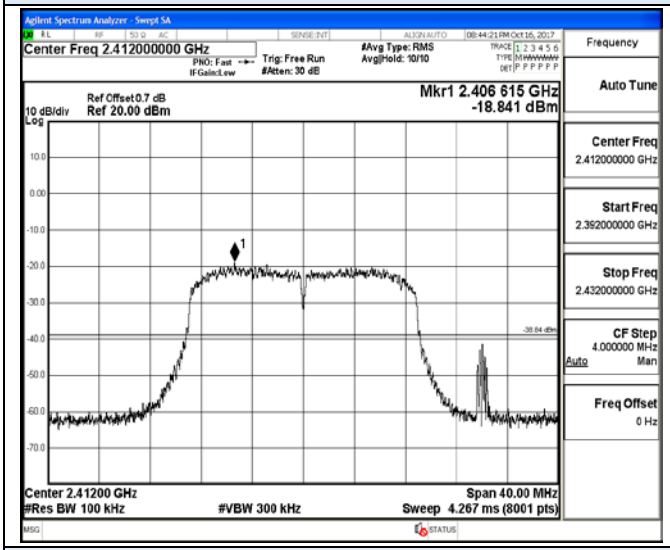
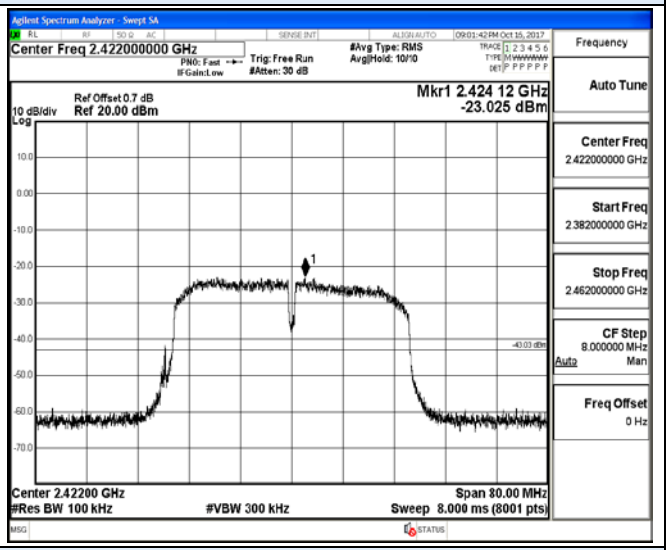
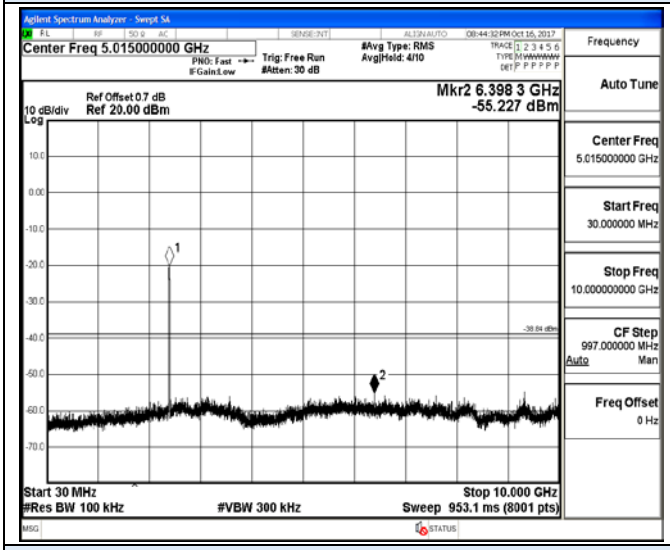
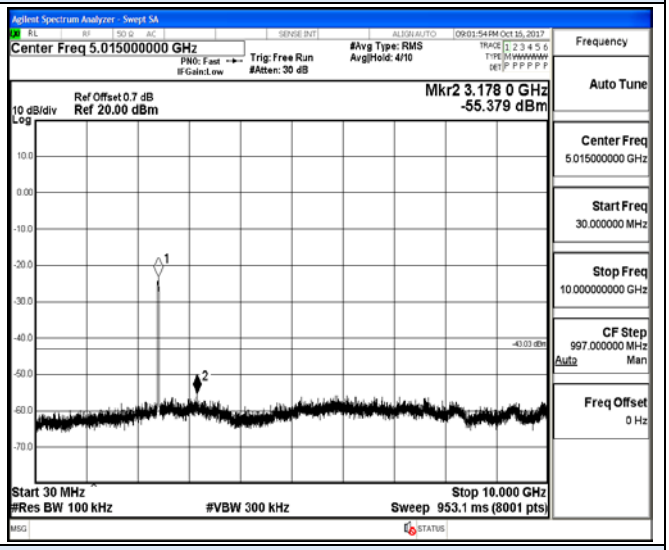
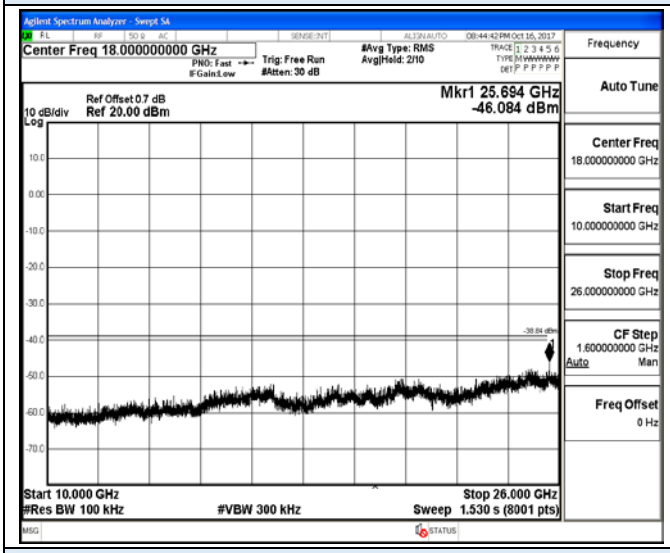
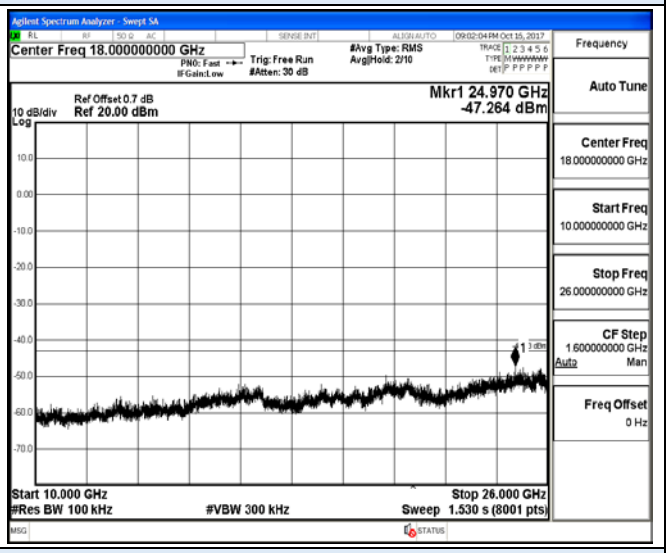
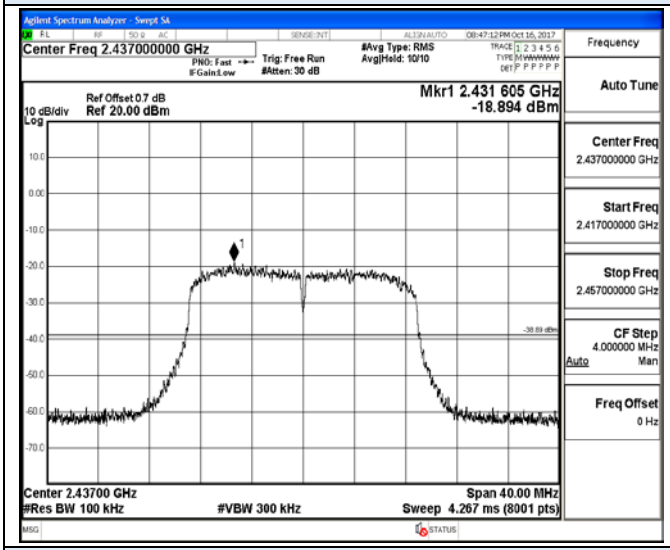
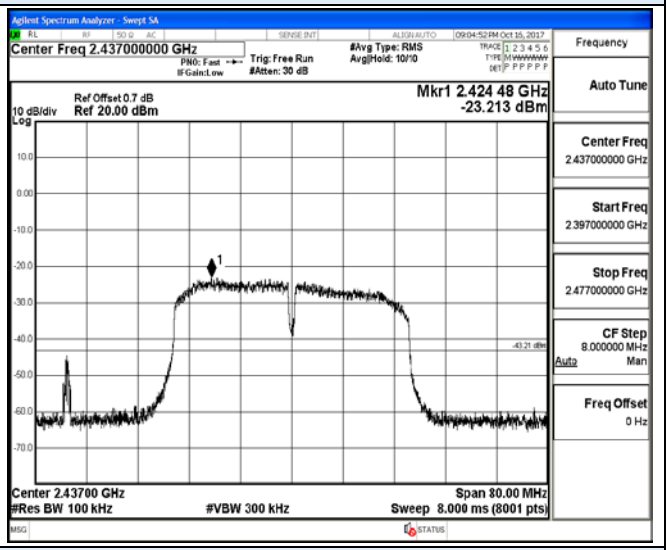
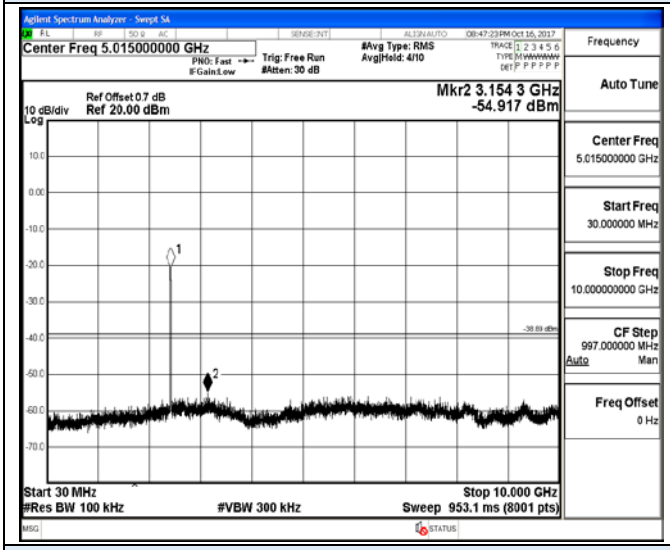
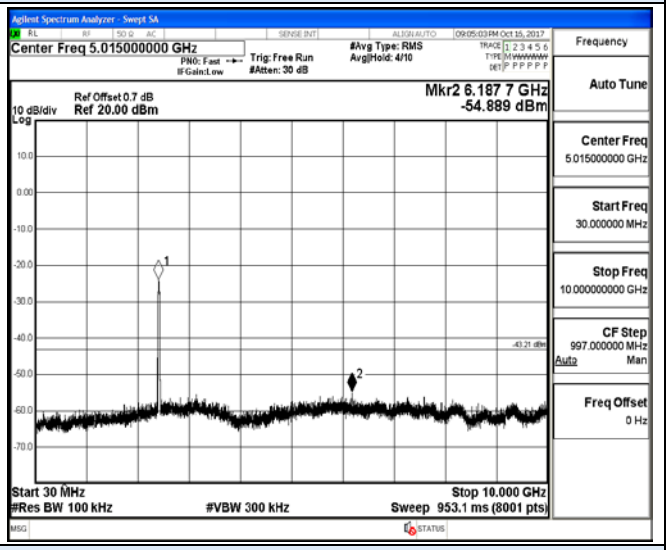
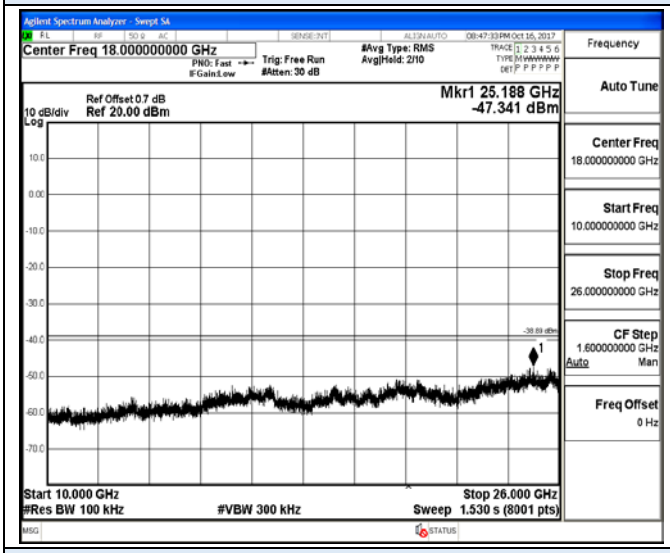
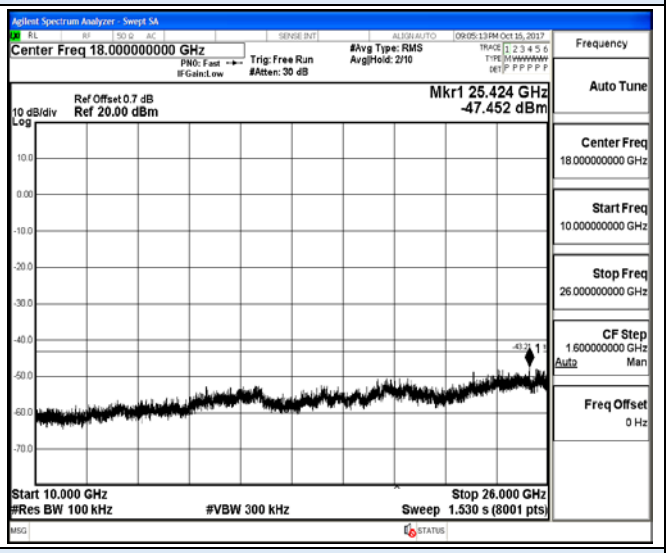
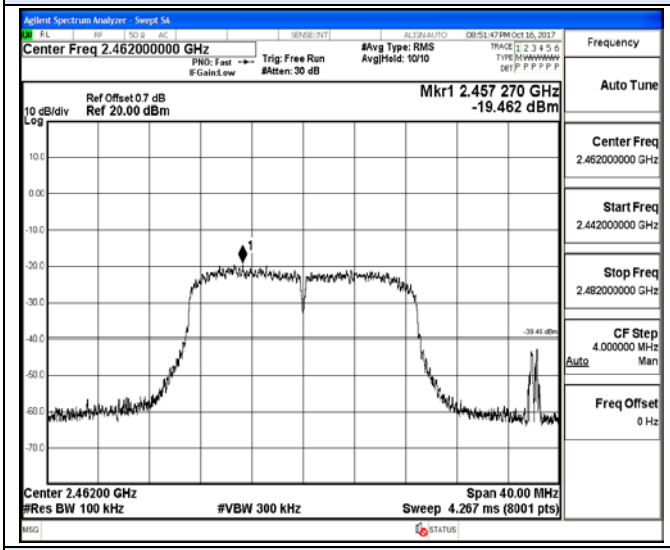
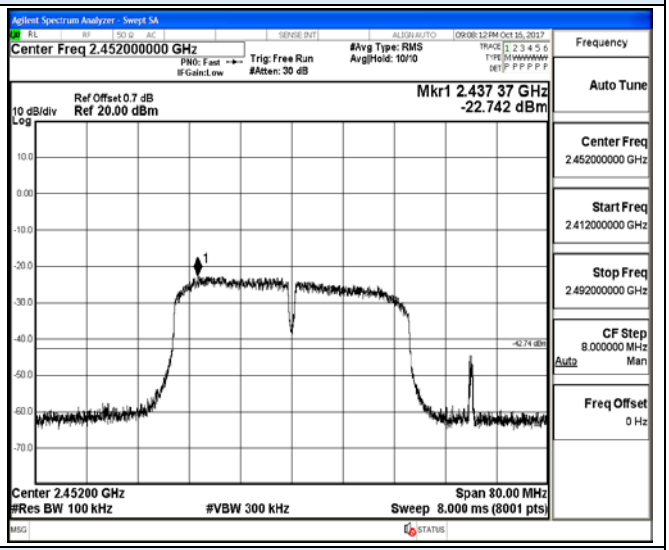
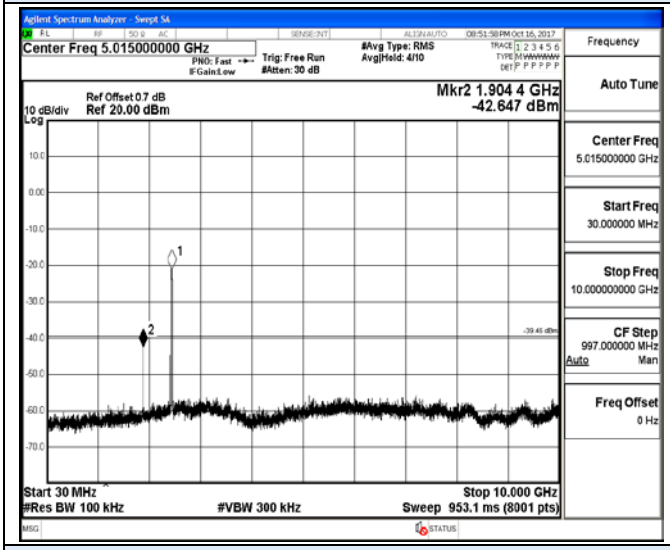
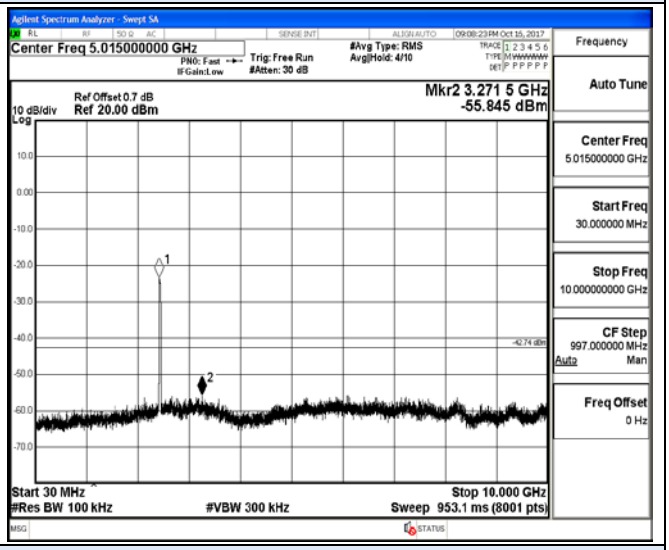
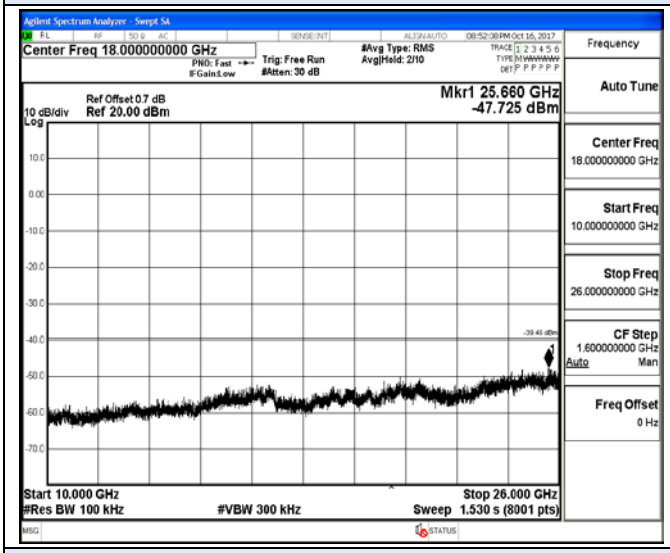
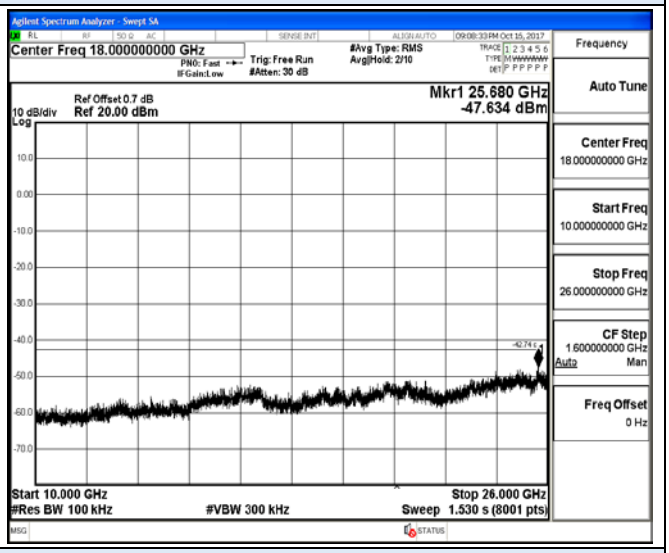
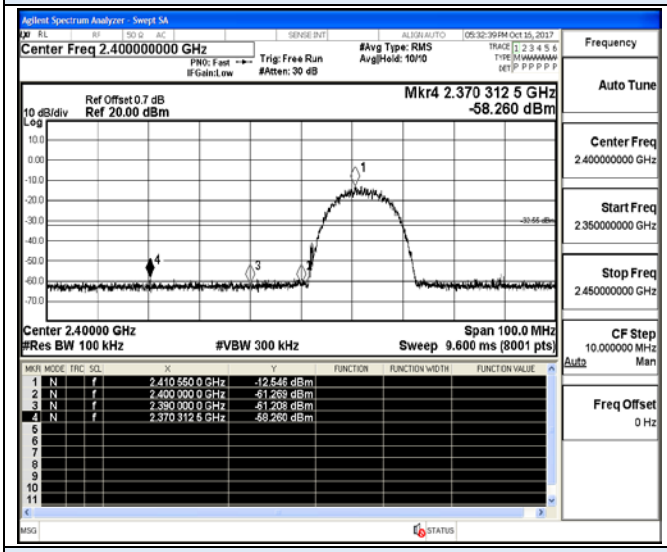
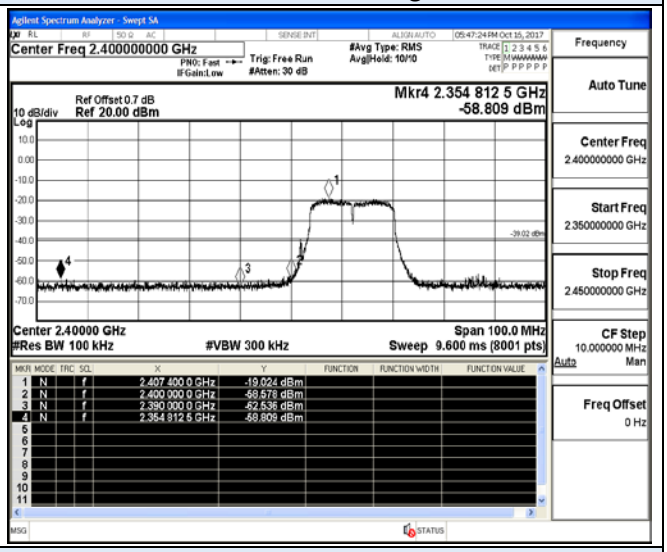
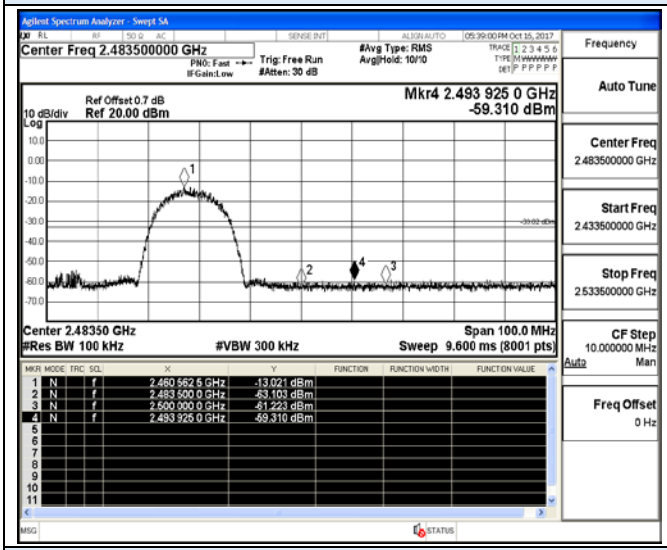
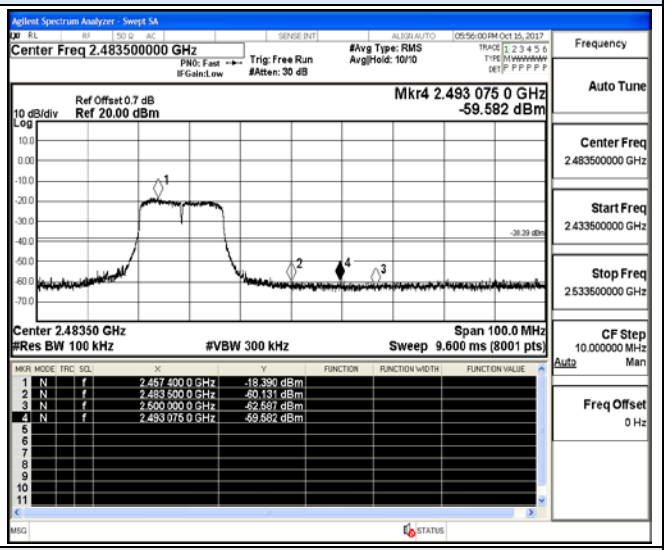
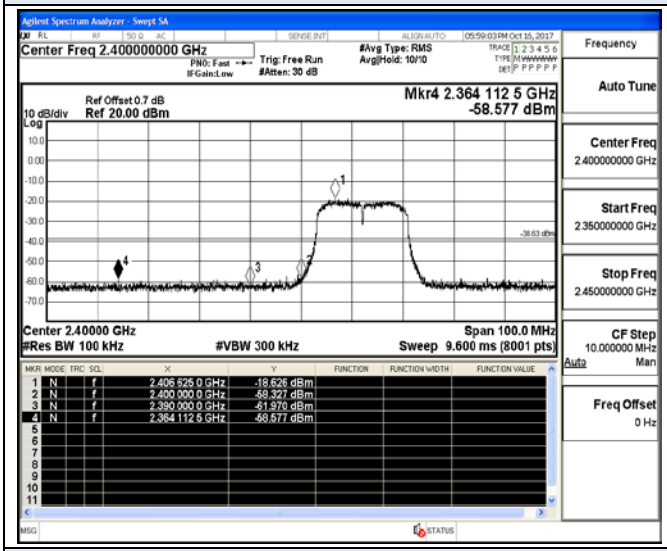
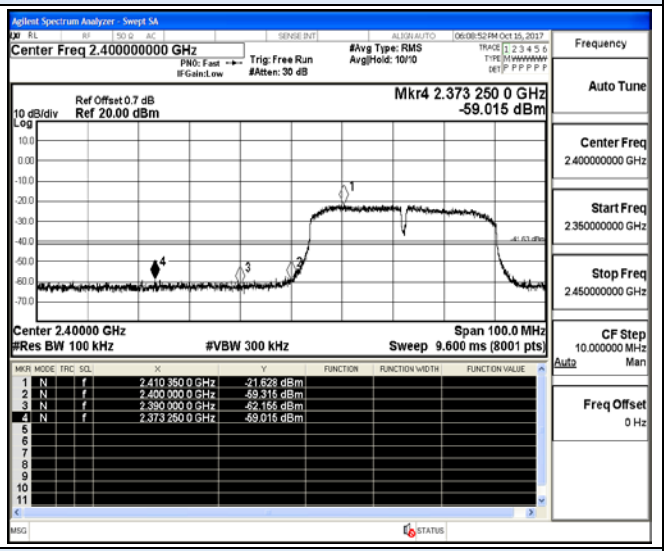
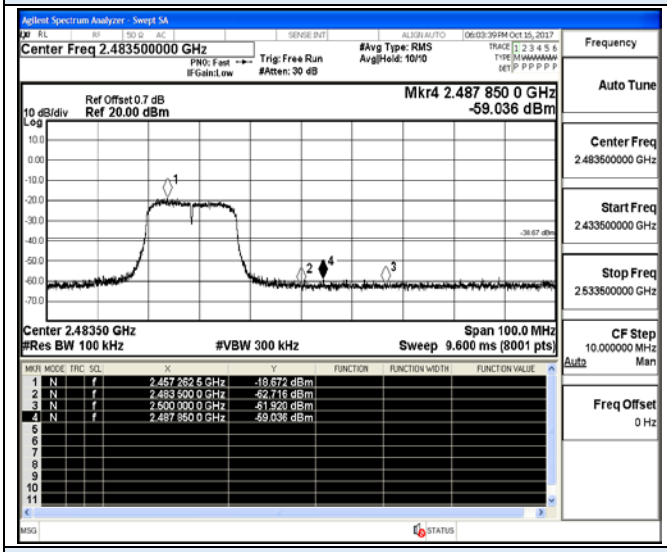
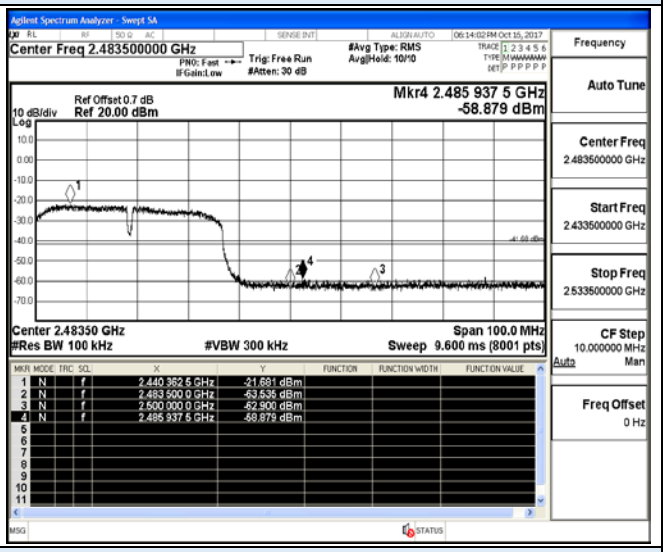
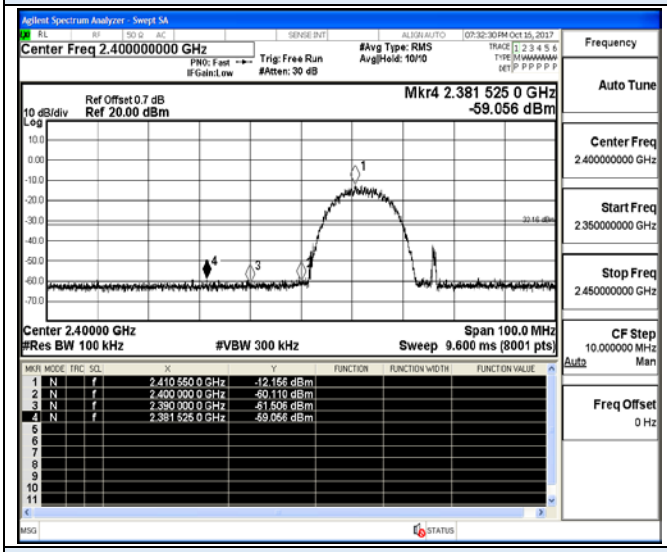
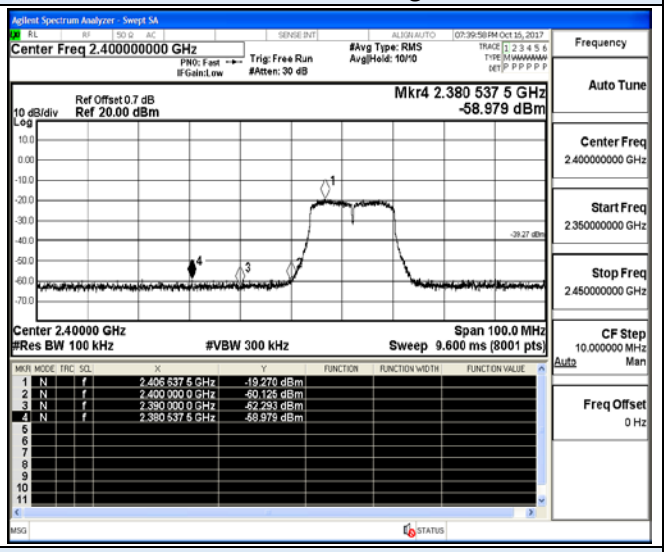
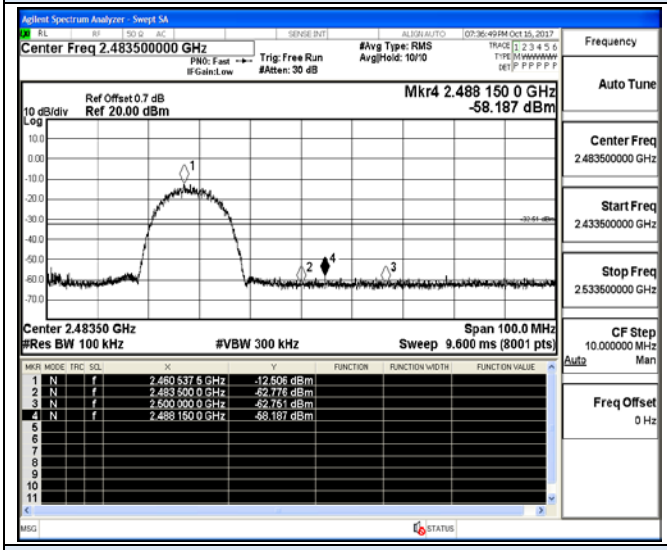
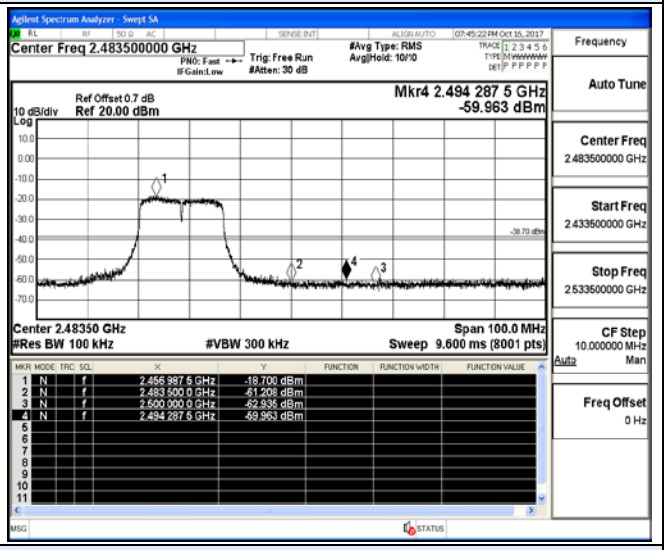
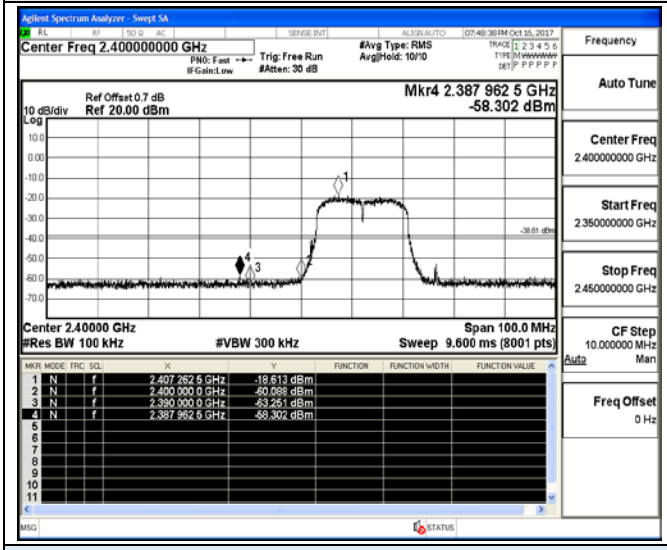
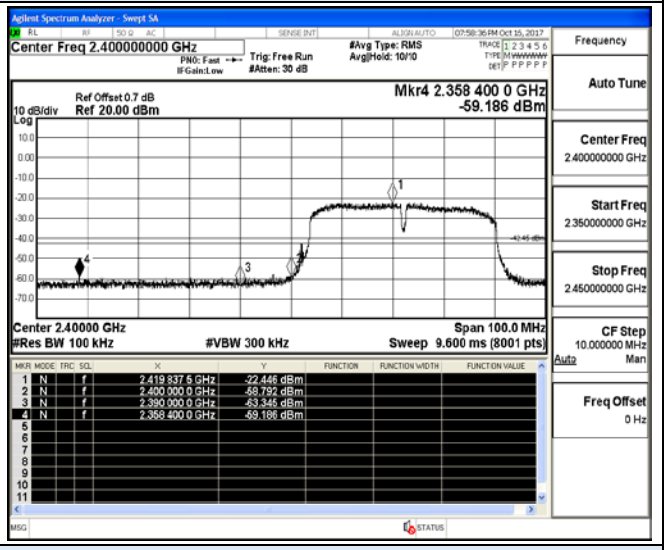
| RF Conducted Spurious Emissions | |
|---|---|
| Antenna 2 | Antenna 2 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
| Channel 1 / 2412 MHz | Channel 3 / 2422 MHz |
|  |  |
| 2392 MHz – 2432 MHz | 2382 MHz – 2462 MHz |
|  |  |
| 30 MHz – 10 GHz | 30 MHz – 10 GHz |
|  |  |
| 10 GHz – 26 GHz | 10 GHz – 26 GHz |

