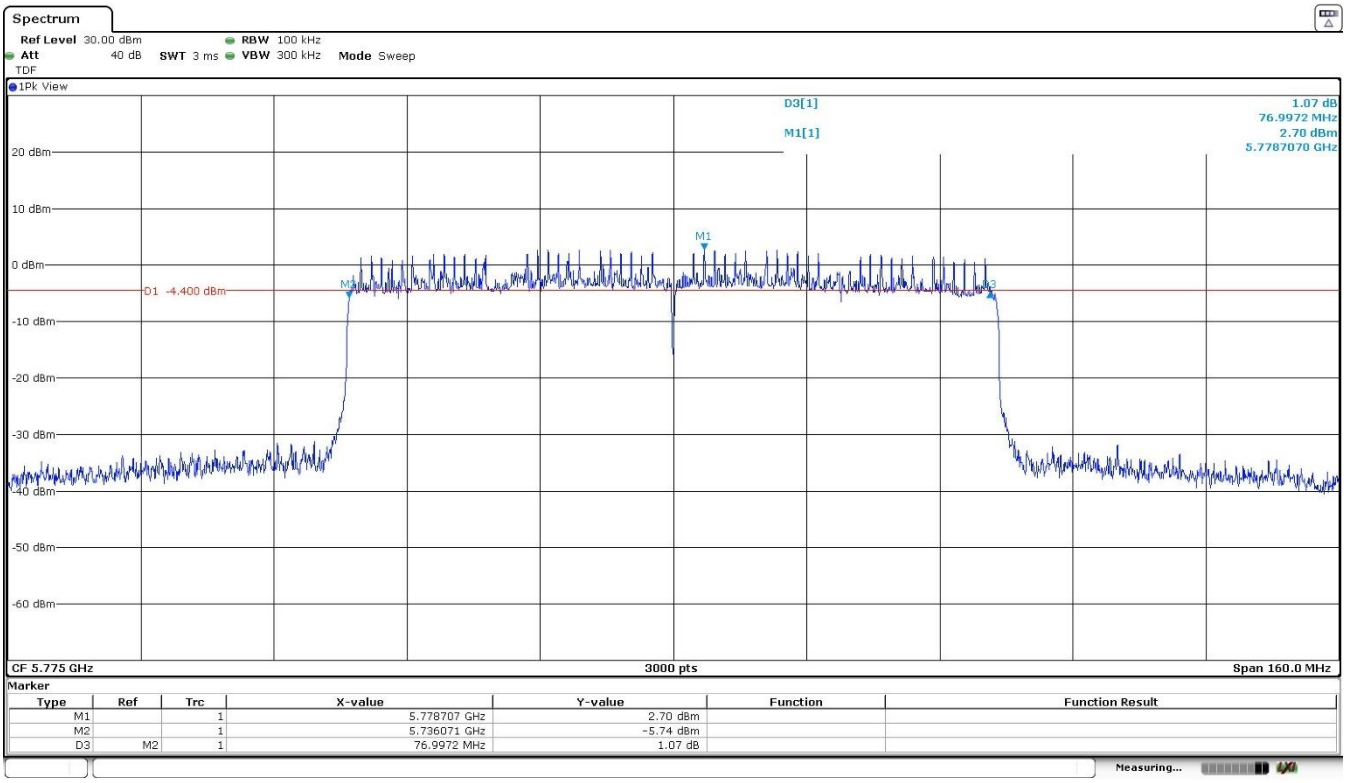
## MIMO 802.11 ax80 (HE80):

### U-NII-3 (5725-5850 MHz)

- Single Channel 155 (5775 MHz):




This plot corresponds to Ant0.

# FCC 15.407 (a)(3)(i) Transmitter Maximum Conducted Output Power

SPECIFICATION:

* FCC 15.407: For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

RESULTS:

The maximum conducted output power was measured using the method according to point E) 2) b) & d) (Method SA-1 & Method SA-2) of 789033 D02 General UNII Test Procedures New Rules v02r01.

In the measure-and-sum approach used for MIMO mode, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units (mW—not dBm).

- SISO: ANT0.
- MIMO: ANT0+ANT1+ANT2+ANT3.

**SISO: Ant0**

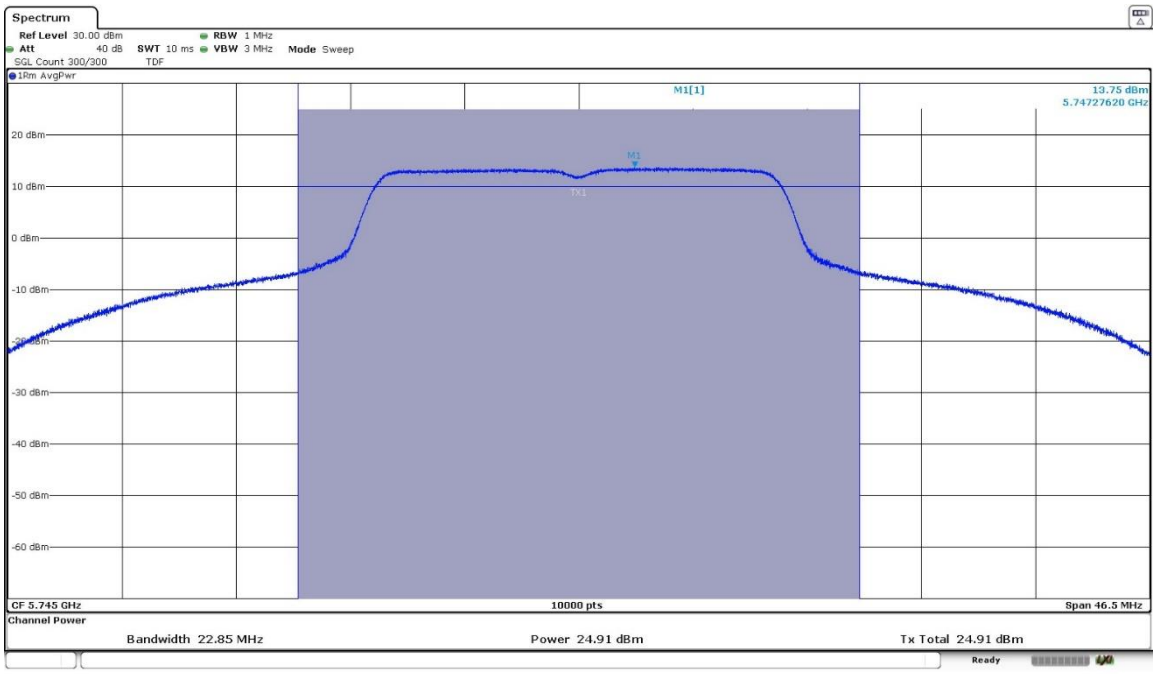
**802.11 a20:**

**U-NII-3 (5725-5850 MHz):**

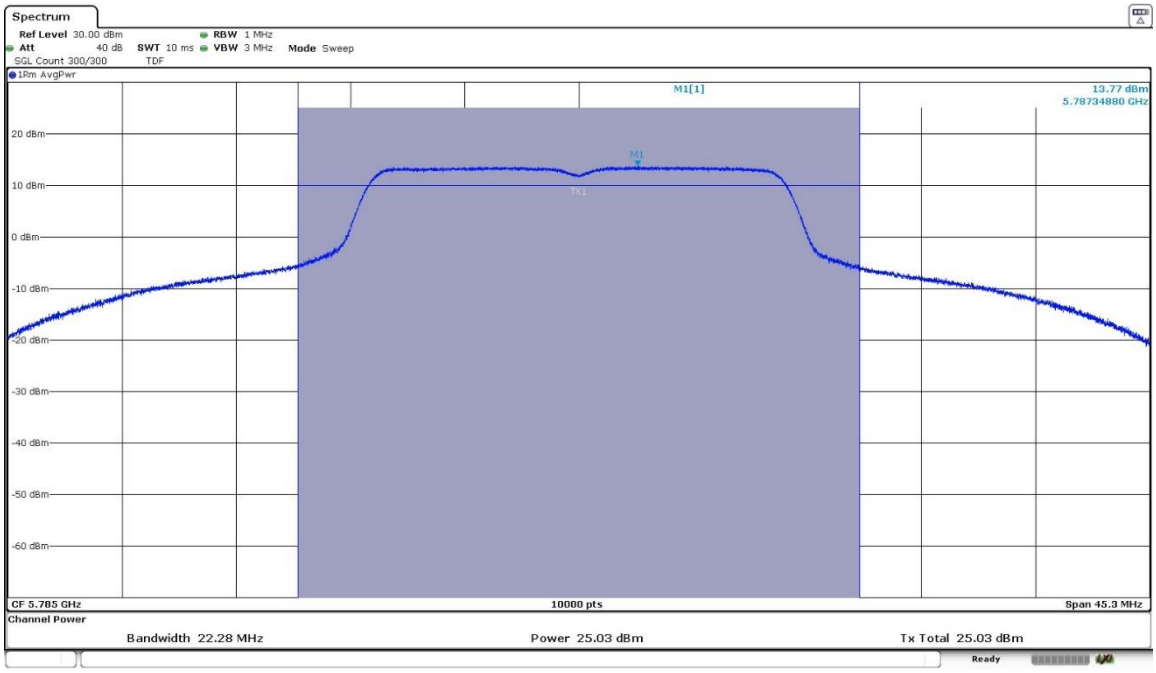
| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|---|---|---|---|
| Maximum Conducted Power (dBm) | 24.91 | 25.03 | 24.23 |
| Measurement uncertainty (dB) | <± 1.67 dB | | |

Verdict: PASS

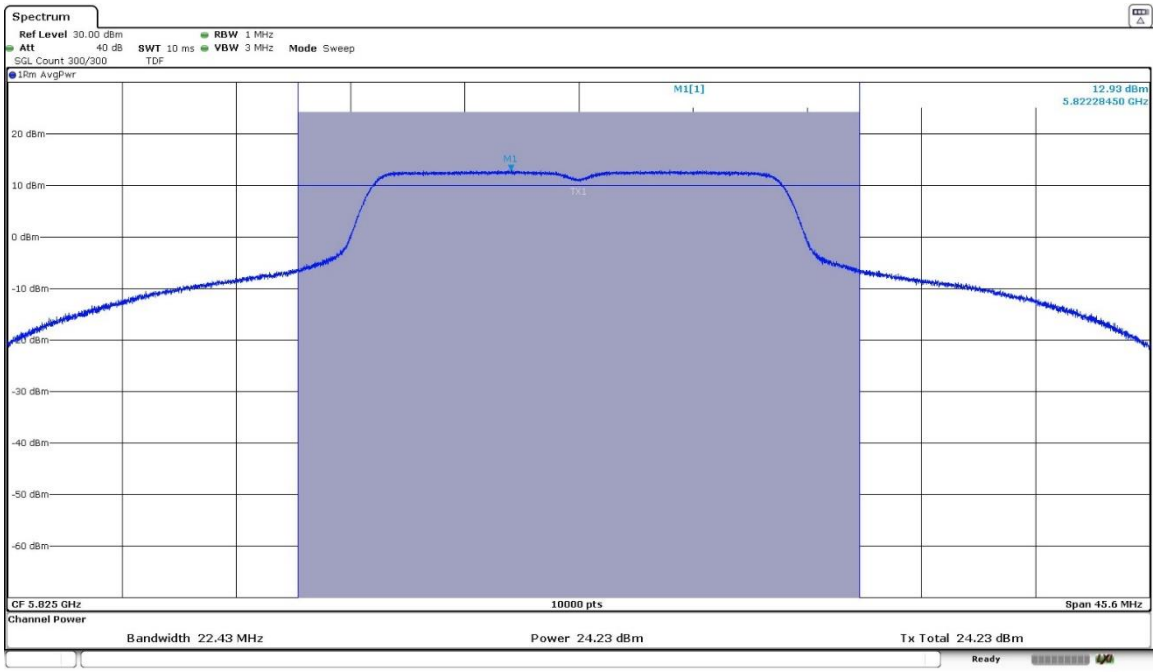
- Low Channel 149 (5745 MHz):



- Middle Channel 157 (5785 MHz):




- High Channel 165 (5825 MHz):



**MIMO 802.11 ac20 (VHT20):**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 149 (5745 MHz) | | | | Middle Channel 157 (5785 MHz) | | | | High Channel 165 (5825 MHz) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted Power (dBm) | 24.40 | 21.34 | 23.18 | 24.04 | 23.99 | 23.33 | 22.96 | 23.93 | 23.66 | 23.25 | 22.61 | 23.59 |
| Combined Conducted Power (dBm) | 29.41 | | | | 29.59 | | | | 29.32 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | | | | | | | | | |

**MIMO 802.11 ax20 (HE20):**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 149 (5745 MHz) | | | | Middle Channel 157 (5785 MHz) | | | | High Channel 165 (5825 MHz) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted Power (dBm) | 23.77 | 22.88 | 22.39 | 23.50 | 23.23 | 22.65 | 22.13 | 23.14 | 22.87 | 20.24 | 21.94 | 22.88 |
| Combined Conducted Power (dBm) | 29.19 | | | | 28.83 | | | | 28.13 | | | |
| Corrected Combined Conducted Power (dBm) | 29.34 | | | | 28.98 | | | | 28.28 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | | | | | | | | | |

**MIMO 802.11 ac40 (VHT40):**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 151 (5755 MHz) | | | | High Channel 159 (5795 MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted Power (dBm) | 22.22 | 21.62 | 21.28 | 22.21 | 23.77 | 23.19 | 22.90 | 23.66 |
| Combined Conducted Power (dBm) | 27.87 | | | | 29.41 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | | | | | |

**MIMO 802.11 ax40 (HE40):**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 151 (5755 MHz) | | | | High Channel 159 (5795 MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted Power (dBm) | 22.64 | 22.04 | 21.51 | 22.61 | 22.90 | 22.53 | 21.73 | 23.00 |
| Combined Conducted Power (dBm) | 28.25 | | | | 28.59 | | | |
| Corrected Combined Conducted Power (dBm) | 28.50 | | | | 28.84 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | | | | | |

**MIMO 802.11 ac80 (VHT80):**

**U-NII-3 (5725-5850 MHz):**

| Channel | Single Channel 155 (5775 MHz) | | | |
|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted Power (dBm) | 19.63 | 18.97 | 18.61 | 19.79 |
| Combined Conducted Power (dBm) | 25.30 | | | |
| Corrected Combined Conducted Power (dBm) | 25.48 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | |

**MIMO 802.11 ax80 (HE80):**

**U-NII-3 (5725-5850 MHz):**

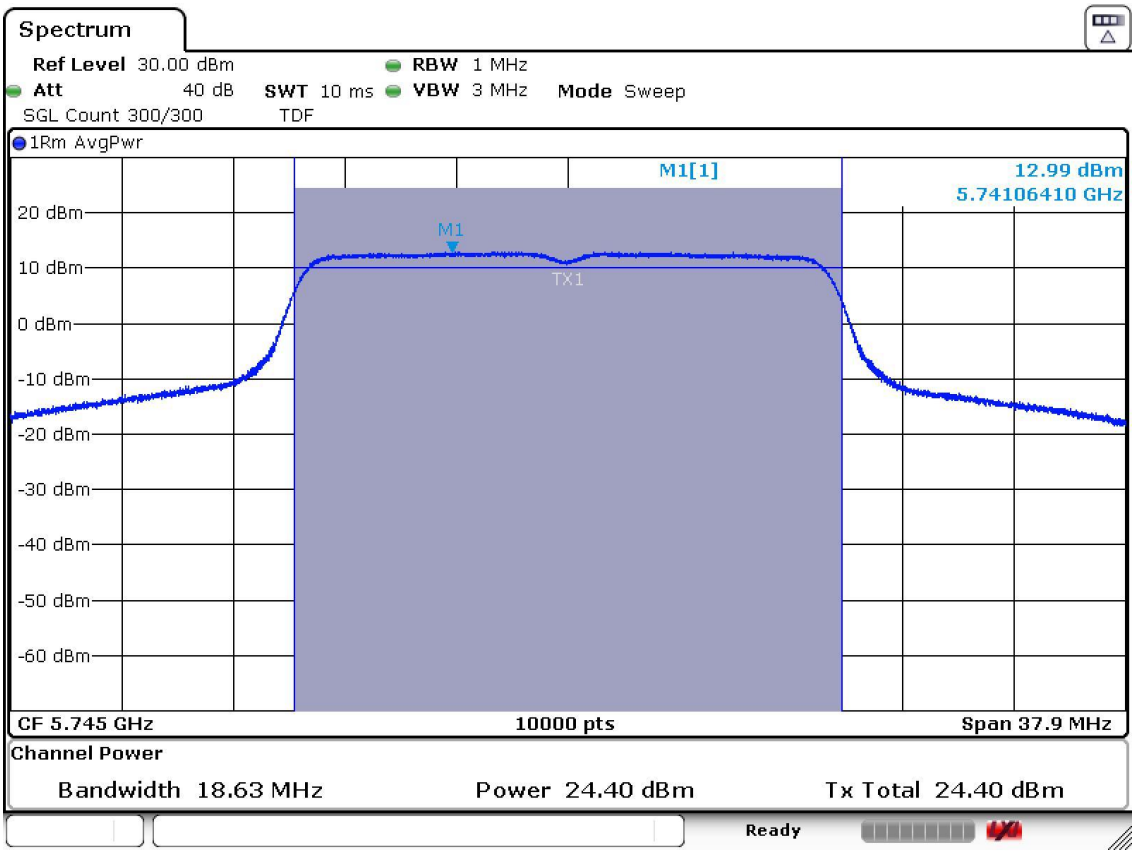
| Channel | Single Channel 155 (5775 MHz) | | | |
|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted Power (dBm) | 20.02 | 21.18 | 19.15 | 20.11 |
| Combined Conducted Power (dBm) | 26.20 | | | |
| Corrected Combined Conducted Power (dBm) | 26.58 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | |

Verdict: PASS

## MIMO 802.11 ac20 (VHT20):

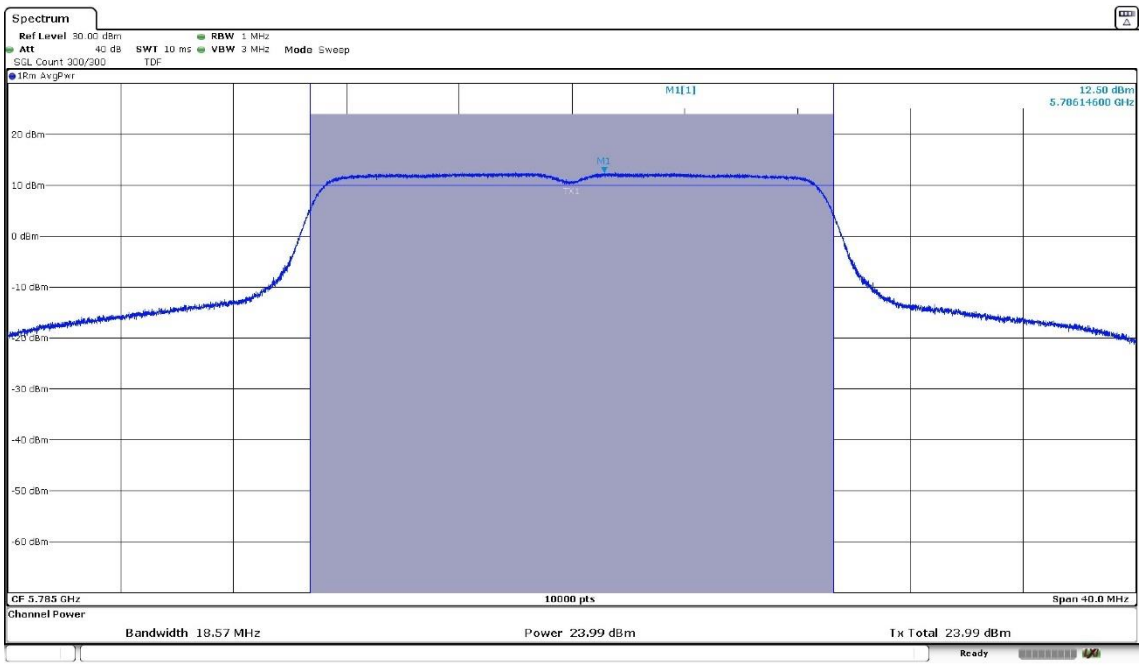
### U-NII-3 (5725-5850 MHz)

- Low Channel 149 (5745 MHz):



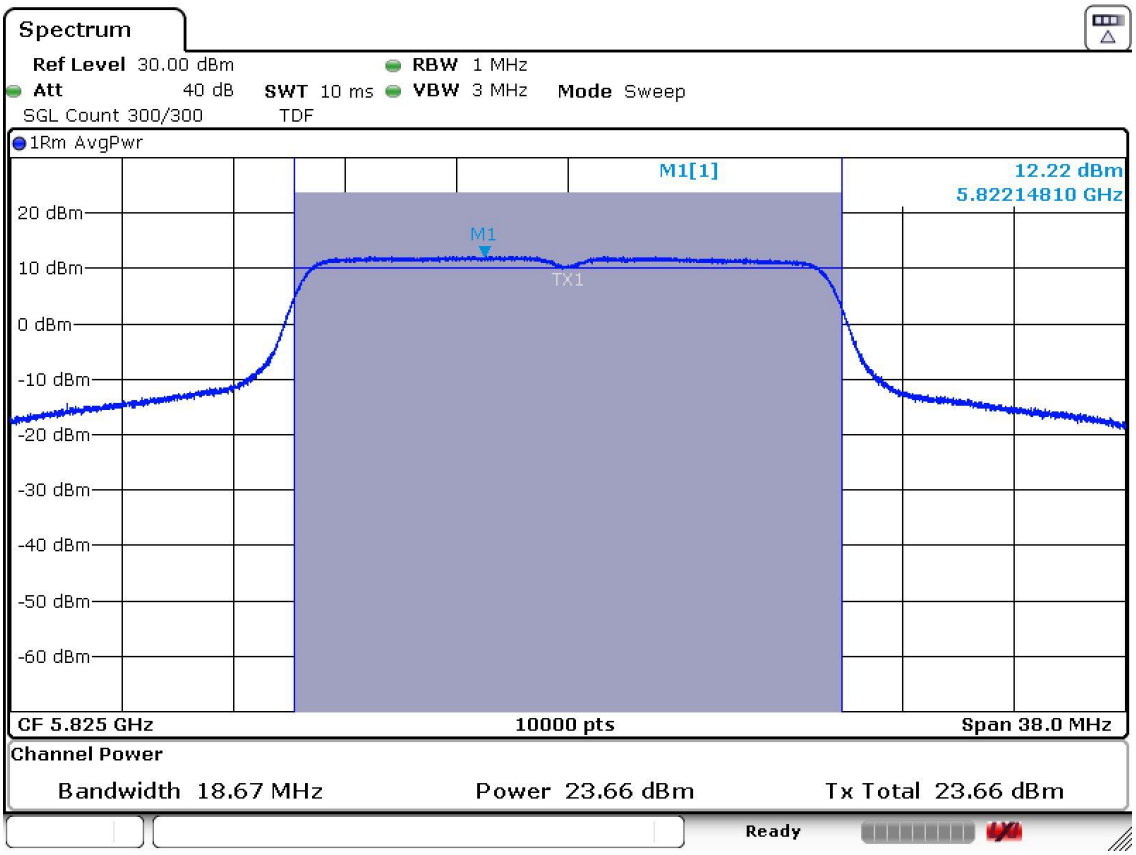

This plot corresponds to Ant0

- Middle Channel 157 (5785 MHz):




This plot corresponds to Ant0

- High Channel 165 (5825 MHz):

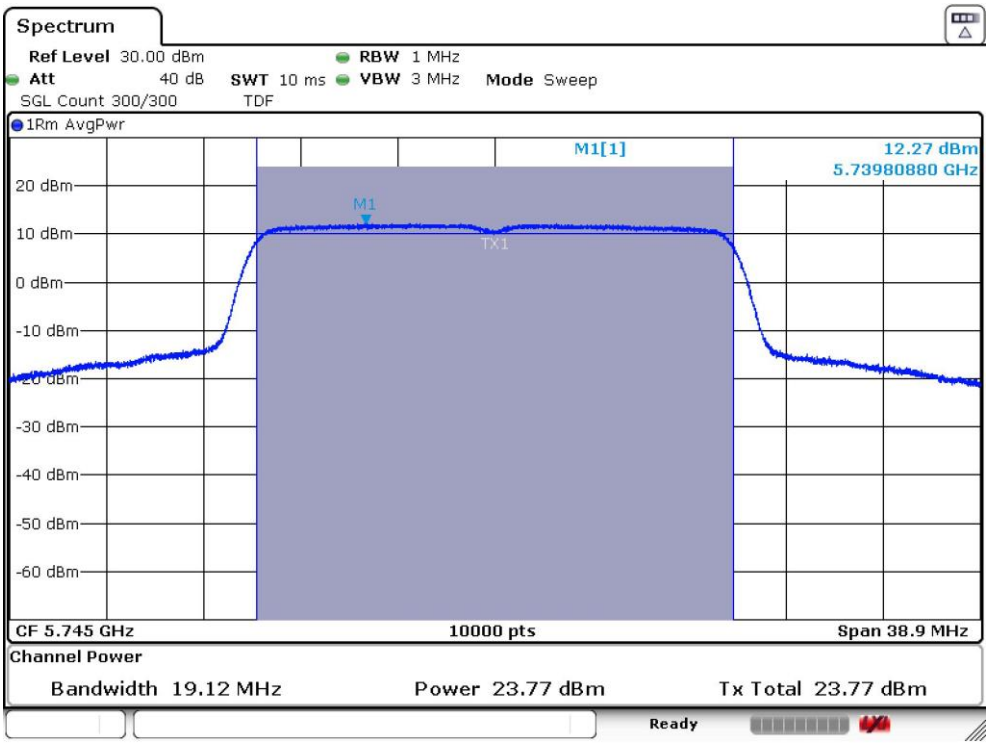



This plot corresponds to Ant0

**MIMO 802.11 ax20 (HE20):**

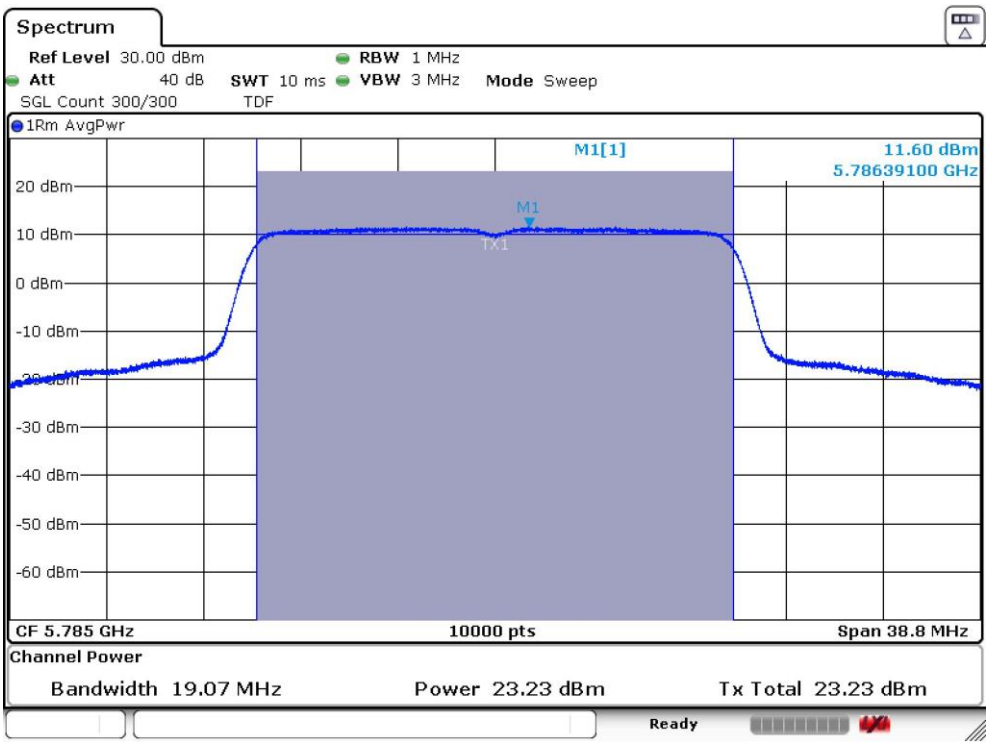
**U-NII-3 (5725-5850 MHz)**

- Low Channel 149 (5745 MHz):



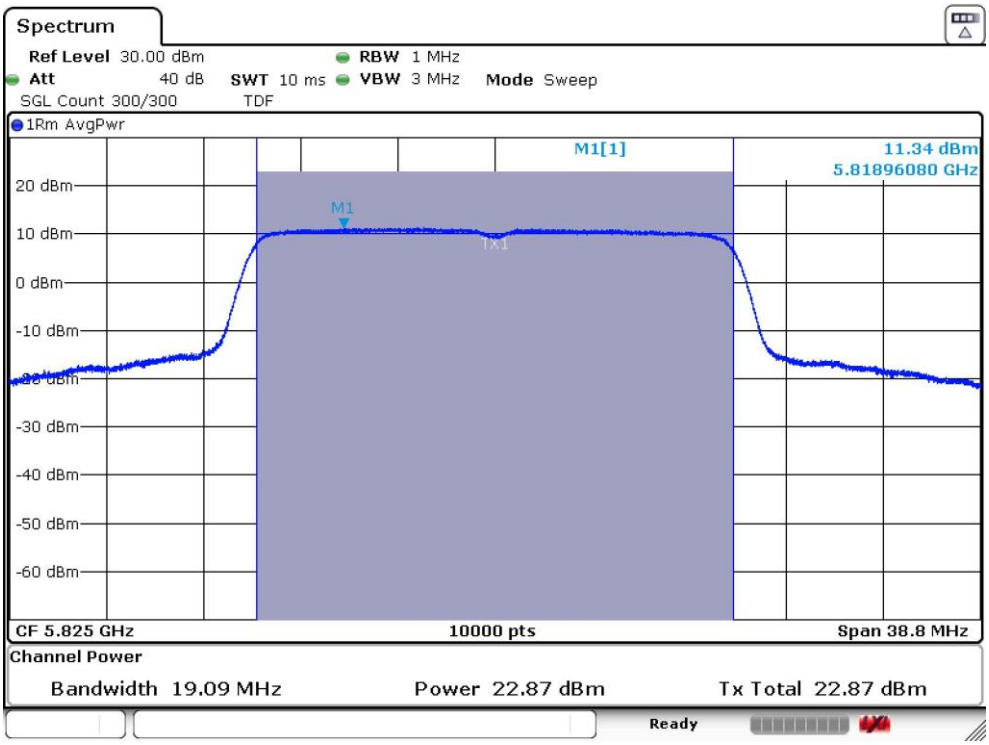

This plot corresponds to Ant0

- Middle Channel 157 (5785 MHz):




This plot corresponds to Ant0

- High Channel 165 (5825 MHz):

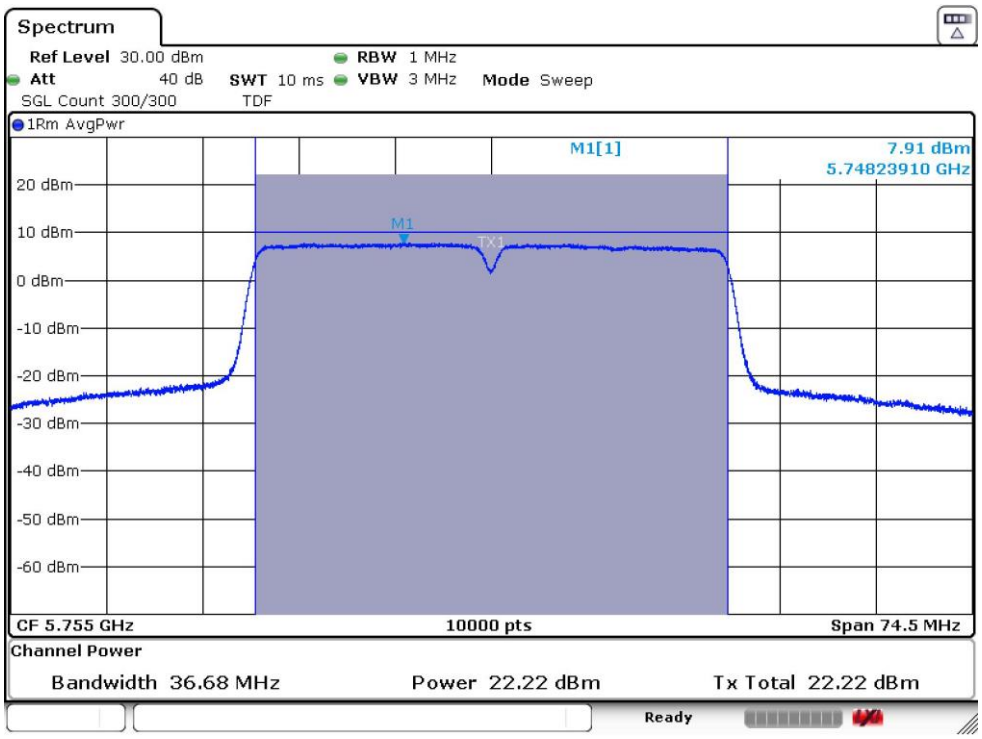



This plot corresponds to Ant0

## MIMO 802.11 ac40 (VHT40):

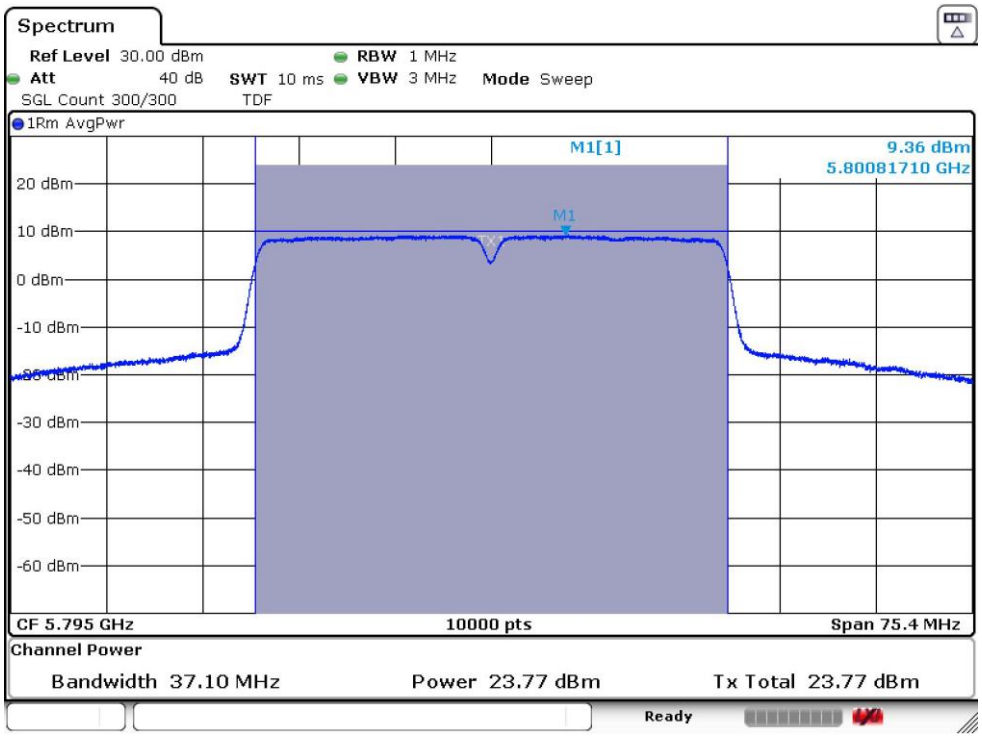
### U-NII-3 (5725-5850 MHz)

- Low Channel 151 (5755 MHz):




This plot corresponds to Ant0

- High Channel 159 (5795 MHz):

