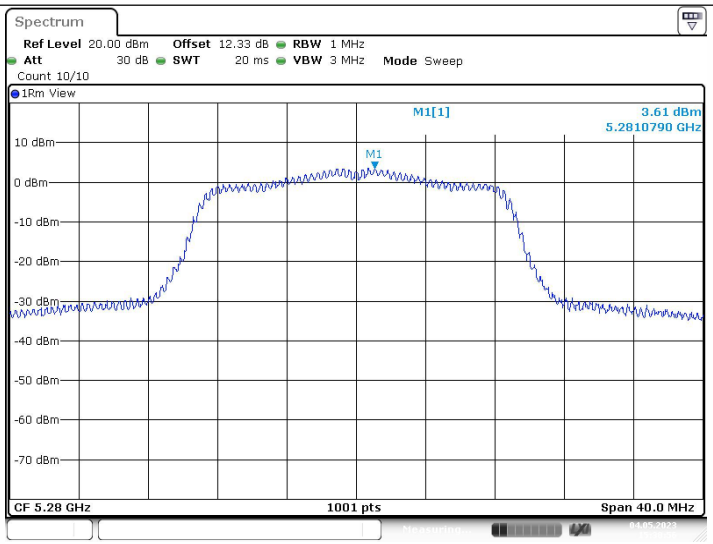

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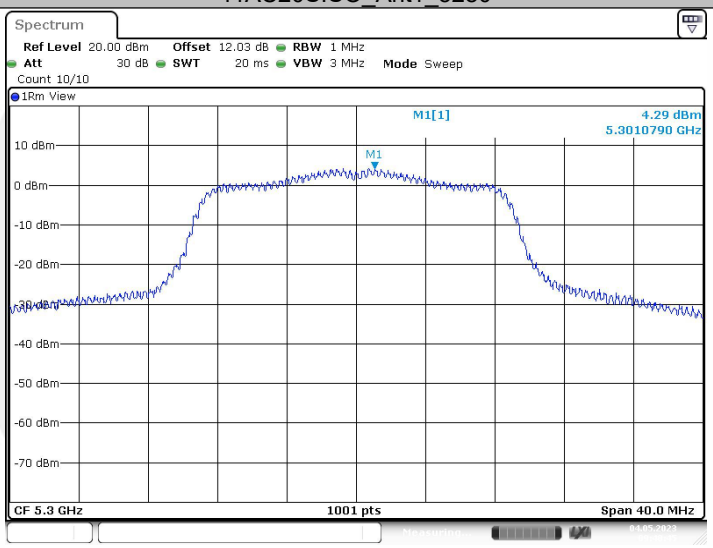

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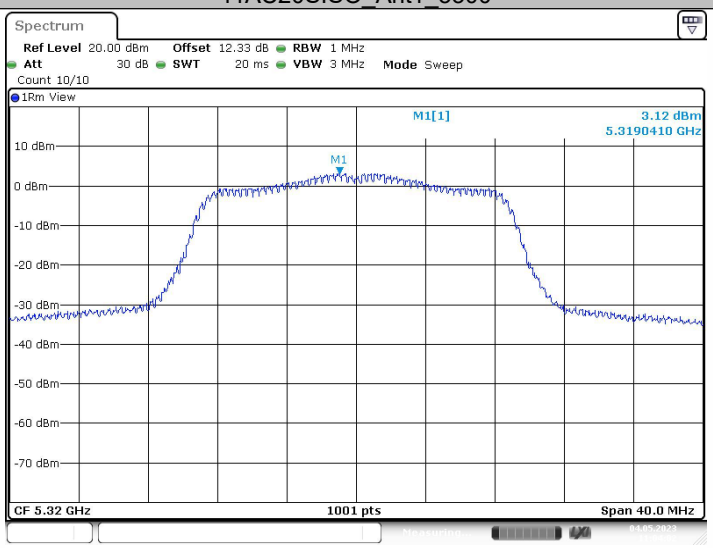

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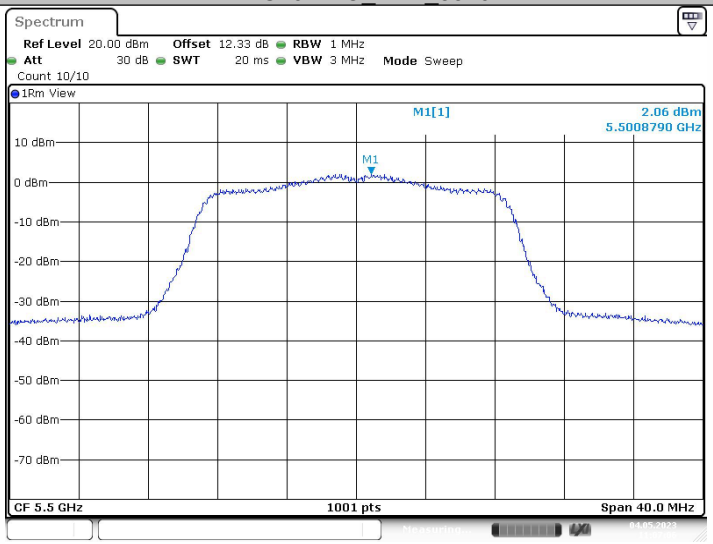

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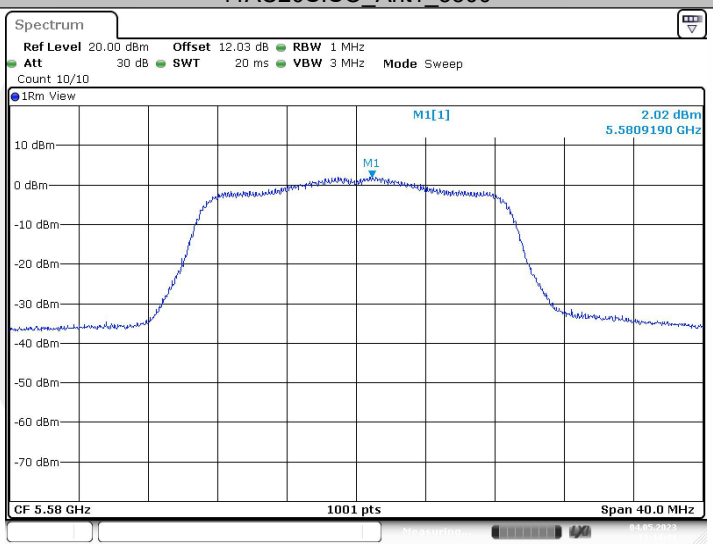

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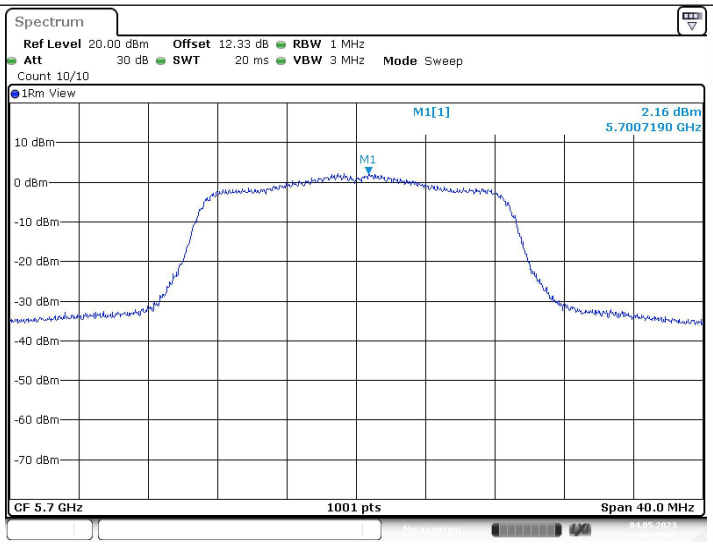

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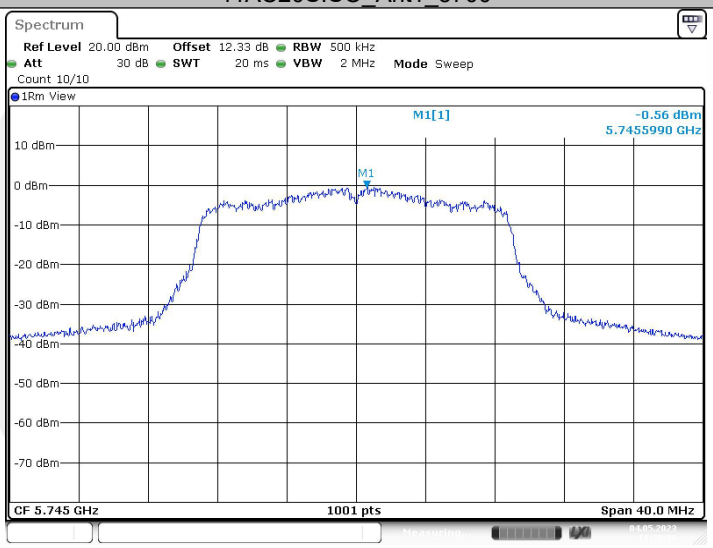

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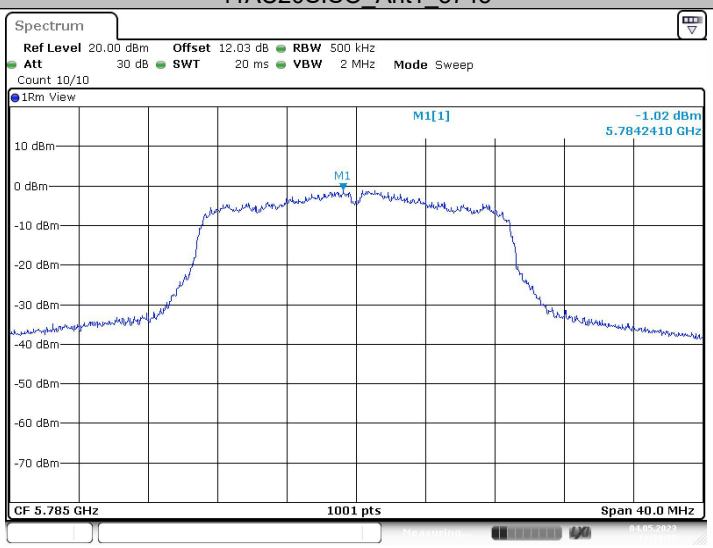

