.88       | N/A       | N/A      | 50.40           | 74.00          | 23.60       |
|         |                   | 5351.040    | H       | Z                   | AV            | 33.73          | 7.88       | 0.61      | N/A      | 42.22           | 54.00          | 11.78       |
|         |                   | 10479.467   | V       | Z                   | PK            | 49.60          | 12.69      | N/A       | -9.54    | 52.75           | 68.20          | 15.45       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
| U-NII 3 | 149<br>(5745 MHz) | 5651.490    | H       | Z                   | PK            | 45.27          | 8.98       | N/A       | N/A      | 54.25           | 69.33          | 15.08       |
|         |                   | 11491.667   | V       | Z                   | PK            | 51.91          | 14.18      | N/A       | -9.54    | 56.55           | 74.00          | 17.45       |
|         |                   | 11491.433   | V       | Z                   | AV            | 40.24          | 14.18      | 0.61      | -9.54    | 45.49           | 54.00          | 8.51        |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 157<br>(5785 MHz) | 11571.517   | V       | Z                   | PK            | 53.81          | 14.24      | N/A       | -9.54    | 58.51           | 74.00          | 15.49       |
|         |                   | 11572.283   | V       | Z                   | AV            | 42.86          | 14.24      | 0.61      | -9.54    | 48.17           | 54.00          | 5.83        |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 165<br>(5825 MHz) | 5935.060    | H       | Z                   | PK            | 45.16          | 9.61       | N/A       | N/A      | 54.77           | 68.20          | 13.43       |
|         |                   | 11649.333   | V       | Z                   | PK            | 52.96          | 14.29      | N/A       | -9.54    | 57.71           | 74.00          | 16.29       |
|         |                   | 11649.683   | V       | Z                   | AV            | 41.52          | 14.29      | 0.61      | -9.54    | 46.88           | 54.00          | 7.12        |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |

### Note.

- No other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.  
 $\text{Margin} = \text{Limit} - \text{Result}$  /  $\text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF}$  /  $\text{T.F} = \text{AF} + \text{CL} - \text{AG}$   
Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,  
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Measurement Distance = 3 m for below 10 GHz, Measurement Distance = 1 m for above 10 GHz.  
Therefore Distance Correction Factor(DCF) :  $-9.54 \text{ dB} = 20 \cdot \log(1\text{m}/3\text{m})$
- The limit is converted to field strength.  
 $\text{E}[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$

# Measurement Data:

## Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : 802.11n(HT20)

| Band    | Tested Channel    | Freq. (MHz) | ANT Pol | EUT Position (Axis) | Detector Mode | Reading (dBuV) | T.F (dB/m) | DCCF (dB) | DCF (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|---------|-------------------|-------------|---------|---------------------|---------------|----------------|------------|-----------|----------|-----------------|----------------|-------------|
| U-NII 1 | 36<br>(5180 MHz)  | 5127.800    | H       | Z                   | PK            | 45.79          | 7.82       | N/A       | N/A      | 53.61           | 74.00          | 20.39       |
|         |                   | 5127.930    | H       | Z                   | AV            | 34.93          | 7.82       | 1.14      | N/A      | 43.89           | 54.00          | 10.11       |
|         |                   | 10362.383   | V       | Z                   | PK            | 47.33          | 12.18      | N/A       | -9.54    | 49.97           | 68.20          | 18.23       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 40<br>(5200 MHz)  | 10400.400   | V       | Z                   | PK            | 46.89          | 12.35      | N/A       | -9.54    | 49.70           | 68.20          | 18.50       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 48<br>(5240 MHz)  | 5351.040    | H       | Z                   | PK            | 43.47          | 7.88       | N/A       | N/A      | 51.35           | 74.00          | 22.65       |
|         |                   | 5350.480    | H       | Z                   | AV            | 33.55          | 7.88       | 1.14      | N/A      | 42.57           | 54.00          | 11.43       |
|         |                   | 10481.950   | V       | Z                   | PK            | 45.58          | 12.69      | N/A       | -9.54    | 48.73           | 68.20          | 19.47       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
| U-NII 3 | 149<br>(5745 MHz) | 5650.640    | H       | Z                   | PK            | 44.75          | 8.98       | N/A       | N/A      | 53.73           | 68.70          | 14.97       |
|         |                   | 11488.933   | V       | Z                   | PK            | 48.51          | 14.18      | N/A       | -9.54    | 53.15           | 74.00          | 20.85       |
|         |                   | 11488.783   | V       | Z                   | AV            | 38.08          | 14.18      | 1.14      | -9.54    | 43.86           | 54.00          | 10.14       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 157<br>(5785 MHz) | 11568.700   | V       | Z                   | PK            | 46.78          | 14.24      | N/A       | -9.54    | 51.48           | 74.00          | 22.52       |
|         |                   | 11568.150   | V       | Z                   | AV            | 35.92          | 14.24      | 1.14      | -9.54    | 41.76           | 54.00          | 12.24       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 165<br>(5825 MHz) | 5934.030    | H       | Z                   | PK            | 45.29          | 9.61       | N/A       | N/A      | 54.90           | 68.20          | 13.30       |
|         |                   | 11649.267   | V       | Z                   | PK            | 47.76          | 14.29      | N/A       | -9.54    | 52.51           | 74.00          | 21.49       |
|         |                   | 11648.583   | V       | Z                   | AV            | 37.00          | 14.29      | 1.14      | -9.54    | 42.89           | 54.00          | 11.11       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |

### Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Sample Calculation.  
 $\text{Margin} = \text{Limit} - \text{Result}$  /  $\text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF}$  /  $\text{T.F} = \text{AF} + \text{CL} - \text{AG}$   
Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,  
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
3. Measurement Distance = 3 m for below 10 GHz, Measurement Distance = 1 m for above 10 GHz.  
Therefore Distance Correction Factor(DCF) :  $-9.54 \text{ dB} = 20 \cdot \log(1\text{m}/3\text{m})$
4. The limit is converted to field strength.  
 $\text{E}[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$

■ Measurement Data:

**Radiated Spurious Emissions data(9 kHz ~ 40 GHz) : 802.11n(HT40)**

| Band    | Tested Channel    | Freq. (MHz) | ANT Pol | EUT Position (Axis) | Detector Mode | Reading (dBuV) | T.F (dB/m) | DCCF (dB) | DCF (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|---------|-------------------|-------------|---------|---------------------|---------------|----------------|------------|-----------|----------|-----------------|----------------|-------------|
| U-NII 1 | 38<br>(5190 MHz)  | 5149.070    | H       | Z                   | PK            | 50.85          | 7.82       | N/A       | N/A      | 58.67           | 74.00          | 15.33       |
|         |                   | 5149.470    | H       | Z                   | AV            | 39.55          | 7.82       | 2.01      | N/A      | 49.38           | 54.00          | 4.62        |
|         |                   | 10380.830   | V       | Z                   | PK            | 51.00          | 12.27      | N/A       | -9.54    | 53.73           | 68.20          | 14.47       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 46<br>(5230 MHz)  | 5350.800    | H       | Z                   | PK            | 42.51          | 7.88       | N/A       | N/A      | 50.39           | 74.00          | 23.61       |
|         |                   | 5351.280    | H       | Z                   | AV            | 33.46          | 7.88       | 2.01      | N/A      | 43.35           | 54.00          | 10.65       |
|         |                   | 10458.930   | V       | Z                   | PK            | 46.95          | 12.60      | N/A       | -9.54    | 50.01           | 68.20          | 18.19       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
| U-NII 3 | 151<br>(5755 MHz) | 5649.170    | H       | Z                   | PK            | 45.74          | 8.98       | N/A       | N/A      | 54.72           | 68.20          | 13.48       |
|         |                   | 11510.200   | V       | Z                   | PK            | 45.85          | 14.20      | N/A       | -9.54    | 50.51           | 74.00          | 23.49       |
|         |                   | 11511.170   | V       | Z                   | AV            | 34.61          | 14.20      | 2.01      | -9.54    | 41.28           | 54.00          | 12.72       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |
|         | 159<br>(5795 MHz) | 5947.850    | H       | Z                   | PK            | 44.41          | 9.55       | N/A       | N/A      | 53.96           | 68.20          | 14.24       |
|         |                   | 11597.330   | V       | Z                   | PK            | 45.19          | 14.25      | N/A       | -9.54    | 49.90           | 74.00          | 24.10       |
|         |                   | 11597.770   | V       | Z                   | AV            | 35.11          | 14.25      | 2.01      | -9.54    | 41.83           | 54.00          | 12.17       |
|         |                   | -           | -       | -                   | -             | -              | -          | -         | -        | -               | -              | -           |

**Note.**

- No other spurious and harmonic emissions were found greater than listed emissions on above table.
- Sample Calculation.  
 $\text{Margin} = \text{Limit} - \text{Result}$  /  $\text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF}$  /  $\text{T.F} = \text{AF} + \text{CL} - \text{AG}$   
Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,  
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Measurement Distance = 3 m for below 10 GHz, Measurement Distance = 1 m for above 10 GHz.  
Therefore Distance Correction Factor(DCF) :  $-9.54 \text{ dB} = 20 \cdot \log(1\text{m}/3\text{m})$
- The limit is converted to field strength.  
 $\text{E}[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$

## 8.7 AC Conducted Emissions

### ■ Test Procedure

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. Emissions closest to the limit are measured in the quasi-peak mode (QP) and average mode (AV) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

### ■ Measurement Data: **Comply**

Note 1: See next pages for actual measured spectrum plots and data for worst case result.

