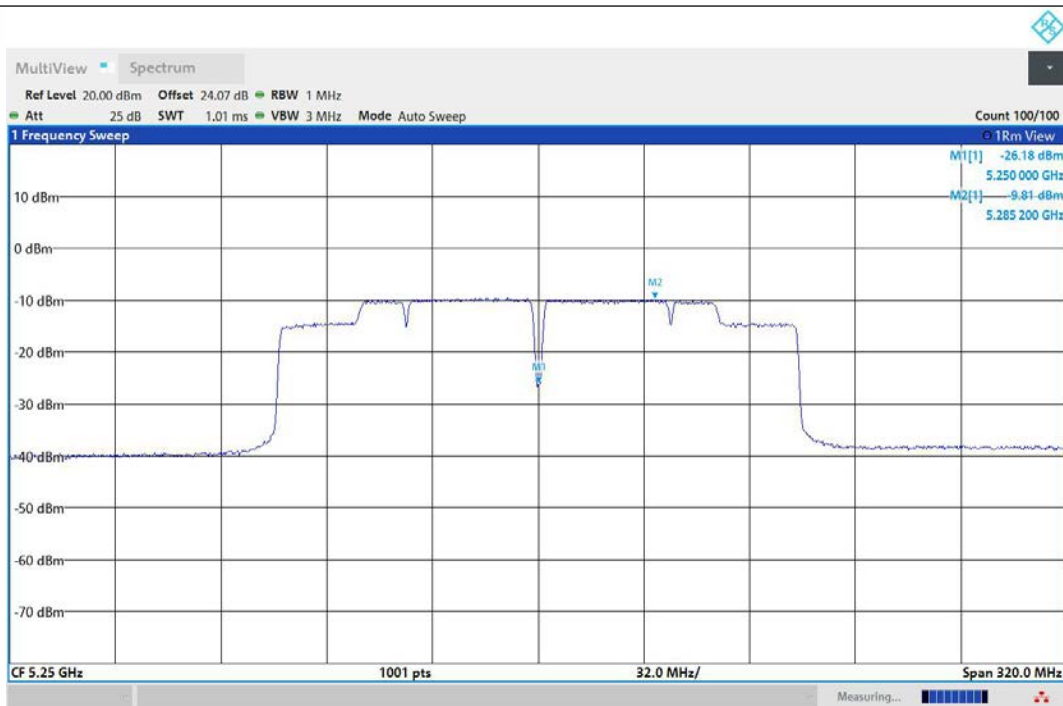
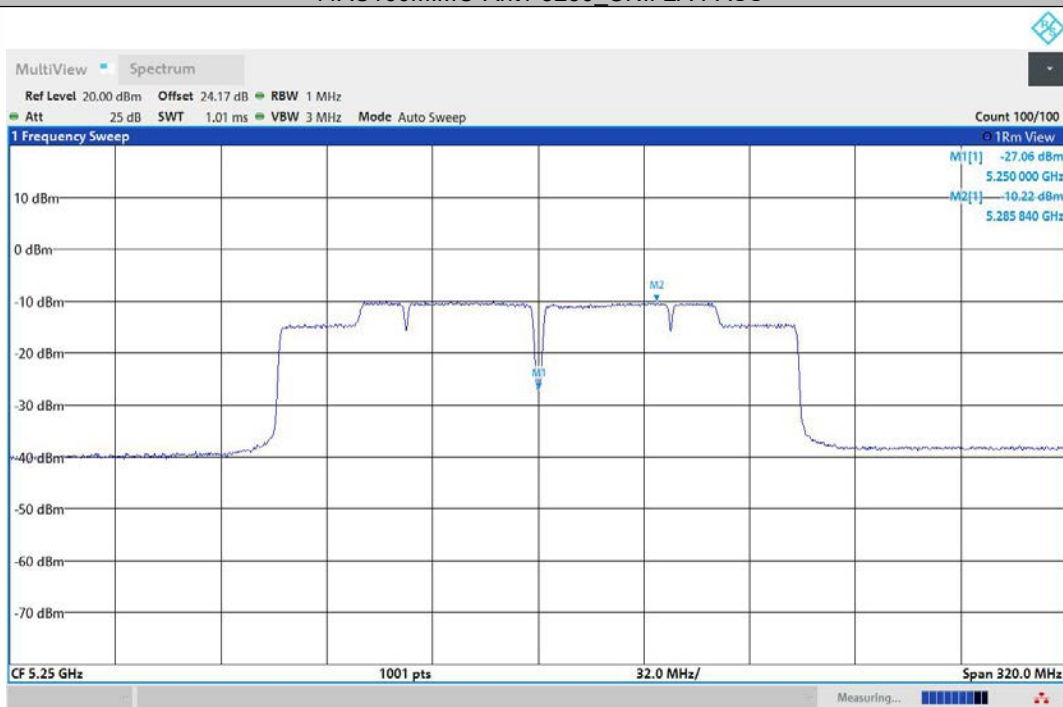
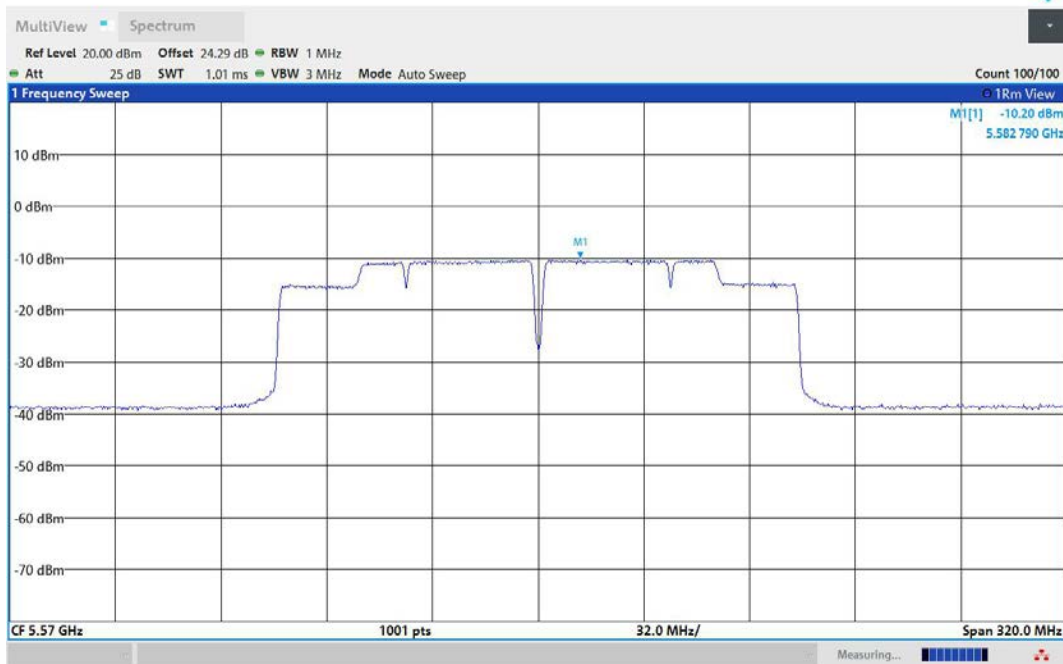




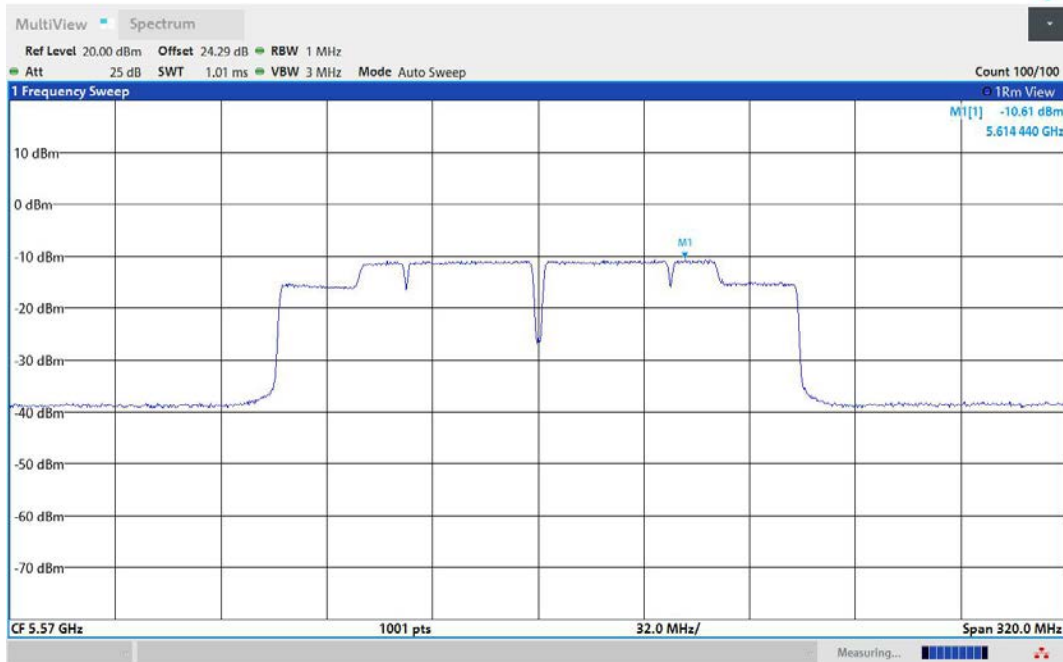
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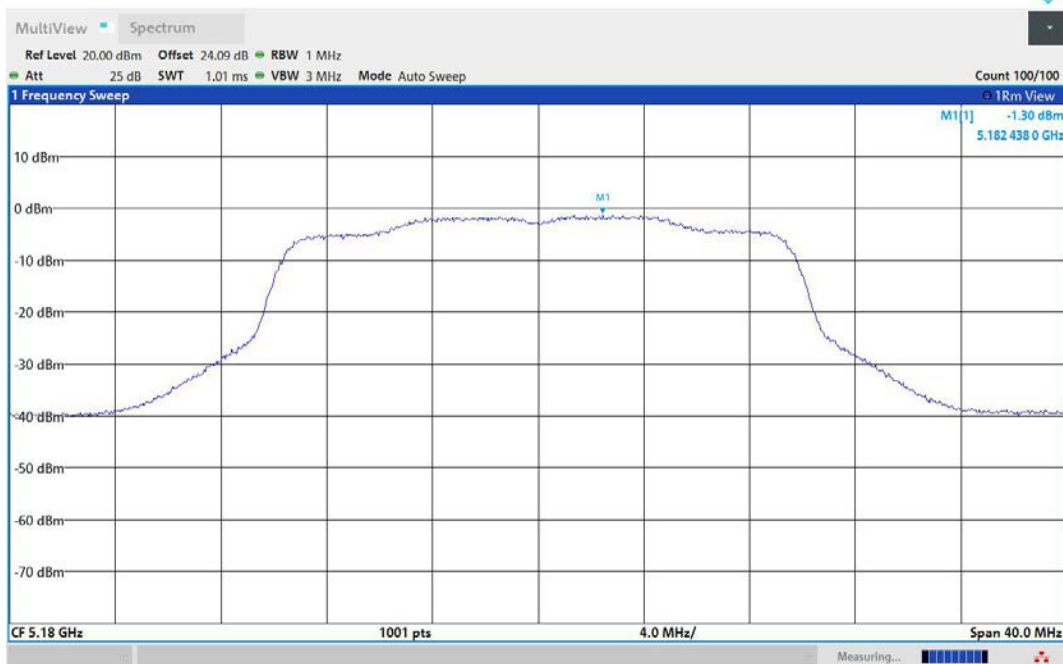
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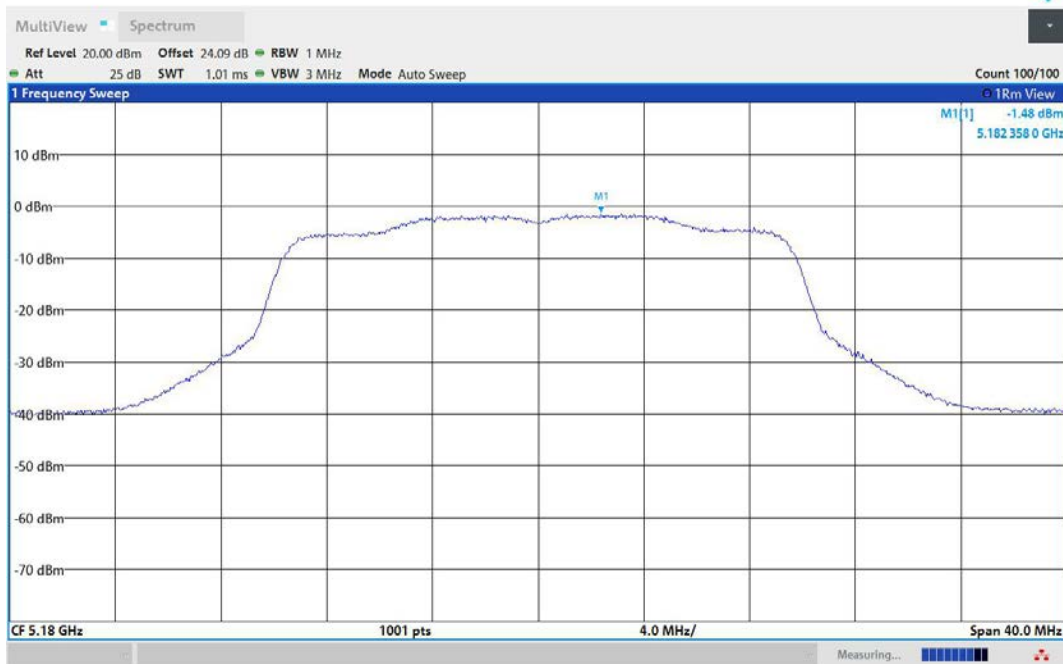
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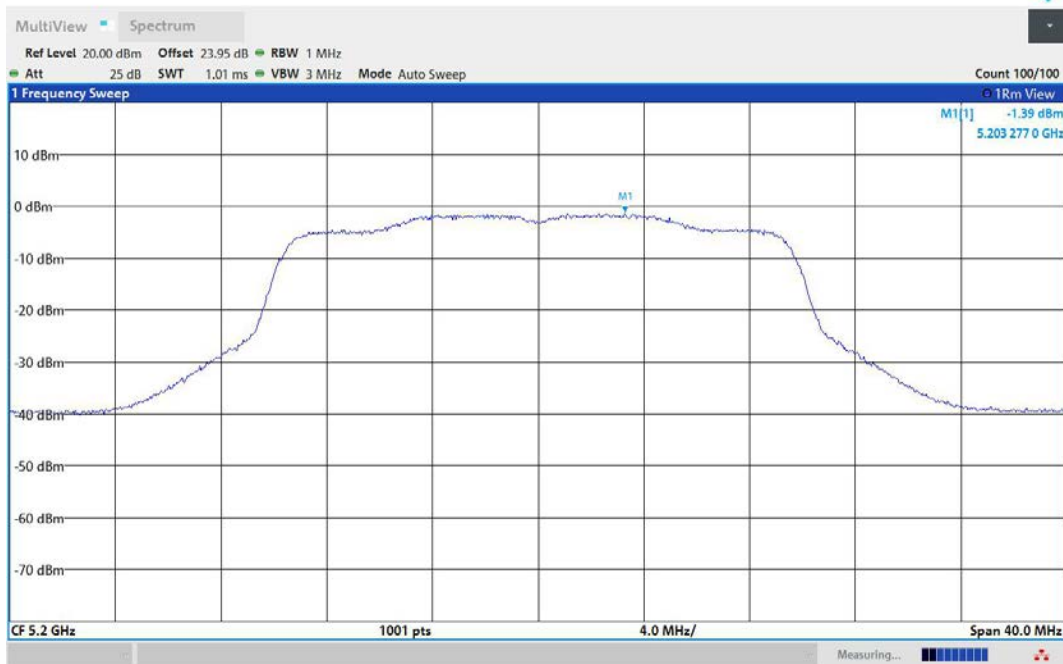
