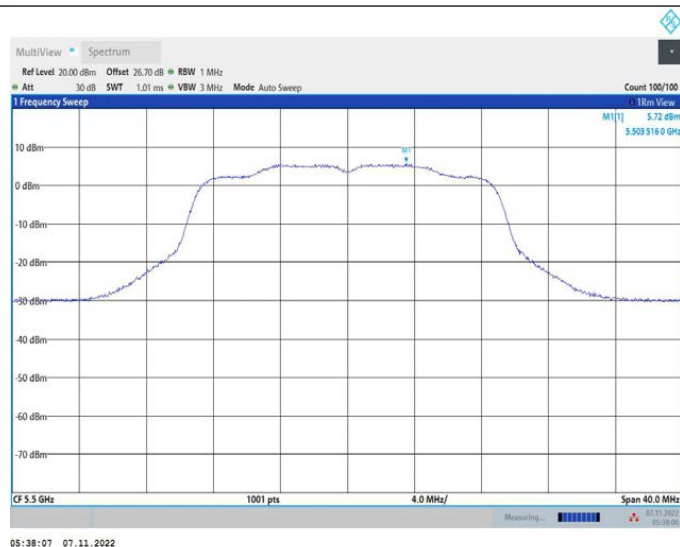
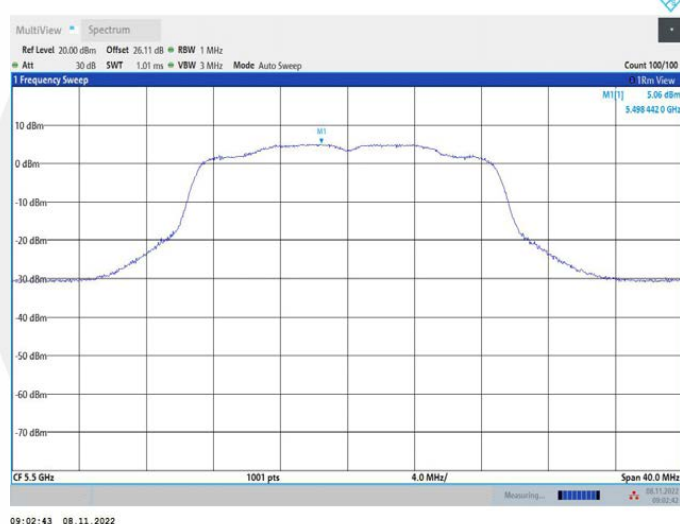
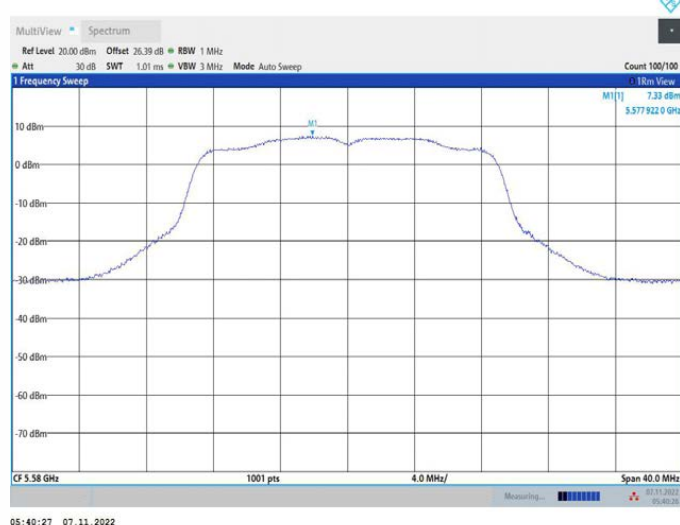




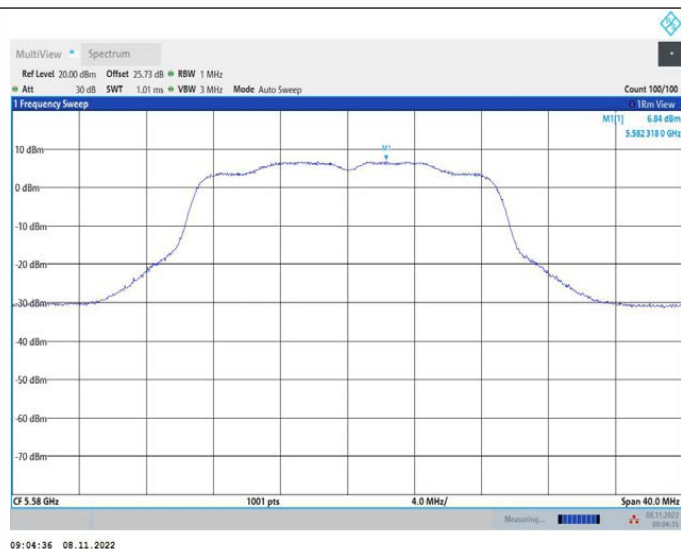
11AC20MIMO_Ant2_5500



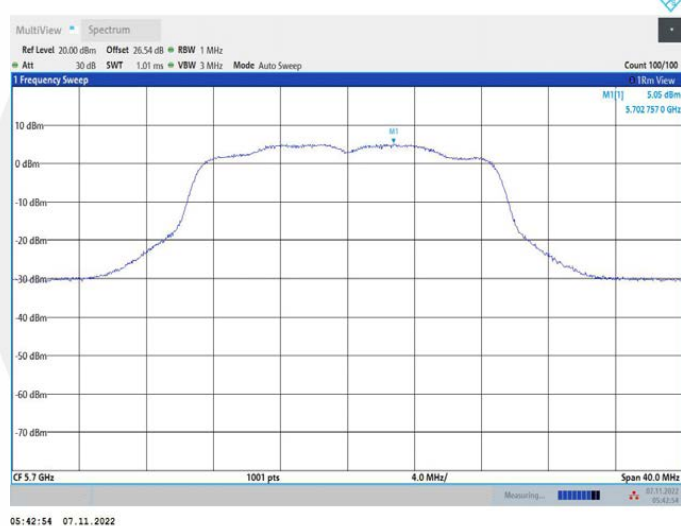
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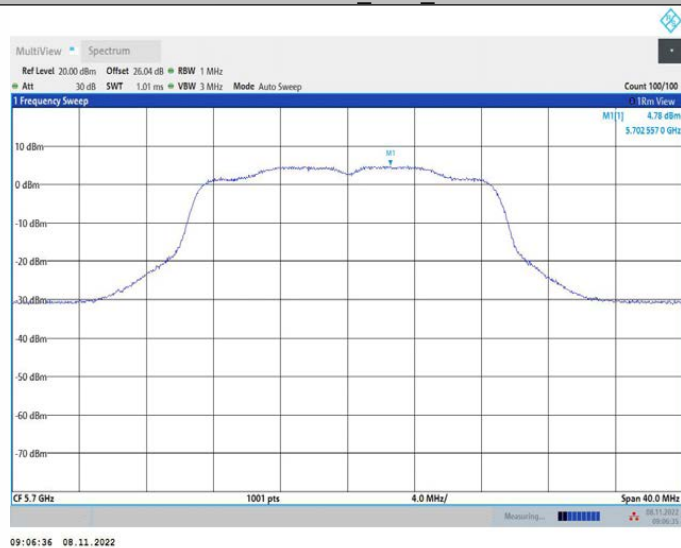
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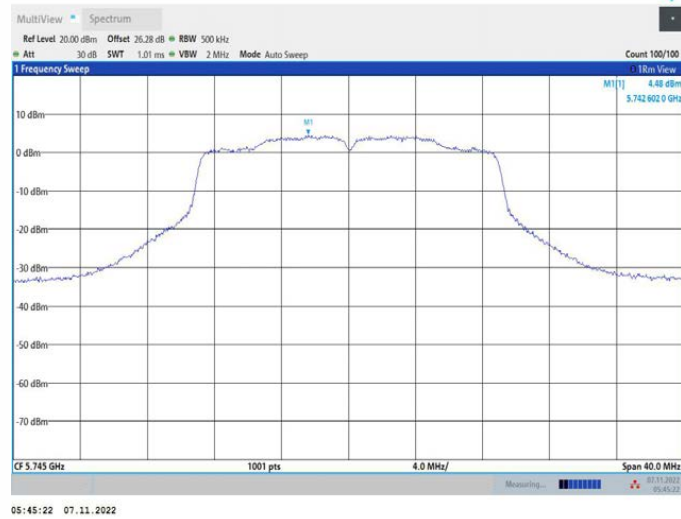
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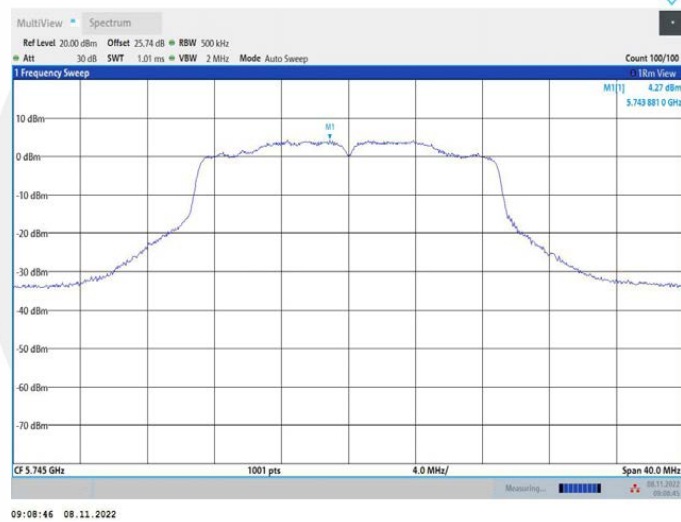
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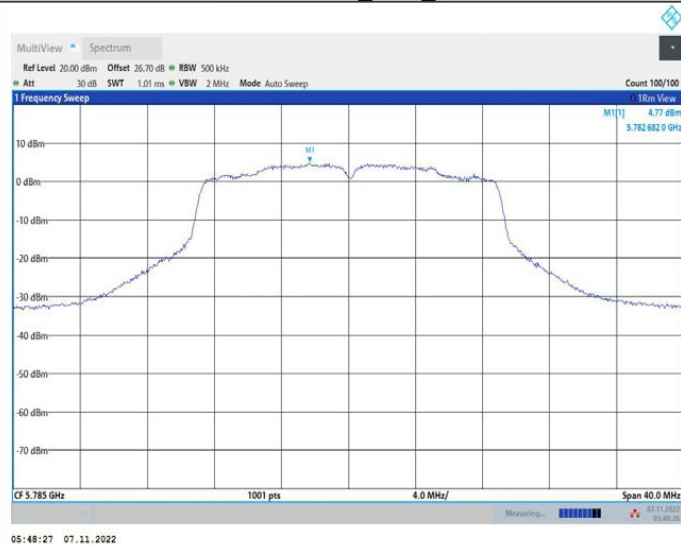
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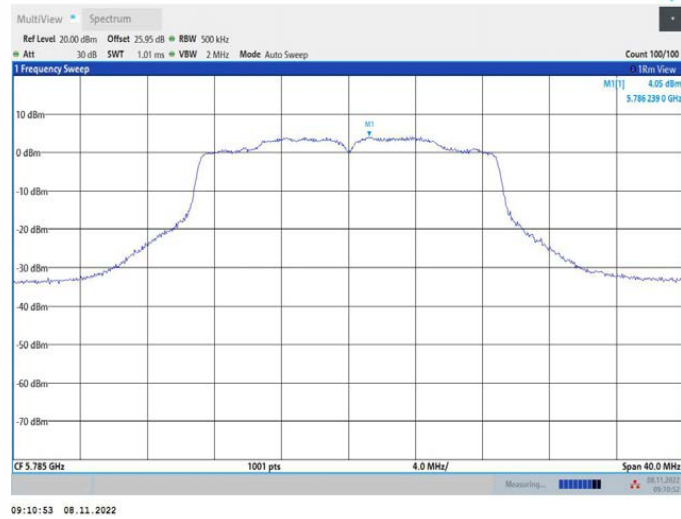
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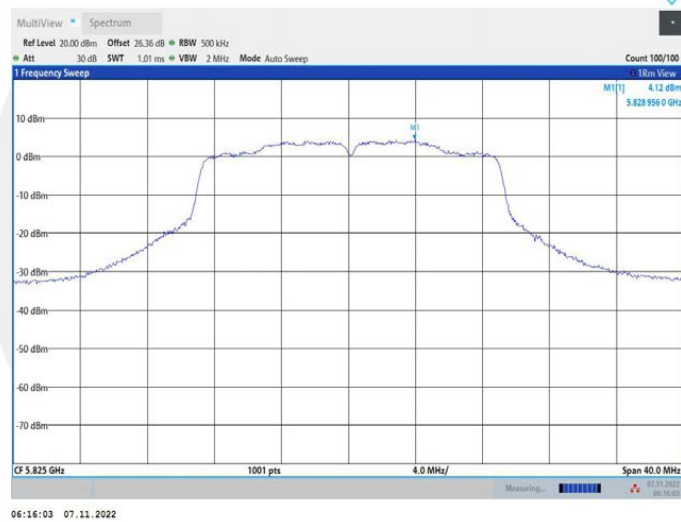
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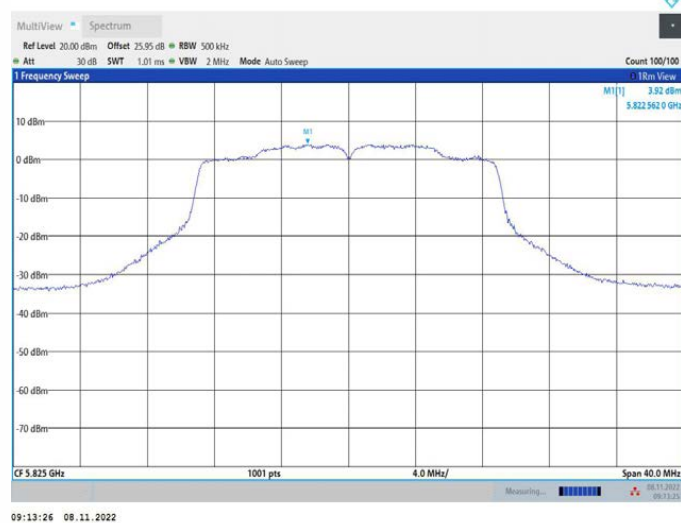
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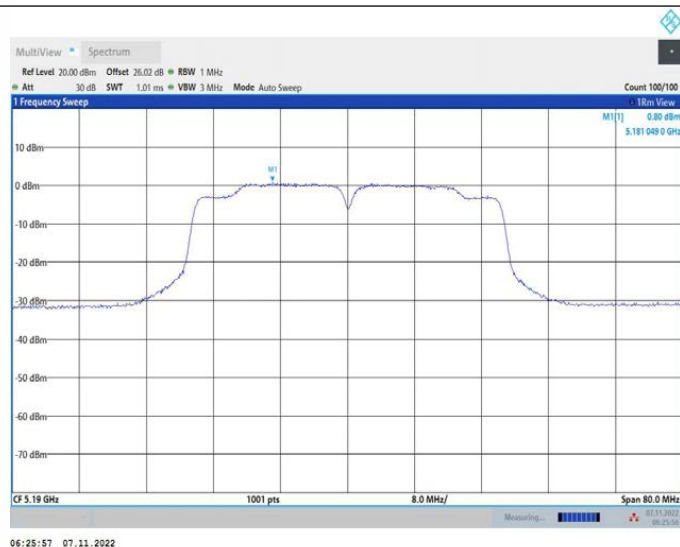
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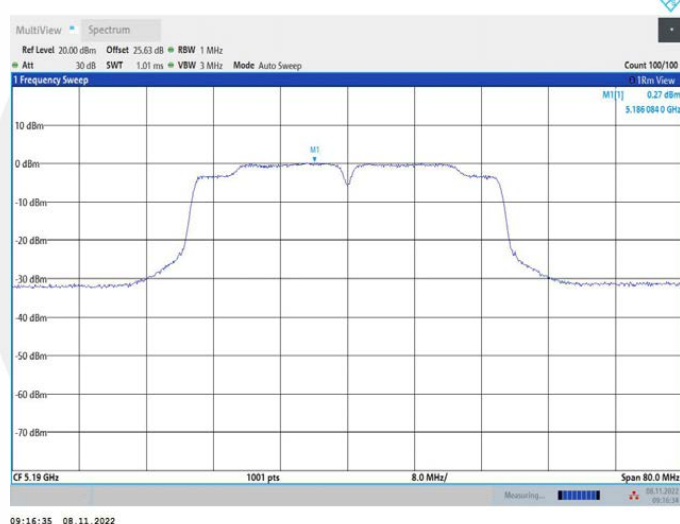
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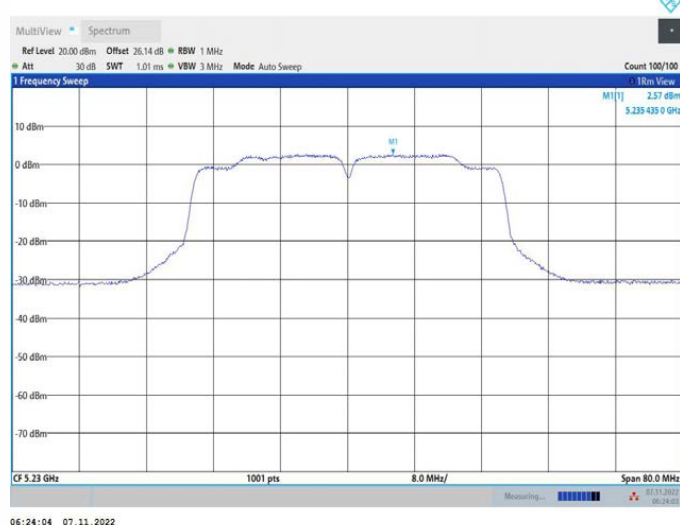
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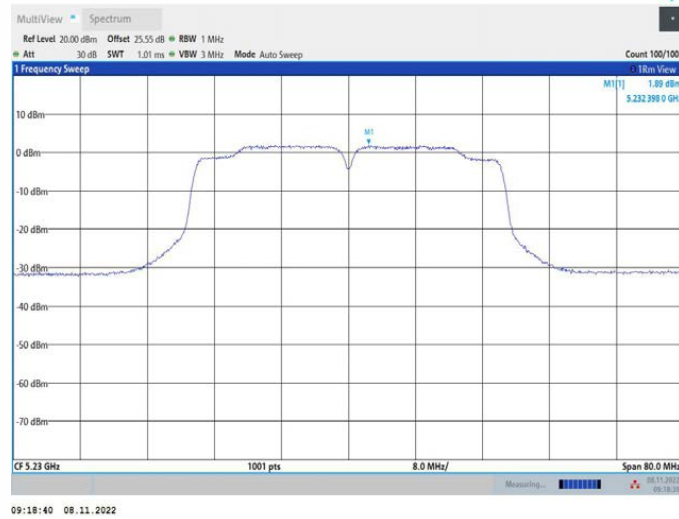
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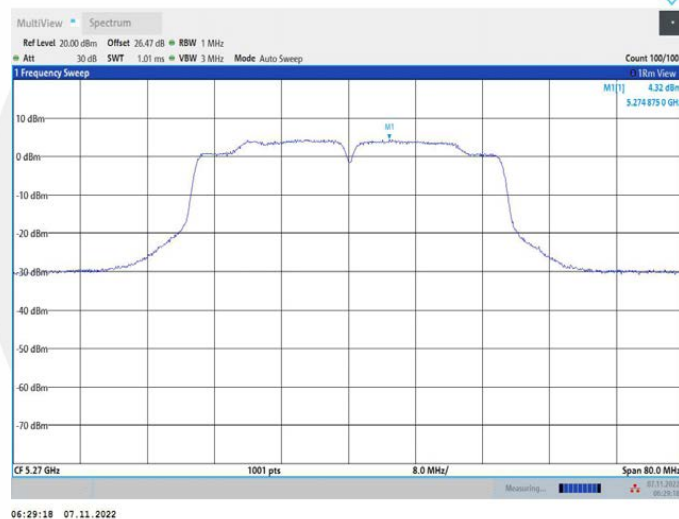
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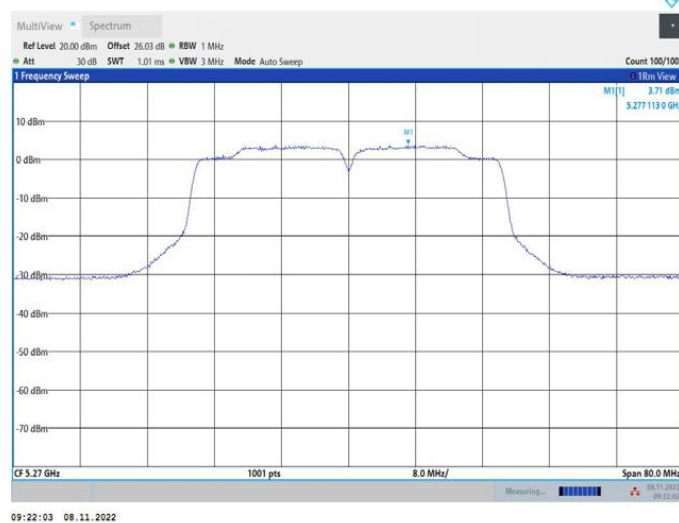
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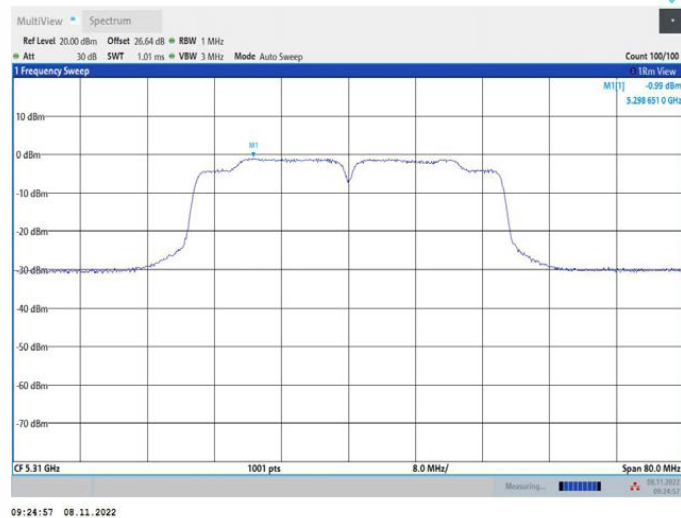
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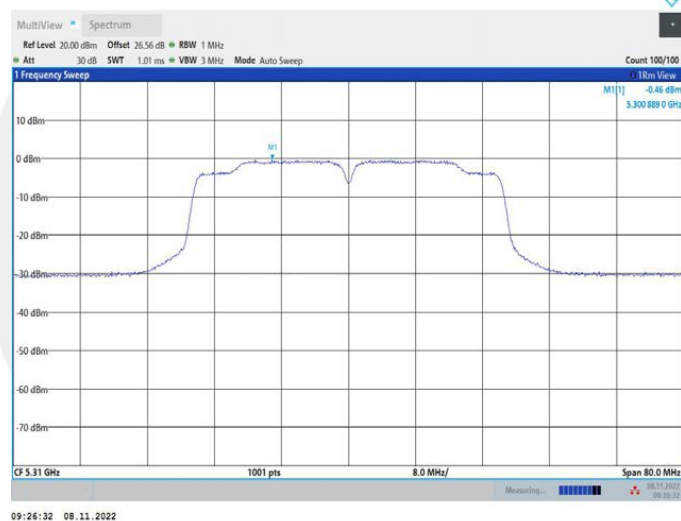
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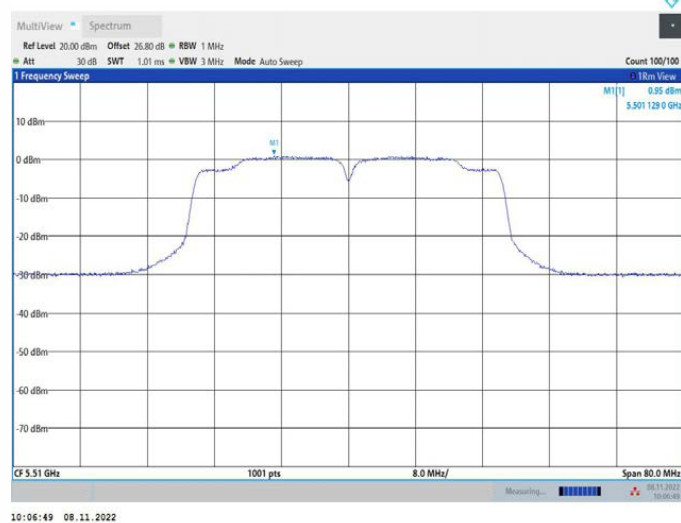
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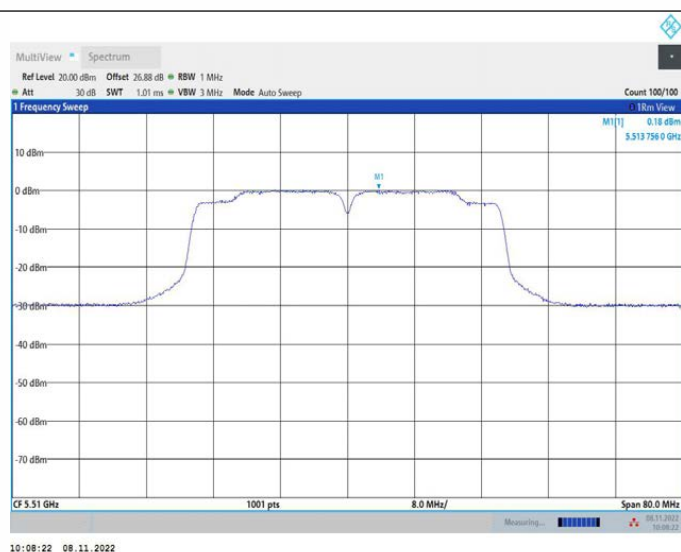
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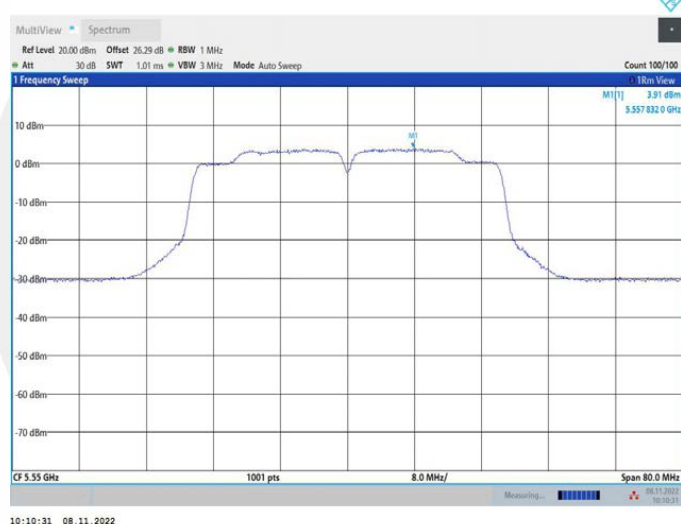
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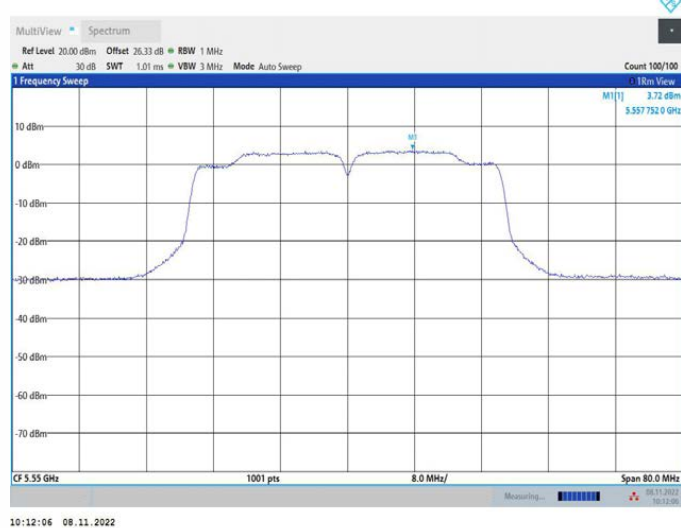
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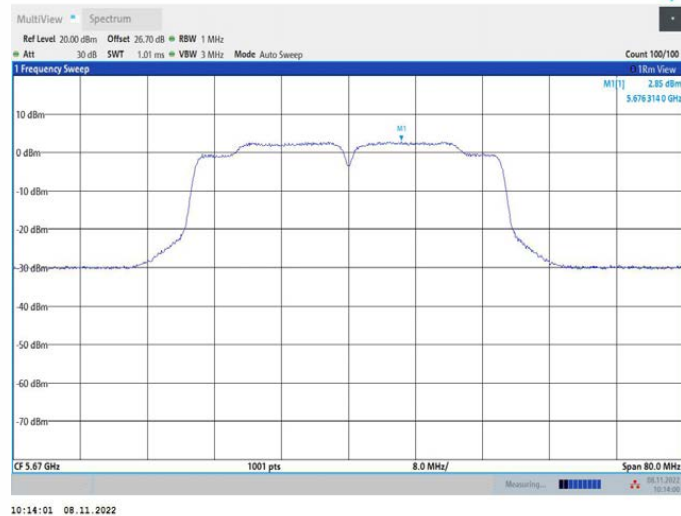
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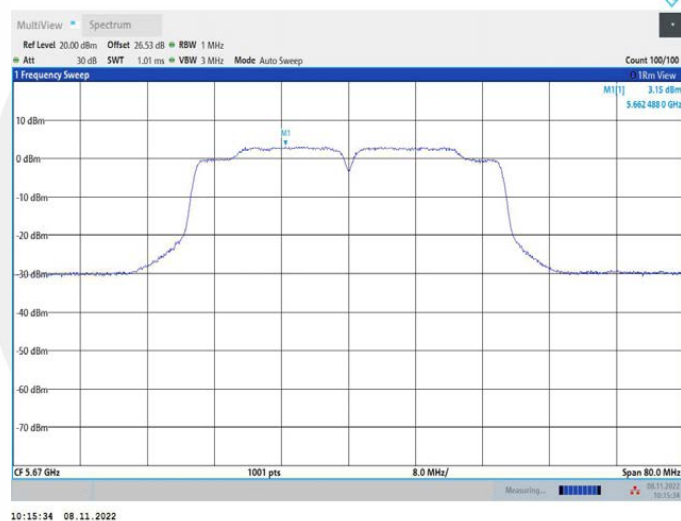
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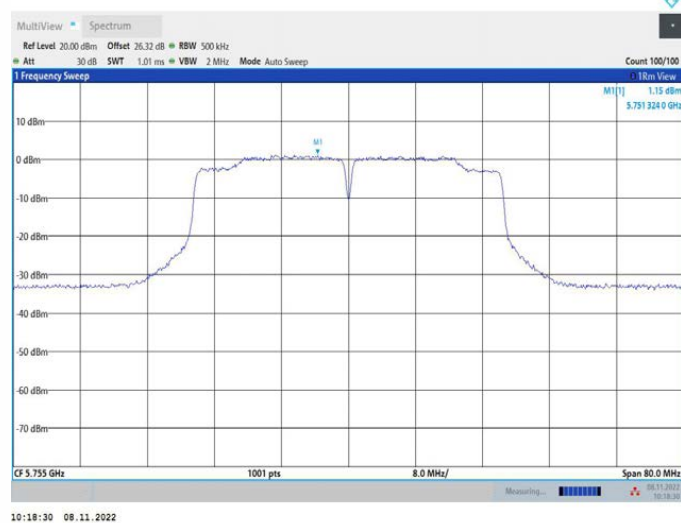
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11AC40MIMO_Ant2_5670