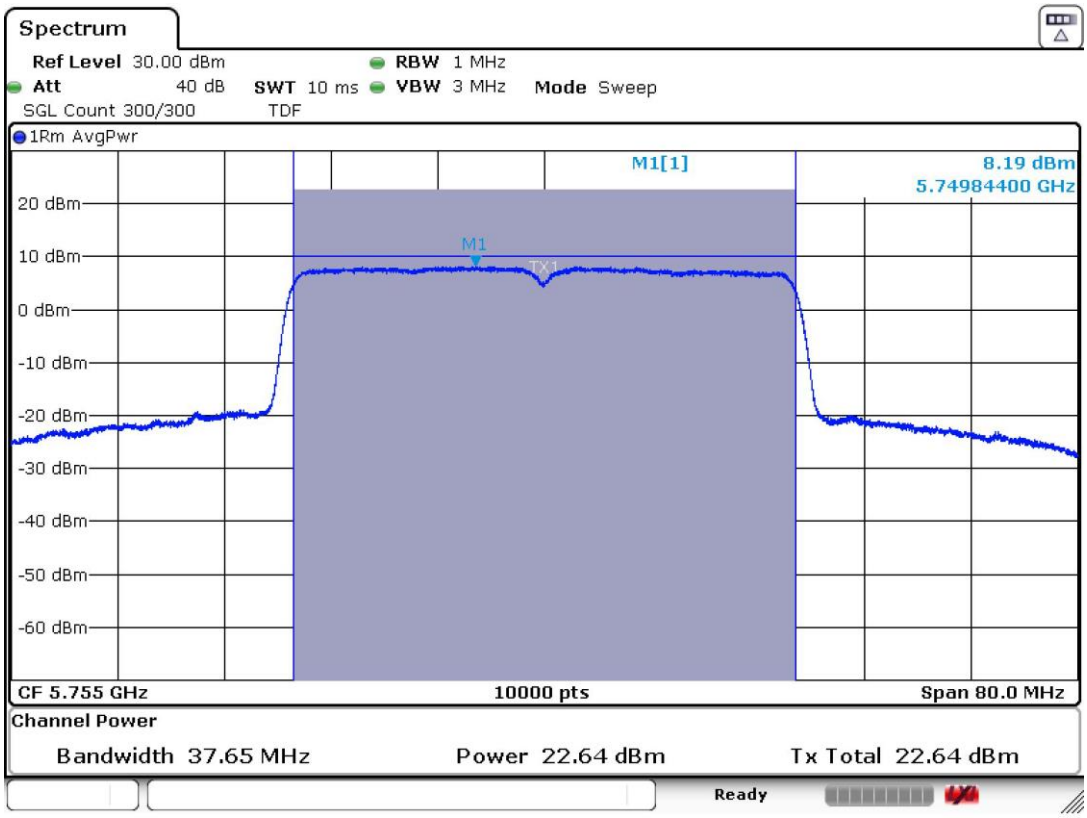



This plot corresponds to Ant0

## MIMO 802.11 ax40 (HE40):

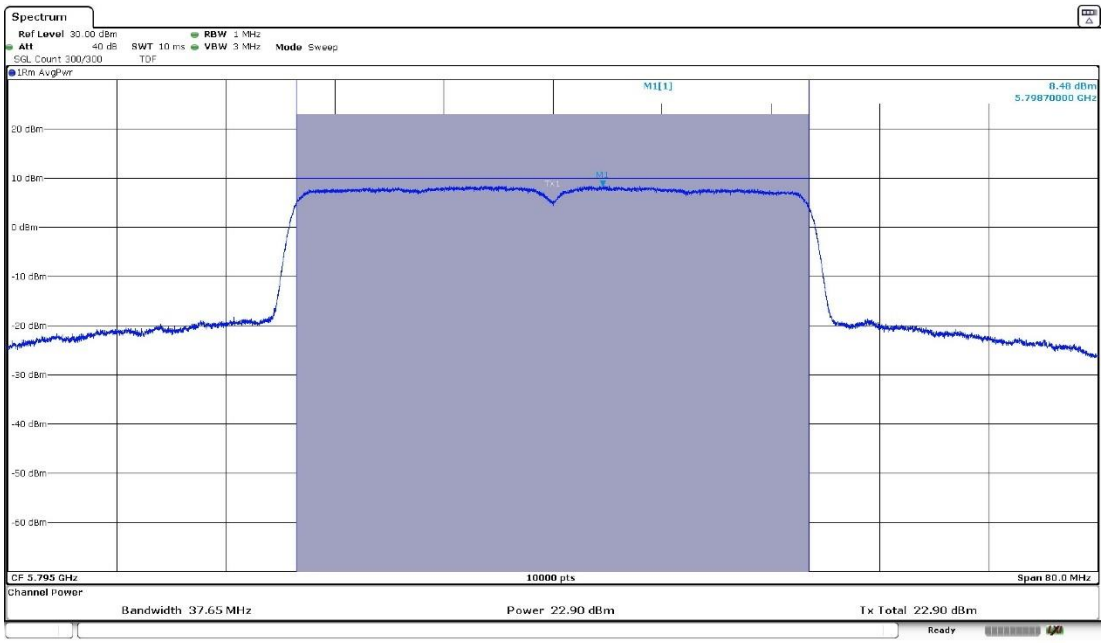
### U-NII-3 (5725-5850 MHz)

- Low Channel 151 (5755 MHz):




This plot corresponds to Ant0

- High Channel 159 (5795 MHz):

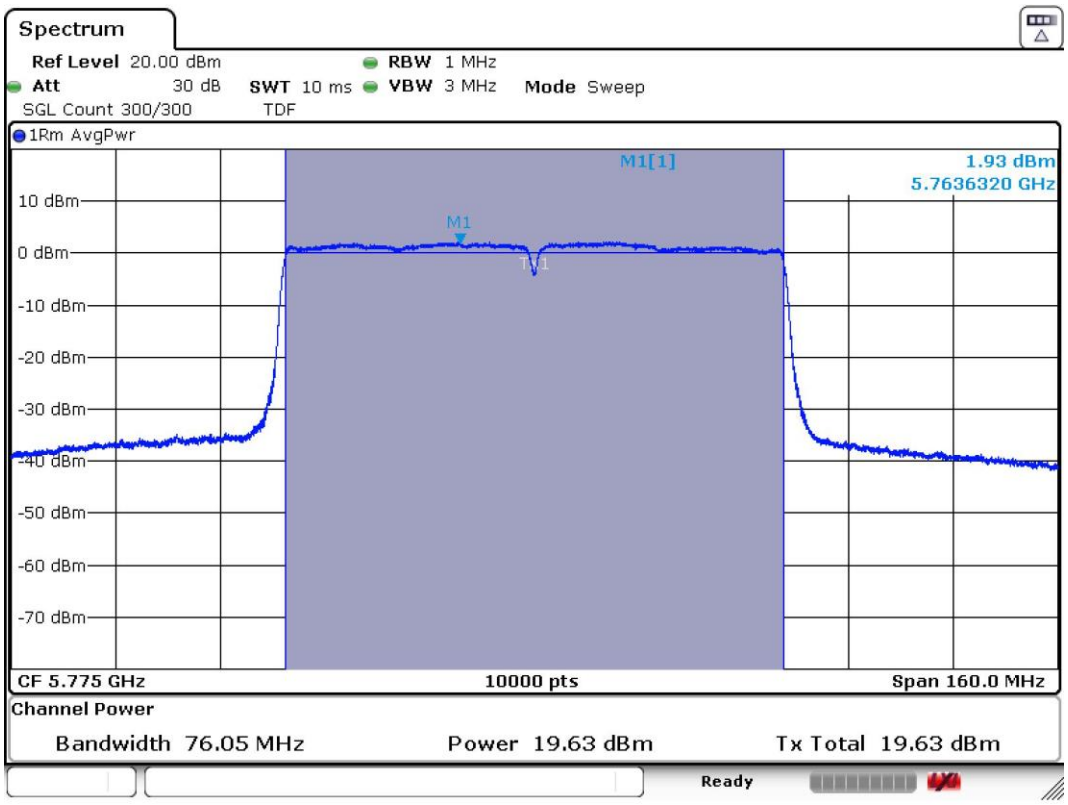



This plot corresponds to Ant0

**MIMO 802.11 ac80 (VHT80):**

**U-NII-3 (5725-5850 MHz)**

- Single Channel 155 (5775 MHz):

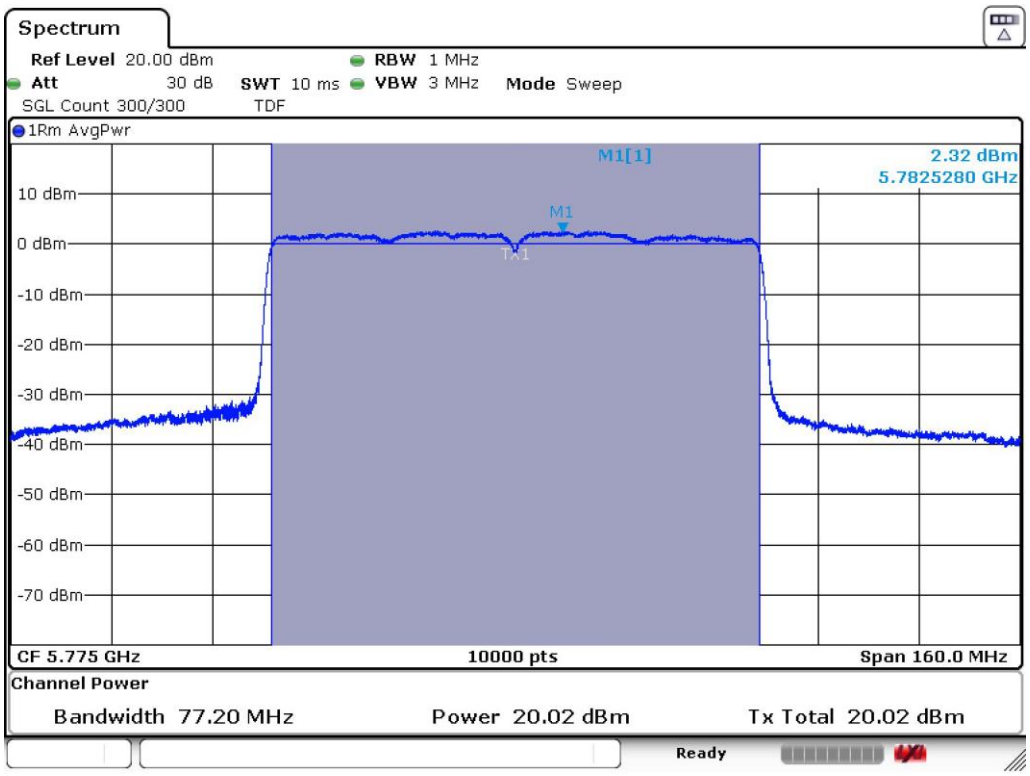



This plot corresponds to Ant0

**MIMO 802.11 ax80 (HE80):**

**U-NII-3 (5725-5850 MHz)**

- Single Channel 155 (5775 MHz):




This plot corresponds to Ant0

# FCC 15.407 (a)(3)(i) Transmitter Maximum Power Spectral Density

SPECIFICATION:

* FCC 15.407: For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

RESULTS:

The maximum Power Spectral Density (PSD) was measured using the method according to point F) referencing E.2.b) (Method SA-1) & E.2.d) (Method SA-2) of Guidance 789033 D02 General UNII Test Procedures New Rules v02r01.

In accordance with ANSI C63.10 Section 4.1.4.1, use of bandwidths greater than those specified can produce higher readings. Compliance against the applicable limits is showns using a 1 MHz resolution bandwidth. This was deemed worst case.
The plots are the same as FCC section 15.407 (a)(3)(i) Transmitter Maximum Conducted Output Power.

In the Measure and sum spectral maxima across the outputs used for MIMO mode, the spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs.

- SISO: ANT0.
- MIMO: ANT0+ANT1+ANT2+ANT3.

**SISO 802.11 a20:**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|---|---|---|---|
| Maximum Conducted PSD (dBm) | 13.75 | 13.77 | 12.93 |
| Measurement uncertainty (dB) | <± 1.67 dB | | |

**MIMO 802.11 ac20 (VHT20):**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 149 (5745 MHz) | | | | Middle Channel 157 (5785 MHz) | | | | High Channel 165 (5825 MHz) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted PSD (dBm) | 12.99 | 9.48 | 11.57 | 12.68 | 12.50 | 11.92 | 11.55 | 12.45 | 12.22 | 11.89 | 11.18 | 12.06 |
| Combined Conducted PSD (dBm) | 17.90 | | | | 18.14 | | | | 17.88 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | | | | | | | | | |

**MIMO 802.11 ax20 (HE20):**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 149 (5745 MHz) | | | | Middle Channel 157 (5785 MHz) | | | | High Channel 165 (5825 MHz) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted PSD (dBm) | 12.27 | 10.69 | 10.80 | 11.94 | 11.60 | 11.10 | 10.50 | 11.52 | 11.34 | 8.65 | 10.40 | 11.35 |
| Combined Conducted PSD (dBm) | 17.50 | | | | 17.22 | | | | 16.59 | | | |
| Corrected Combined Conducted PSD (dBm) | 17.65 | | | | 17.37 | | | | 16.74 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | | | | | | | | | |

**MIMO 802.11 ac40 (VHT40):**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 151 (5755 MHz) | | | | High Channel 159 (5795 MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted PSD (dBm) | 7.91 | 7.22 | 7.00 | 7.31 | 9.36 | 8.79 | 8.70 | 9.32 |
| Combined Conducted PSD (dBm) | 13.39 | | | | 15.07 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | | | | | |

**MIMO 802.11 ax40 (HE40):**

**U-NII-3 (5725-5850 MHz):**

| Channels | Low Channel 151 (5755 MHz) | | | | High Channel 159 (5795 MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted PSD (dBm) | 8.19 | 7.72 | 7.16 | 8.18 | 8.48 | 8.19 | 7.17 | 8.54 |
| Combined Conducted PSD (dBm) | 13.85 | | | | 14.15 | | | |
| Corrected Combined Conducted PSD (dBm) | | | | | | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | | | | | |

**MIMO 802.11 ac80 (VHT80):**

**U-NII-3 (5725-5850 MHz):**

| Channel | Single Channel 155 (5775 MHz) | | | |
|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted PSD (dBm) | 1.93 | 1.59 | 1.15 | 2.47 |
| Combined Conducted PSD (dBm) | 7.83 | | | |
| Corrected Combined Conducted PSD (dBm) | 8.01 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | |

**MIMO 802.11 ax80 (HE80):**

**U-NII-3 (5725-5850 MHz):**

| Channel | Single Channel 155 (5775 MHz) | | | |
|---|---|---|---|---|
| | ANT0 | ANT1 | ANT2 | ANT3 |
| Maximum Conducted PSD (dBm) | 2.32 | 4.26 | 1.75 | 2.85 |
| Combined Conducted PSD (dBm) | 8.92 | | | |
| Corrected Combined Conducted PSD (dBm) | 9.30 | | | |
| Measurement uncertainty (dB) | <± 1.67 dB | | | |

Verdict: PASS

# FCC 15.407(b)(4)(6) /RSS-247 6.2.4.2. Transmitter Out of Band Radiated Emissions and Transmitter Band Edge Radiated Emissions.

SPECIFICATION:

For transmitters operating in the 5.725–5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz (68.23 dBµV/m at 3 m distance) 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.

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)):

| Frequency Range (MHz) | Field strength (µV/m) | Field strength (dBµV/m) | Measurement distance (m) |
|---|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | - | 300 |
| 0.490-1.705 | 24000/F(kHz) | - | 300 |
| 1.705 - 30.0 | 30 | - | 30 |
| 30 - 88 | 100 | 40 | 3 |
| 88 - 216 | 150 | 43.5 | 3 |
| 216 - 960 | 200 | 46 | 3 |
| 960 - 40000 | 500 | 54 | 3 |

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RESULTS:

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 1m for the frequency range 1 GHz-40 GHz and a distance of 3m for frequency range 30MHz-1GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyser. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

**OUT OF BAND EMISSIONS**: For spurious emissions outside of the U-NII-3 band edge mask of 5.65-5.925 GHz, the worst-case was determined after preliminary measurements of the density (conducted).

The worst-case was determined by measuring the density (conducted). Test performed on the worst-case.

**SISO:**

Worst-case OFDM/OFDMA: **802.11 a20**

**Frequency range 30 MHz - 1 GHz (SISO worst-case):**

The spurious emissions below 1 GHz do not depend on either the operating channel or the modulation mode selected in the EUT.

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (MHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 57.5480 | 26.94 | V | Quasi Peak |
| 106.4360 | 31.86 | V | Quasi Peak |
| 174.3845 | 25.69 | V | Quasi Peak |
| 275.7495 | 34.34 | H | Quasi Peak |
| 450.0100 | 36.62 | V | Quasi Peak |
| 550.0170 | 45.36 | V | Quasi Peak |

Measurement Uncertainty (dB) <± 5.07

**Frequency range 1 - 40 GHz (SISO worst-case):**

The results in the next tables show the maximum measured levels in the 1-40 GHz range except the 5.65-5.725 GHz and 5.85-5.925GHz adjacent bands. The results in the adjacent bands was evaluated on the next section.

Spurious frequencies with peak levels above the average limit (54 dBµV/m at 3 m) are measured with an average detector for checking compliance with the average limit.