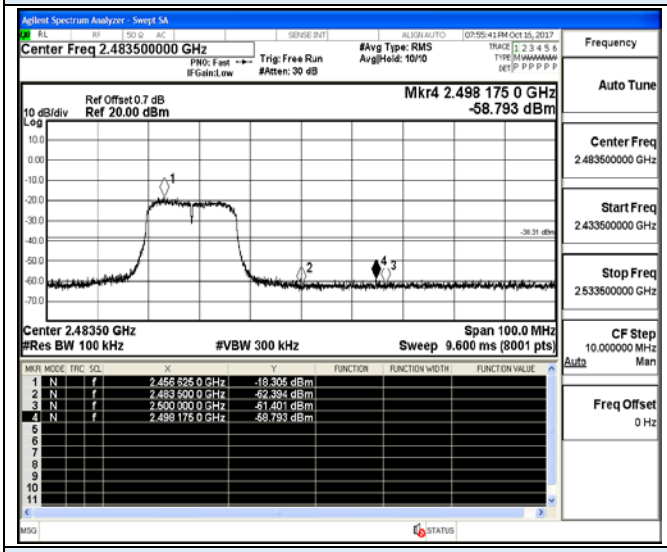
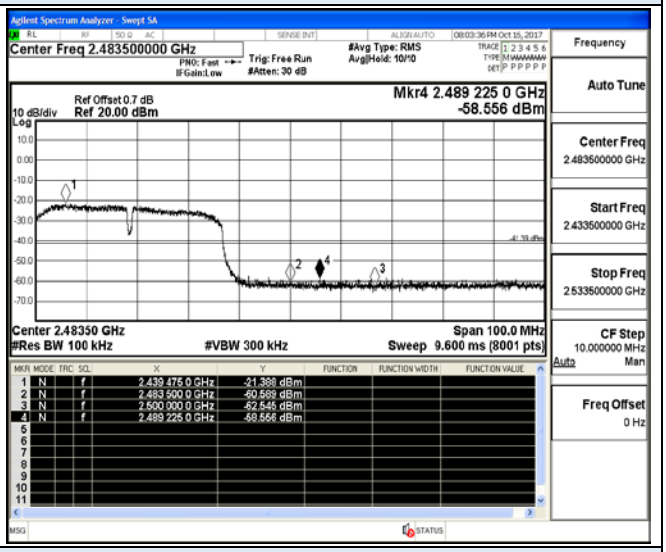
| RF Conducted Spurious Emissions | |
|---|---|
| Antenna 2 | Antenna 2 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
| Channel 6 / 2437 MHz | Channel 6 / 2437 MHz |
|  |  |
| 2417 MHz – 2457 MHz | 2397 MHz – 2477 MHz |
|  |  |
| 30 MHz – 10 GHz | 30 MHz – 10 GHz |
|  |  |
| 10 GHz – 26 GHz | 10 GHz – 26 GHz |