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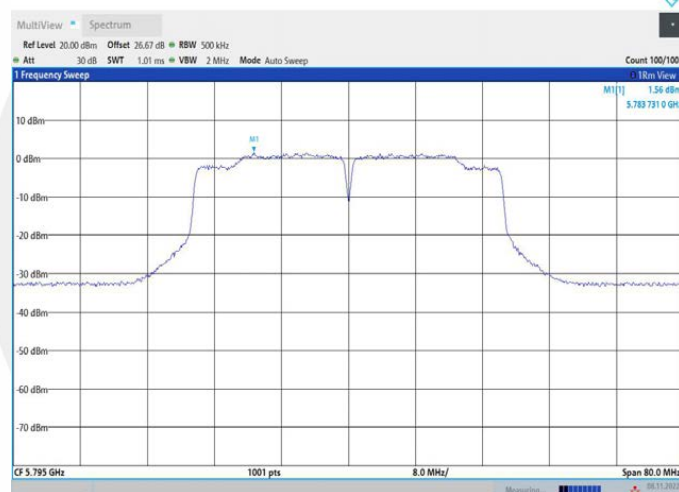


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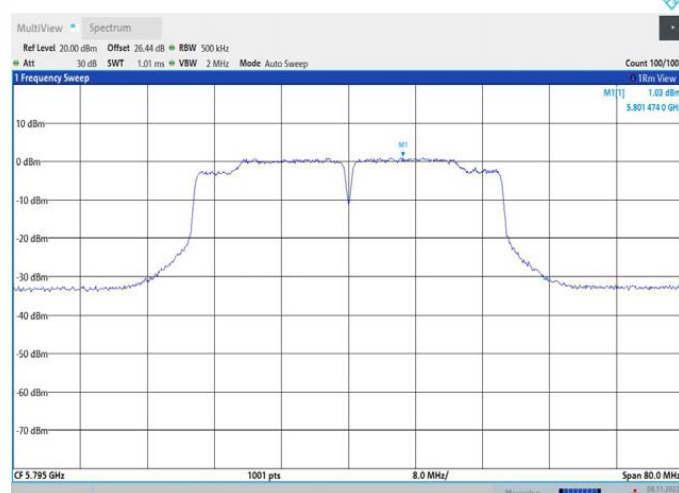
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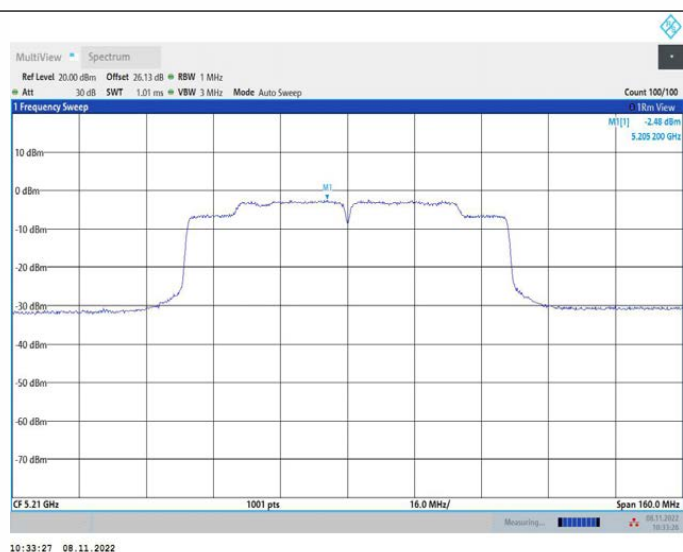
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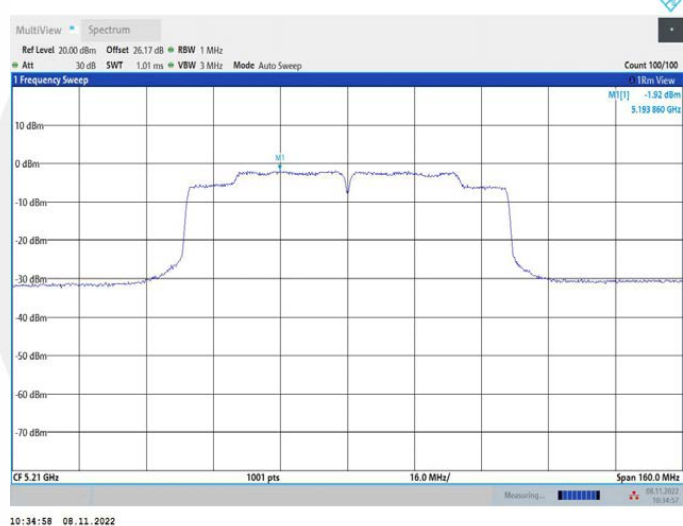