### ■ Minimum Standard: FCC Part 15.207(a)

| Frequency Range<br>(MHz) | Conducted Limit (dBuV) |            |
|--------------------------|------------------------|------------|
|                          | Quasi-Peak             | Average    |
| 0.15 ~ 0.5               | 66 to 56 *             | 56 to 46 * |
| 0.5 ~ 5                  | 56                     | 46         |
| 5 ~ 30                   | 60                     | 50         |

\* Decreases with the logarithm of the frequency

## AC Line Conducted Emissions (Graph)

Test Mode: U-NII 1 & 802.11n(HT40) & MIMO & 5190 MHz

## Results of Conducted Emission

DT&amp;C

Date 2017-02-10

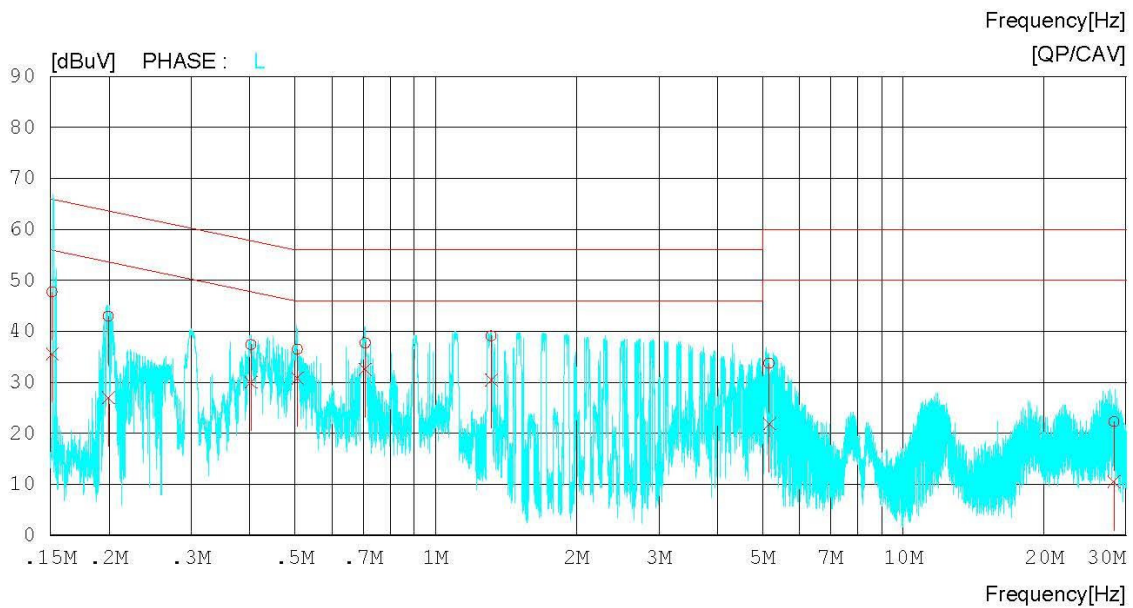
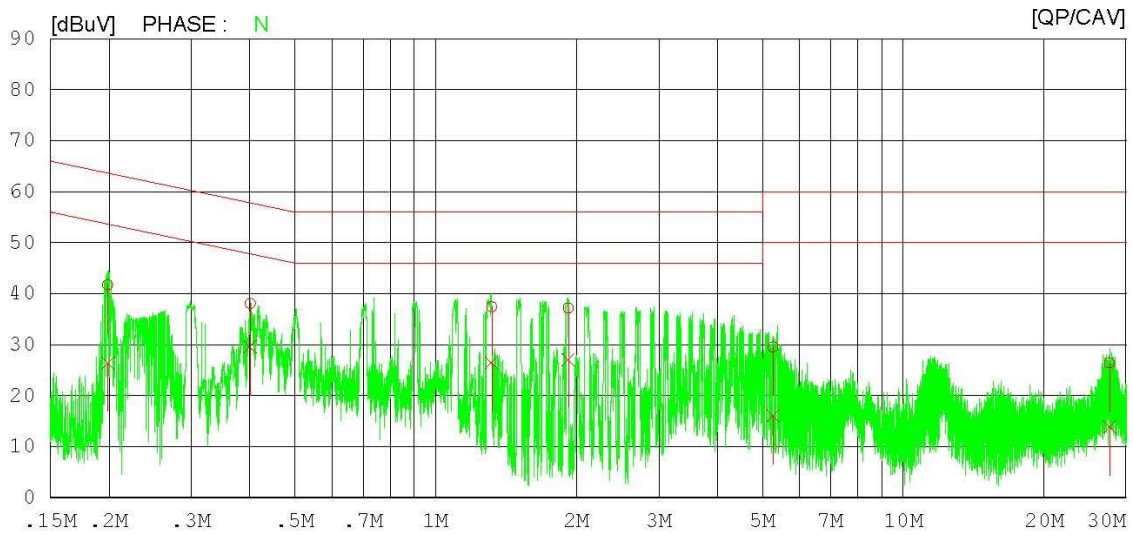
Model EVS 2430W  
Function 5.1GHz\_WLAN  
Mode 802.11n(HT40)  
Test condition

Temp/Humi.  
Power Supply  
Operator

23 'C 48 %  
AC 120 V 60 Hz  
J.W.Kim

Memo

LIMIT : FCC P15.207 QP  
FCC P15.207 AV



## AC Line Conducted Emissions (Data List)

Test Mode: U-NII 1 & 802.11n(HT40) & MIMO & 5190 MHz

## Results of Conducted Emission

DT&amp;C

Date 2017-02-10

|                |               |              |                |
|----------------|---------------|--------------|----------------|
| Model          | EVS 2430W     | Temp/Humi.   | 23 'C 48 %     |
| Function       | 5.1GHz_WLAN   | Power Supply | AC 120 V 60 Hz |
| Mode           | 802.11n(HT40) | Operator     | J.W.Kim        |
| Test condition |               |              |                |

Memo

LIMIT : FCC P15.207 QP  
FCC P15.207 AV

| NO | FREQ<br>[MHz] | READING      |               | C.FACTOR<br>[dB] | RESULT       |               | LIMIT        |               | MARGIN       |               | PHASE |
|----|---------------|--------------|---------------|------------------|--------------|---------------|--------------|---------------|--------------|---------------|-------|
|    |               | QP<br>[dBuV] | CAV<br>[dBuV] |                  | QP<br>[dBuV] | CAV<br>[dBuV] | QP<br>[dBuV] | CAV<br>[dBuV] | QP<br>[dBuV] | CAV<br>[dBuV] |       |
| 1  | 0.19923       | 39.62        | 24.33         | 2.07             | 41.69        | 26.40         | 63.64        | 53.64         | 21.95        | 27.24         | N     |
| 2  | 0.40171       | 37.18        | 28.76         | 0.87             | 38.05        | 29.63         | 57.82        | 47.82         | 19.77        | 18.19         | N     |
| 3  | 1.31820       | 36.98        | 26.11         | 0.36             | 37.34        | 26.47         | 56.00        | 46.00         | 18.66        | 19.53         | N     |
| 4  | 1.92060       | 36.87        | 26.74         | 0.33             | 37.20        | 27.07         | 56.00        | 46.00         | 18.80        | 18.93         | N     |
| 5  | 5.27500       | 29.24        | 15.70         | 0.34             | 29.58        | 16.04         | 60.00        | 50.00         | 30.42        | 33.96         | N     |
| 6  | 27.63360      | 25.77        | 13.32         | 0.57             | 26.34        | 13.89         | 60.00        | 50.00         | 33.66        | 36.11         | N     |
| 7  | 0.15127       | 44.36        | 32.18         | 3.35             | 47.71        | 35.53         | 65.93        | 55.93         | 18.22        | 20.40         | L     |
| 8  | 0.19971       | 40.79        | 24.89         | 2.09             | 42.88        | 26.98         | 63.62        | 53.62         | 20.74        | 26.64         | L     |
| 9  | 0.40282       | 36.46        | 29.07         | 0.89             | 37.35        | 29.96         | 57.80        | 47.80         | 20.45        | 17.84         | L     |
| 10 | 0.50650       | 35.75        | 30.10         | 0.70             | 36.45        | 30.80         | 56.00        | 46.00         | 19.55        | 15.20         | L     |
| 11 | 0.70633       | 37.19        | 31.99         | 0.53             | 37.72        | 32.52         | 56.00        | 46.00         | 18.28        | 13.48         | L     |
| 12 | 1.31580       | 38.65        | 30.12         | 0.39             | 39.04        | 30.51         | 56.00        | 46.00         | 16.96        | 15.49         | L     |
| 13 | 5.17020       | 33.28        | 21.41         | 0.38             | 33.66        | 21.79         | 60.00        | 50.00         | 26.34        | 28.21         | L     |
| 14 | 28.23160      | 21.44        | 9.71          | 0.75             | 22.19        | 10.46         | 60.00        | 50.00         | 37.81        | 39.54         | L     |

## AC Line Conducted Emissions (Graph)

Test Mode: U-NII 3 & 802.11n(HT20) & MIMO & 5745 MHz

## Results of Conducted Emission

DT&amp;C

Date 2017-02-10

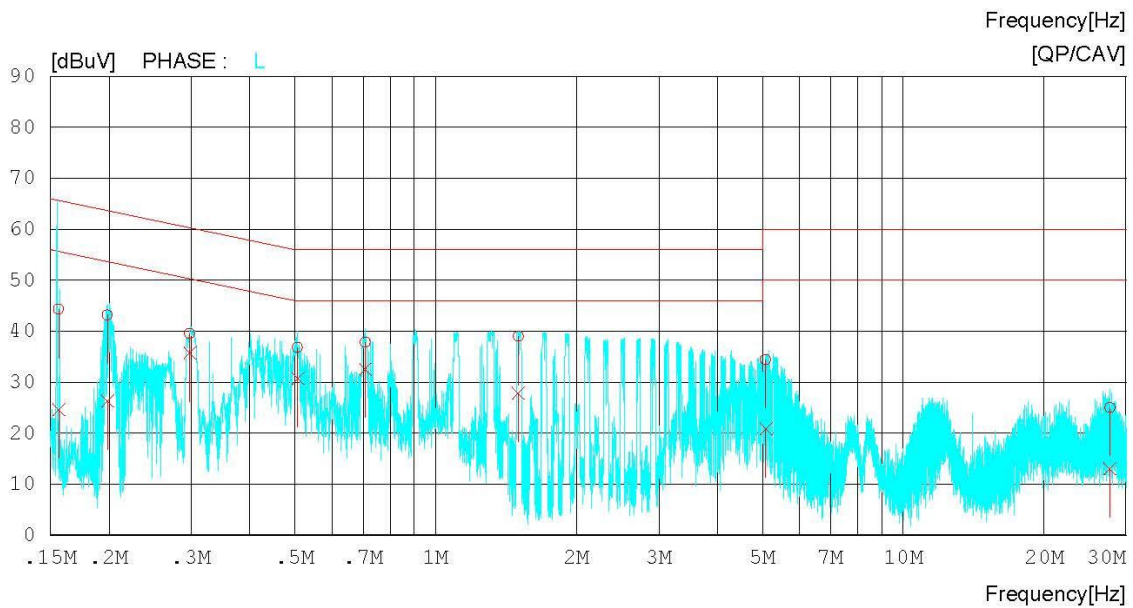
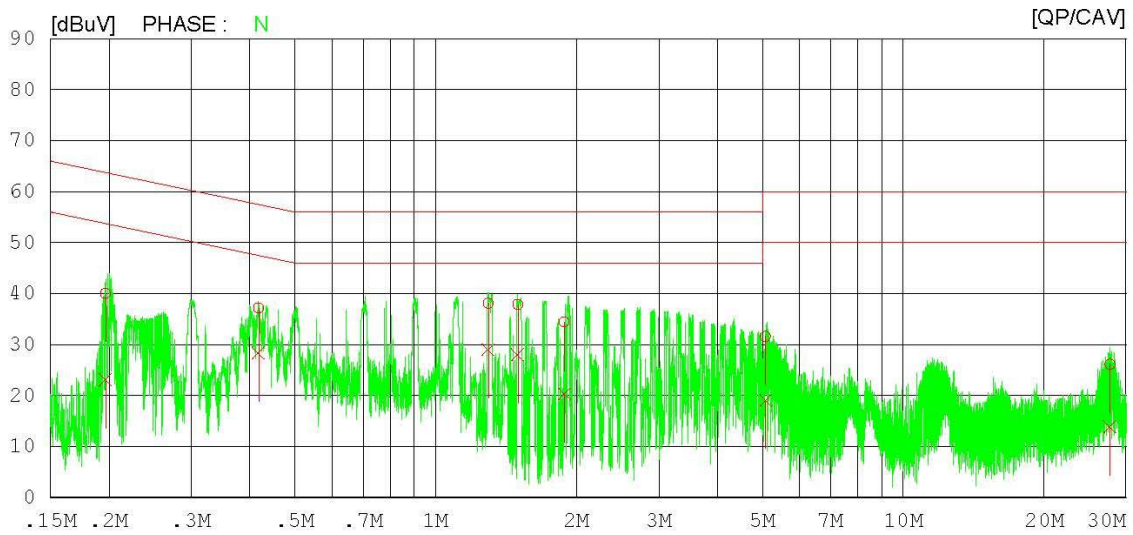
Model EVS 2430W  
Function 5.7GHz\_WLAN  
Mode 802.11n(HT20)  
Test condition

