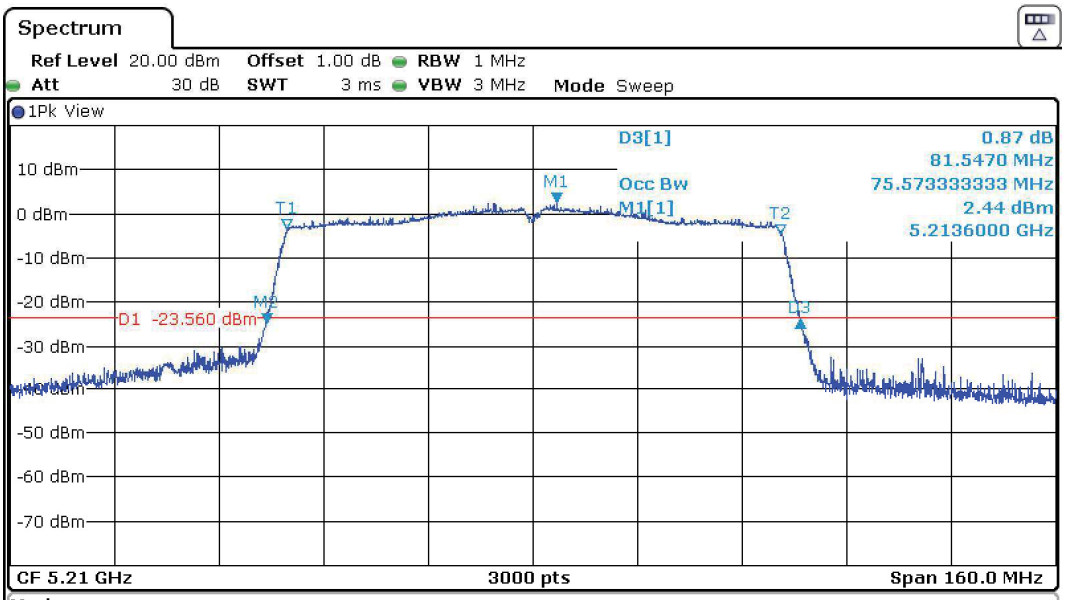
Mode 802.11 ac80 (VHT80):

U-NII-1 (5150-5250 MHz)

- Single Channel 42 (5210 MHz):

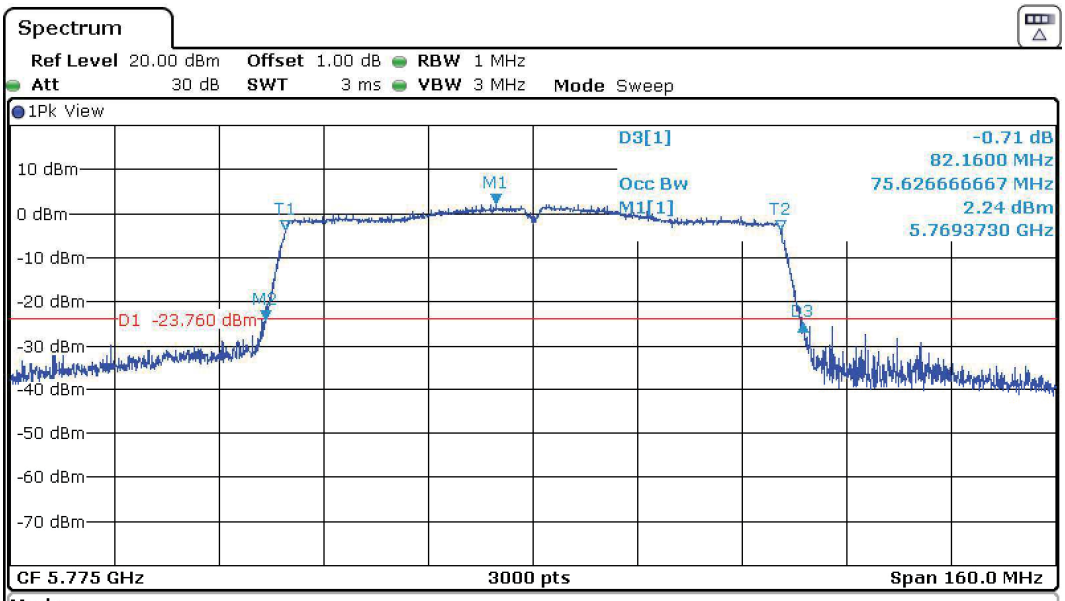


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2136 GHz	2.44 dBm		
T1		1	5.1722667 GHz	-3.52 dBm	Occ Bw	75.573333333 MHz
T2		1	5.24784 GHz	-4.57 dBm		
M2		1	5.16928 GHz	-24.67 dBm		
D3	M2	1	81.547 MHz	0.87 dB		

U-NII-3 (5725-5850 MHz)

- Single Channel 155 (5775 MHz):



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.769373 GHz	2.24 dBm		
T1		1	5.73716 GHz	-3.76 dBm	Occ Bw	75.626666667 MHz
T2		1	5.8127867 GHz	-3.76 dBm		
M2		1	5.734066 GHz	-24.08 dBm		
D3	M2	1	82.16 MHz	-0.71 dB		

Appendix B: Tests results for the U-NII-1 Band 5.15 – 5.25 GHz

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TEST CONDITIONS

POWER SUPPLY (V):

V nonimal:	12 Vdc
Type of Power Supply:	DC voltage from external power supply (car battery).

ANTENNAS:

Type of Antenna:	External.
Antennas Gain:	

- SISO – CORE-0_Port3 Antenna – Declared Maximum Antenna Gain: +2.5 dBi

TEST FREQUENCIES:

Technology Tested:	WLAN (IEEE 802.11 a,n,ac) / U-NII-1	
Modes:	802.11a20: 6, 9, 12, 18, 24, 36, 48 & 54 Mbps	
	802.11n HT20: MCS0 to MCS23	
	802.11n HT40: MCS0 to MCS23	
	802.11ac VHT20: MCS0 to MCS9	
	802.11ac VHT40: MCS0 to MCS9	
	802.11ac VHT80: MCS0 to MCS9	
Setting of cores / ports:	Core 0 / Port 3.	
Beamforming:	No.	
Frequency Range:	5150 MHz to 5250 MHz	
Channel Spacing:	20 MHz	
Transmit Channels	Channel	Channel Frequency (MHz)
	Lowest: 36	5180
	Middle: 40	5200
	Highest: 48	5240
Channel Spacing:	40 MHz	
Transmit Channels	Channel	Channel Frequency (MHz)
	Lowest: 38	5190
	Highest: 46	5230
Channel Spacing:	80 MHz	
Transmit Channels	Middle: 42	5210

The test set-up was made in accordance to the general provisions of FCC Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017.

The EUT was tested in the following operating mode:

- Continuously transmitting with a modulated carrier at maximum power in all required channels using the supported data rates/modulations types.

The field strength at the band edges was evaluated for each mode on the lowest and highest channels at the rated power for the channel under test.

For all modes, the EUT was configured in test mode using a software application. The application was used to enable a continuous transmission and to select the test channels as required. The client supplied instructions to configure the EUT. The customer supplied a document containing the setup instructions.

The worst cases for testing were identified for output power and spurious levels at the band edges which were selected based on preliminary testing that correspond to next data rates:

- 802.11a20: 6 Mbits
- 802.11n HT20: MCS0
- 802.11n HT40: MCS0
- 802.11ac VHT20: MCS0
- 802.11ac VHT40: MCS0
- 802.11ac VHT80: MCS0

WIFI FCC:

tx_test.sh -a wlan0 stop

a20 - Core0

tx_test.sh -a wlan0 36 0 -d x -r 6 20 –c US

tx_test.sh -a wlan0 40 0 -d x -r 6 20 -c US

tx_test.sh -a wlan0 48 0 -d x -r 6 20 -c US

n20 - Core0

tx_test.sh -a wlan0 36 0 -d x -h 0 20 -c US

tx_test.sh -a wlan0 40 0 -d x -h 0 20 -c US

tx_test.sh -a wlan0 48 0 -d x -h 0 20 -c US

ac20 - Core0

tx_test.sh -a wlan0 36 0 -d x -v 0 20 -c US

tx_test.sh -a wlan0 40 0 -d x -v 0 20 -c US

tx_test.sh -a wlan0 48 0 -d x -v 0 20 -c US

n40 - Core0

tx_test.sh -a wlan0 40 0 -d x -h 0 40 -c US

tx_test.sh -a wlan0 48 0 -d x -h 0 40 -c US

ac40 - Core0

tx_test.sh -a wlan0 40 0 -d x -v 0 40 -c US

tx_test.sh -a wlan0 48 0 -d x -v 0 40 -c US

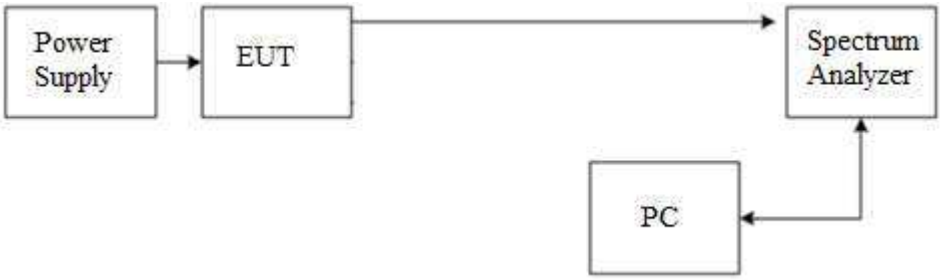
ac80 - Core0

tx_test.sh -a wlan0 40 0 -d x -v 0 80 -c US

CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and connected to the spectrum analyzer using a low loss RF cable. The reading in the spectrum analyzer is corrected taking into account the internal and external RF cable loss.