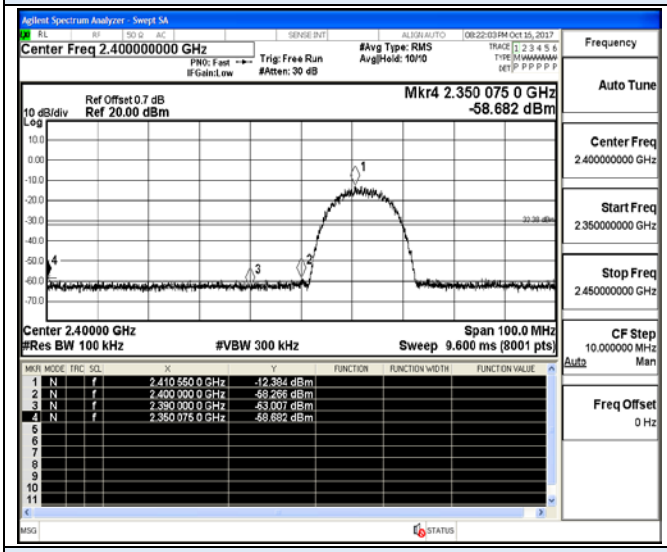
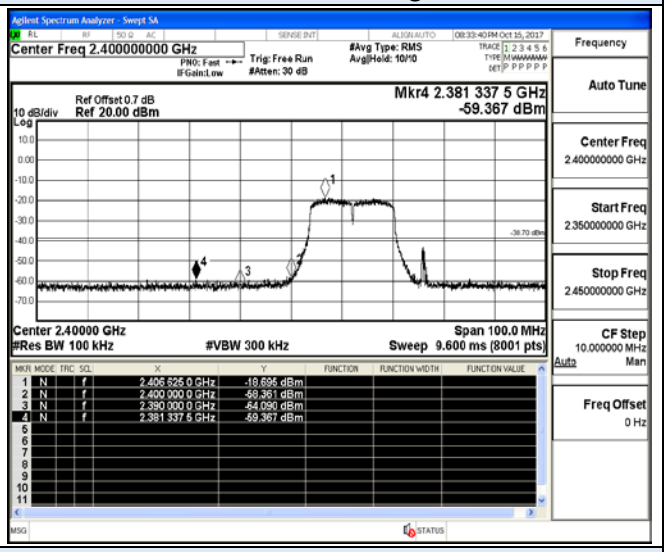
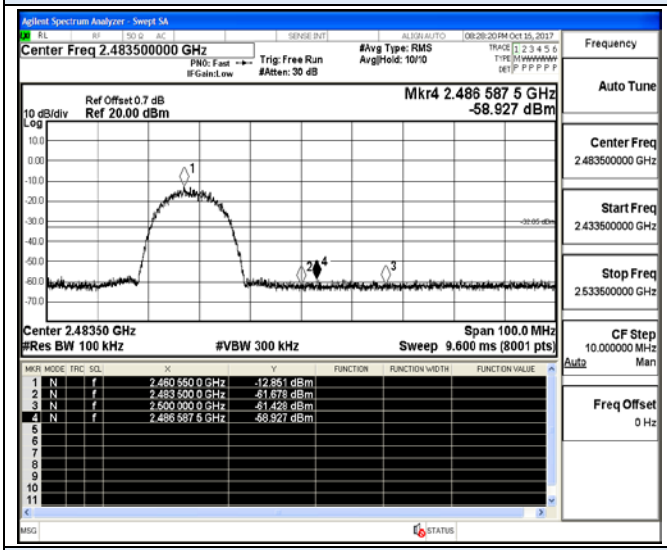
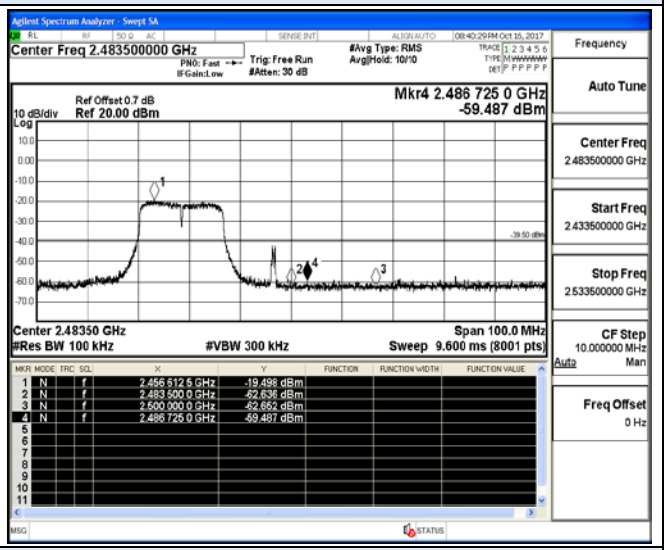
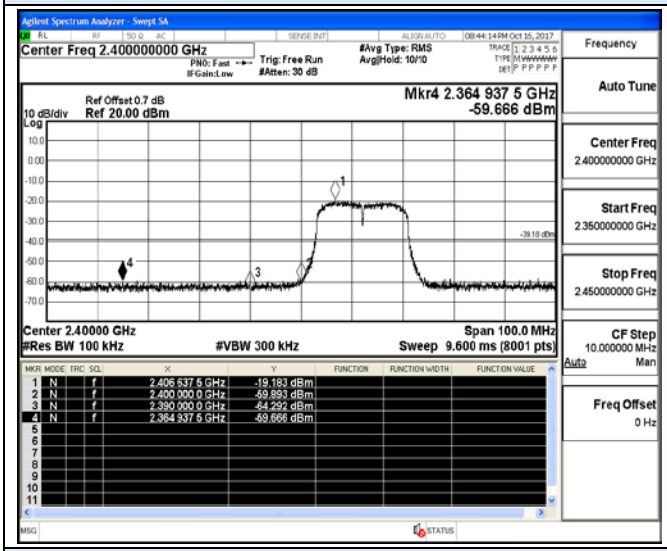
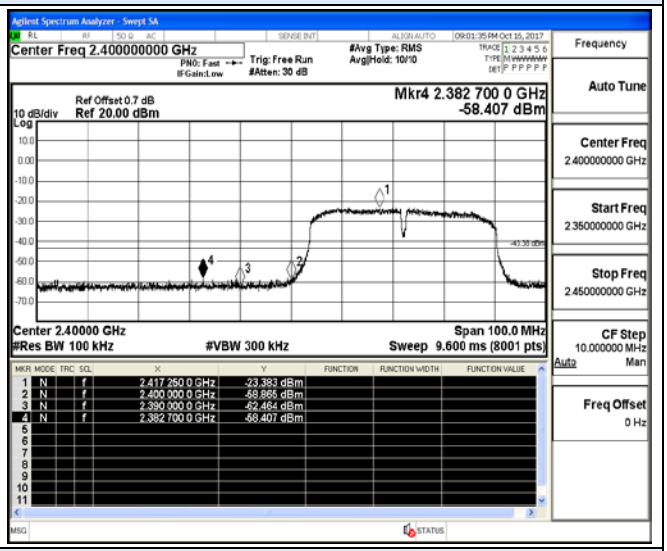
| RF Conducted Spurious Emissions | |
|---|---|
| Antenna 2 | Antenna 2 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
| Channel 11 / 2462 MHz | Channel 9 / 2452 MHz |
|  |  |
| 2442 MHz – 2482 MHz | 2412 MHz – 2492 MHz |
|  |  |
| 30 MHz – 10 GHz | 30 MHz – 10 GHz |
|  |  |
| 10 GHz – 26 GHz | 10 GHz – 26 GHz |

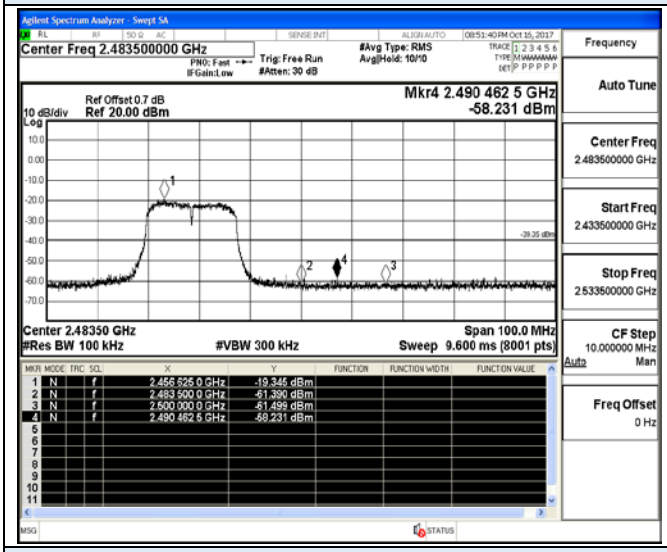
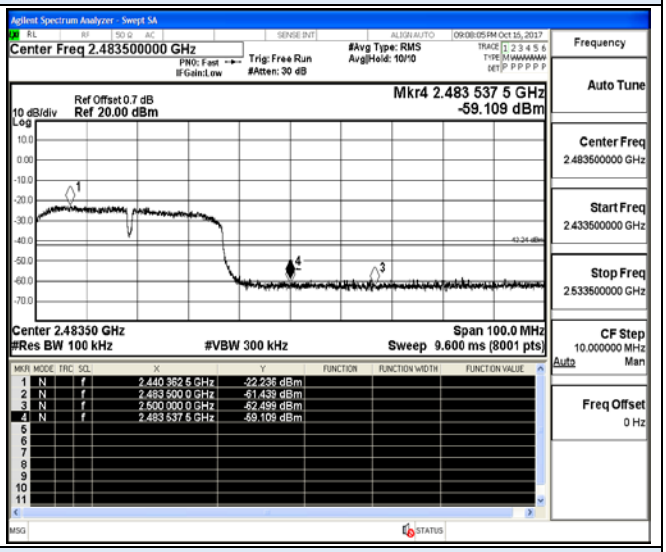
| Band-edge Measurements for Conducted Emissions | |
|---|---|
| Antenna 0 | Antenna 0 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 1 / 2412 MHz | Channel 1 / 2412 MHz |
|  |  |
| Channel 11 / 2462 MHz | Channel 11 / 2462 MHz |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 1 / 2412 MHz | Channel 3 / 2422 MHz |

| Band-edge Measurements for Conducted Emissions | |
|---|---|
| Antenna 0 | Antenna 0 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 11 / 2462 MHz | Channel 11 / 2462 MHz |

| Band-edge Measurements for Conducted Emissions | |
|---|---|
| Antenna 1 | Antenna 1 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 1 / 2412 MHz | Channel 1 / 2412 MHz |
|  |  |
| Channel 11 / 2462 MHz | Channel 11 / 2462 MHz |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 1 / 2412 MHz | Channel 3 / 2422 MHz |

| Band-edge Measurements for Conducted Emissions | |
|---|---|
| Antenna 1 | Antenna 1 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 11 / 2462 MHz | Channel 11 / 2462 MHz |

| Band-edge Measurements for Conducted Emissions | |
|---|---|
| Antenna 2 | Antenna 2 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 1 / 2412 MHz | Channel 1 / 2412 MHz |
|  |  |
| Channel 11 / 2462 MHz | Channel 11 / 2462 MHz |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 1 / 2412 MHz | Channel 3 / 2422 MHz |

| Band-edge Measurements for Conducted Emissions | |
|---|---|
| Antenna 2 | Antenna 2 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 11 / 2462 MHz | Channel 11 / 2462 MHz |

## 5.7. Power line conducted emissions

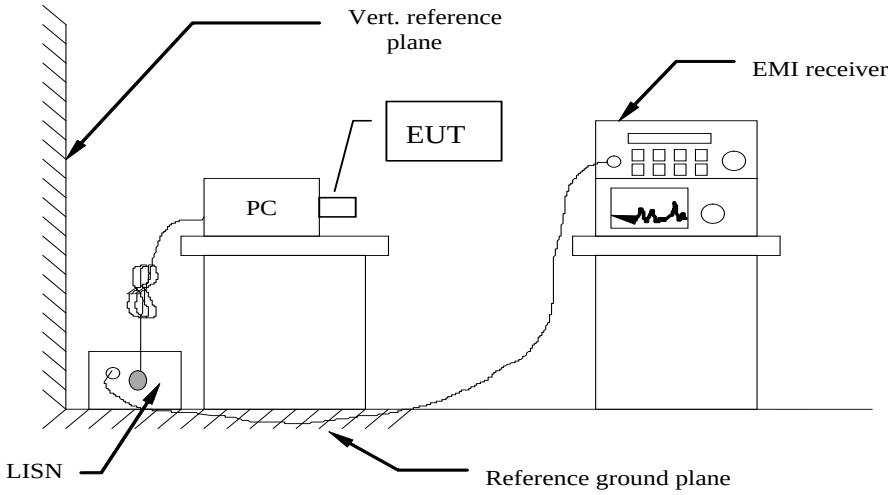
### 5.7.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

| Frequency Range (MHz) | Limits (dBμV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 to 0.50 | 66 to 56 | 56 to 46 |
| 0.50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |

* Decreasing linearly with the logarithm of the frequency

### 5.7.2 Block Diagram of Test Setup



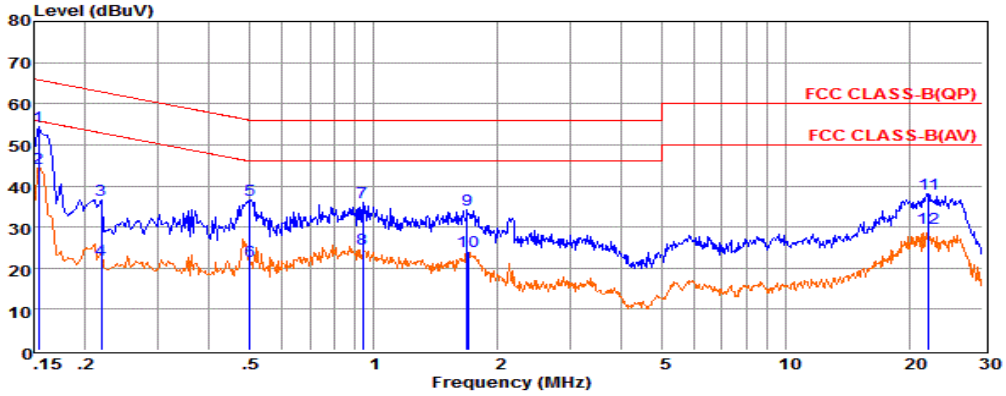

### 5.7.3 Test Results

PASS.