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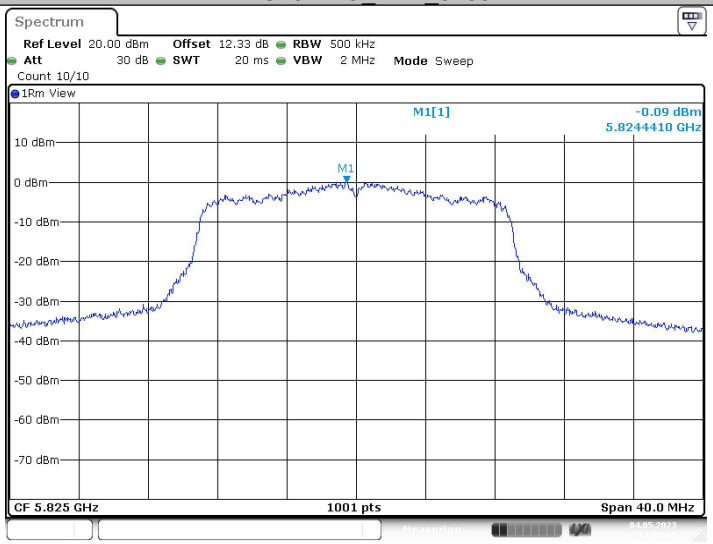

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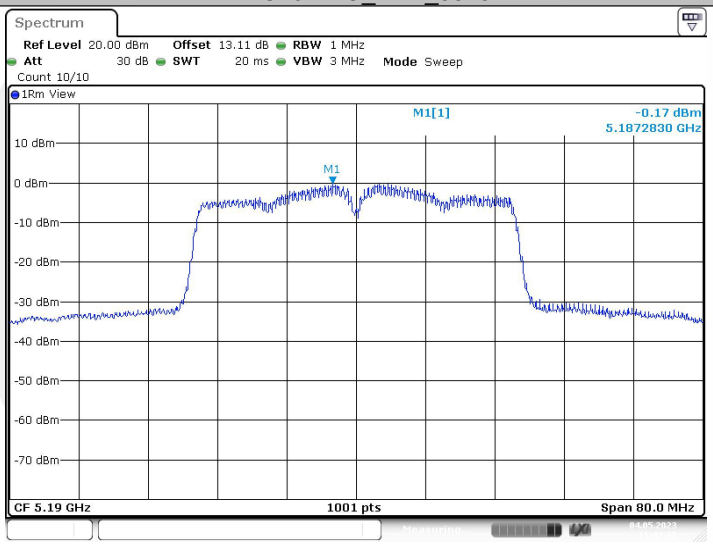

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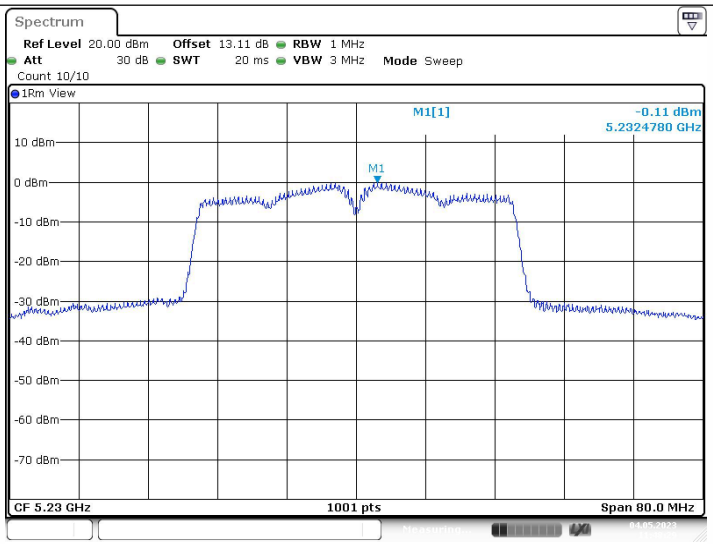

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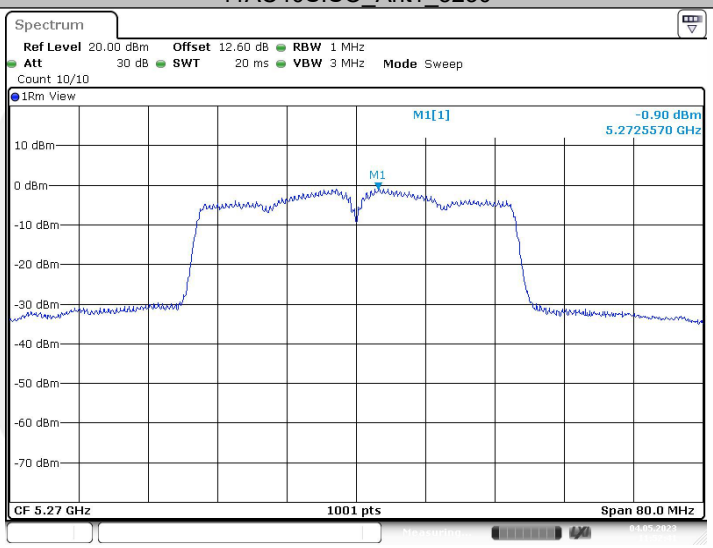

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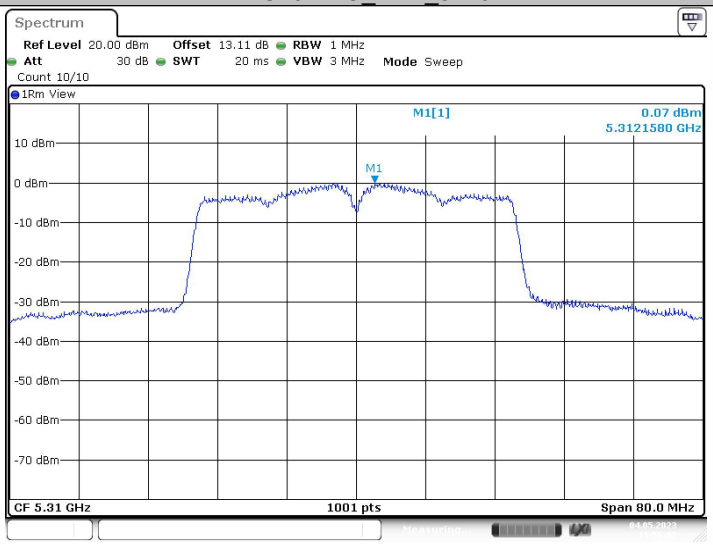

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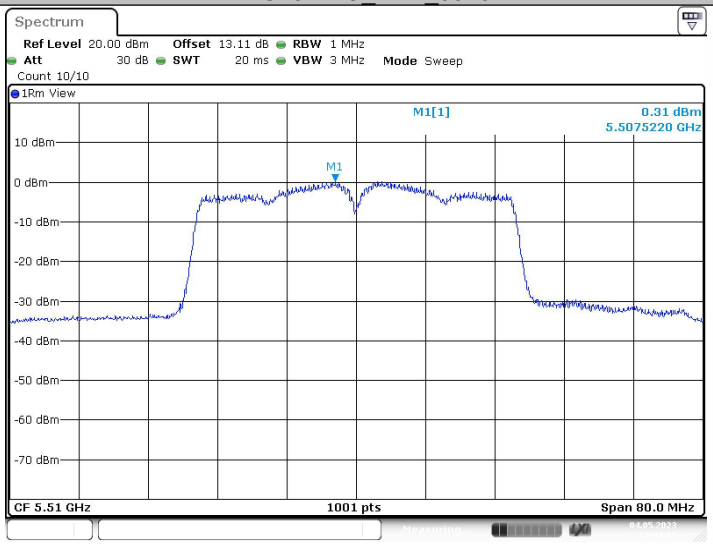

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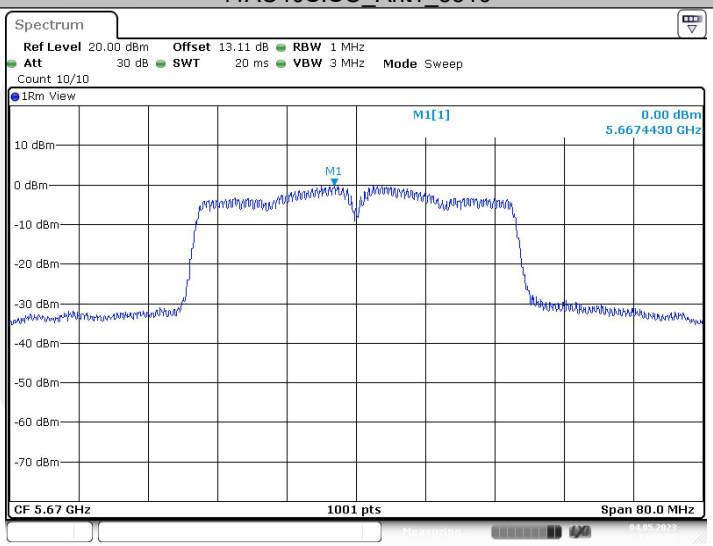

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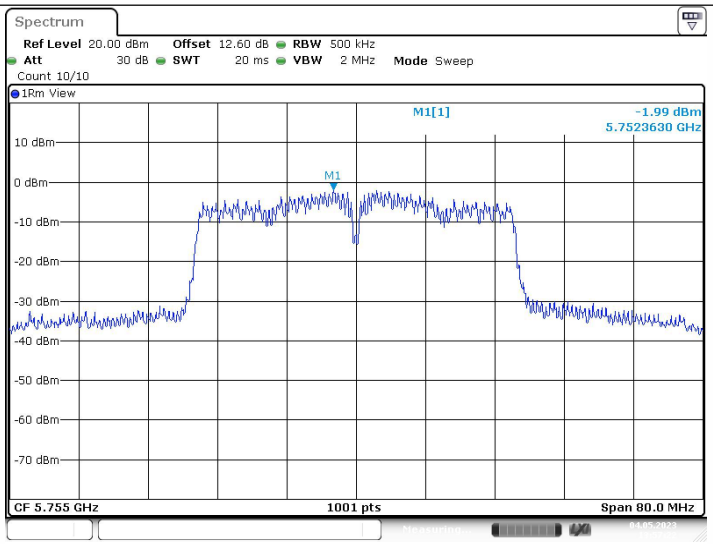