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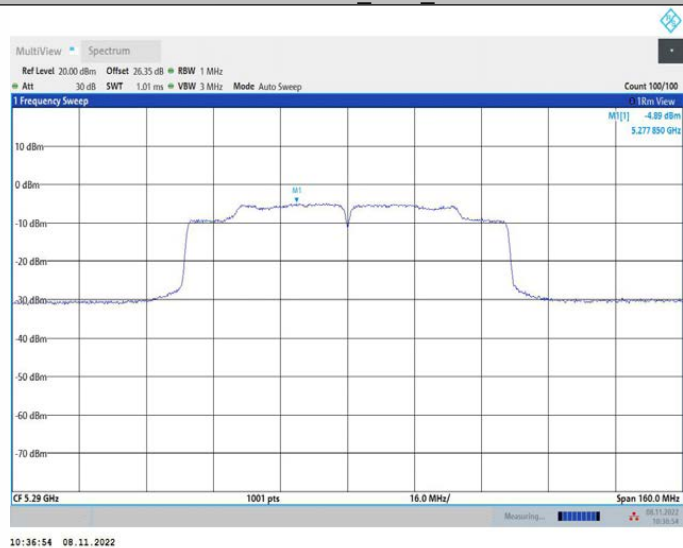
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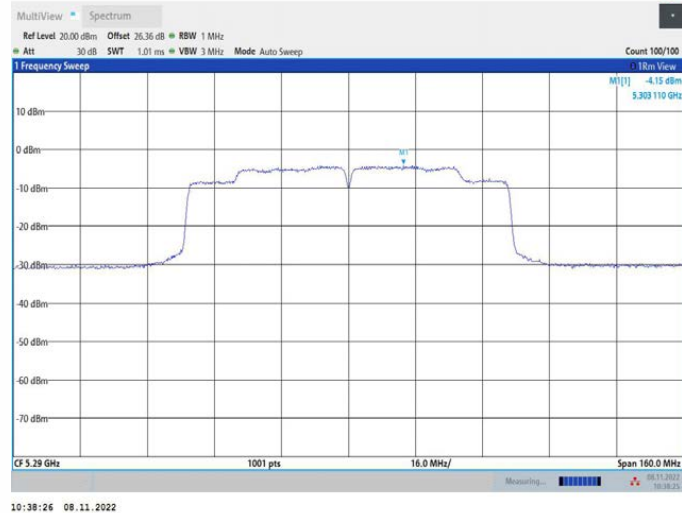
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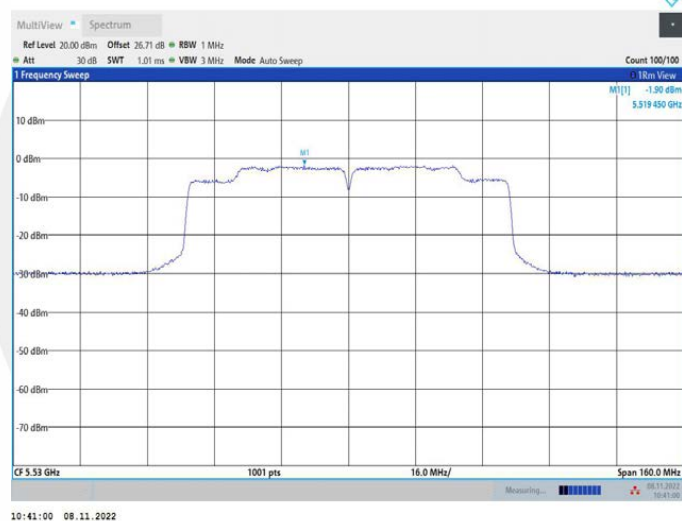
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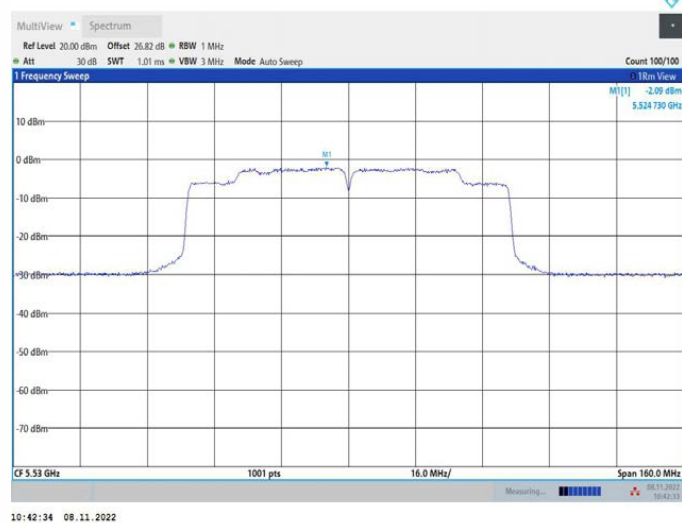
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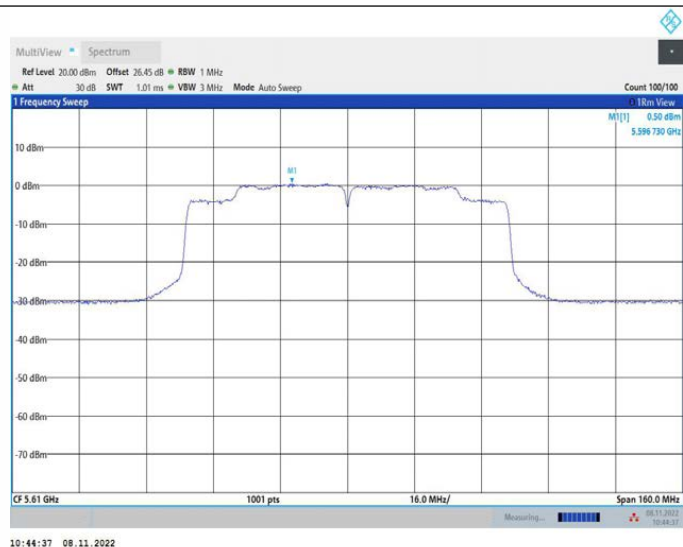
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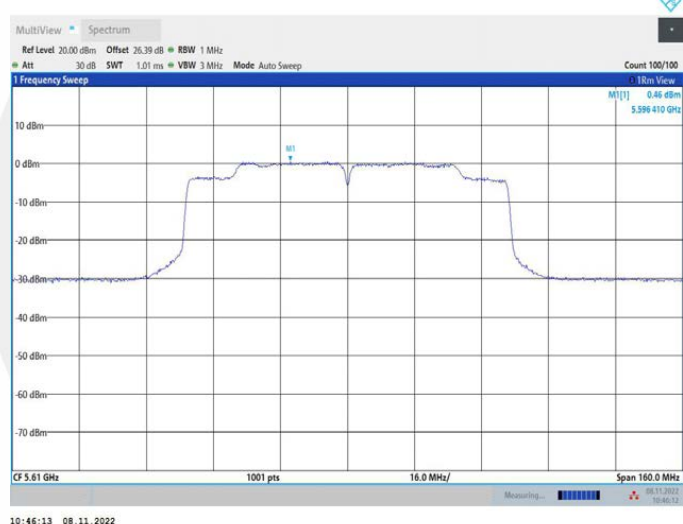
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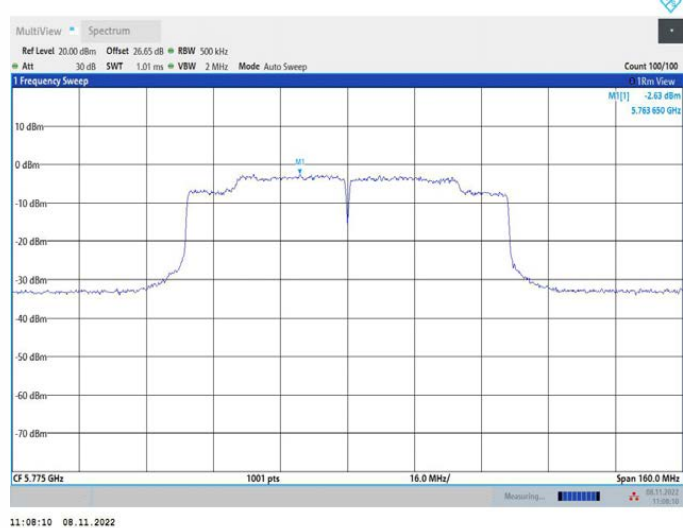
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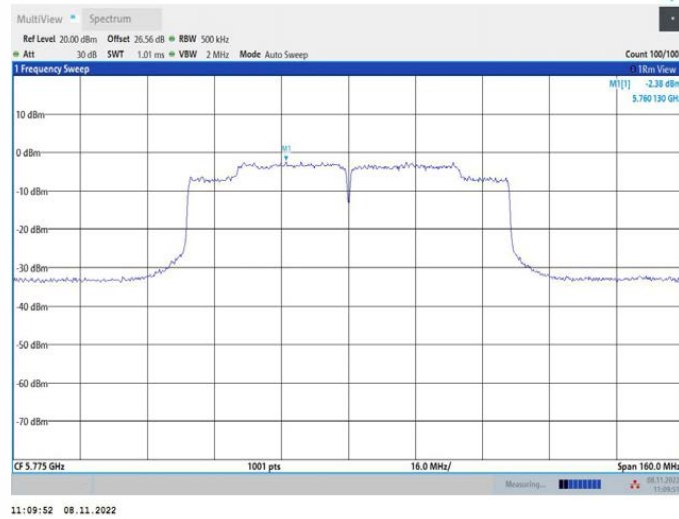
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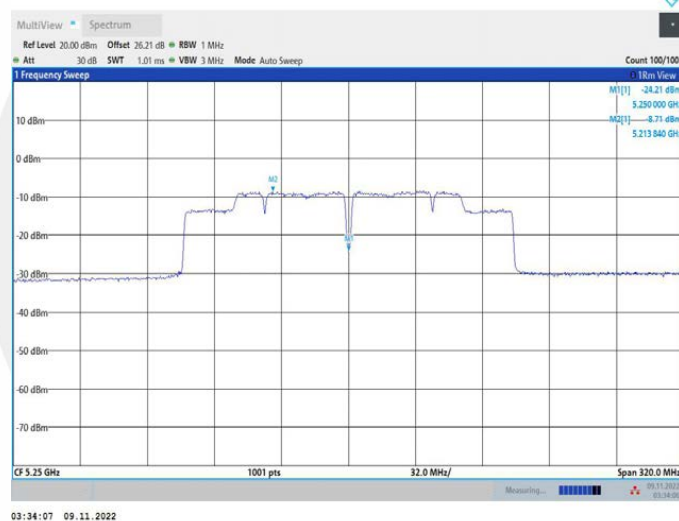
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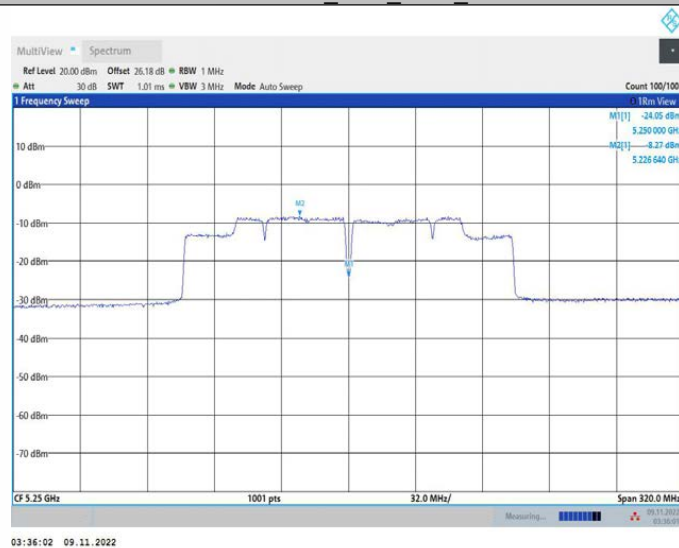
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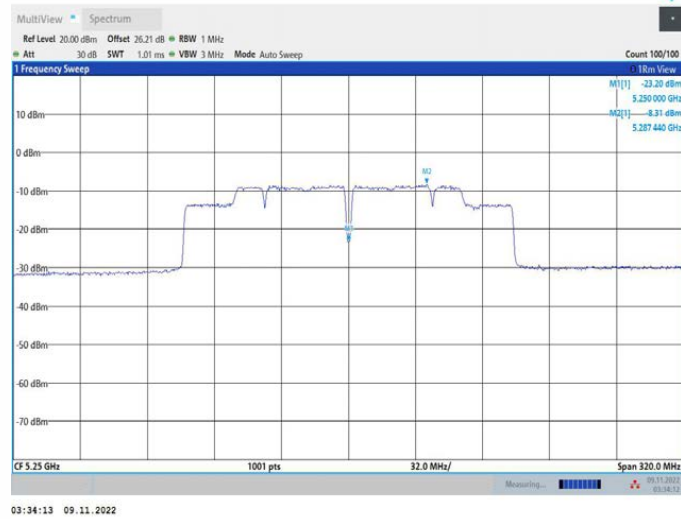
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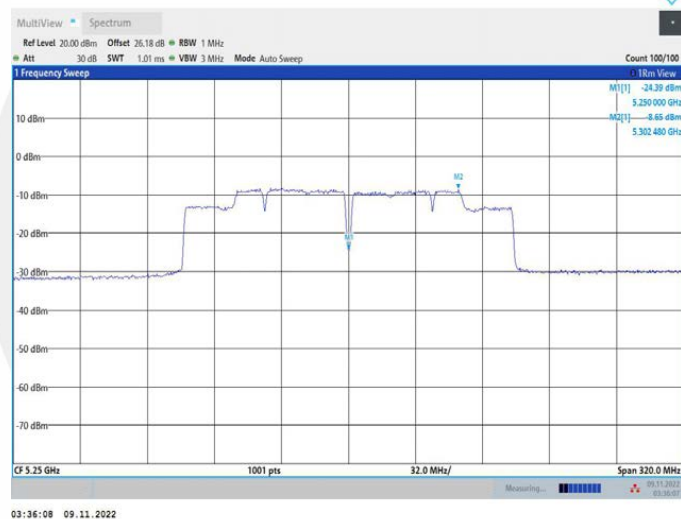
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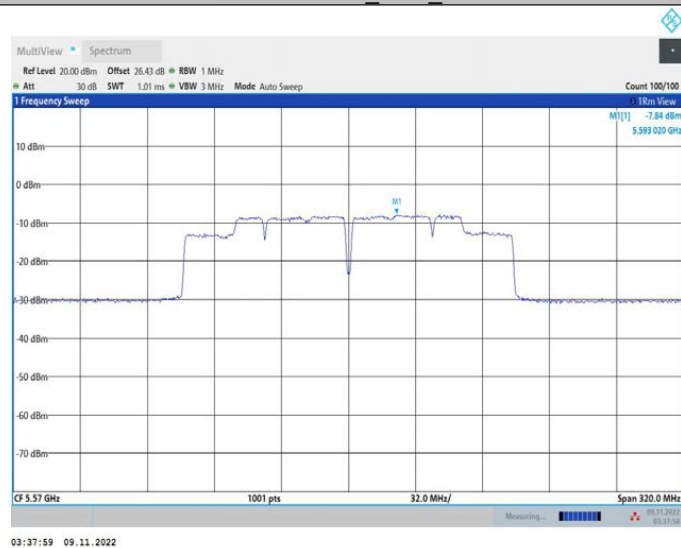
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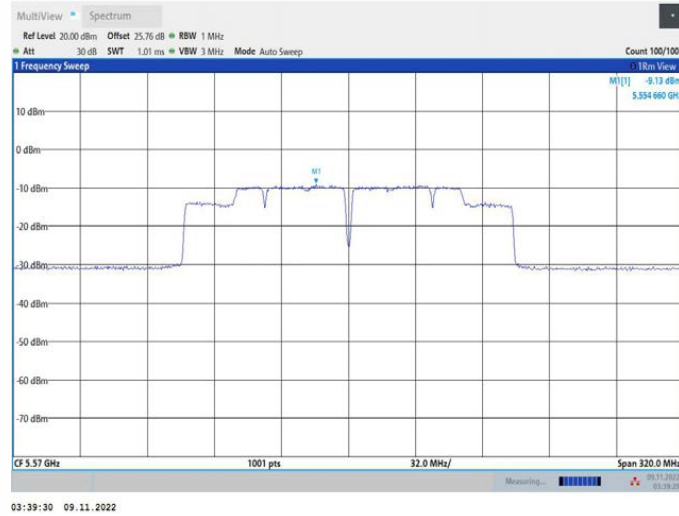
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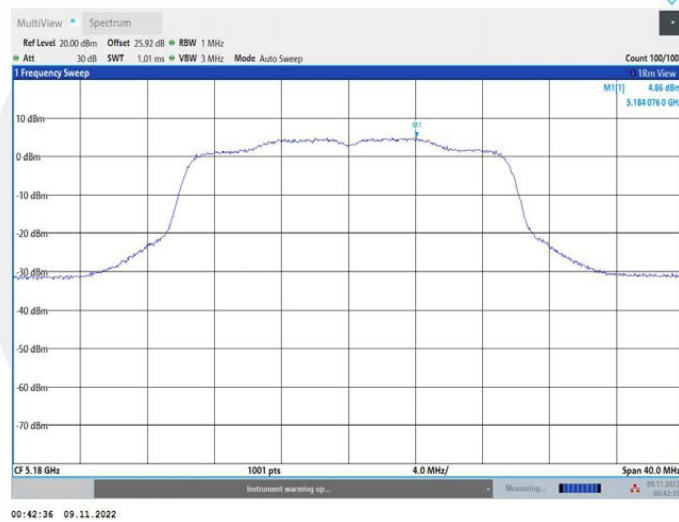
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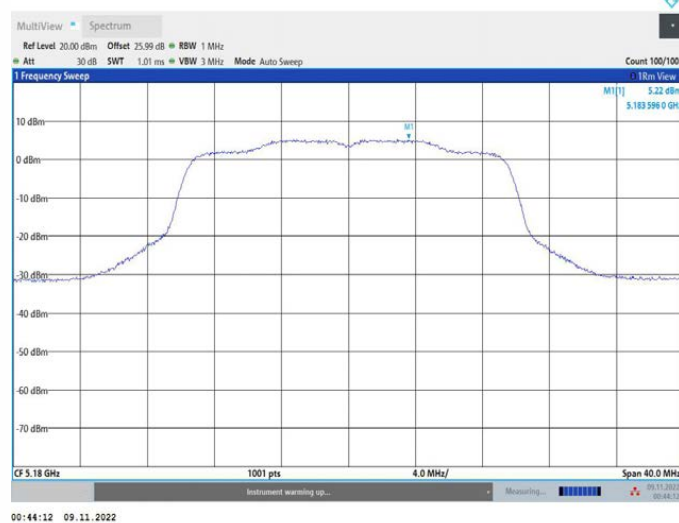
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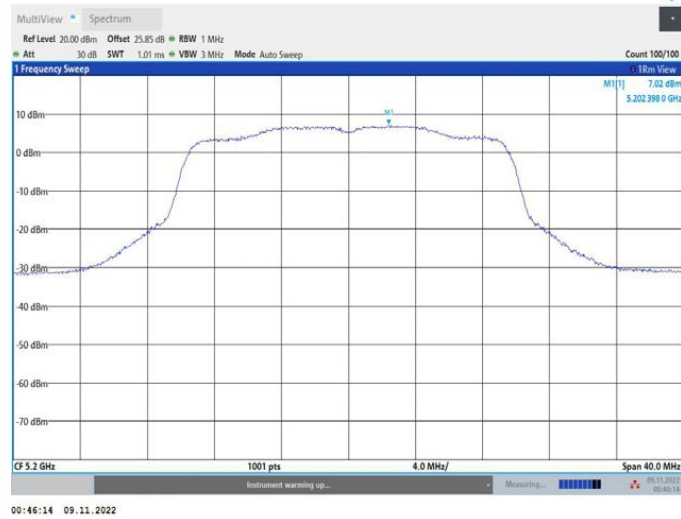
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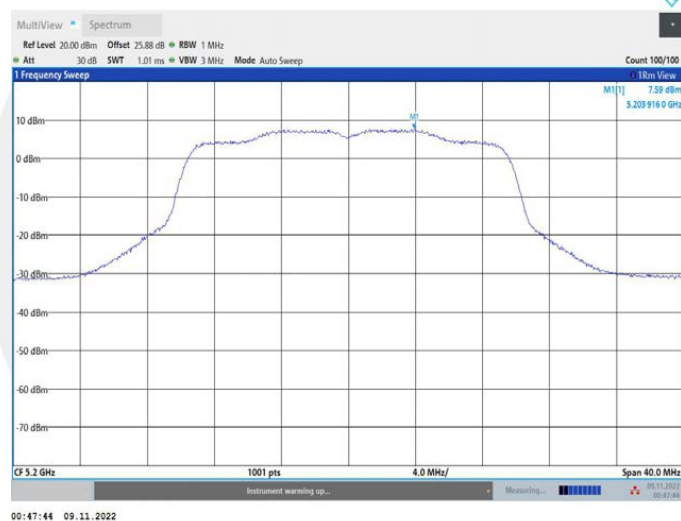
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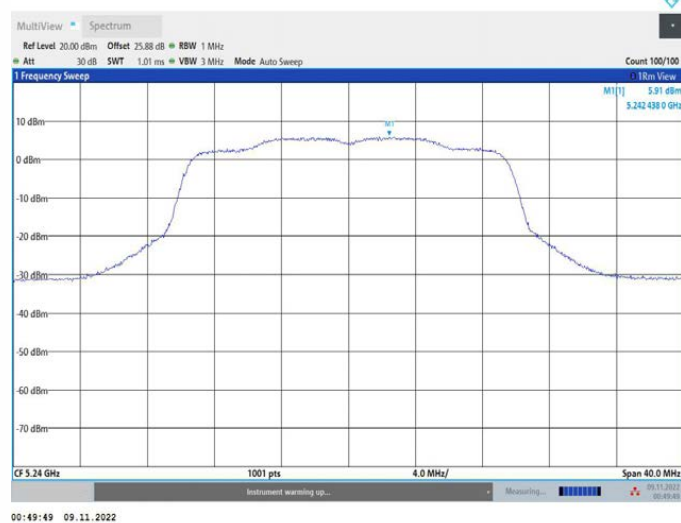
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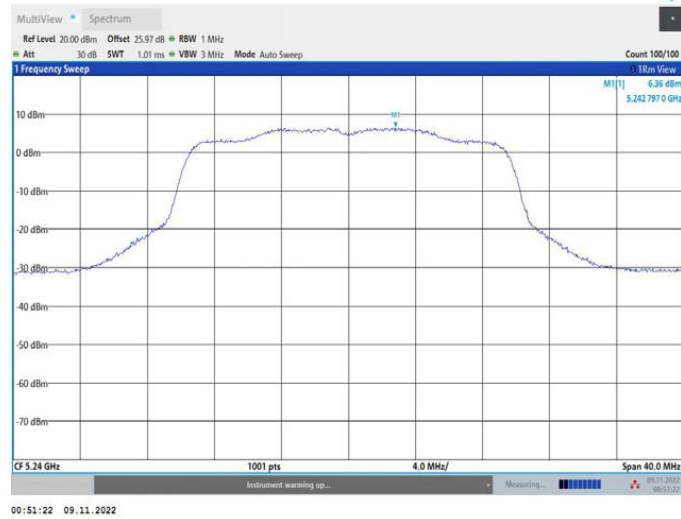
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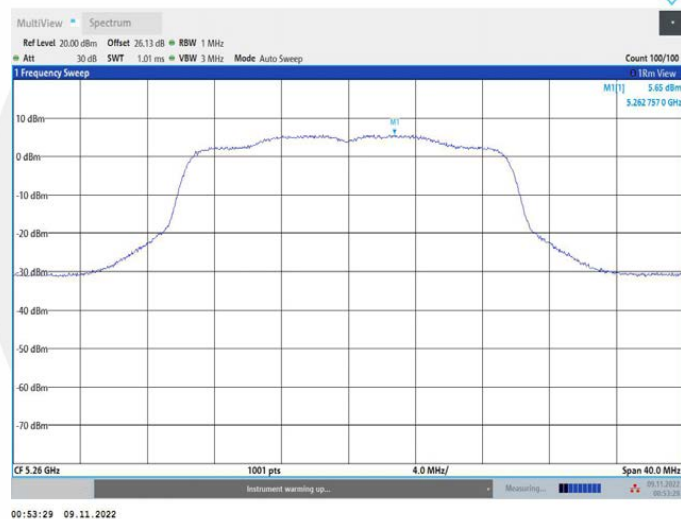
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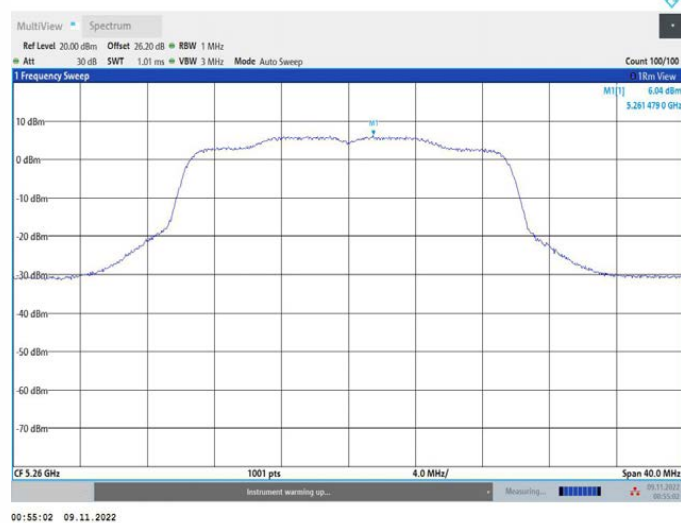
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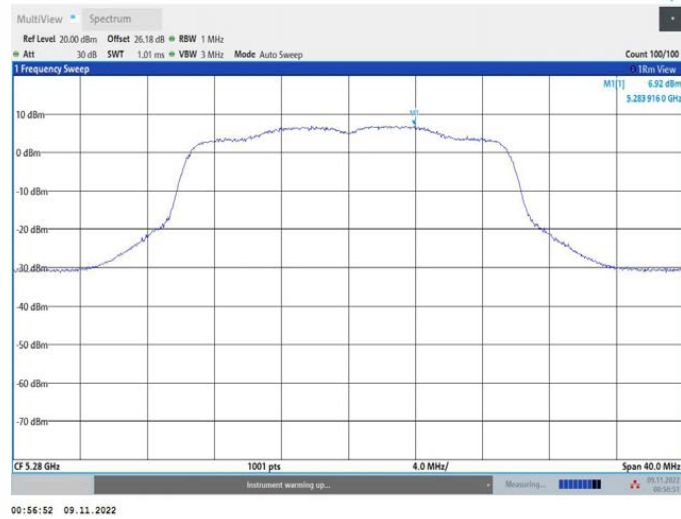
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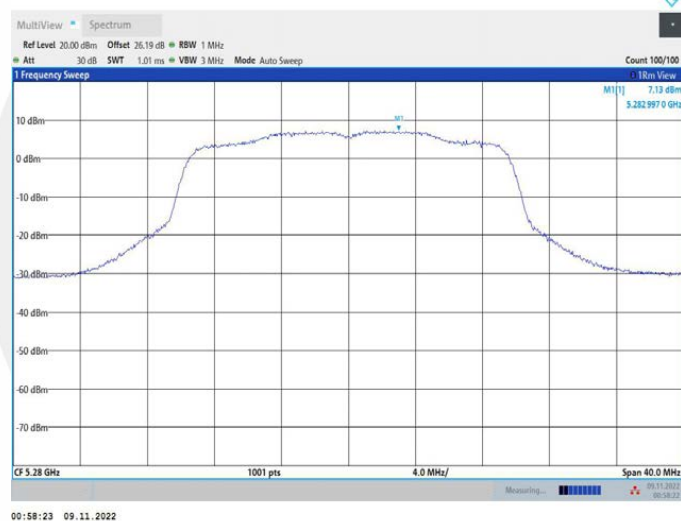
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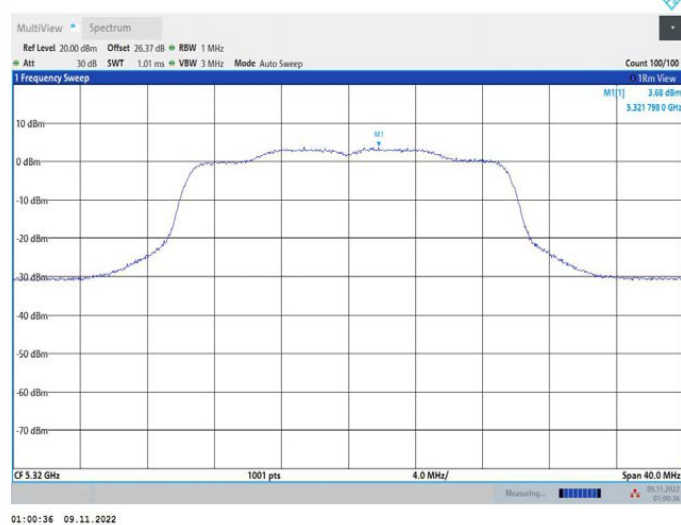
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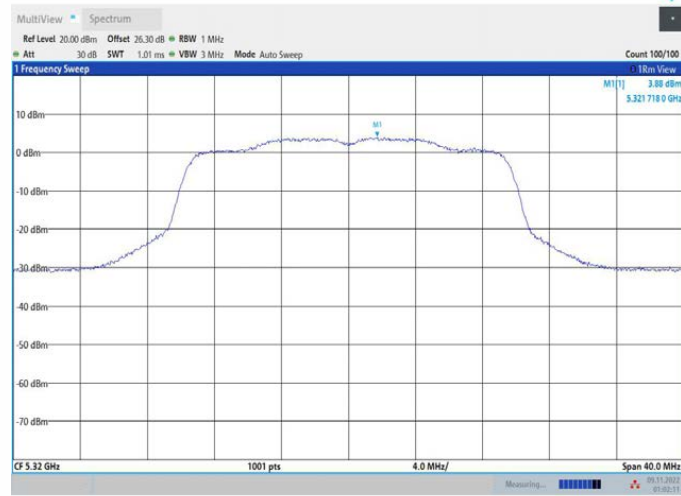
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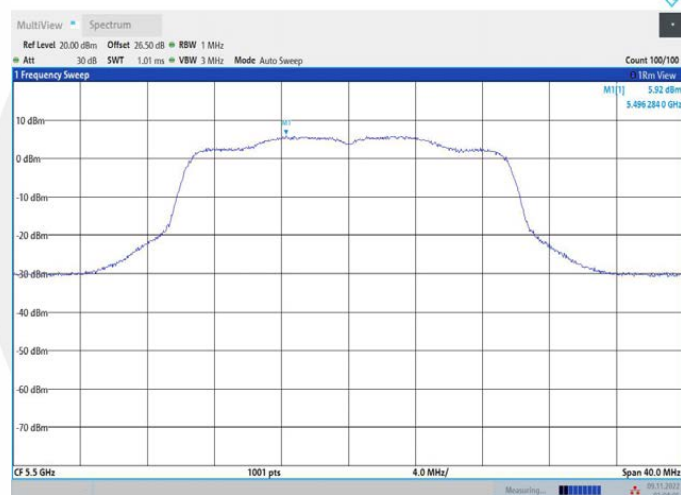


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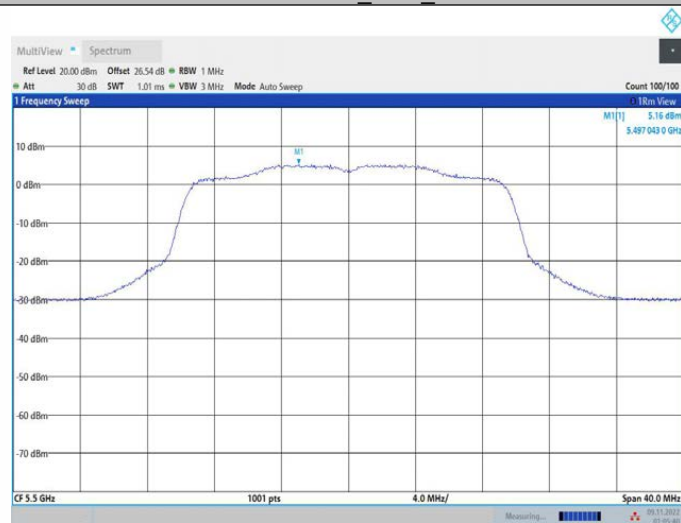
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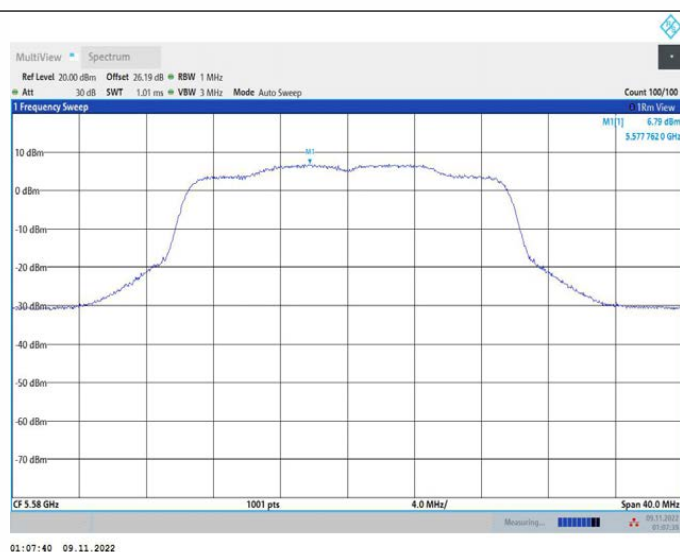
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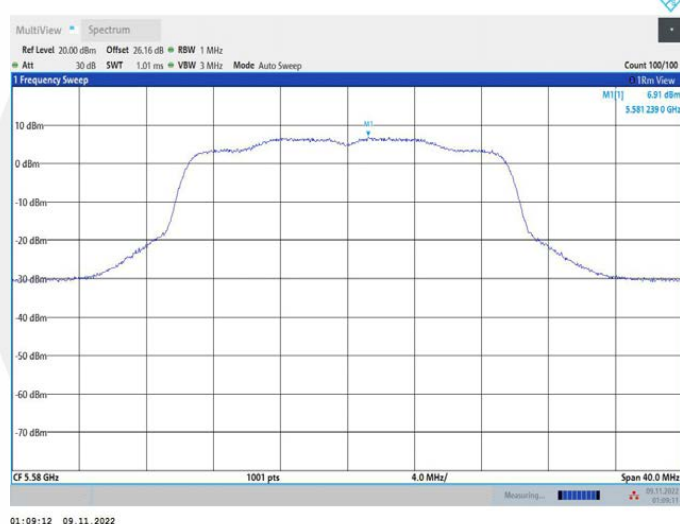