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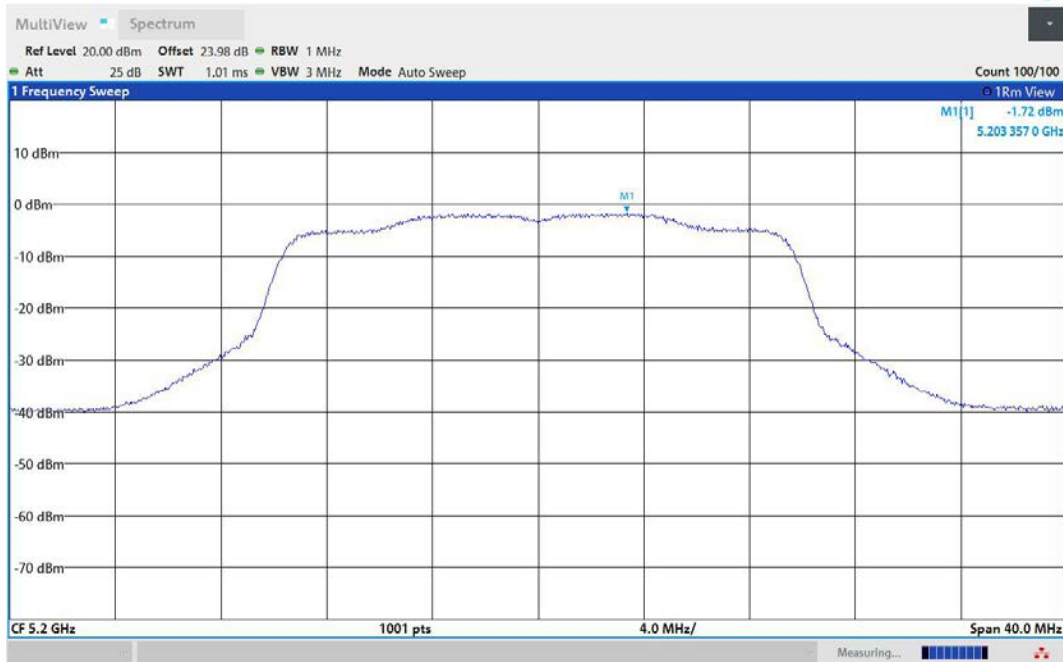
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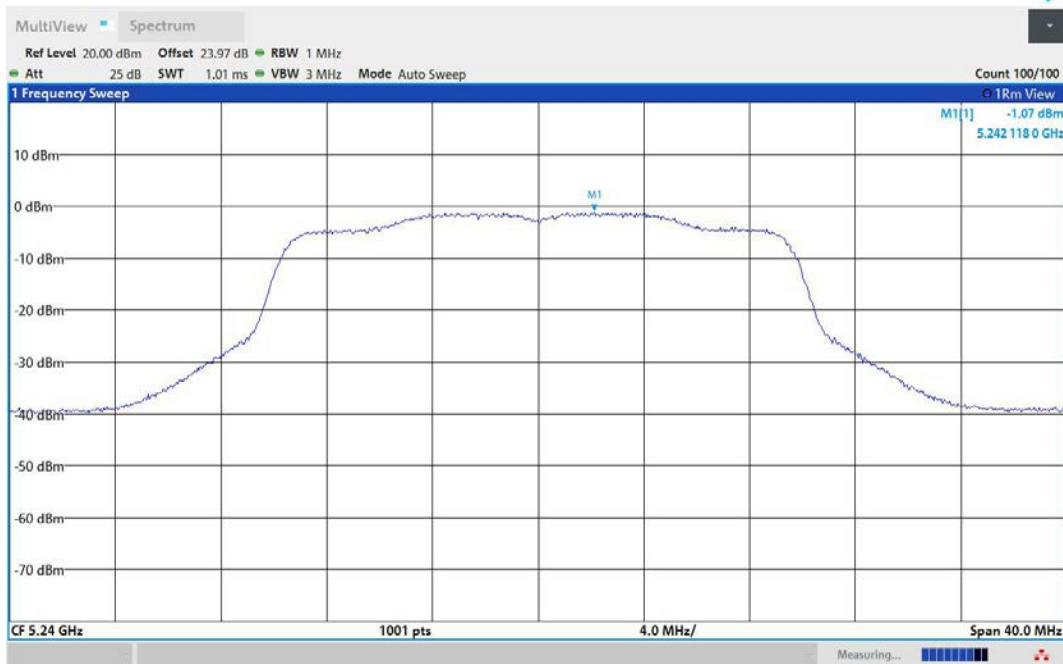
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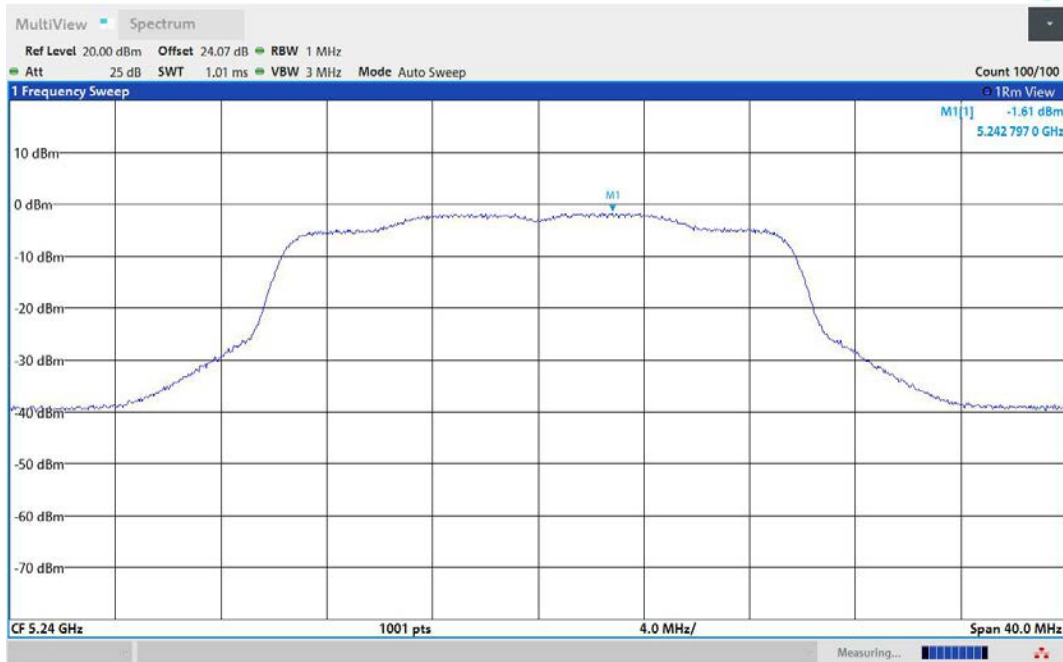
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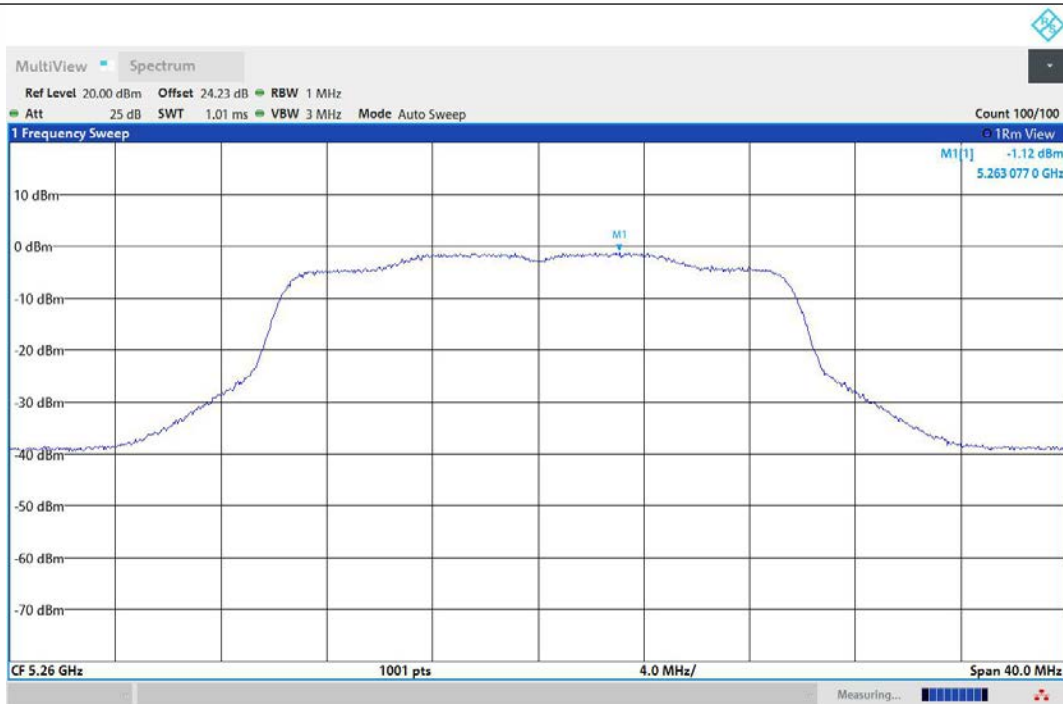
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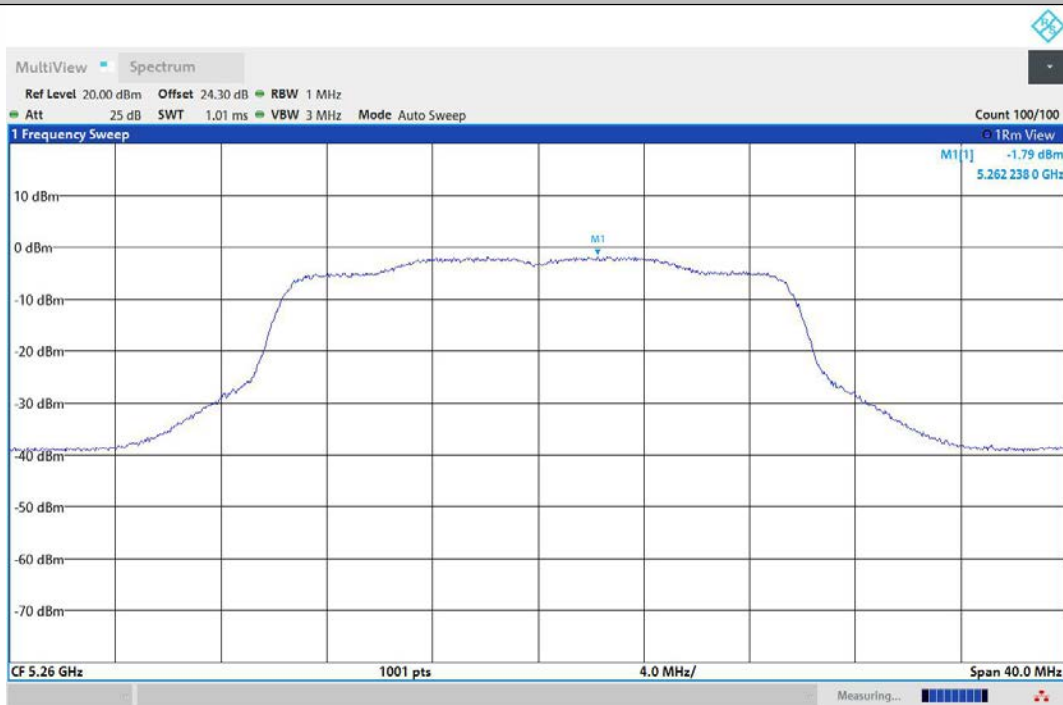