- **SISO 802.11 a20 (SISO worst-case):**

  - LOW CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 9.9995 | 51.84 | V | Peak |
| 11.4885 | 53.83 | V | Peak |
| 15.3200 | 50.43 | V | Peak |

- MIDDLE CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 11.5680 | 59.23 | V | Peak |
| | 46.55 | | Average |
| 15.4260 | 52.21 | H | Peak |

- HIGH CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 11.6480 | 59.58 | H | Peak |
| | 47.26 | | Average |
| 14.6220 | 55.46 | H | Peak |
| | 45.19 | | Average |

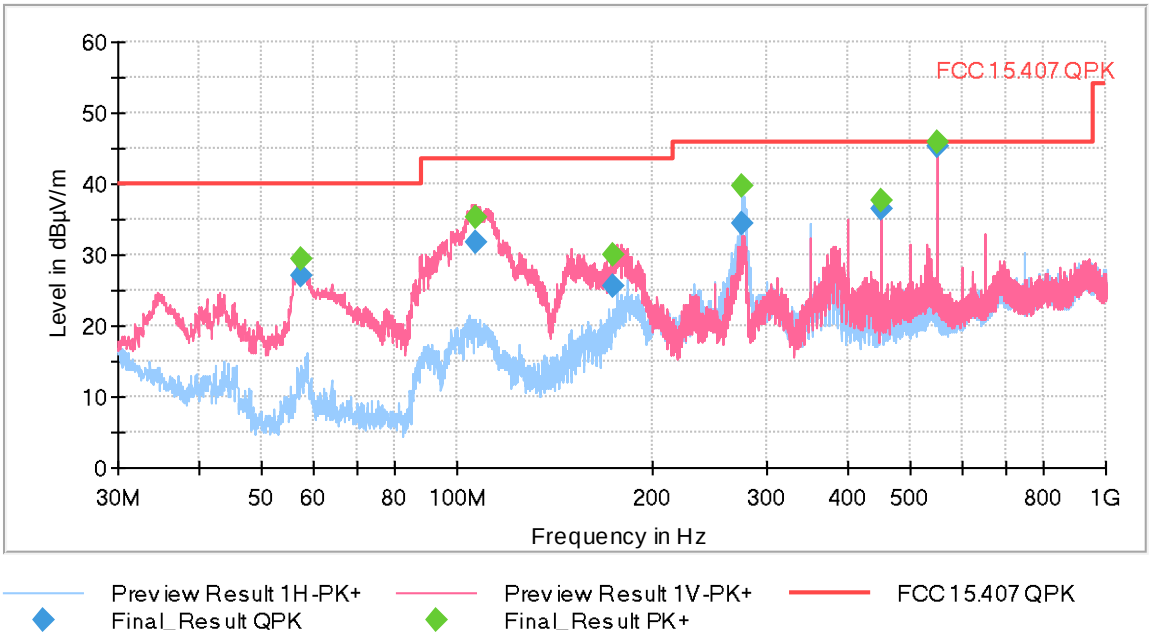
| | |
|---|---|
| Measurement uncertainty (dB) | <± 4.00 for f ≥ 1 GHz up to 7 GHz<br><± 4.99 for f ≥ 7 GHz up to 17 GHz<br><± 5.08 for f ≥ 17 GHz up to 26.5 GHz<br><± 5.33 for f ≥ 26.5 GHz up to 40 GHz |

Verdict: PASS

**SISO worst-case:**

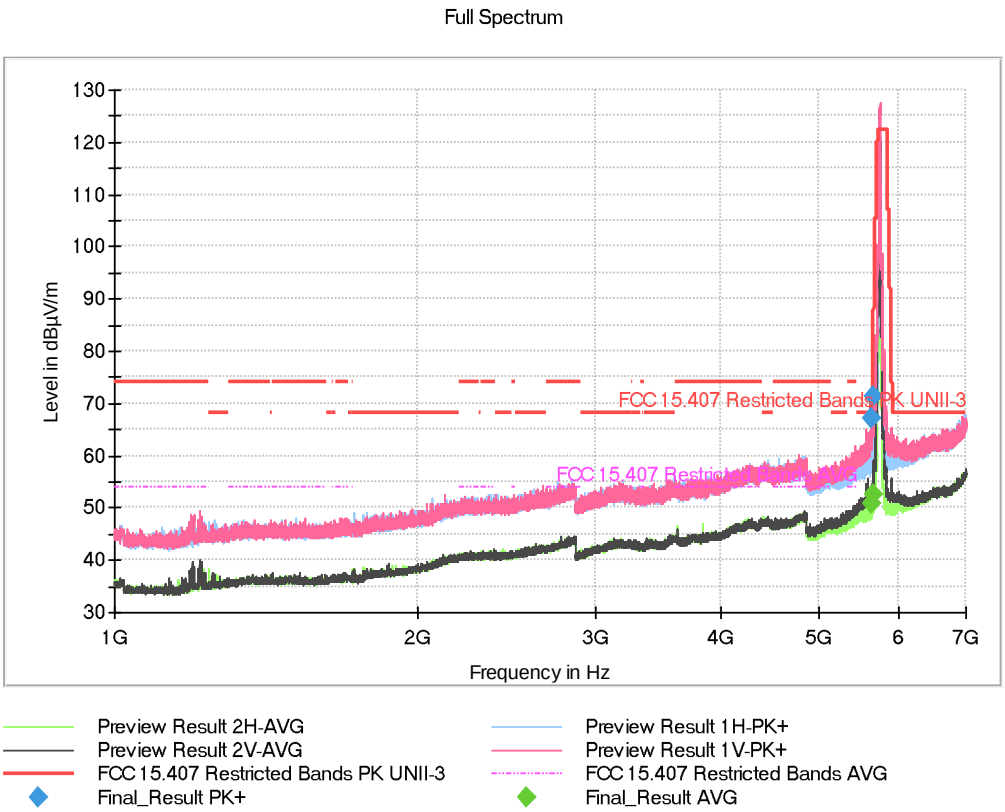
**FREQUENCY RANGE 30 MHz - 1 GHz (SISO worst-case):**

This plot is valid for all the Channels and all the modulation modes and bandwidths.



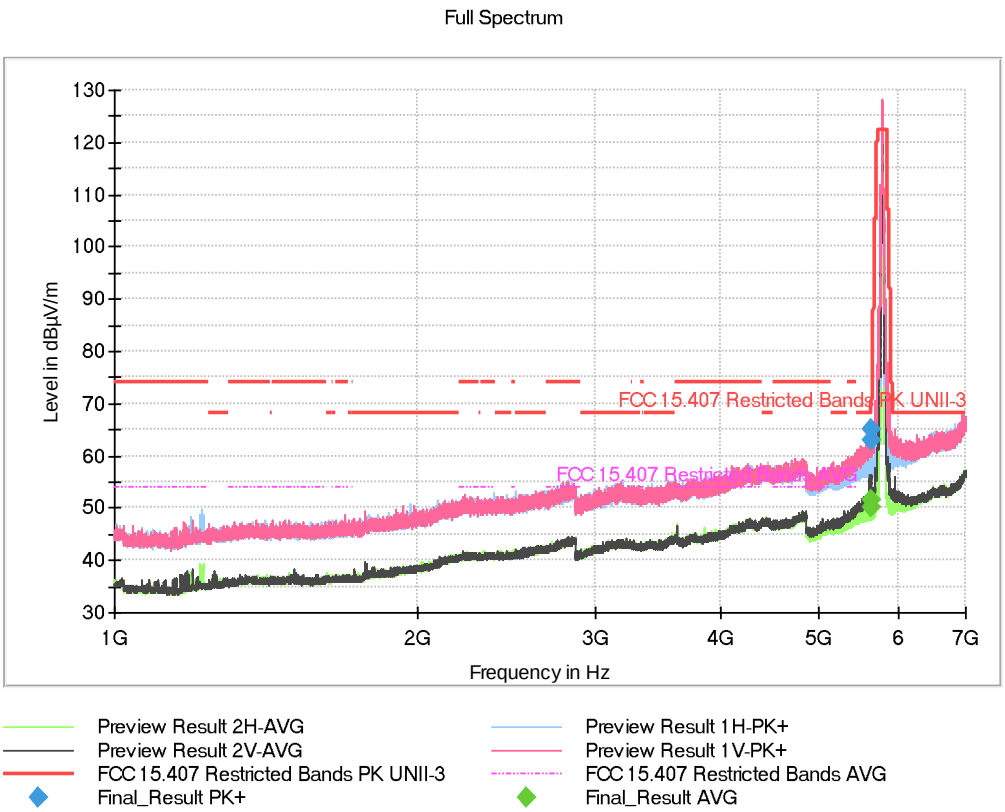

**FREQUENCY RANGE 1 - 7 GHz (SISO worst-case):**

- Low Channel:



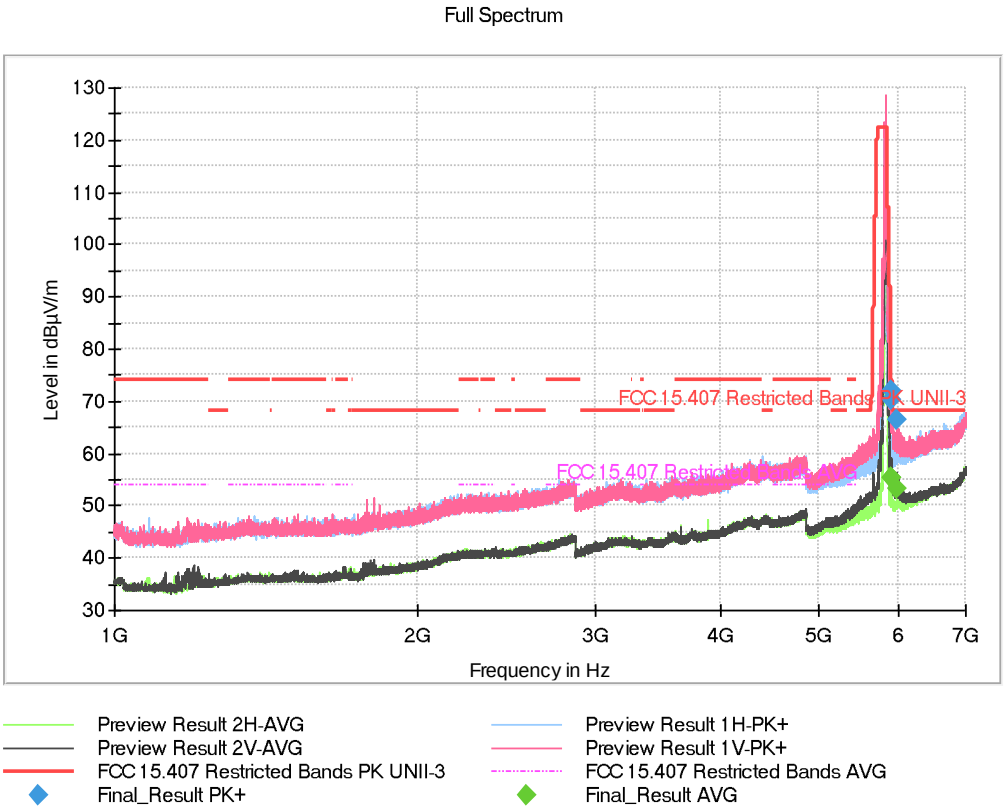

Note: The peak shown in the plot above the limit is the carrier frequency. Range 5.725 – 5.850 GHz no eirp limit applies.

- Middle Channel:




Note: The peak shown in the plot above the limit is the carrier frequency. Range 5.725 – 5.850 GHz no eirp limit applies.

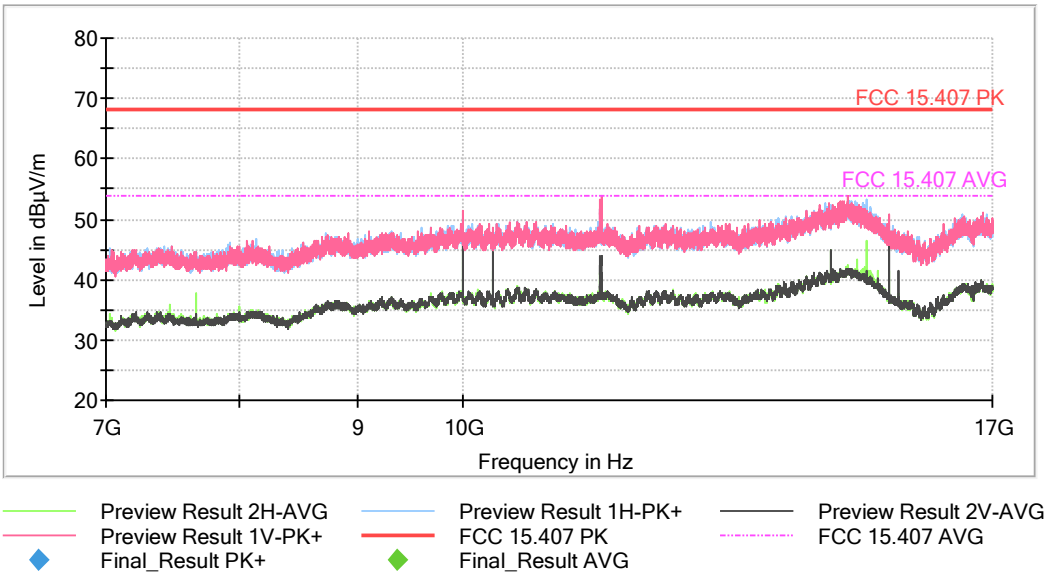
- High Channel:



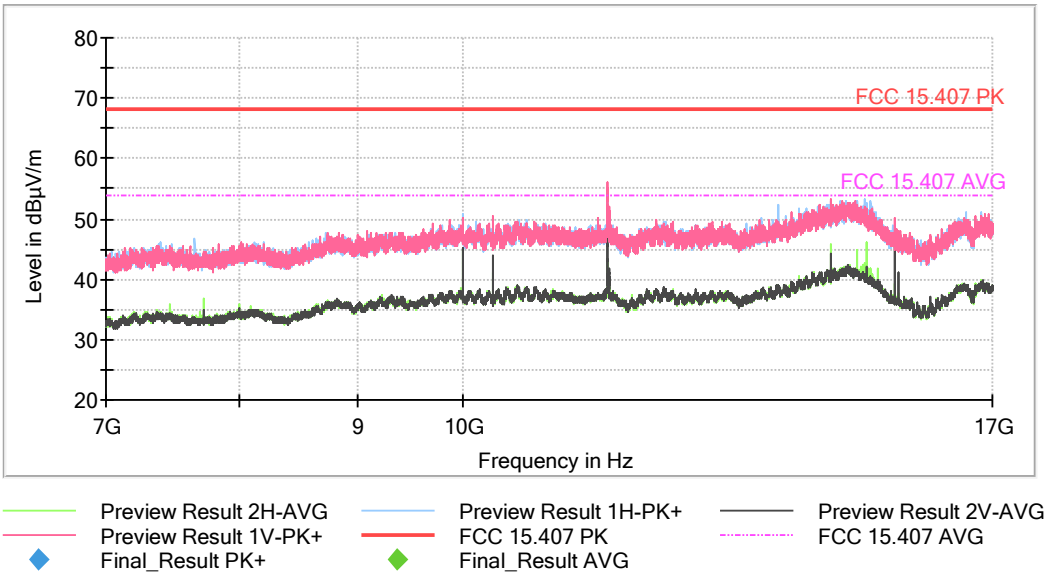

Note: The peak shown in the plot above the limit is the carrier frequency. Range 5.725 – 5.850 GHz no eirp limit applies.

**FREQUENCY RANGE 7 - 17 GHz (SISO worst-case):**

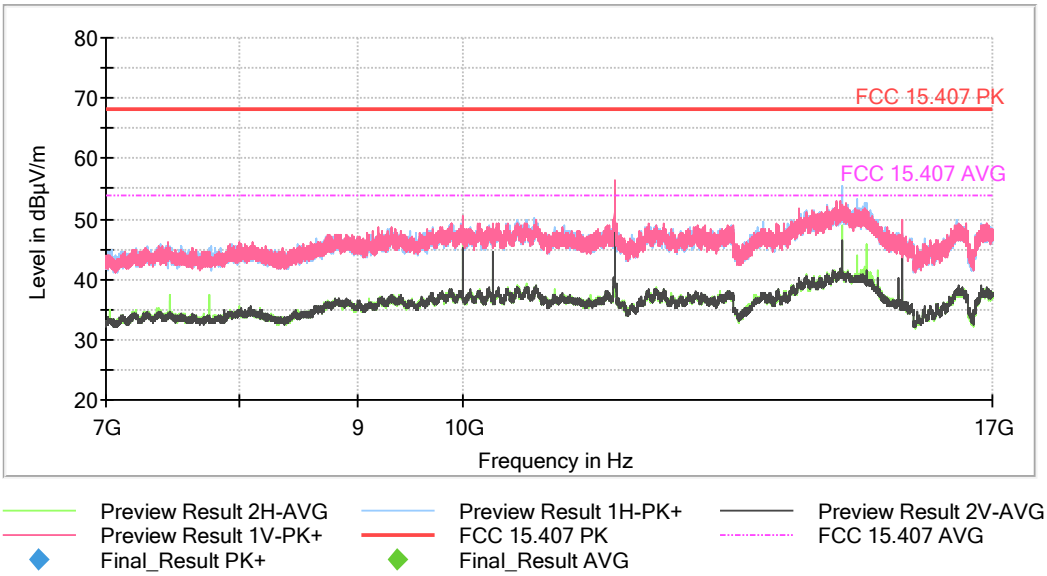
- Low Channel:




- Middle Channel:

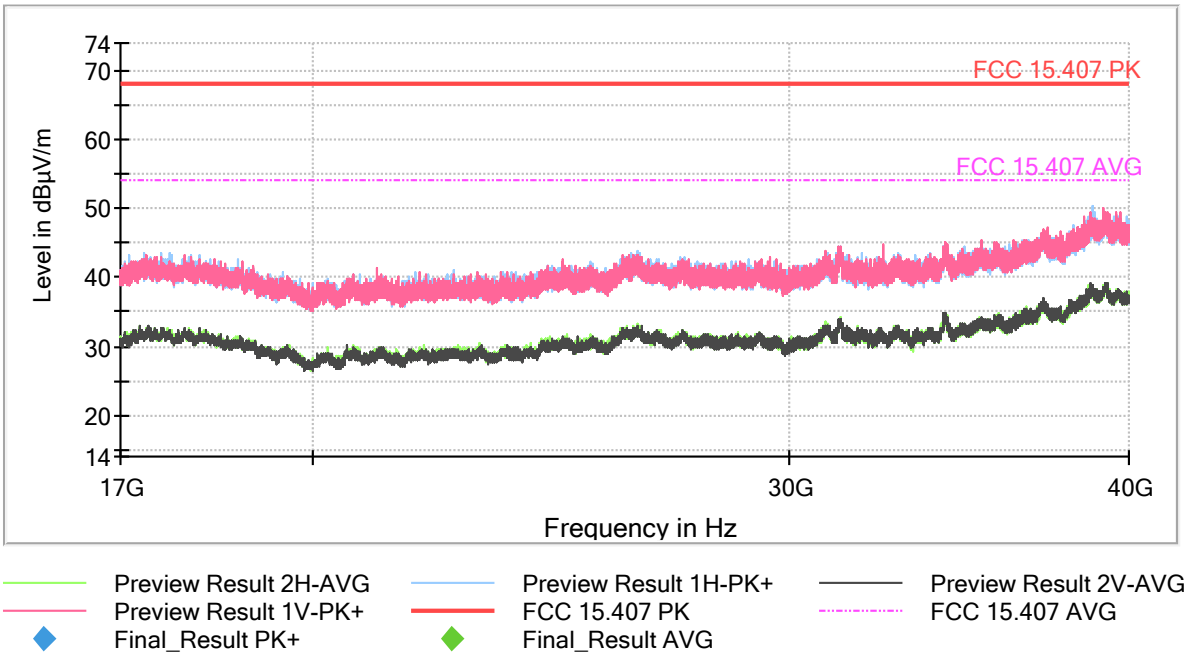


- High Channel:




**FREQUENCY RANGE 17 - 40 GHz (SISO worst-case):**

This plot is valid for all the Channels and all the modulation modes and bandwidths.