Temp/Humi.  
Power Supply  
Operator

23 'C 48 %  
AC 120 V 60 Hz  
J.W.Kim

Memo

LIMIT : FCC P15.207 QP  
FCC P15.207 AV



## AC Line Conducted Emissions (Data List)

Test Mode: U-NII 3 & 802.11n(HT20) & MIMO & 5745 MHz

## Results of Conducted Emission

DT&amp;C

Date 2017-02-10

Model EVS 2430W  
Function 5.7GHz\_WLAN  
Mode 802.11n(HT20)  
Test condition

Temp/Humi. 23 'C 48 %  
Power Supply AC 120 V 60 Hz  
Operator J.W.Kim

Memo

LIMIT : FCC P15.207 QP  
FCC P15.207 AV

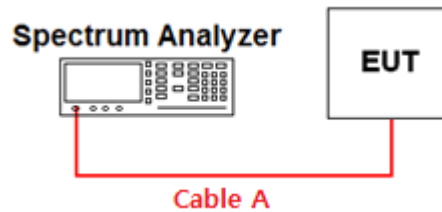
| NO | FREQ<br>[MHz] | READING      |               | C.FACTOR<br>[dB] | RESULT       |               | LIMIT        |               | MARGIN       |               | PHASE |
|----|---------------|--------------|---------------|------------------|--------------|---------------|--------------|---------------|--------------|---------------|-------|
|    |               | QP<br>[dBuV] | CAV<br>[dBuV] |                  | QP<br>[dBuV] | CAV<br>[dBuV] | QP<br>[dBuV] | CAV<br>[dBuV] | QP<br>[dBuV] | CAV<br>[dBuV] |       |
| 1  | 0.19668       | 37.87        | 20.96         | 2.12             | 39.99        | 23.08         | 63.75        | 53.75         | 23.76        | 30.67         | N     |
| 2  | 0.41764       | 36.33        | 27.53         | 0.84             | 37.17        | 28.37         | 57.49        | 47.49         | 20.32        | 19.12         | N     |
| 3  | 1.29520       | 37.76        | 28.62         | 0.36             | 38.12        | 28.98         | 56.00        | 46.00         | 17.88        | 17.02         | N     |
| 4  | 1.49820       | 37.52        | 27.69         | 0.34             | 37.86        | 28.03         | 56.00        | 46.00         | 18.14        | 17.97         | N     |
| 5  | 1.88700       | 34.06        | 20.02         | 0.33             | 34.39        | 20.35         | 56.00        | 46.00         | 21.61        | 25.65         | N     |
| 6  | 5.07540       | 31.23        | 18.76         | 0.34             | 31.57        | 19.10         | 60.00        | 50.00         | 28.43        | 30.90         | N     |
| 7  | 27.67540      | 25.60        | 13.30         | 0.57             | 26.17        | 13.87         | 60.00        | 50.00         | 33.83        | 36.13         | N     |
| 8  | 0.15617       | 41.05        | 21.39         | 3.18             | 44.23        | 24.57         | 65.67        | 55.67         | 21.44        | 31.10         | L     |
| 9  | 0.19849       | 41.06        | 24.13         | 2.11             | 43.17        | 26.24         | 63.67        | 53.67         | 20.50        | 27.43         | L     |
| 10 | 0.29796       | 38.21        | 34.43         | 1.25             | 39.46        | 35.68         | 60.30        | 50.30         | 20.84        | 14.62         | L     |
| 11 | 0.50717       | 36.03        | 30.02         | 0.70             | 36.73        | 30.72         | 56.00        | 46.00         | 19.27        | 15.28         | L     |
| 12 | 0.70738       | 37.30        | 31.95         | 0.53             | 37.83        | 32.48         | 56.00        | 46.00         | 18.17        | 13.52         | L     |
| 13 | 1.50300       | 38.54        | 27.50         | 0.38             | 38.92        | 27.88         | 56.00        | 46.00         | 17.08        | 18.12         | L     |
| 14 | 5.07680       | 34.00        | 20.46         | 0.38             | 34.38        | 20.84         | 60.00        | 50.00         | 25.62        | 29.16         | L     |
| 15 | 27.68420      | 24.21        | 12.23         | 0.74             | 24.95        | 12.97         | 60.00        | 50.00         | 35.05        | 37.03         | L     |

## 8.8 Occupied Bandwidth

### ■ Test Requirements

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured

### ■ Test Configuration



### ■ Test Procedure :

#### - Procedure: RSS-Gen[6.6]

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

### ■ Test Result : **NA**

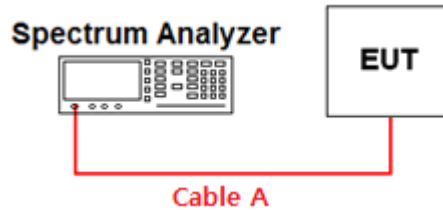
## 9. LIST OF TEST EQUIPMENT

| Type                     | Manufacturer           | Model                      | Cal.Date<br>(yy/mm/dd) | Next.Cal.Date<br>(yy/mm/dd) | S/N           |
|--------------------------|------------------------|----------------------------|------------------------|-----------------------------|---------------|
| Spectrum Analyzer        | Agilent Technologies   | N9020A                     | 16/09/09               | 17/09/09                    | MY50200834    |
| Spectrum Analyzer        | Agilent Technologies   | N9030A                     | 16/10/18               | 17/10/18                    | MY53310140    |
| Digital Multimeter       | Agilent Technologies   | 34401A                     | 16/01/05               | 17/01/05                    | US36099541    |
|                          |                        |                            | 17/01/04               | 18/01/04                    |               |
| DC Power Supply          | SM techno              | SDP30-5D                   | 16/01/05               | 17/01/05                    | 305DLJ204     |
|                          |                        |                            | 17/01/05               | 18/01/05                    |               |
| Signal Generator         | Rohde Schwarz          | SMBV100A                   | 16/01/05               | 17/01/05                    | 255571        |
|                          |                        |                            | 17/01/04               | 08/01/04                    |               |
| Signal Generator         | Rohde Schwarz          | SMF100A                    | 16/06/23               | 17/06/23                    | 102341        |
| Thermohygrometer         | BODYCOM                | BJ5478                     | 16/04/22               | 17/04/22                    | 120612-2      |
| Temp & Humi Test Chamber | SJ Science             | SJ-TH-S50                  | 16/09/09               | 17/09/09                    | U5542113      |
| Loop Antenna             | Schwarzbeck            | FMZB1513                   | 16/04/22               | 18/04/22                    | 1513-128      |
| Bilog Antenna            | SCHAFFNER              | CBL6112B                   | 16/05/23               | 18/05/23                    | 2737          |
| Horn Antenna             | ETS-LINDGREN           | 3117                       | 16/05/03               | 18/05/03                    | 00140394      |
| Horn Antenna             | A.H.Systems Inc.       | SAS-574                    | 15/09/03               | 17/09/03                    | 155           |
| PreAmplifier             | Agilent                | 8449B                      | 16/02/24               | 17/02/24                    | 3008A00370    |
| PreAmplifier             | tsj                    | MLA-010K01-B01-27          | 16/03/10               | 17/03/10                    | 1844539       |
| PreAmplifier             | A.H.Systems Inc.       | PAM-1840VH                 | 16/12/04               | 17/12/04                    | 163           |
| EMI TEST RECEIVER        | Rohde Schwarz          | ESU                        | 16/07/18               | 17/07/18                    | 100469        |
| EMI TEST RECEIVER        | Rohde Schwarz          | ESCI                       | 16/02/25               | 17/02/25                    | 100364        |
| Highpass Filter          | Wainwright Instruments | WHNX6-6320-8000-26500-40CC | 16/09/13               | 17/09/13                    | 1             |
| ARTIFICIAL MAINS NETWORK | Narda S.T.S. / PMM     | PMM L2-16B                 | 16/06/22               | 17/06/22                    | 000WX20305    |
| SINGLE-PHASE MASTER      | NF                     | 4420                       | 16/09/08               | 17/09/08                    | 3049354420023 |
| Attenuator               | SMAJK                  | SMAJK-50-10                | 16/09/08               | 17/09/08                    | 15081901      |
| Power Meter              | Anritsu                | ML2496A                    | 16/06/23               | 17/06/23                    | 1338004       |
| Wide Bandwidth Sensor    | Anritsu                | MA2411B                    | 16/06/23               | 17/06/23                    | 1306053       |

## APPENDIX I

### Conducted Test set up Diagram

#### ▪ Conducted Measurement



## APPENDIX II

### Duty Cycle Information

#### ■ Test Procedure

**Duty Cycle [X = On Time / ( On + Off time )]** is measured using Measurement Procedure of **KDB789033 D02**

1. Set the center frequency of the spectrum analyzer to the center frequency of the transmission.
2. Set RBW  $\geq$  EBW if possible; otherwise, set RBW to the largest available value.
3. Set VBW  $\geq$  RBW. Set detector = peak.
4. Note : The zero-span measurement method shall not be used unless both **RBW and VBW are  $> 50/T$** , where  $T$  is defined in section II.B.1.a), and **the number of sweep points across duration  $T$  exceeds 100**. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if  $T \leq 16.7$  microseconds.)