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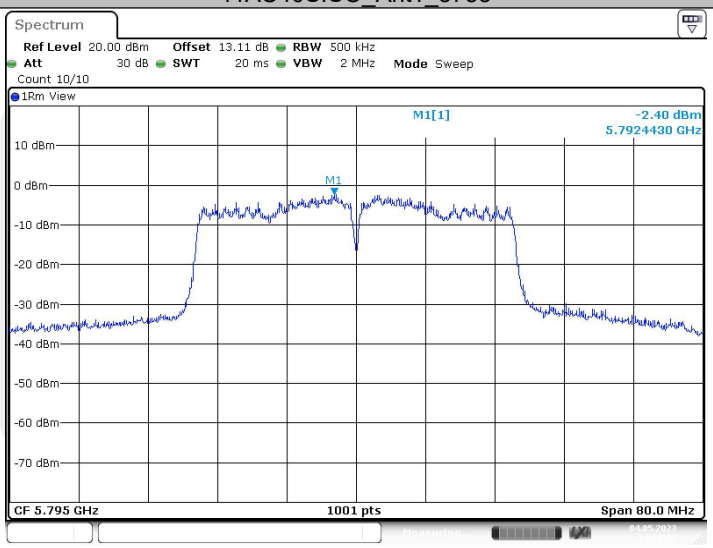

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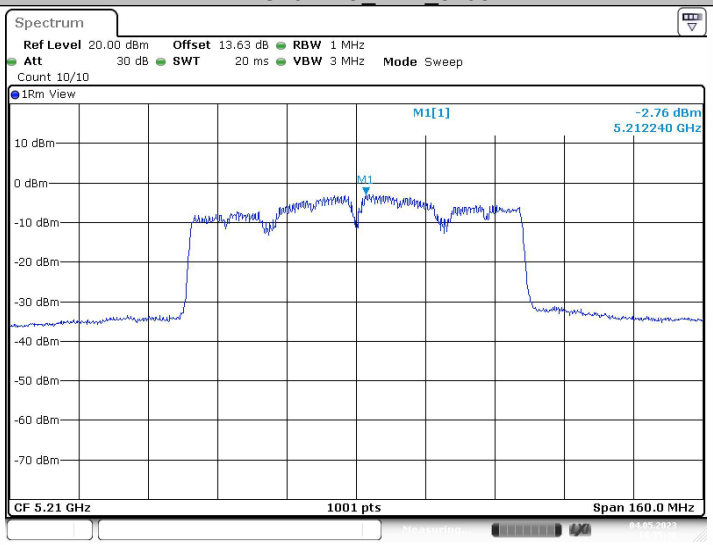

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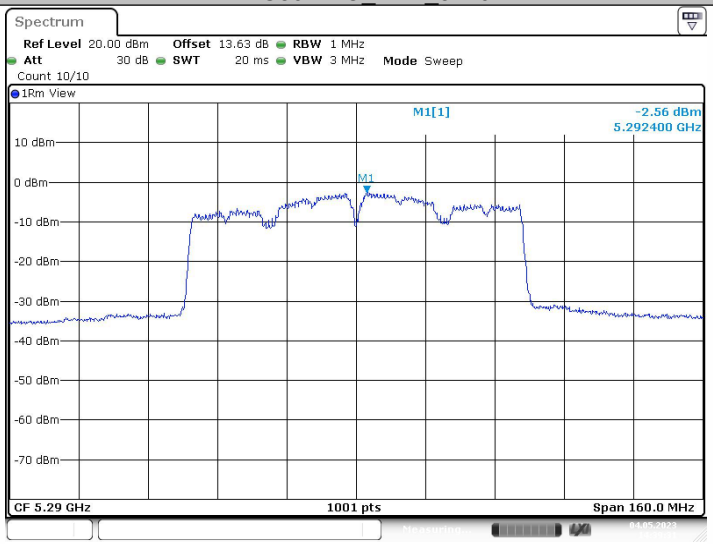

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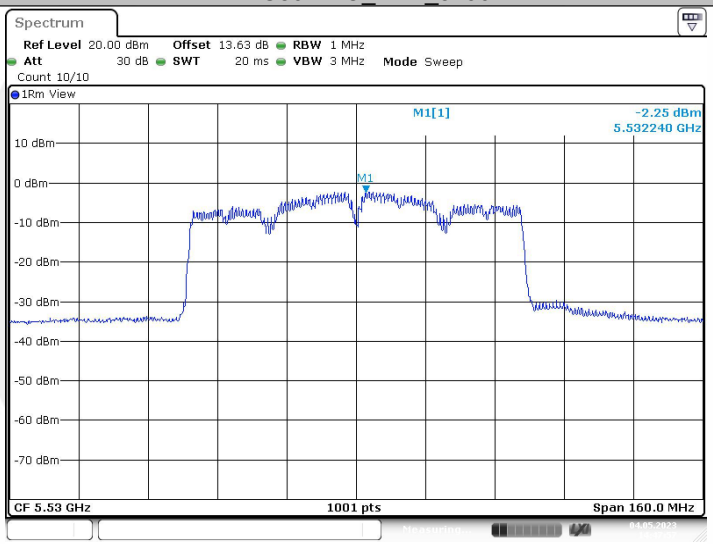

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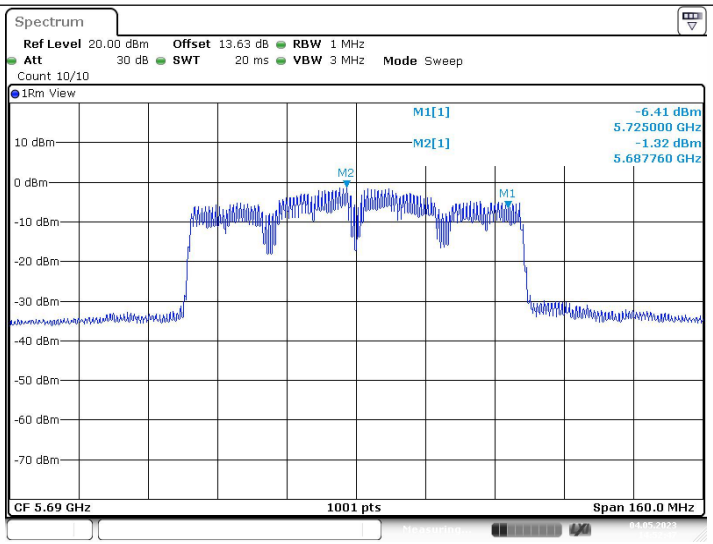

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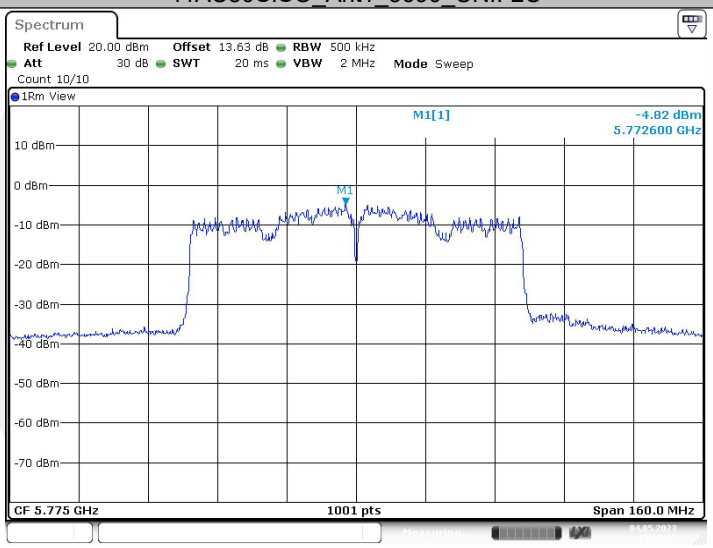


Date: 4.MAY.2023 15:05:05

11AC80SISO_Ant1_5775

8.4 UNDESIRABLE RADIATED SPURIOUS EMISSION

8.4.1 Applicable Standard

According to FCC Part 15.407 (b)
According to 789033 D02 Section II(G)

8.4.2 Conformance Limit

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209
The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	24000/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

The provisions of §15.205 apply to intentional radiators operating under this section,15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

8.4.3 Test Configuration

Test according to clause 6.2 radio frequency test setup

8.4.4 Test Procedure

■ Unwanted Emissions Measurements below 1000 MHz

Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.
The EUT was placed on a turn table which is 0.8m above ground plane.
And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
Repeat above procedures until all frequency measured was complete.
We use software control the EUT, Let EUT hopping on and transmit with highest power, All the modes have been tested and the worst result was reported.
Use the following spectrum analyzer settings:
Set RBW=120kHz for f < 1 GHz(30MHz to 1GHz), 200Hz for f<150KHz(9KHz to 150KHz), 9KHz for <30MHz (150KHz to 30KHz).
Set the VBW > RBW.
Detector = Peak.
Trace mode = max hold.
Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.
Repeat above procedures until all frequency measured was complete.

■ Unwanted Maximum peak Emissions Measurements above 1000 MHz

Maximum emission levels are measured by setting the analyzer as follows:
RBW = 1 MHz.
VBW ≥ 3 MHz.
Detector = Peak.
Sweep time = auto.
Trace mode = max hold.
Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

■ Unwanted Average Emissions Measurements above 1000 MHz

Method VB (Averaging using reduced video bandwidth): Alternative method.
RBW = 1 MHz.
Video bandwidth. • If the EUT is configured to transmit with duty cycle ≥ 98 percent, set VBW ≤ RBW/100 (i.e., 10 kHz) but not less than 10 Hz.
• If the EUT duty cycle is < 98 percent, set VBW ≥ 1/T, where T is defined in section II.B.1.a).
Video bandwidth mode or display mode • The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).
• As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode.
Detector = Peak.
Sweep time = auto.
Trace mode = max hold.
Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of 1/x, where x is the duty cycle. For example, use at least 200 traces if the duty cycle is 25 percent. (If a specific emission is demonstrated to be continuous—i.e., 100 percent duty cycle—rather than turning on and off with the transmit cycle, at least 50 traces

shall be averaged.)