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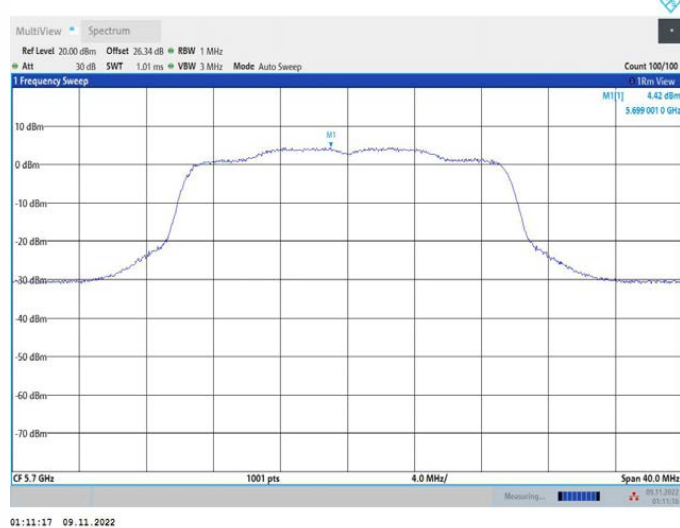
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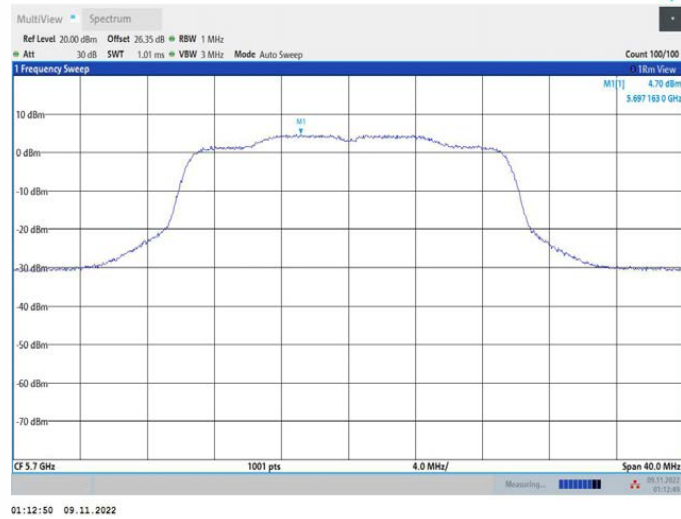
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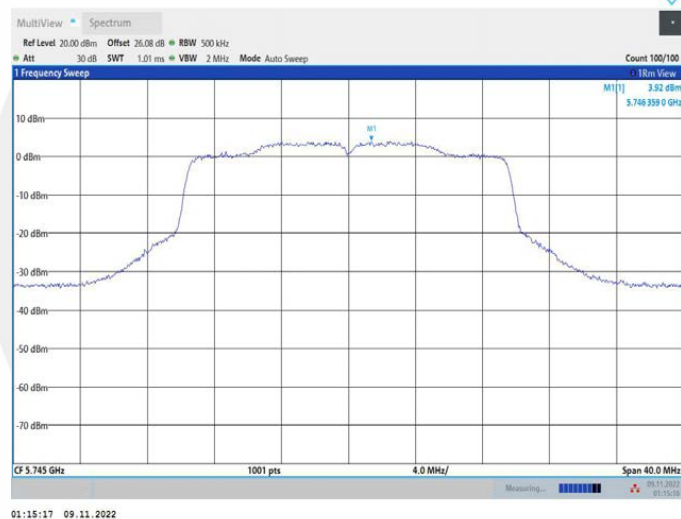
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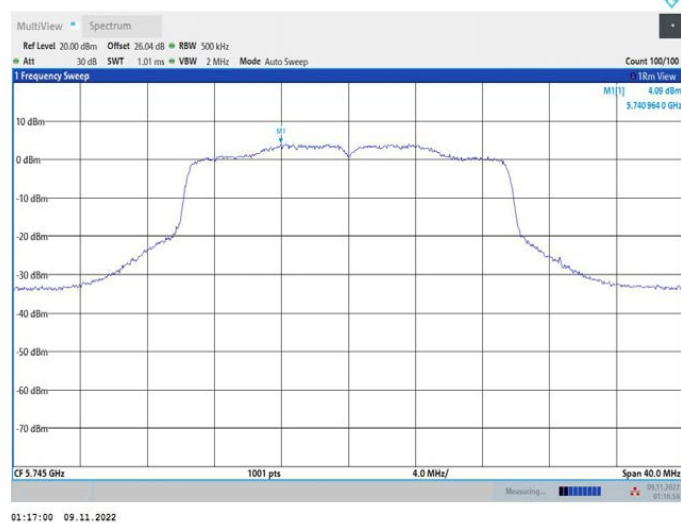
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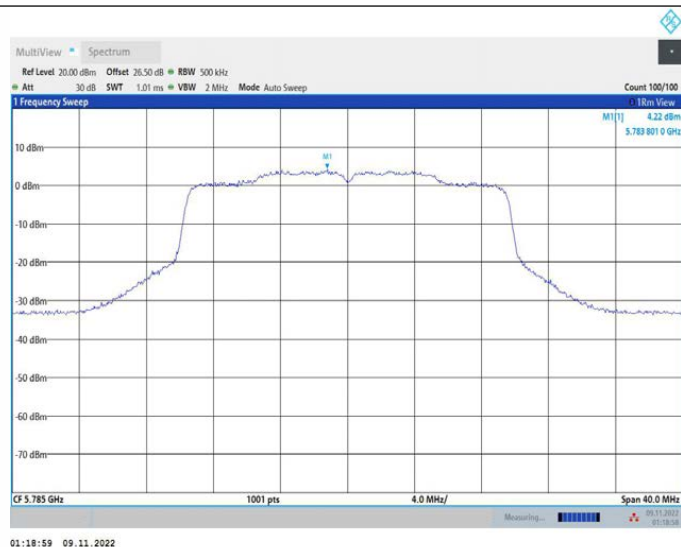
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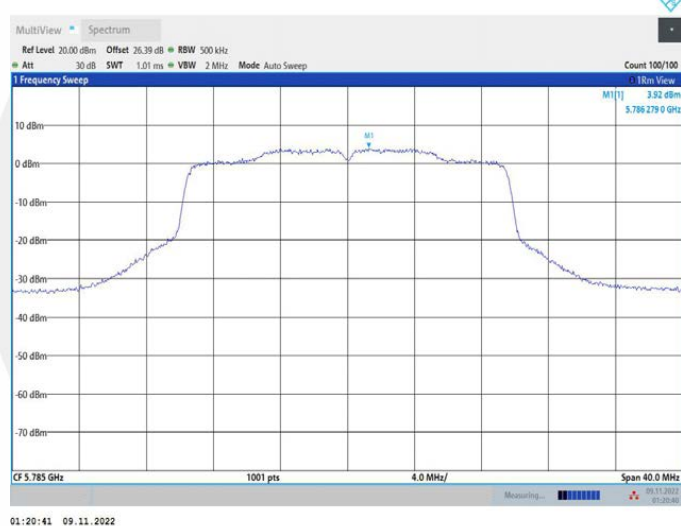
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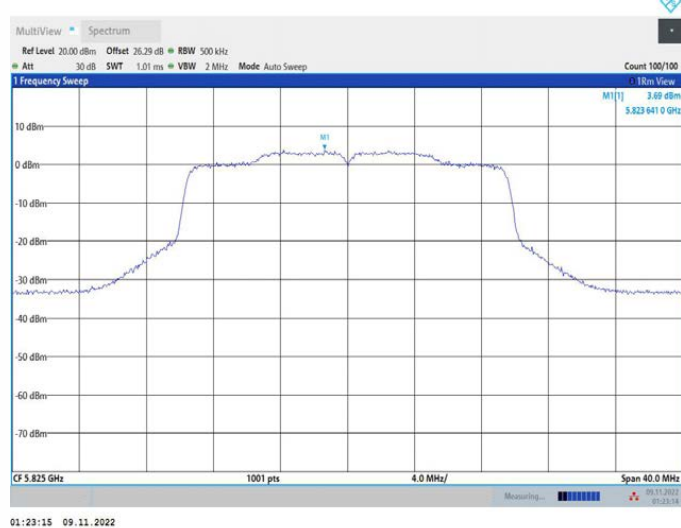
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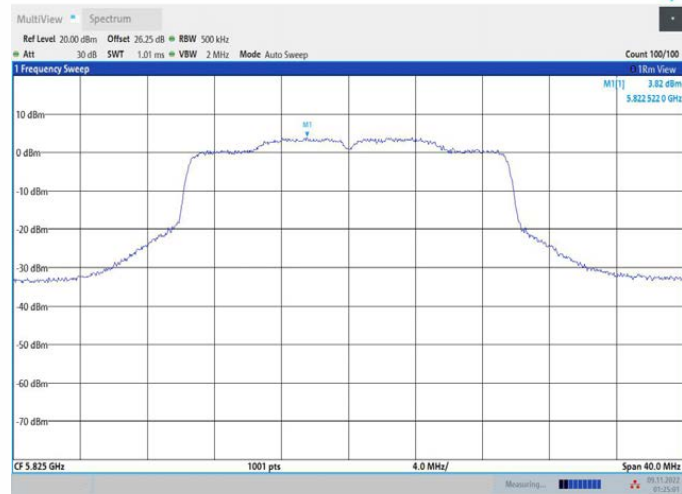
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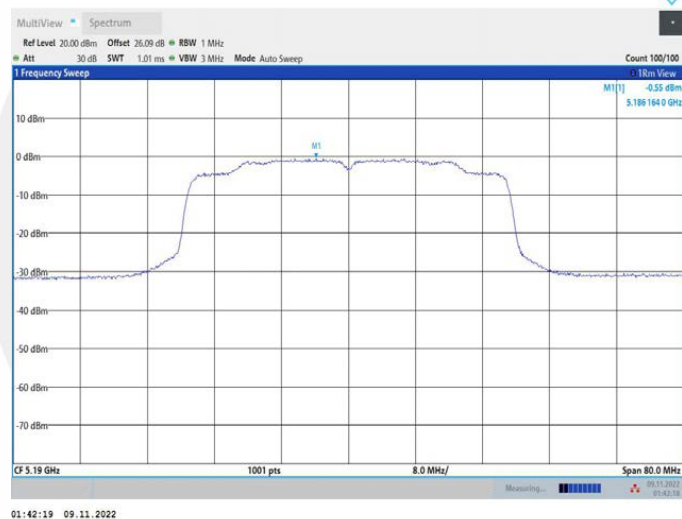
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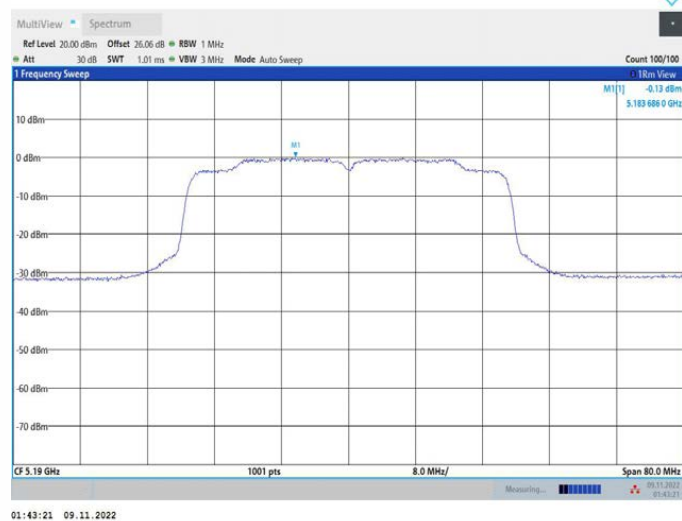
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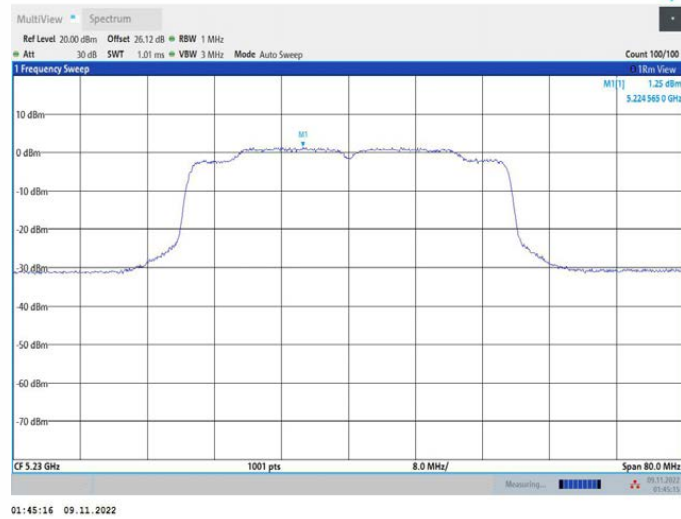
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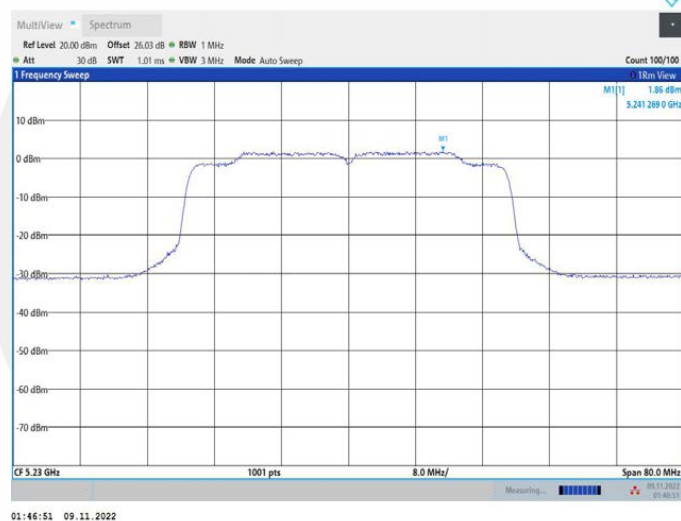
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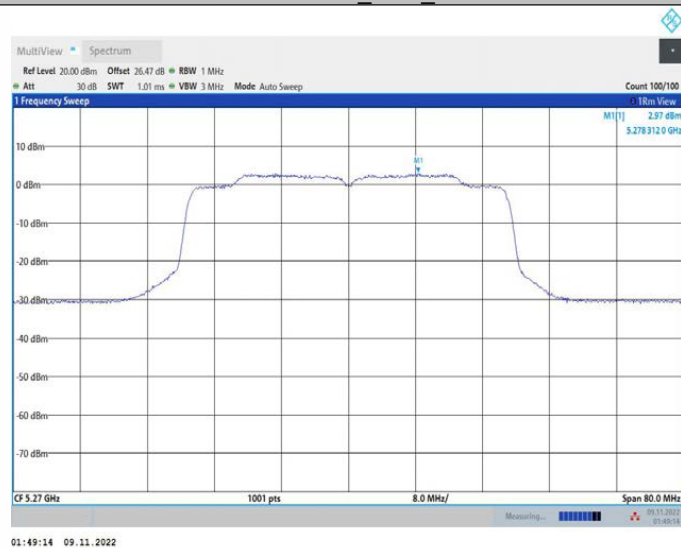
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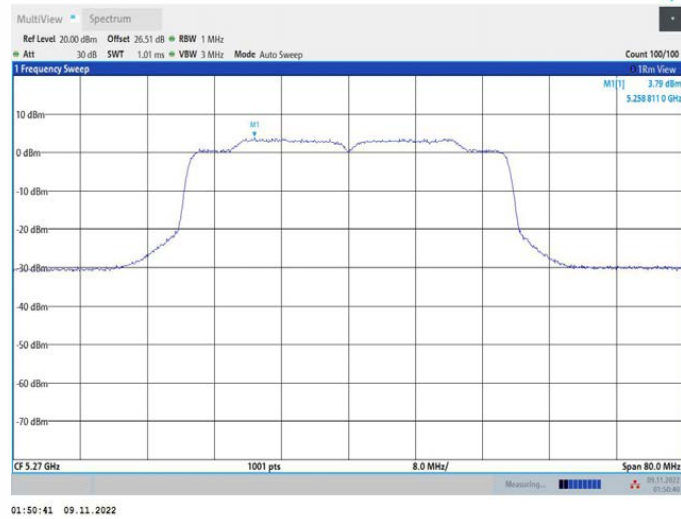
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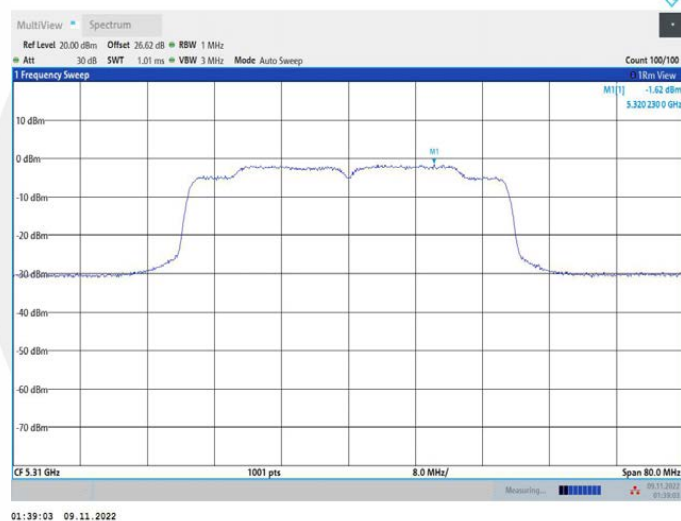
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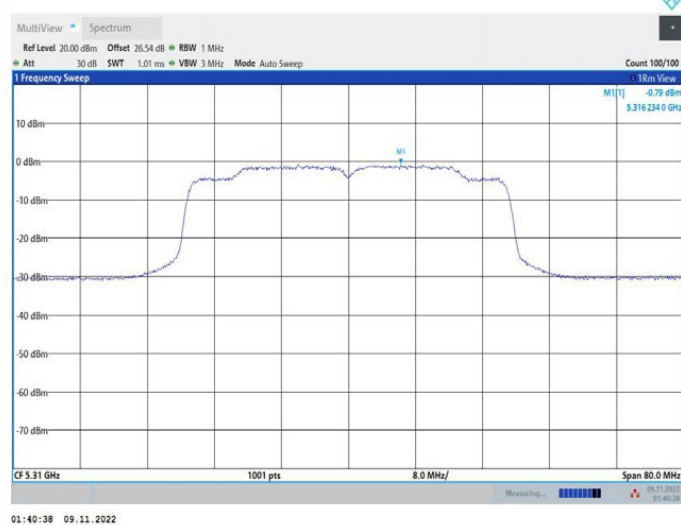
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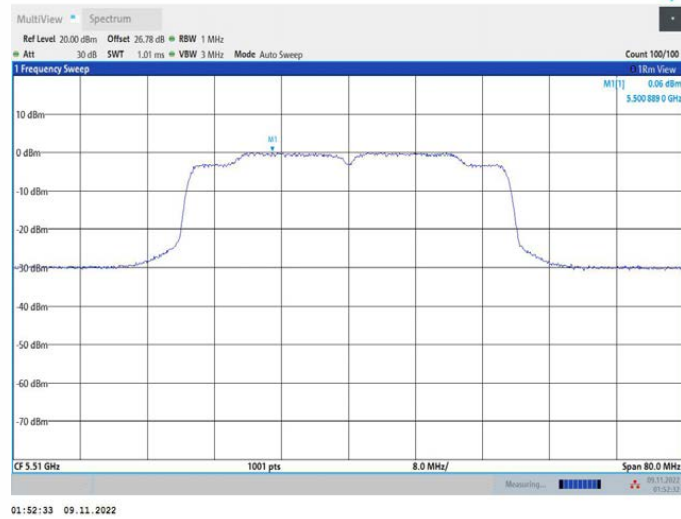
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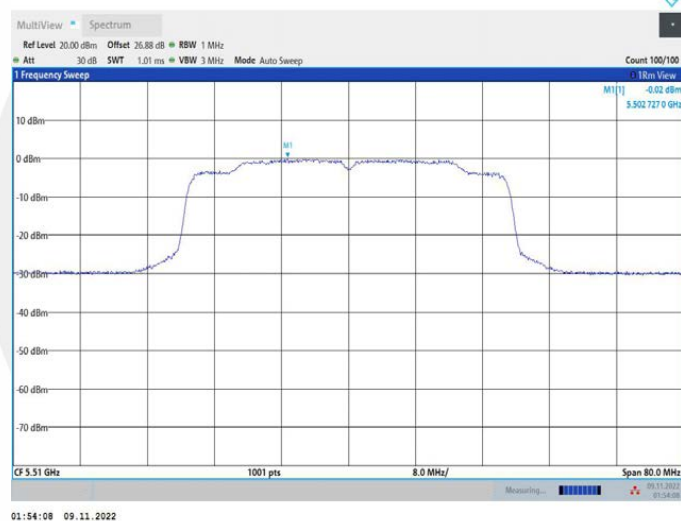
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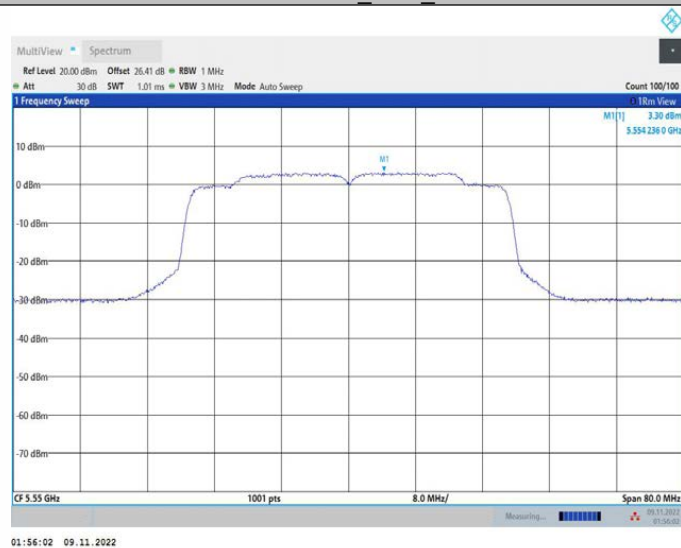
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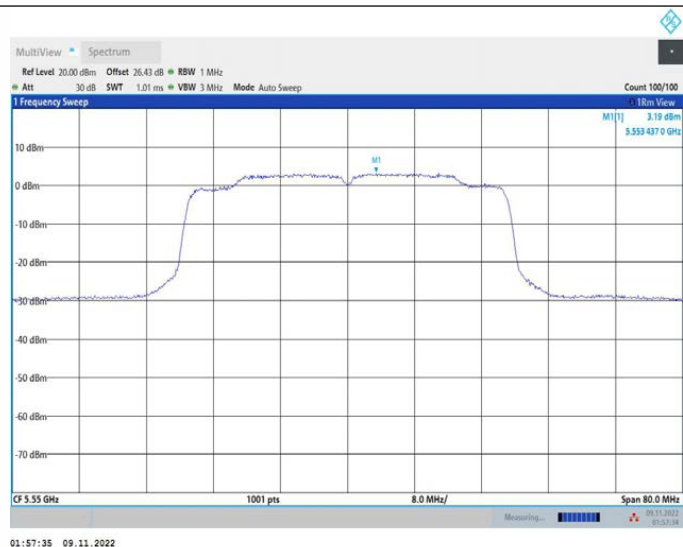
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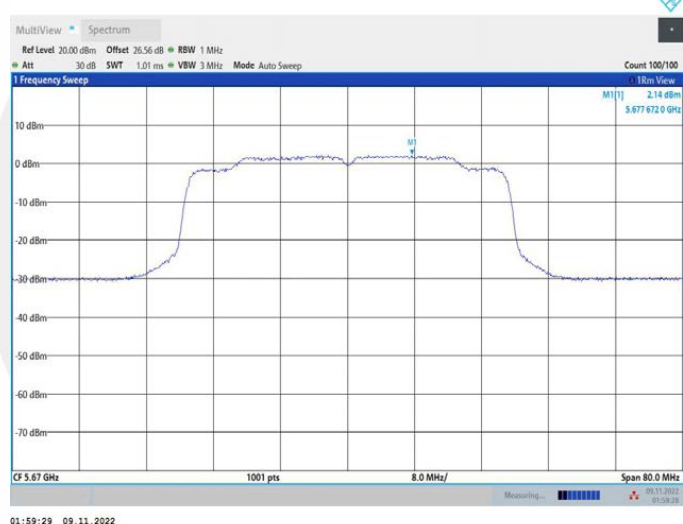
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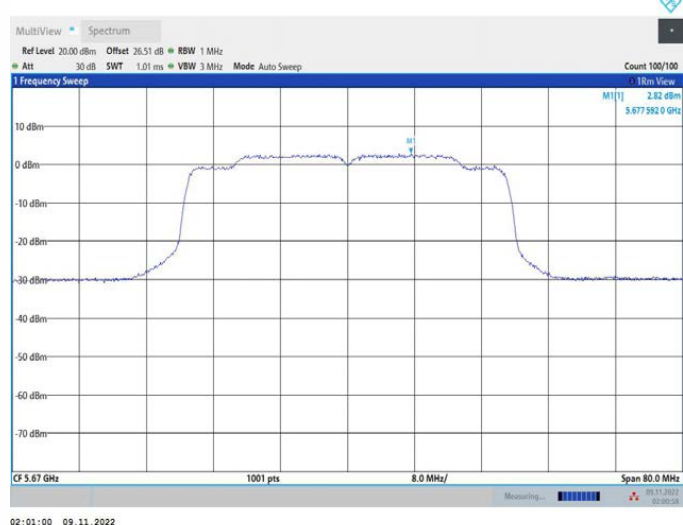
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11AX40MIMO_Ant1_5670