$T$  : The minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

( $T$  = On time of the above table since the EUT operates with above fixed Duty Cycle and it is the minimum On time)

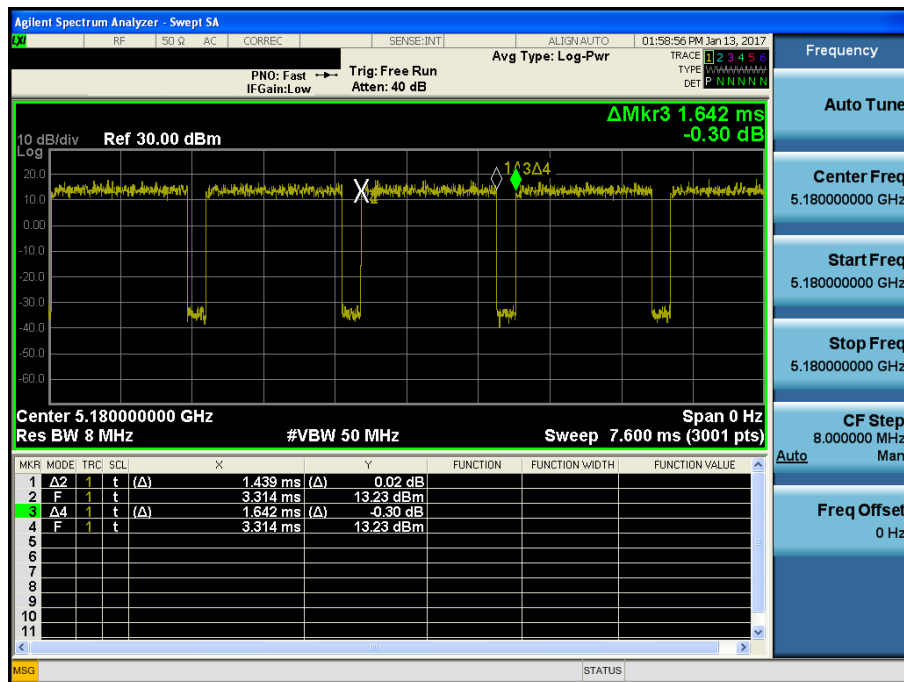
# Test Results:

## Multiple Transmit

| Mode           | Channel | Tested Frequency [MHz] | Maximum Achievable Duty Cycle ( $x$ ) = On / (On+Off) |                 |      | Duty Cycle Correction Factor [dB] | 50/T [kHz] |
|----------------|---------|------------------------|-------------------------------------------------------|-----------------|------|-----------------------------------|------------|
|                |         |                        | On Time [ms]                                          | On+OffTime [ms] | $x$  |                                   |            |
| 802.11a        | 36      | 5180                   | 1.439                                                 | 1.642           | 0.87 | 0.61                              | 34.75      |
| 802.11n (HT20) | 36      | 5180                   | 0.695                                                 | 0.899           | 0.77 | 1.14                              | 71.94      |
| 802.11n (HT40) | 38      | 5190                   | 0.355                                                 | 0.558           | 0.63 | 2.01                              | 140.85     |

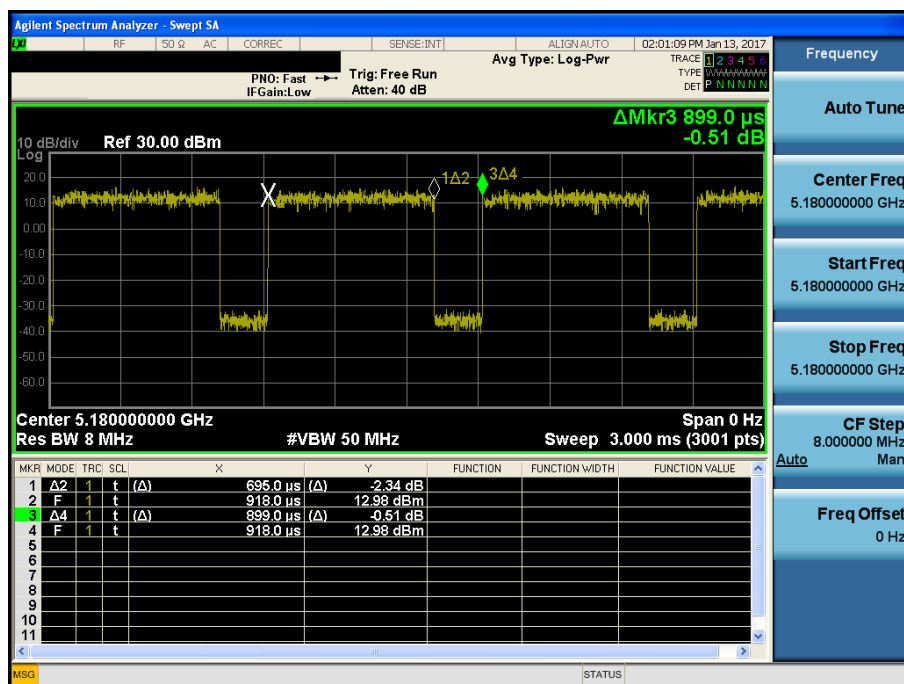
## Duty Cycle

Test Mode: 802.11a & Ch.36



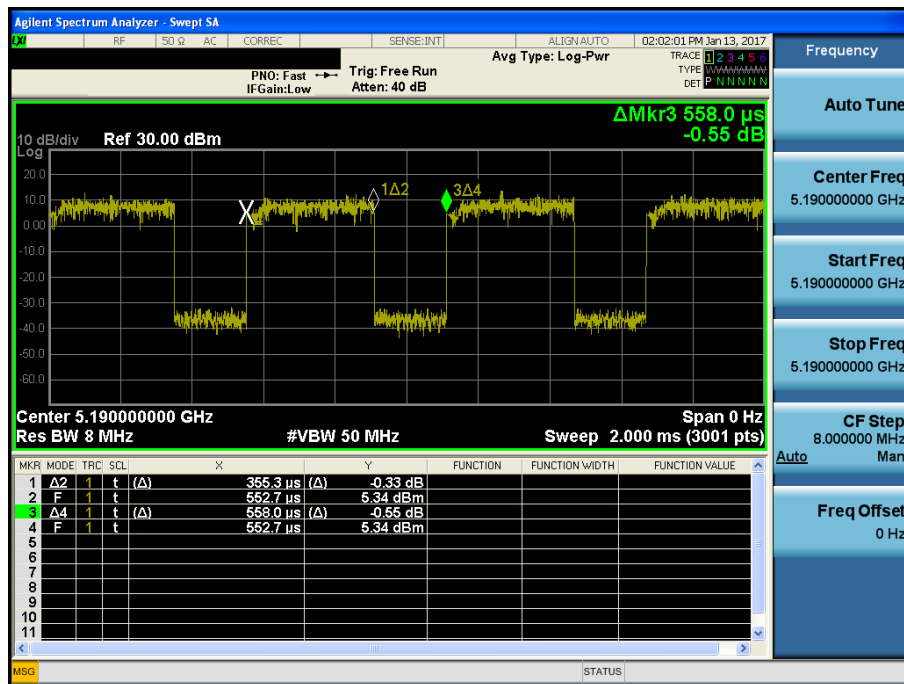
## Duty Cycle

Test Mode: 802.11n HT20 & Ch.36



# Duty Cycle

Test Mode: 802.11n HT40 & Ch.38

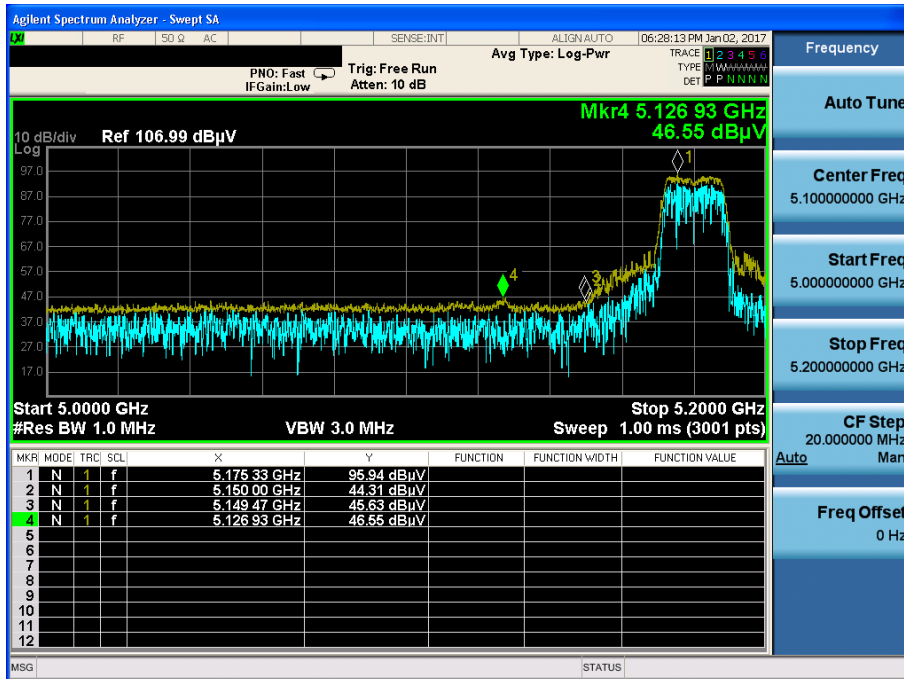


## APPENDIX III

## Unwanted Emissions (Radiated) Test Plot

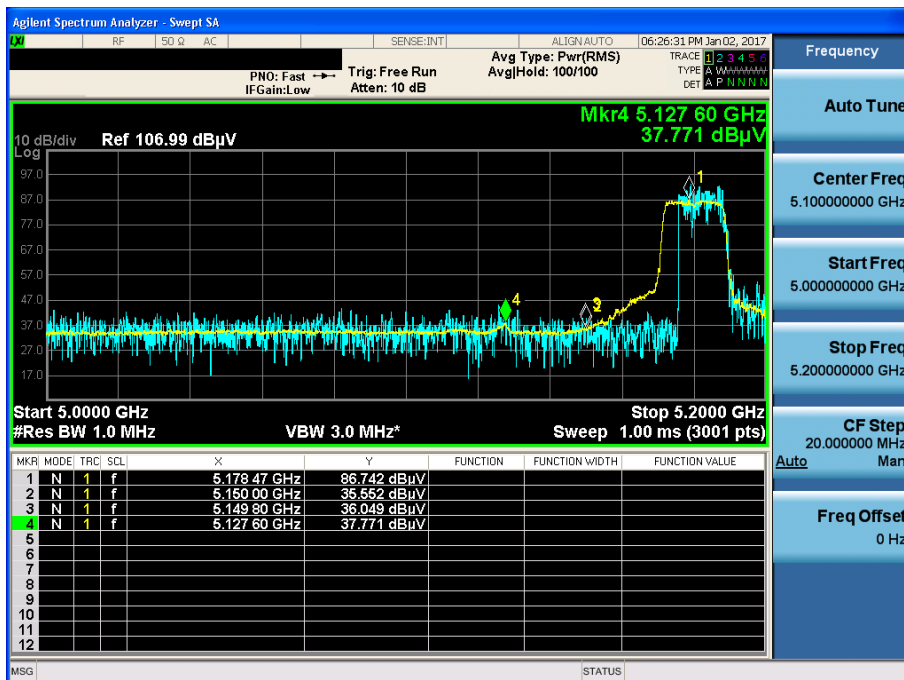
802.11a &amp; U-NII 1 &amp; Ch.36 &amp; Z axis &amp; Hor