■ Band edge measurements.

Unwanted band-edge emissions may be measured using either of the special band-edge measurement techniques (the marker-delta or integration methods) described below. Note that the marker-delta method is primarily a radiated measurement technique that requires the 99% occupied bandwidth edge to be within 2 MHz of the authorized band edge, whereas the integration method can be used in either a radiated or conducted measurement without any special requirement with regards to the displacement of the unwanted emission(s) relative to the authorized bandwidth.

Marker-Delta Method.

The marker-delta method, as described in ANSI C63.10, can be used to perform measurements of the radiated unwanted emissions level of emissions provided that the 99% occupied bandwidth of the fundamental is within 2 MHz of the authorized band-edge.

8.4.5 Test Results

The voltage 120V &240V and the modes 802.11a/n/ac has been tested and the worst result recorded as below

■ ☒ For Undesirable radiated Spurious Emission in U-NII – 1
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:
: ☒ Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Test mode: 802.11a Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11493.2	V	59.52	-35.71	-27	8.71
14508.6	V	62.96	-32.27	-27	5.27
17492.1	V	67.11	-28.12	-27	1.12
11376.3	H	60.02	-35.21	-27	8.21
14614.8	H	62.98	-32.25	-27	5.25
17517.6	H	67.31	-27.92	-27	0.92

Test mode: 802.11a Frequency(MHz): 5200

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11536.7	V	60.70	-34.53	-27	7.53
14666.3	V	63.23	-32	-27	5
17489.7	V	68.05	-27.18	-27	0.18
11400.7	H	60.36	-34.87	-27	7.87
14530.2	H	62.85	-32.38	-27	5.38
17515.2	H	67.74	-27.49	-27	0.49

Test mode: 802.11a Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11528.2	V	60.19	-35.04	-27	8.04
14530.2	V	63.70	-31.53	-27	4.53
17481.2	V	67.57	-27.66	-27	0.66
11494.2	H	60.54	-34.69	-27	7.69
14589.7	H	62.90	-32.33	-27	5.33
17506.7	H	68.16	-27.07	-27	0.07

Note: (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Frequency: 5180							
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Margin (dB)	
	H/V	PK	AV	PK	AV	PK	AV
11493.2	V	59.52	49.13	74	54	14.48	4.87
14508.6	V	62.96	48.74	74	54	11.04	5.26
17492.1	V	67.11	47.14	74	54	6.89	6.86
11376.3	H	60.02	48.21	74	54	13.98	5.79
14614.8	H	62.98	49.78	74	54	11.02	4.22
17517.6	H	67.31	46.61	74	54	6.69	7.39

Frequency: 5200							
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Margin (dB)	
	H/V	PK	AV	PK	AV	PK	AV
11536.7	V	60.70	41.83	74	54	13.30	12.17
14666.3	V	63.23	43.52	74	54	10.77	10.48
17489.7	V	68.05	45.43	74	54	5.95	8.57
11400.7	H	60.36	41.10	74	54	13.64	12.90
14530.2	H	62.85	43.89	74	54	11.15	10.11
17515.2	H	67.74	45.68	74	54	6.26	8.32

Frequency: 5240							
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Margin (dB)	
	H/V	PK	AV	PK	AV	PK	AV
11528.2	V	60.19	42.20	74	54	13.81	11.80
14530.2	V	63.70	43.92	74	54	10.30	10.08
17481.2	V	67.57	45.30	74	54	6.43	8.70
11494.2	H	60.54	41.80	74	54	13.46	12.20
14589.7	H	62.90	44.60	74	54	11.10	9.40
17506.7	H	68.16	45.88	74	54	5.84	8.12

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11a Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5147.4	H	60.22	-35.01	-27	Pass
5149.67	V	61.34	-33.89	-27	Pass

Test mode: 802.11a Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5351.81	H	52.90	-42.33	-27	Pass
5351.69	V	52.41	-42.82	-27	Pass

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Test mode: 802.11a Frequency(MHz): 5180

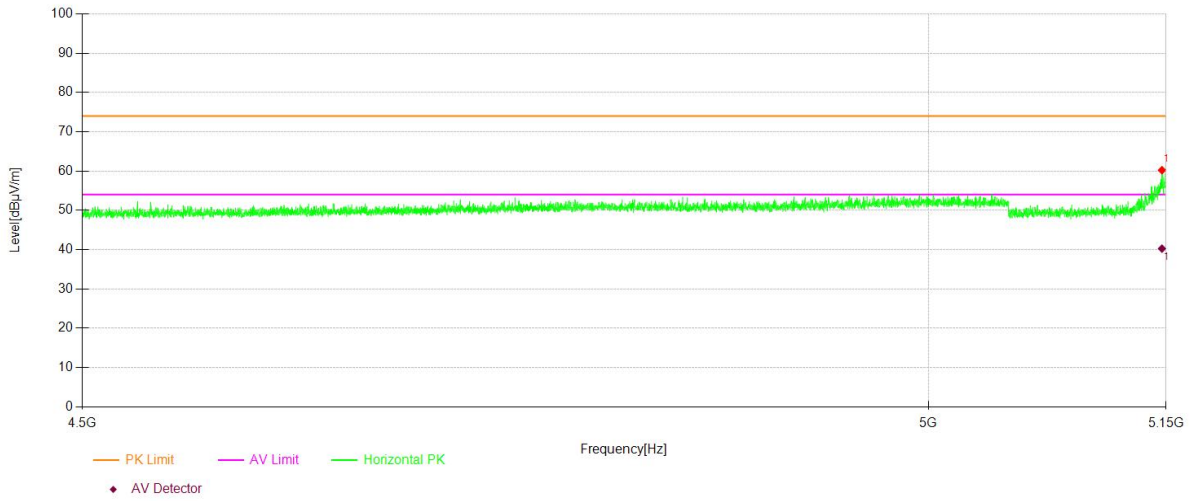
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over(dB)
5147.4	H	60.22	74	13.78	40.25	54	13.75
5149.67	V	61.34	74	12.66	44.73	54	9.27

Test mode: 802.11a Frequency(MHz): 5240

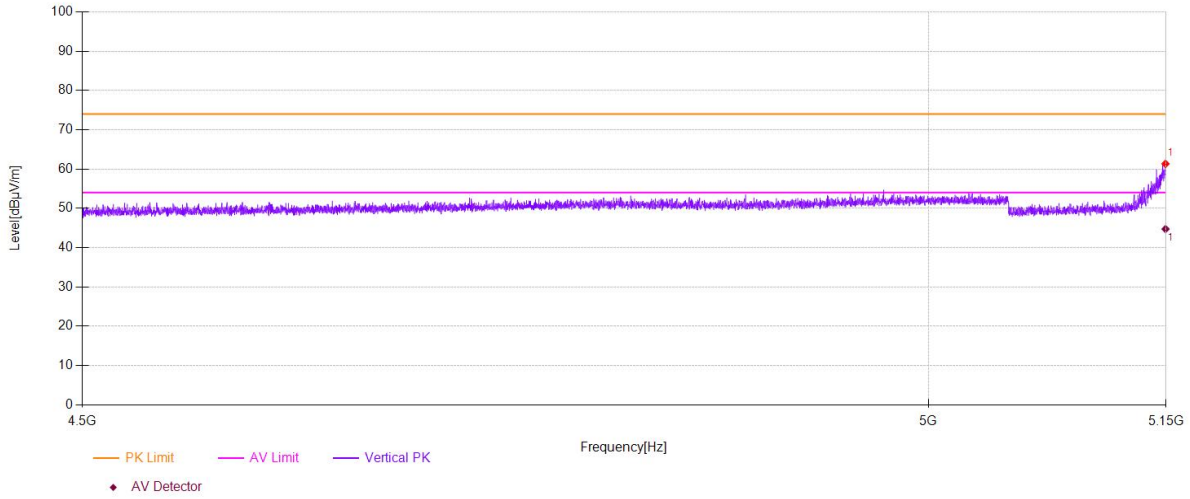
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over(dB)
5351.81	H	52.90	74	21.10	40.52	54	13.48
5351.69	V	52.41	74	21.59	41.38	54	12.62

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

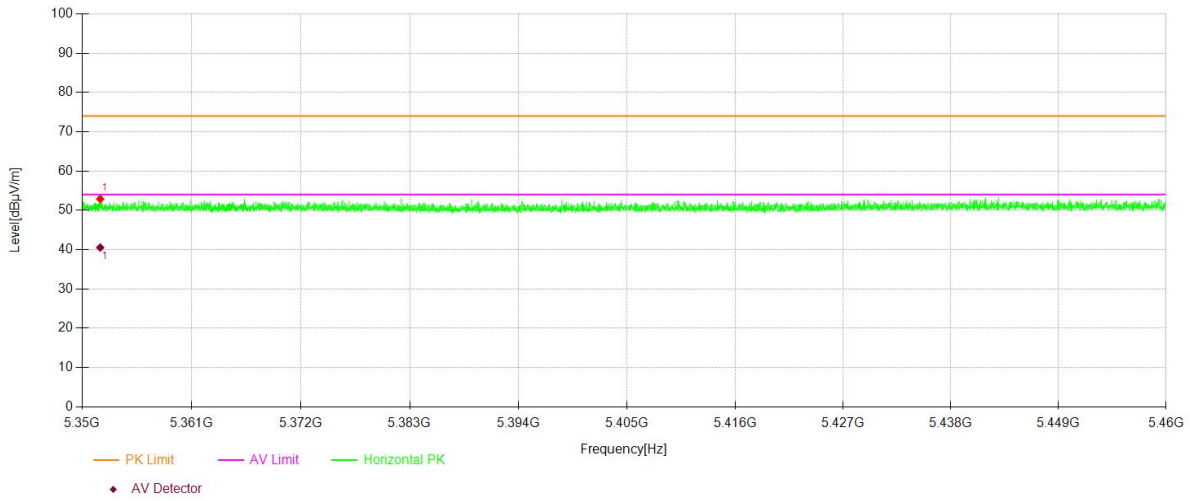
Test Model	U-NII - 1 Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz) ☒ 802.11a ☐ 802.11n(HT20) ☐ 802.11n(HT40) ☒ 5180 ☐ 5200 ☐ 5240 Ant.Pol H