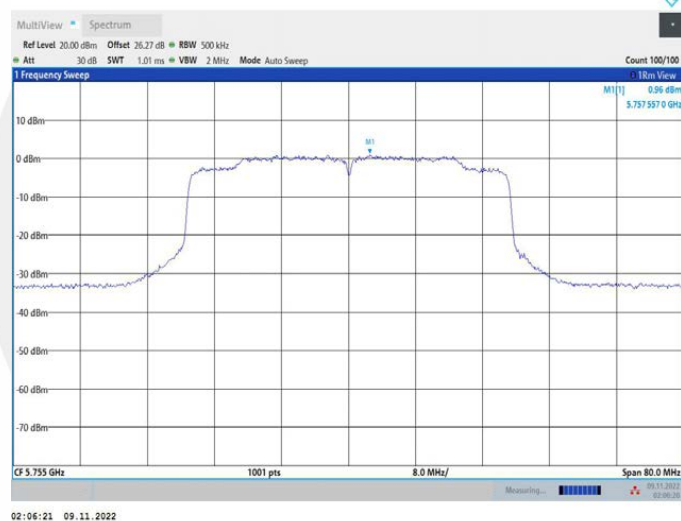
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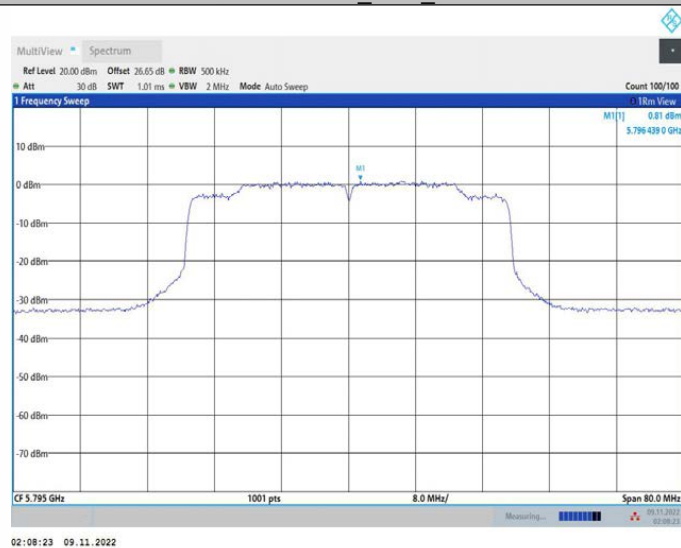
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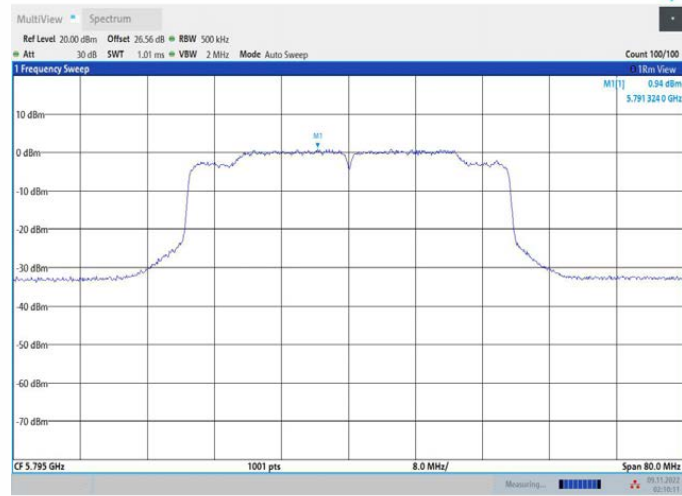
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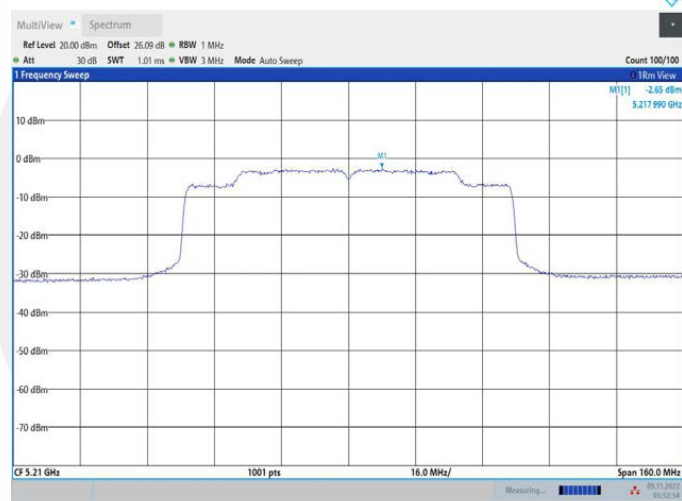
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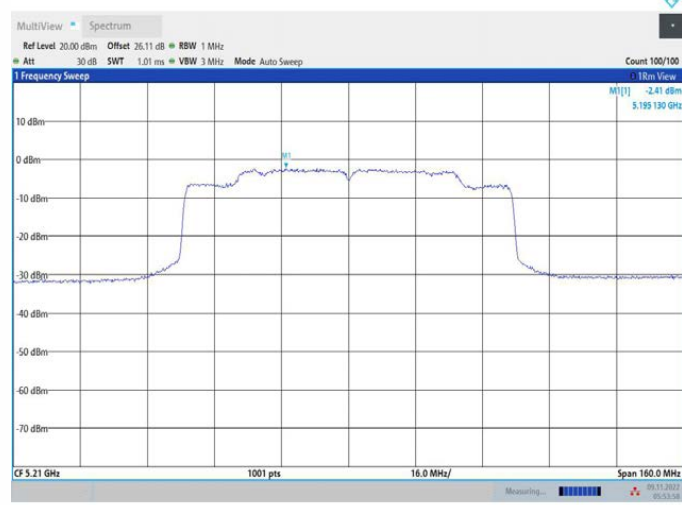
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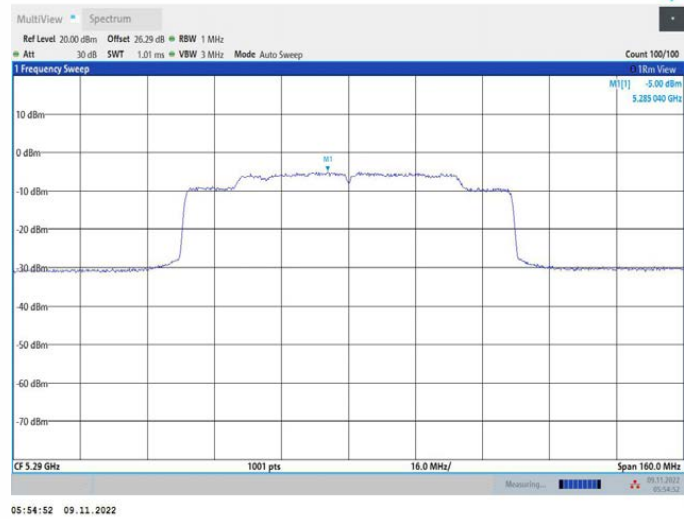
11AX80MIMO_Ant1_5210



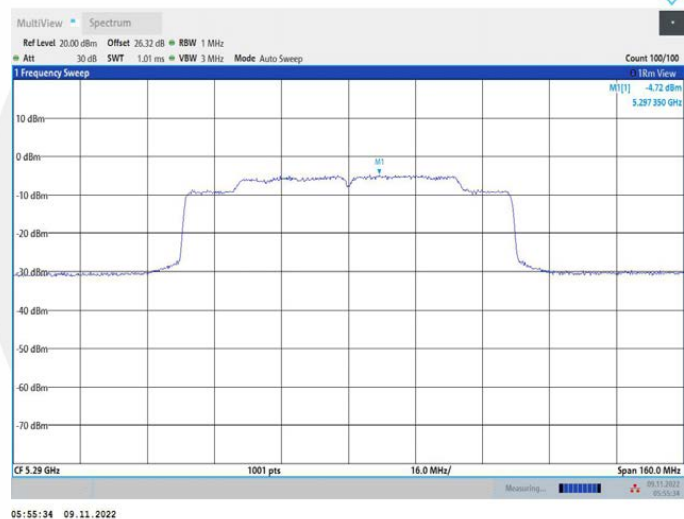
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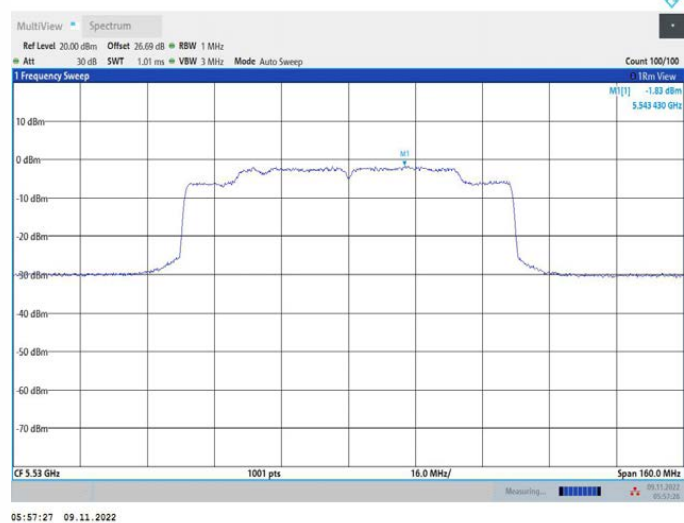
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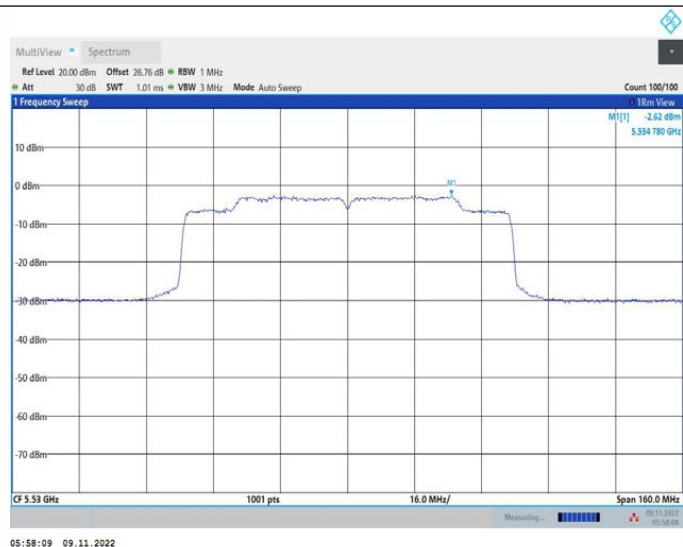
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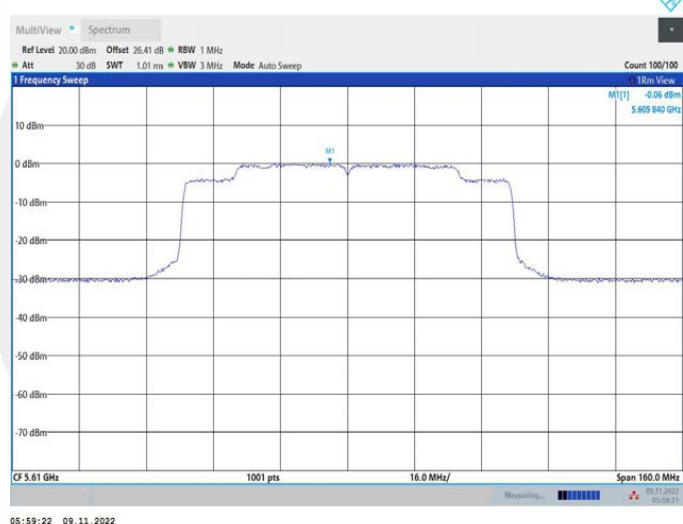
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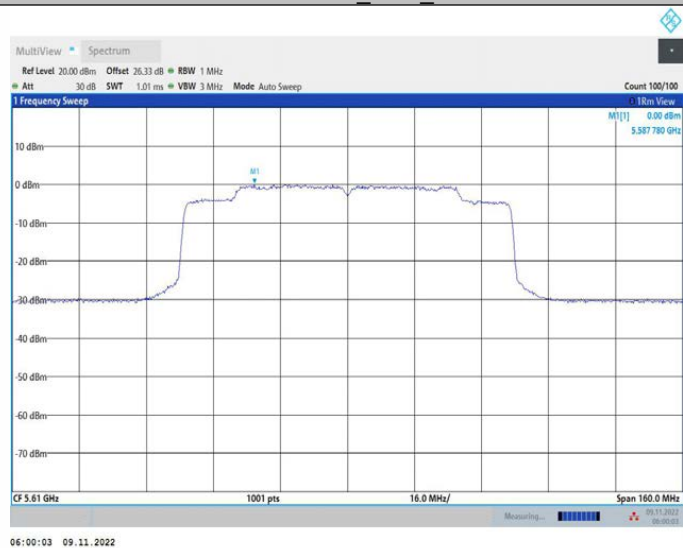
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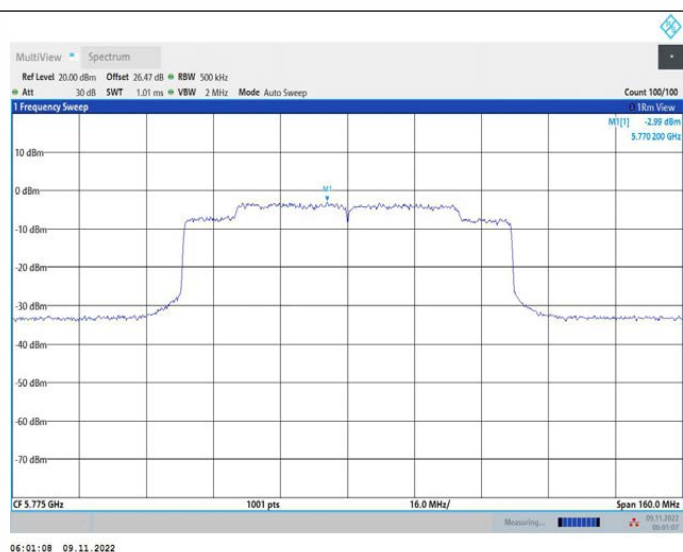
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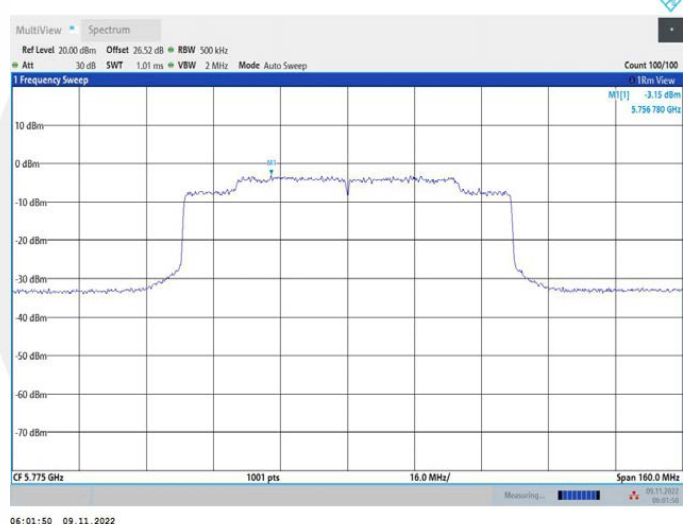
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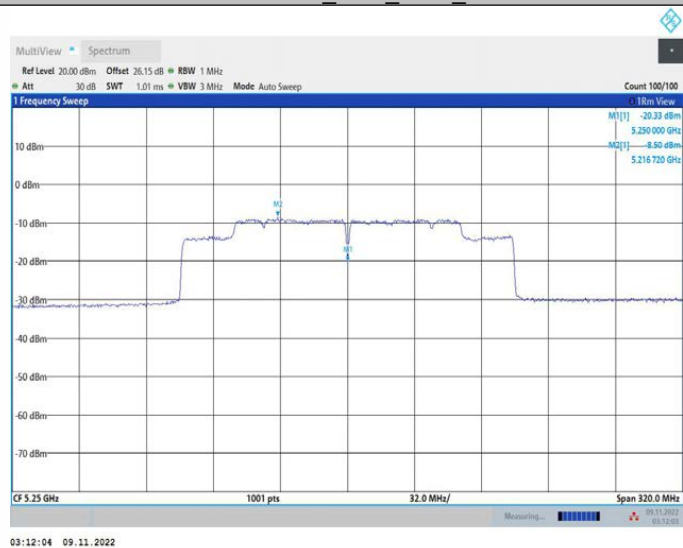
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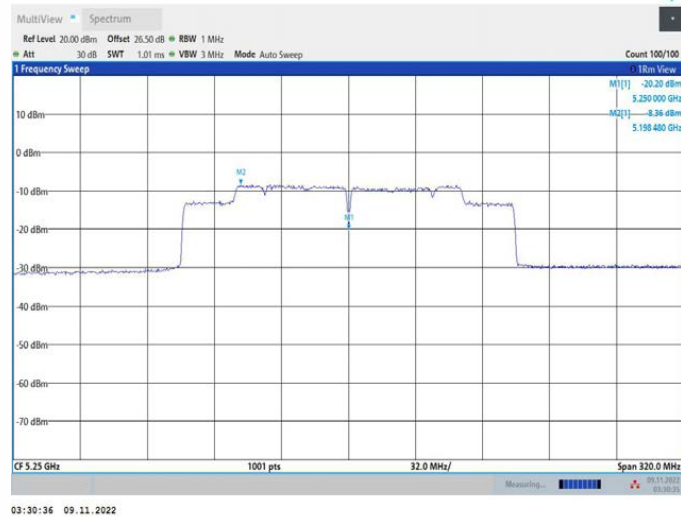
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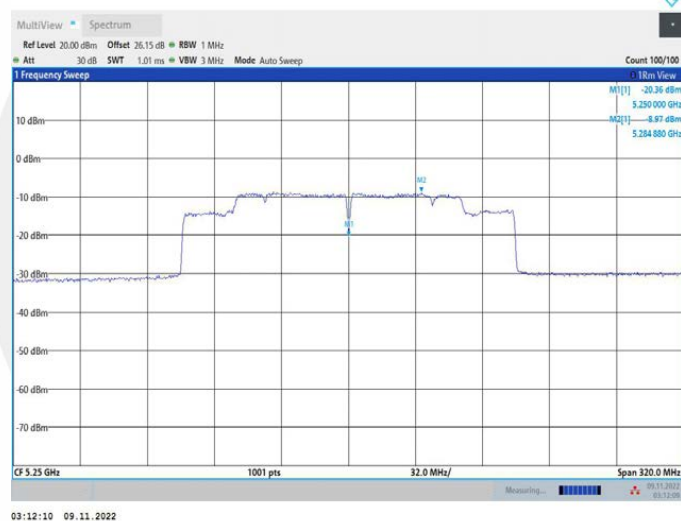
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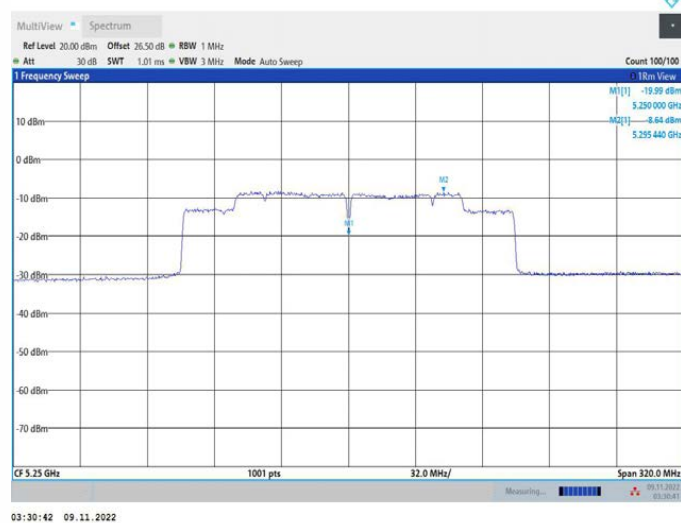
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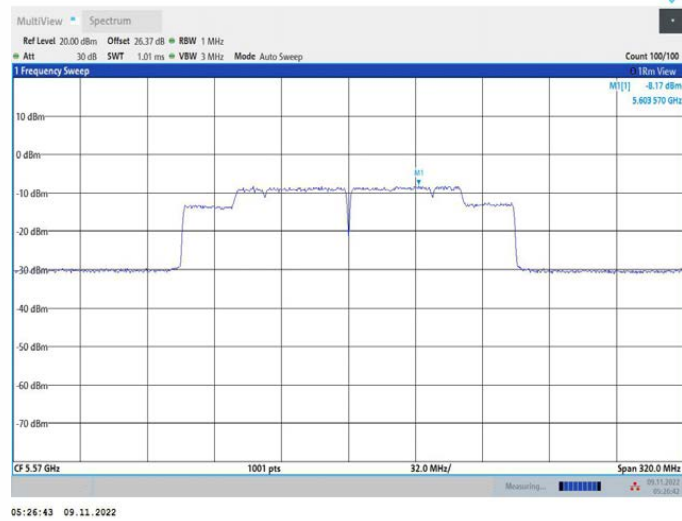
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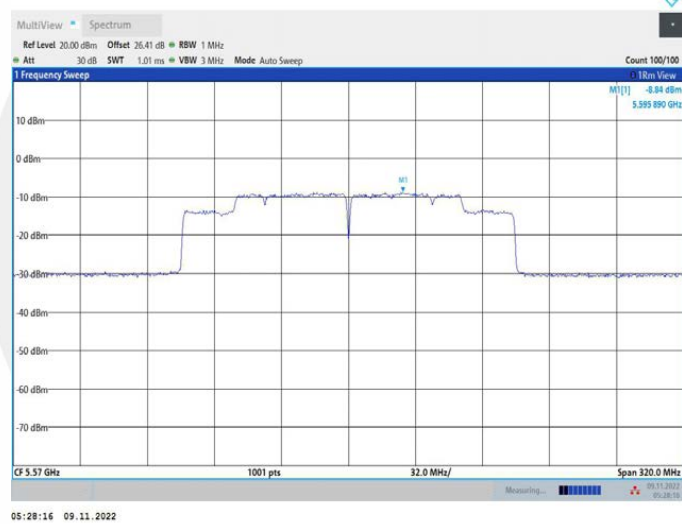
11AX160MIMO_Ant2_5250_UNII-2A



11AX160MIMO_Ant1_5570



11AX160MIMO_Ant2_5570



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 ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log ($\mu\text{V/m}$)	300
0.490-1.705	2400/F(KHz)	20 log ($\mu\text{V/m}$)	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 2.