The test data please refer to following page.

***AC Conducted Emission of power adapter @ AC 120V/60Hz @ IEEE 802.11n HT40 (worst case)***

*Line*

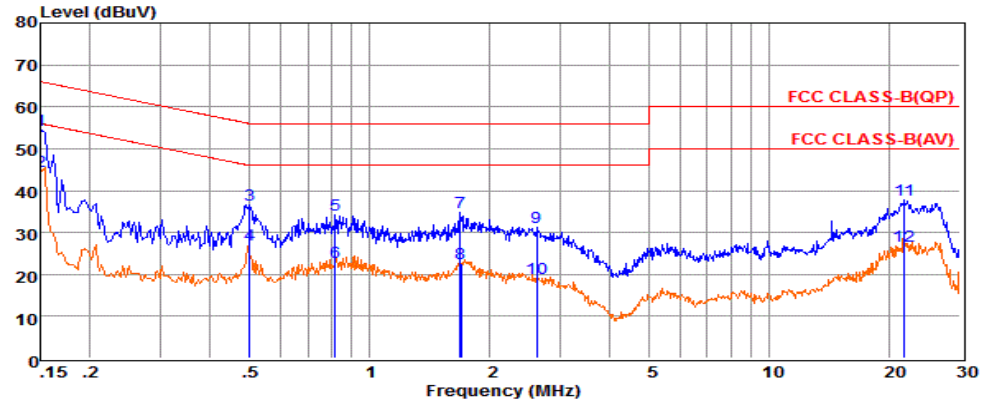



Pol: LINE

| | Freq | Reading | LISNFac | CabLos | Aux2Fac | Measured | Limit | Over | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.15 | 34.84 | 9.58 | 0.02 | 10.00 | 54.44 | 65.78 | -11.34 | QP |
| 2 | 0.15 | 24.60 | 9.58 | 0.02 | 10.00 | 44.20 | 55.77 | -11.57 | Average |
| 3 | 0.22 | 16.78 | 9.63 | 0.03 | 10.00 | 36.44 | 62.88 | -26.44 | QP |
| 4 | 0.22 | 2.30 | 9.63 | 0.03 | 10.00 | 21.96 | 52.87 | -30.91 | Average |
| 5 | 0.50 | 16.94 | 9.62 | 0.04 | 10.00 | 36.60 | 56.00 | -19.40 | QP |
| 6 | 0.50 | 2.16 | 9.62 | 0.04 | 10.00 | 21.82 | 46.00 | -24.18 | Average |
| 7 | 0.94 | 16.38 | 9.63 | 0.05 | 10.00 | 36.06 | 56.00 | -19.94 | QP |
| 8 | 0.94 | 5.05 | 9.63 | 0.05 | 10.00 | 24.73 | 46.00 | -21.27 | Average |
| 9 | 1.69 | 14.43 | 9.64 | 0.05 | 10.00 | 34.12 | 56.00 | -21.88 | QP |
| 10 | 1.69 | 4.37 | 9.64 | 0.05 | 10.00 | 24.06 | 46.00 | -21.94 | Average |
| 11 | 22.18 | 18.31 | 9.71 | 0.12 | 10.00 | 38.14 | 60.00 | -21.86 | QP |
| 12 | 22.18 | 9.90 | 9.71 | 0.12 | 10.00 | 29.73 | 50.00 | -20.27 | Average |

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

*Neutral*




Pol: NEUTRAL

| | Freq | Reading | LISNFac | CabLos | Aux2Fac | Measured | Limit | Over | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.15 | 34.78 | 9.70 | 0.02 | 10.00 | 54.50 | 66.00 | -11.50 | QP |
| 2 | 0.15 | 25.00 | 9.70 | 0.02 | 10.00 | 44.72 | 55.99 | -11.27 | Average |
| 3 | 0.50 | 16.88 | 9.62 | 0.04 | 10.00 | 36.54 | 56.00 | -19.46 | QP |
| 4 | 0.50 | 7.27 | 9.62 | 0.04 | 10.00 | 26.93 | 46.00 | -19.07 | Average |
| 5 | 0.82 | 14.41 | 9.63 | 0.04 | 10.00 | 34.08 | 56.00 | -21.92 | QP |
| 6 | 0.82 | 3.28 | 9.63 | 0.04 | 10.00 | 22.95 | 46.00 | -23.05 | Average |
| 7 | 1.69 | 15.20 | 9.63 | 0.05 | 10.00 | 34.88 | 56.00 | -21.12 | QP |
| 8 | 1.69 | 2.82 | 9.63 | 0.05 | 10.00 | 22.50 | 46.00 | -23.50 | Average |
| 9 | 2.62 | 11.67 | 9.64 | 0.05 | 10.00 | 31.36 | 56.00 | -24.64 | QP |
| 10 | 2.62 | -0.76 | 9.64 | 0.05 | 10.00 | 18.93 | 46.00 | -27.07 | Average |
| 11 | 21.83 | 17.88 | 9.82 | 0.12 | 10.00 | 37.82 | 60.00 | -22.18 | QP |
| 12 | 21.83 | 6.97 | 9.82 | 0.12 | 10.00 | 26.91 | 50.00 | -23.09 | Average |

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

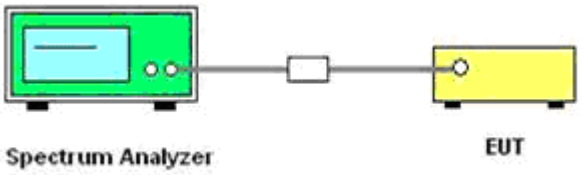
****Note: Pre-scan all modes and recorded the worst case results in this report (IEEE 802.11n HT40).*

## 5.8. Band-edge measurements for radiated emissions

### 5.8.1 Standard Applicable

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### 5.8.2 Test Setup Layout




### 5.8.3. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of Spectrum Analyzer.

### 5.8.4. Test Procedures

According to KDB 558074 D01 for Antenna-port conducted measurement. Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to an EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge, for Radiated emissions restricted band RBW=1MHz, VBW=3MHz for peak detector and RBW=1MHz, VBW=1/B for AV detector.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.
6. Measure the conducted output power (in dBm) using the detector specified by the appropriate regulatory agency (see 12.2.2, 12.2.3, and 12.2.4 for guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).
7. Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see 12.2.5 for guidance on determining the applicable antenna gain)
8. Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).
9. For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).
10. Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

E = EIRP – 20log D + 104.77=EIRP+95.23

Where:
E = electric field strength in dBμV/m,
EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

11. Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.
12. Per KDB662911 D01 section b) In cases where a combination of conducted measurements and cabinet radiated measurements are permitted to demonstrate compliance with absolute radiated out-of-band and spurious limits (e.g., KDB Publications 558074 for DTS and 789033 for U-NII), the conducted measurements must be combined with directional gain to compute the radiated levels of the out-of-band and spurious emissions as described in this section.
13. Compare the resultant electric field strength level to the applicable regulatory limit.
14. Perform radiated spurious emission test duress until all measured frequencies were complete.

5.8.5 Test Results

*Antenna 0*

| ***IEEE 802.11b*** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -51.575 | 2.000 | 0.000 | 45.683 | Peak | 74.00 | -28.317 | PASS |
| 2310.000 | -62.774 | 2.000 | 0.000 | 34.484 | Average | 54.00 | -19.516 | PASS |
| 2390.000 | -50.106 | 2.000 | 0.000 | 47.152 | Peak | 74.00 | -26.848 | PASS |
| 2390.000 | -62.247 | 2.000 | 0.000 | 35.011 | Average | 54.00 | -18.989 | PASS |
| 2483.500 | -51.634 | 2.000 | 0.000 | 45.624 | Peak | 74.00 | -28.376 | PASS |
| 2483.500 | -62.282 | 2.000 | 0.000 | 34.976 | Average | 54.00 | -19.024 | PASS |
| 2500.000 | -52.787 | 2.000 | 0.000 | 44.471 | Peak | 74.00 | -29.529 | PASS |
| 2500.000 | -62.379 | 2.000 | 0.000 | 34.879 | Average | 54.00 | -19.121 | PASS |

| ***IEEE 802.11g*** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Limit (dBuV/m) | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -53.847 | 2.000 | 0.000 | 43.411 | Peak | 74.00 | -30.589 | PASS |
| 2310.000 | -62.760 | 2.000 | 0.000 | 34.498 | Average | 54.00 | -19.502 | PASS |
| 2390.000 | -51.976 | 2.000 | 0.000 | 45.282 | Peak | 74.00 | -28.718 | PASS |
| 2390.000 | -61.909 | 2.000 | 0.000 | 35.349 | Average | 54.00 | -18.651 | PASS |
| 2483.500 | -51.590 | 2.000 | 0.000 | 45.668 | Peak | 74.00 | -28.332 | PASS |
| 2483.500 | -61.887 | 2.000 | 0.000 | 35.371 | Average | 54.00 | -18.629 | PASS |
| 2500.000 | -51.636 | 2.000 | 0.000 | 45.622 | Peak | 74.00 | -28.378 | PASS |
| 2500.000 | -62.167 | 2.000 | 0.000 | 35.091 | Average | 54.00 | -18.909 | PASS |

| IEEE 802.11n HT20 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -50.897 | 2.000 | 0.000 | 46.361 | Peak | 74.00 | -27.639 | PASS |
| 2310.000 | -62.766 | 2.000 | 0.000 | 34.492 | Average | 54.00 | -19.508 | PASS |
| 2390.000 | -51.704 | 2.000 | 0.000 | 45.554 | Peak | 74.00 | -28.446 | PASS |
| 2390.000 | -61.903 | 2.000 | 0.000 | 35.355 | Average | 54.00 | -18.645 | PASS |
| 2483.500 | -51.673 | 2.000 | 0.000 | 45.585 | Peak | 74.00 | -28.415 | PASS |
| 2483.500 | -61.989 | 2.000 | 0.000 | 35.269 | Average | 54.00 | -18.731 | PASS |
| 2500.000 | -51.609 | 2.000 | 0.000 | 45.649 | Peak | 74.00 | -28.351 | PASS |
| 2500.000 | -62.288 | 2.000 | 0.000 | 34.970 | Average | 54.00 | -19.030 | PASS |

| IEEE 802.11n HT40 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -52.809 | 2.0 | 0.000 | 44.449 | Peak | 74.00 | -29.551 | PASS |
| 2310.000 | -62.747 | 2.0 | 0.000 | 34.511 | Average | 54.00 | -19.489 | PASS |
| 2390.000 | -49.928 | 2.0 | 0.000 | 47.330 | Peak | 74.00 | -26.670 | PASS |
| 2390.000 | -61.996 | 2.0 | 0.000 | 35.262 | Average | 54.00 | -18.738 | PASS |
| 2483.500 | -51.859 | 2.0 | 0.000 | 45.399 | Peak | 74.00 | -28.601 | PASS |
| 2483.500 | -62.073 | 2.0 | 0.000 | 35.185 | Average | 54.00 | -18.815 | PASS |
| 2500.000 | -50.859 | 2.0 | 0.000 | 46.399 | Peak | 74.00 | -27.601 | PASS |
| 2500.000 | -62.254 | 2.0 | 0.000 | 35.004 | Average | 54.00 | -18.996 | PASS |

*Antenna 1*

| IEEE 802.11b | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -51.575 | 2.0 | 0.000 | 45.683 | Peak | 74.00 | -28.317 | PASS |
| 2310.000 | -62.794 | 2.0 | 0.000 | 34.464 | Average | 54.00 | -19.536 | PASS |
| 2390.000 | -49.604 | 2.0 | 0.000 | 47.654 | Peak | 74.00 | -26.346 | PASS |
| 2390.000 | -62.250 | 2.0 | 0.000 | 35.008 | Average | 54.00 | -18.992 | PASS |
| 2483.500 | -51.035 | 2.0 | 0.000 | 46.223 | Peak | 74.00 | -27.777 | PASS |
| 2483.500 | -62.261 | 2.0 | 0.000 | 34.997 | Average | 54.00 | -19.003 | PASS |
| 2500.000 | -50.647 | 2.0 | 0.000 | 46.611 | Peak | 74.00 | -27.389 | PASS |
| 2500.000 | -62.364 | 2.0 | 0.000 | 34.894 | Average | 54.00 | -19.106 | PASS |

| IEEE 802.11g | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -51.279 | 2.0 | 0.000 | 45.979 | Peak | 74.00 | -28.021 | PASS |
| 2310.000 | -62.740 | 2.0 | 0.000 | 34.518 | Average | 54.00 | -19.482 | PASS |
| 2390.000 | -50.528 | 2.0 | 0.000 | 46.730 | Peak | 74.00 | -27.270 | PASS |
| 2390.000 | -61.875 | 2.0 | 0.000 | 35.383 | Average | 54.00 | -18.617 | PASS |
| 2483.500 | -49.703 | 2.0 | 0.000 | 47.555 | Peak | 74.00 | -26.445 | PASS |
| 2483.500 | -61.937 | 2.0 | 0.000 | 35.321 | Average | 54.00 | -18.679 | PASS |
| 2500.000 | -50.347 | 2.0 | 0.000 | 46.911 | Peak | 74.00 | -27.089 | PASS |
| 2500.000 | -62.244 | 2.0 | 0.000 | 35.014 | Average | 54.00 | -18.986 | PASS |

| IEEE 802.11n HT20 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -52.299 | 2.0 | 0.000 | 44.959 | Peak | 74.00 | -29.041 | PASS |
| 2310.000 | -62.740 | 2.0 | 0.000 | 34.518 | Average | 54.00 | -19.482 | PASS |
| 2390.000 | -51.347 | 2.0 | 0.000 | 45.911 | Peak | 74.00 | -28.089 | PASS |
| 2390.000 | -61.915 | 2.0 | 0.000 | 35.343 | Average | 54.00 | -18.657 | PASS |
| 2483.500 | -50.910 | 2.0 | 0.000 | 46.348 | Peak | 74.00 | -27.652 | PASS |
| 2483.500 | -61.954 | 2.0 | 0.000 | 35.304 | Average | 54.00 | -18.696 | PASS |
| 2500.000 | -51.456 | 2.0 | 0.000 | 45.802 | Peak | 74.00 | -28.198 | PASS |
| 2500.000 | -62.236 | 2.0 | 0.000 | 35.022 | Average | 54.00 | -18.978 | PASS |

| IEEE 802.11n HT40 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -49.332 | 2.0 | 0.000 | 47.926 | Peak | 74.00 | -26.074 | PASS |
| 2310.000 | -62.736 | 2.0 | 0.000 | 34.522 | Average | 54.00 | -19.478 | PASS |
| 2390.000 | -49.928 | 2.0 | 0.000 | 47.330 | Peak | 74.00 | -26.670 | PASS |
| 2390.000 | -61.981 | 2.0 | 0.000 | 35.277 | Average | 54.00 | -18.723 | PASS |
| 2483.500 | -50.778 | 2.0 | 0.000 | 46.480 | Peak | 74.00 | -27.520 | PASS |
| 2483.500 | -62.048 | 2.0 | 0.000 | 35.210 | Average | 54.00 | -18.790 | PASS |
| 2500.000 | -50.859 | 2.0 | 0.000 | 46.399 | Peak | 74.00 | -27.601 | PASS |
| 2500.000 | -62.254 | 2.0 | 0.000 | 35.004 | Average | 54.00 | -18.996 | PASS |