Detector Mode : PK

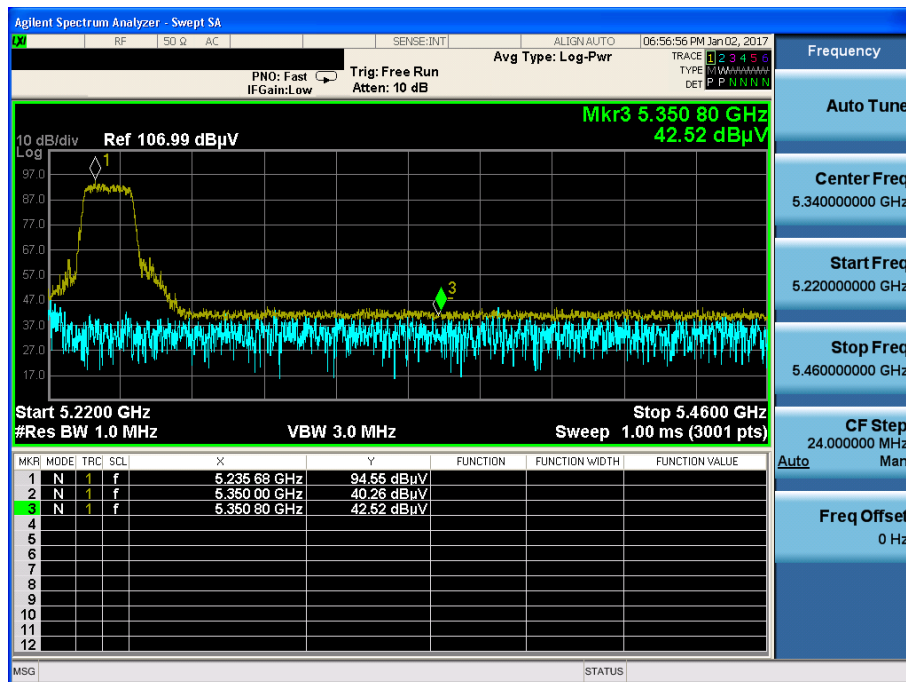


802.11a &amp; U-NII 1 &amp; Ch.36 &amp; Z axis &amp; Hor

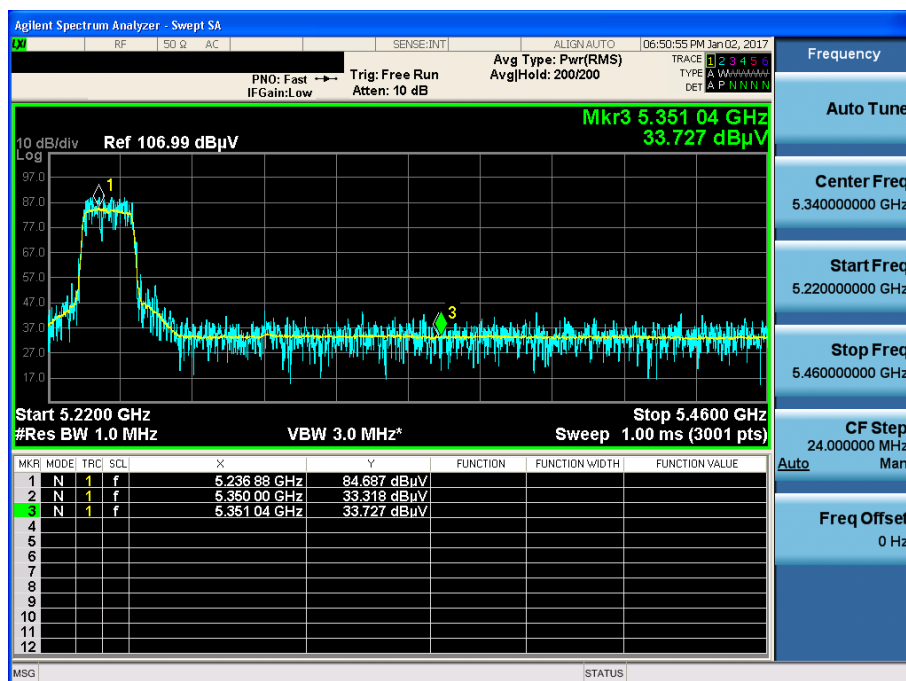
Detector Mode : AV



**Detector Mode : PK**

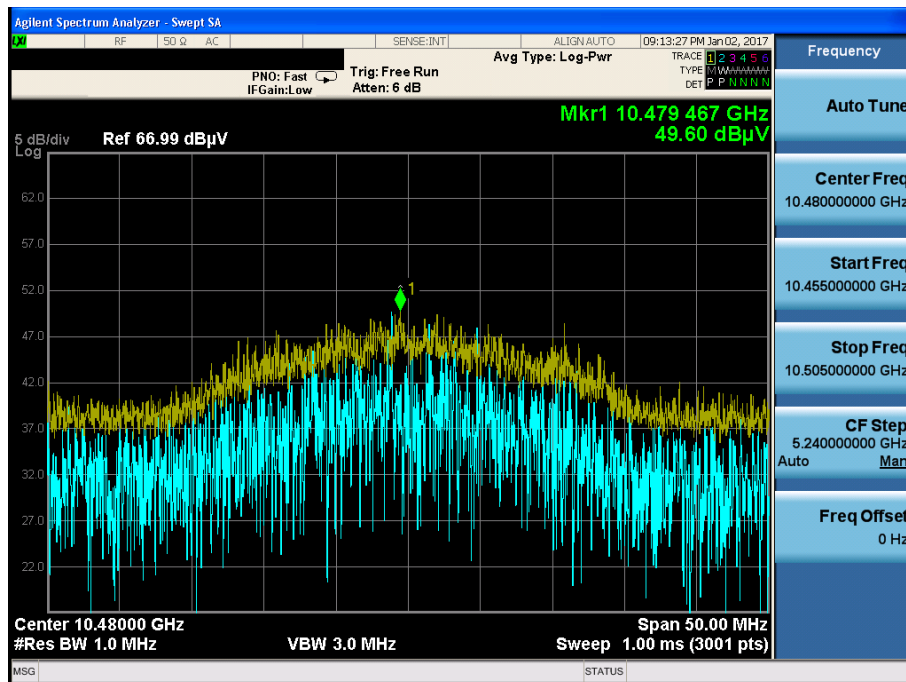


**Detector Mode : AV**



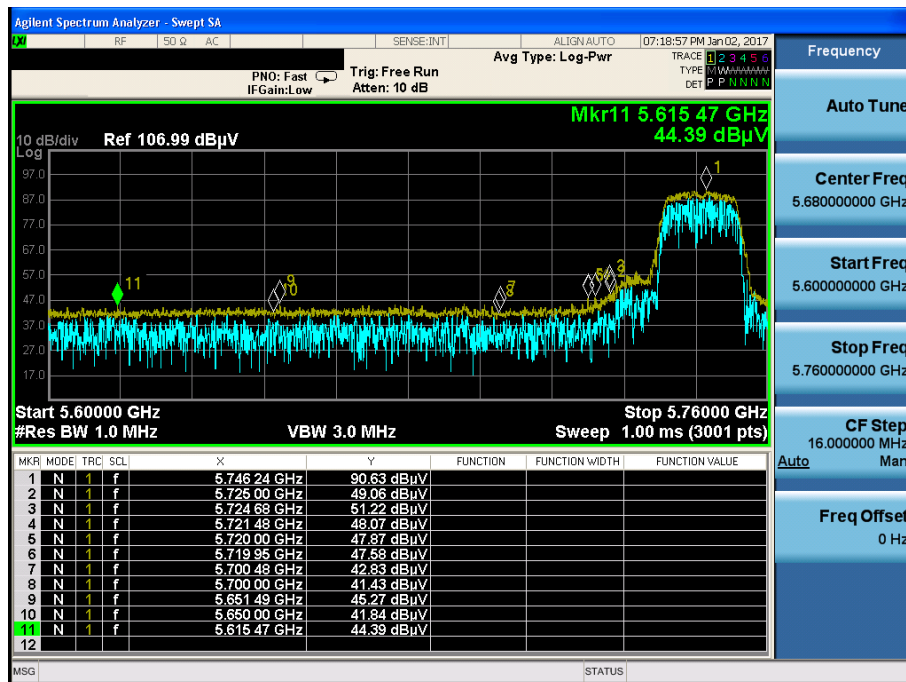
802.11a & U-NII 1 & Ch.48 & Z axis & Ver

Detector Mode : PK



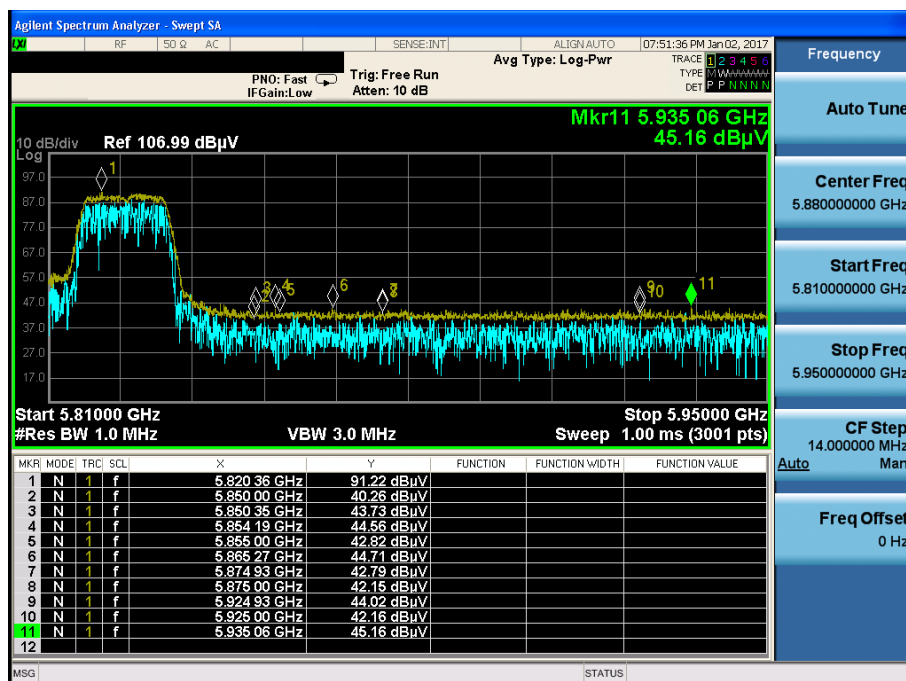
802.11a &amp; U-NII 3 &amp; Ch.149 &amp; Z axis &amp; Hor