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 $f < 150$ KHz(9KHz to 150KHz), 9KHz for $f < 30$ MHz (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 $\geq$ 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 $\geq$ 98 percent, set $VBW \leq RBW/100$ (i.e., 10 kHz) but not less than 10 Hz.

• If the EUT duty cycle is < 98 percent, set $VBW \geq 1/T$, 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)
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:
ANT2:

Test mode: 802.11n(HT20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
10694.25	V	59.75	-35.48	-27	8.48
14589.375	V	62.85	-32.38	-27	5.38
17487.875	V	65.16	-30.07	-27	3.07
11614.375	H	60.29	-34.94	-27	7.94
14593.625	H	63.08	-32.15	-27	5.15
17502.75	H	64.98	-30.25	-27	3.25

Test mode: 802.11n(HT20) Frequency(MHz): 5200

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11518.75	V	59.92	-35.31	-27	8.31
14555.375	V	62.89	-32.34	-27	5.34
17502.75	V	64.88	-30.35	-27	3.35
10058.875	H	58.53	-36.7	-27	9.7
16999.125	H	64.79	-30.44	-27	3.44
17511.25	H	65.45	-29.78	-27	2.78

Test mode: 802.11n(HT20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11656.875	V	60.59	-34.64	-27	7.64
14600	V	62.90	-32.33	-27	5.33
17496.375	V	65.72	-29.51	-27	2.51
10692.125	H	60.08	-35.15	-27	8.15
14521.375	H	63.00	-32.23	-27	5.23
17490	H	65.12	-30.11	-27	3.11

MIMO:

Test mode: 802.11n(HT20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
10691.47	V	59.49	-35.74	-27	8.74
17490.435	V	65.1	-30.13	-27	3.13
14584.875	V	42.33	-52.90	-27	25.90
11637.755	H	60.13	-35.10	-27	8.10
17526.13	H	64.66	-30.57	-27	3.57
14587.005	H	42.72	-52.51	-27	25.51

Test mode: 802.11n(HT20) Frequency(MHz): 5200

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11517.36	V	59.79	-35.44	-27	8.44
17504.03	V	64.85	-30.38	-27	3.38
14553.125	V	42.62	-52.61	-27	25.61
10070.565	H	58.45	-36.78	-27	9.78
17522.94	H	65.29	-29.94	-27	2.94
16995.815	H	44.62	-50.61	-27	23.61

Test mode: 802.11n(HT20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11655.485	V	60.46	-34.77	-27	7.77
17497.655	V	65.69	-29.54	-27	2.54
14597.75	V	42.67	-52.56	-27	25.56
10703.815	H	60	-35.23	-27	8.23
17501.69	H	64.96	-30.27	-27	3.27
14518.065	H	43.35	-51.88	-27	24.88

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[dBuV/m] + 20 log(d[meters]) - 104.77

d is the measurement distance in 3 meters

ANT2:

Frequency: 5180 Test mode: 802.11n(HT20)					
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
10694.25	V	59.75	74.00	14.25	peak
14589.375	V	62.85	74.00	11.15	peak
17487.875	V	65.16	74.00	8.84	peak
10694.25	V	40.15	54.00	13.85	AVG
14589.375	V	42.85	54.00	11.15	AVG
17487.875	V	47.76	54.00	6.24	AVG
11614.375	H	60.29	74.00	13.71	peak
14593.625	H	63.08	74.00	10.92	peak
17502.75	H	64.98	74.00	9.02	peak
11614.375	H	40.43	54.00	13.57	AVG
14593.625	H	43.08	54.00	10.92	AVG
17502.75	H	47.99	54.00	6.01	AVG

Frequency: 5200 Test mode: 802.11n(HT20)					
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11518.75	V	59.92	74.00	14.08	peak
14555.375	V	62.89	74.00	11.11	peak
17502.75	V	64.88	74.00	9.12	peak
11518.75	V	39.87	54.00	14.13	AVG
14555.375	V	42.88	54.00	11.12	AVG
17502.75	V	49.88	54.00	4.12	AVG
10058.875	H	58.53	74.00	15.47	peak
16999.125	H	64.79	74.00	9.21	peak
17511.25	H	65.45	74.00	8.55	peak
10058.875	H	37.95	54.00	16.05	AVG
16999.125	H	44.80	54.00	9.20	AVG
17511.25	H	47.34	54.00	6.66	AVG

Frequency: 5240 Test mode: 802.11n(HT20)					
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11656.875	V	60.59	74.00	13.41	peak
14600	V	62.90	74.00	11.10	peak
17496.375	V	65.72	74.00	8.28	peak
11656.875	V	40.08	54.00	13.92	AVG
14600	V	42.93	54.00	11.07	AVG
17496.375	V	49.59	54.00	4.41	AVG
10692.125	H	60.08	74.00	13.92	peak
14521.375	H	63.00	74.00	11.00	peak
17490	H	65.12	74.00	8.88	peak
10692.125	H	39.43	54.00	14.57	AVG
14521.375	H	43.53	54.00	10.47	AVG
17490	H	46.64	54.00	7.36	AVG

MIMO:

Frequency: 5180 Test mode: 802.11n(HT20)					
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
10691.470	V	59.49	74.00	14.51	peak
14586.595	V	62.53	74.00	11.47	peak
17490.435	V	65.10	74.00	8.9	peak
10696.810	V	40.11	54.00	13.89	AVG
14584.875	V	42.33	54.00	11.67	AVG
17483.375	V	47.38	54.00	6.62	AVG
11637.755	H	60.13	74.00	13.87	peak
14617.005	H	62.66	74.00	11.34	peak
17526.130	H	64.66	74.00	9.34	peak
11637.755	H	40.15	54.00	13.85	AVG
14587.005	H	42.72	54.00	11.28	AVG
17496.130	H	47.73	54.00	6.27	AVG

Frequency: 5200 Test mode: 802.11n(HT20)					
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11517.360	V	59.79	74.00	14.21	peak
14553.985	V	62.73	74.00	11.27	peak
17504.030	V	64.85	74.00	9.15	peak
11520.030	V	39.85	54.00	14.15	AVG
14553.125	V	42.62	54.00	11.38	AVG
17500.500	V	49.69	54.00	4.31	AVG
10070.565	H	58.45	74.00	15.55	peak
17010.815	H	64.58	74.00	9.42	peak
17522.940	H	65.29	74.00	8.71	peak
10070.565	H	37.81	54.00	16.19	AVG
16995.815	H	44.62	54.00	9.38	AVG
17507.940	H	47.21	54.00	6.79	AVG

Frequency: 5240 Test mode: 802.11n(HT20)					
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11655.485	V	60.46	74.00	13.54	peak
14598.610	V	62.74	74.00	11.26	peak
17497.655	V	65.69	74.00	8.31	peak
11658.155	V	40.06	54.00	13.94	AVG
14597.750	V	42.67	54.00	11.33	AVG
17494.125	V	49.40	54.00	4.6	AVG
10703.815	H	60.00	74.00	14	peak
14533.065	H	62.79	74.00	11.21	peak
17501.690	H	64.96	74.00	9.04	peak
10703.815	H	39.29	54.00	14.71	AVG
14518.065	H	43.35	54.00	10.65	AVG
17486.690	H	46.51	54.00	7.49	AVG

- 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: 802.11n(HT20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5029.587	H	54.69	-40.54	-27	Pass
5030.1562	V	54.64	-40.59	-27	Pass

Test mode: 802.11n(HT20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5452.7675	H	53.44	-41.79	-27	Pass
5372.3575	V	53.54	-41.69	-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[dBuV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

Test mode: 802.11n(HT20) Frequency(MHz): 5180

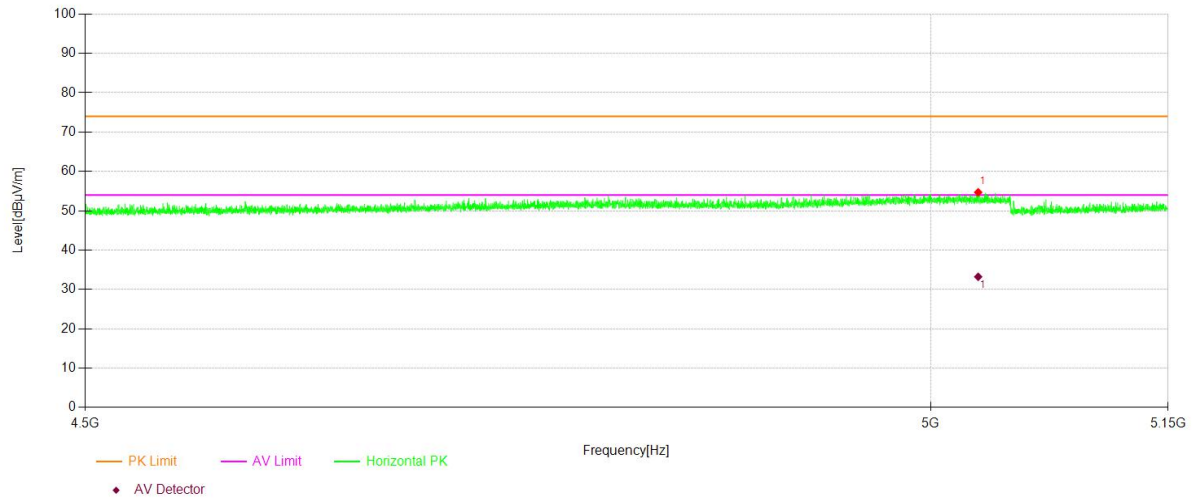
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5030.1562	V	54.64	74.00	19.36	peak
5030.1562	V	33.66	54.00	20.34	AVG
5029.587	H	54.69	74.00	19.31	peak
5029.587	H	33.22	54.00	20.78	AVG

Test mode: 802.11n(HT20) Frequency(MHz): 5240

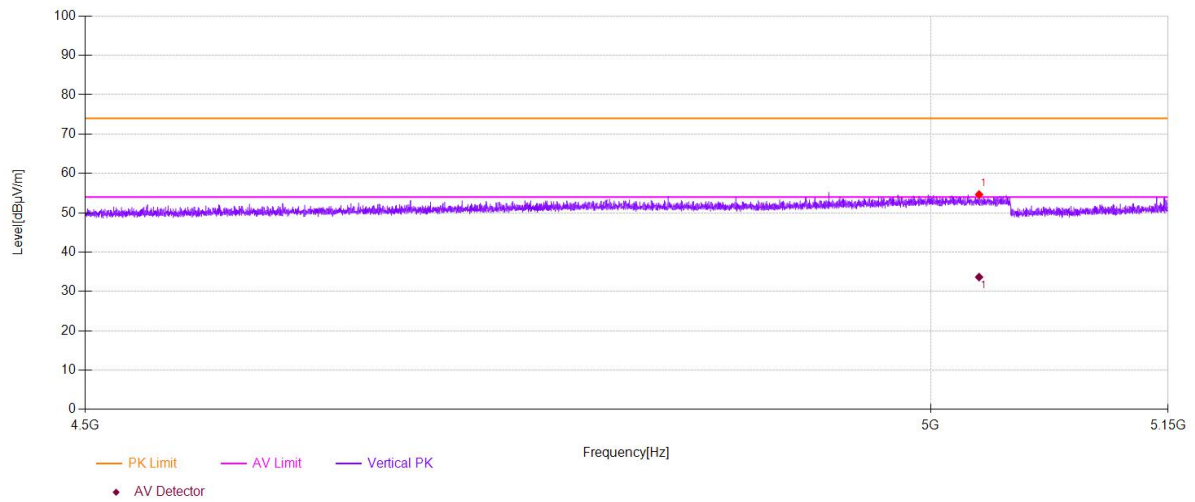
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5372.3575	V	53.54	74.00	20.46	peak
5372.3575	V	32.21	54.00	21.79	AVG
5452.7675	H	53.44	74.00	20.56	peak
5452.7675	H	32.25	54.00	21.75	AVG

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.

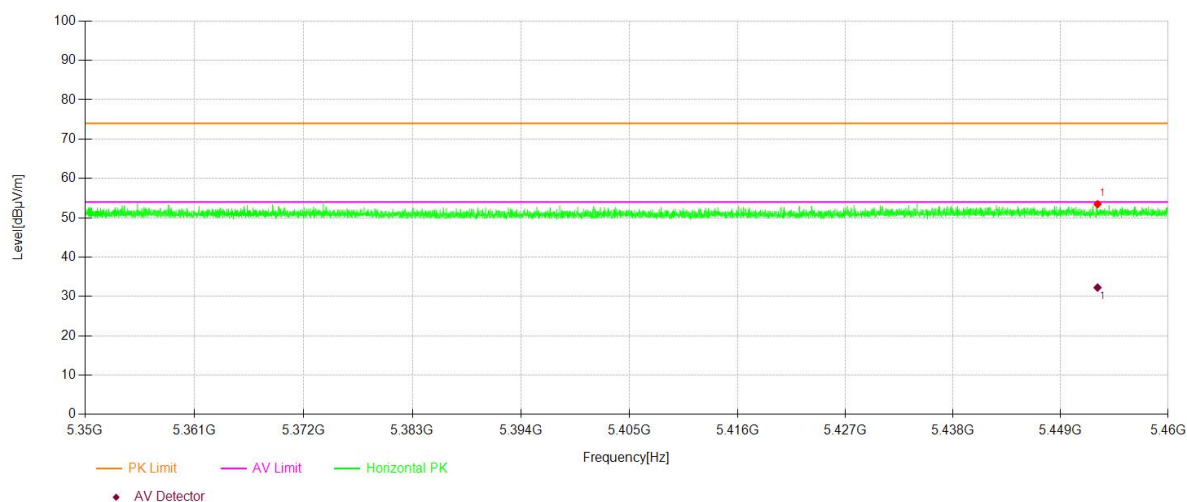
U-NII - 1				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)			
	☐ 802.11a	☒ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5180	☐ 5200	☐ 5240	Ant.Pol H



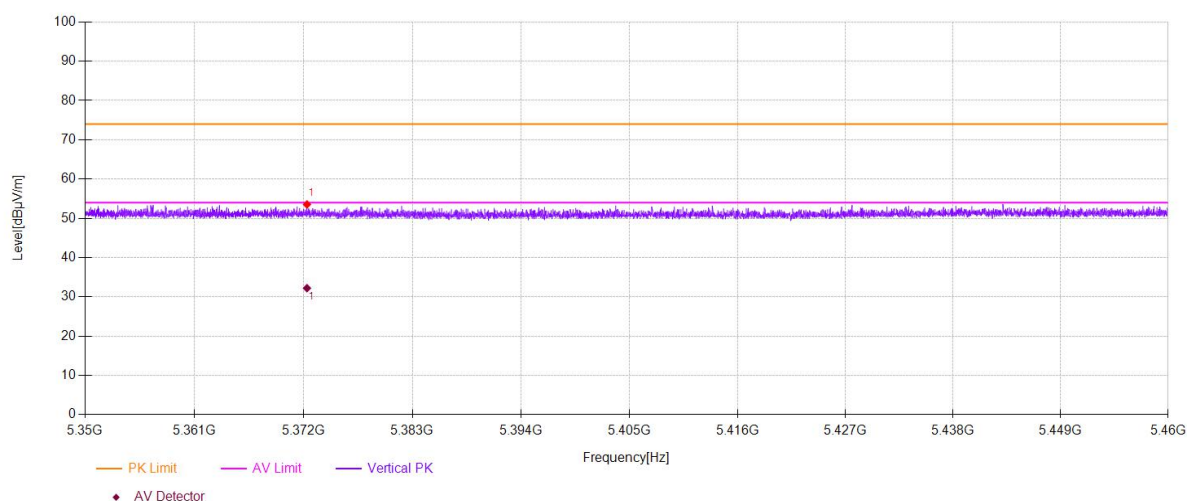
U-NII - 1				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)			
	☐ 802.11a	☒ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5180	☐ 5200	☐ 5240	Ant.Pol V



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



U-NII - 1				
Test Model	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)
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:

ANT2:

Test mode: 802.11n(HT20) Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
10732.5	V	59.62	-35.61	-27	8.61
14515	V	63.02	-32.21	-27	5.21
17492.125	V	65.31	-29.92	-27	2.92
11376.375	H	60.40	-34.83	-27	7.83
14534.125	H	62.98	-32.25	-27	5.25
17498.5	H	65.75	-29.48	-27	2.48

Test mode: 802.11n(HT20) Frequency(MHz): 5280

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11540	V	60.70	-34.53	-27	7.53
14529.875	V	63.26	-31.97	-27	4.97
17498.5	V	65.29	-29.94	-27	2.94
10728.25	H	59.79	-35.44	-27	8.44
14602.125	H	63.18	-32.05	-27	5.05
17502.75	H	66.57	-28.66	-27	1.66

Test mode: 802.11n(HT20) Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11493.25	V	61.11	-34.12	-27	7.12
14634	V	63.13	-32.1	-27	5.1
17494.25	V	65.27	-29.96	-27	2.96
11542.125	H	60.30	-34.93	-27	7.93
14568.125	H	63.24	-31.99	-27	4.99
17500.625	H	65.42	-29.81	-27	2.81

MIMO:

Test mode: 802.11n(HT20) Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
10731.11	V	59.49	-35.74	-27	8.74
17493.405	V	65.28	-29.95	-27	2.95
14512.75	V	42.75	-52.48	-27	25.48
11388.065	H	60.32	-34.91	-27	7.91
17510.19	H	65.59	-29.64	-27	2.64
14530.815	H	42.8	-52.43	-27	25.43

Test mode: 802.11n(HT20) Frequency(MHz): 5280

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11538.61	V	60.57	-34.66	-27	7.66
17499.78	V	65.26	-29.97	-27	2.97
14527.625	V	43.3	-51.93	-27	24.93
10739.94	H	59.71	-35.52	-27	8.52
17514.44	H	66.41	-28.82	-27	1.82
14598.815	H	44.93	-50.30	-27	23.30

Test mode: 802.11n(HT20) Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11491.86	V	60.98	-34.25	-27	7.25
17495.53	V	65.24	-29.99	-27	2.99
14631.75	V	43.67	-51.56	-27	24.56
11553.815	H	60.22	-35.01	-27	8.01
17512.315	H	65.26	-29.97	-27	2.97
14564.815	H	43.06	-52.17	-27	25.17

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[dBuV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

ANT2:

Test mode: 802.11n(HT20)			Frequency(MHz): 5260		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
10732.5	V	59.62	74.00	14.38	peak
14515	V	63.02	74.00	10.98	peak
17492.125	V	65.31	74.00	8.69	peak
10732.5	V	39.62	54.00	14.38	AVG
14515	V	43.01	54.00	10.99	AVG
17492.125	V	48.41	54.00	5.59	AVG
11376.375	H	60.40	74.00	13.60	peak
14534.125	H	62.98	74.00	11.02	peak
17498.5	H	65.75	74.00	8.25	peak
11376.375	H	40.22	54.00	13.78	AVG
14534.125	H	42.98	54.00	11.02	AVG
17498.5	H	48.73	54.00	5.27	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5280		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11540	V	60.70	74.00	13.30	peak
14529.875	V	63.26	74.00	10.74	peak
17498.5	V	65.29	74.00	8.71	peak
11540	V	40.70	54.00	13.30	AVG
14529.875	V	43.56	54.00	10.44	AVG
17498.5	V	48.29	54.00	5.71	AVG
10728.25	H	59.79	74.00	14.21	peak
14602.125	H	63.18	74.00	10.82	peak
17502.75	H	66.57	74.00	7.43	peak
10728.25	H	39.79	54.00	14.21	AVG
14602.125	H	45.11	54.00	8.89	AVG
17502.75	H	48.90	54.00	5.10	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5320		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11493.25	V	61.11	74.00	12.89	peak
14634	V	63.13	74.00	10.87	peak
17494.25	V	65.27	74.00	8.73	peak
11493.25	V	41.11	54.00	12.89	AVG
14634	V	43.93	54.00	10.07	AVG
17494.25	V	47.83	54.00	6.17	AVG
11542.125	H	60.30	74.00	13.70	peak
14568.125	H	63.24	74.00	10.76	peak
17500.625	H	65.42	74.00	8.58	peak
11542.125	H	39.96	54.00	14.04	AVG
14568.125	H	43.24	54.00	10.76	AVG
17500.625	H	48.74	54.00	5.26	AVG

MIMO:

Test mode: 802.11n(HT20)			Frequency(MHz): 5260		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
10731.110	V	59.49	74.00	14.51	peak
14513.610	V	62.86	74.00	11.14	peak
17493.405	V	65.28	74.00	8.72	peak
10733.780	V	39.60	54.00	14.4	AVG
14512.750	V	42.75	54.00	11.25	AVG
17489.875	V	48.22	54.00	5.78	AVG
11388.065	H	60.32	74.00	13.68	peak
14545.815	H	62.77	74.00	11.23	peak
17510.190	H	65.59	74.00	8.41	peak
11388.065	H	40.08	54.00	13.92	AVG
14530.815	H	42.80	54.00	11.2	AVG
17495.190	H	48.60	54.00	5.4	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5280		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11538.610	V	60.57	74.00	13.43	peak
14528.485	V	63.10	74.00	10.9	peak
17499.780	V	65.26	74.00	8.74	peak
11541.280	V	40.68	54.00	13.32	AVG
14527.625	V	43.30	54.00	10.7	AVG
17496.250	V	48.10	54.00	5.9	AVG
10739.940	H	59.71	74.00	14.29	peak
14613.815	H	62.97	74.00	11.03	peak
17514.440	H	66.41	74.00	7.59	peak
10739.940	H	39.65	54.00	14.35	AVG
14598.815	H	44.93	54.00	9.07	AVG
17499.440	H	48.77	54.00	5.23	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5320		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11491.860	V	60.98	74.00	13.02	peak
14632.610	V	62.97	74.00	11.03	peak
17495.530	V	65.24	74.00	8.76	peak
11494.530	V	41.09	54.00	12.91	AVG
14631.750	V	43.67	54.00	10.33	AVG
17492.000	V	47.64	54.00	6.36	AVG
11553.815	H	60.22	74.00	13.78	peak
14579.815	H	63.03	74.00	10.97	peak
17512.315	H	65.26	74.00	8.74	peak
11553.815	H	39.82	54.00	14.18	AVG
14564.815	H	43.06	54.00	10.94	AVG
17497.315	H	48.61	54.00	5.39	AVG

- 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: 802.11n(HT20) Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5028.775	V	55.30	-39.93	-27	Pass
5037.7938	H	54.60	-40.63	-27	Pass

Test mode: 802.11n(HT20) Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5350.8662	V	57.94	-37.29	-27	Pass
5350.7562	H	55.32	-39.91	-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[dBuV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

Test mode: 802.11n(HT20) Frequency(MHz): 5260

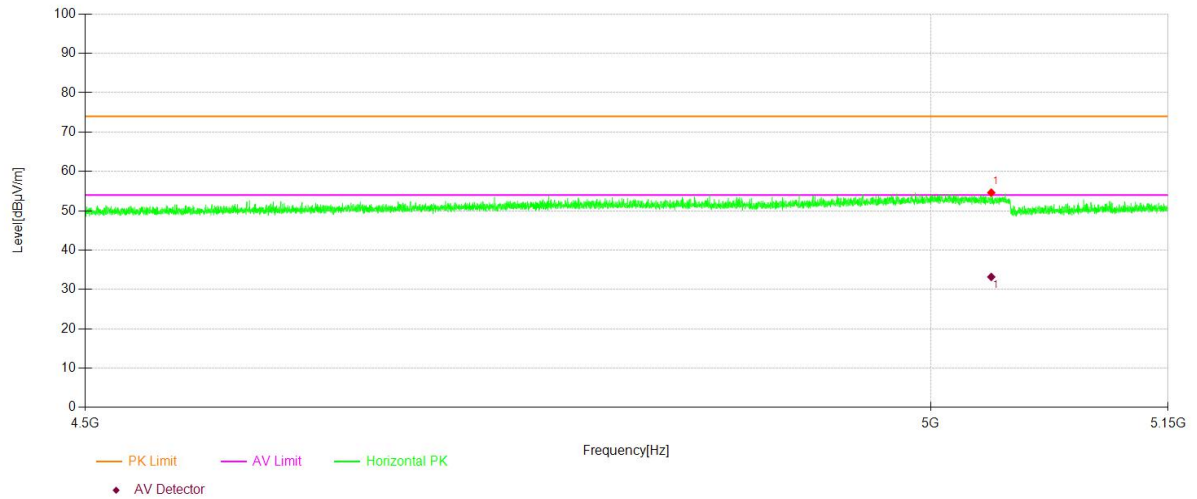
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5028.775	V	55.30	74.00	18.70	peak
5028.775	V	34.19	54.00	19.81	AVG
5037.7938	H	54.60	74.00	19.40	peak
5037.7938	H	33.18	54.00	20.82	AVG

Test mode: 802.11n(HT20) Frequency(MHz): 5320

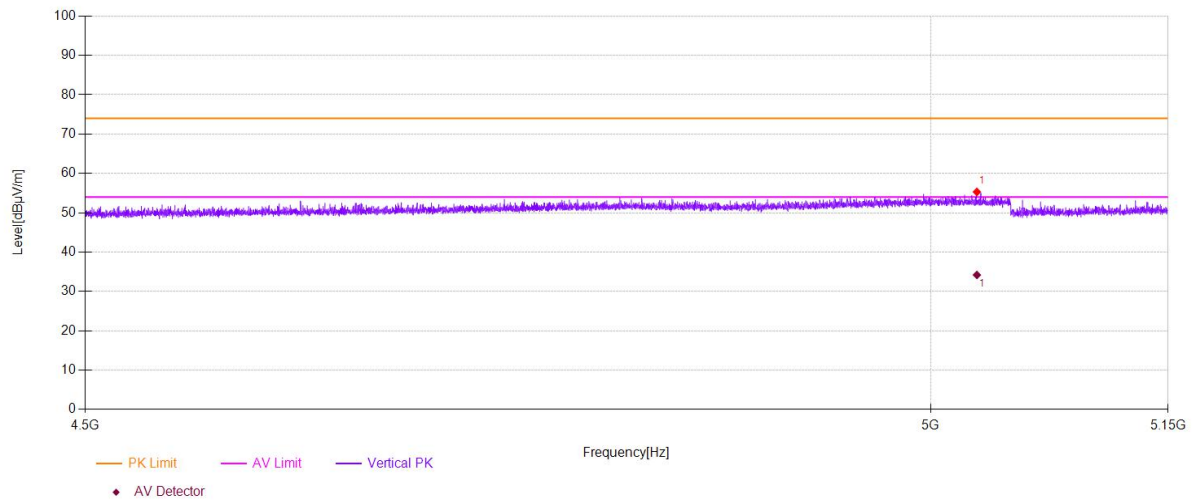
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5350.8662	V	57.94	74.00	16.06	peak
5350.8662	V	37.94	54.00	16.06	AVG
5350.7562	H	55.32	74.00	18.68	peak
5350.7562	H	34.94	54.00	19.06	AVG

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.