**MIMO worst-case:**

Worst-case (OFDM/OFDMA): **802.11 ac20**

**Frequency range 30 MHz - 1 GHz (MIMO worst-case):**

The spurious emissions below 1 GHz do not depend on either the operating channel or the modulation mode selected in the EUT.

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (MHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 56.9660 | 25.14 | V | Quasi Peak |
| 105.2720 | 31.15 | V | Quasi Peak |
| 176.1790 | 26.42 | V | Quasi Peak |
| 275.3130 | 34.01 | H | Quasi Peak |
| 400.0065 | 36.53 | V | Quasi Peak |
| 550.0170 | 45.16 | V | Quasi Peak |

Measurement Uncertainty (dB) <± 5.07

**Frequency range 1 - 40 GHz (MIMO worst-case):**

The results in the next tables show the maximum measured levels in the 1-40 GHz range except the 5.65-5.725 GHz and 5.85-5.925GHz adjacent bands. The results in the adjacent bands was evaluated on the next section.

Spurious frequencies with peak levels above the average limit (54 dBµV/m at 3 m) are measured with an average detector for checking compliance with the average limit.

- LOW CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 10.0000 | 53.74 | H | Peak |
| 11.4840 | 53.26 | V | Peak |
| 14.9515 | 54.25 | H | Peak |
| | 41.43 | | Average |

- MIDDLE CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 10.0005 | 53.76 | V | Peak |
| 11.5690 | 55.53 | V | Peak |
| | 42.49 | | Average |
| 15.4265 | 50.99 | V | Peak |

- HIGH CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 10.0000 | 53.50 | V | Peak |
| 11.6500 | 55.96 | V | Peak |
| | 43.68 | | Average |
| 15.0005 | 55.39 | H | Peak |
| | 45.77 | | Average |

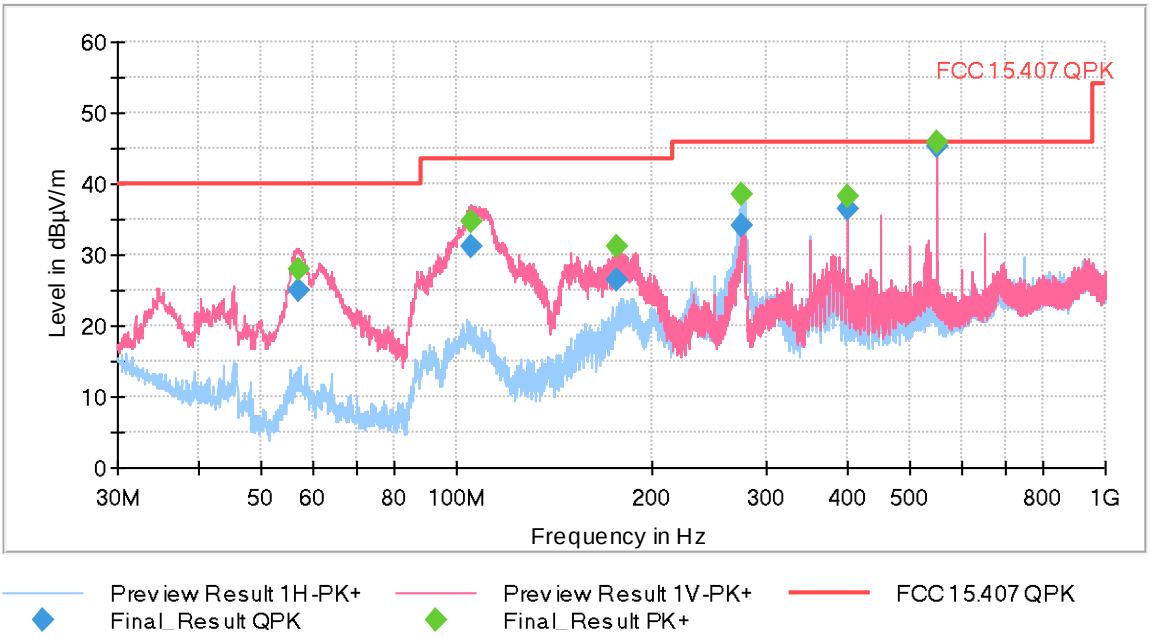
Measurement uncertainty (dB)
<± 4.00 for f ≥ 1 GHz up to 7 GHz
<± 4.99 for f ≥ 7 GHz up to 17 GHz
<± 5.08 for f ≥ 17 GHz up to 26.5 GHz
<± 5.33 for f ≥ 26.5 GHz up to 40 GHz

Verdict: PASS

**MIMO worst-case:**

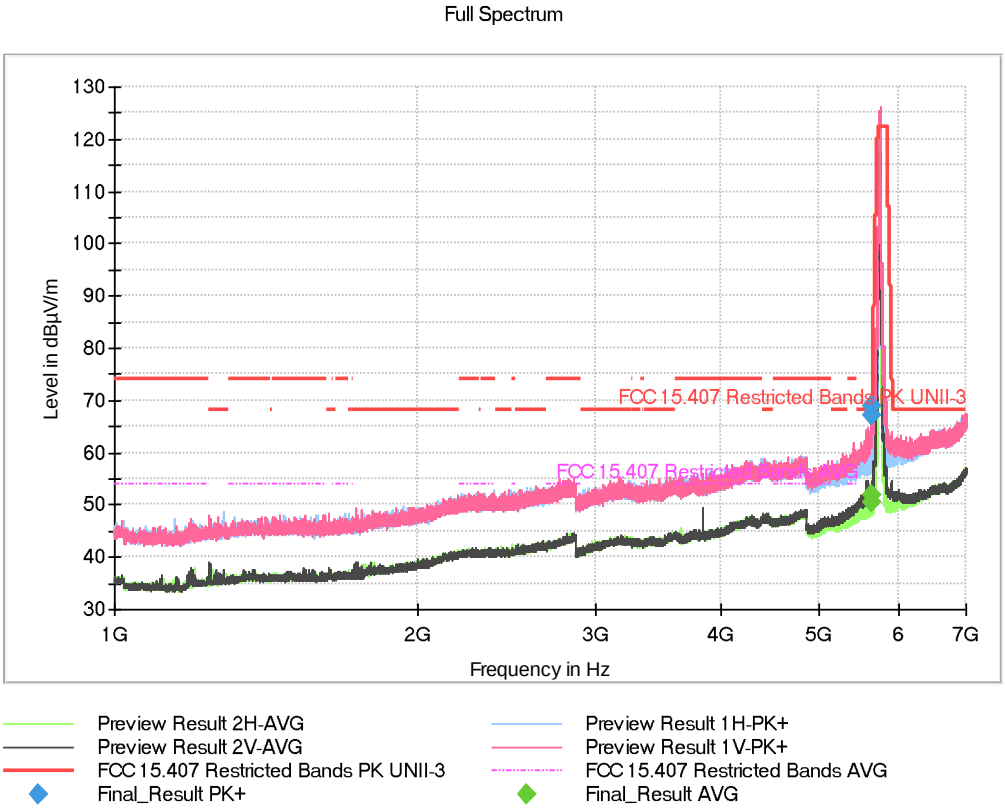
**FREQUENCY RANGE 30 MHz - 1 GHz (MIMO worst-case):**

This plot is valid for all the Channels and all the modulation modes and bandwidths.



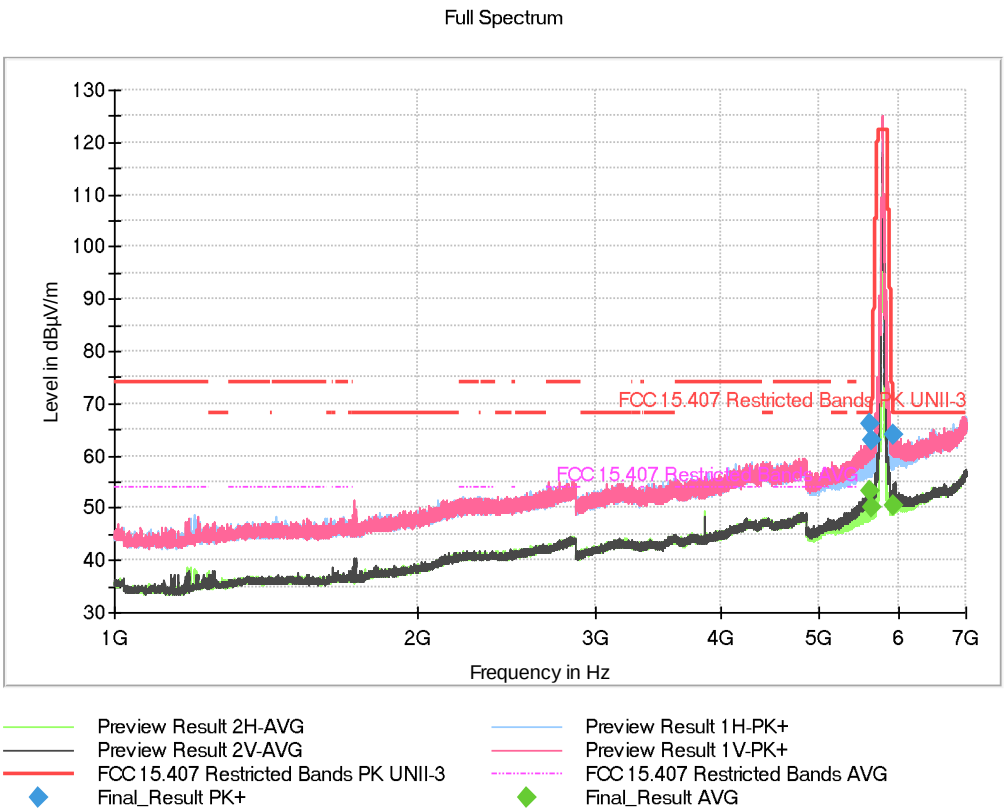

**FREQUENCY RANGE 1 - 7 GHz (MIMO worst-case):**

- Low Channel:



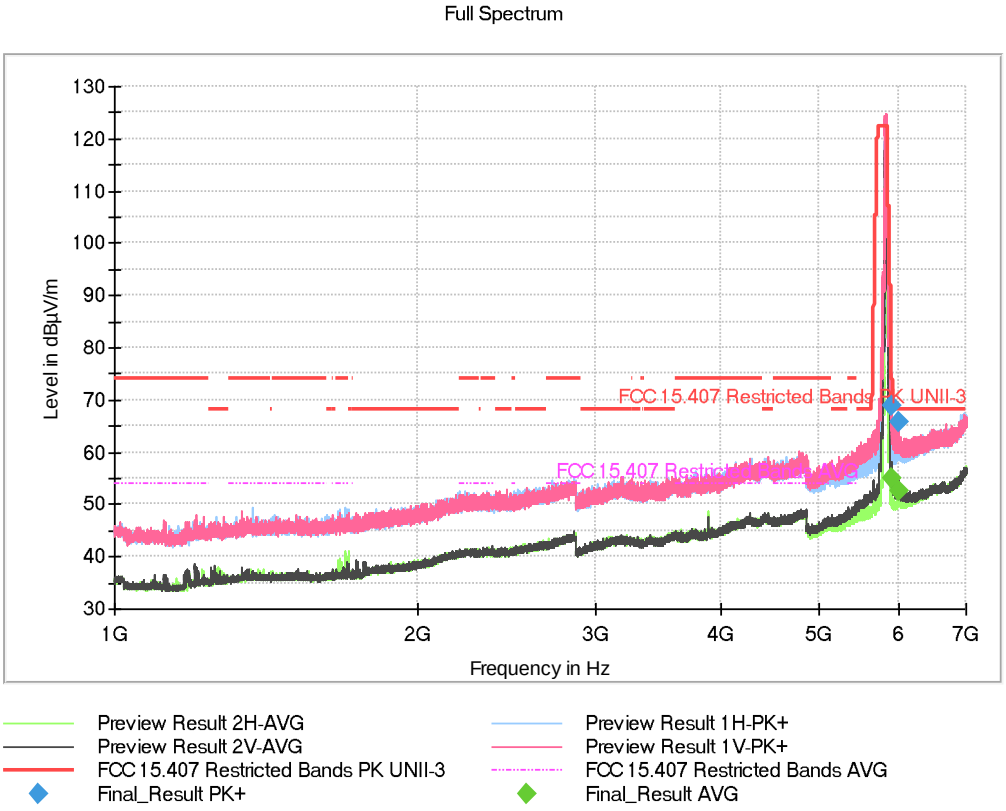

Note: The peak shown in the plot above the limit is the carrier frequency. Range 5.725 – 5.850 GHz no eirp limit applies.

- Middle Channel:




Note: The peak shown in the plot above the limit is the carrier frequency. Range 5.725 – 5.850 GHz no eirp limit applies.

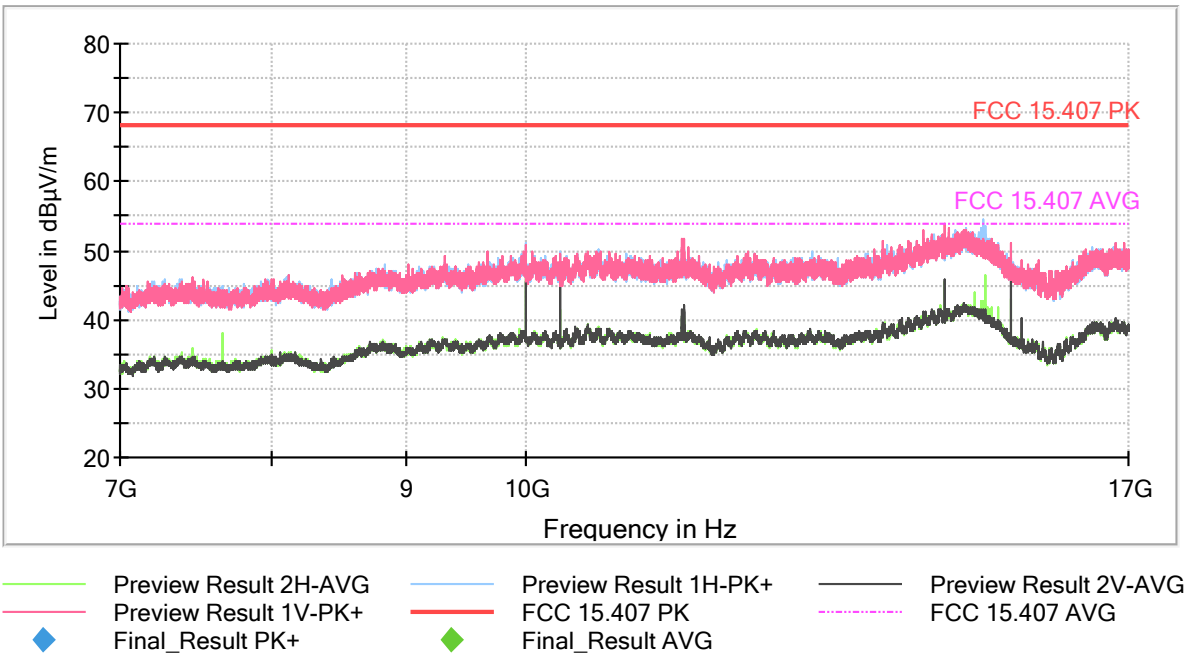
- High Channel:



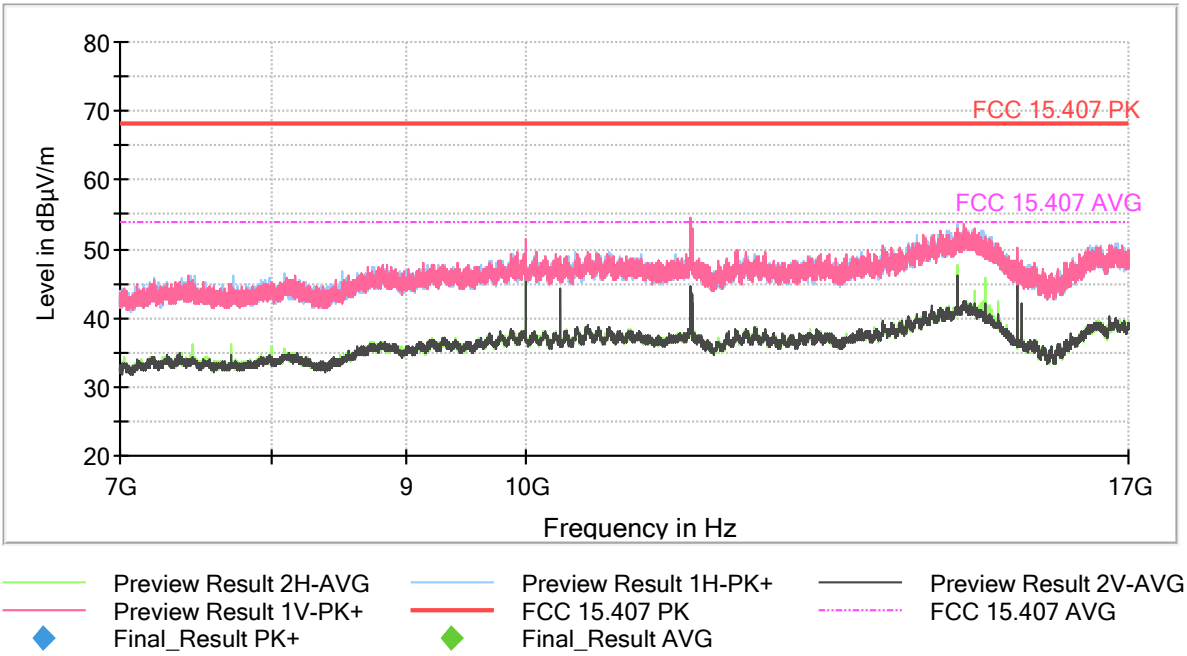

Note: The peak shown in the plot above the limit is the carrier frequency. Range 5.725 – 5.850 GHz no eirp limit applies.