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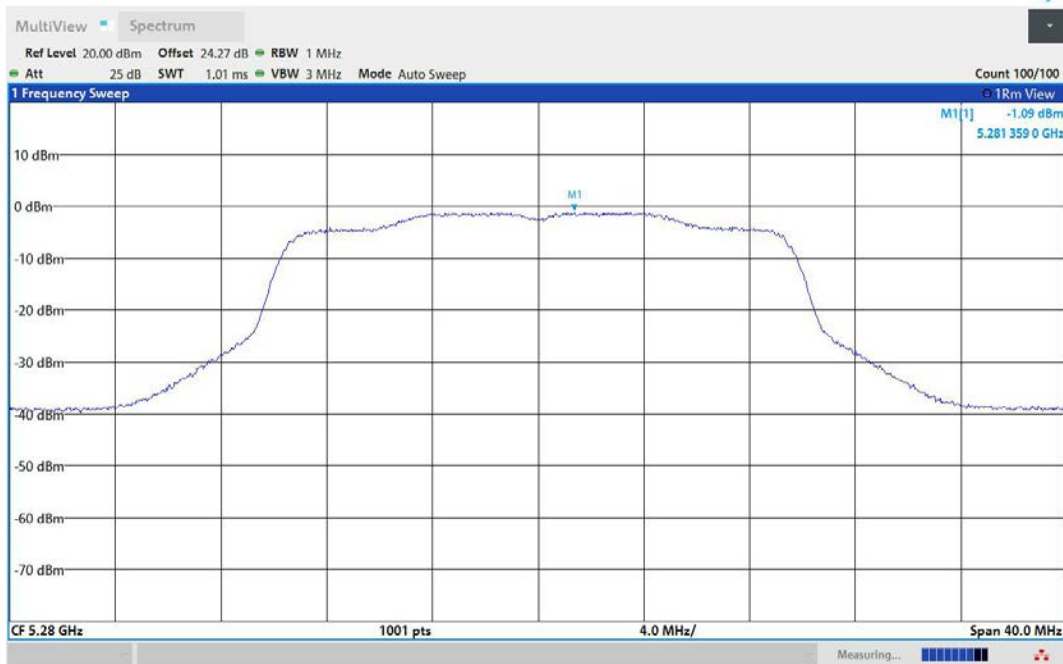
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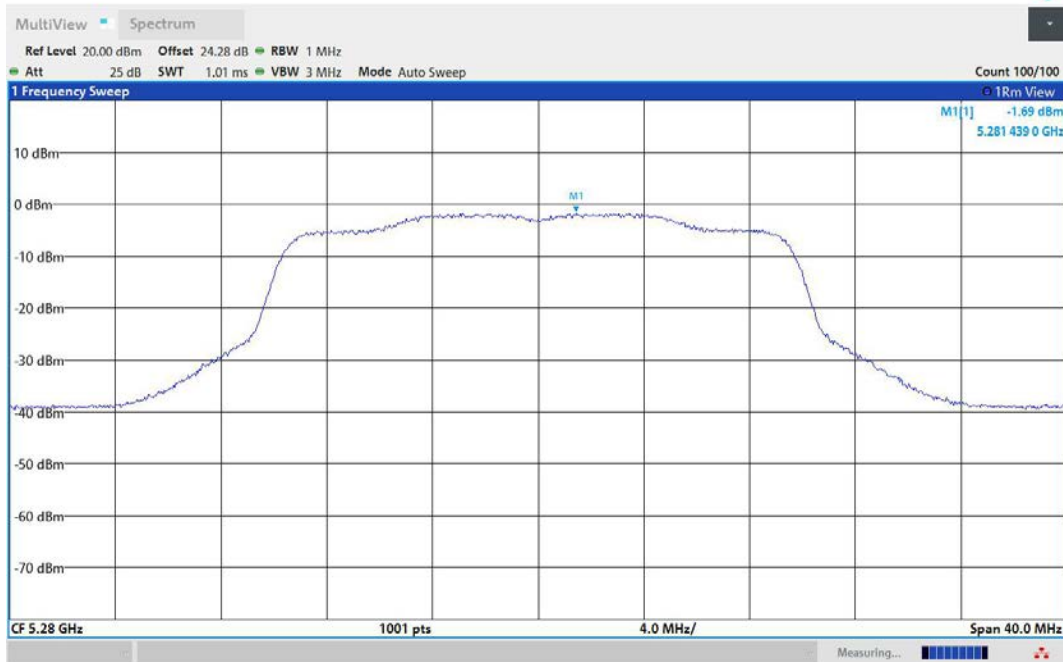
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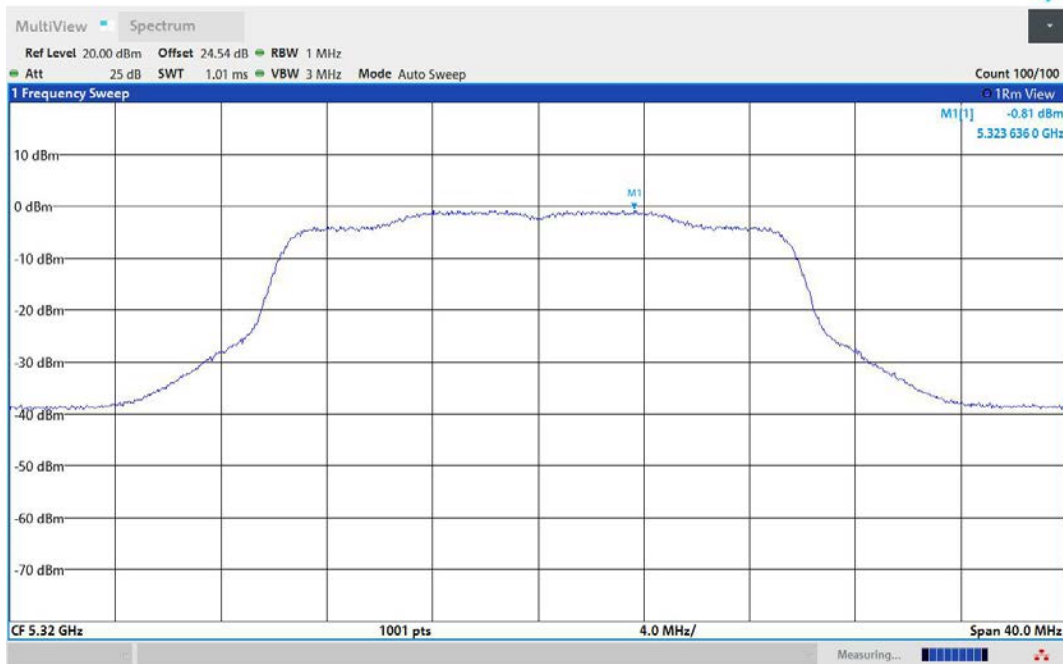
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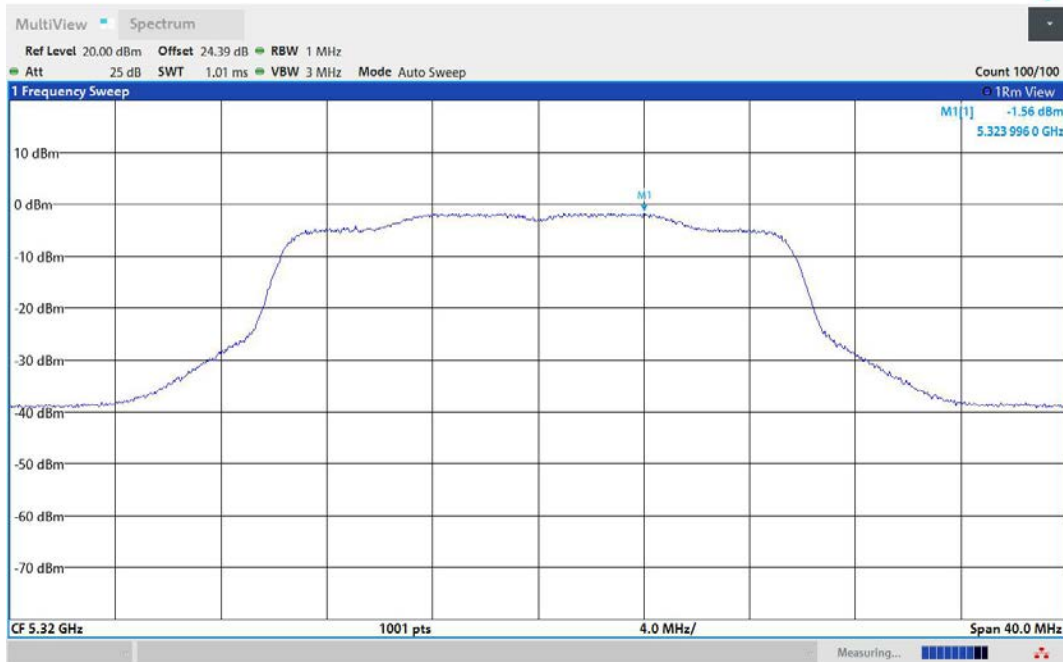
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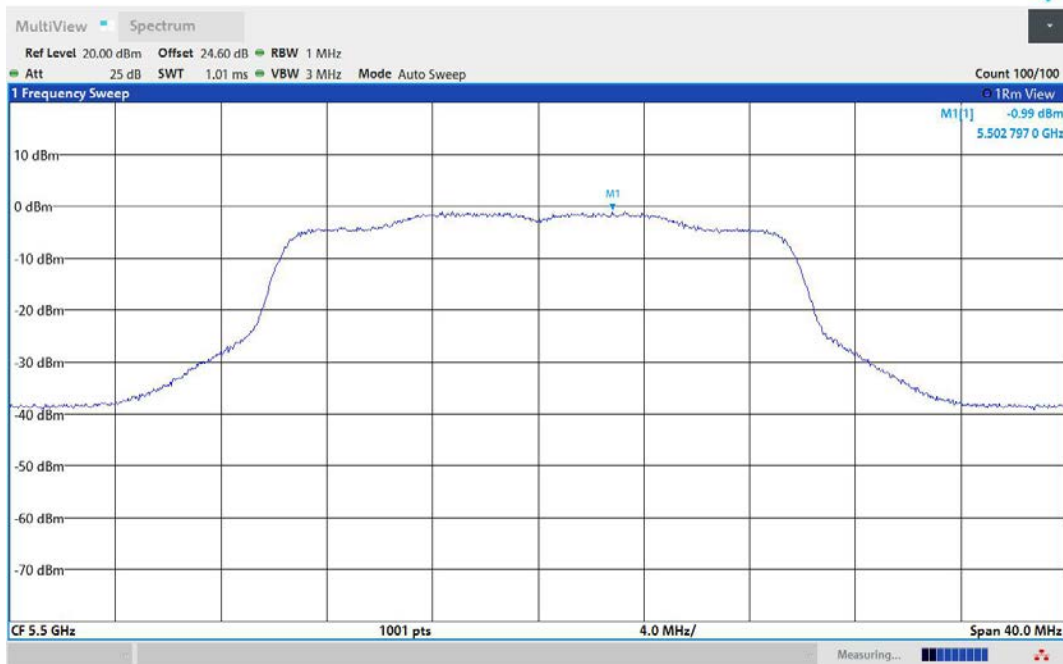