Detector Mode : PK



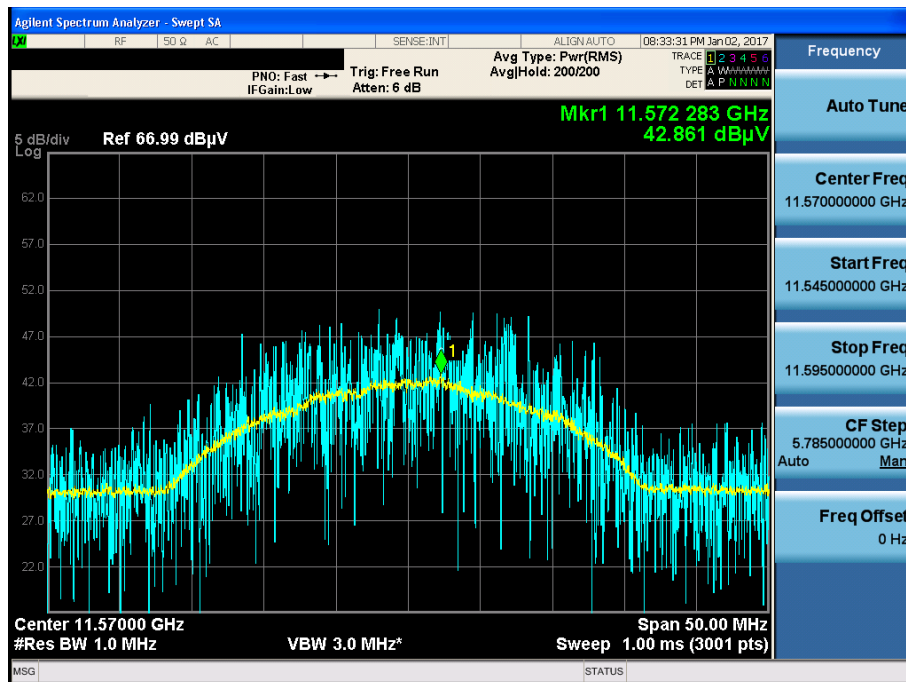
802.11a &amp; U-NII 3 &amp; Ch.165 &amp; Z axis &amp; Hor

Detector Mode : PK

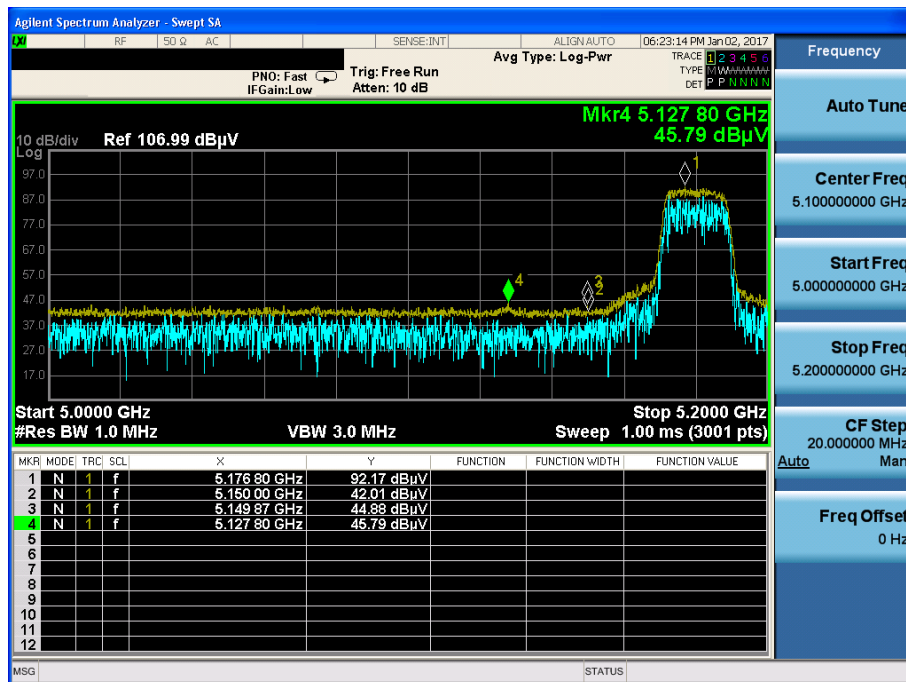


802.11a & U-NII 3 & Ch.157 & Z axis & Ver

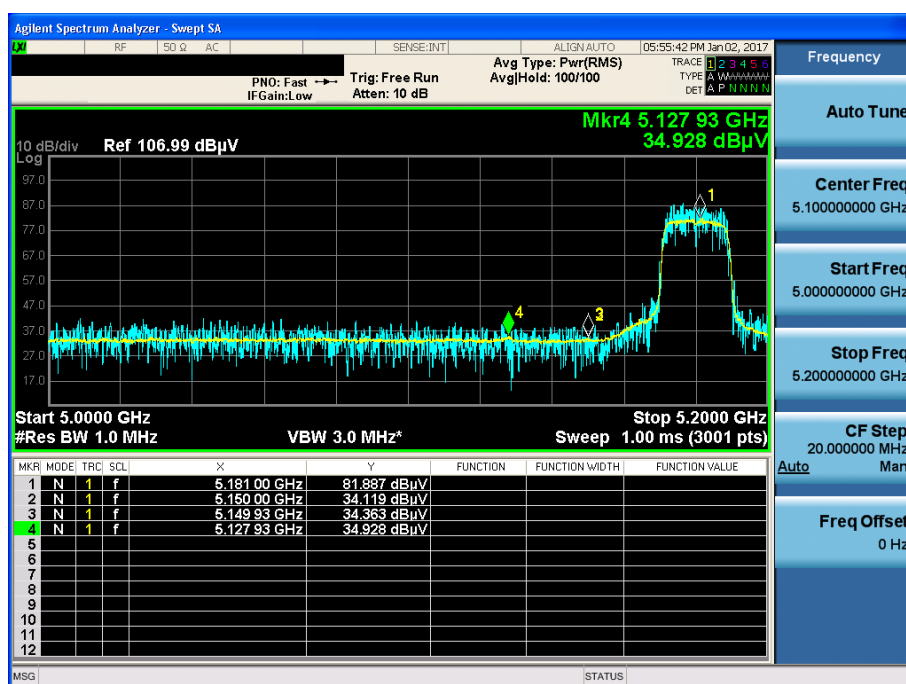
Detector Mode : AV



**Detector Mode : PK**

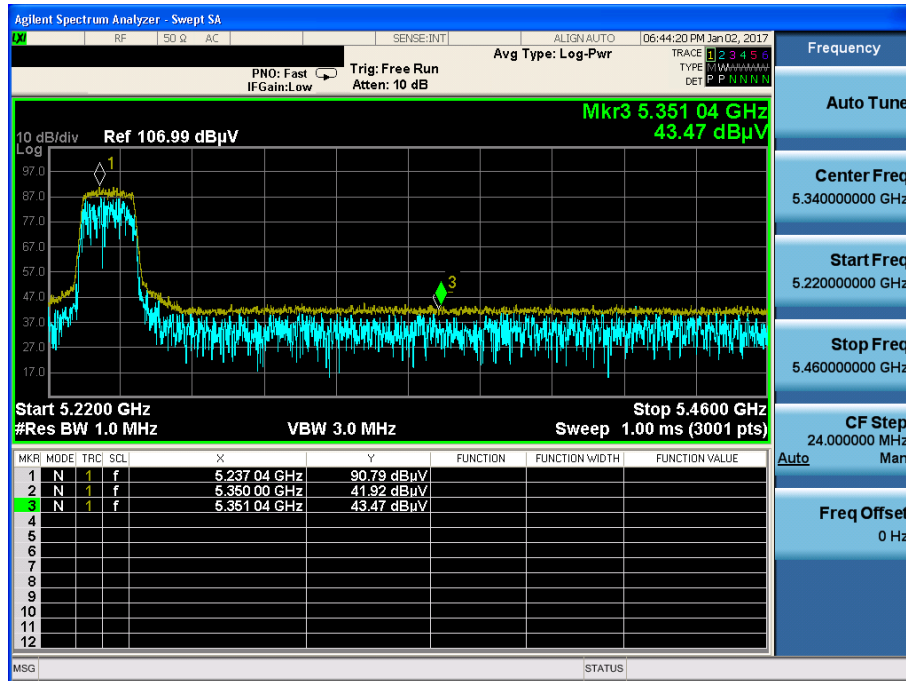


**Detector Mode : AV**



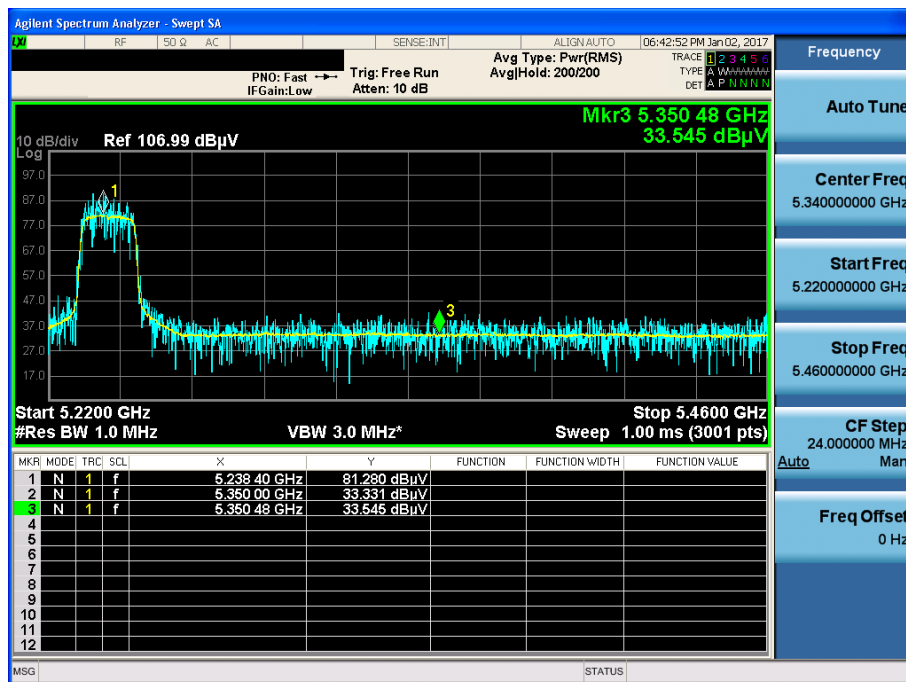
802.11n(HT20) &amp; U-NII 1 &amp; Ch.48 &amp; Z axis &amp; Hor