For all modes:



The DC supply voltage is applied using an external power supply.

RADIATED MEASUREMENTS

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (Bilog antenna for the range between 30 MHz to 1 GHz and 1 GHz-17 GHz Double ridge horn antenna) is situated at a distance of 3 and at a distance of 1m for the frequency range 17 GHz-40 GHz (17 GHz-40 GHz horn antenna).

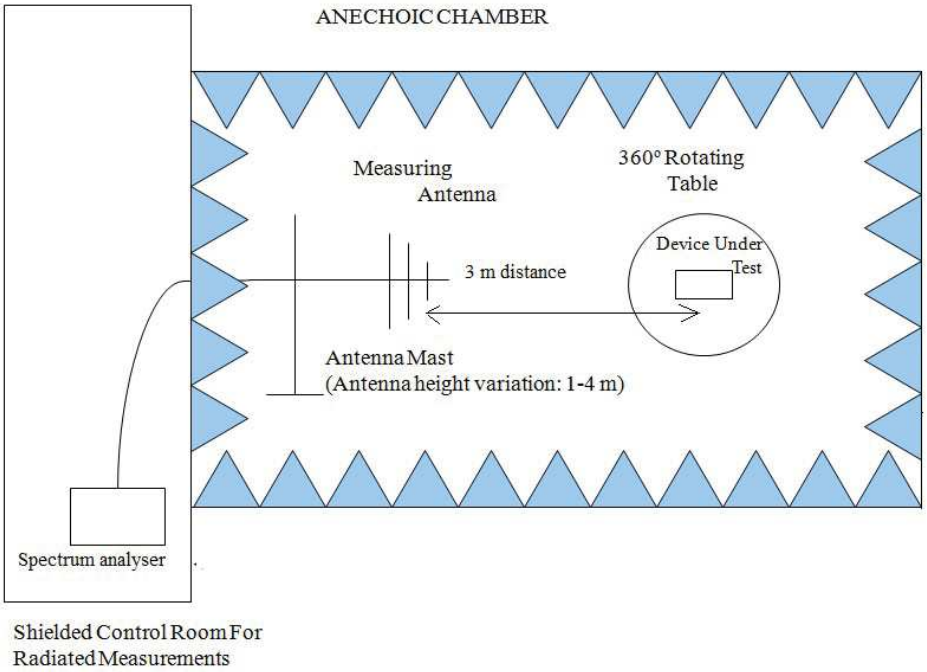
For radiated emissions in the range 17 GHz-40 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The EUT was placed at a height of 80 cm above the reference ground plane in the center of the chamber turntable to perform the measurements below 1GHz and the EUT was placed at a height of 1.5 meters above the test chamber floor in the center of the chamber turntable to perform the measurements above 1GHz. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

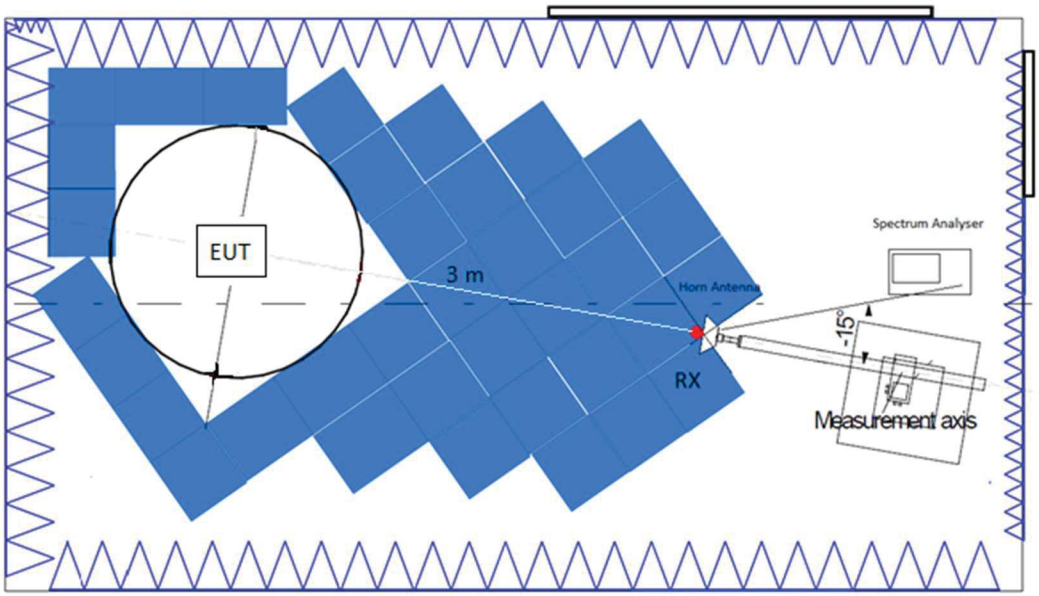
Measurements were made in both horizontal and vertical planes of polarization.

The final measured value, for the given emission, in the tables below incorporates the calibrated antenna factor and cable loss.

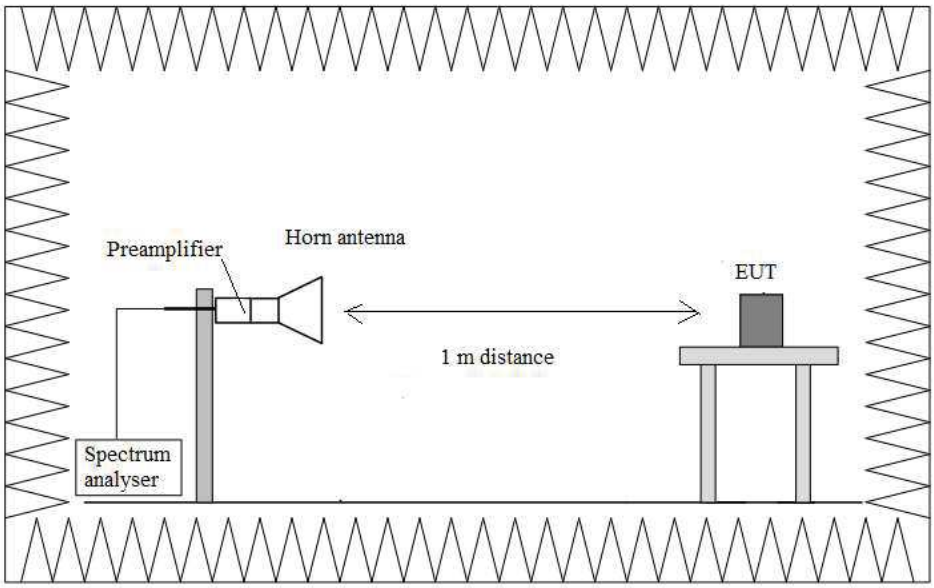
Radiated measurements setup f < 1 GHz.



Radiated measurements setup from 1 GHz to 17GHz.



Radiated measurements setup f > 17 GHz up to 40 GHz.



FCC 15.407 (a)(1)(ii) / RSS-247 6.2.1.1 Transmitter Maximum Conducted Output Power

SPECIFICATION:

FCC 15.407: For client devices in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24 dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-247: The maximum e.i.r.p. shall not exceed 200 mW (23 dBm) or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

RESULTS:

The maximum conducted output power was measured using the channel power integration method according to point E) 2) b) (Method SA-1) of 789033 D02 General UNII Test Procedures New Rules v02r01 when the duty cycle is >98% and the channel power integration method according to point E) 2) d) (Method SA-2) of 789033 D02 General UNII Test Procedures New Rules v02r01 when the duty cycle is <98%.

For data rates where the EUT was transmitting at <98% duty cycle, the duty calculated in Appendix A was added to the measured power in order to calculate the total average power during the actual transmission time.

The e.i.r.p. levels are calculated by adding the declared maximum antenna gain (dBi).

Preliminary tests determined the SISO worst case is CORE-0_Port3 Antenna.

- SISO – CORE-0_Port3 Antenna – Declared Maximum Antenna Gain: +2.5 dBi

For all modes of operation, the antenna gain is less than 6 dBi.