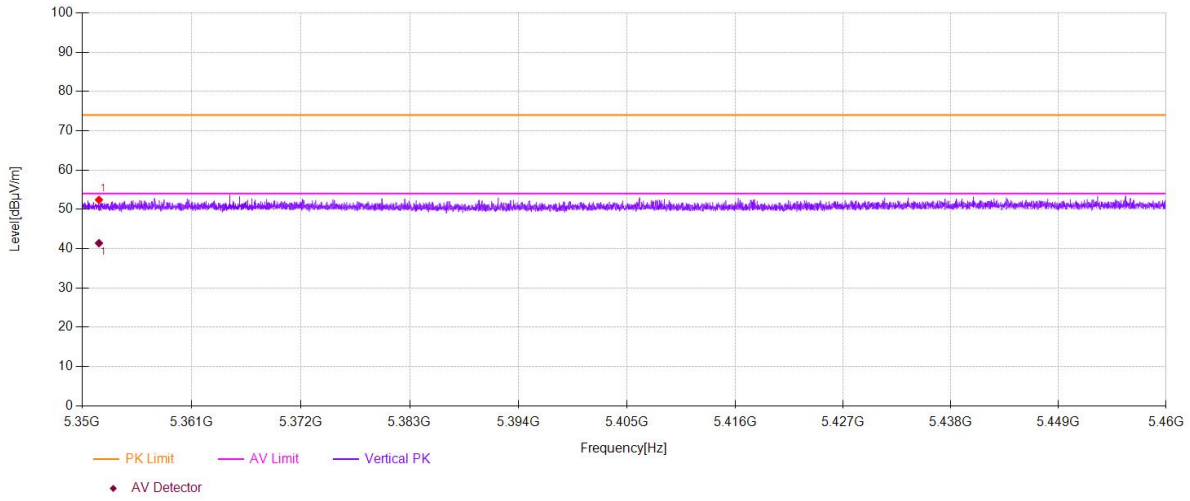
Test Model	U-NII - 1 Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz) ☒ 802.11a ☐ 802.11n(HT20) ☐ 802.11n(HT40) ☒ 5180 ☐ 5200 ☐ 5240 Ant.Pol V



Test Model	U-NII - 1 Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5180 ☐5200 ☒5240 Ant.Pol H



Test Model	U-NII - 1 Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz) ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☐5180 ☐5200 ☒5240 Ant.Pol V



■ ☒ For Undesirable radiated Spurious Emission in U-NII -2A
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:
: ☒ Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Test mode: 802.11a Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11570.7	V	59.86	-35.37	-27	8.37
14513.2	V	62.67	-32.56	-27	5.56
17498.2	V	68.51	-26.72	-27	-0.28
11366.6	H	60.24	-34.99	-27	7.99
14368.6	H	63.89	-31.34	-27	4.34
17506.7	H	68.02	-27.21	-27	0.21

Test mode: 802.11a Frequency(MHz): 5280

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11596.2	V	60.46	-34.77	-27	7.77
14581.2	V	62.84	-32.39	-27	5.39
17506.7	V	68.57	-26.66	-27	-0.34
11511.2	H	60.34	-34.89	-27	7.89
14606.8	H	63.43	-31.8	-27	4.8
17506.7	H	67.67	-27.56	-27	0.56

Test mode: 802.11a Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11366.6	V	60.45	-34.78	-27	7.78
14598.2	V	63.63	-31.6	-27	4.6
17506.7	V	67.85	-27.38	-27	0.38
11511.2	H	59.90	-35.33	-27	8.33
14598.2	H	63.07	-32.16	-27	5.16
17498.2	H	67.69	-27.54	-27	0.54

Note: (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Frequency: 802.11a				Frequency(MHz): 5260			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11570.7	V	59.86	42.02	74	54	14.14	11.98
14513.2	V	62.67	43.79	74	54	11.33	10.21
17498.2	V	68.51	45.84	74	54	5.49	8.16
11366.6	H	60.24	41.32	74	54	13.76	12.68
14368.6	H	63.89	43.48	74	54	10.11	10.52
17506.7	H	68.02	45.81	74	54	5.98	8.19

Frequency: 802.11a				Frequency(MHz): 5280			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11596.2	V	60.46	41.57	74	54	13.54	12.43
14581.2	V	62.84	45.09	74	54	11.16	8.91
17506.7	V	68.57	46.24	74	54	5.43	7.76
11511.2	H	60.34	42.07	74	54	13.66	11.93
14606.8	H	63.43	45.50	74	54	10.57	8.50
17506.7	H	67.67	46.69	74	54	6.33	7.31

Frequency: 802.11a				Frequency(MHz): 5320			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11366.6	V	60.45	41.53	74	54	13.55	12.47
14598.2	V	63.63	44.94	74	54	10.37	9.06
17506.7	V	67.85	45.69	74	54	6.15	8.31
11511.2	H	59.90	42.20	74	54	14.10	11.80
14598.2	H	63.07	45.53	74	54	10.93	8.47
17498.2	H	67.69	46.37	74	54	6.31	7.63

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11a Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5042.26	H	54.33	-40.9	-27	Pass
5037.38	V	53.72	-41.51	-27	Pass

Test mode: 802.11a Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5353.46	H	51.93	-43.3	-27	Pass
5350.56	V	52.20	-43.03	-27	Pass

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Test mode: 802.11a Frequency(MHz): 5260

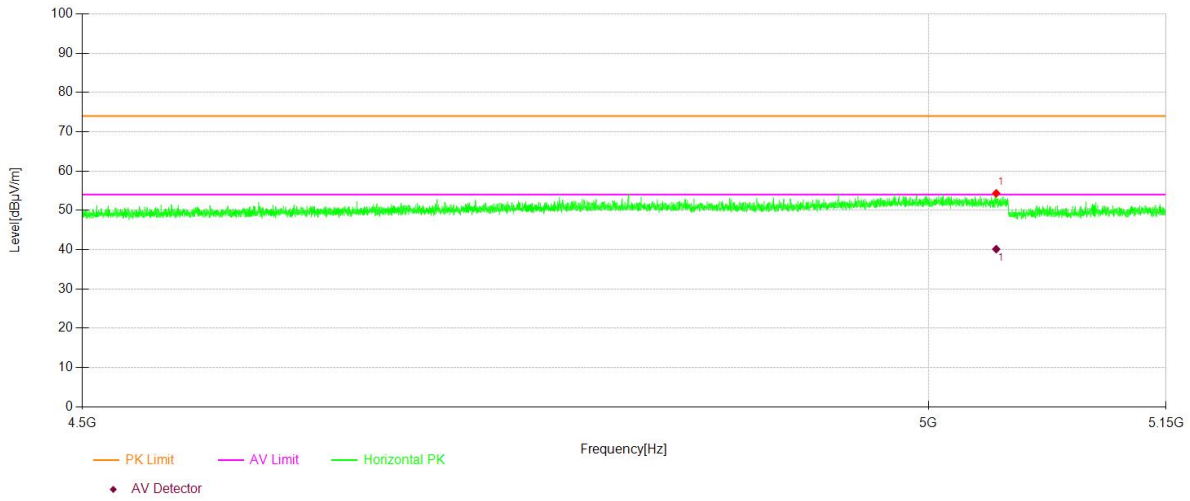
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over(dB)
5042.26	H	54.33	74	19.67	40.12	54	13.88
5037.38	V	53.72	74	20.28	39.97	54	14.03

Test mode: 802.11a Frequency(MHz): 5320

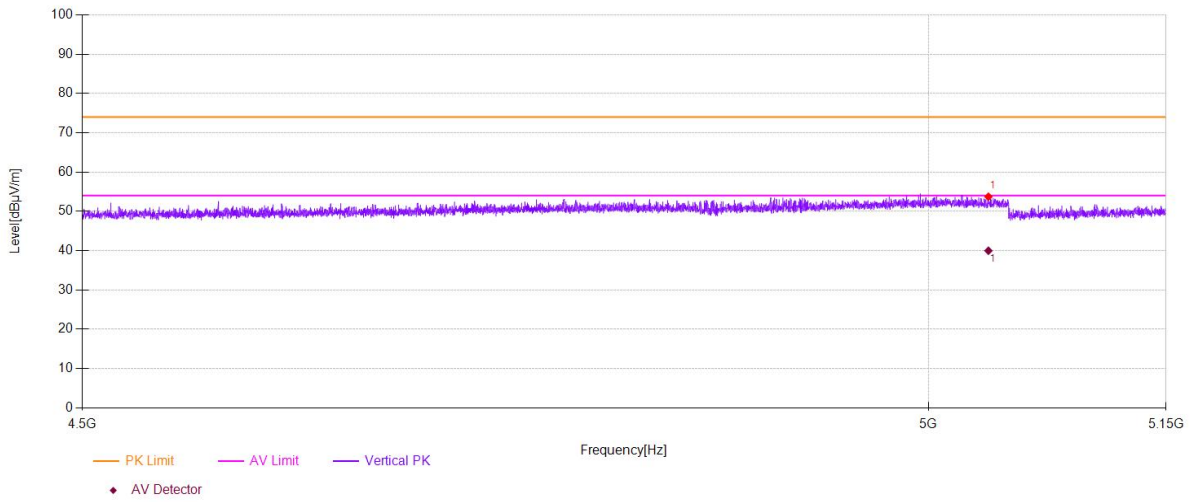
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over(dB)
5353.46	H	51.93	74	22.07	41.27	54	12.73
5350.56	V	52.20	74	21.80	41.54	54	12.46