*Antenna 2*

| IEEE 802.11b | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -51.078 | 2.0 | 0.000 | 46.180 | Peak | 74.00 | -27.820 | PASS |
| 2310.000 | -62.773 | 2.0 | 0.000 | 34.485 | Average | 54.00 | -19.515 | PASS |
| 2390.000 | -50.705 | 2.0 | 0.000 | 46.553 | Peak | 74.00 | -27.447 | PASS |
| 2390.000 | -62.298 | 2.0 | 0.000 | 34.960 | Average | 54.00 | -19.040 | PASS |
| 2483.500 | -51.761 | 2.0 | 0.000 | 45.497 | Peak | 74.00 | -28.503 | PASS |
| 2483.500 | -62.270 | 2.0 | 0.000 | 34.988 | Average | 54.00 | -19.012 | PASS |
| 2500.000 | -52.307 | 2.0 | 0.000 | 44.951 | Peak | 74.00 | -29.049 | PASS |
| 2500.000 | -62.366 | 2.0 | 0.000 | 34.892 | Average | 54.00 | -19.108 | PASS |

| IEEE 802.11g | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -51.286 | 2.0 | 0.000 | 45.972 | Peak | 74.00 | -28.028 | PASS |
| 2310.000 | -62.772 | 2.0 | 0.000 | 34.486 | Average | 54.00 | -19.514 | PASS |
| 2390.000 | -51.103 | 2.0 | 0.000 | 46.155 | Peak | 74.00 | -27.845 | PASS |
| 2390.000 | -61.924 | 2.0 | 0.000 | 35.334 | Average | 54.00 | -18.666 | PASS |
| 2483.500 | -51.009 | 2.0 | 0.000 | 46.249 | Peak | 74.00 | -27.751 | PASS |
| 2483.500 | -61.906 | 2.0 | 0.000 | 35.352 | Average | 54.00 | -18.648 | PASS |
| 2500.000 | -50.588 | 2.0 | 0.000 | 46.670 | Peak | 74.00 | -27.330 | PASS |
| 2500.000 | -62.168 | 2.0 | 0.000 | 35.090 | Average | 54.00 | -18.910 | PASS |

| IEEE 802.11n HT20 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -51.741 | 2.0 | 0.000 | 45.517 | Peak | 74.00 | -28.483 | PASS |
| 2310.000 | -62.760 | 2.0 | 0.000 | 34.498 | Average | 54.00 | -19.502 | PASS |
| 2390.000 | -51.362 | 2.0 | 0.000 | 45.896 | Peak | 74.00 | -28.104 | PASS |
| 2390.000 | -61.898 | 2.0 | 0.000 | 35.360 | Average | 54.00 | -18.640 | PASS |
| 2483.500 | -50.567 | 2.0 | 0.000 | 46.691 | Peak | 74.00 | -27.309 | PASS |
| 2483.500 | -61.956 | 2.0 | 0.000 | 35.302 | Average | 54.00 | -18.698 | PASS |
| 2500.000 | -52.471 | 2.0 | 0.000 | 44.787 | Peak | 74.00 | -29.213 | PASS |
| 2500.000 | -62.279 | 2.0 | 0.000 | 34.979 | Average | 54.00 | -19.021 | PASS |

| IEEE 802.11n HT40 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| 2310.000 | -51.798 | 2.0 | 0.000 | 45.460 | Peak | 74.00 | -28.540 | PASS |
| 2310.000 | -62.748 | 2.0 | 0.000 | 34.510 | Average | 54.00 | -19.490 | PASS |
| 2390.000 | -50.707 | 2.0 | 0.000 | 46.551 | Peak | 74.00 | -27.449 | PASS |
| 2390.000 | -61.966 | 2.0 | 0.000 | 35.292 | Average | 54.00 | -18.708 | PASS |
| 2483.500 | -51.569 | 2.0 | 0.000 | 45.689 | Peak | 74.00 | -28.311 | PASS |
| 2483.500 | -62.042 | 2.0 | 0.000 | 35.216 | Average | 54.00 | -18.784 | PASS |
| 2500.000 | -52.416 | 2.0 | 0.000 | 44.842 | Peak | 74.00 | -29.158 | PASS |
| 2500.000 | -62.279 | 2.0 | 0.000 | 34.979 | Average | 54.00 | -19.021 | PASS |

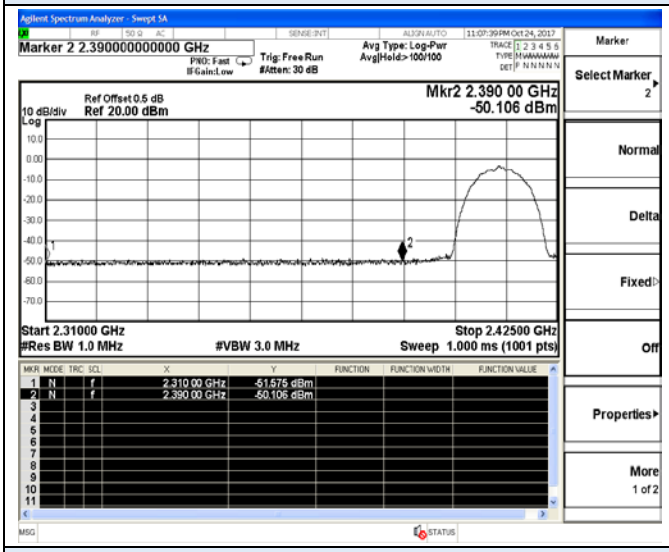
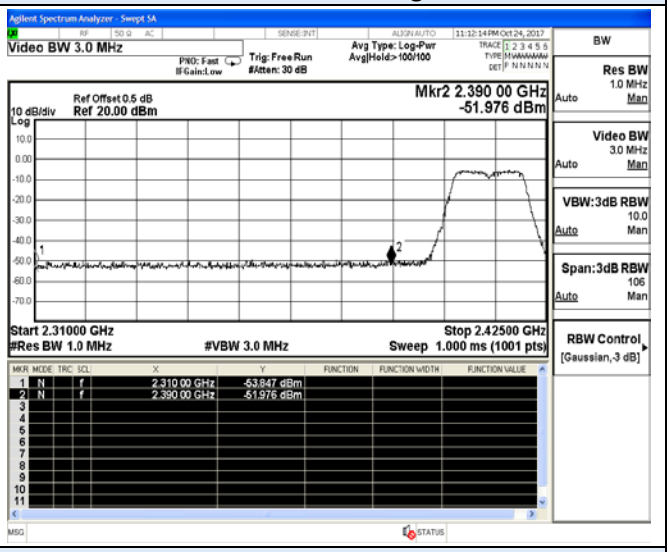
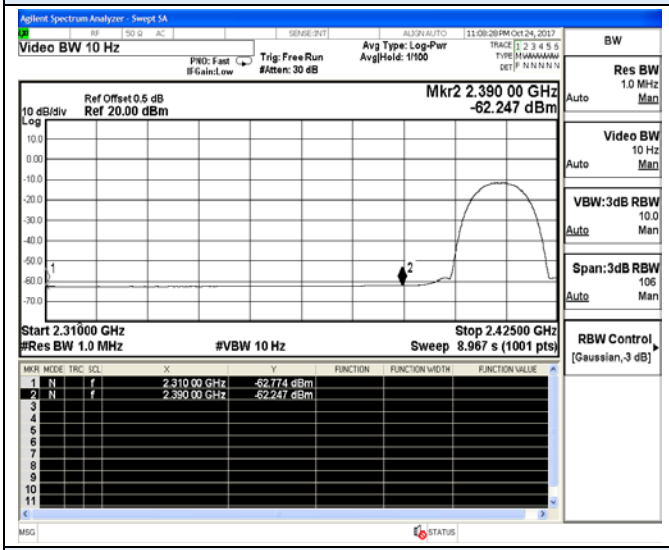
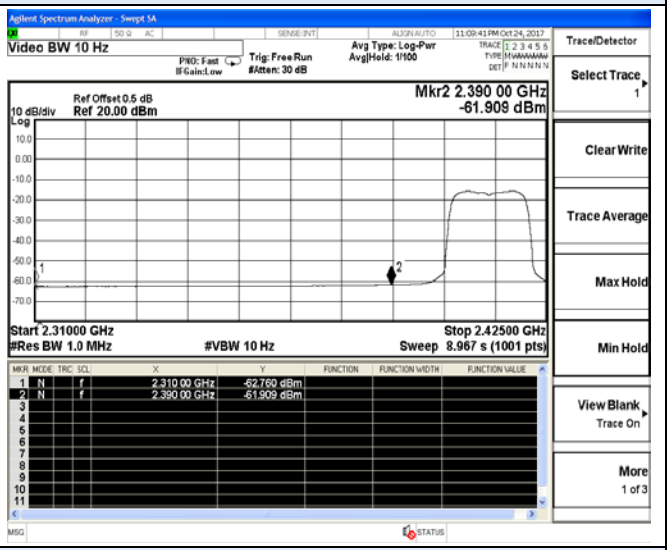
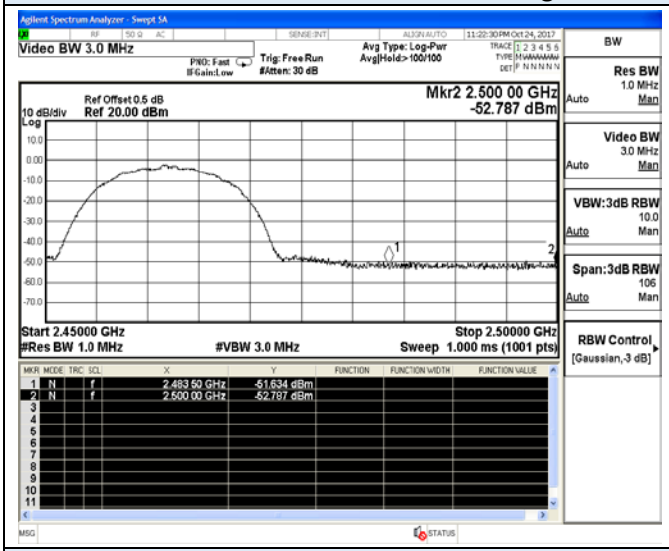
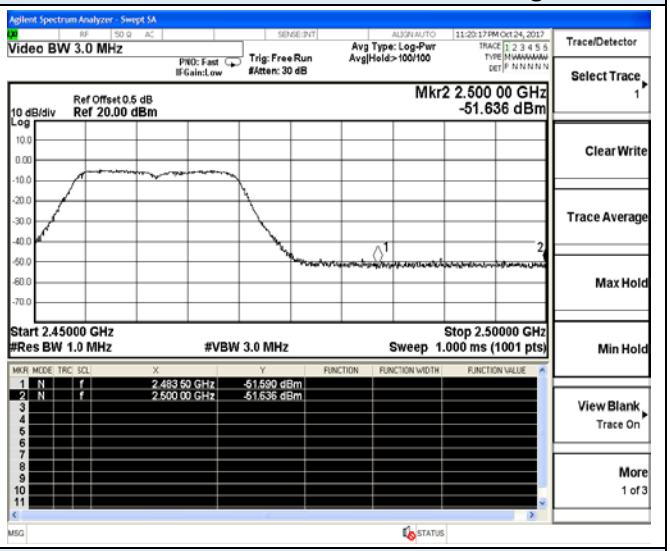
*Combined Antenna 0, Antenna 1 and Antenna 2*

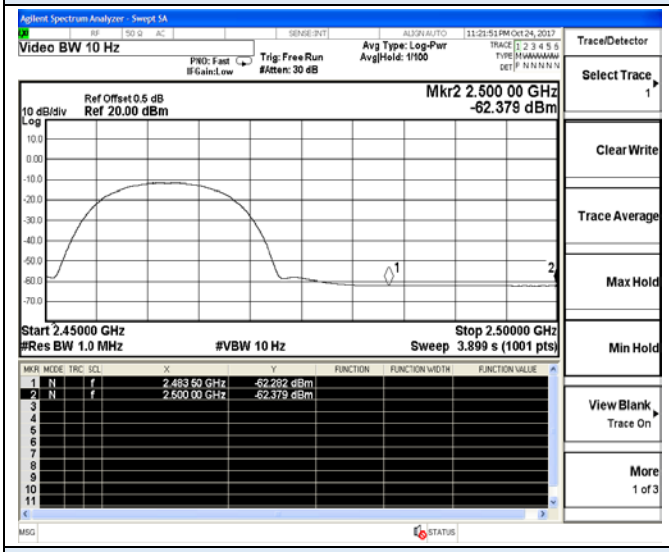
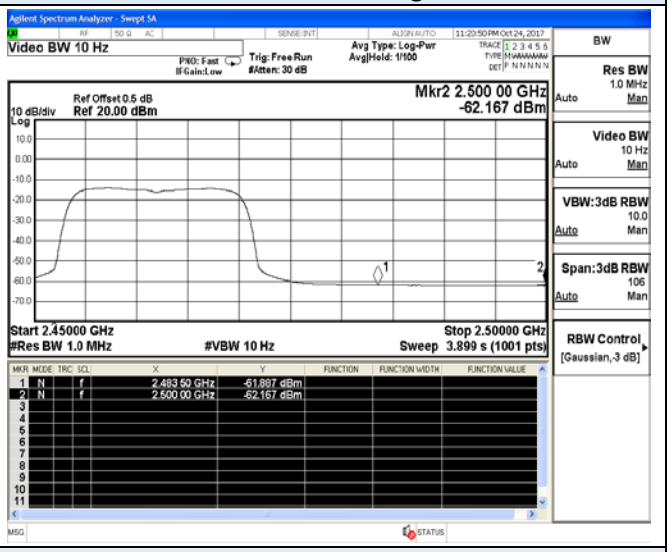
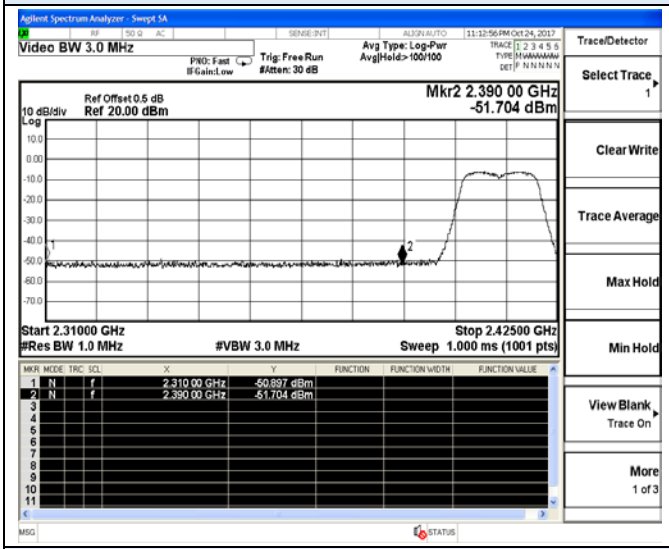
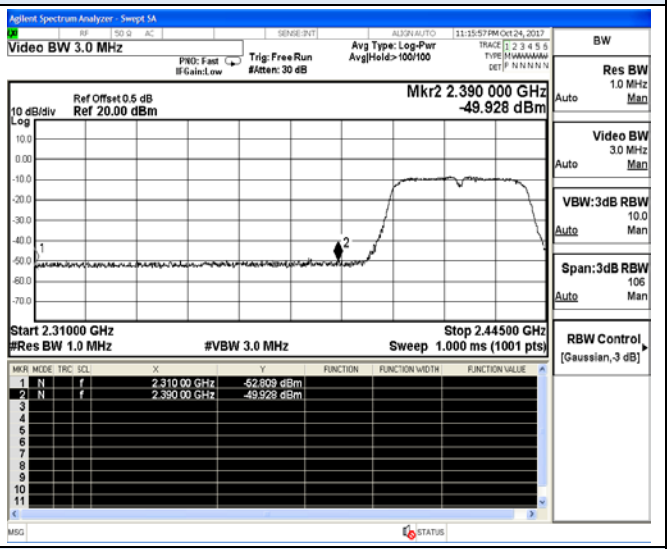
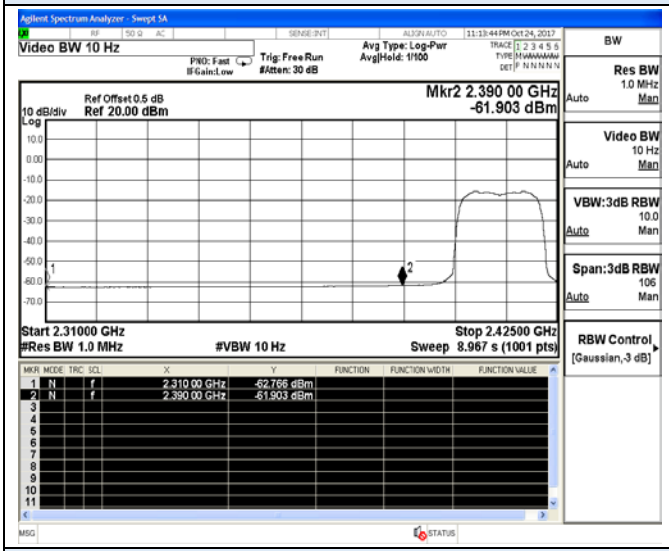
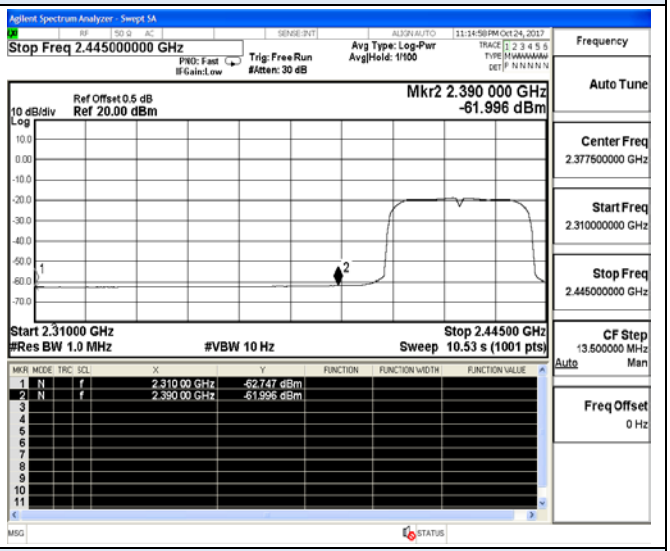
| IEEE 802.11n HT20 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | | | | Directional Gain (dB) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| | Antenna 0 | Antenna 1 | Antenna 2 | Sum | | | | | | | |
| 2310.000* | -50.897 | -52.299 | -51.741 | -46.836 | 6.771* | 0.000 | 55.193 | Peak | 74.00 | -18.807 | PASS |
| 2310.000 | -62.766 | -62.740 | -62.760 | -57.984 | 6.771* | 0.000 | 44.045 | AV | 54.00 | -9.955 | PASS |
| 2390.000 | -51.704 | -51.347 | -51.362 | -46.697 | 6.771* | 0.000 | 55.332 | Peak | 74.00 | -18.668 | PASS |
| 2390.000 | -61.903 | -61.915 | -61.898 | -57.134 | 6.771* | 0.000 | 44.895 | AV | 54.00 | -9.105 | PASS |
| 2483.500* | -51.673 | -50.910 | -50.567 | -46.255 | 6.771* | 0.000 | 55.774 | Peak | 74.00 | -18.226 | PASS |
| 2483.500 | -61.989 | -61.954 | -61.956 | -57.195 | 6.771* | 0.000 | 44.834 | AV | 54.00 | -9.166 | PASS |
| 2500.000 | -51.609 | -51.456 | -52.471 | -47.052 | 6.771* | 0.000 | 54.977 | Peak | 74.00 | -19.023 | PASS |
| 2500.000 | -62.288 | -62.236 | -62.279 | -57.496 | 6.771* | 0.000 | 44.533 | AV | 54.00 | -9.467 | PASS |