SISO – CORE-0_Port3 Antenna:

Mode 802.11 a20

	Low Channel 36 (5180 MHz)	Middle Channel 40 (5200 MHz)	High Channel 48 (5240 MHz)
Max. Conducted Power (dBm)	8.95	9.33	8.92
Duty Cycle Correction Factor (dB)	1.014		
Max. Conducted Power Corrected (dBm)	9.964	10.344	9.934
Max. EIRP power Corrected (dBm)	12.464	12.844	12.434
Measurement uncertainty (dB)	<±2.57		

Mode 802.11 n20 (HT20)

	Low Channel 36 (5180 MHz)	Middle Channel 40 (5200 MHz)	High Channel 48 (5240 MHz)
Max. Conducted Power (dBm)	8.98	9.08	8.82
Duty Cycle Correction Factor (dB)	1.085		
Max. Conducted Power Corrected (dBm)	10.065	10.165	9.905
Max. EIRP power Corrected (dBm)	12.565	12.665	12.405
Measurement uncertainty (dB)	<±2.57		

Mode 802.11 n40 (HT40)

	Low Channel 38 (5190 MHz)	High Channel 46 (5230 MHz)
Max. Conducted Power (dBm)	8.71	8.64
Duty Cycle Correction Factor (dB)	1.840	
Max. Conducted Power Corrected (dBm)	10.550	10.480
Max. EIRP power Corrected (dBm)	13.050	12.980
Measurement uncertainty (dB)	<±2.57	

Mode 802.11 ac80 (VHT80)

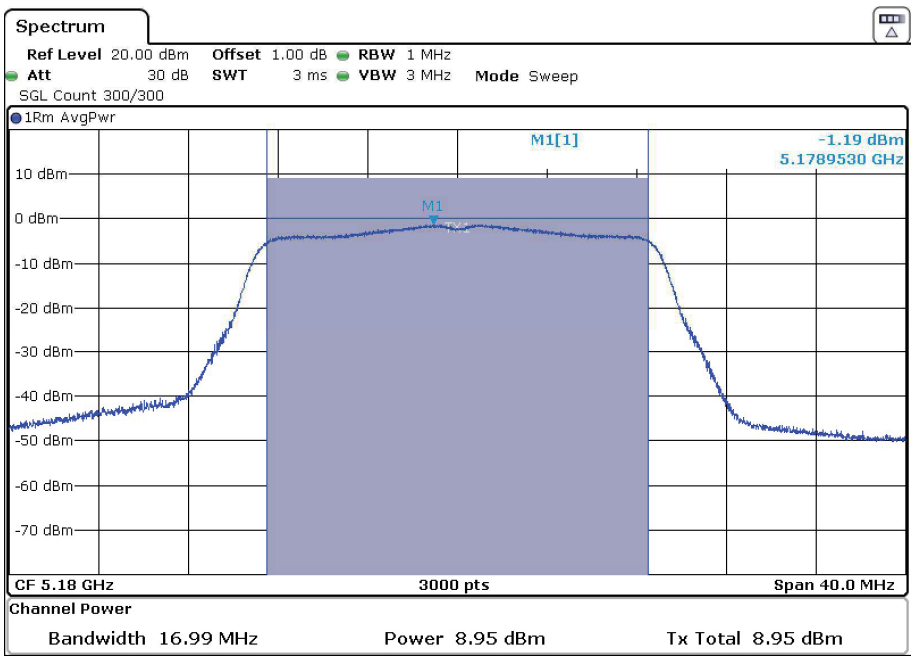
	Single Channel 42 (5210 MHz)
Max. Conducted Power (dBm)	5.89
Duty Cycle Correction Factor (dB)	3.448
Max. Conducted Power Corrected (dBm)	9.338
Max. EIRP power Corrected (dBm)	11.838
Measurement uncertainty (dB)	<±2.57

Verdict: PASS

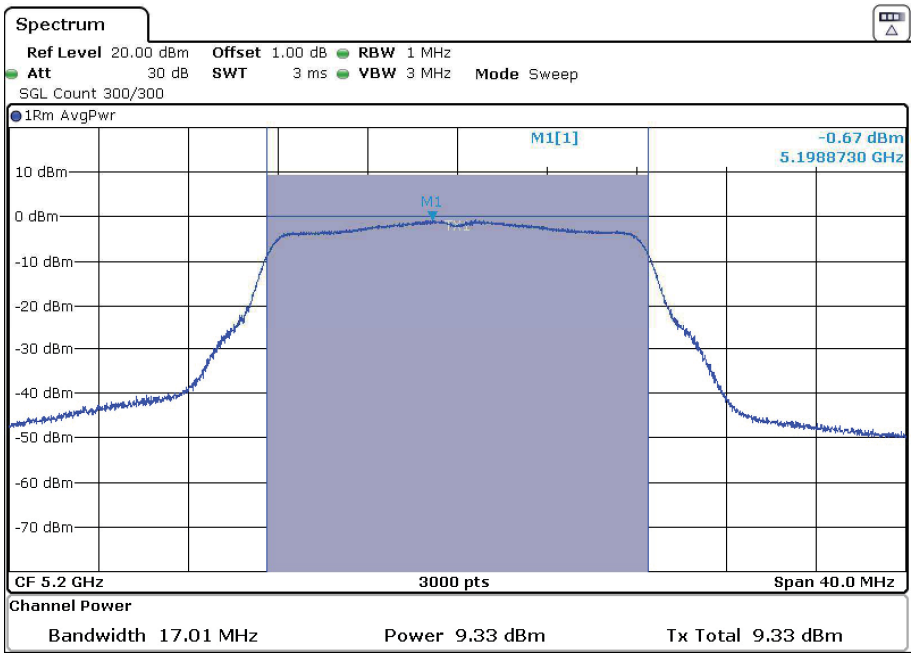
SISO – CORE-0_Port3 Antenna:

Mode 802.11 a20

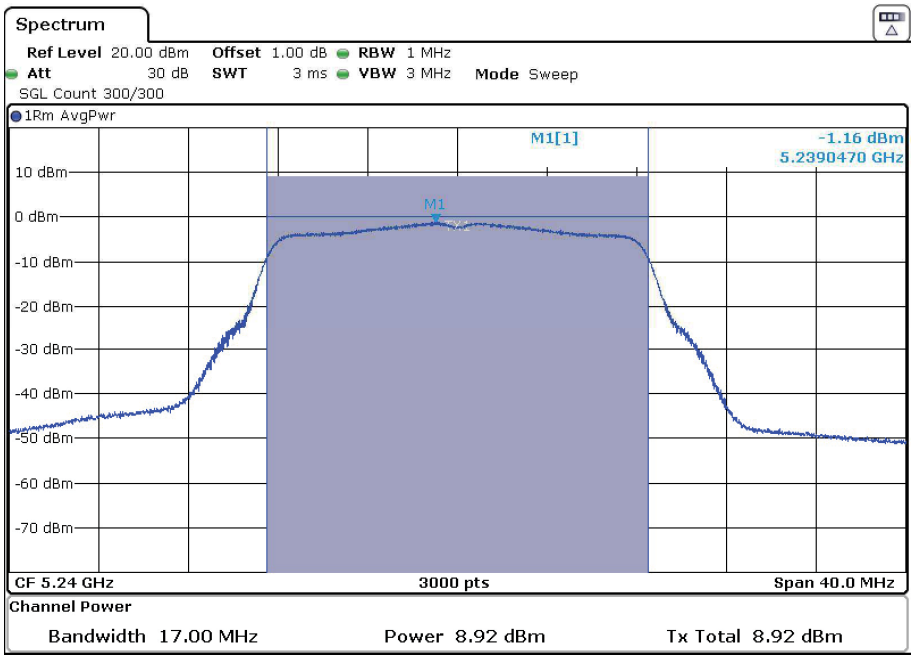
- Low Channel 36:



- Middle Channel 40:

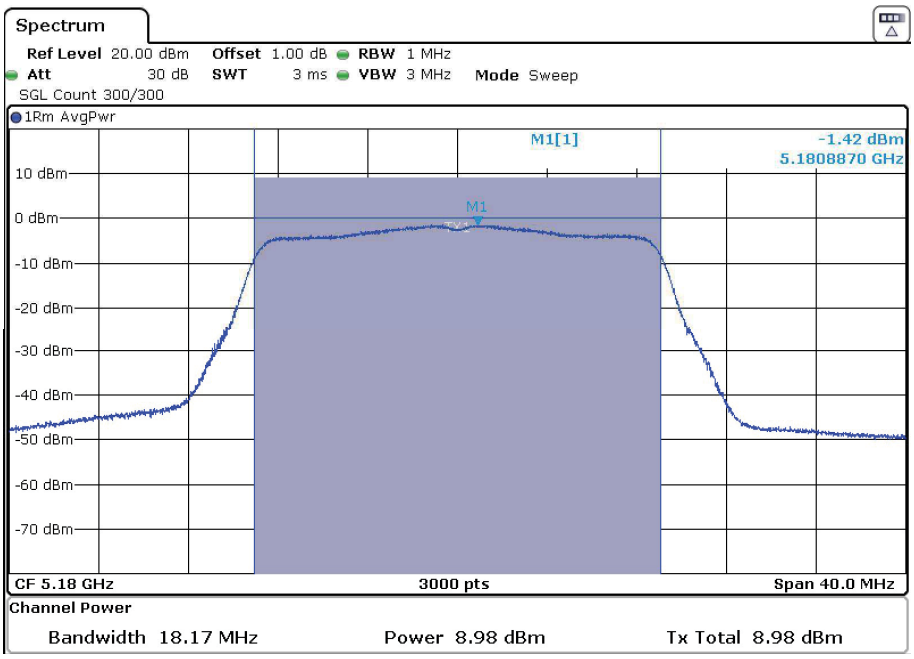


- High Channel 48:

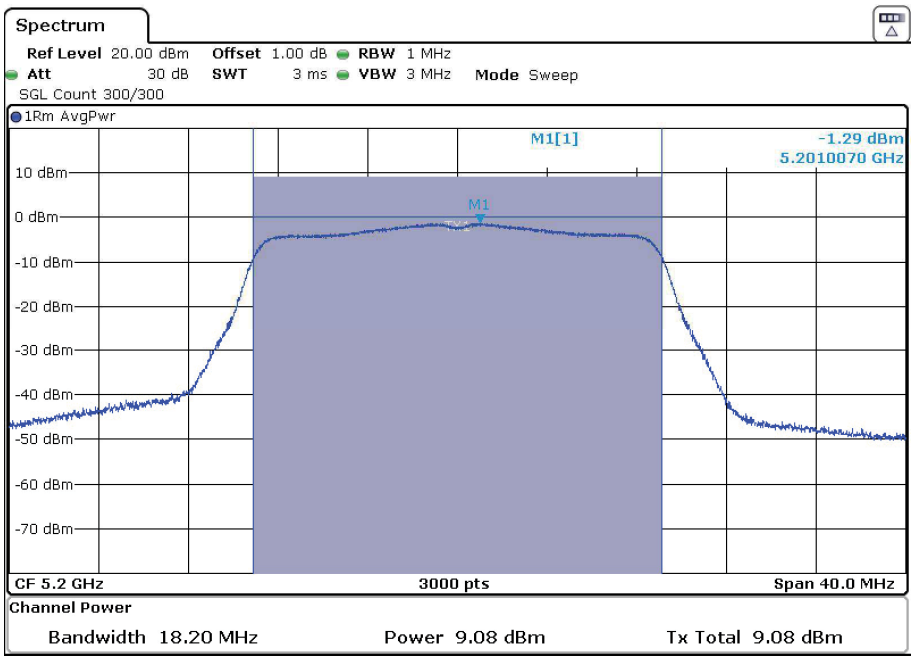


Mode 802.11 n20 (HT20)

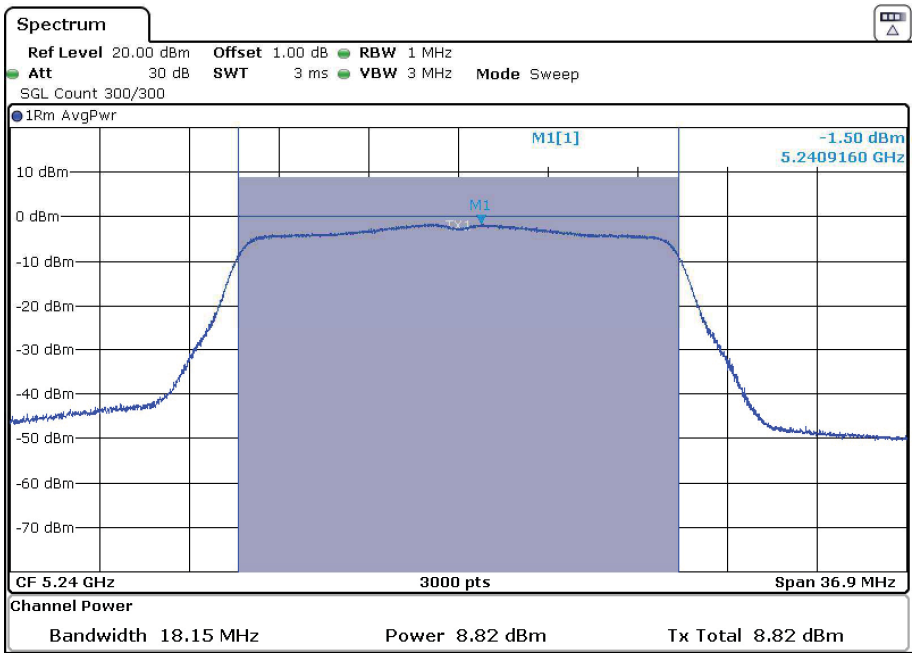
- Low Channel 36:



- Middle Channel 40:

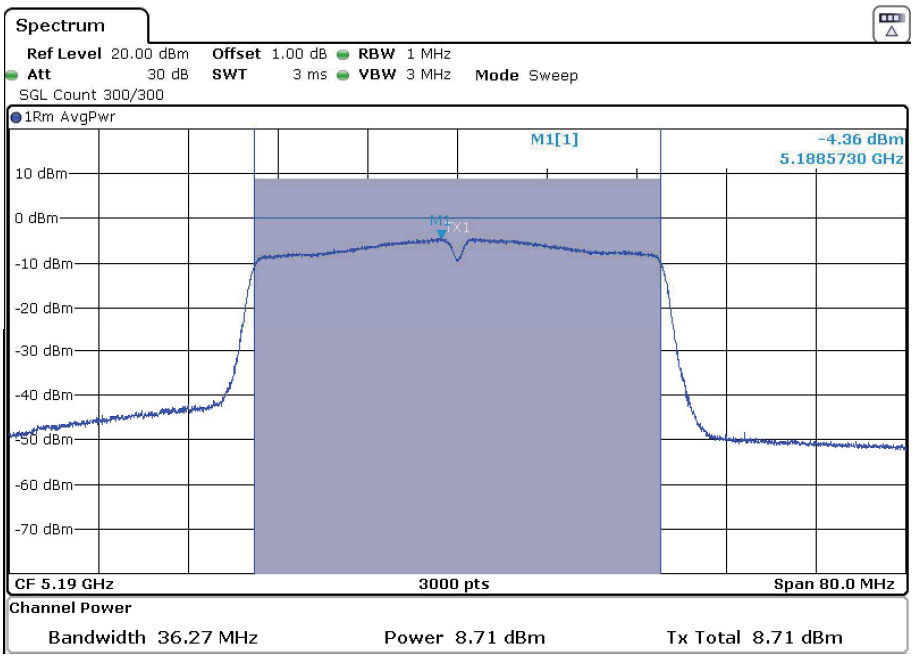


- High Channel 48:

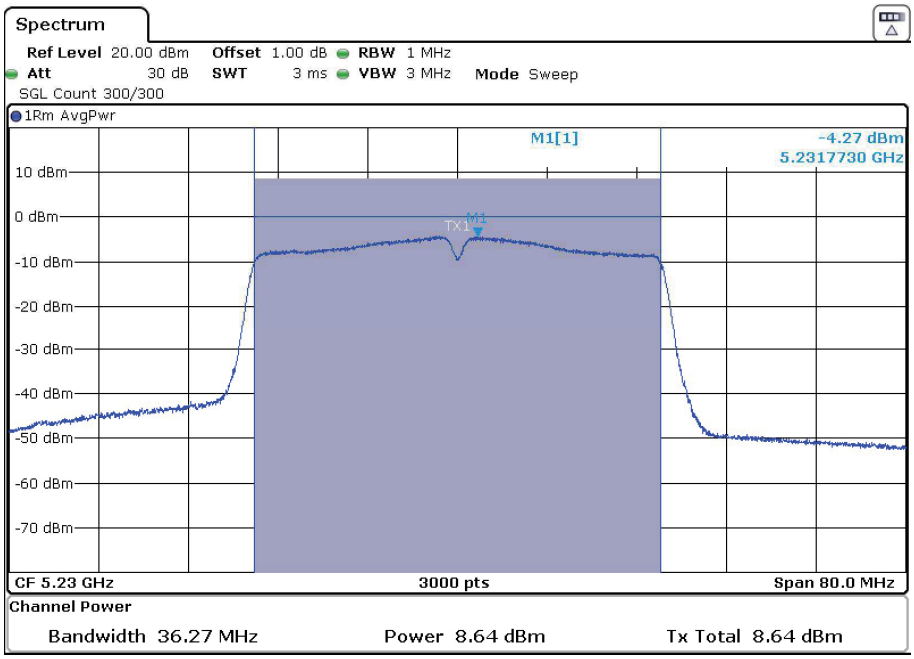


Mode 802.11 n40 (HT40)