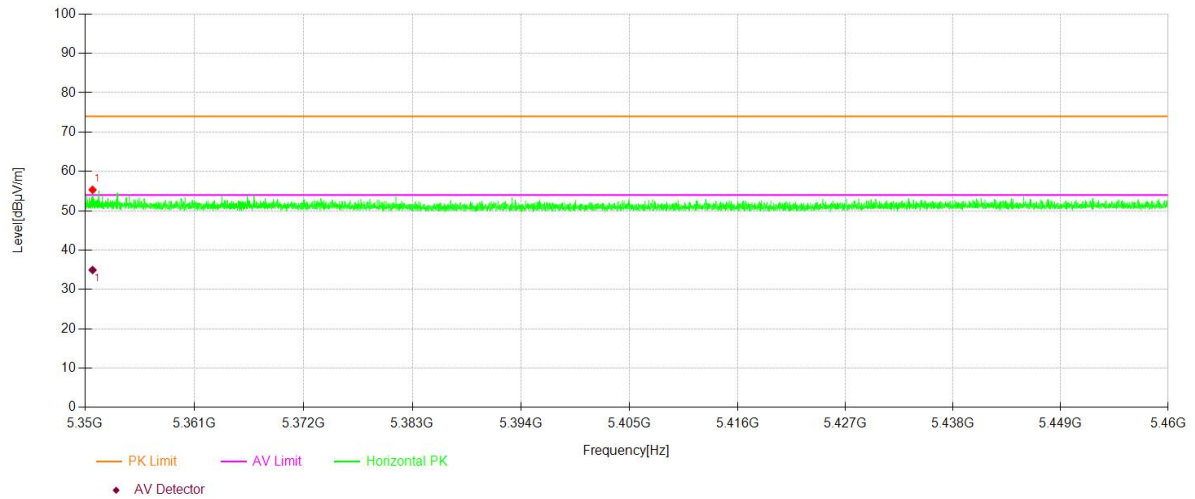
Test Model U-NII -2A
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
802.11a 802.11n(HT20) 802.11 ac (VHT20)
5260 5300 5320 Ant.Pol H



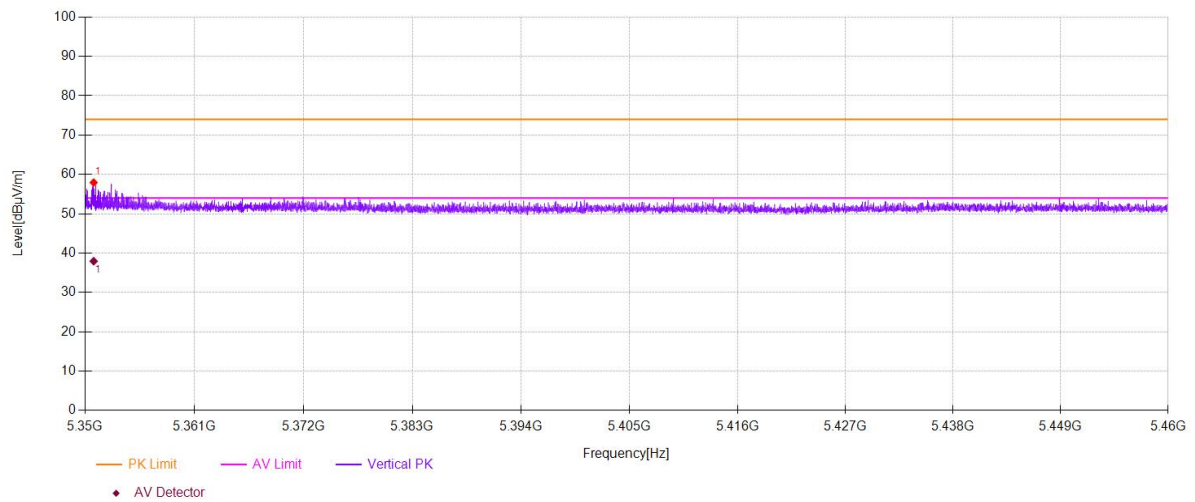
Test Model U-NII -2A
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
802.11a 802.11n(HT20) 802.11 ac (VHT20)
5260 5300 5320 Ant.Pol V



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



U-NII -2A				
Test Model	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)
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:
ANT2:

Test mode: 802.11n(HT20) Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11508.125	V	60.94	-34.29	-27	7.29
14799.75	V	63.23	-32	-27	5
17498.5	V	64.59	-30.64	-27	3.64
11523	H	60.95	-34.28	-27	7.28
14542.625	H	62.98	-32.25	-27	5.25
17502.75	H	65.47	-29.76	-27	2.76

Test mode: 802.11n(HT20) Frequency(MHz): 5580

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11489	V	60.73	-34.5	-27	7.5
14587.25	V	63.04	-32.19	-27	5.19
17487.875	V	64.68	-30.55	-27	3.55
11540	H	60.84	-34.39	-27	7.39
14527.75	H	63.79	-31.44	-27	4.44
17509.125	H	65.53	-29.7	-27	2.7

Test mode: 802.11n(HT20) Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11588.875	V	60.18	-35.05	-27	8.05
14580.875	V	62.91	-32.32	-27	5.32
17490	V	64.55	-30.68	-27	3.68
11489	H	59.91	-35.32	-27	8.32
14597.875	H	63.34	-31.89	-27	4.89
17490	H	65.76	-29.47	-27	2.47

MIMO:

Test mode: 802.11n(HT20) Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11506.735	V	60.81	-34.42	-27	7.42
17499.78	V	64.56	-30.67	-27	3.67
14797.5	V	42.93	-52.30	-27	25.30
11534.69	H	60.87	-34.36	-27	7.36
17514.44	H	65.31	-29.92	-27	2.92
14539.315	H	43.25	-51.98	-27	24.98

Test mode: 802.11n(HT20) Frequency(MHz): 5580

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11487.61	V	60.6	-34.63	-27	7.63
17489.155	V	64.65	-30.58	-27	3.58
14585	V	42.75	-52.48	-27	25.48
11551.69	H	60.76	-34.47	-27	7.47
17520.815	H	65.37	-29.86	-27	2.86
14524.44	H	42.03	-53.20	-27	26.20

Test mode: 802.11n(HT20) Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11586.095	V	60.05	-35.18	-27	8.18
17492.56	V	64.52	-30.71	-27	3.71
14576.375	V	42.79	-52.44	-27	25.44
11512.38	H	59.83	-35.40	-27	8.40
17513.38	H	65.6	-29.63	-27	2.63
14591.255	H	42.63	-52.60	-27	25.60

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[dBuV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

ANT2:

Test mode: 802.11n(HT20)			Frequency(MHz): 5500		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11508.125	V	60.94	74.00	13.06	peak
14799.75	V	63.23	74.00	10.77	peak
17498.5	V	64.59	74.00	9.41	peak
11508.125	V	40.94	54.00	13.06	AVG
14799.75	V	43.19	54.00	10.81	AVG
17498.5	V	47.02	54.00	6.98	AVG
11523	H	60.95	74.00	13.05	peak
14542.625	H	62.98	74.00	11.02	peak
17502.75	H	65.47	74.00	8.53	peak
11523	H	40.82	54.00	13.18	AVG
14542.625	H	43.43	54.00	10.57	AVG
17502.75	H	48.00	54.00	6.00	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5580		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11489	V	60.73	74.00	13.27	peak
14587.25	V	63.04	74.00	10.96	peak
17487.875	V	64.68	74.00	9.32	peak
11489	V	41.64	54.00	12.36	AVG
14587.25	V	43.01	54.00	10.99	AVG
17487.875	V	47.71	54.00	6.29	AVG
11540	H	60.84	74.00	13.16	peak
14527.75	H	63.79	74.00	10.21	peak
17509.125	H	65.53	74.00	8.47	peak
11540	H	41.41	54.00	12.59	AVG
14527.75	H	42.21	54.00	11.79	AVG
17509.125	H	48.52	54.00	5.48	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5700		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11588.875	V	60.18	74.00	13.82	peak
14580.875	V	62.91	74.00	11.09	peak
17490	V	64.55	74.00	9.45	peak
11588.875	V	40.11	54.00	13.89	AVG
14580.875	V	43.05	54.00	10.95	AVG
17490	V	47.76	54.00	6.24	AVG
11489	H	59.91	74.00	14.09	peak
14597.875	H	63.34	74.00	10.66	peak
17490	H	65.76	74.00	8.24	peak
11489	H	40.33	54.00	13.67	AVG
14597.875	H	42.81	54.00	11.19	AVG
17490	H	49.19	54.00	4.81	AVG

MIMO:

Test mode: 802.11n(HT20)			Frequency(MHz): 5500		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11506.735	V	60.81	74.00	13.19	peak
14798.360	V	63.07	74.00	10.93	peak
17499.780	V	64.56	74.00	9.44	peak
11509.405	V	40.92	54.00	13.08	AVG
14797.500	V	42.93	54.00	11.07	AVG
17496.250	V	46.83	54.00	7.17	AVG
11534.690	H	60.87	74.00	13.13	peak
14554.315	H	62.77	74.00	11.23	peak
17514.440	H	65.31	74.00	8.69	peak
11534.690	H	40.68	54.00	13.32	AVG
14539.315	H	43.25	54.00	10.75	AVG
17499.440	H	47.87	54.00	6.13	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5580		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11487.610	V	60.60	74.00	13.4	peak
14585.860	V	62.88	74.00	11.12	peak
17489.155	V	64.65	74.00	9.35	peak
11490.280	V	41.62	54.00	12.38	AVG
14585.000	V	42.75	54.00	11.25	AVG
17485.625	V	47.52	54.00	6.48	AVG
11551.690	H	60.76	74.00	13.24	peak
14539.440	H	63.58	74.00	10.42	peak
17520.815	H	65.37	74.00	8.63	peak
11551.690	H	41.27	54.00	12.73	AVG
14524.440	H	42.03	54.00	11.97	AVG
17505.815	H	48.39	54.00	5.61	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5700		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11586.095	V	60.05	74.00	13.95	peak
14578.095	V	62.75	74.00	11.25	peak
17492.560	V	64.52	74.00	9.48	peak
11591.435	V	40.09	54.00	13.91	AVG
14576.375	V	42.79	54.00	11.21	AVG
17485.500	V	47.57	54.00	6.43	AVG
11512.380	H	59.83	74.00	14.17	peak
14621.255	H	63.13	74.00	10.87	peak
17513.380	H	65.60	74.00	8.4	peak
11512.380	H	40.19	54.00	13.81	AVG
14591.255	H	42.63	54.00	11.37	AVG
17483.380	H	49.06	54.00	4.94	AVG

- 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: 802.11n(HT20) Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5469.4875	V	56.37	-38.86	-27	Pass
5424.6062	H	53.28	-41.95	-27	Pass

Test mode: 802.11n(HT20) Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5762.9375	V	54.64	-40.59	-27	Pass
5738.5625	H	53.96	-41.27	-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[dBuV/m] + 20 log(d[meters]) - 104.77
d is the measurement distance in 3 meters

Test mode: 802.11n(HT20) Frequency(MHz): 5500

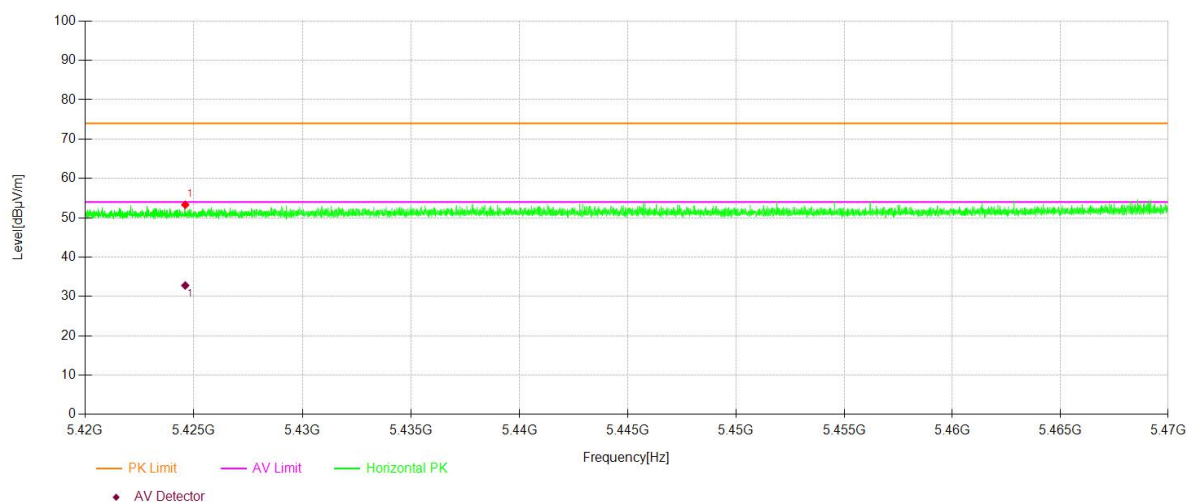
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5469.4875	V	56.37	74.00	17.63	peak
5469.4875	V	35.69	54.00	18.31	AVG
5424.6062	H	53.28	74.00	20.72	peak
5424.6062	H	32.79	54.00	21.21	AVG

Test mode: 802.11n(HT20) Frequency(MHz): 5700

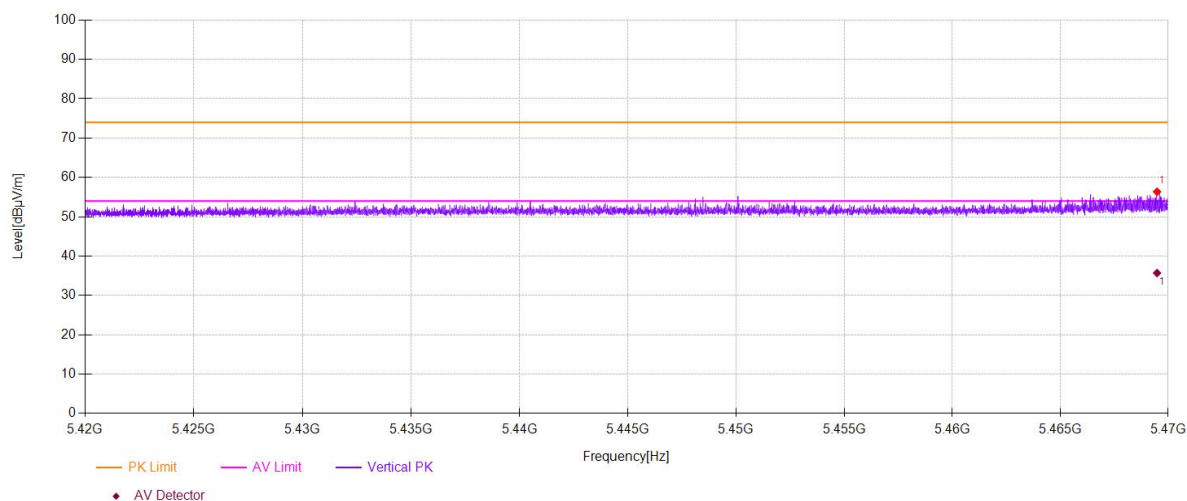
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5762.9375	V	54.64	74.00	19.36	peak
5762.9375	V	34.37	54.00	19.63	AVG
5738.5625	H	53.96	74.00	20.04	peak
5738.5625	H	33.24	54.00	20.76	AVG

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.

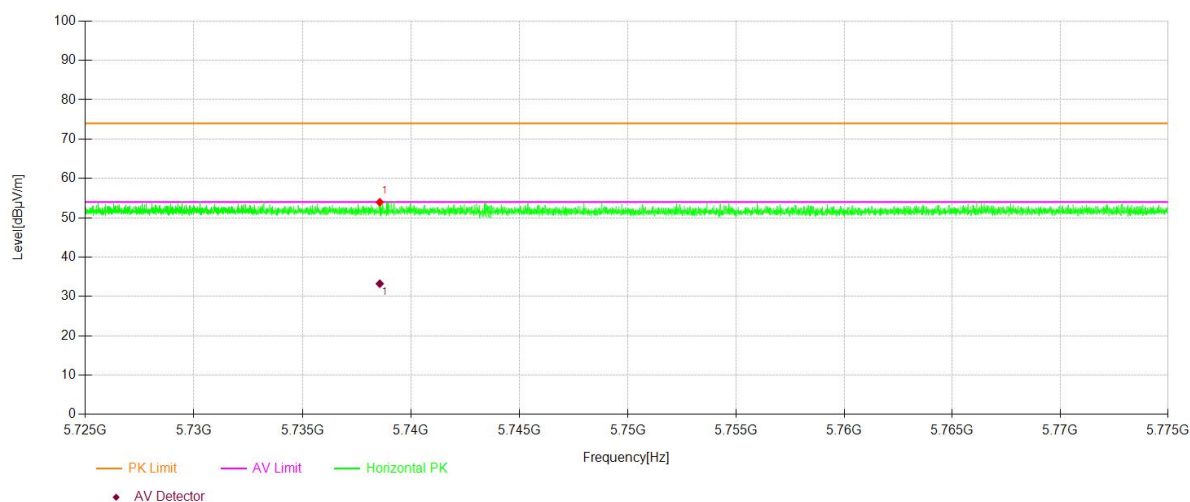
Test Model U-NII -2C
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
802.11a 802.11n(HT20) 802.11 ac (VHT20)
5500 5580 5700 Ant.Pol H



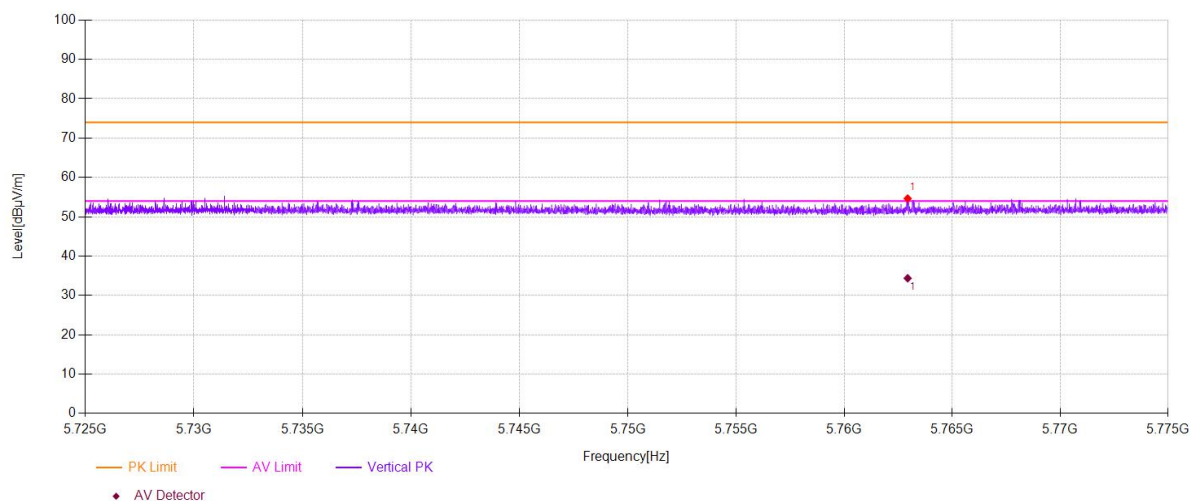
Test Model U-NII -2C
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
802.11a 802.11n(HT20) 802.11 ac (VHT20)
5500 5580 5700 Ant.Pol V



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



U-NII -2C			
Test Model	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)
Highest gain of each antenna and highest output power is ANT2 and MIMO as below:
ANT2:

Test mode: 802.11n(HT20) Frequency(MHz): 5745					
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11544.25	V	61.41	-33.82	-27	6.82
14799.75	V	63.09	-32.14	-27	5.14
17498.5	V	65.06	-30.17	-27	3.17
11508.125	H	60.47	-34.76	-27	7.76
14636.125	H	62.70	-32.53	-27	5.53
17492.125	H	65.71	-29.52	-27	2.52

Test mode: 802.11n(HT20) Frequency(MHz): 5785					
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11499.625	V	60.31	-34.92	-27	7.92
14540.5	V	62.92	-32.31	-27	5.31
17502.75	V	65.50	-29.73	-27	2.73
11367.875	H	60.03	-35.2	-27	8.2
14574.5	H	63.48	-31.75	-27	4.75
17504.875	H	65.15	-30.08	-27	3.08