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

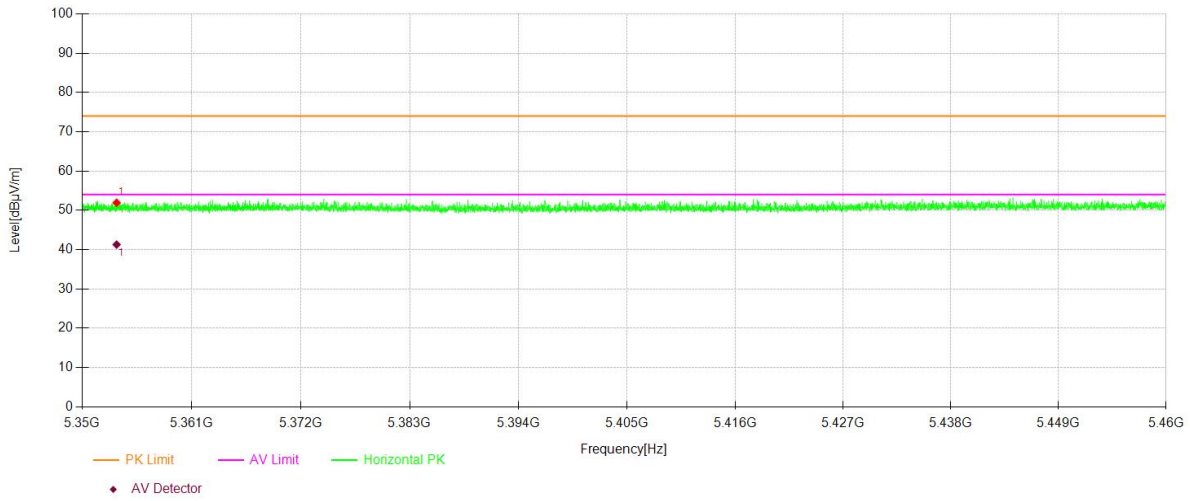
Test Model	U-NII -2A Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz) ☒ 802.11a ☐ 802.11n(HT20) ☐ 802.11 ac (VHT20) ☒ 5260 ☐ 5300 ☐ 5320 Ant.Pol H



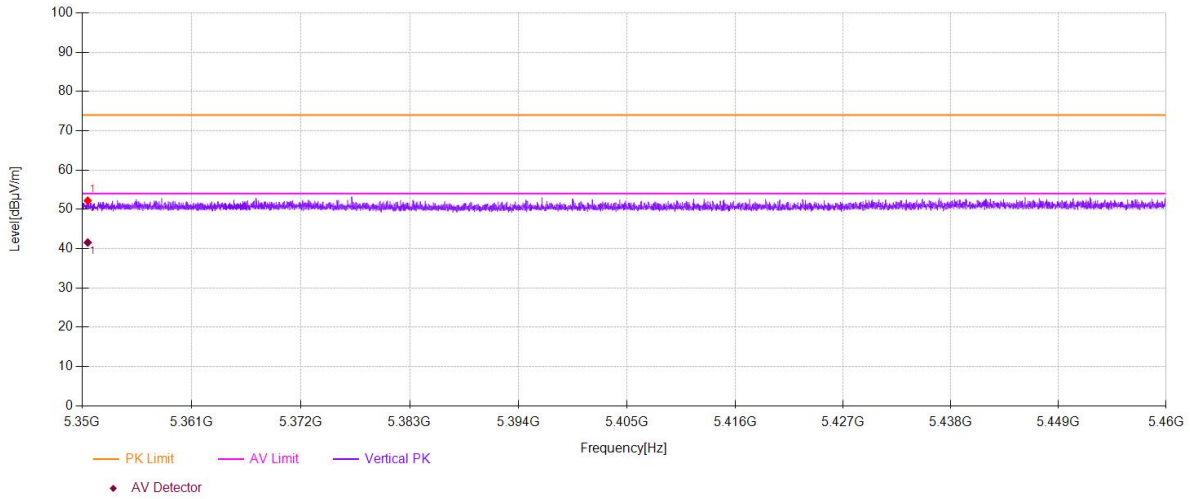
Test Model	U-NII -2A Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz) ☒ 802.11a ☐ 802.11n(HT20) ☐ 802.11 ac (VHT20) ☒ 5260 ☐ 5300 ☐ 5320 Ant.Pol V



Test Model	U-NII -2A Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz) ☒802.11a ☐802.11n(HT20) ☐802.11 ac (VHT20) ☐5260 ☐5300 ☒5320 Ant.Pol H



Test Model	U-NII -2A Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz) ☒802.11a ☐802.11n(HT20) ☐802.11 ac (VHT20) ☐5260 ☐5300 ☒5320 Ant.Pol V



■ ☒ For Undesirable radiated Spurious Emission in U-NII -2C
All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:
: ☒ Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Test mode: 802.11a Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11477.2	V	60.24	-34.99	-27	7.99
14538.7	V	62.94	-32.29	-27	5.29
17489.7	V	67.89	-27.34	-27	0.34
11630.3	H	60.07	-35.16	-27	8.16
14606.8	H	62.86	-32.37	-27	5.37
17498.2	H	68.13	-27.1	-27	0.1

Test mode: 802.11a Frequency(MHz): 5580

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11417.7	V	60.64	-34.59	-27	7.59
14793.8	V	63.61	-31.62	-27	4.62
17498.2	V	68.21	-27.02	-27	0.02
11375.1	H	60.18	-35.05	-27	8.05
14589.7	H	62.92	-32.31	-27	5.31
17498.2	H	67.47	-27.76	-27	0.76

Test mode: 802.11a Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11358.1	V	59.91	-35.32	-27	8.32
14589.7	V	62.83	-32.4	-27	5.4
17498.2	V	67.78	-27.45	-27	0.45
11536.7	H	59.87	-35.36	-27	8.36
14530.2	H	62.86	-32.37	-27	5.37
17498.2	H	67.37	-27.86	-27	0.86

Note: (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Frequency: 802.11a				Frequency(MHz): 5500			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11477.2	V	60.24	41.82	74	54	13.76	12.18
14538.7	V	62.94	44.51	74	54	11.06	9.49
17489.7	V	67.89	45.74	74	54	6.11	8.26
11630.3	H	60.07	41.68	74	54	13.93	12.32
14606.8	H	62.86	45.13	74	54	11.14	8.87
17498.2	H	68.13	46.52	74	54	5.87	7.48

Frequency: 802.11a				Frequency(MHz): 5580			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11417.7	V	60.64	41.56	74	54	13.36	12.44
14793.8	V	63.61	42.76	74	54	10.39	11.24
17498.2	V	68.21	45.87	74	54	5.79	8.13
11375.1	H	60.18	41.43	74	54	13.82	12.57
14589.7	H	62.92	45.41	74	54	11.08	8.59
17498.2	H	67.47	45.98	74	54	6.53	8.02

Frequency: 802.11a				Frequency(MHz): 5700			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11358.1	V	59.91	41.35	74	54	14.09	12.65
14589.7	V	62.83	44.86	74	54	11.17	9.14
17498.2	V	67.78	46.57	74	54	6.22	7.43
11536.7	H	59.87	42.26	74	54	14.13	11.74
14530.2	H	62.86	44.35	74	54	11.14	9.65
17498.2	H	67.37	45.94	74	54	6.63	8.06

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11a Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5469.71	H	63.27	-31.96	-27	Pass
5469.74	V	67.17	-28.06	-27	Pass

Test mode: 802.11a Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5725.86	H	62.16	-33.07	-27	Pass
5725.76	V	62.45	-32.78	-27	Pass

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Test mode: 802.11a Frequency(MHz): 5500

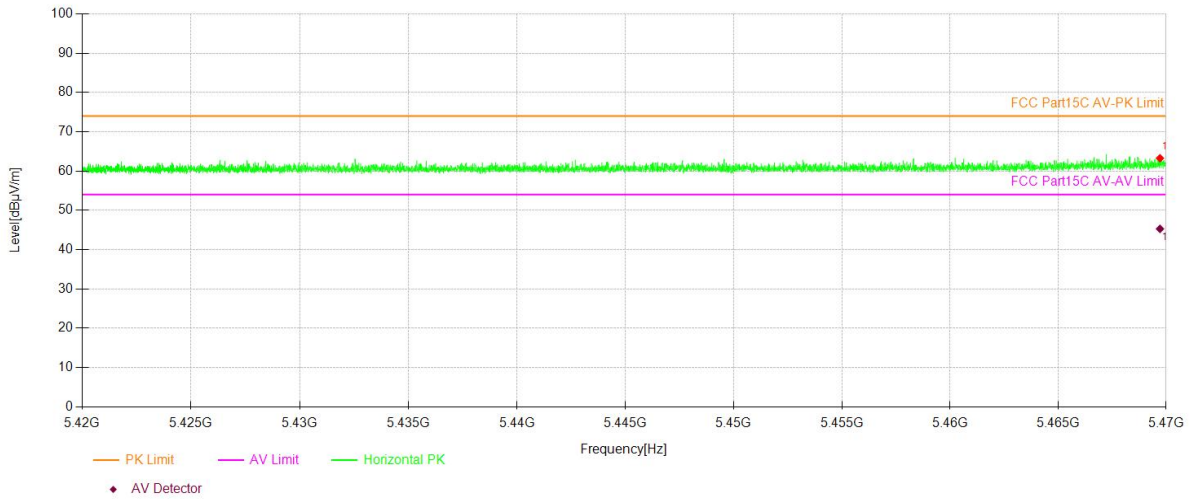
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over(dB)
5469.71	H	63.27	74	10.73	45.28	54	8.72
5469.74	V	67.17	74	6.83	45.98	54	8.02