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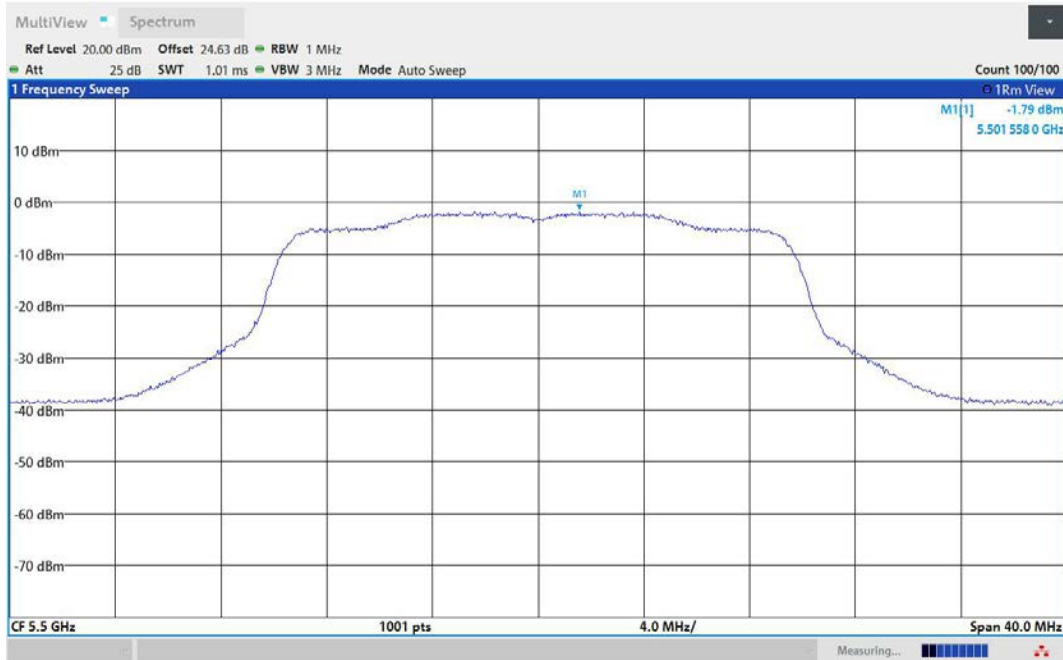
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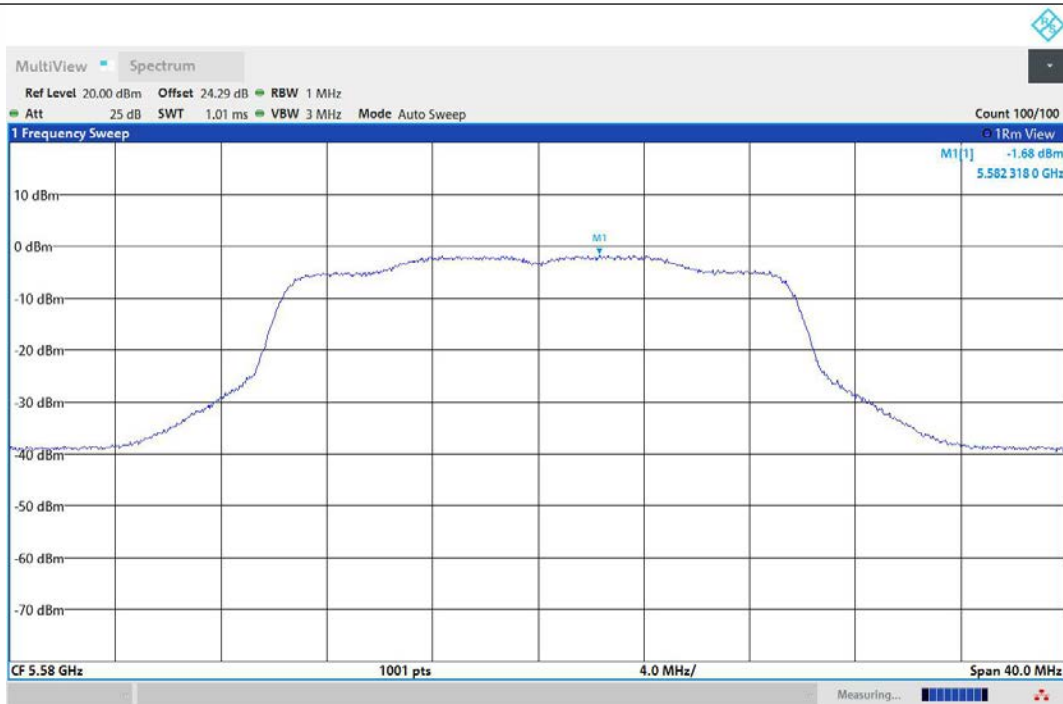
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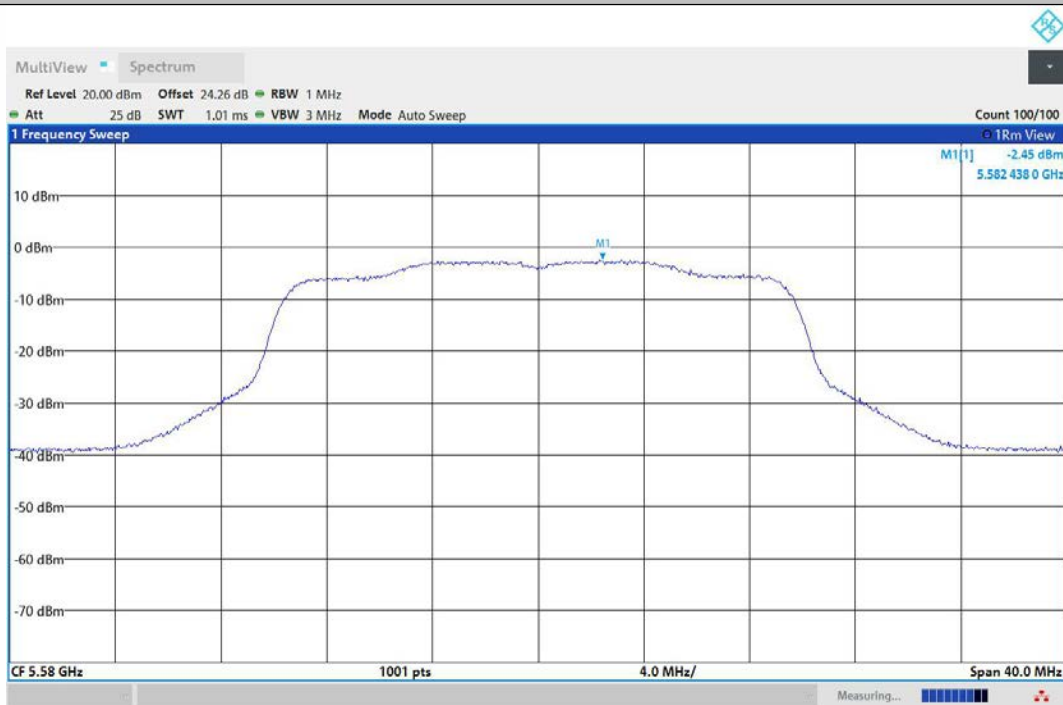
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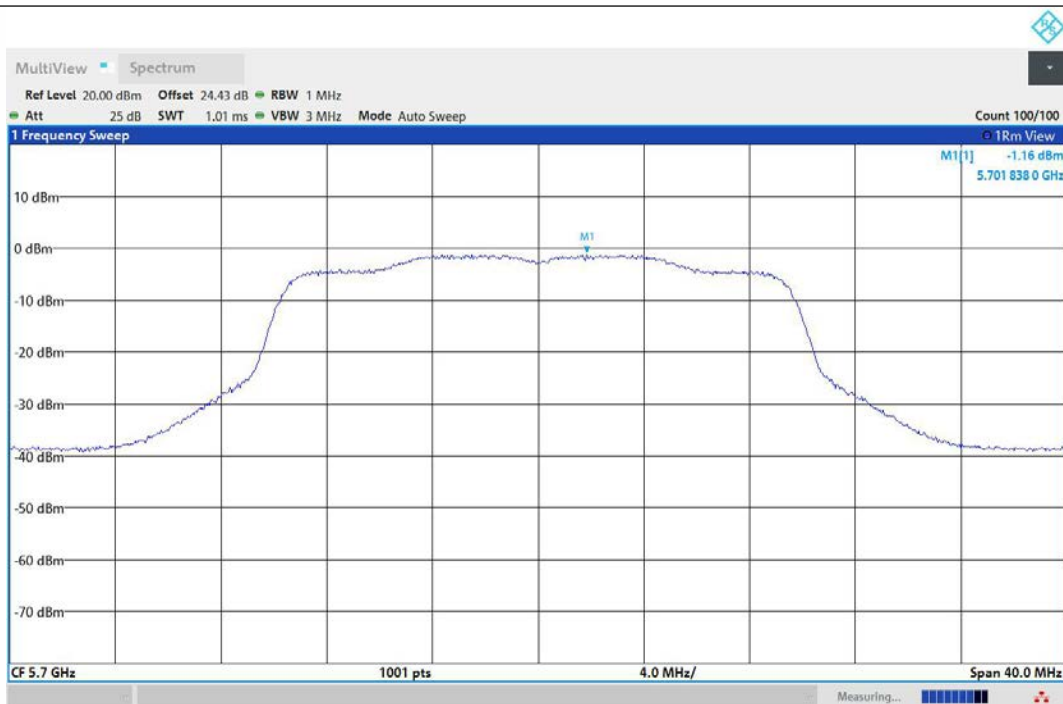
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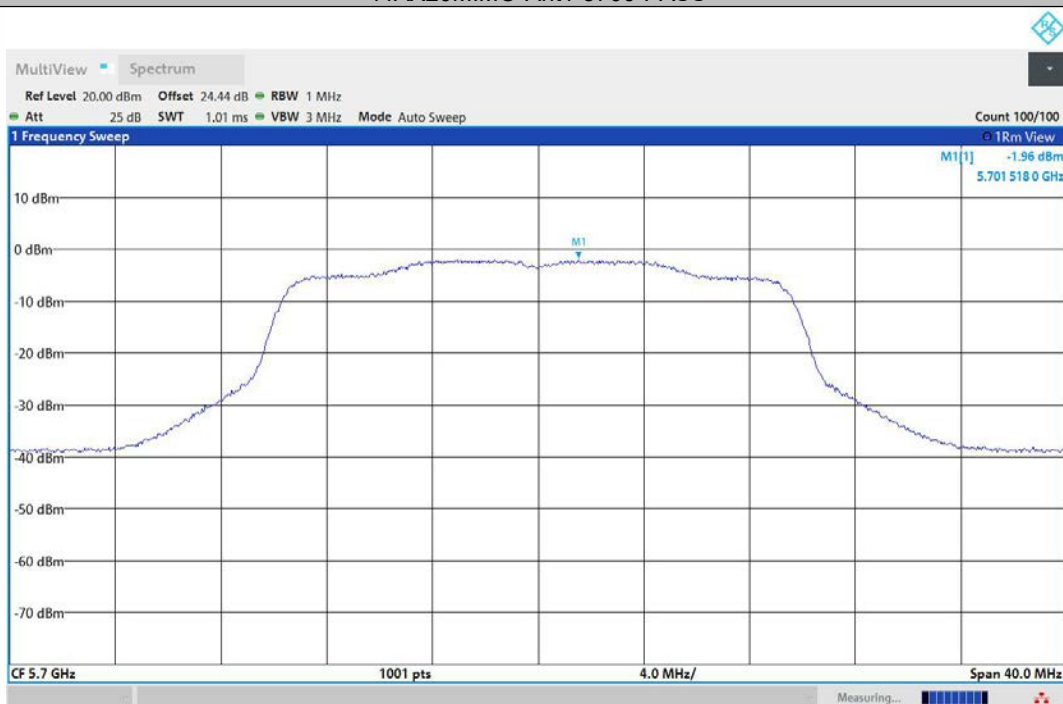