- Low Channel 38:

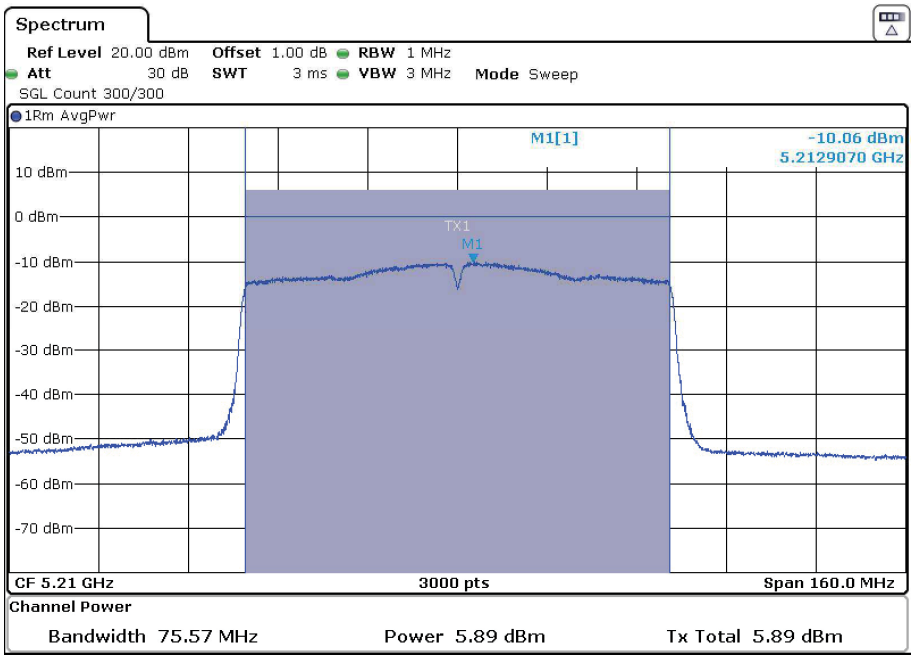


- High Channel 46:



Mode 802.11 ac80 (VHT80)

- Single Channel 42:



FCC 15.407 (a)(1)(ii) Density / RSS-247 6.2.1.1. Maximum Power Spectral Density

SPECIFICATION:

FCC 15.407: The maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-247: The e.i.r.p. spectral density shall not exceed 10dBm in any 1.0 MHz band.

RESULTS:

The maximum power spectral density (PSD) was measured using the method according to point F) referencing E.2.b) (Method SA-1) and E.2.b) (Method SA-2) of Guidance 789033 D02 General UNII Test Procedures New Rules v02r01.

The PSD test uses the same setup as the transmitter maximum conducted output power test. The result of the Peak PSD was measured by colocation a maker on the peak of the signal and the results are in the tables below.

The e.i.r.p. levels are calculated by adding the declared maximum antenna gain (dBi).

Preliminary tests determined the SISO worst case is CORE-0_Port3 Antenna.

- SISO – CORE-0_Port3 Antenna – Declared Maximum Antenna Gain: +2.5 dBi

For all modes of operation, the antenna gain is < 6 dBi.

SISO – CORE-0_Port3 – Antenna:

Mode 802.11 a20

	Low Channel 36 (5180 MHz)	Middle Channel 40 (5200 MHz)	High Channel 48 (5240 MHz)
Maximum Average PSD (dBm/MHz)	-1.19	-0.67	-1.16
Duty Cycle Correction Factor (dB)	1.01		
Maximum AveragePSD Corrected (dBm/MHz)	-0.18	0.34	-0.15
Maximum EIRP PSD Corrected (dBm/MHz)	2.32	2.84	2.35
Measurement uncertainty (dB)	<±2.57		

Mode 802.11 n20 (HT20)

	Low Channel 36 (5180 MHz)	Middle Channel 40 (5200 MHz)	High Channel 48 (5240 MHz)
Maximum Average PSD (dBm/MHz)	-1.42	-1.29	-1.50
Duty Cycle Correction Factor (dB)	1.08		
Maximum Average PSD Corrected (dBm/MHz)	-0.34	-0.21	-0.42
Maximum EIRP PSD Corrected (dBm/MHz)	2.16	2.29	2.08
Measurement uncertainty (dB)	<±2.57		

Mode 802.11 n40 (HT40)

	Low Channel 38 (5190 MHz)	High Channel 46 (5230 MHz)
Maximum Average PSD (dBm/MHz)	-4.36	-4.27
Duty Cycle Correction Factor (dB)	1.84	
Maximum Average PSD Corrected (dBm/MHz)	-2.52	-2.43
Maximum EIRP PSD Corrected (dBm/MHz)	-0.02	0.07
Measurement uncertainty (dB)	<±2.57	

Mode 802.11 ac80 (VHT80)

	Low Channel 42 (5210 MHz)
Maximum Average PSD (dBm/MHz)	-10.06
Duty Cycle Correction Factor (dB)	3.45
Maximum Average PSD Corrected (dBm/MHz)	-6.61
Maximum EIRP PSD Corrected (dBm/MHz)	-4.11
Measurement uncertainty (dB)	<±2.57

Verdict: PASS

FCC 15.407 (b)(1)(6) / RSS-247 6.2.1.2. Out of Band Radiated Emissions

SPECIFICATION:

For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz (68.23 dBµV/m at 3 m distance).

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 17 GHz-40 GHz and a distance of 3m for frequency range 30MHz-17GHz.

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

Test performed on the following worst case: 802.11ac20: MCS0. The worst case was determined by measuring the eirp density (radiated).

SISO CORE-0_Port3 Antenna:

Frequency range 30 MHz - 1 GHz

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	Measurement Uncertainty (dB)
31.9885	26.54	V	Quasi-Peak	<±4.99
66.9085	20.54	V	Quasi-Peak	<±4.99
500.0135	30.70	V	Quasi-Peak	<±4.99
624.9980	24.59	V	Quasi-Peak	<±4.99

Frequency range 1 - 40 GHz

The results in the next tables show the maximum measured levels in the 1-40 GHz frequency range.

The Low, Middle and High Channels were measured for out-of-band emissions for the worst mode.

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.

- **Mode 802.11 ac20** (worst case)

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

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
1.5640	46.01	H	Peak	<±4.98
10.3609	67.10	V	Peak	<±4.98

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

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
1.5642	43.80	H	Peak	<±4.98
10.3963	66.09	V	Peak	<±4.98
11.6734	50.95	V	Peak	<±4.98

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

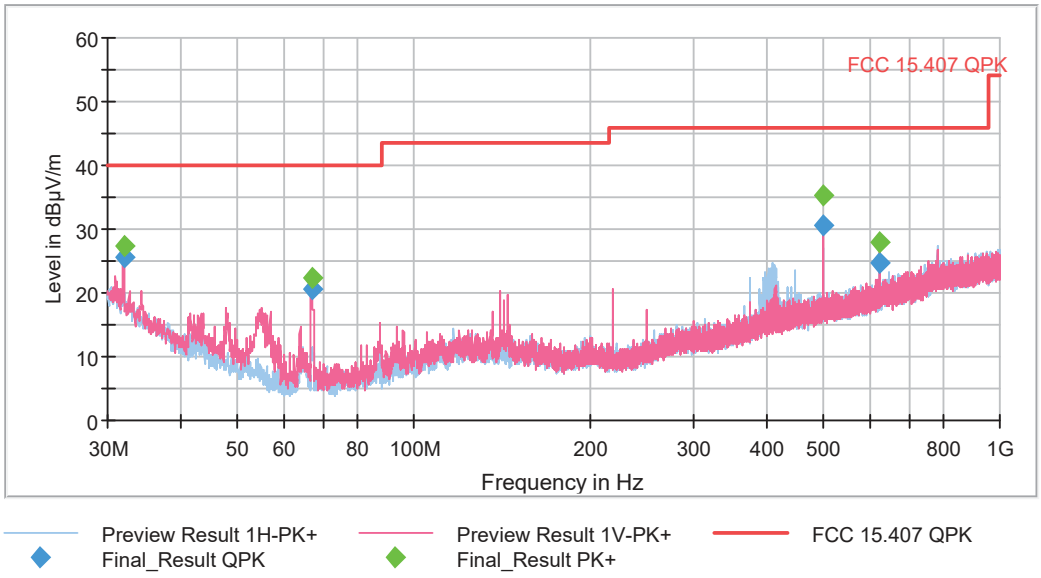
Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
1.5626	44.99	H	Peak	<±4.98
10.4794	67.05	V	Peak	<±4.98

Verdict: PASS

SISO CORE-0_Port3 Antenna:

FREQUENCY RANGE 30 MHz - 1 GHz

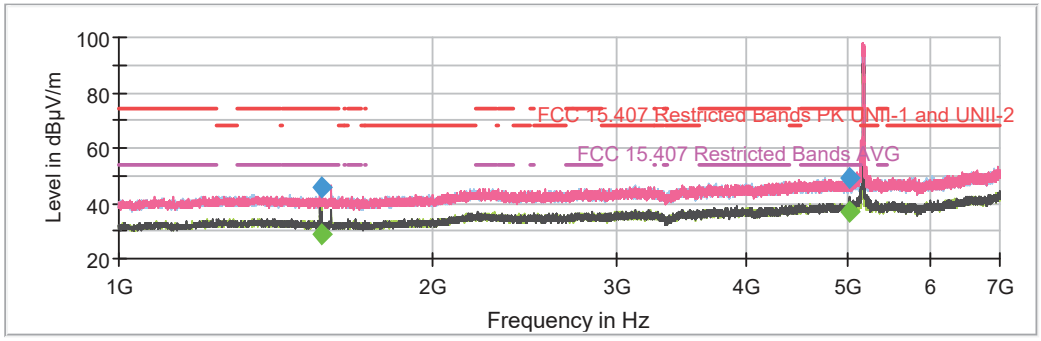
This plot is valid for the Low, Middle and High Channels and all the modulation modes.