Detector Mode : PK

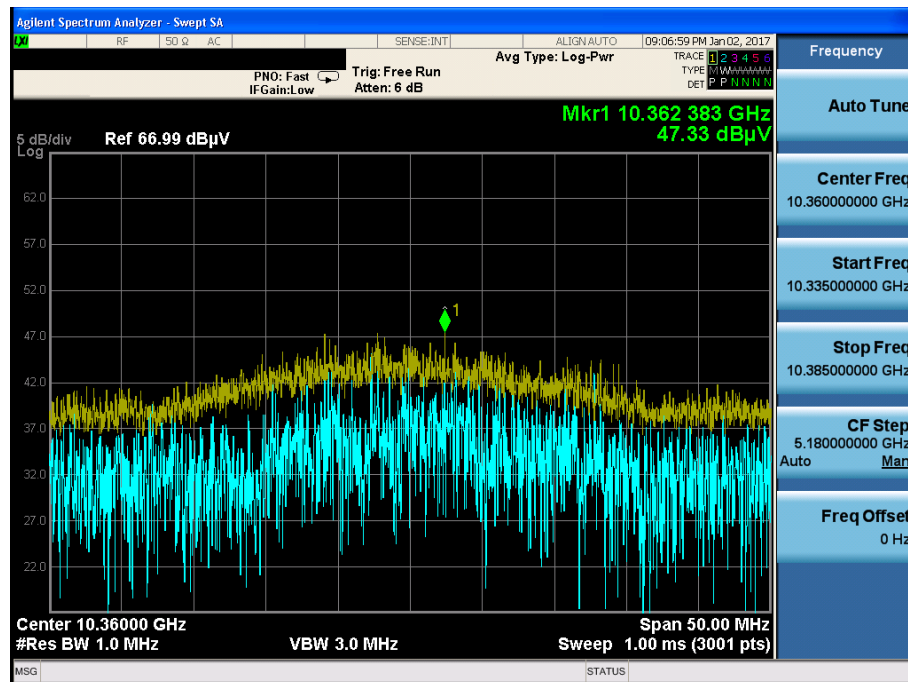


802.11n(HT20) &amp; U-NII 1 &amp; Ch.48 &amp; Z axis &amp; Hor

Detector Mode : AV

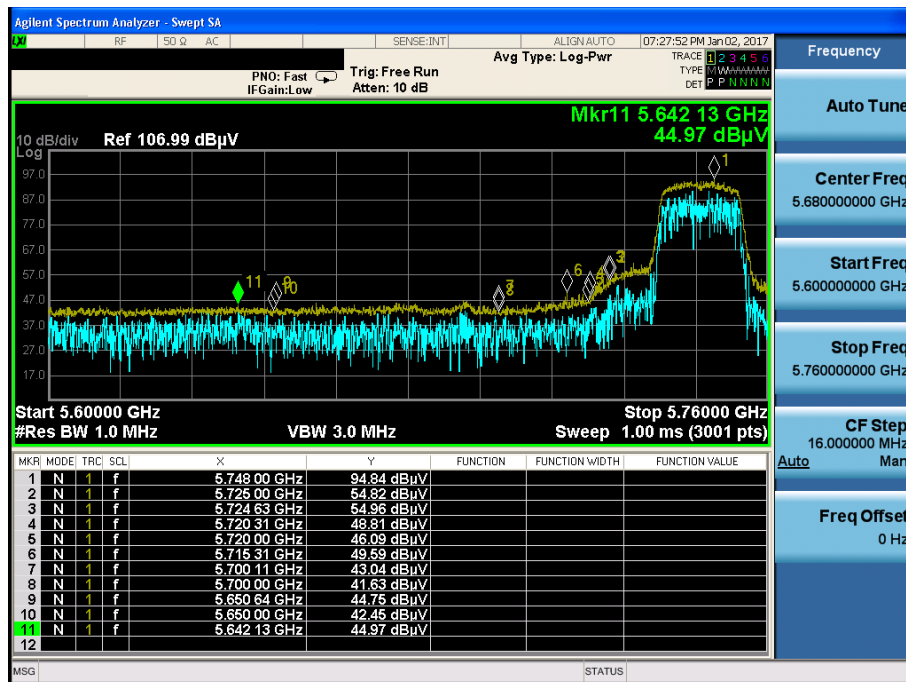


**Detector Mode : PK**



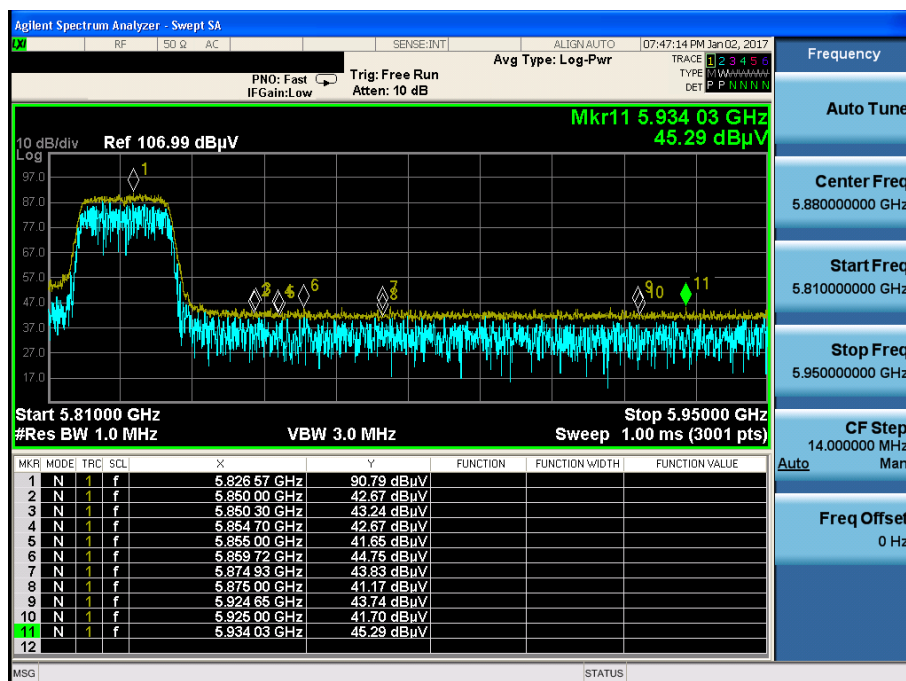
802.11n(HT20) &amp; U-NII 3 &amp; Ch.149 &amp; Z axis &amp; Hor

Detector Mode : PK



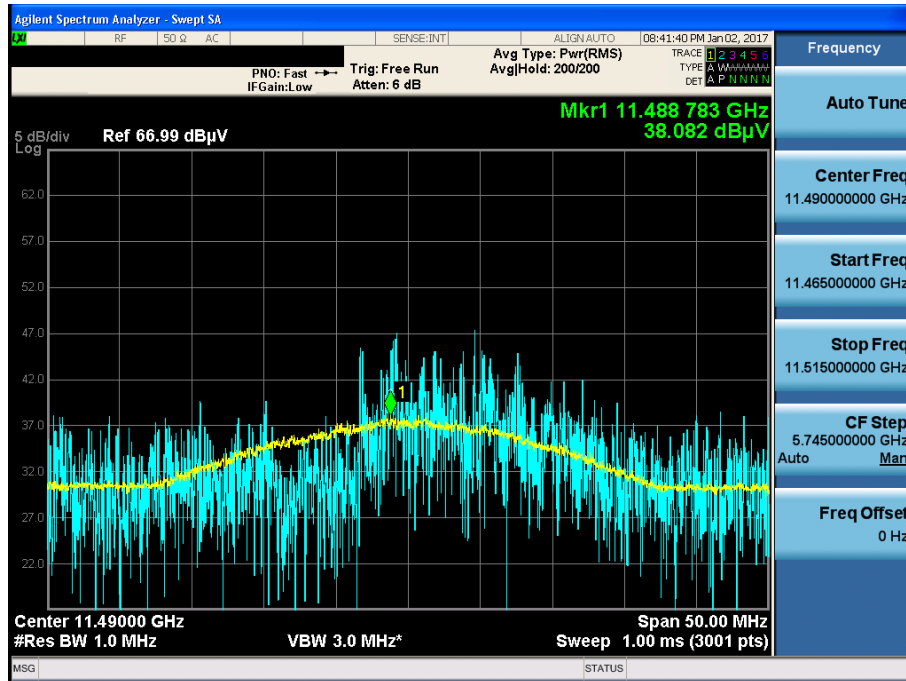
802.11n(HT20) &amp; U-NII 3 &amp; Ch.165 &amp; Z axis &amp; Hor

Detector Mode : PK



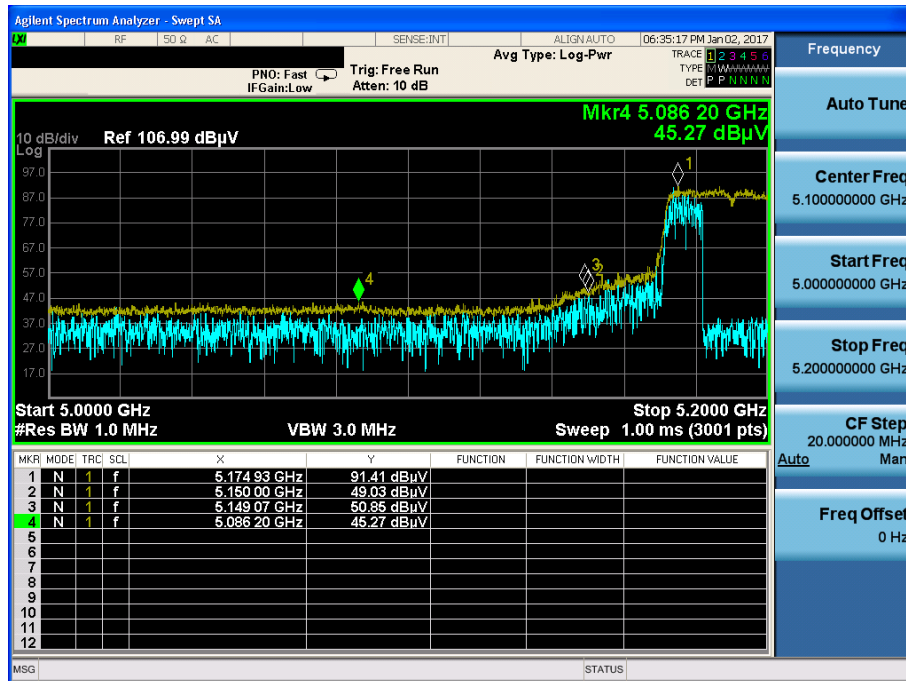
802.11n(HT20) & U-NII 3 & Ch.149 & Z axis & Ver

Detector Mode : AV



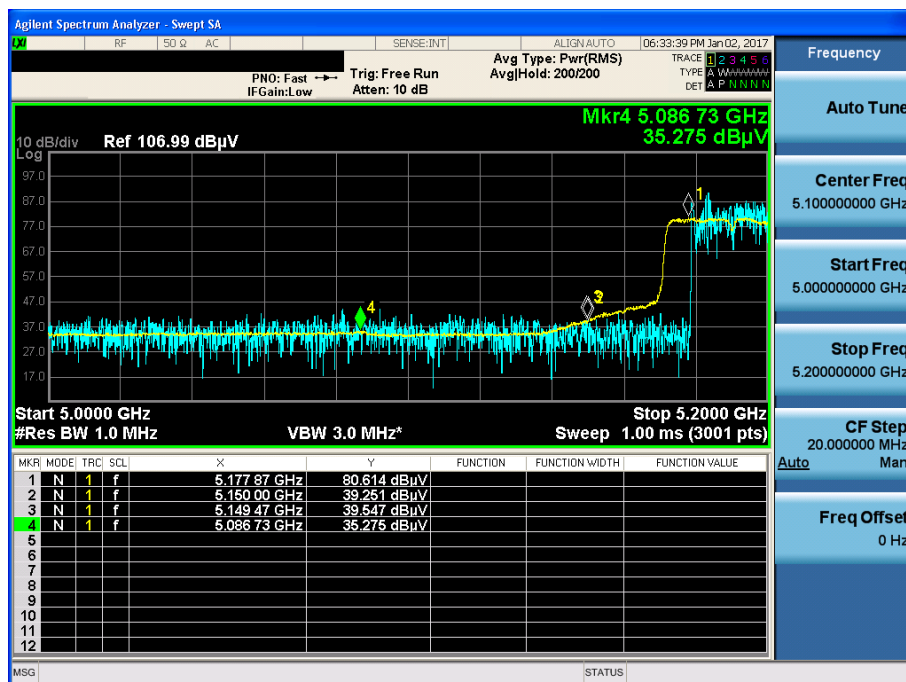
802.11n(HT40) &amp; U-NII 1 &amp; Ch.38 &amp; Z axis &amp; Hor