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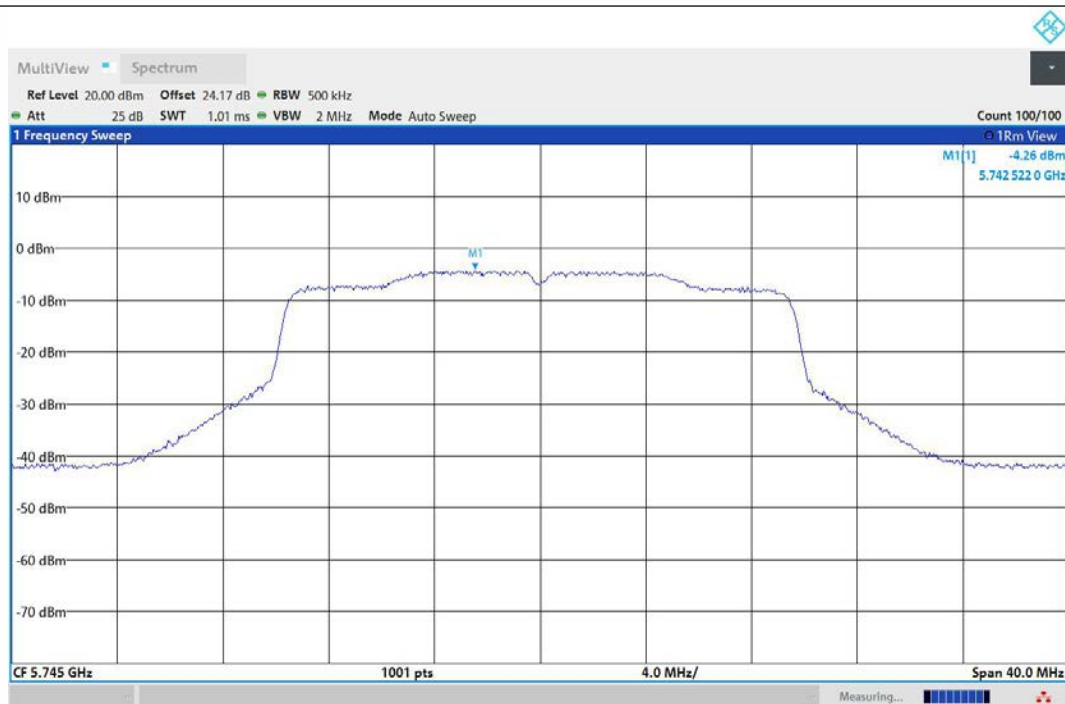
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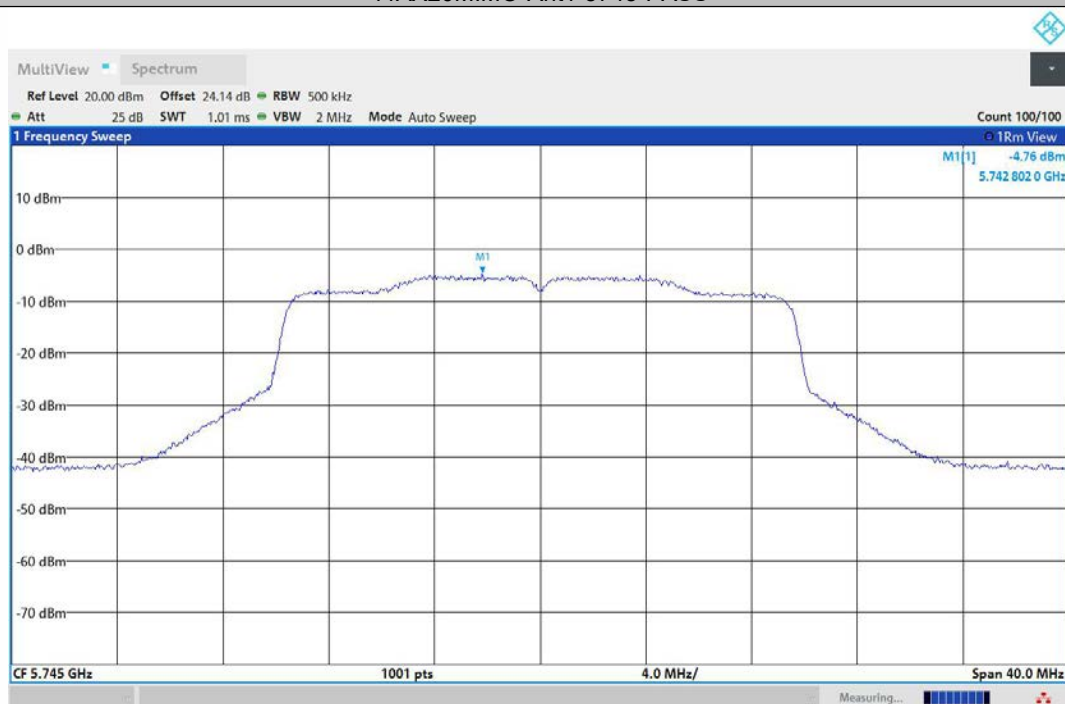
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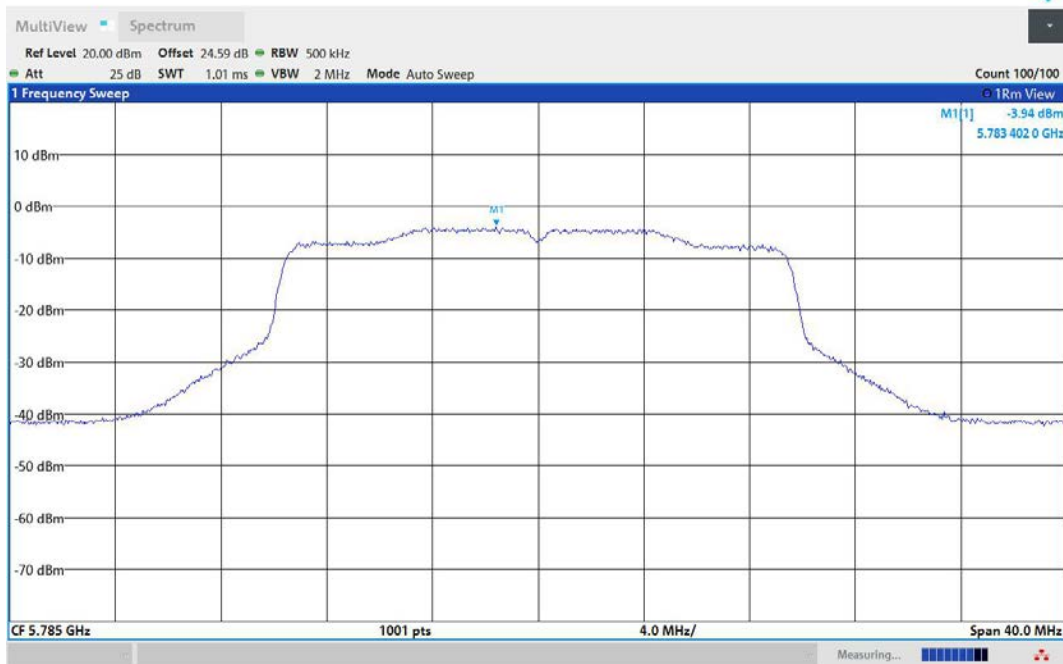
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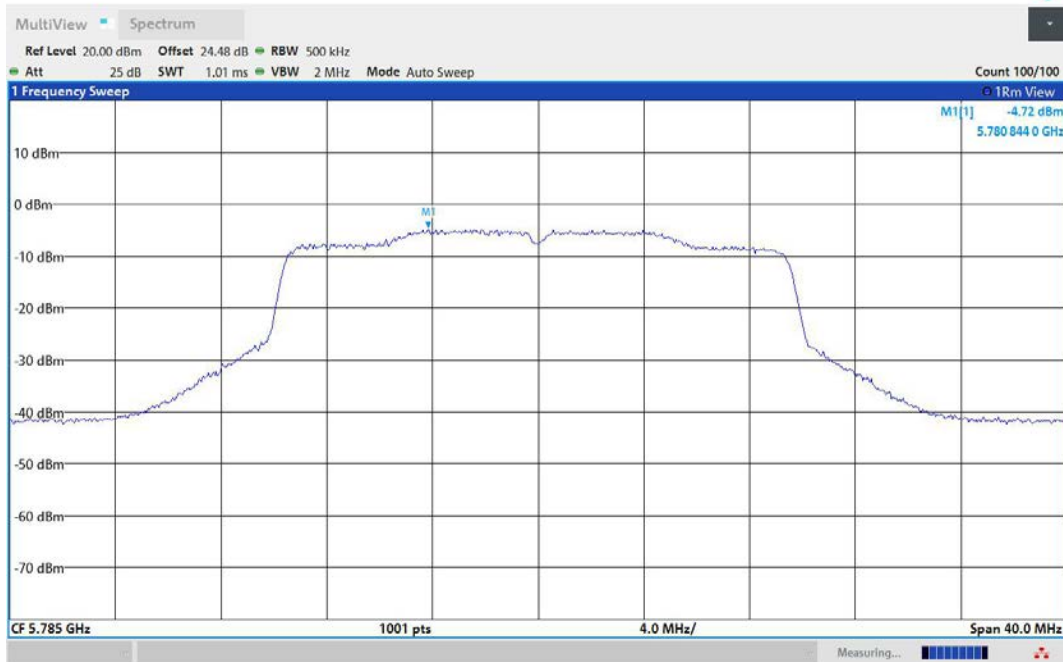
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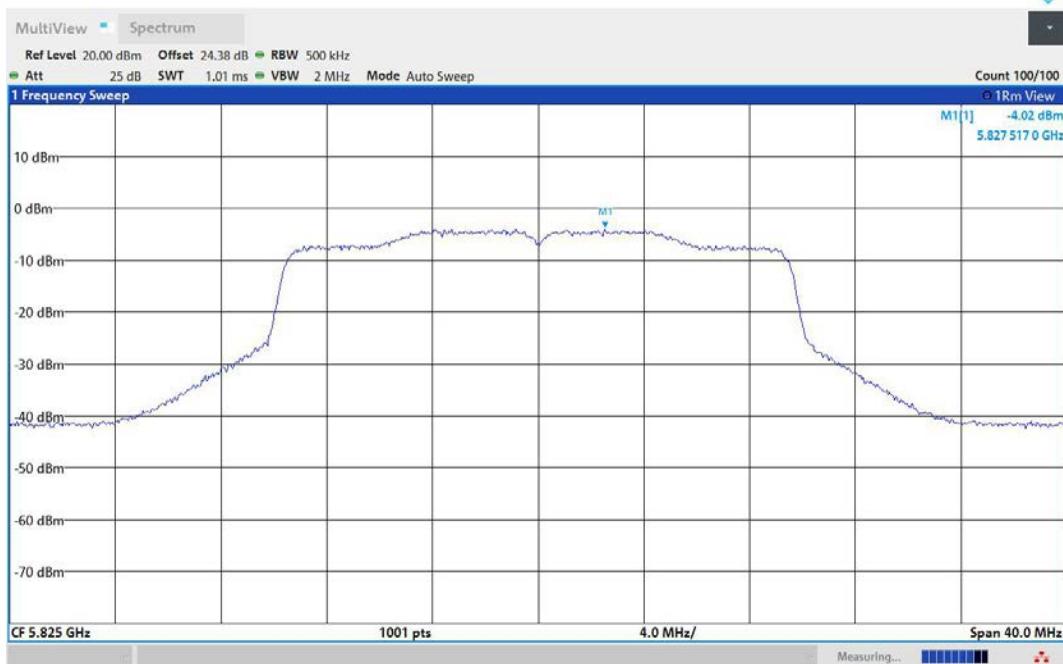