- **Mode 802.11 a20.**

FREQUENCY RANGE 1 – 7 GHz (worst mode)

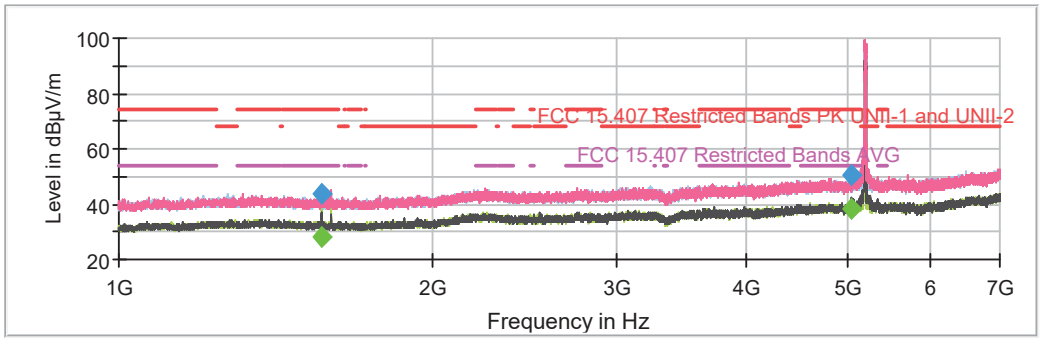
- Low Channel:



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

Note: The peak shown in the plot above the limit is the carrier frequency.

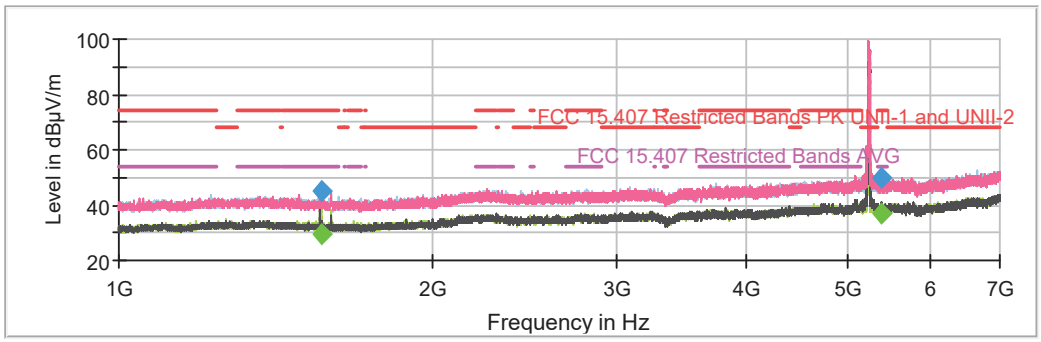
- Middle Channel:



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

Note: The peak shown in the plot above the limit is the carrier frequency.

- High Channel:

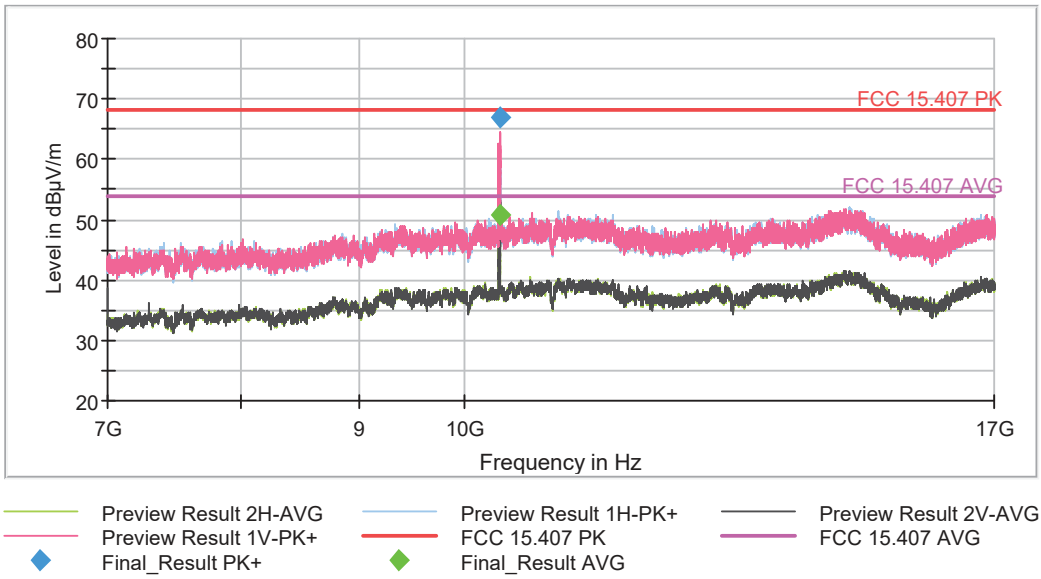


Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

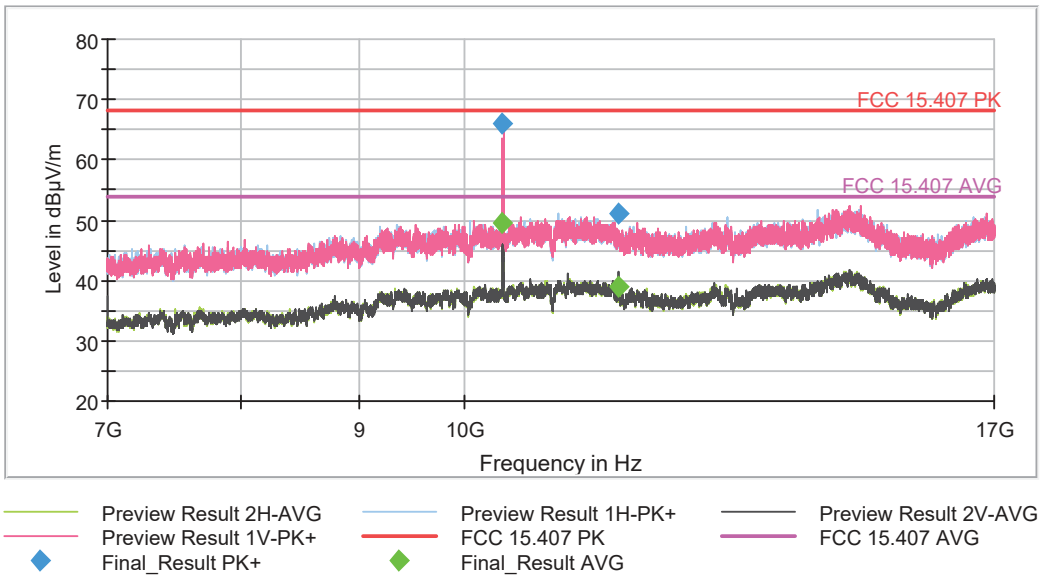
Note: The peak shown in the plot above the limit is the carrier frequency.