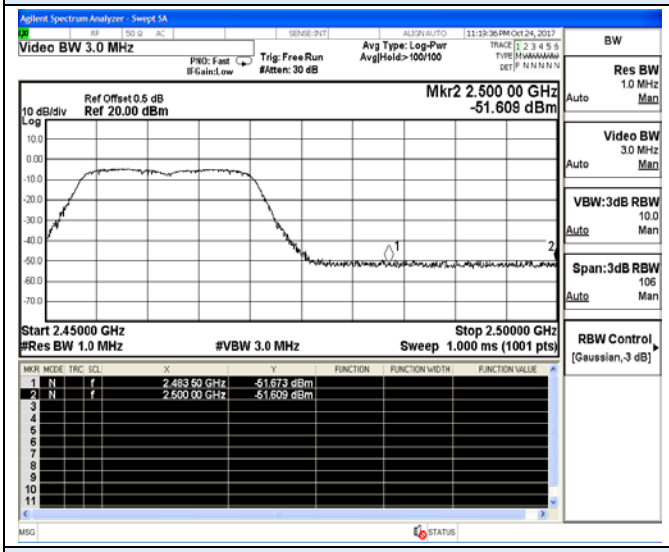
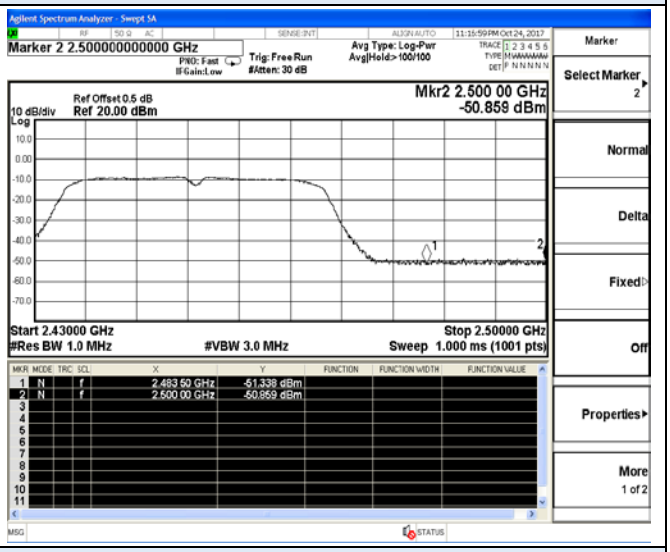
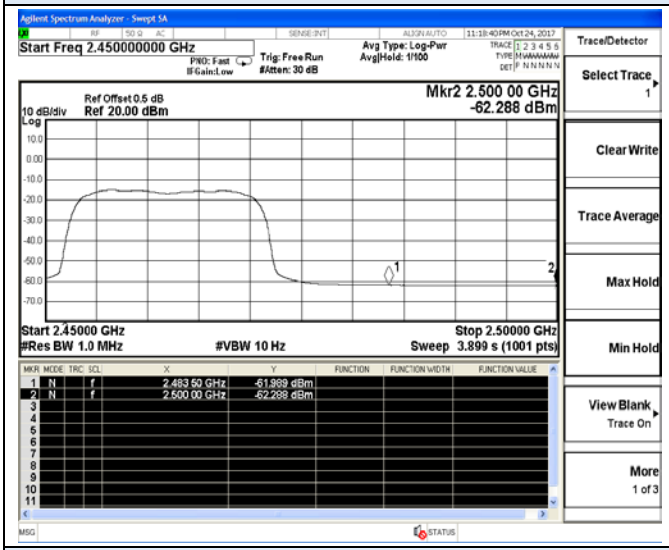
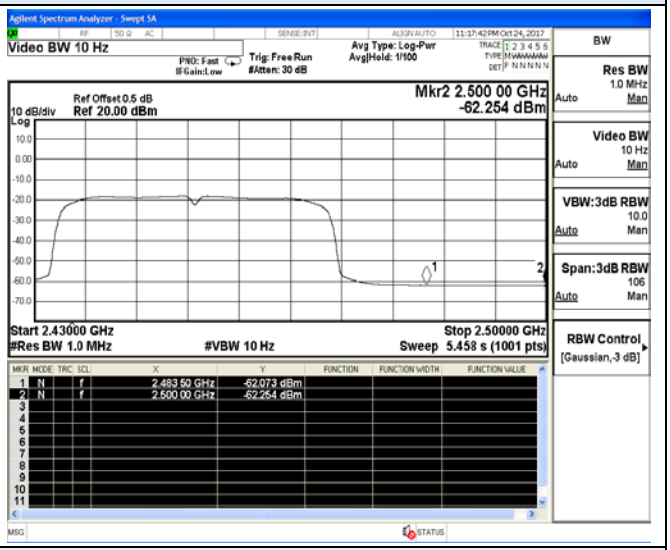
| IEEE 802.11n HT40 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | | | | Directional Gain (dB) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) | Over limit dB | Verdict |
| | Antenna 0 | Antenna 1 | Antenna 2 | Sum | | | | | | | |
| 2310.000* | -52.809 | -49.332 | -51.798 | -46.287 | 6.771* | 0.000 | 55.742 | Peak | 74.00 | -18.258 | PASS |
| 2310.000 | -62.747 | -62.736 | -62.748 | -57.972 | 6.771* | 0.000 | 44.057 | AV | 54.00 | -9.943 | PASS |
| 2390.000 | -49.928 | -49.928 | -50.707 | -45.401 | 6.771* | 0.000 | 56.628 | Peak | 74.00 | -17.372 | PASS |
| 2390.000 | -61.996 | -61.981 | -61.966 | -57.210 | 6.771* | 0.000 | 44.819 | AV | 54.00 | -9.181 | PASS |
| 2483.500* | -51.859 | -50.778 | -51.569 | -46.606 | 6.771* | 0.000 | 55.423 | Peak | 74.00 | -18.577 | PASS |
| 2483.500 | -62.073 | -62.048 | -62.042 | -57.283 | 6.771* | 0.000 | 44.746 | AV | 54.00 | -9.254 | PASS |
| 2500.000 | -50.859 | -50.859 | -52.416 | -46.547 | 6.771* | 0.000 | 55.482 | Peak | 74.00 | -18.518 | PASS |
| 2500.000 | -62.254 | -62.254 | -62.279 | -57.491 | 6.771* | 0.000 | 44.538 | AV | 54.00 | -9.462 | PASS |

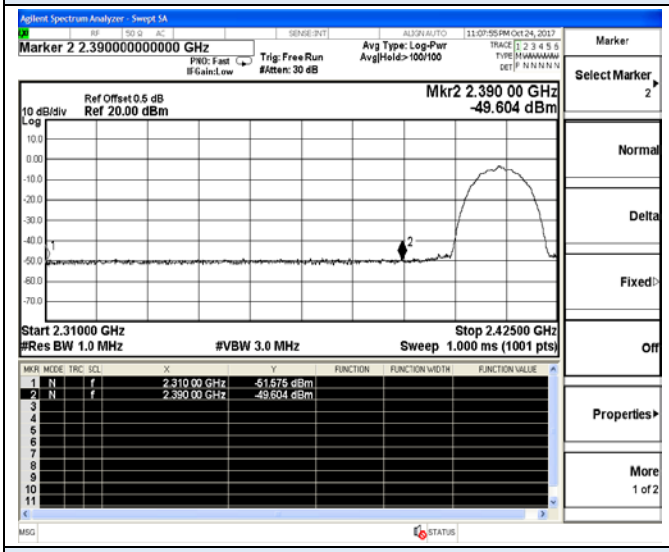
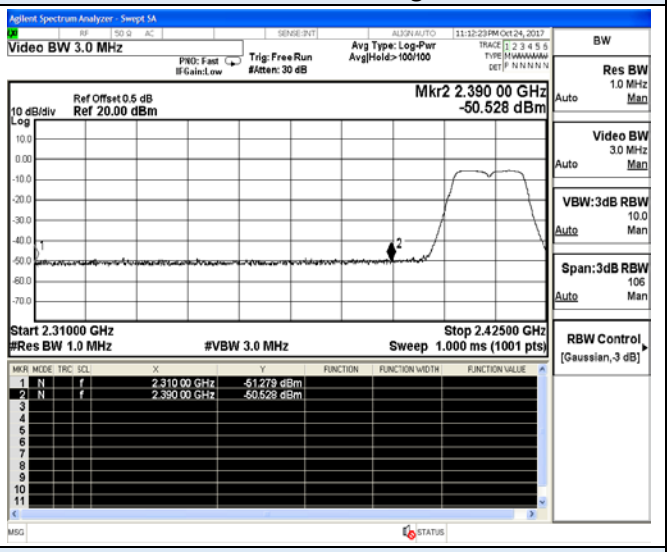
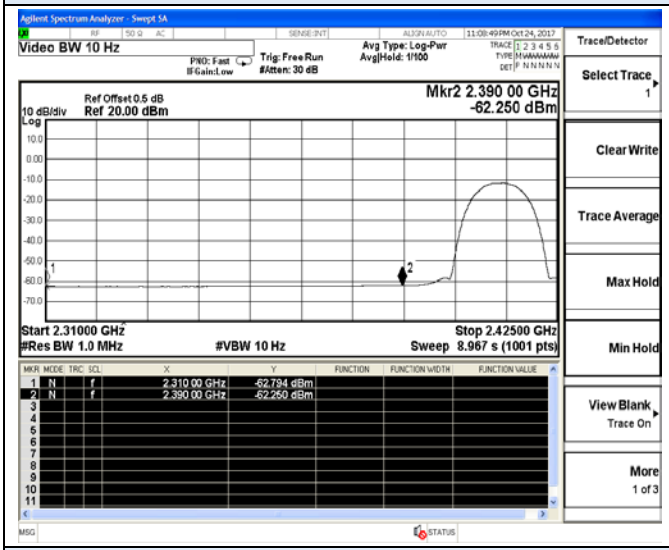
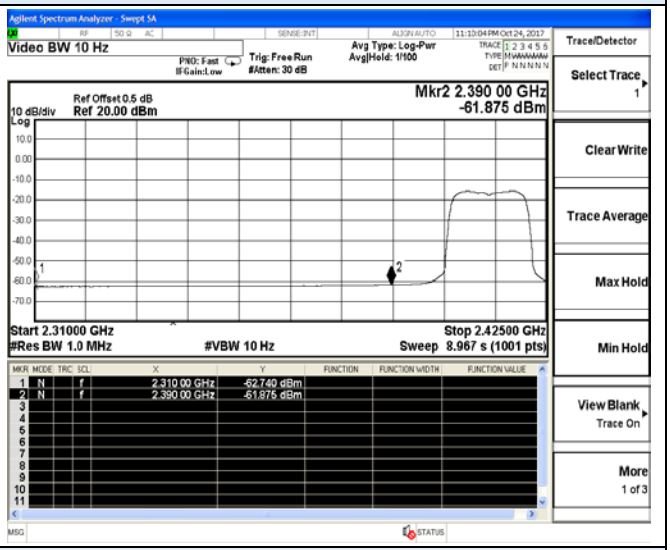
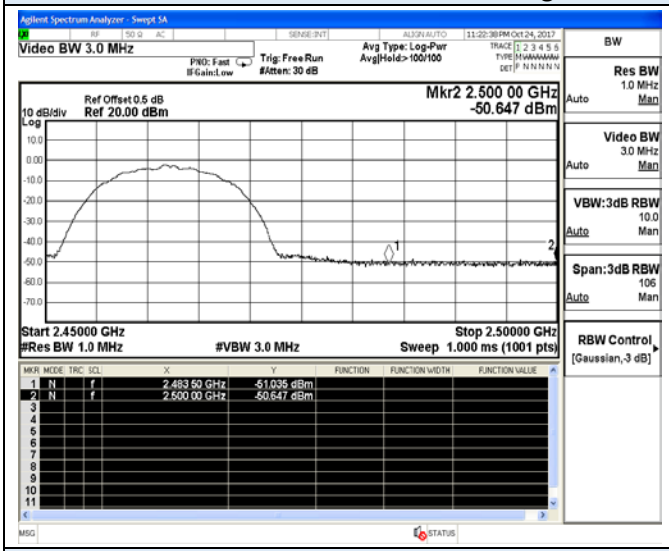
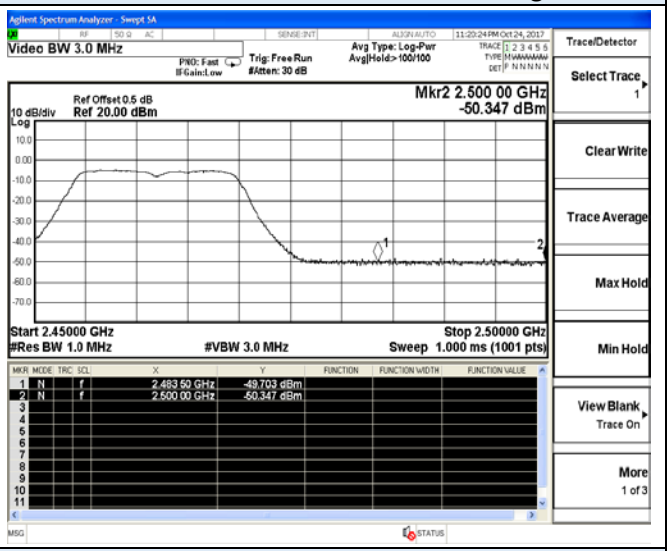
*Remark:*

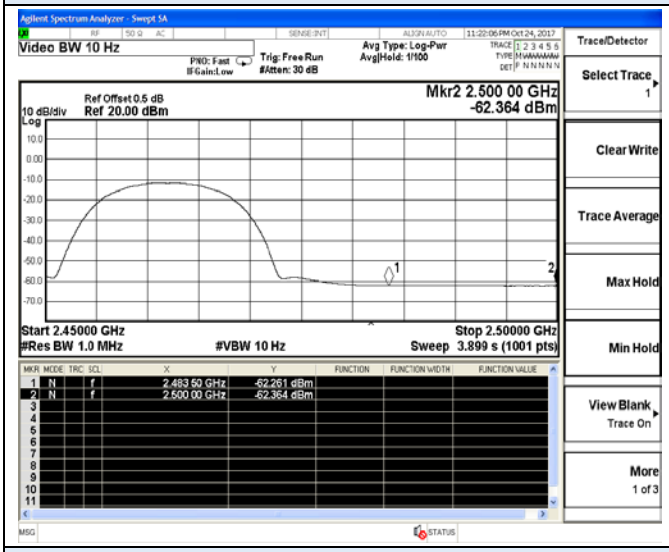
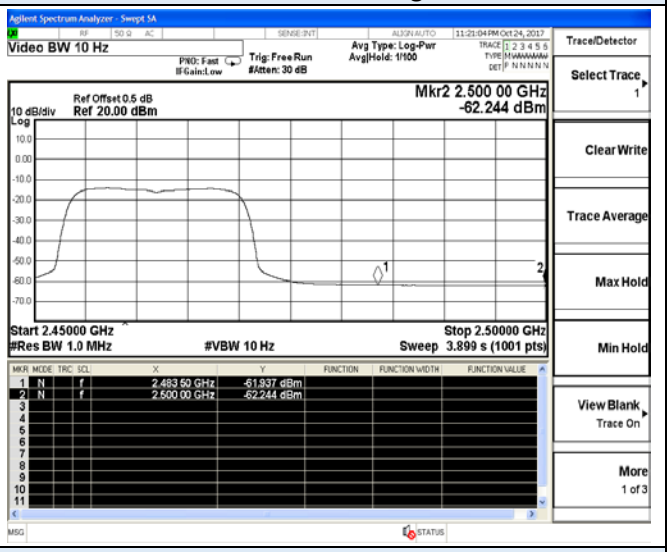
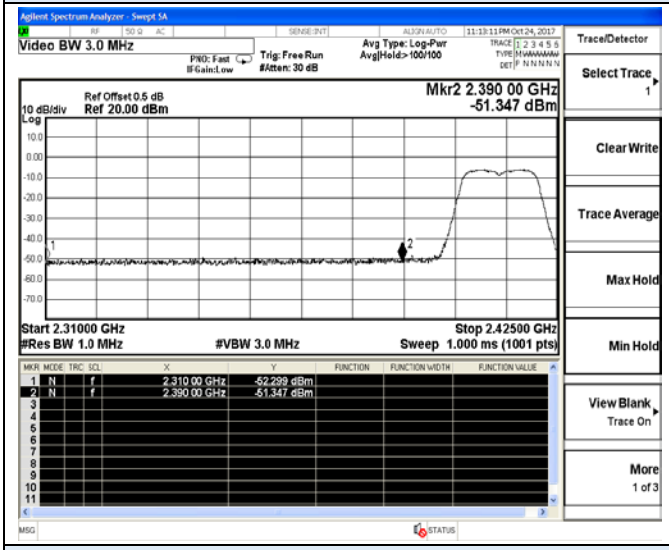
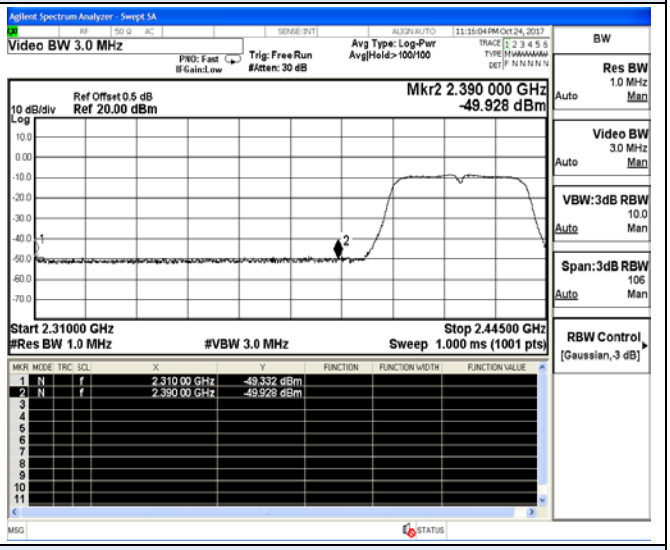
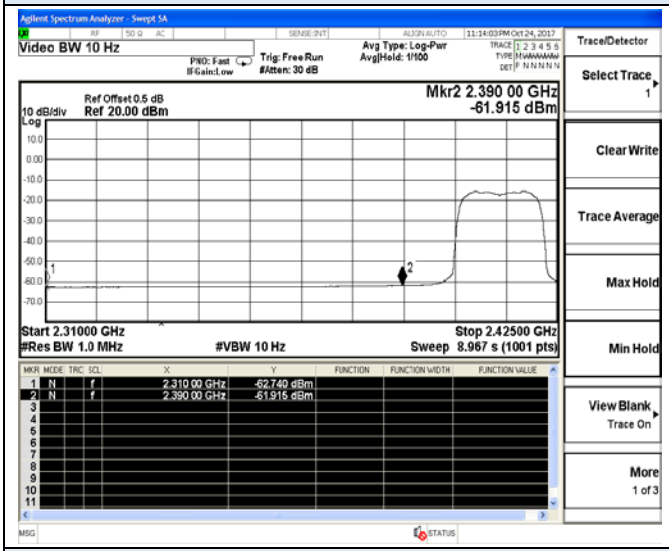
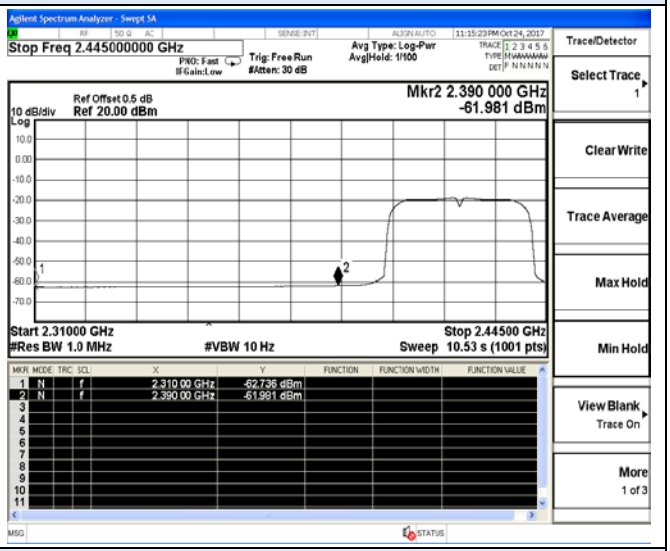
1. *Measured Band-edge measurements for radiated emissions at difference data rate for each mode and recorded worst case for each mode.*
2. *Test results including cable loss;*
3. *Worst case data at 1Mbps at IEEE 802.11b; 6Mbps at IEEE 802.11g; 6.5Mbps at IEEE 802.11n HT20; 13.5Mbps at IEEE 802.11n HT40;*
4. *"---"means that the fundamental frequency not for 15.209 limits requirement.*
5. *No need measure Average values if Peak values meets Average limits;*
6. ** means maximum values of frequency band 2310 – 2390 MHz, 2483.5 – 2500 MHz;*
7. *For MIMO with CCD technology device, The Directional Gain= Gain of individual transmit antennas (dBi) + Array gain;*
   *Array gain = 10 log ($N_{ant}$), where $N_{ant}$ is the number of transmit antennas.*
8. *Directional Gain = 2.0 + 10*log(3) = 6.771**
9. *Covert Radiated E Level At 3m = Conducted average power + Directional Gain + 104.77-20*log(3);*
10. *Please refer to following plots;*