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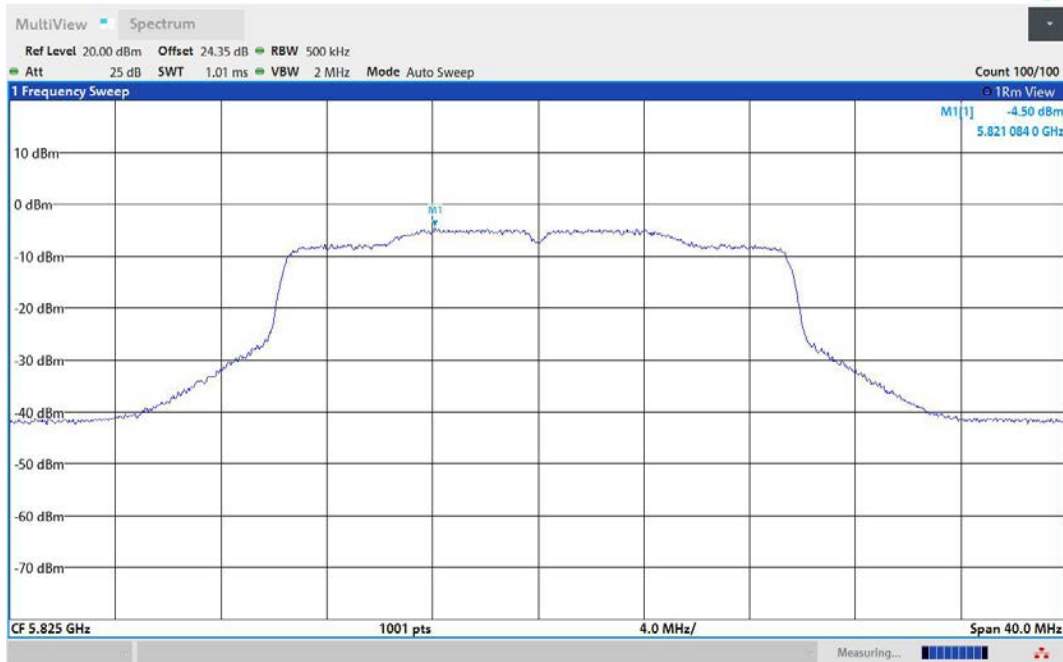
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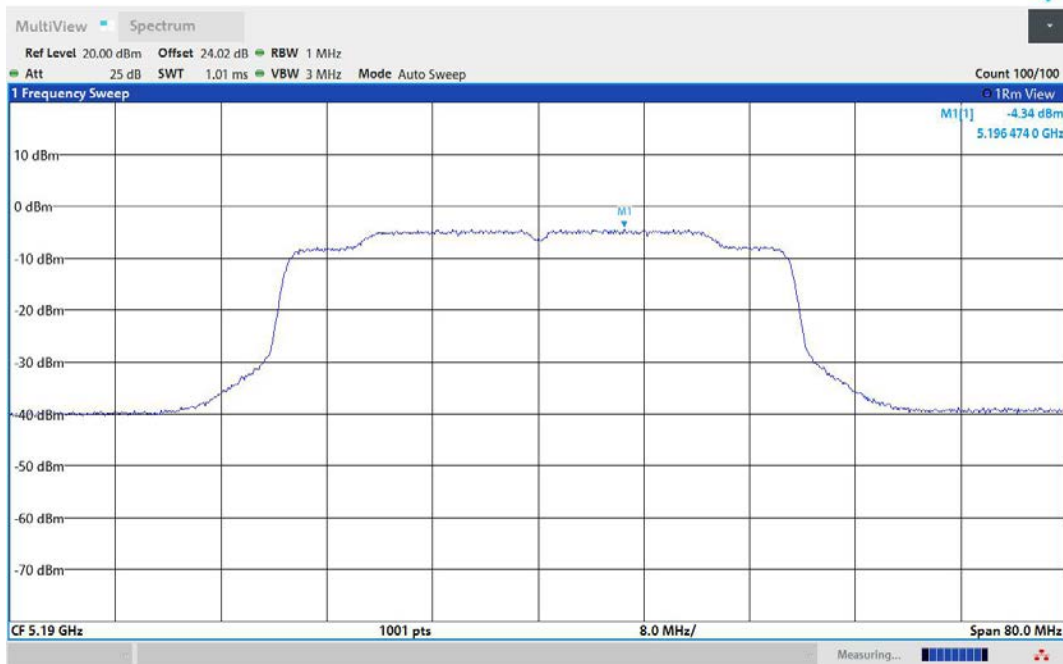
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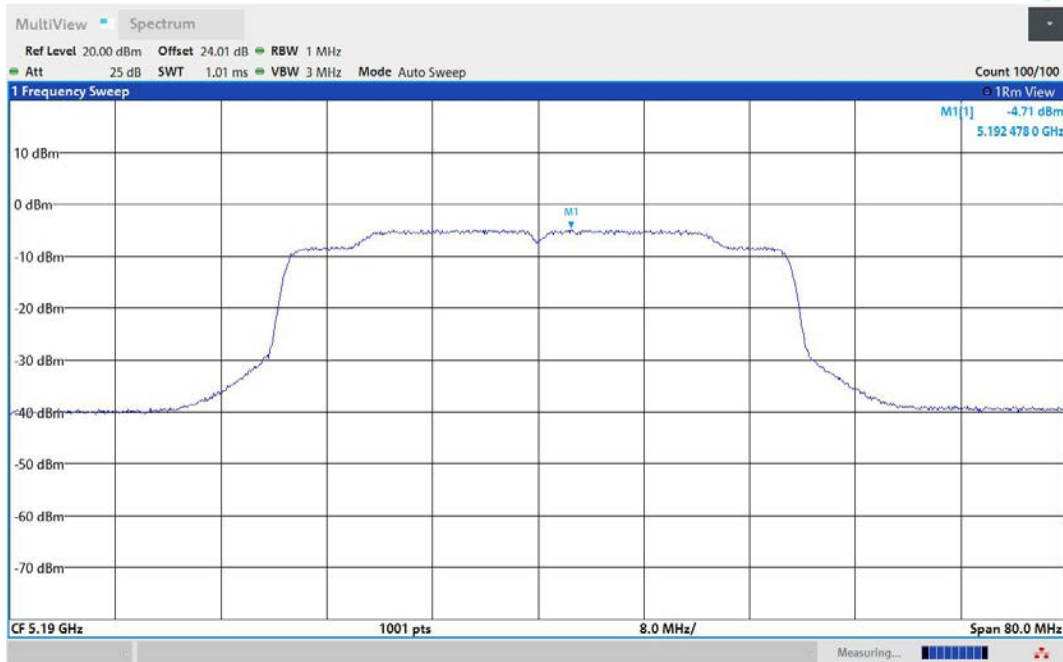
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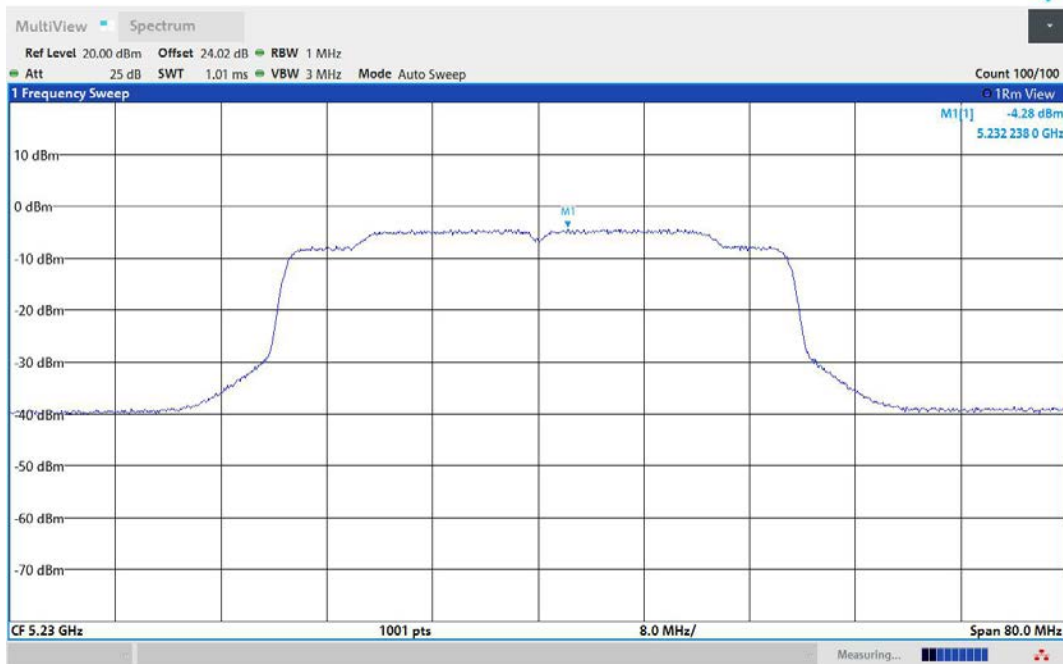
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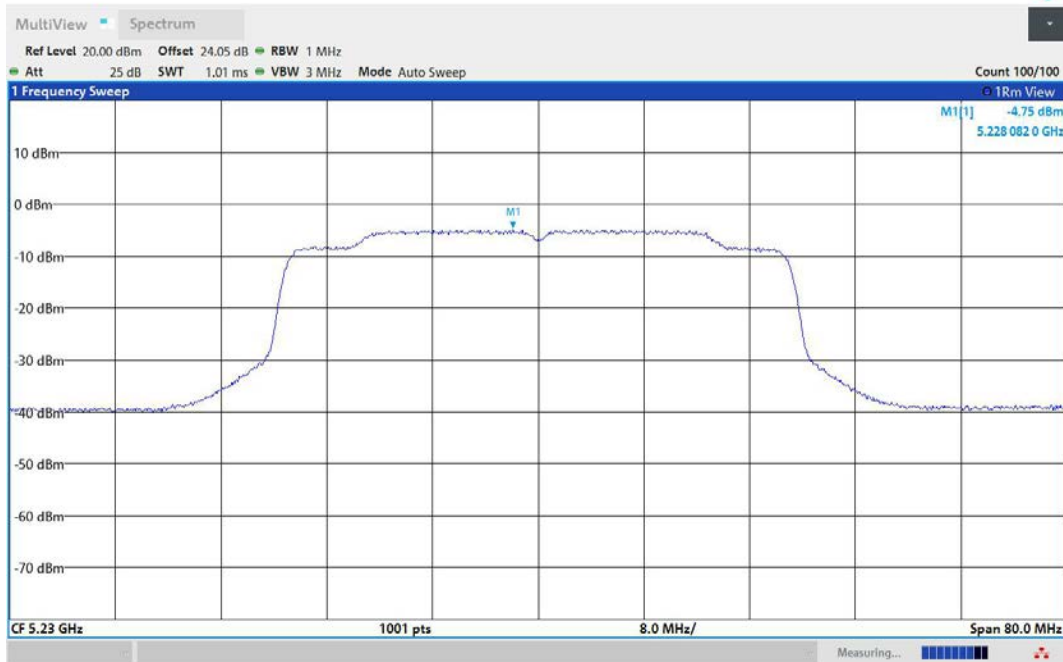