Test mode: 802.11a Frequency(MHz): 5700

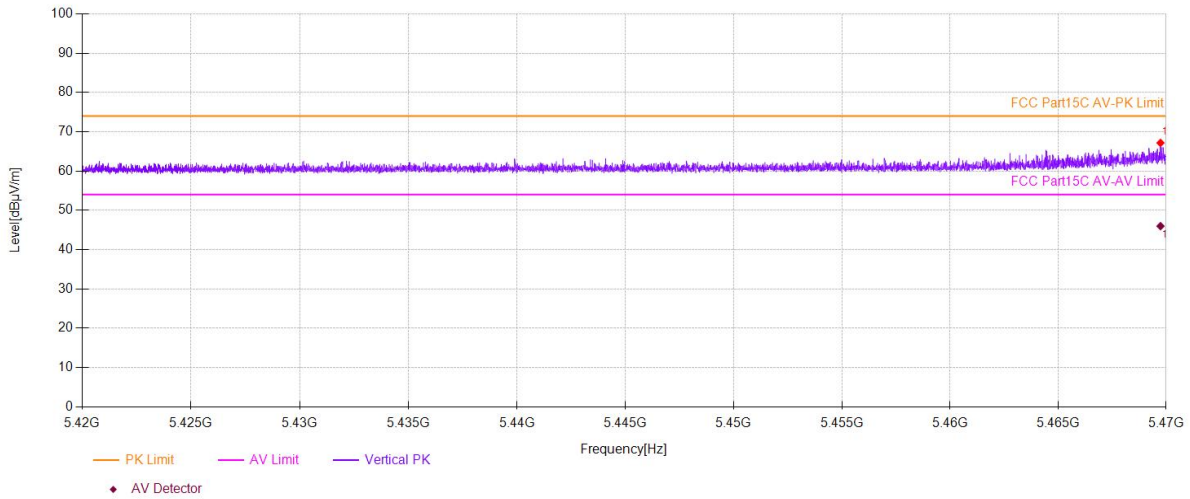
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	Over(dB)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)	Over(dB)
5725.86	H	62.16	74	11.84	45.67	54	8.33
5725.76	V	62.45	74	11.55	45.46	54	8.54

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

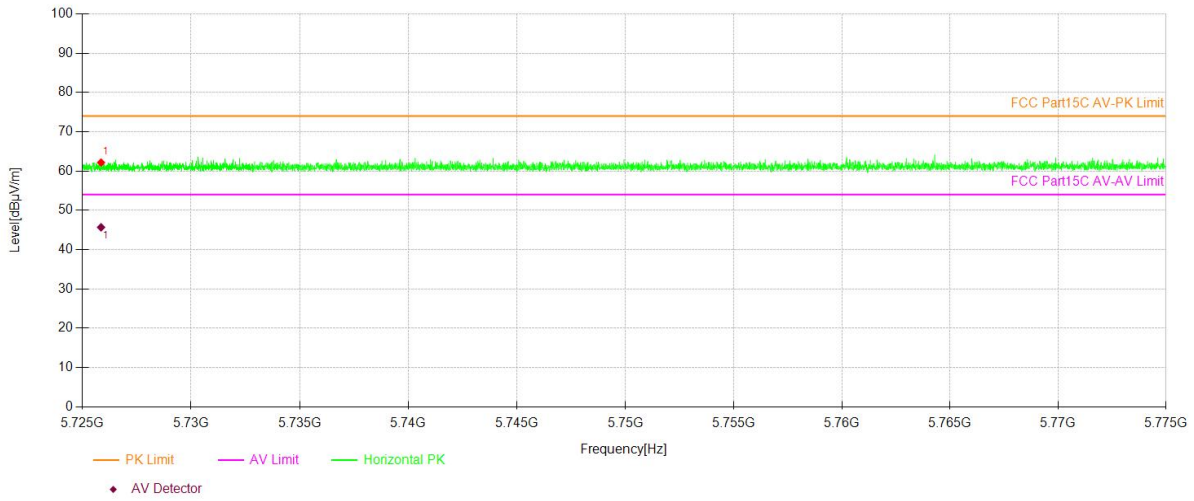
Test Model	U-NII -2C Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz) ☒ 802.11a ☐ 802.11n(HT20) ☐ 802.11 ac (VHT20) ☒ 5500 ☐ 5580 ☐ 5700 Ant.Pol H



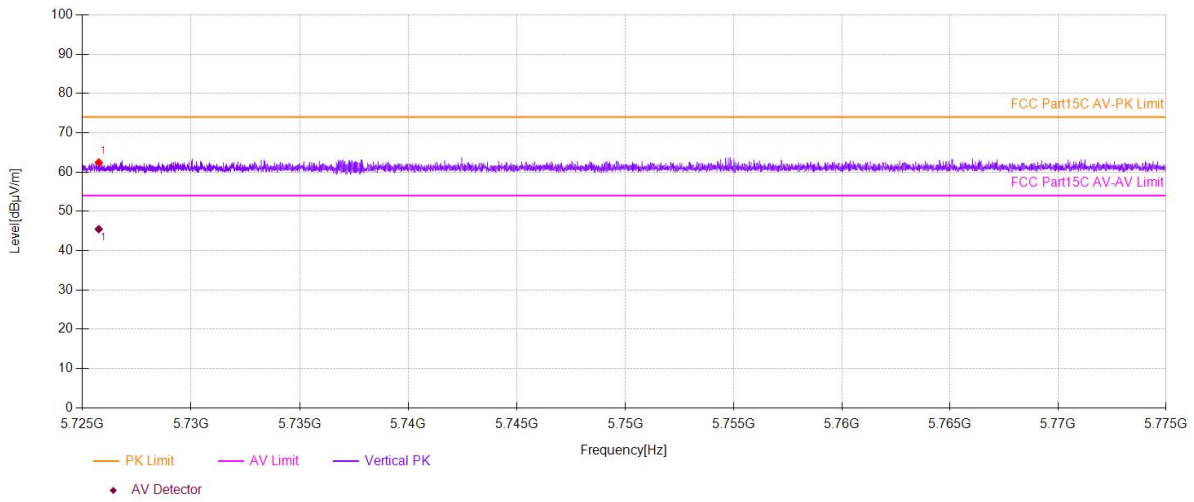
Test Model	U-NII -2C Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz) ☒ 802.11a ☐ 802.11n(HT20) ☐ 802.11 ac (VHT20) ☒ 5500 ☐ 5580 ☐ 5700 Ant.Pol V



Test Model	U-NII -2C Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz) ☒802.11a ☐802.11n(HT20) ☐802.11 ac (VHT20) ☐5500 ☐5580 ☒5700 Ant.Pol H



Test Model	U-NII -2C Undesirable radiated Spurious Emission in Restricted Band (5350-5400MHz) ☒802.11a ☐802.11n(HT20) ☐802.11 ac (VHT20) ☐5500 ☐5580 ☒5700 Ant.Pol V



■ ☒ For Undesirable radiated Spurious Emission in U-NII -3

All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

● ☒ Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Test mode: 802.11a Frequency(MHz): 5745

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11315.6	V	59.43	-35.8	-27	8.8
14589.7	V	62.51	-32.72	-27	5.72
17515.2	V	67.89	-27.34	-27	0.34
11358.1	H	59.52	-35.71	-27	8.71
15176.5	H	63.48	-31.75	-27	4.75
17489.7	H	67.18	-28.05	-27	1.05

Test mode: 802.11a Frequency(MHz): 5785

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11366.6	V	60.57	-34.66	-27	7.66
14521.7	V	63.80	-31.43	-27	4.43
17498.2	V	67.61	-27.62	-27	0.62
10745.8	H	60.06	-35.17	-27	8.17
14521.7	H	62.85	-32.38	-27	5.38
17498.2	H	68.04	-27.19	-27	0.19

Test mode: 802.11a Frequency(MHz): 5825

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11536.7	V	60.40	-34.83	-27	7.83
14598.2	V	62.78	-32.45	-27	5.45
17506.7	V	67.67	-27.56	-27	0.56
11519.7	H	59.86	-35.37	-27	8.37
14623.8	H	62.63	-32.6	-27	5.6
17515.2	H	67.58	-27.65	-27	0.65

Note: (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3)EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Frequency: 802.11a				Frequency(MHz): 5745			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11315.6	V	59.43	42.29	74	54	14.57	11.71
14589.7	V	62.51	44.98	74	54	11.49	9.02
17515.2	V	67.89	46.11	74	54	6.11	7.89
11358.1	H	59.52	41.65	74	54	14.48	12.35
15176.5	H	63.48	42.32	74	54	10.52	11.68
17489.7	H	67.18	46.34	74	54	6.82	7.66

Frequency: 802.11a				Frequency(MHz): 5785			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11366.6	V	60.57	41.68	74	54	13.43	12.32
14521.7	V	63.80	43.87	74	54	10.20	10.13
17498.2	V	67.61	46.18	74	54	6.39	7.82
10745.8	H	60.06	41.73	74	54	13.94	12.27
14521.7	H	62.85	44.28	74	54	11.15	9.72
17498.2	H	68.04	46.00	74	54	5.96	8.00

Frequency: 802.11a				Frequency(MHz): 5825			
Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m) PK	AV	Limit 3m(dBuV/m) PK	AV	Margin (dB) PK	AV
11536.7	V	60.40	42.05	74	54	13.60	11.95
14598.2	V	62.78	44.90	74	54	11.22	9.10
17506.7	V	67.67	45.82	74	54	6.33	8.18
11519.7	H	59.86	42.28	74	54	14.14	11.72
14623.8	H	62.63	44.53	74	54	11.37	9.47
17515.2	H	67.58	45.67	74	54	6.42	8.33

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4)The reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

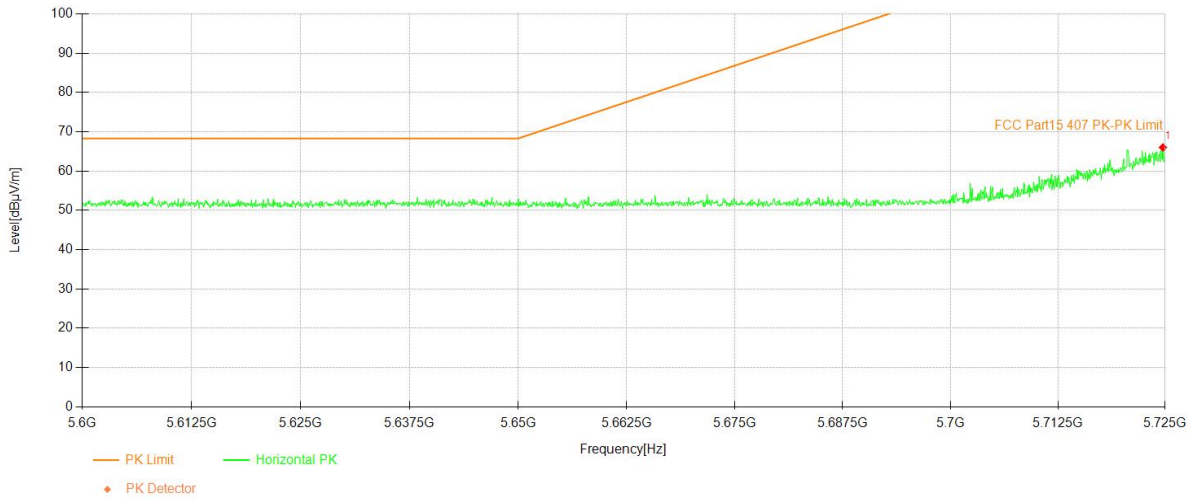
- ☒ Undesirable radiated Spurious Emission in band edge