**FREQUENCY RANGE 7 - 17 GHz (MIMO worst-case):**

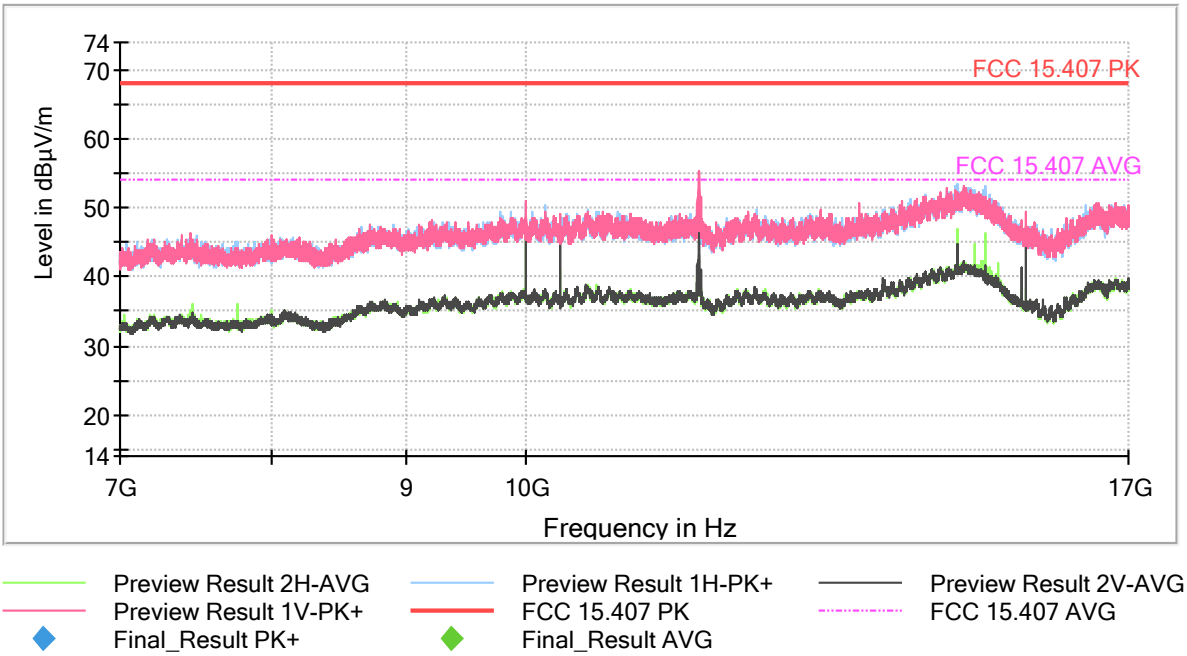
- Low Channel:




- Middle Channel:

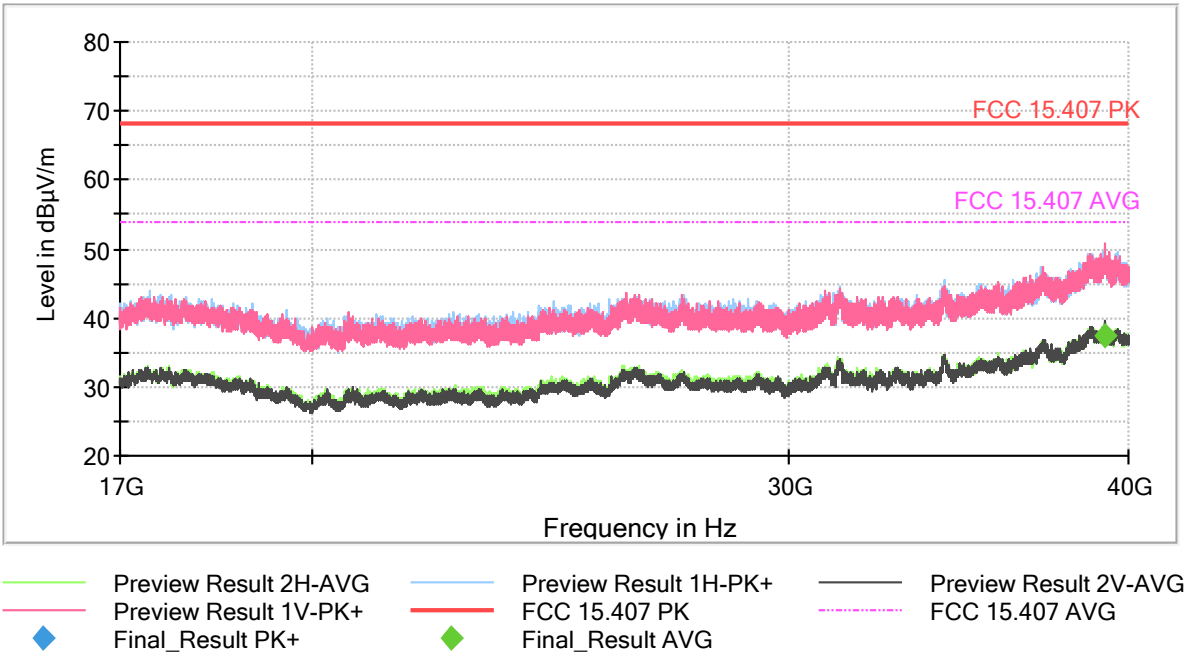


- High Channel:




**FREQUENCY RANGE 17 - 40 GHz (MIMO worst-case):**

This plot is valid for all the Channels and all the modulation modes and bandwidths.



**BAND EDGE EMISSIONS**:

**SISO worst-case:**

- **SISO 802.11 a20. Spurious emissions inside of the mask 5.65-5.925 GHz:**

- LOW CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6482 | 67.23 | V | Peak |
| 5.6544 | 71.27 | V | Peak |

- MIDDLE CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6312 | 65.05 | V | Peak |
| 5.6508 | 63.00 | V | Peak |

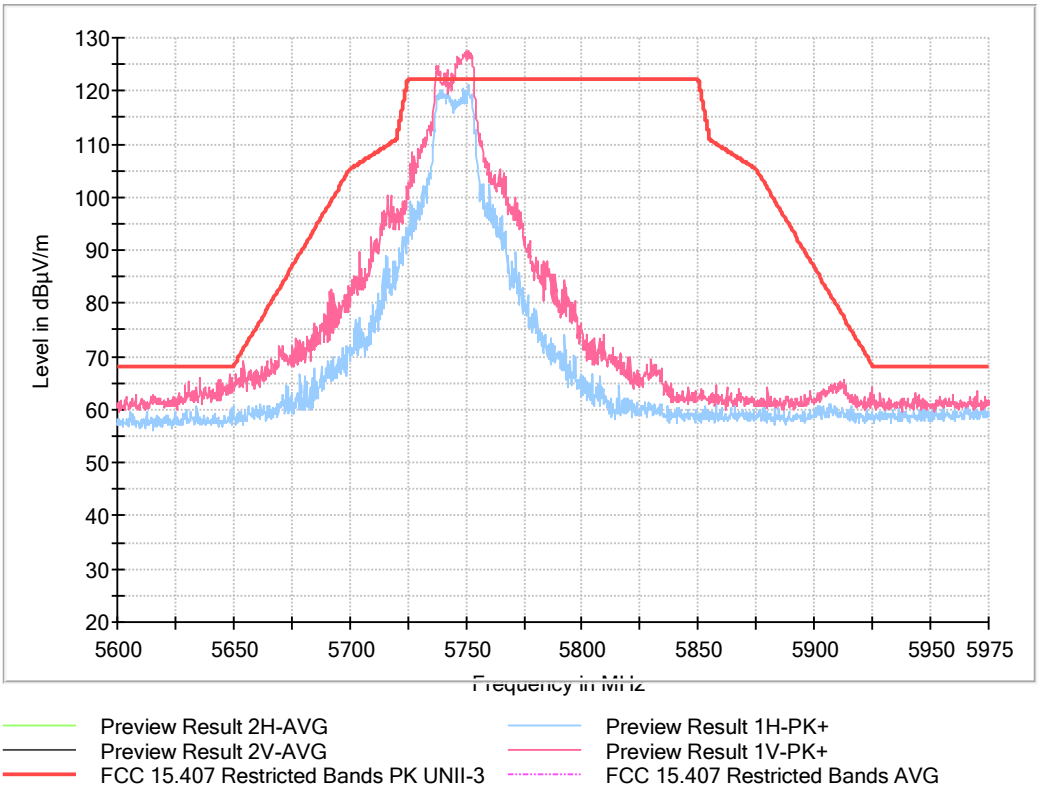
- HIGH CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.9112 | 70.19 | V | Peak |
| 5.9856 | 66.42 | V | Peak |

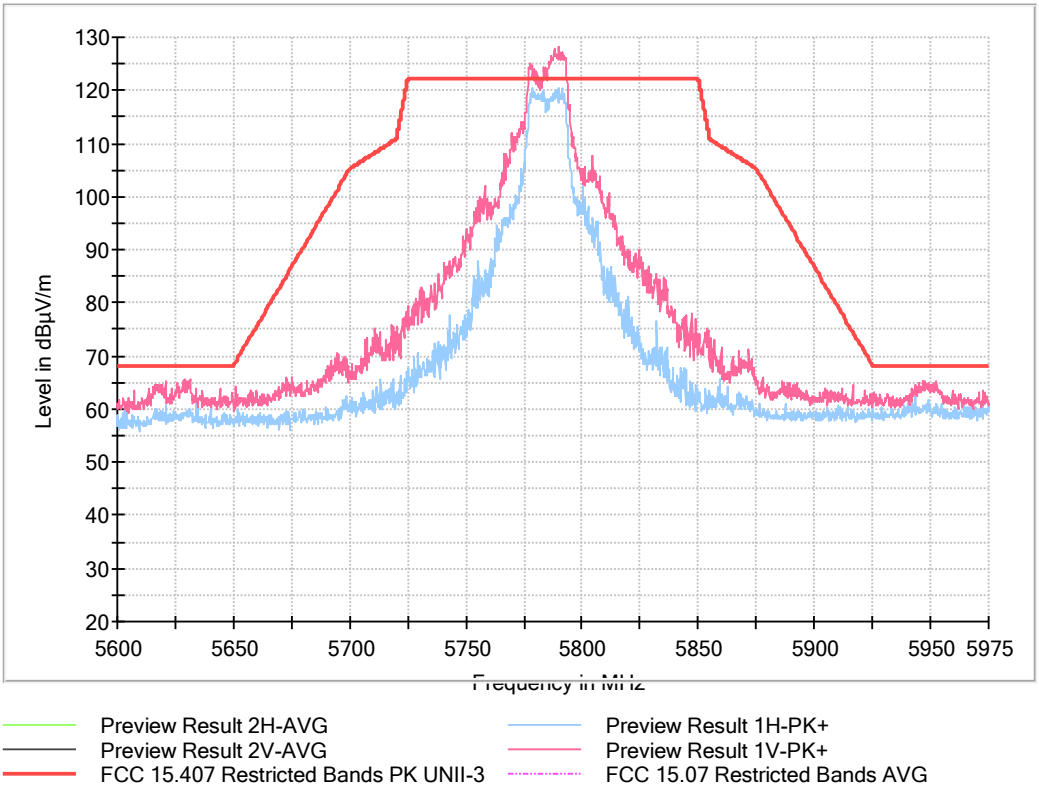
- **SISO 802.11 a20:**

  - Low Channel:



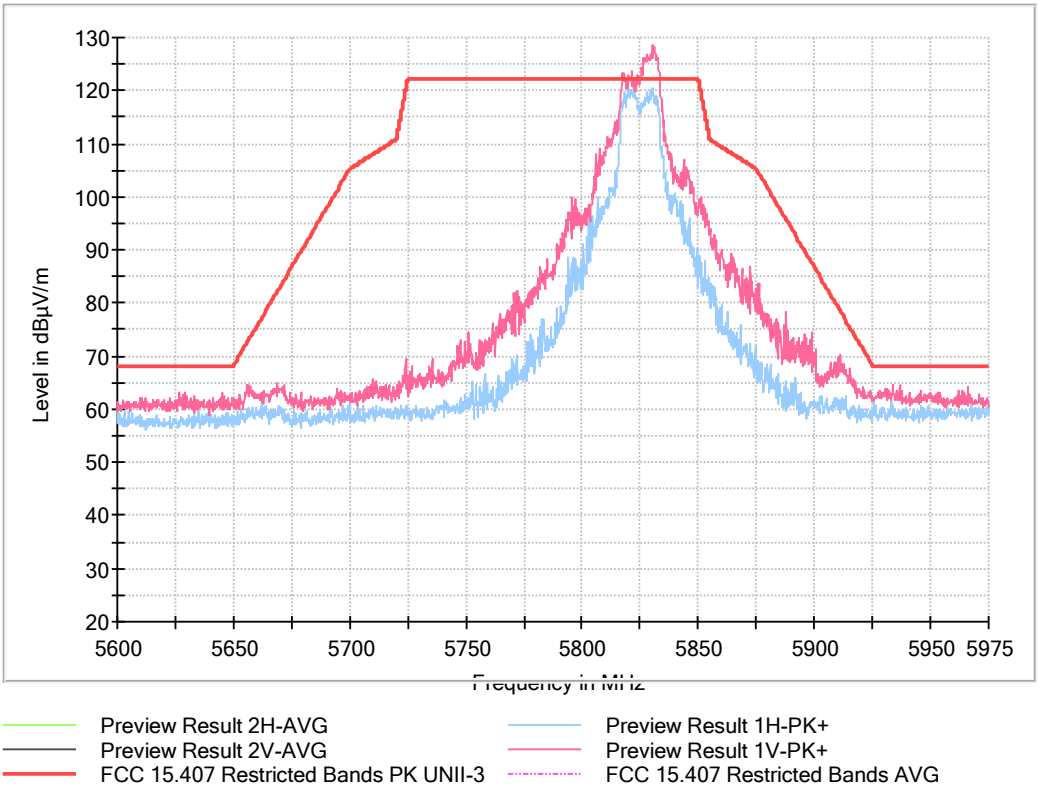

Note: Range 5.725 – 5.850 GHz no eirp limit applies.

- Middle Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

- High Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

**MIMO worst-case:**

- **MIMO 802.11 ac20. Spurious emissions inside of the mask 5.65-5.925 GHz:**

- LOW CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6462 | 67.01 | V | Peak |
| 5.6528 | 68.92 | V | Peak |

- MIDDLE CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6296 | 66.15 | V | Peak |
| 5.9246 | 64.03 | V | Peak |

- HIGH CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.9132 | 68.87 | V | Peak |
| 5.9946 | 65.67 | V | Peak |

- **MIMO 802.11 ax20. Spurious emissions inside of the mask 5.65-5.925 GHz:**

- LOW CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.5906 | 66.28 | V | Peak |
| 5.6520 | 68.10 | V | Peak |

- MIDDLE CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6272 | 66.41 | V | Peak |
| 5.9518 | 67.18 | V | Peak |

- HIGH CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.9214 | 65.98 | V | Peak |
| 5.9922 | 66.64 | V | Peak |

- **MIMO 802.11 ac40. Spurious emissions inside of the mask 5.65-5.925 GHz:**

- LOW CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6484 | 63.57 | V | Peak |
| 5.6542 | 67.64 | V | Peak |

- HIGH CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6638 | 67.94 | V | Peak |
| 5.9250 | 66.02 | V | Peak |

- **MIMO 802.11 ax40. Spurious emissions inside of the mask 5.65-5.925 GHz:**

- LOW CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6510 | 67.77 | V | Peak |
| 5.9246 | 65.20 | V | Peak |

- HIGH CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6506 | 67.48 | V | Peak |

- **MIMO 802.11 ac80. Spurious emissions inside of the mask 5.65-5.925 GHz:**

- SINGLE CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6084 | 66.16 | V | Peak |
| 5.6440 | 67.65 | V | Peak |

- **MIMO 802.11 ax80. Spurious emissions inside of the mask 5.65-5.925 GHz:**

- SINGLE CHANNEL:

Spurious frequencies detected at less than 20 dB below the limit:

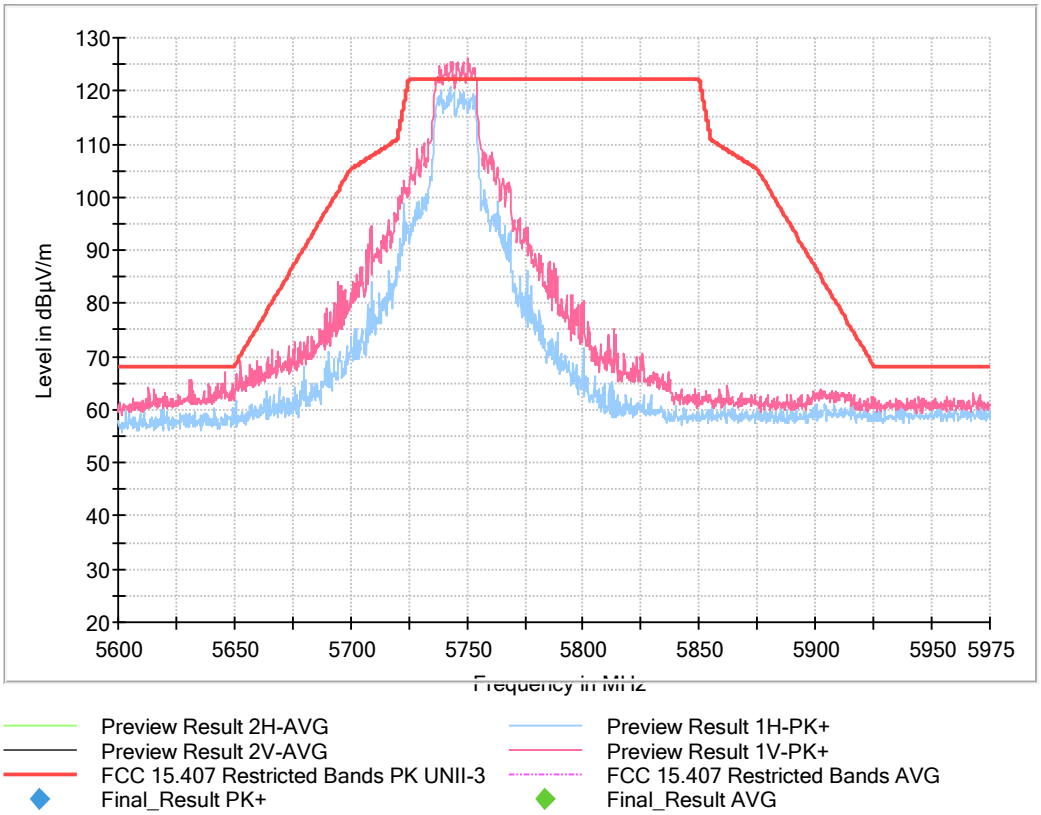
| Spurious frequency (GHz) | Emission Level (dBµV/m) | Polarization | Detector |
|---|---|---|---|
| 5.6418 | 66.65 | V | Peak |