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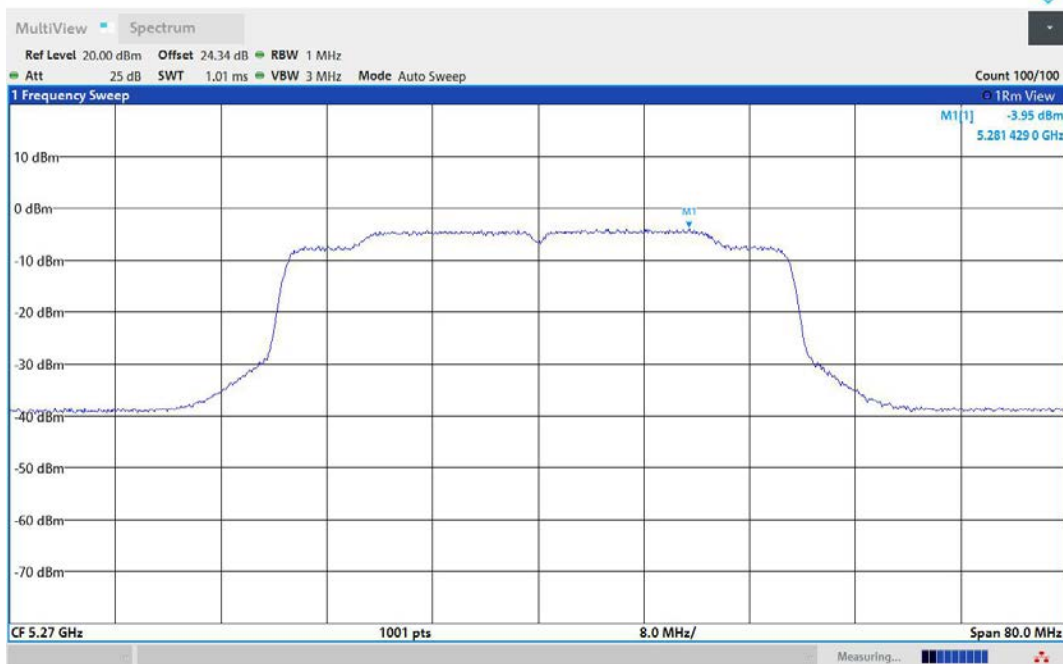
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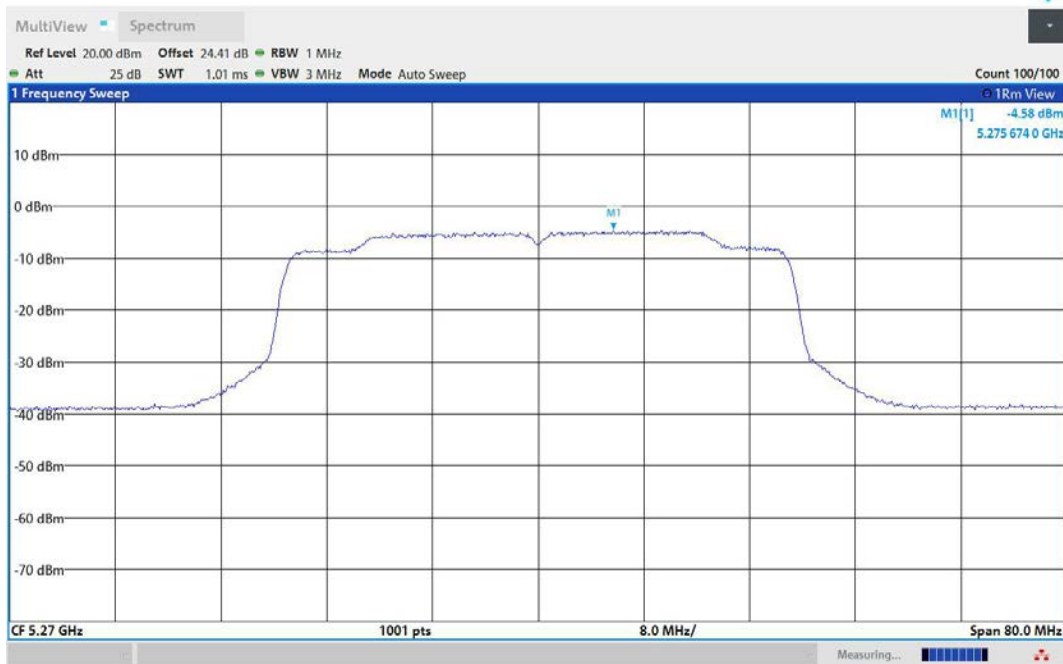
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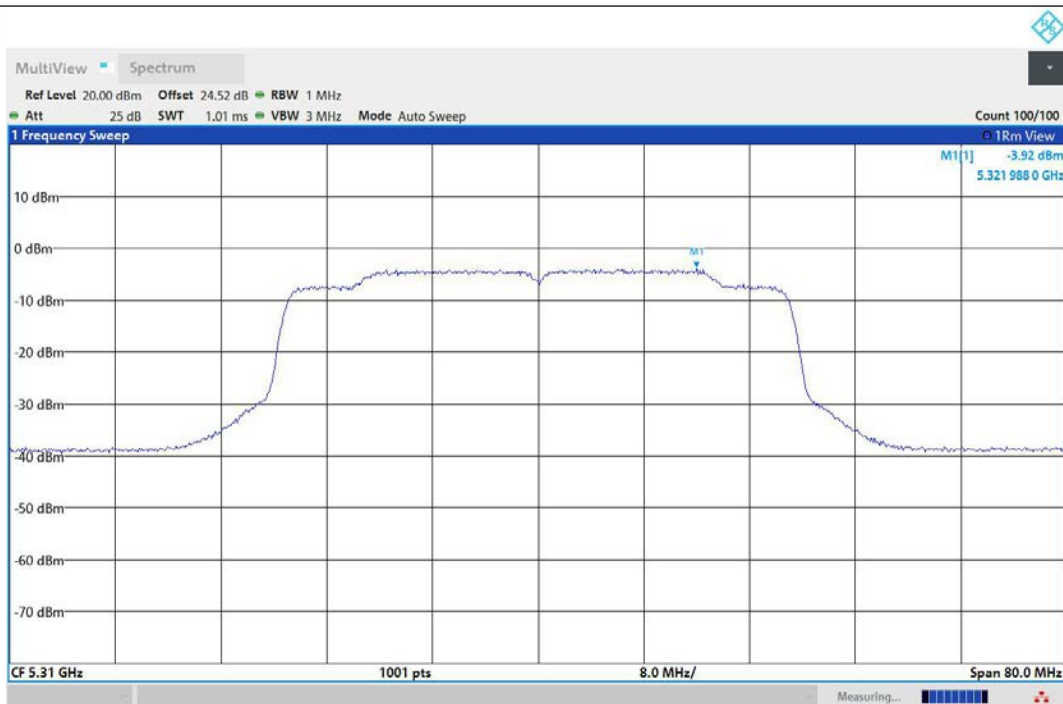
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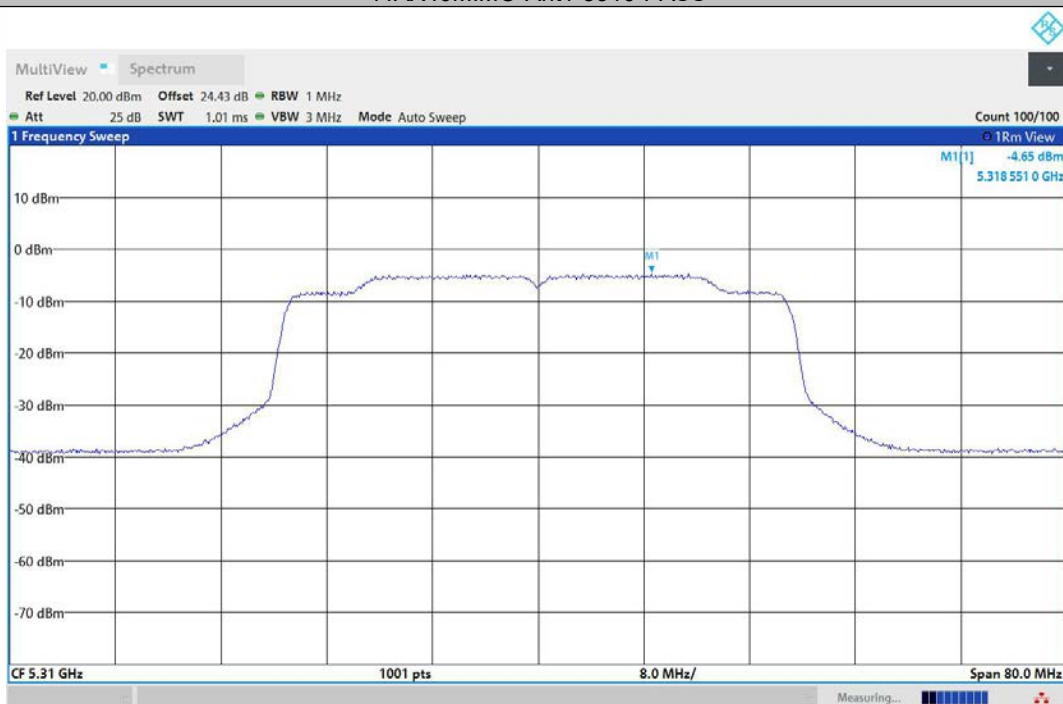
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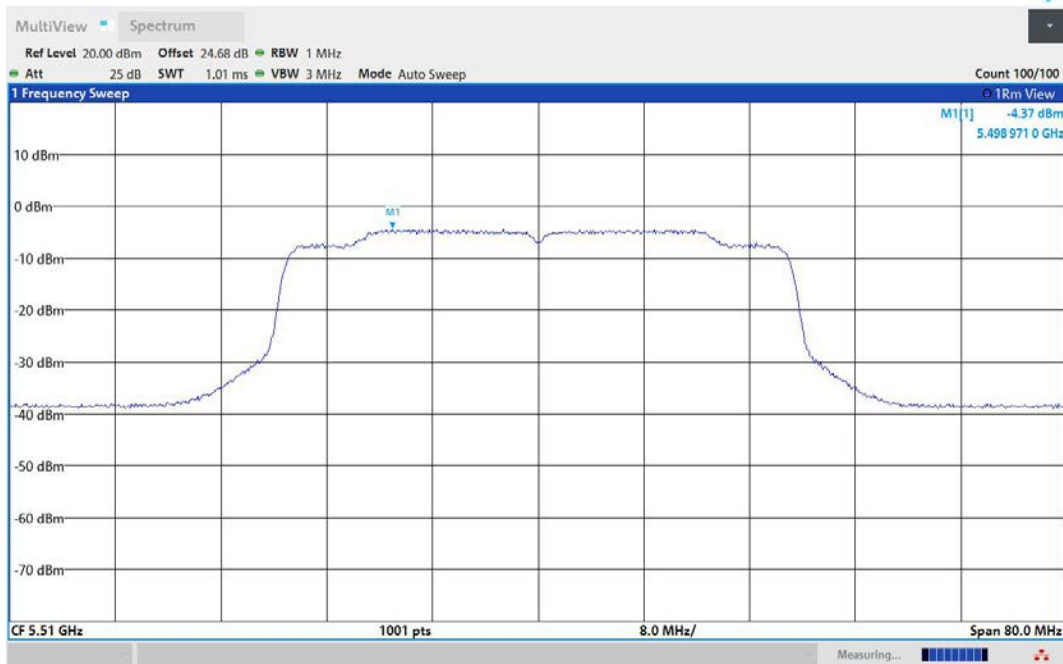