Test mode: 802.11n(HT20) Frequency(MHz): 5825					
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11567.625	V	60.59	-34.64	-27	7.64
14682.875	V	63.23	-32	-27	5
17496.375	V	65.45	-29.78	-27	2.78
11512.375	H	60.48	-34.75	-27	7.75
14593.625	H	63.46	-31.77	-27	4.77
17481.5	H	65.59	-29.64	-27	2.64

MIMO:

Test mode: 802.11n(HT20) Frequency(MHz): 5745					
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11542.86	V	61.28	-33.95	-27	6.95
17499.78	V	65.03	-30.20	-27	3.20
14797.5	V	42.51	-52.72	-27	25.72
11519.815	H	60.39	-34.84	-27	7.84
17503.815	H	65.55	-29.68	-27	2.68
14632.815	H	42.49	-52.74	-27	25.74

Test mode: 802.11n(HT20) Frequency(MHz): 5785					
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11496.845	V	60.05	-35.18	-27	8.18
17505.31	V	65.44	-29.79	-27	2.79
14536	V	42.47	-52.76	-27	25.76
11391.255	H	59.87	-35.36	-27	8.36
17528.255	H	64.83	-30.40	-27	3.40
14567.88	H	43.99	-51.24	-27	24.24

Test mode: 802.11n(HT20) Frequency(MHz): 5825					
Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
11564.845	V	60.33	-34.90	-27	7.90
17498.935	V	65.39	-29.84	-27	2.84
14678.375	V	42.76	-52.47	-27	25.47
11535.755	H	60.32	-34.91	-27	7.91
17504.88	H	65.27	-29.96	-27	2.96
14587.005	H	43.14	-52.09	-27	25.09

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[dBuV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

ANT2:

Test mode: 802.11n(HT20)			Frequency(MHz): 5745		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11544.25	V	61.41	74.00	12.59	peak
14799.75	V	63.09	74.00	10.91	peak
17498.5	V	65.06	74.00	8.94	peak
11544.25	V	40.99	54.00	13.01	AVG
14799.75	V	42.77	54.00	11.23	AVG
17498.5	V	48.60	54.00	5.40	AVG
11508.125	H	60.47	74.00	13.53	peak
14636.125	H	62.70	74.00	11.30	peak
17492.125	H	65.71	74.00	8.29	peak
11508.125	H	40.47	54.00	13.53	AVG
14636.125	H	42.67	54.00	11.33	AVG
17492.125	H	49.30	54.00	4.70	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5785		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11499.625	V	60.31	74.00	13.69	peak
14540.5	V	62.92	74.00	11.08	peak
17502.75	V	65.50	74.00	8.50	peak
11499.625	V	40.21	54.00	13.79	AVG
14540.5	V	42.99	54.00	11.01	AVG
17502.75	V	47.91	54.00	6.09	AVG
11367.875	H	60.03	74.00	13.97	peak
14574.5	H	63.48	74.00	10.52	peak
17504.875	H	65.15	74.00	8.85	peak
11367.875	H	39.51	54.00	14.49	AVG
14574.5	H	44.35	54.00	9.65	AVG
17504.875	H	47.83	54.00	6.17	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5825		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11567.625	V	60.59	74.00	13.41	peak
14682.875	V	63.23	74.00	10.77	peak
17496.375	V	65.45	74.00	8.55	peak
11567.625	V	40.91	54.00	13.09	AVG
14682.875	V	43.28	54.00	10.72	AVG
17496.375	V	48.48	54.00	5.52	AVG
11512.375	H	60.48	74.00	13.52	peak
14593.625	H	63.46	74.00	10.54	peak
17481.5	H	65.59	74.00	8.41	peak
11512.375	H	40.15	54.00	13.85	AVG
14593.625	H	43.50	54.00	10.50	AVG
17481.5	H	48.69	54.00	5.31	AVG

MIMO:

Test mode: 802.11n(HT20)			Frequency(MHz): 5745		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11542.860	V	61.28	74.00	12.72	peak
14798.360	V	62.93	74.00	11.07	peak
17499.780	V	65.03	74.00	8.97	peak
11545.530	V	40.97	54.00	13.03	AVG
14797.500	V	42.51	54.00	11.49	AVG
17496.250	V	48.41	54.00	5.59	AVG
11519.815	H	60.39	74.00	13.61	peak
14647.815	H	62.49	74.00	11.51	peak
17503.815	H	65.55	74.00	8.45	peak
11519.815	H	40.33	54.00	13.67	AVG
14632.815	H	42.49	54.00	11.51	AVG
17488.815	H	49.17	54.00	4.83	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5785		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11496.845	V	60.05	74.00	13.95	peak
14537.720	V	62.60	74.00	11.4	peak
17505.310	V	65.44	74.00	8.56	peak
11502.185	V	40.17	54.00	13.83	AVG
14536.000	V	42.47	54.00	11.53	AVG
17498.250	V	47.53	54.00	6.47	AVG
11391.255	H	59.87	74.00	14.13	peak
14597.880	H	63.06	74.00	10.94	peak
17528.255	H	64.83	74.00	9.17	peak
11391.255	H	39.23	54.00	14.77	AVG
14567.880	H	43.99	54.00	10.01	AVG
17498.255	H	47.57	54.00	6.43	AVG

Test mode: 802.11n(HT20)			Frequency(MHz): 5825		
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
11564.845	V	60.33	74.00	13.67	peak
14680.095	V	62.91	74.00	11.09	peak
17498.935	V	65.39	74.00	8.61	peak
11570.185	V	40.87	54.00	13.13	AVG
14678.375	V	42.76	54.00	11.24	AVG
17491.875	V	48.10	54.00	5.9	AVG
11535.755	H	60.32	74.00	13.68	peak
14617.005	H	63.04	74.00	10.96	peak
17504.880	H	65.27	74.00	8.73	peak
11535.755	H	39.87	54.00	14.13	AVG
14587.005	H	43.14	54.00	10.86	AVG
17474.880	H	48.43	54.00	5.57	AVG

- 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.

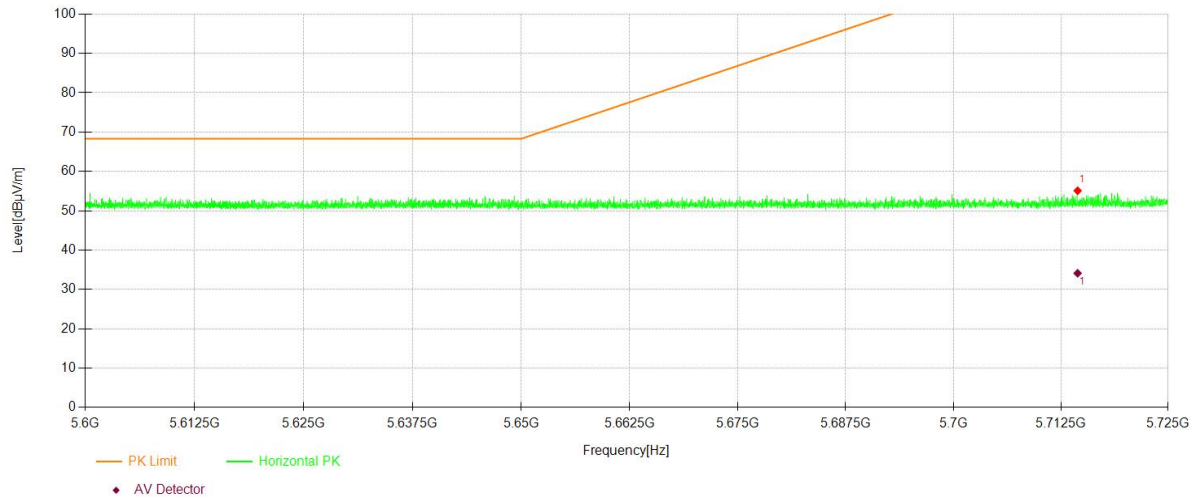
● ☒ Undesirable radiated Spurious Emission in band edge

Test mode:		802.11n(HT20)		Frequency:		5745	
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict		
5714.4531	H	55.10	-40.13	-27	PASS		
5623.6719	V	53.63	-41.6	-27	PASS		

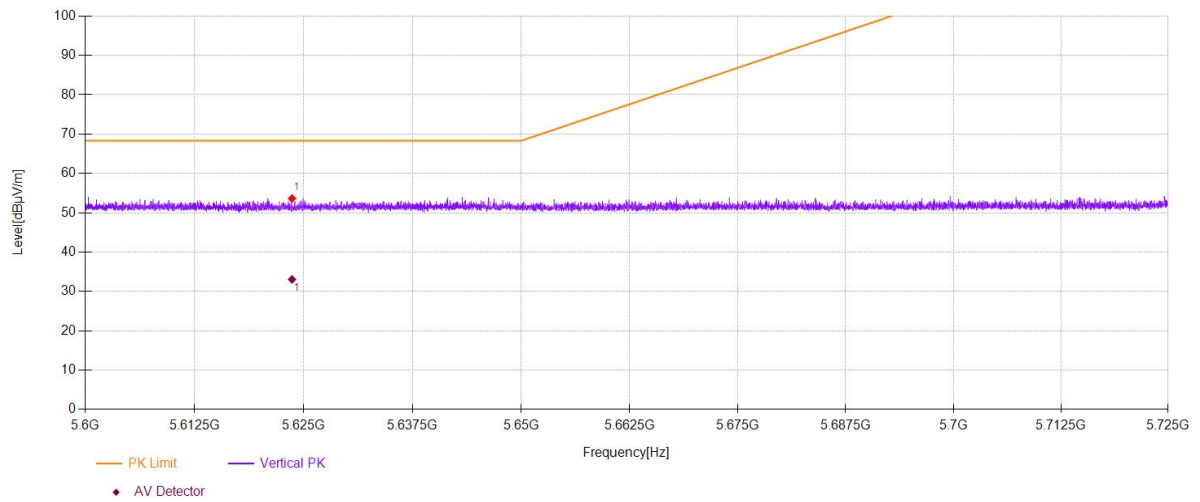
Test mode:		802.11n(HT20)	Frequency:	5825		
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict	
5881.2188	H	55.07	-40.16	-27	PASS	
5944.6094	V	55.36	-39.87	-27	PASS	

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[dBuV/m] + 20 log(d[meters]) - 104.77
 d is the measurement distance in 3 meters

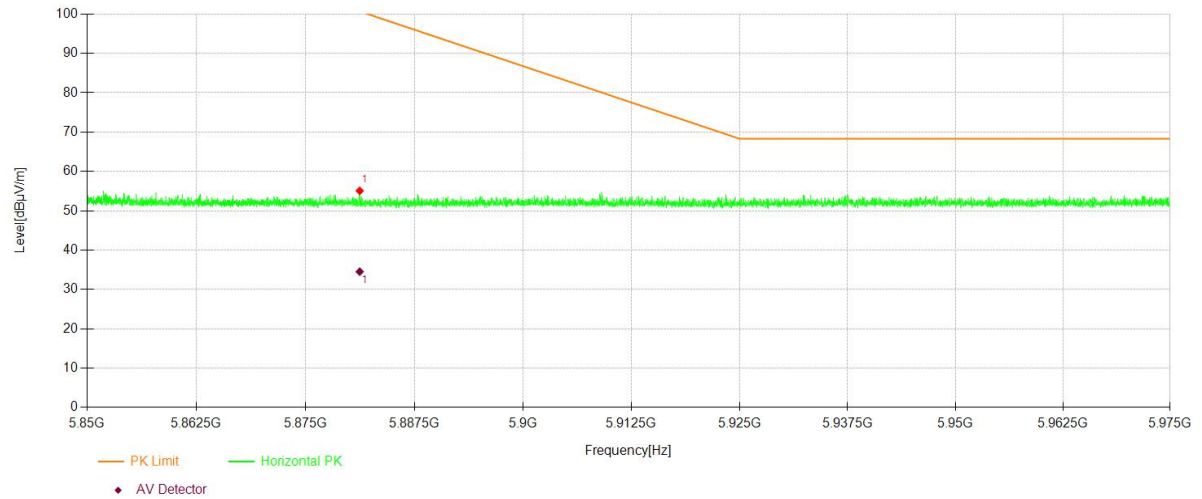
Test Model U-NII -3
Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
802.11a 802.11n(HT20) 802.11n(HT40)
5745 Ant.Pol H



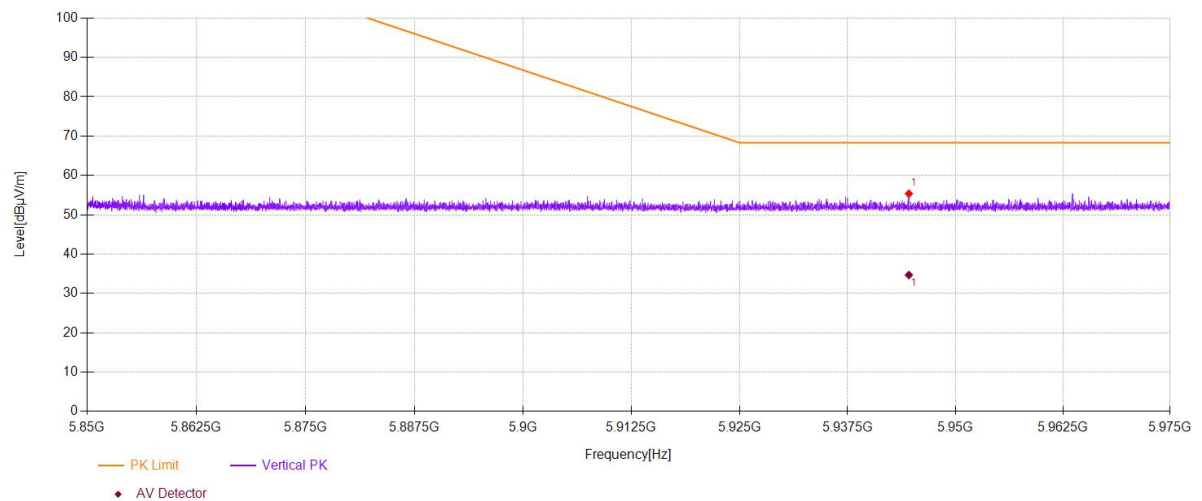
Test Model U-NII -3
Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
802.11a 802.11n(HT20) 802.11n(HT40)
5745 Ant.Pol V



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

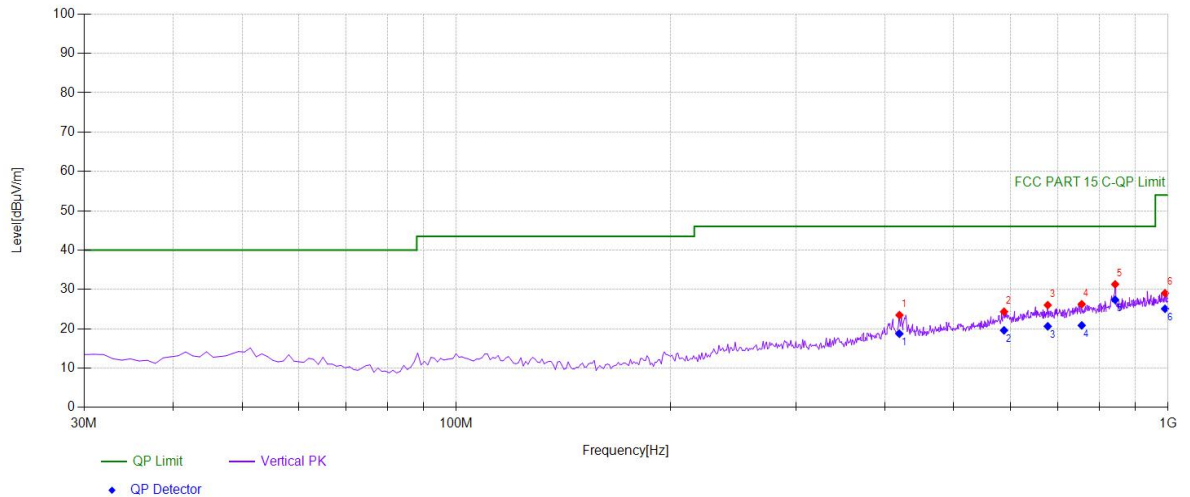


Test Model U-NII -3
Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
802.11a 802.11n(HT20) 802.11n(HT40)
5825 Ant.Pol V



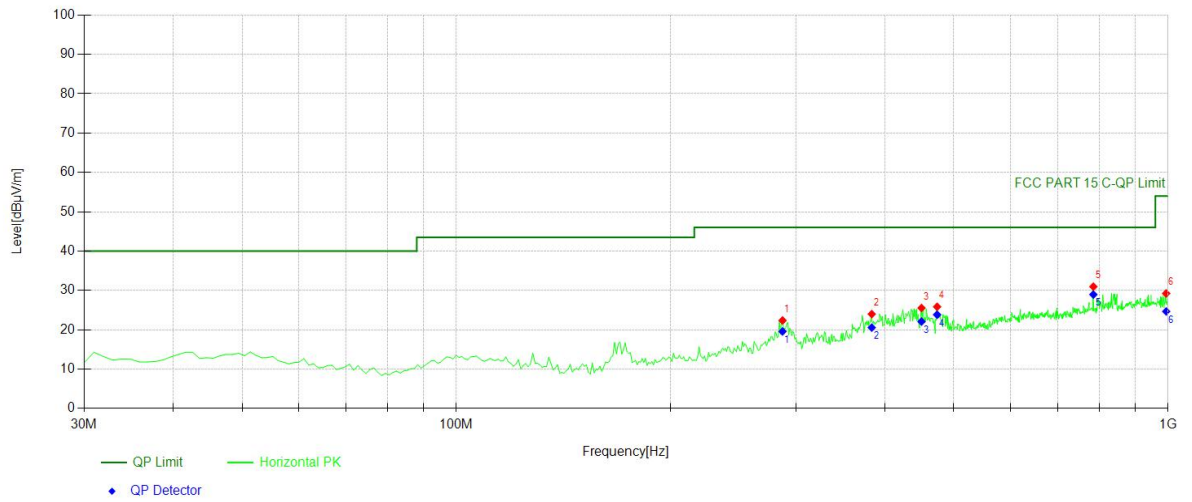
- Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)
All modes have been tested, and the worst result recorded was report as below:

Test mode: 802.11a Frequency(MHz): 5180



Suspected Data List

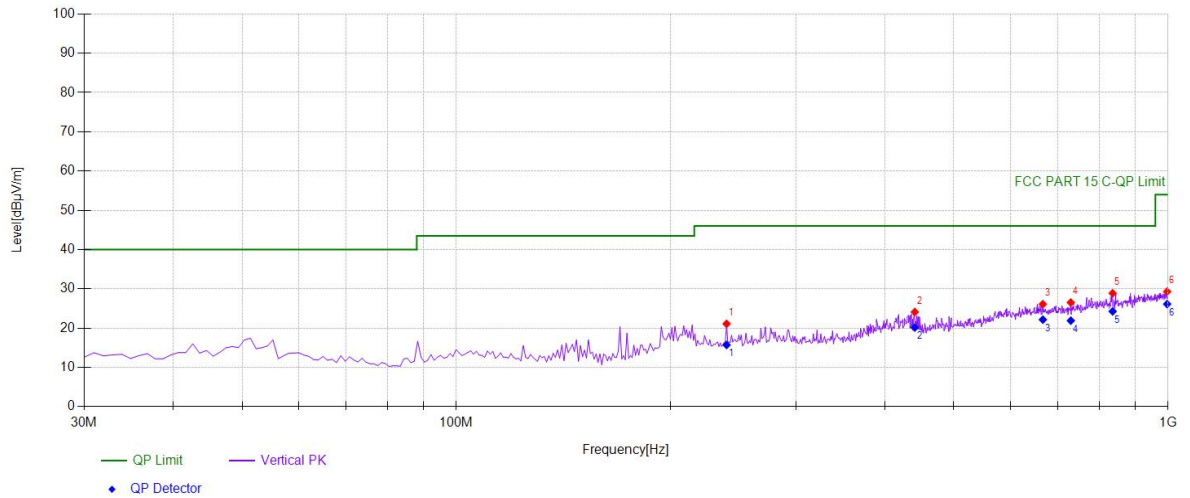
NO.	Freq. [MHz]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	419.3594	23.48	46.00	22.52	110	77	Vertical
2	588.3083	24.34	46.00	21.66	101	216	Vertical
3	677.6376	26.03	46.00	19.97	133	322	Vertical
4	756.2863	26.26	46.00	19.74	100	193	Vertical
5	842.7027	31.31	46.00	14.69	212	30	Vertical
6	990.2903	29.04	54.00	24.96	171	77	Vertical



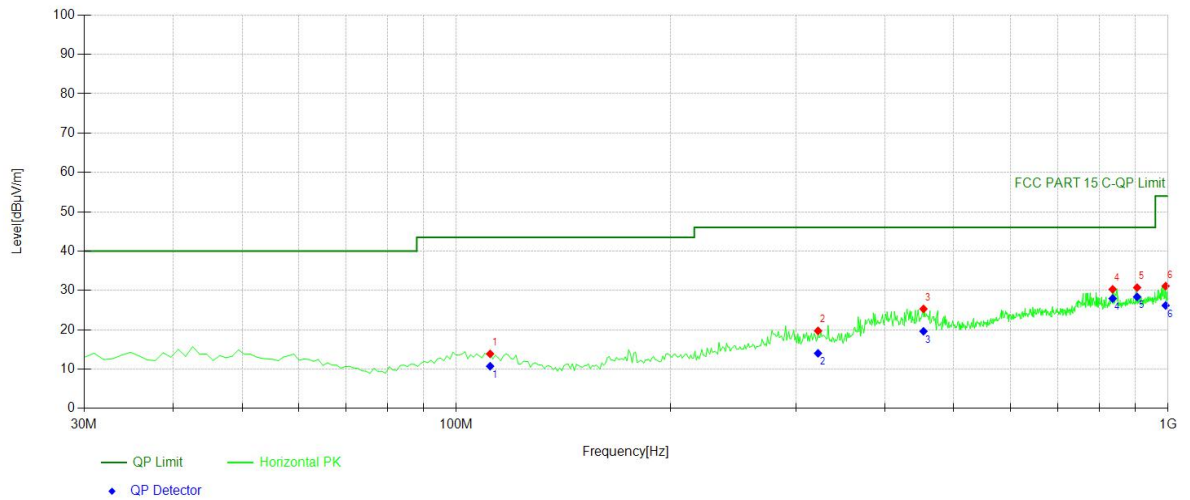
Suspected Data List

NO.	Freq. [MHz]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	287.3073	22.37	46.00	23.63	101	195	Horizontal
2	383.4334	24.00	46.00	22.00	180	121	Horizontal
3	450.4304	25.54	46.00	20.46	102	153	Horizontal
4	473.7337	25.85	46.00	20.15	132	139	Horizontal
5	785.4154	30.97	46.00	15.03	100	126	Horizontal
6	994.1742	29.24	54.00	24.76	100	126	Horizontal

Test mode: 802.11a Frequency(MHz): 5200



Suspected Data List							
NO.	Freq. [MHz]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	239.7297	21.11	46.00	24.89	100	54	Vertical
2	440.7207	24.11	46.00	21.89	143	235	Vertical
3	666.957	26.11	46.00	19.89	151	360	Vertical
4	730.0701	26.52	46.00	19.48	106	286	Vertical
5	835.9059	28.88	46.00	17.12	208	63	Vertical
6	997.0871	29.30	54.00	24.70	100	91	Vertical



Suspected Data List

NO.	Freq. [MHz]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	111.5616	13.88	43.50	29.62	126	66	Horizontal
2	322.2623	19.73	46.00	26.27	117	173	Horizontal
3	453.3433	25.32	46.00	20.68	152	325	Horizontal
4	835.9059	30.30	46.00	15.70	109	20	Horizontal
5	904.8448	30.72	46.00	15.28	101	329	Horizontal
6	992.2322	31.11	54.00	22.89	133	108	Horizontal