Measurement Uncertainly (dB) <± 4.00

Verdict: PASS

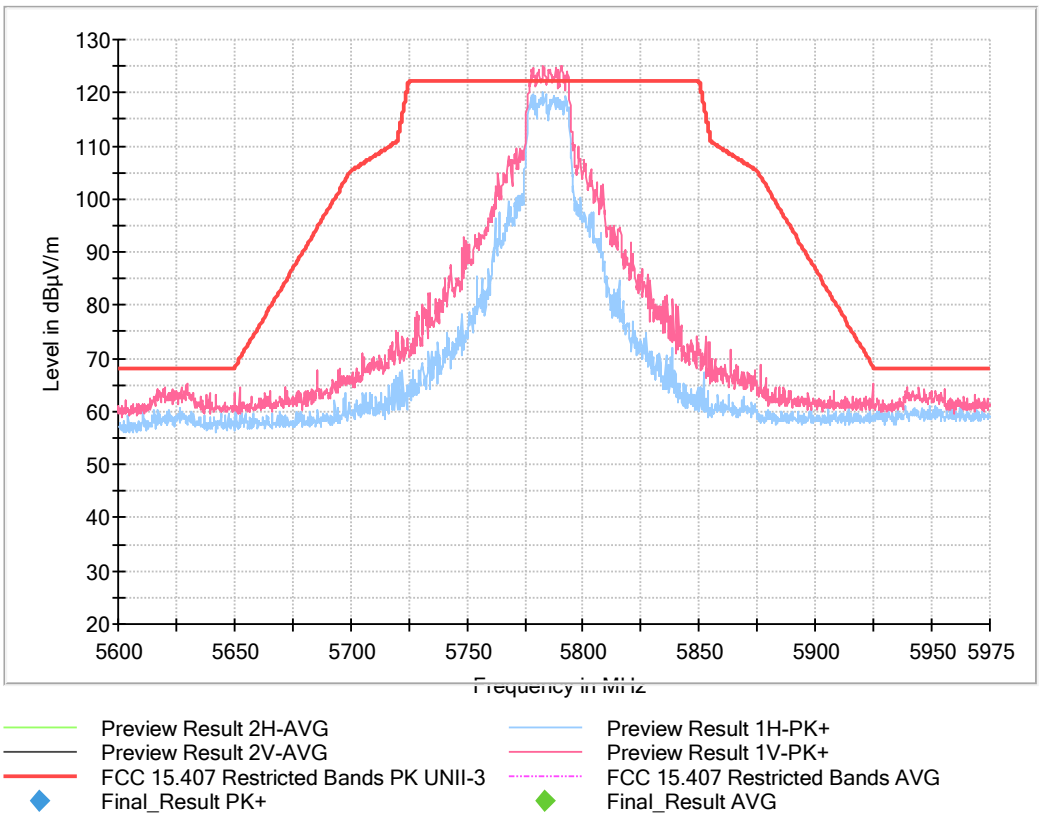
- **MIMO 802.11 ac20:**

  - Low Channel:



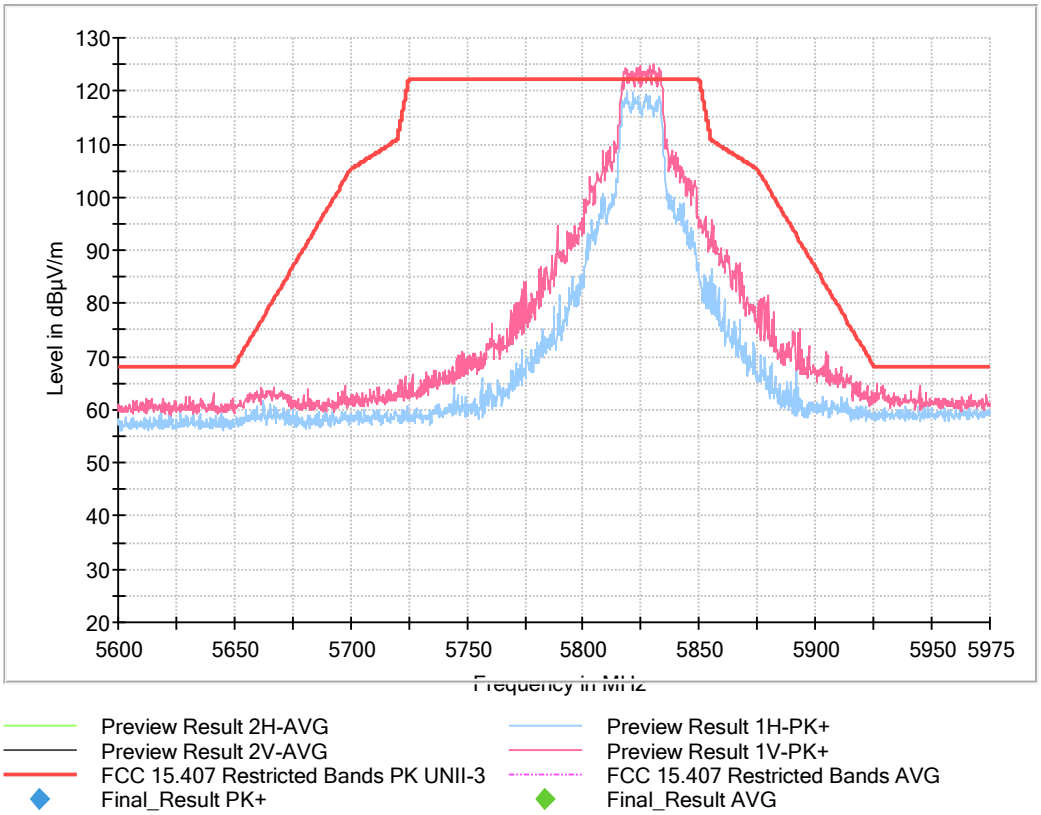

Note: Range 5.725 – 5.850 GHz no eirp limit applies.

- Middle Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

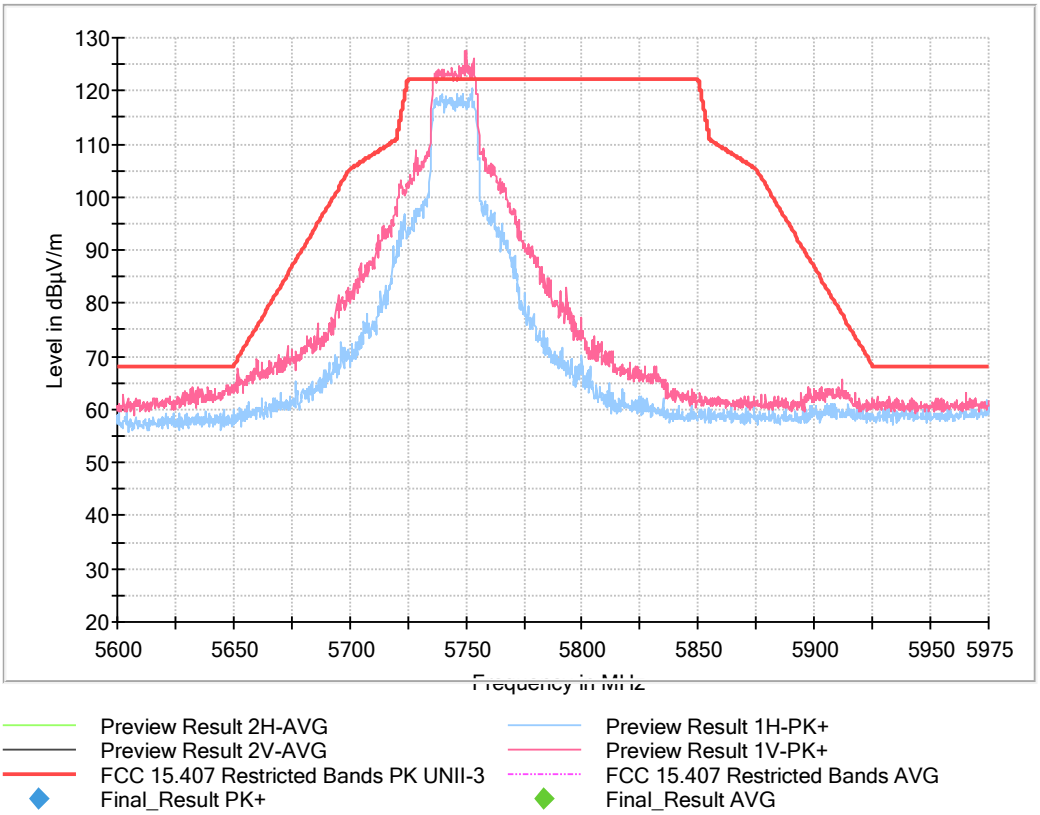
- High Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

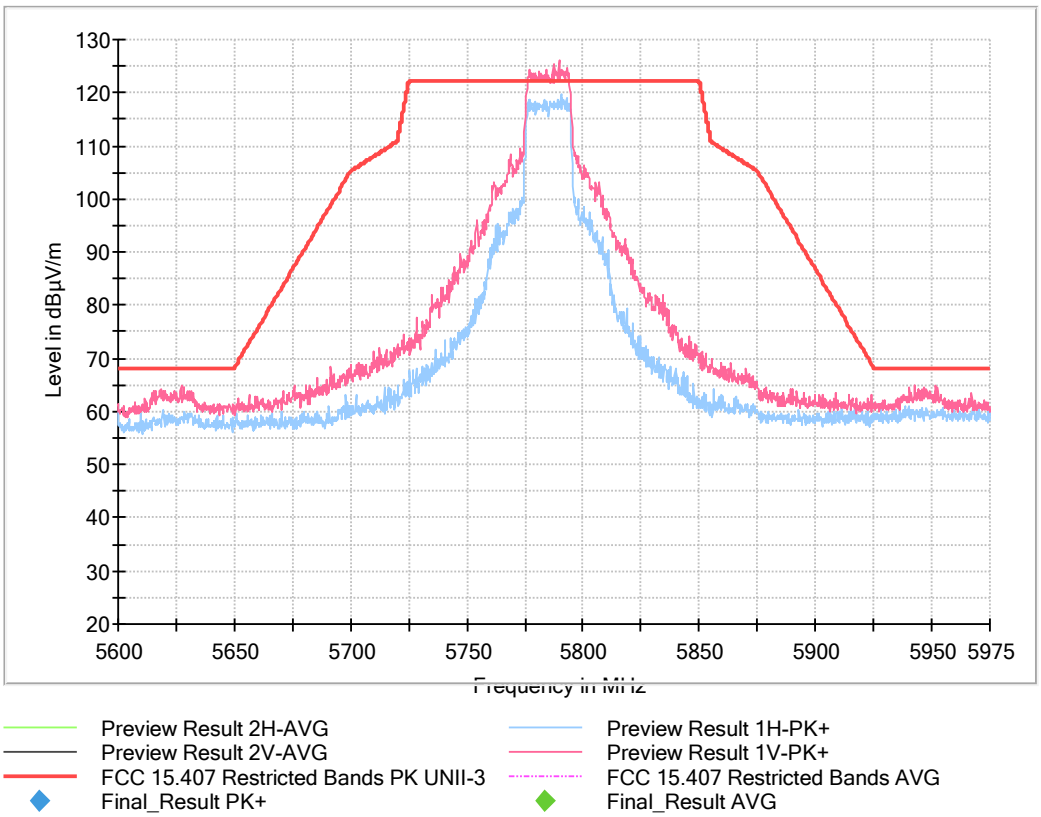
- **MIMO 802.11 ax20:**

  - Low Channel:



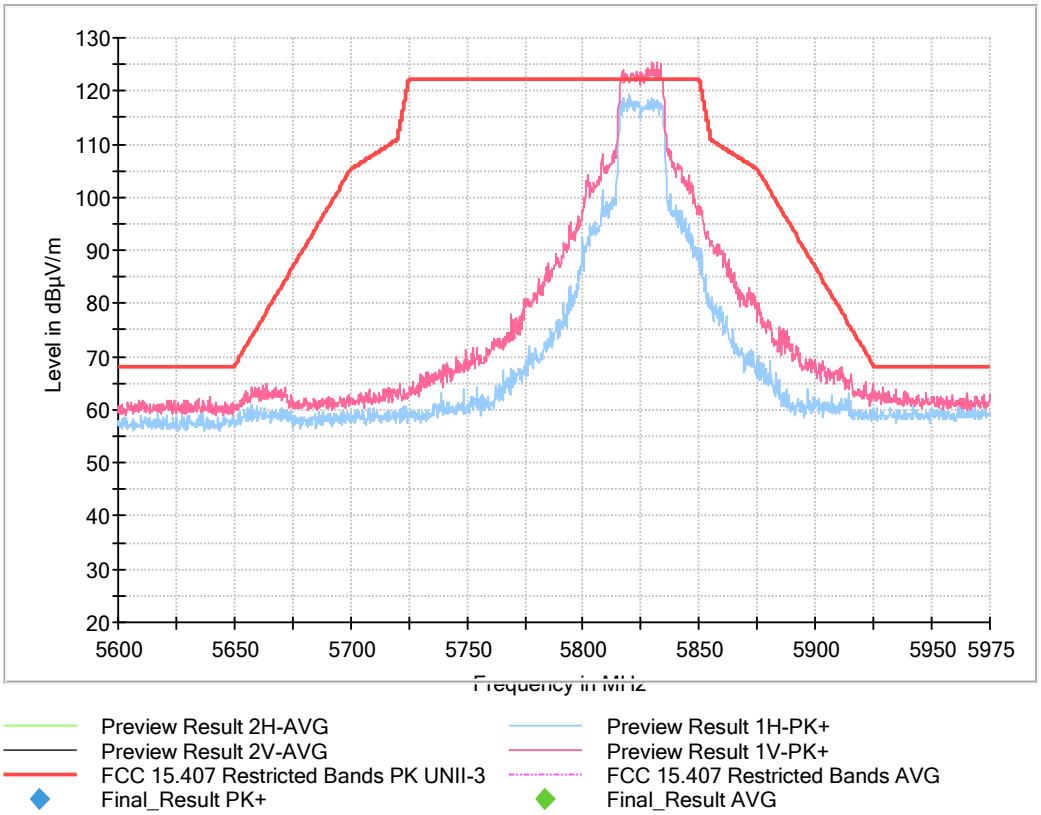

Note: Range 5.725 – 5.850 GHz no eirp limit applies.