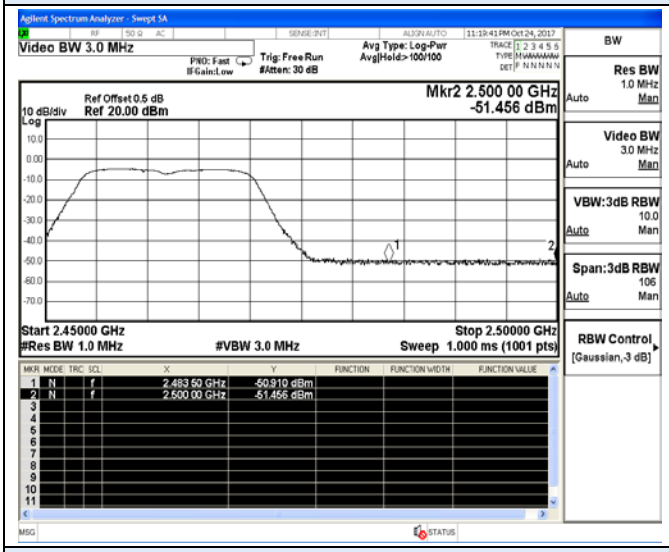
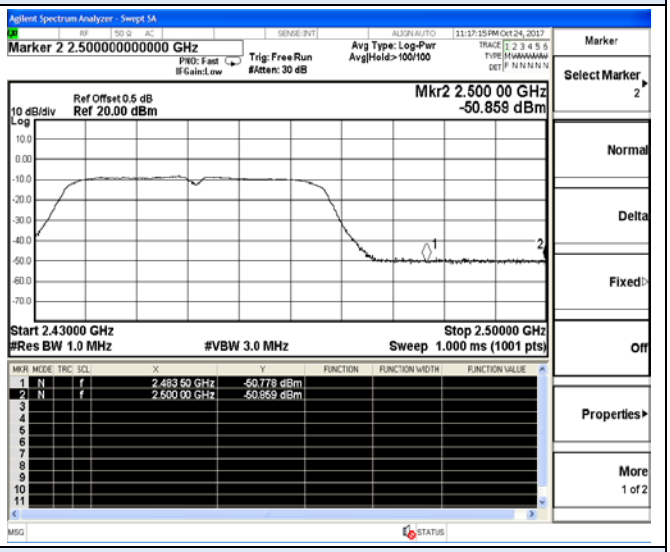
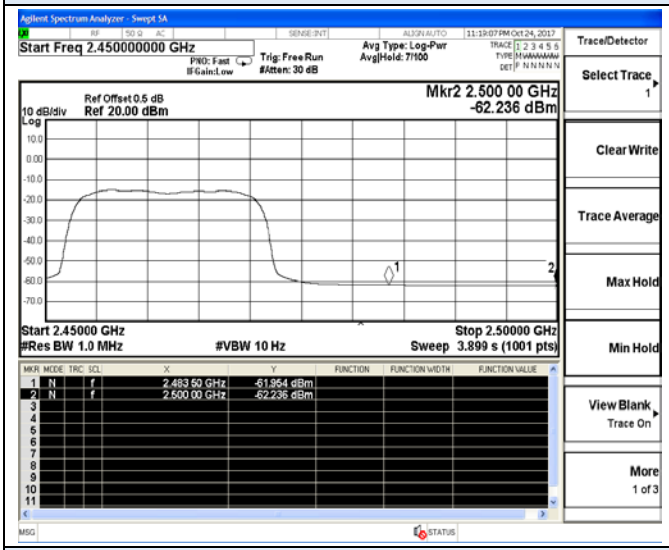
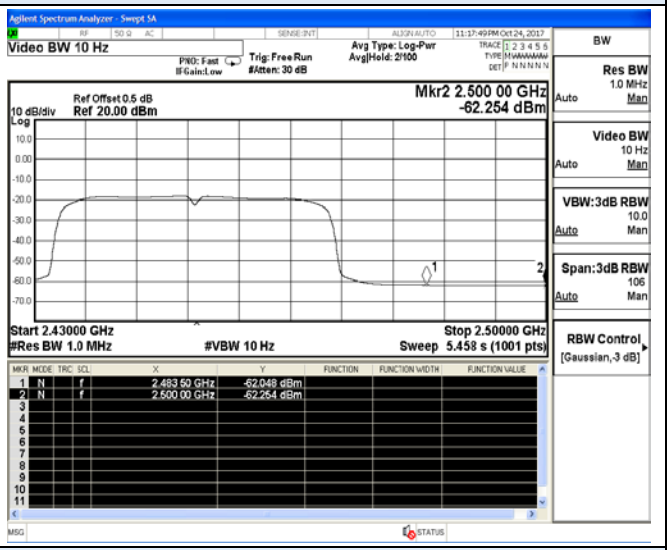
| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 0 | Antenna 0 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 1 / 2412 MHz – Peak | Channel 1 / 2412 MHz – Peak |
|  |  |
| Channel 1 / 2412 MHz – Average | Channel 1 / 2412 MHz – Average |
|  |  |
| Channel 11 / 2462 MHz – Peak | |

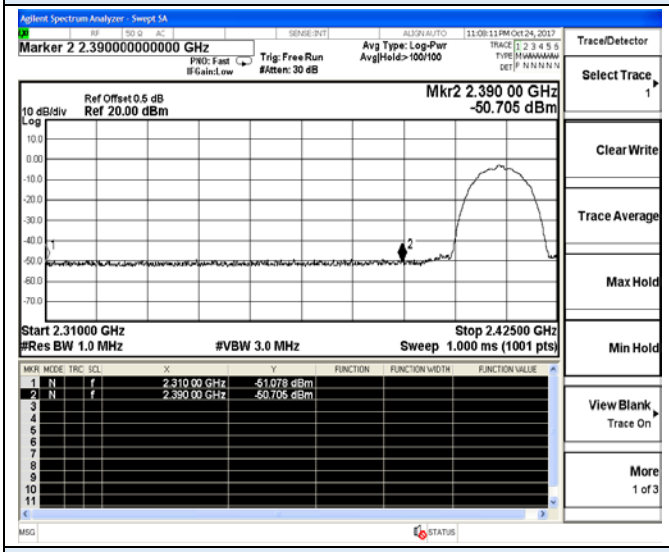
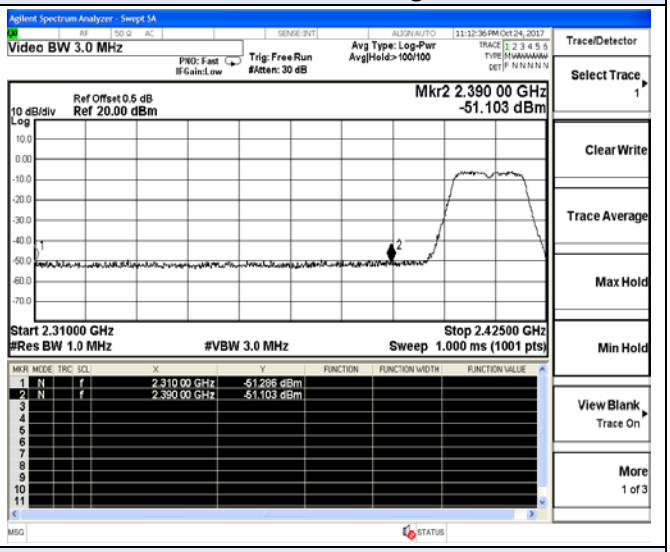
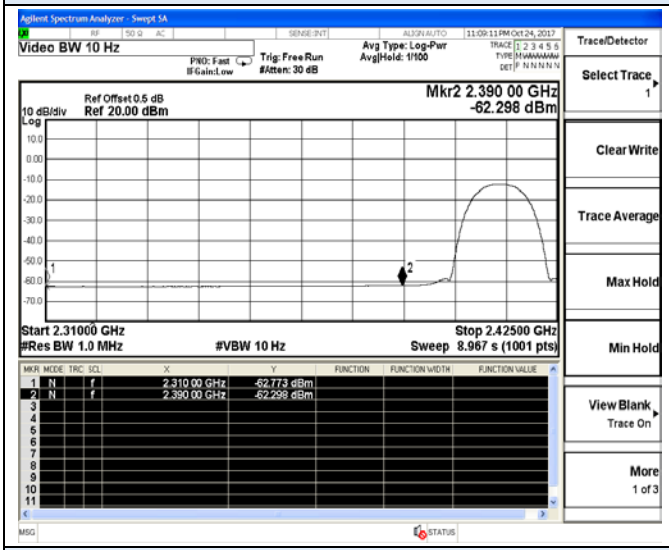
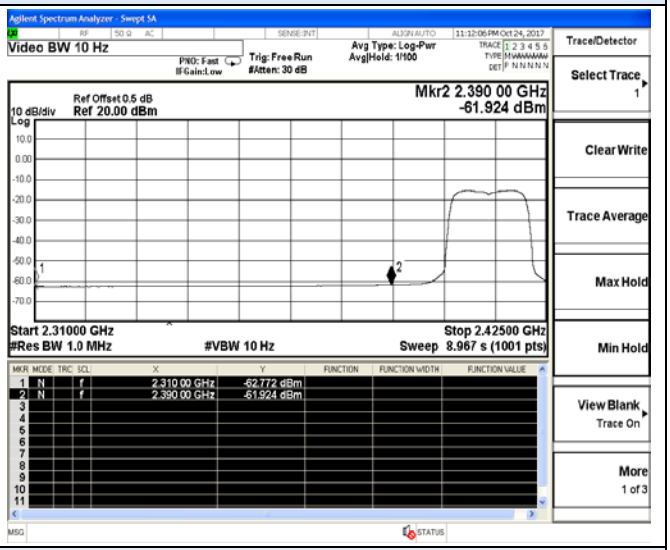
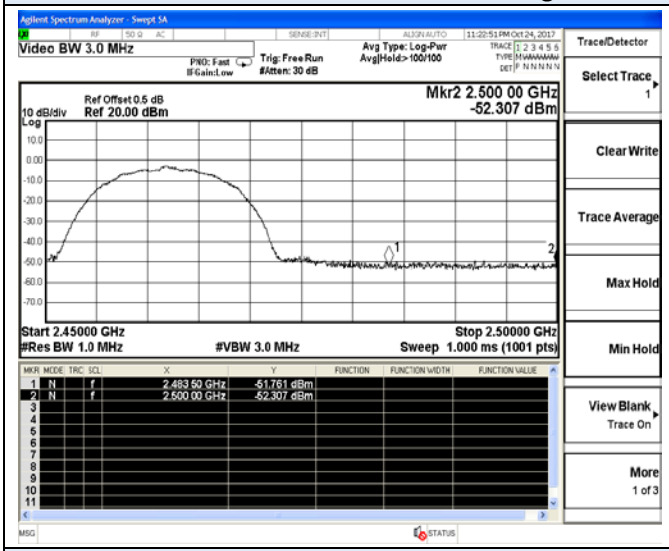
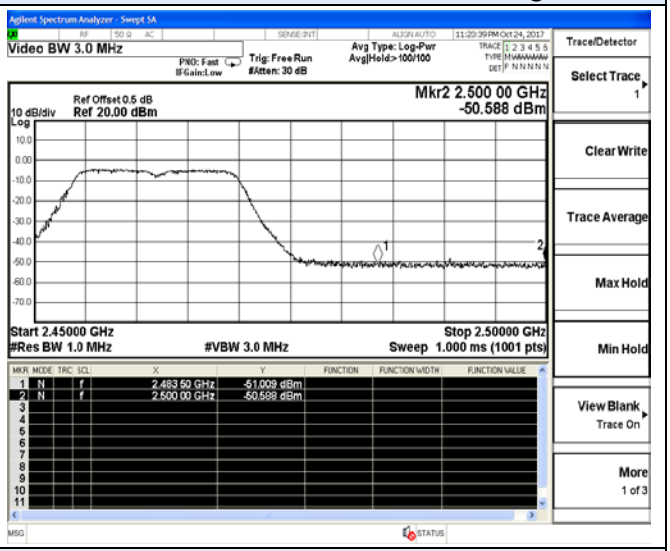
| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 0 | Antenna 0 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 11 / 2462 MHz – Average | Channel 11 / 2462 MHz – Average |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 1 / 2412 MHz – Peak | Channel 3 / 2422 MHz – Peak |
|  |  |
| Channel 1 / 2412 MHz – Average | Channel 3 / 2422 MHz – Average |