FREQUENCY RANGE 7 - 17 GHz. (worst mode)

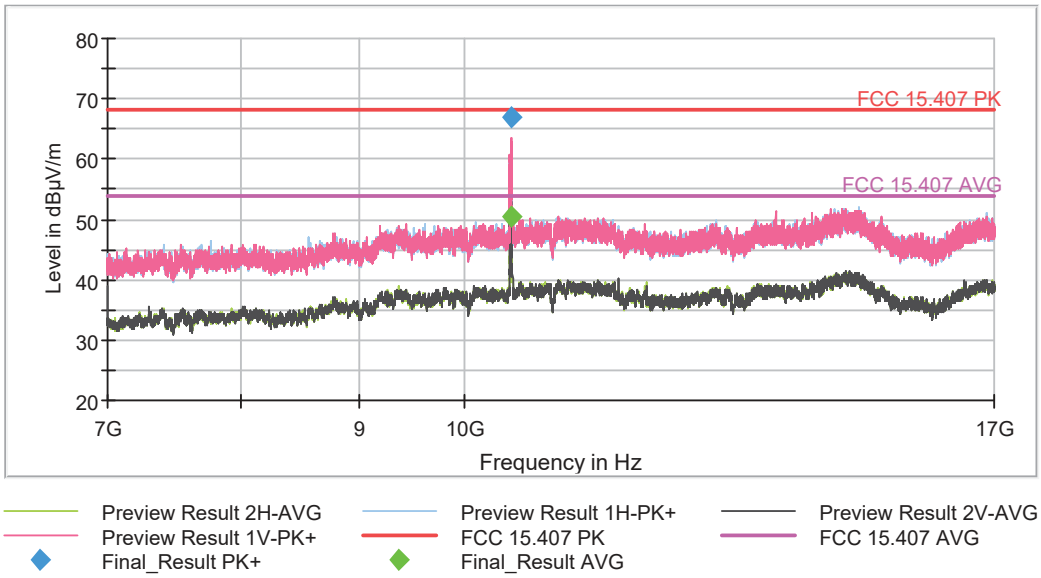
- Low Channel:



- Middle Channel:

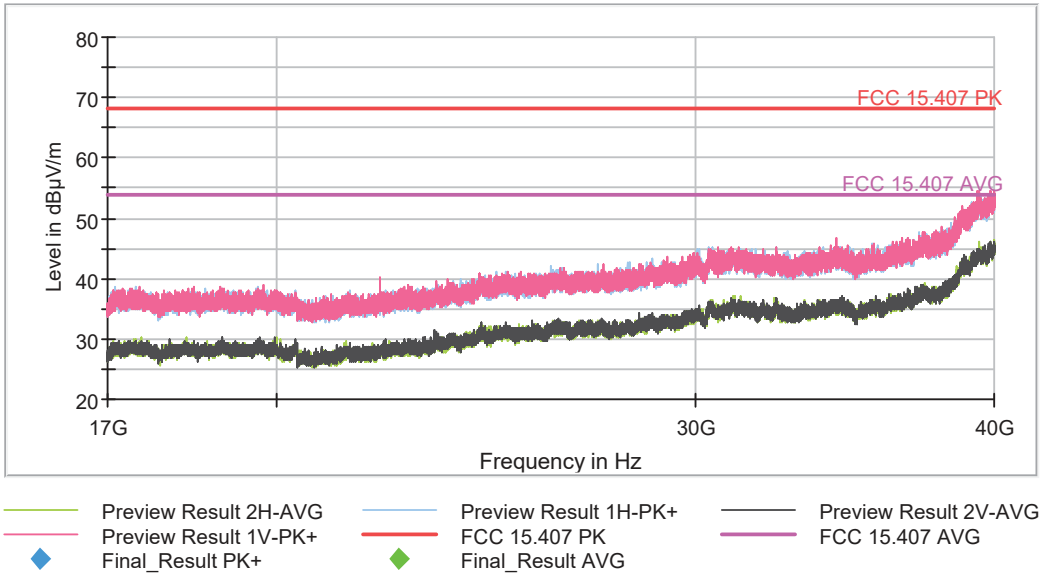


- High Channel:



FREQUENCY RANGE 17 - 40 GHz

This plot is valid for the Low, Middle and High Channels and all the modulation modes.



FCC 15.407 (b)(1) / RSS-247 6.2.1.2. Band Edge Radiated Emissions

SPECIFICATION:

For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz (68.23 dBµV/m at 3 m distance).

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

All emissions outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm/MHz. There are restricted bands of operation below band edge at 4.5-5.15 GHz also above the upper band edge at 5.35-5.46GHz therefore the provision of FCC Part 15.205 apply.

Field strength measurements using peak and average detector performed in the restricted bands below 5.15GHz and above 5.35 GHz.

Test performed on the following worst cases modes in all relevant tests channels:

- 802.11a: 6 Mbit/s / SISO on CORE-0_Port3 Antenna.
- 802.11n HT20: MCS0 / SISO on CORE-0_Port3 Antenna.
- 802.11ac VHT20: MCS0 / SISO on CORE-0_Port3 Antenna.
- 802.11n HT40: MCS0 / SISO on CORE-0_Port3 Antenna.
- 802.11ac VHT80: MCS0 / SISO on CORE-0_Port3 Antenna.

SISO CORE-0_Port3 Antenna:

- **Mode 802.11 a20**

- Lower Band Edge Channel 36 (5180 MHz): Inside band 4.50-5.15 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.0296	50.38	V	Peak	<±4.98

- Upper Band Edge Channel 48 (5240 MHz): Inside band 5.35-5.46 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.3928	49.14	V	Peak	<±4.98

- **Mode 802.11 n20 (HT20)**

- Lower Band Edge Channel 36 (5180 MHz): Inside band 4.50-5.15 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.0320	49.81	V	Peak	<±4.98

- Upper Band Edge Channel 48 (5240 MHz): Inside band 5.35-5.46 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.3926	47.69	V	Peak	<±4.98

- **Mode 802.11 ac20 (HT20)**

- Lower Band Edge Channel 36 (5180 MHz): Inside band 4.50-5.15 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.0264	49.35	V	Peak	<±4,98

- Upper Band Edge Channel 48 (5240 MHz): Inside band 5.35-5.46 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.3908	49.80	V	Peak	<±4,98

- **Mode 802.11 n40 (HT40)**

- Lower Band Edge Channel 38 (5190 MHz): Inside band 4.50-5.15 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.1496	59.72	V	Peak	<±4.98
	40.78		Average	<±4.98

- Upper Band Edge Channel 46 (5230 MHz): Inside band 5.35-5.46 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.3910	47.70	H	Peak	<±4.98

- **Mode 802.11 ac40 (VHT40)**

- Lower Band Edge Channel 38 (5190 MHz): Inside band 4.50-5.15 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.1370	56.39	V	Peak	<±4.98
	37.18		Average	

- Upper Band Edge Channel 46 (5230 MHz): Inside band 5.35-5.46 GHz.

No radiated spurious frequencies detected at less than 20 dB below the limit.

- **Mode 802.11 ac80 (VHT80)**

- Lower Band Edge Channel 42 (5210 MHz): Inside band 4.50-5.15 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.1440	49.15	V	Peak	<±4.98

- Upper Band Edge Channel 42 (5210 MHz): Inside band 5.35-5.46 GHz.

Radiated spurious frequencies detected at less than 20 dB below the limit:

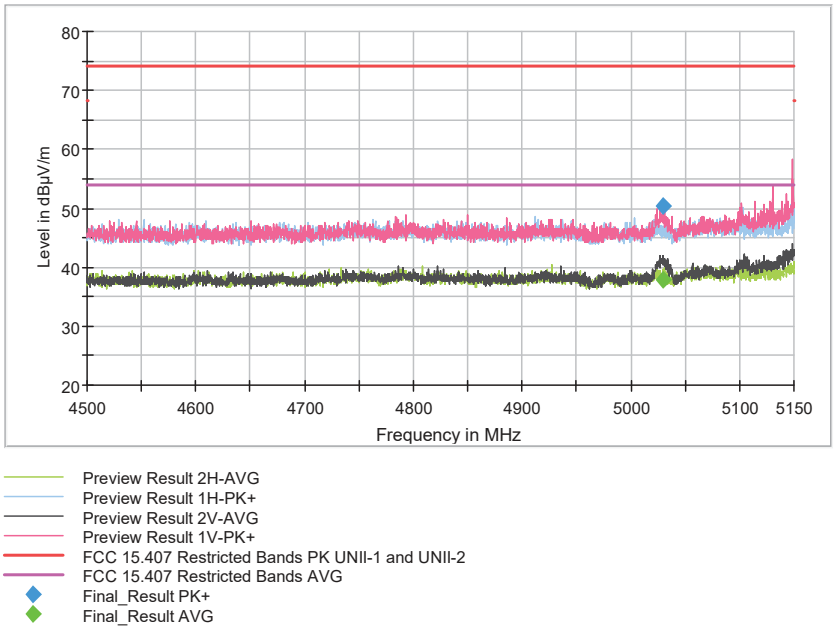
Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
5.3554	49.15	H	Peak	<±4.98