- Middle Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

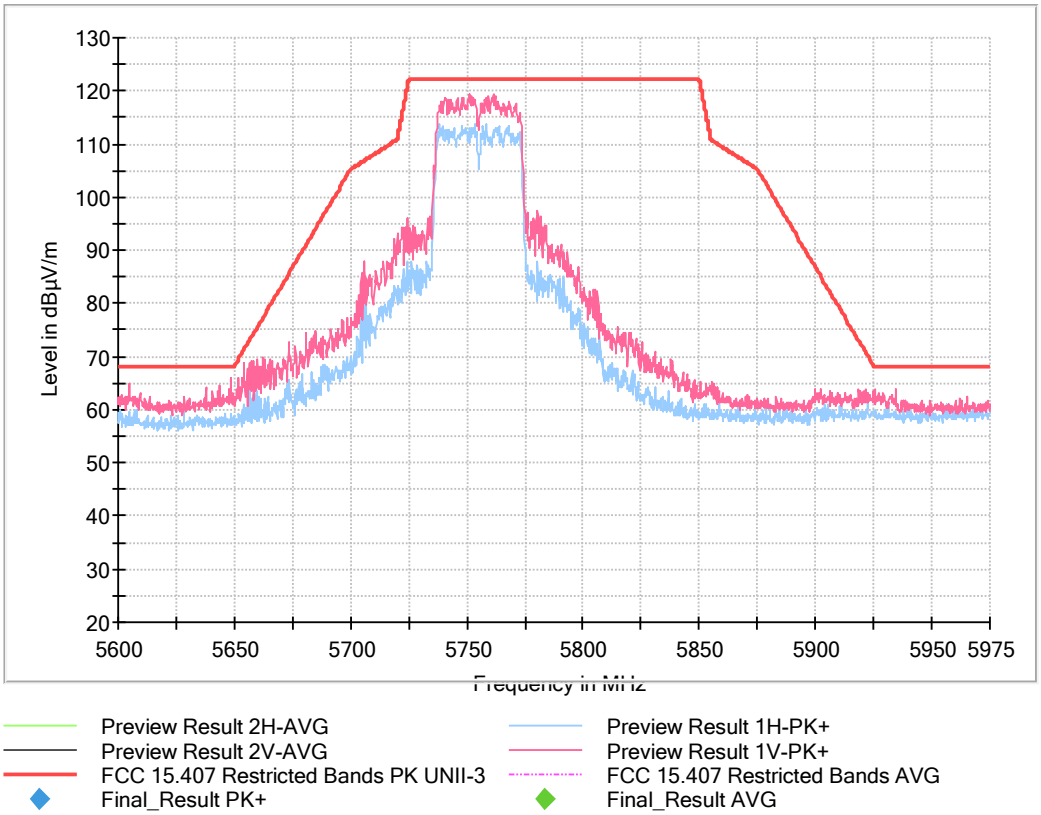
- High Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

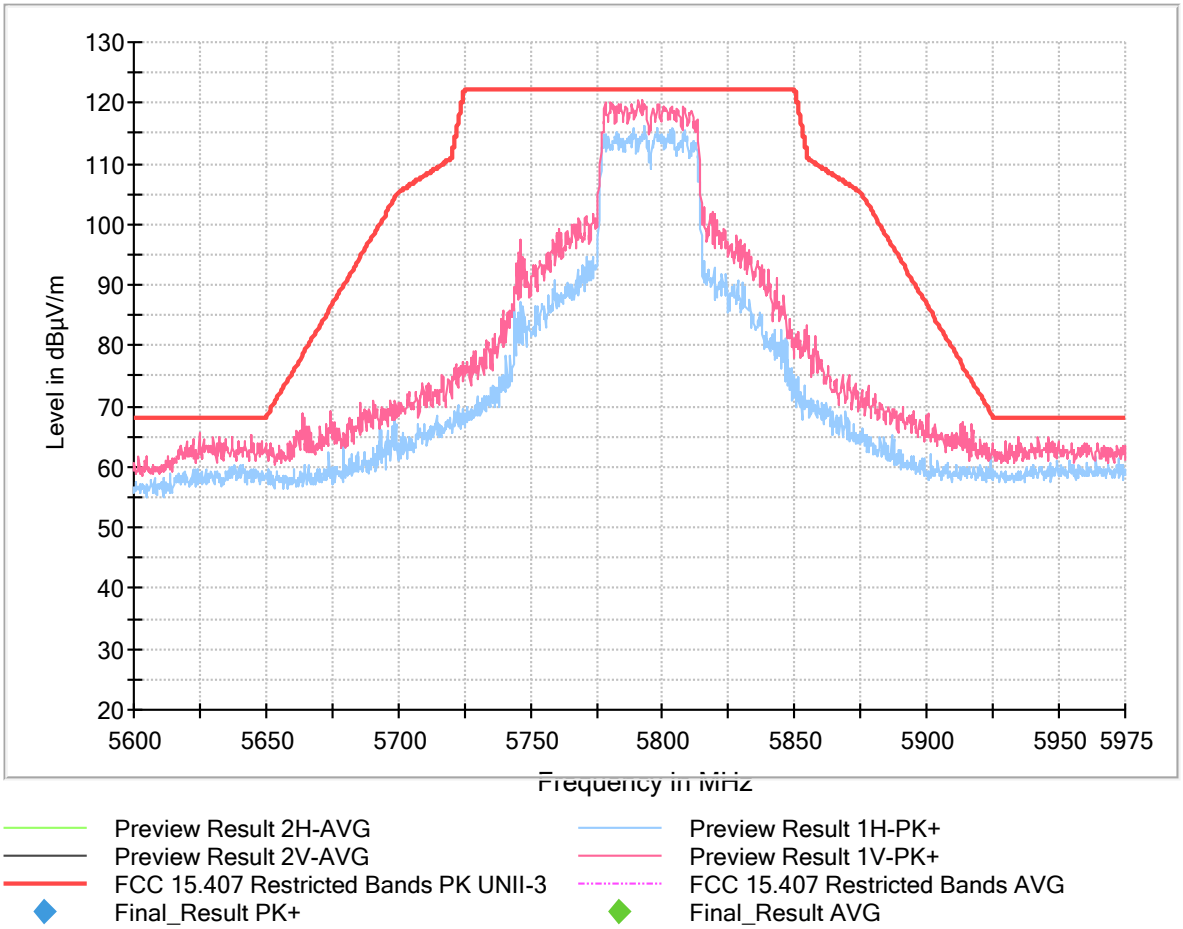
- **MIMO 802.11 ac40:**

  - Low Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

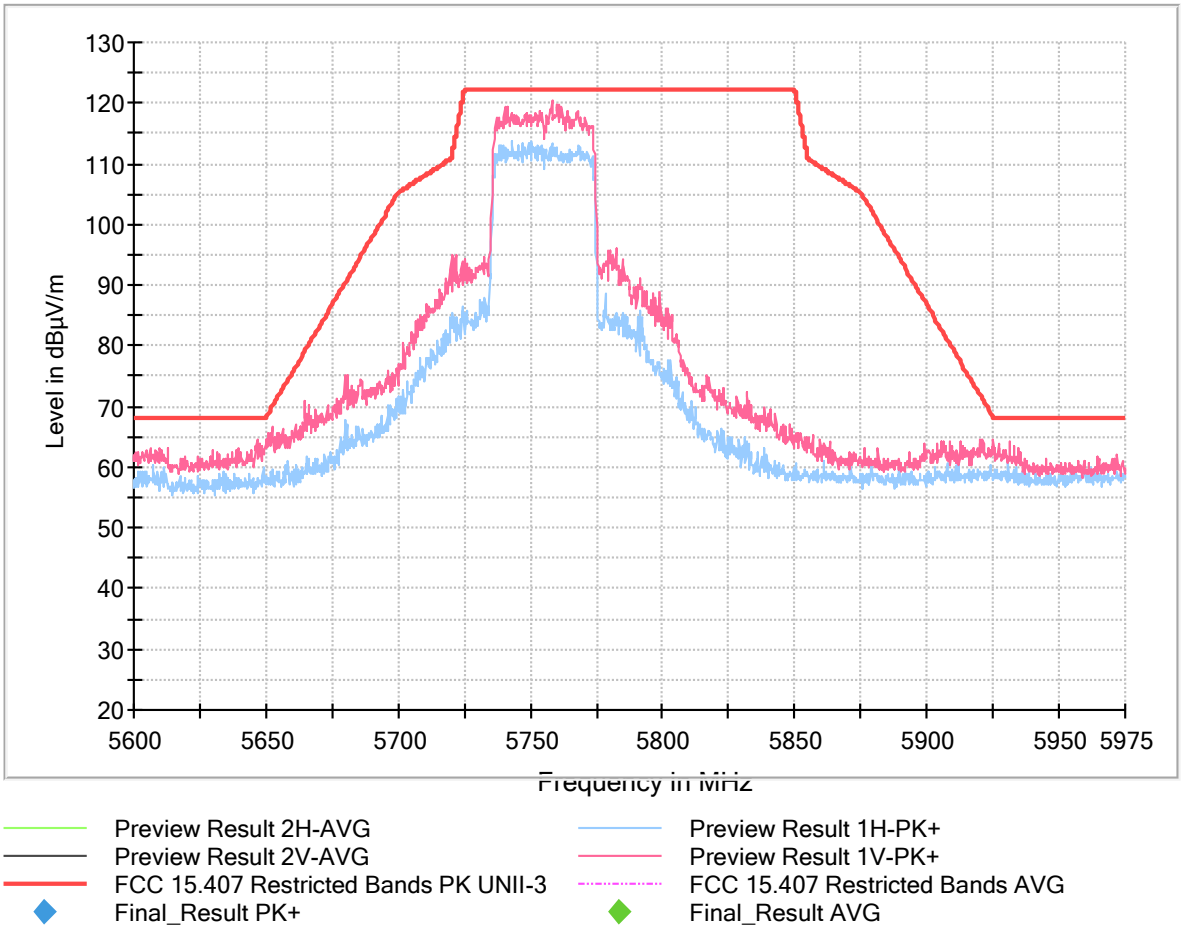
- High Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

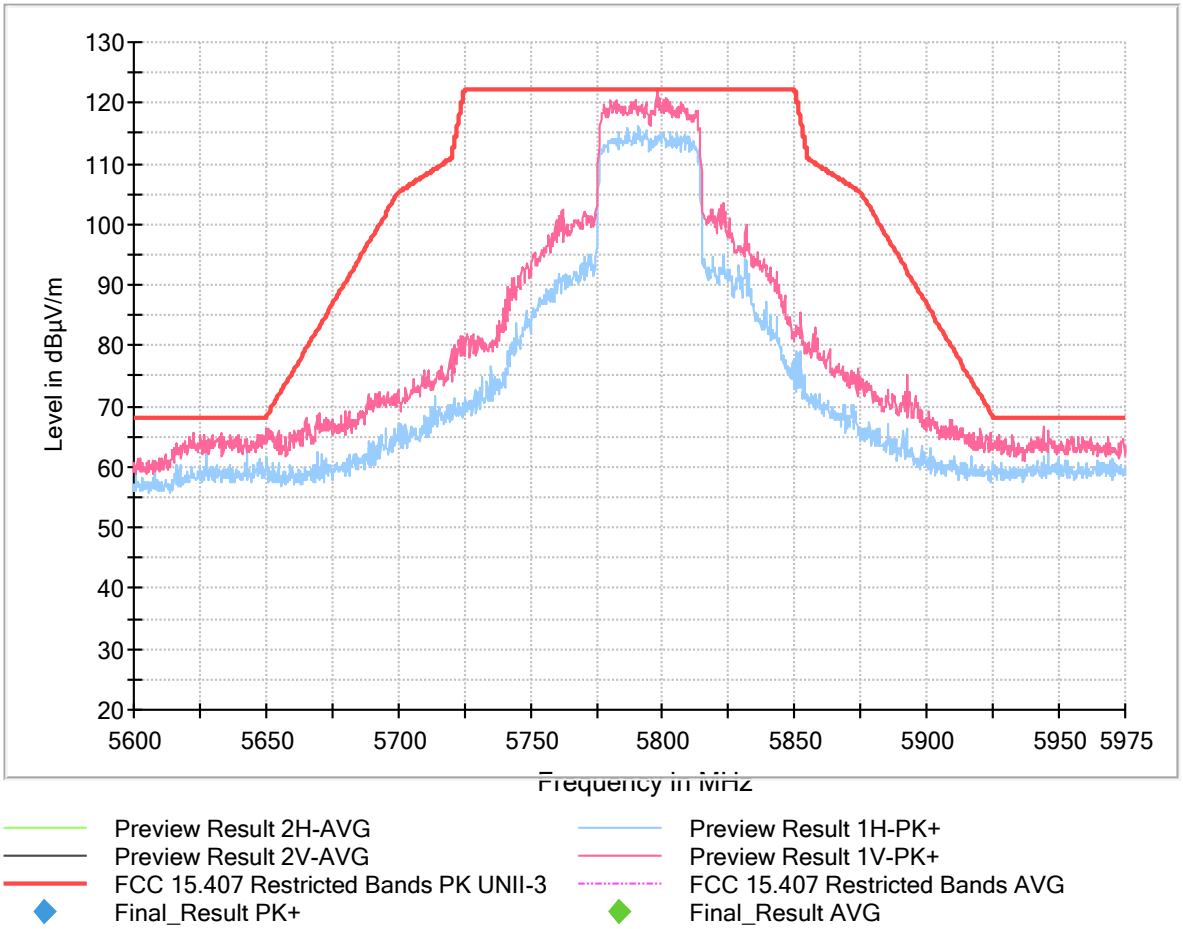
- **MIMO 802.11 ax40:**

  - Low Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

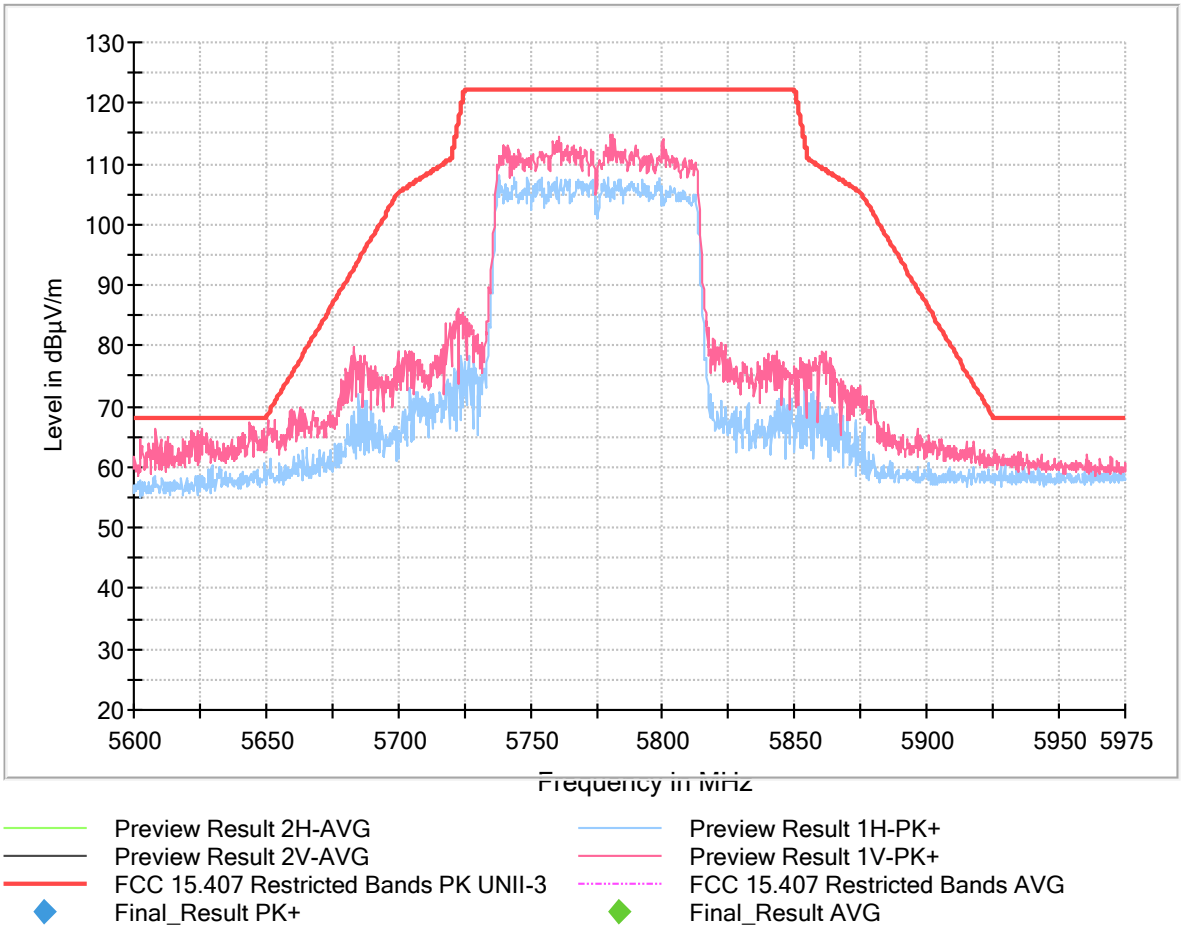
- High Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

- **MIMO 802.11 ac80:**

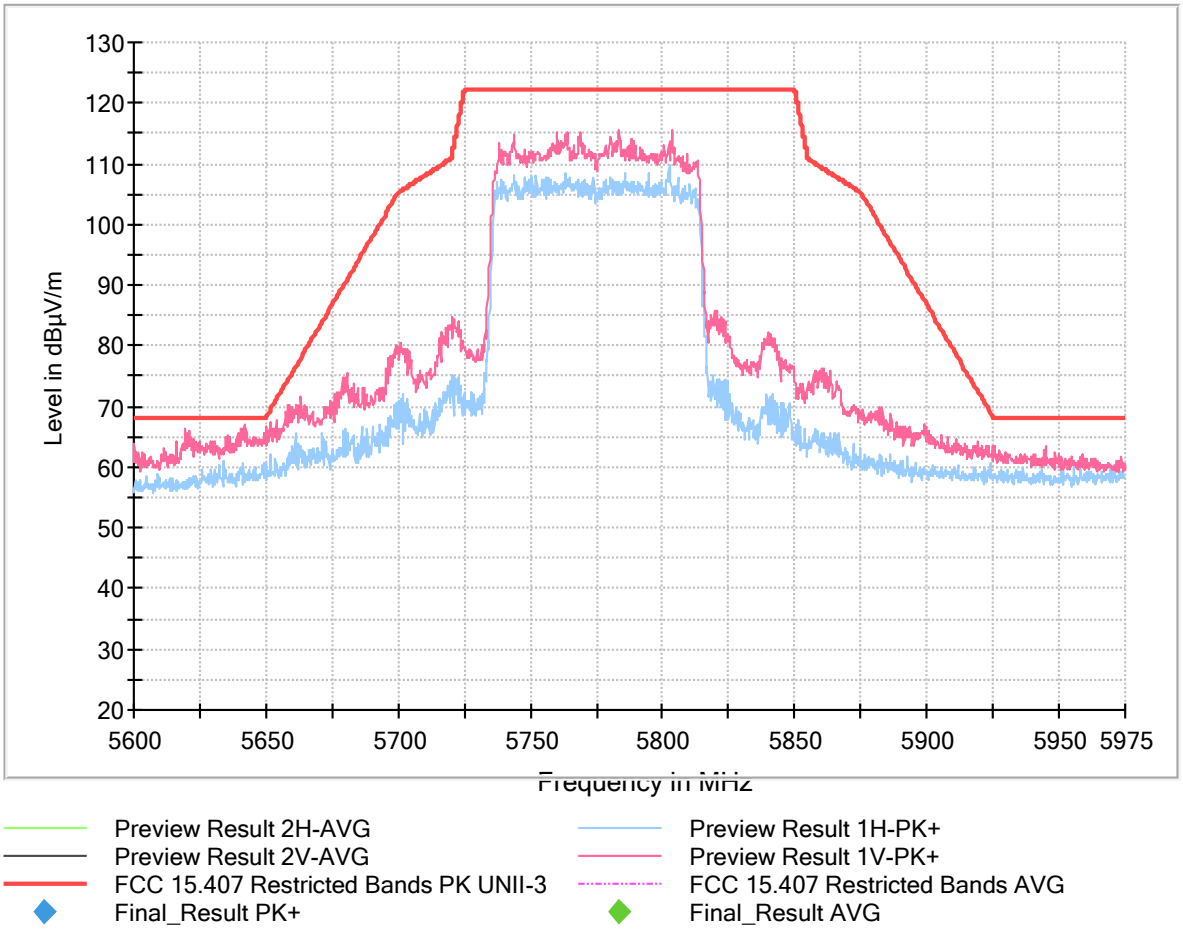
  - Single Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.

- **MIMO 802.11 ax80:**

  - Single Channel:




Note: Range 5.725 – 5.850 GHz no eirp limit applies.