Detector Mode : PK



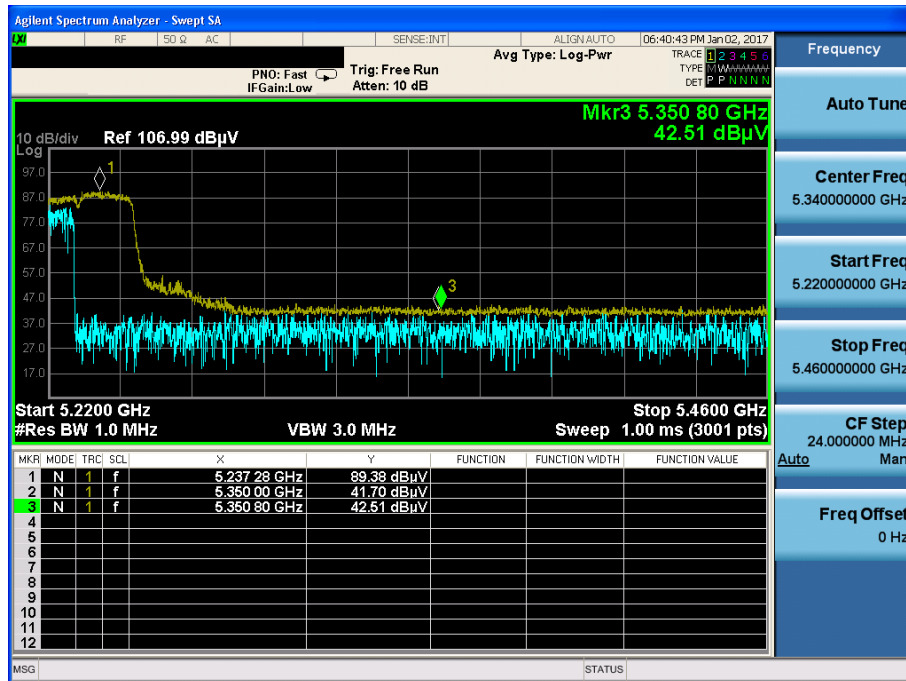
802.11n(HT40) &amp; U-NII 1 &amp; Ch.38 &amp; Z axis &amp; Hor

Detector Mode : AV



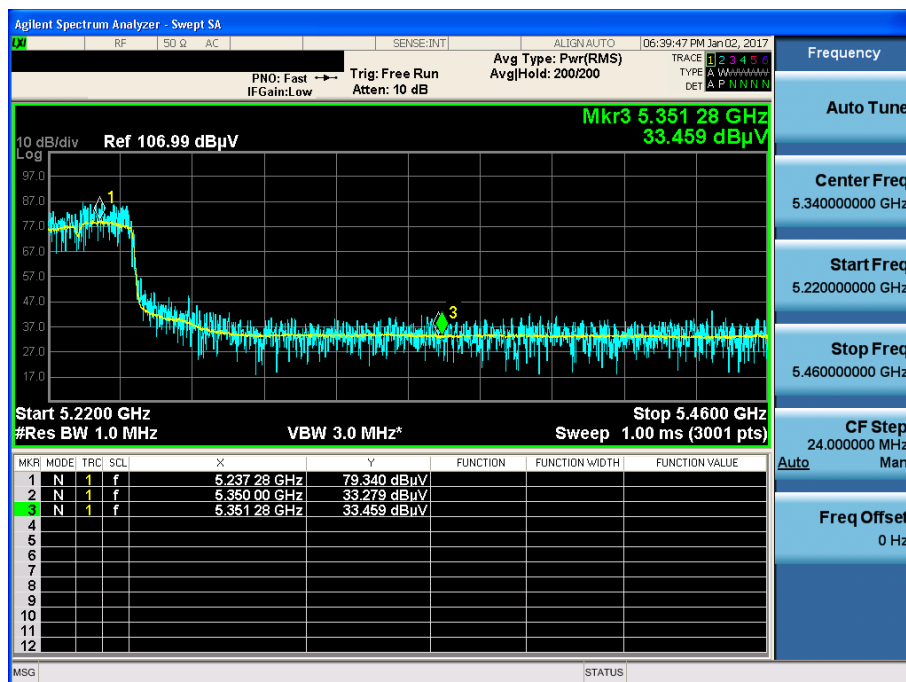
802.11n(HT40) & U-NII 1 & Ch.46 & Z axis & Hor

Detector Mode : PK

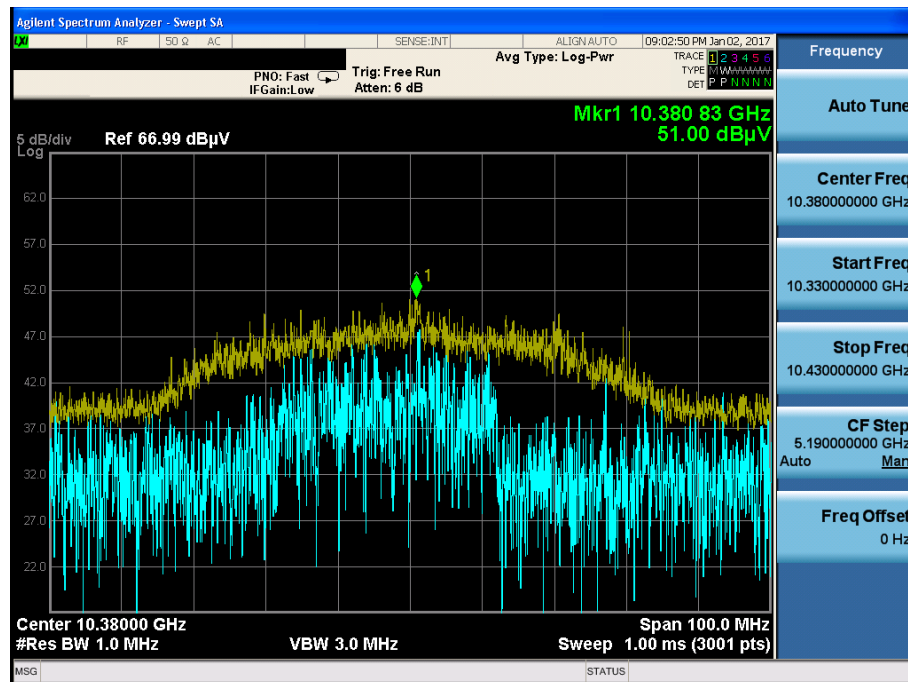


802.11n(HT40) & U-NII 1 & Ch.46 & Z axis & Hor

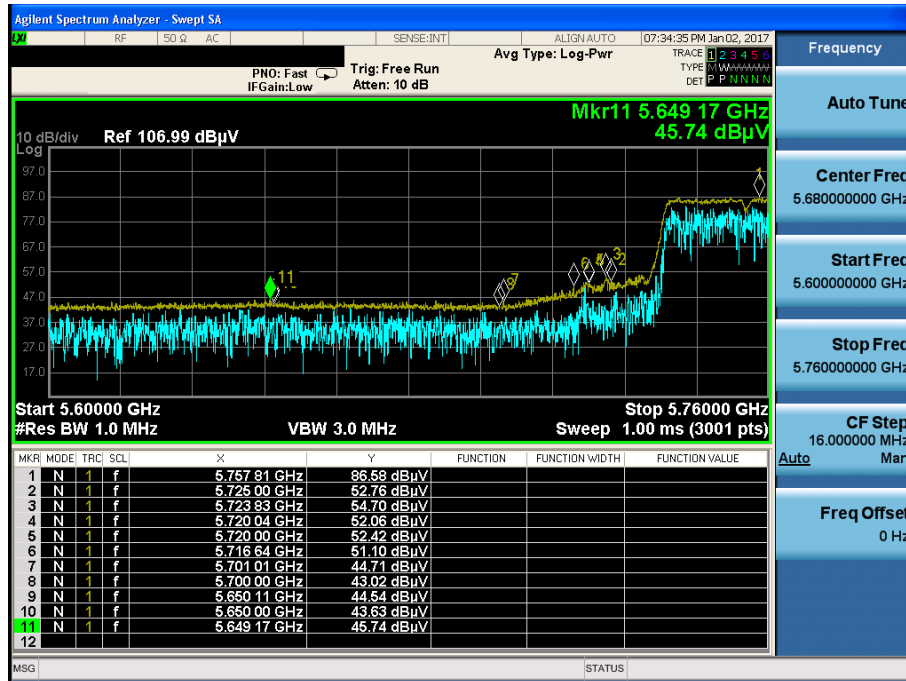
Detector Mode : AV



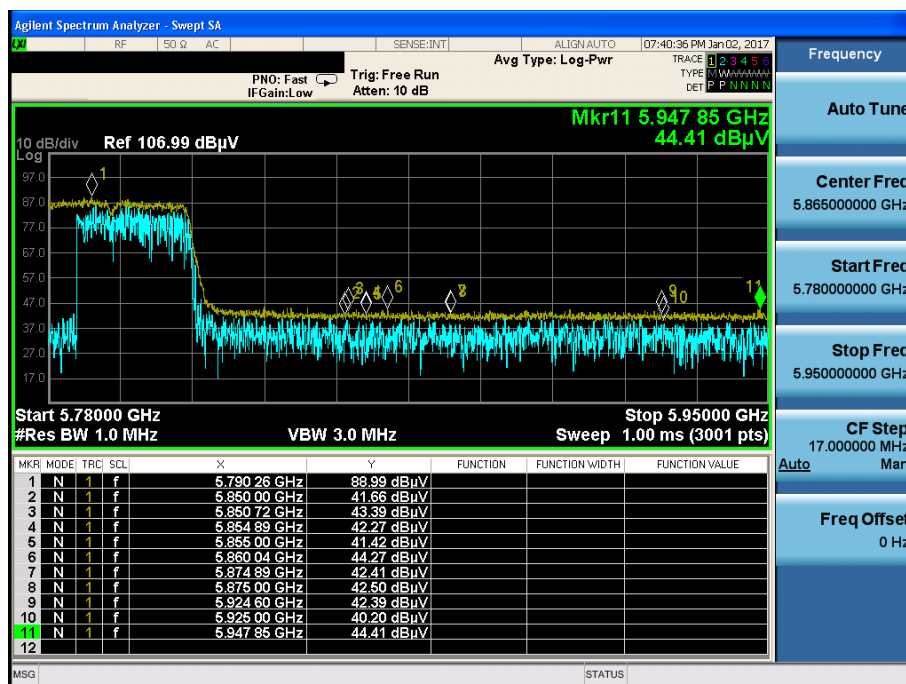
**Detector Mode : PK**



**Detector Mode : PK**



**Detector Mode : PK**



802.11n(HT40) & U-NII 3 & Ch.159 & Z axis & Ver

Detector Mode : AV