Verdict: PASS

- **Mode 802.11 a20**

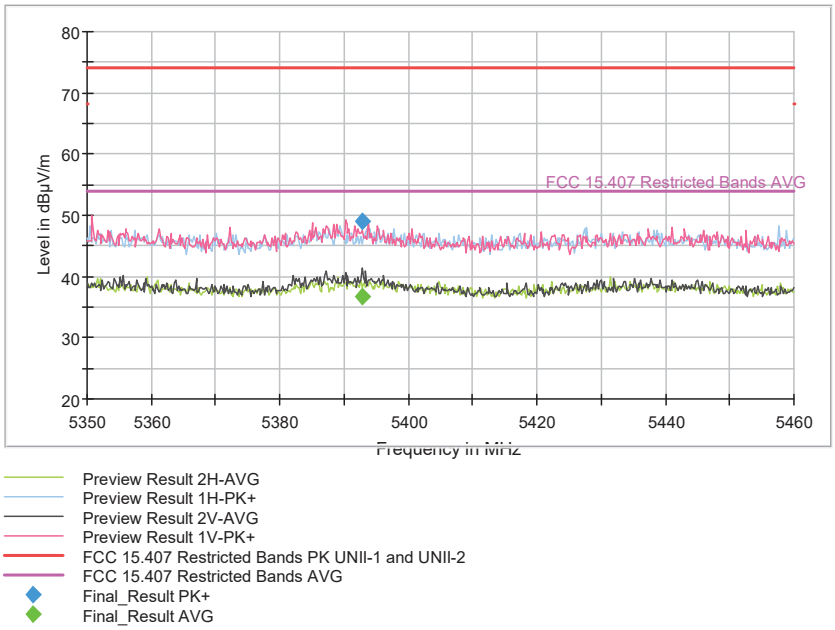
Radiated spurious emissions at band-edges and inside adjacent band 4.50 - 5.15 GHz

- Lower Band Edge Channel 36 (4500 to 5150 MHz)



Radiated spurious emissions at band-edges and inside adjacent band 5.35 - 5.46 GHz

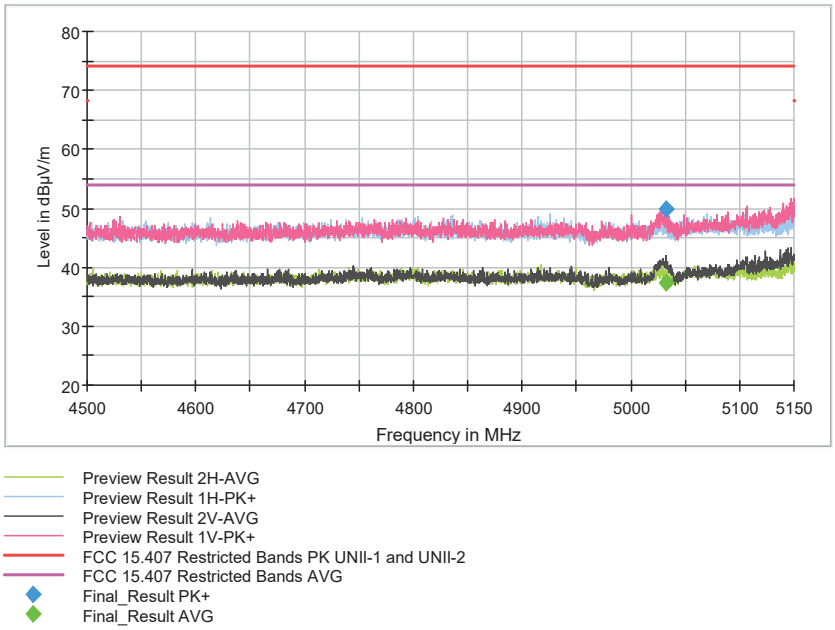
- Upper Band Edge Channel 48 (5350 to 5460 MHz)



- **Mode 802.11 n20 (HT20)**

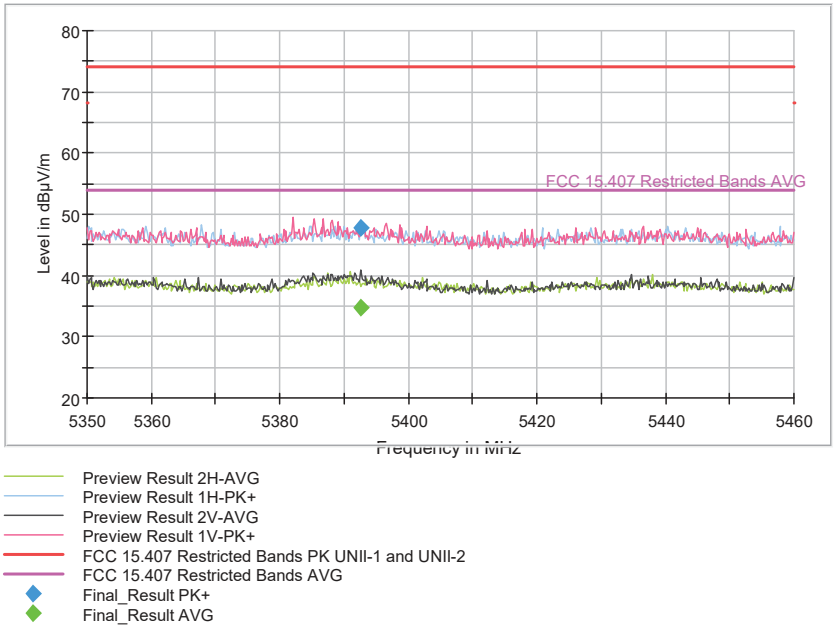
Radiated spurious emissions at band-edges and inside adjacent band 4.50 - 5.15 GHz

- Lower Band Edge Channel 36 (4500 to 5150 MHz)



Radiated spurious emissions at band-edges and inside adjacent band 5.35 - 5.46 GHz

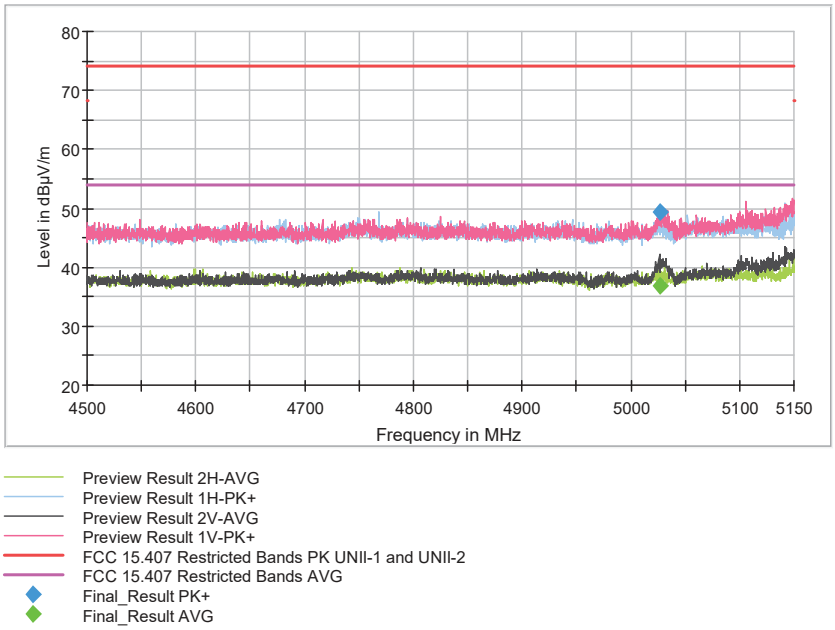
- Upper Band Edge Channel 48 (5350 to 5460 MHz)

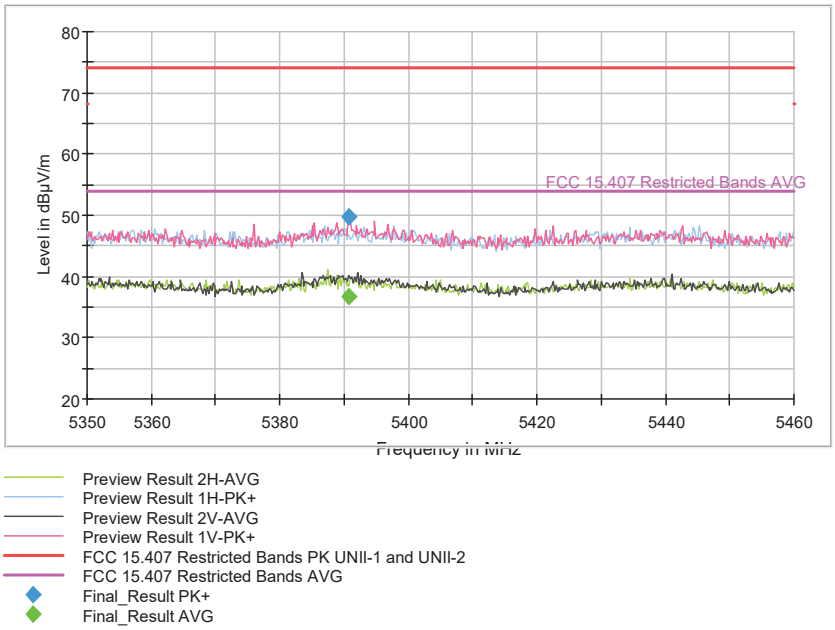


- **Mode 802.11 ac20 (VHT20)**

Radiated spurious emissions at band-edges and inside adjacent band 4.50 - 5.15 GHz

- Lower Band Edge Channel 36 (4500 to 5150 MHz)



Radiated spurious emissions at band-edges and inside adjacent band 5.35 - 5.46 GHz

- Upper Band Edge Channel 48 (5350 to 5460 MHz)