Test mode:	802.11a	Frequency:	5745		
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5724.74	H	66.02	-29.21	-27	PASS
5724.56	V	69.13	-26.1	-27	PASS

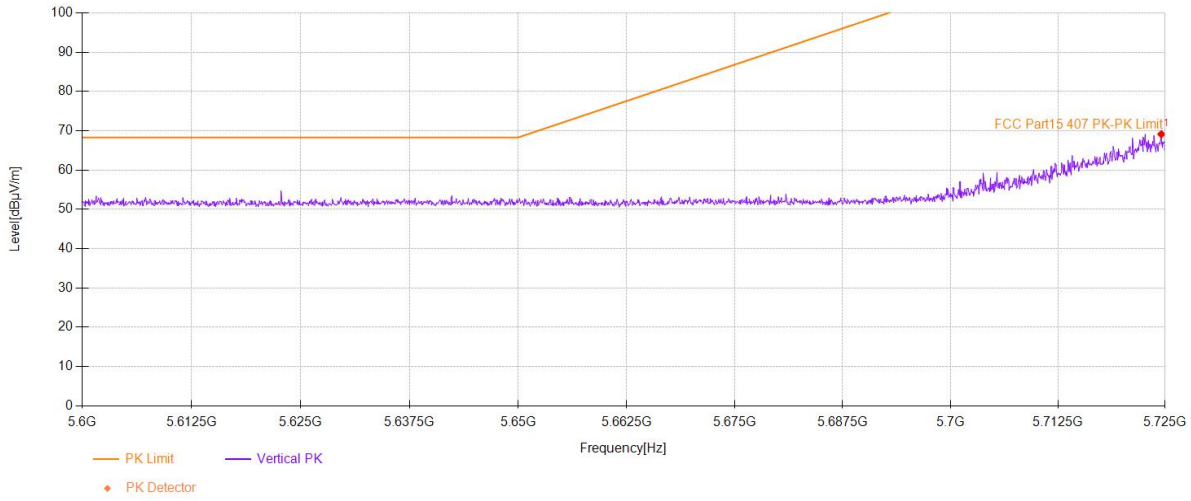
Test mode:	802.11a	Frequency:	5825		
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5850.31	V	65.85	-29.38	-27	PASS
5850.18	H	61.57	-33.66	-27	PASS

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor +Cable Loss.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

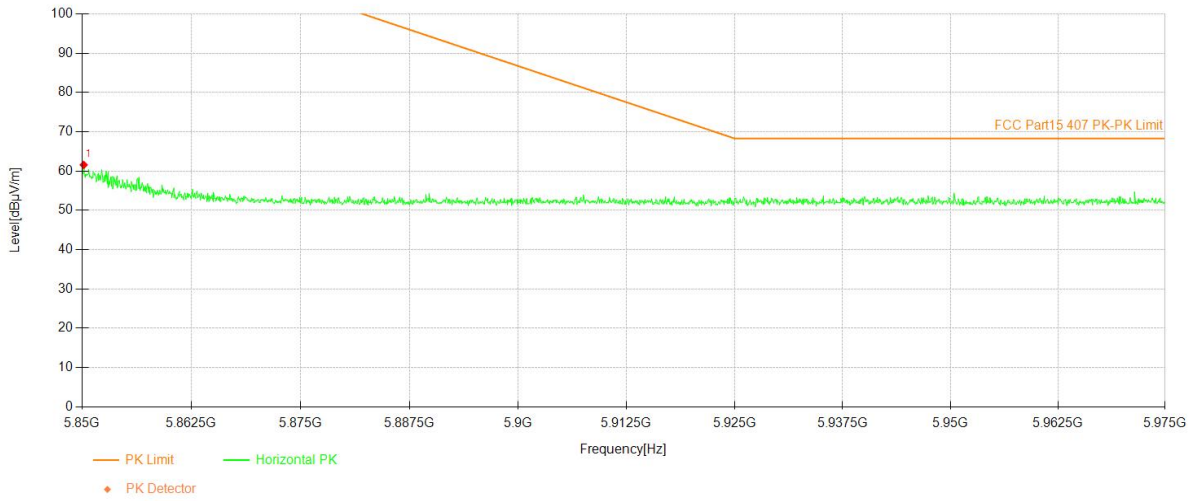
Test Model	U-NII -3 Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5745 Ant.Pol H



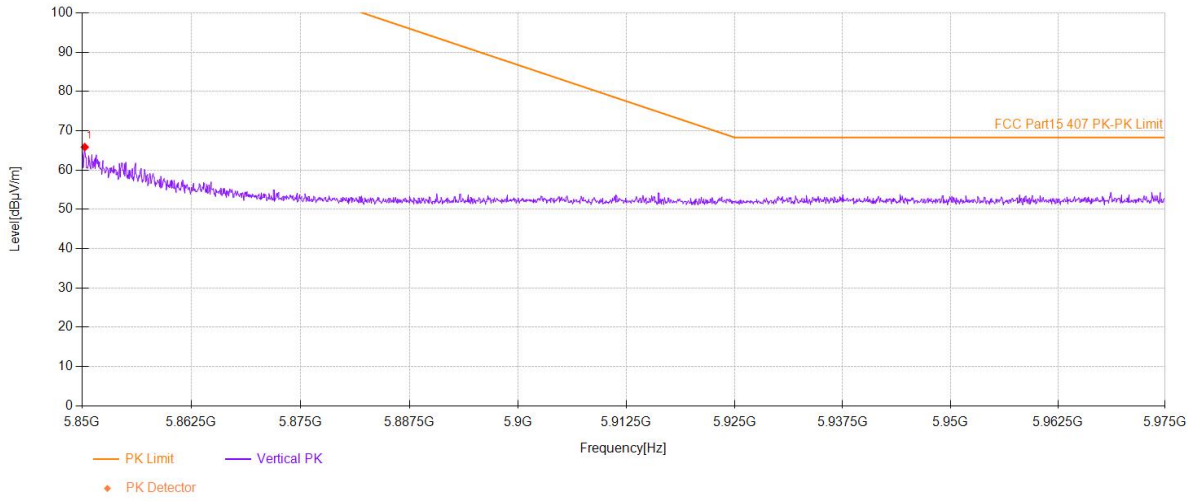
Test Model	U-NII -3 Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5745 Ant.Pol V



Test Model	U-NII -3 Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5825 Ant.Pol H

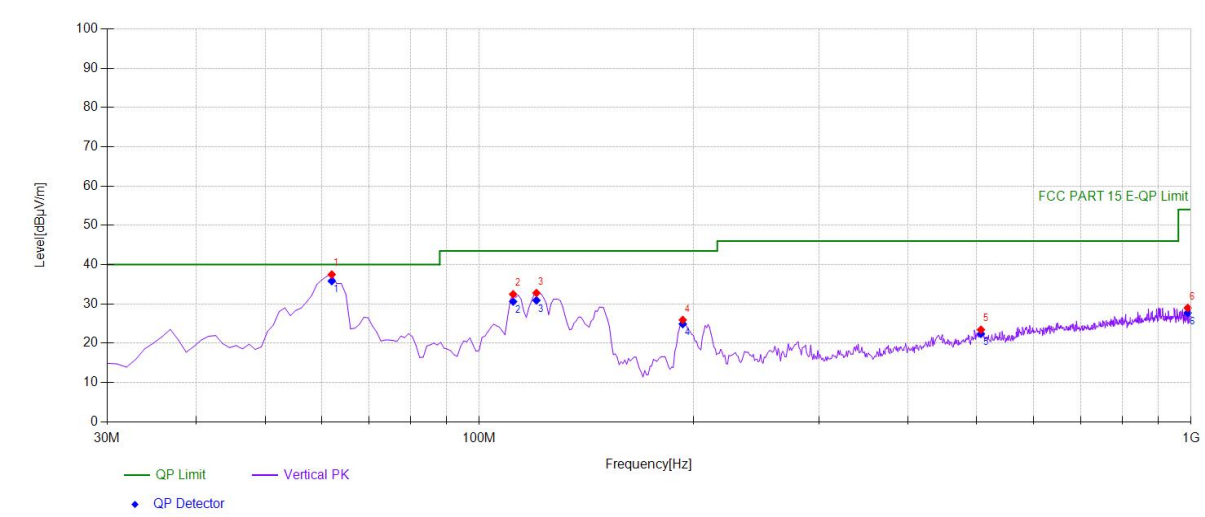


Test Model	U-NII -3 Undesirable radiated Undesirable radiated Spurious Emission in Band Edge ☒802.11a ☐802.11n(HT20) ☐802.11n(HT40) ☒5825 Ant.Pol V



- Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)
  All the modes 802.11a/n/ac has been tested and the worst result 802.11a recorded as below:

Mode:	11A 5180



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	62.042	56.32	-18.84	37.48	PK	40.00	2.52	Vertical
2	111.561	49.85	-17.41	32.44	PK	43.50	11.06	Vertical
3	120.300	50.72	-17.95	32.77	PK	43.50	10.73	Vertical
4	193.123	43.47	-17.56	25.91	PK	43.50	17.59	Vertical
5	506.746	33.18	-9.77	23.41	PK	46.00	22.59	Vertical
6	989.319	30.67	-1.71	28.96	PK	54.00	25.04	Vertical