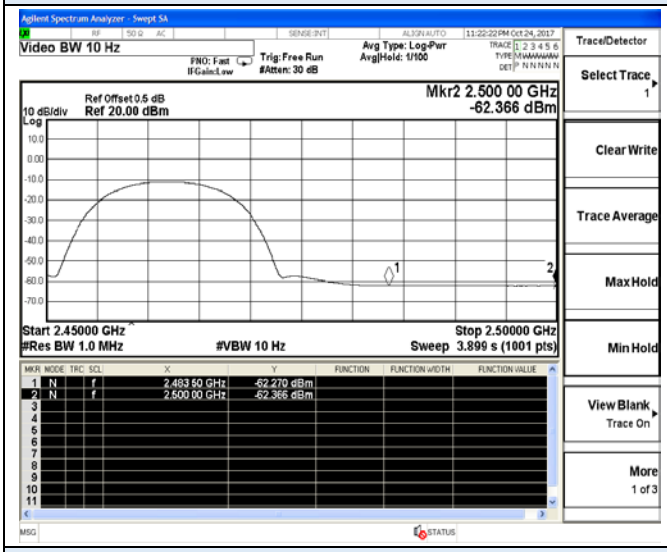
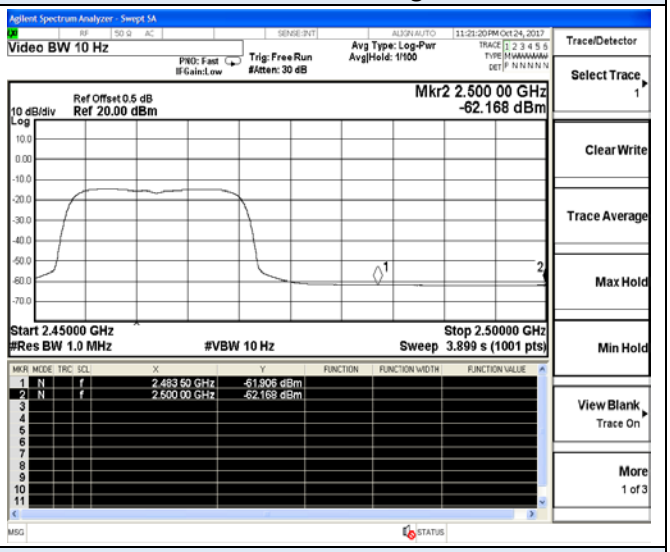
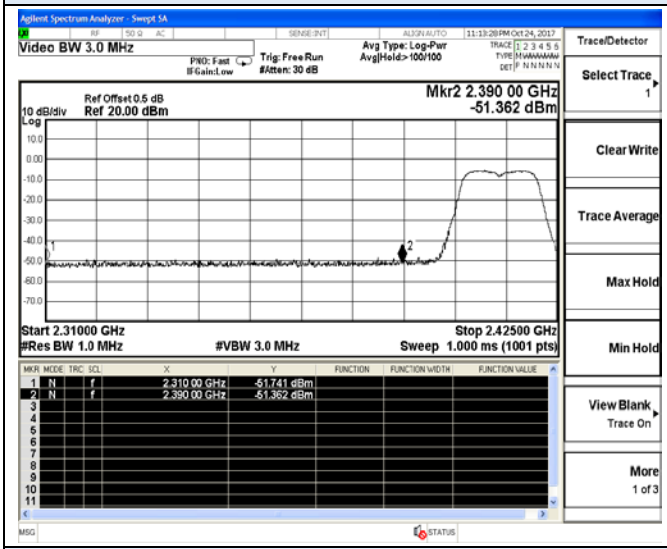
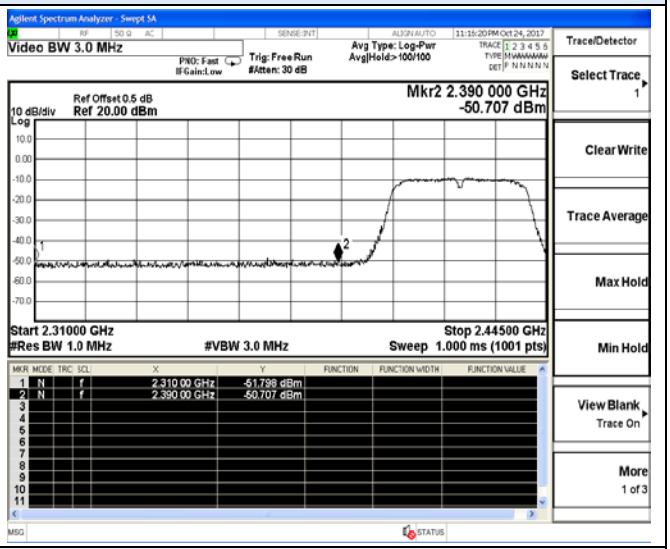
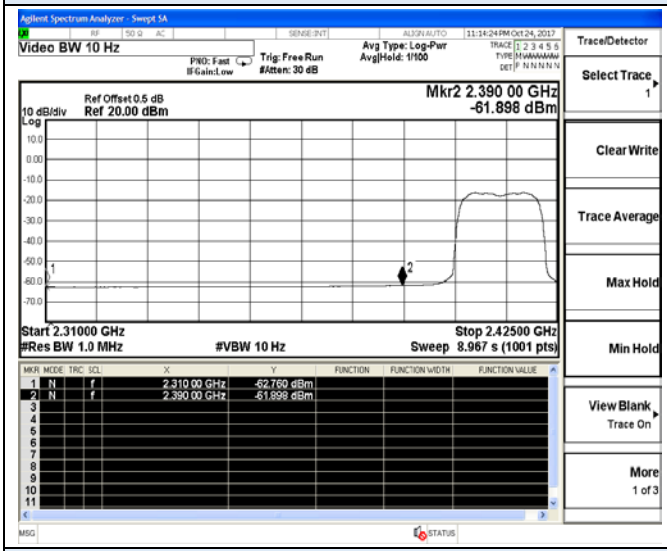
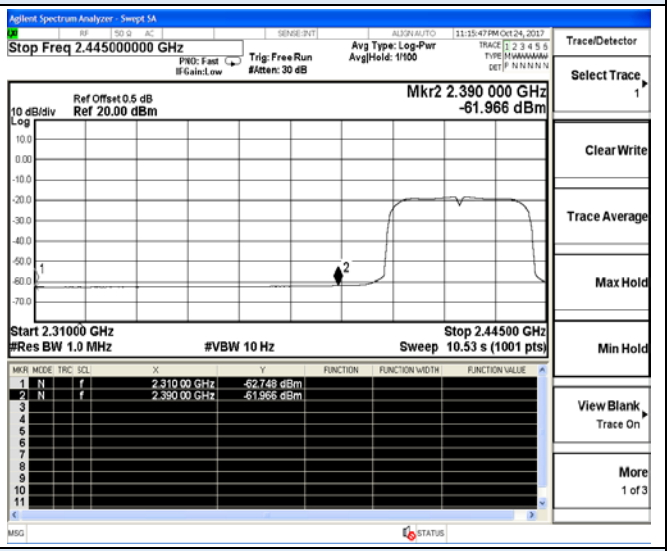
| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 0 | Antenna 0 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 11 / 2462 MHz – Peak | Channel 9 / 2452 MHz – Peak |
|  |  |
| Channel 11 / 2462 MHz – Average | Channel 9 / 2452 MHz – Average |

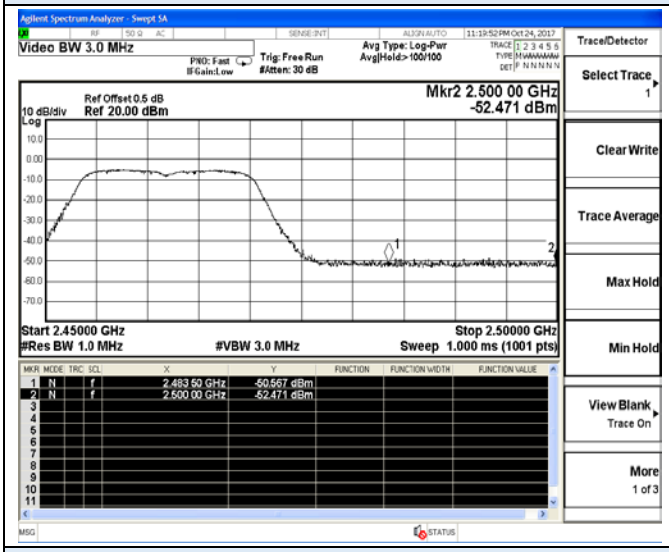
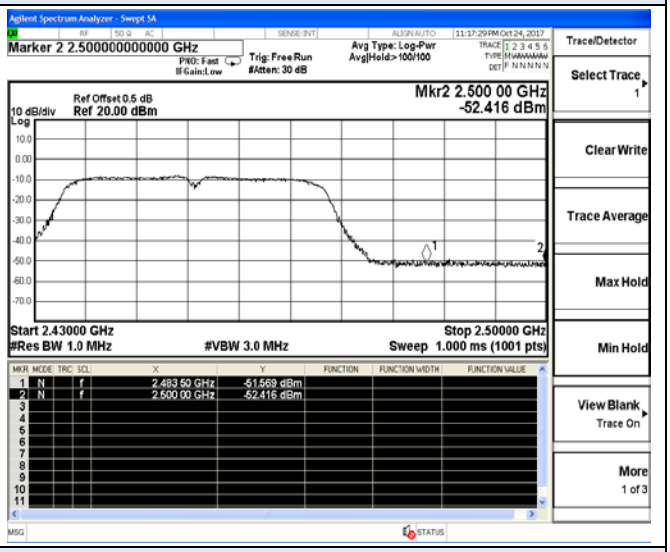
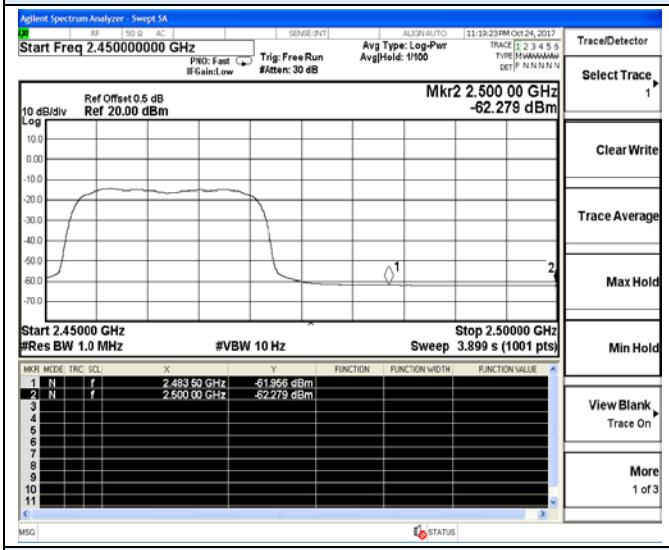
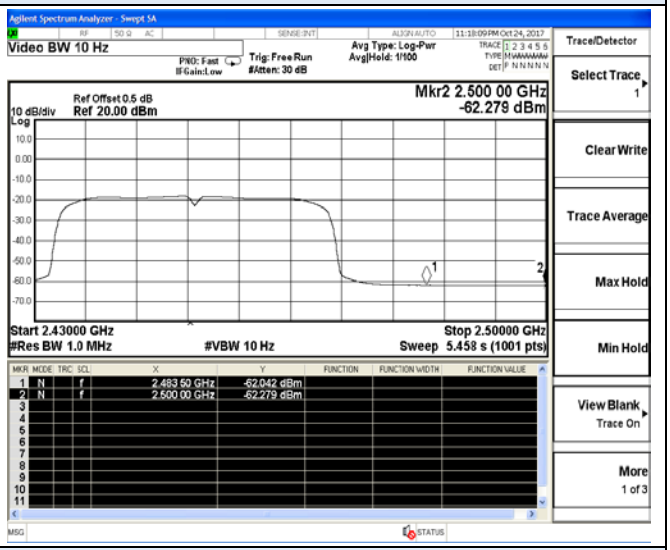
| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 1 | Antenna 1 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 1 / 2412 MHz – Peak | Channel 1 / 2412 MHz – Peak |
|  |  |
| Channel 1 / 2412 MHz – Average | Channel 1 / 2412 MHz – Average |
|  |  |
| Channel 11 / 2462 MHz – Peak | |

| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 1 | Antenna 1 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 11 / 2462 MHz – Average | Channel 11 / 2462 MHz – Average |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 1 / 2412 MHz – Peak | Channel 3 / 2422 MHz – Peak |
|  |  |
| Channel 1 / 2412 MHz – Average | Channel 3 / 2422 MHz – Average |

| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 1 | Antenna 1 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 11 / 2462 MHz – Peak | Channel 9 / 2452 MHz – Peak |
|  |  |
| Channel 11 / 2462 MHz – Average | Channel 9 / 2452 MHz – Average |

| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 2 | Antenna 2 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 1 / 2412 MHz – Peak | Channel 1 / 2412 MHz – Peak |
|  |  |
| Channel 1 / 2412 MHz – Average | Channel 1 / 2412 MHz – Average |
|  |  |
| Channel 11 / 2462 MHz – Peak | |

| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 2 | Antenna 2 |
| IEEE 802.11b | IEEE 802.11g |
|  |  |
| Channel 11 / 2462 MHz – Average | Channel 11 / 2462 MHz – Average |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 1 / 2412 MHz – Peak | Channel 3 / 2422 MHz – Peak |
|  |  |
| Channel 1 / 2412 MHz – Average | Channel 3 / 2422 MHz – Average |

| Band-edge measurements for radiated emissions | |
|---|---|
| Antenna 2 | Antenna 2 |
| IEEE 802.11n HT20 | IEEE 802.11n HT40 |
|  |  |
| Channel 11 / 2462 MHz – Peak | Channel 9 / 2452 MHz – Peak |
|  |  |
| Channel 11 / 2462 MHz – Average | Channel 9 / 2452 MHz – Average |

# 5.9. Antenna Requirements

## 5.9.1. Standard Applicable

According to antenna requirement of §15.203.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be re-placed by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

And according to §15.247(4)(1), system operating in the 2400-2483.5MHz bands that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

## 5.9.2. Antenna Connected Construction

### 5.9.2.1. Standard Applicable

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

### 5.9.2.2. Antenna Connector Construction

The directional gains of antenna used for transmitting is 2.0dBi, and the antenna is a PCB antenna connect to PCB board and no consideration of replacement. Please see EUT photo for details.

### 5.9.2.3. Results: Compliance.

**Measurement**

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module.

Conducted power refers ANSI C63.10:2013 Output power test procedure for DTS devices.

Radiated power refers to ANSI C63.10:2013 Radiated emissions tests.

**Measurement parameters**

| Measurement parameter | |
|---|---|
| Detector: | Peak |
| Sweep Time: | Auto |
| Resolution bandwidth: | 1MHz |
| Video bandwidth: | 3MHz |
| Trace-Mode: | Max hold |

Note: The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal WLAN devices, the IEEE 802.11b mode is used.

## Limits

| FCC | ISED |
|---|---|
| Antenna Gain | |
| 6 dBi | |

*Antenna 0*

| $T_{nom}$ | $V_{nom}$ | Lowest Channel 2412 MHz | Middle Channel 2437 MHz | Highest Channel 2462 MHz |
|---|---|---|---|---|
| Conducted power [dBm] Measured with DSSS modulation | | -0.846 | -1.044 | -1.233 |
| Radiated power [dBm] Measured with DSSS modulation | | 0.420 | 0.415 | 0.360 |
| Gain [dBi] Calculated | | 1.266 | 1.459 | 1.593 |
| Measurement uncertainty | | | ± 1.6 dB (cond.) / ± 3.8 dB (rad.) | |

*Antenna 1*

| $T_{nom}$ | $V_{nom}$ | Lowest Channel 2412 MHz | Middle Channel 2437 MHz | Highest Channel 2462 MHz |
|---|---|---|---|---|
| Conducted power [dBm] Measured with DSSS modulation | | -0.941 | -0.997 | -1.271 |
| Radiated power [dBm] Measured with DSSS modulation | | 0.350 | 0.505 | 0.317 |
| Gain [dBi] Calculated | | 1.291 | 1.502 | 1.588 |
| Measurement uncertainty | | | ± 1.6 dB (cond.) / ± 3.8 dB (rad.) | |

*Antenna 2*

| $T_{nom}$ | $V_{nom}$ | Lowest Channel 2412 MHz | Middle Channel 2437 MHz | Highest Channel 2462 MHz |
|---|---|---|---|---|
| Conducted power [dBm] Measured with DSSS modulation | | -1.266 | -1.028 | -1.242 |
| Radiated power [dBm] Measured with DSSS modulation | | 0.008 | 0.448 | 0.370 |
| Gain [dBi] Calculated | | 1.274 | 1.476 | 1.612 |
| Measurement uncertainty | | | ± 1.6 dB (cond.) / ± 3.8 dB (rad.) | |

# 6. LIST OF MEASURING EQUIPMENTS

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|---|---|---|---|---|---|---|
| 1 | Power Meter | R&S | NRVS | 100444 | 2017-06-17 | 2018-06-16 |
| 2 | Power Sensor | R&S | NRV-Z81 | 100458 | 2017-06-17 | 2018-06-16 |
| 3 | Power Sensor | R&S | NRV-Z32 | 10057 | 2017-06-17 | 2018-06-16 |
| 4 | ESA-E SERIES SPECTRUM ANALYZER | Agilent | E4407B | MY41440754 | 2016-11-18 | 2017-11-17 |
| 5 | MXA Signal Analyzer | Agilent | N9020A | MY49100040 | 2017-06-17 | 2018-06-16 |
| 6 | SPECTRUM ANALYZER | R&S | FSP | 100503 | 2017-06-17 | 2018-06-16 |
| 7 | 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | 2017-06-17 | 2018-06-16 |
| 8 | Positioning Controller | MF | MF-7082 | / | 2017-06-17 | 2018-06-16 |
| 9 | EMI Test Software | AUDIX | E3 | N/A | 2017-06-17 | 2018-06-16 |
| 10 | EMI Test Receiver | R&S | ESR 7 | 101181 | 2017-06-17 | 2018-06-16 |
| 11 | AMPLIFIER | QuieTek | QTK-A2525G | CHM10809065 | 2016-11-18 | 2017-11-17 |
| 12 | Active Loop Antenna | SCHWARZBECK | FMZB 1519B | 00005 | 2017-06-23 | 2018-06-22 |
| 13 | By-log Antenna | SCHWARZBECK | VULB9163 | 9163-470 | 2017-05-02 | 2018-05-01 |
| 14 | Horn Antenna | EMCO | 3115 | 6741 | 2017-06-23 | 2018-06-22 |
| 15 | Broadband Horn Antenna | SCHWARZBECK | BBHA 9170 | 791 | 2017-09-21 | 2018-09-20 |
| 16 | Broadband Preamplifier | SCHWARZBECK | BBV 9719 | 9719-025 | 2017-09-21 | 2018-09-20 |
| 17 | RF Cable-R03m | Jye Bao | RG142 | CB021 | 2017-06-17 | 2018-06-16 |
| 18 | RF Cable-HIGH | SUHNER | SUCOFLEX 106 | 03CH03-HY | 2017-06-17 | 2018-06-16 |
| 19 | TEST RECEIVER | R&S | ESCI | 101142 | 2017-06-17 | 2018-06-16 |
| 20 | RF Cable-CON | UTIFLEX | 3102-26886-4 | CB049 | 2017-06-17 | 2018-06-16 |
| 21 | 10dB Attenuator | SCHWARZBECK | MTS-IMP136 | 261115-001-0032 | 2017-06-17 | 2018-06-16 |
| 22 | Artificial Mains | R&S | ENV216 | 101288 | 2017-06-17 | 2018-06-16 |
| Note: All equipment is calibrated through GUANGZHOU LISAI CALIBRATION AND TEST CO.,LTD. | | | | | | |

# 7. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

# 8. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

# 9. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

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