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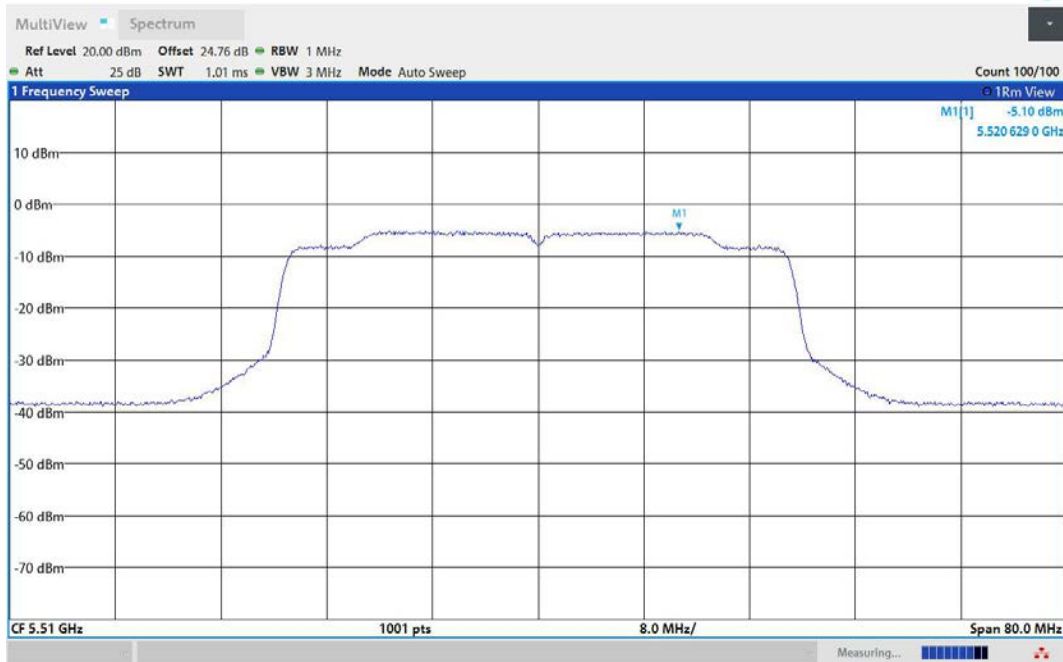
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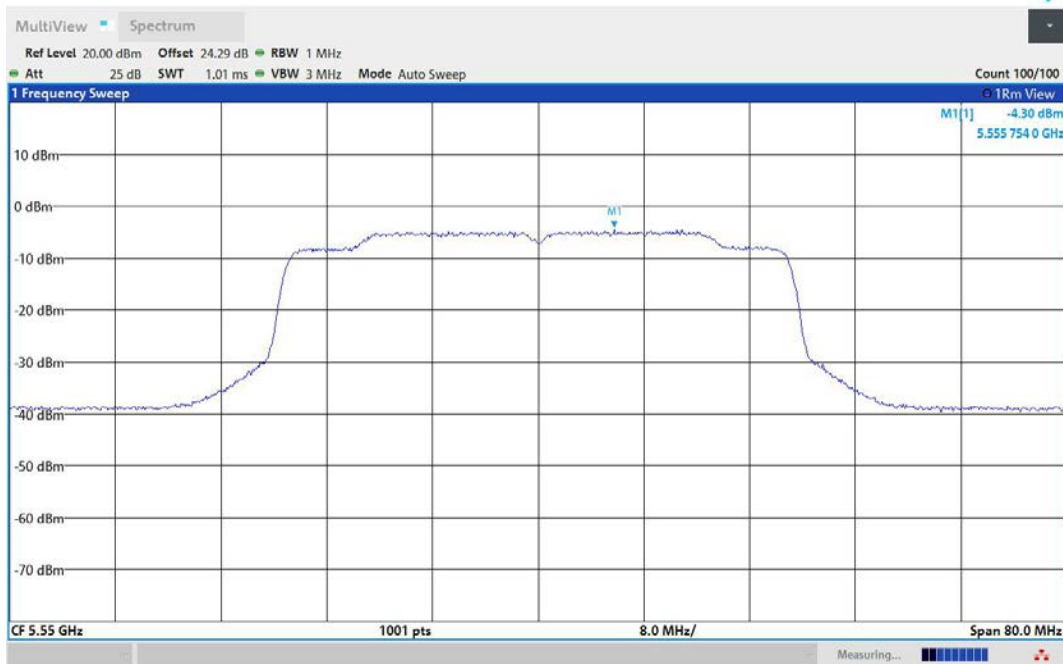
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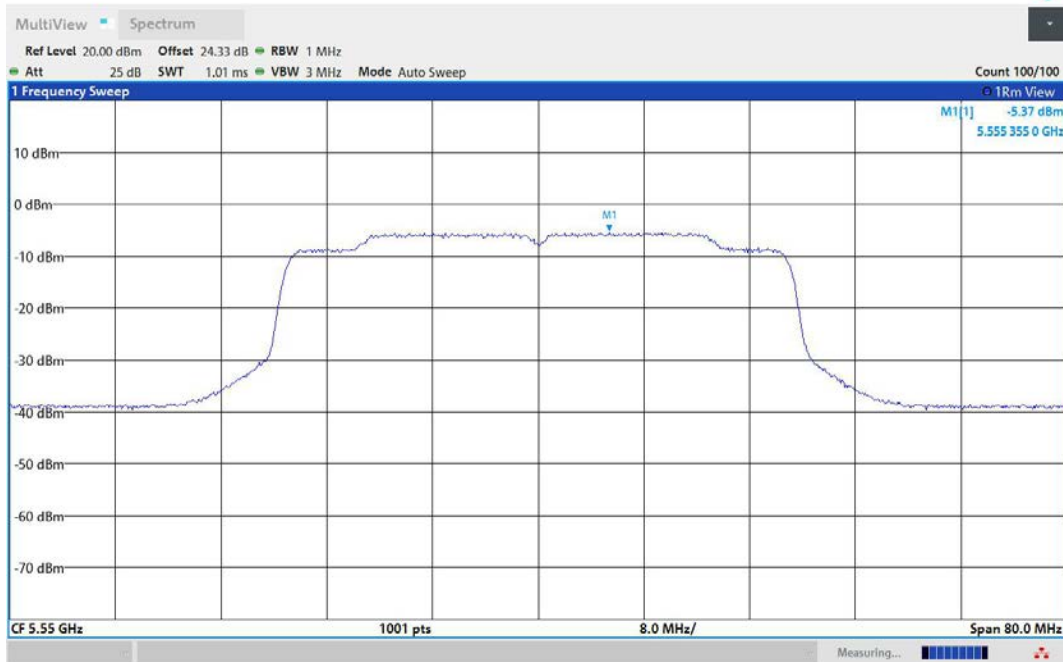
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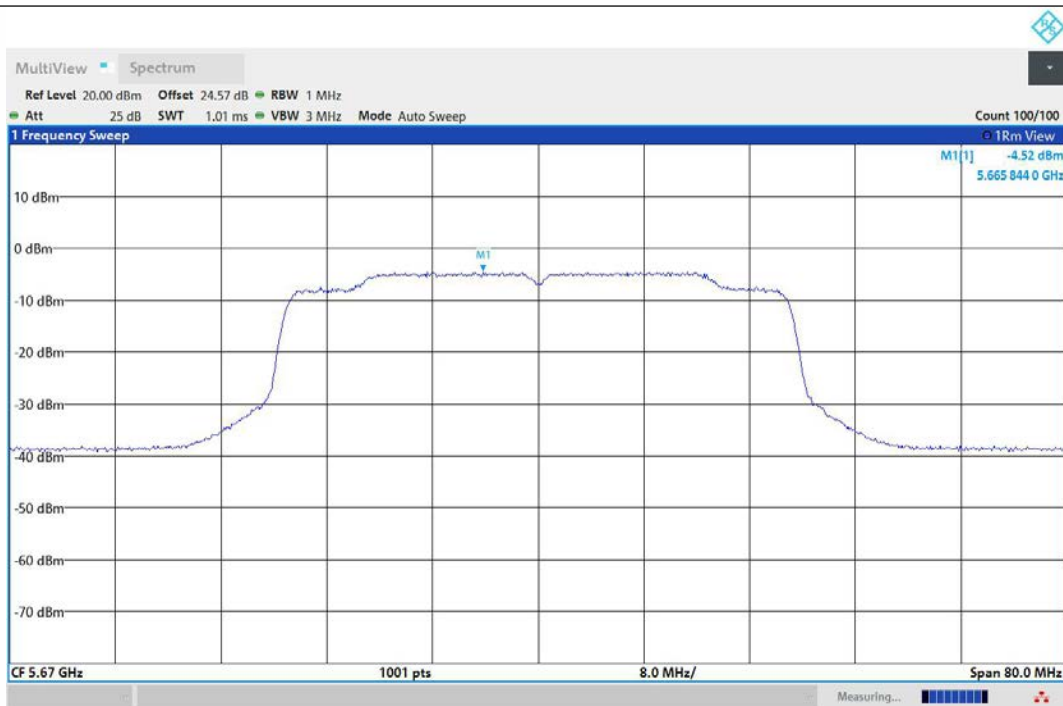
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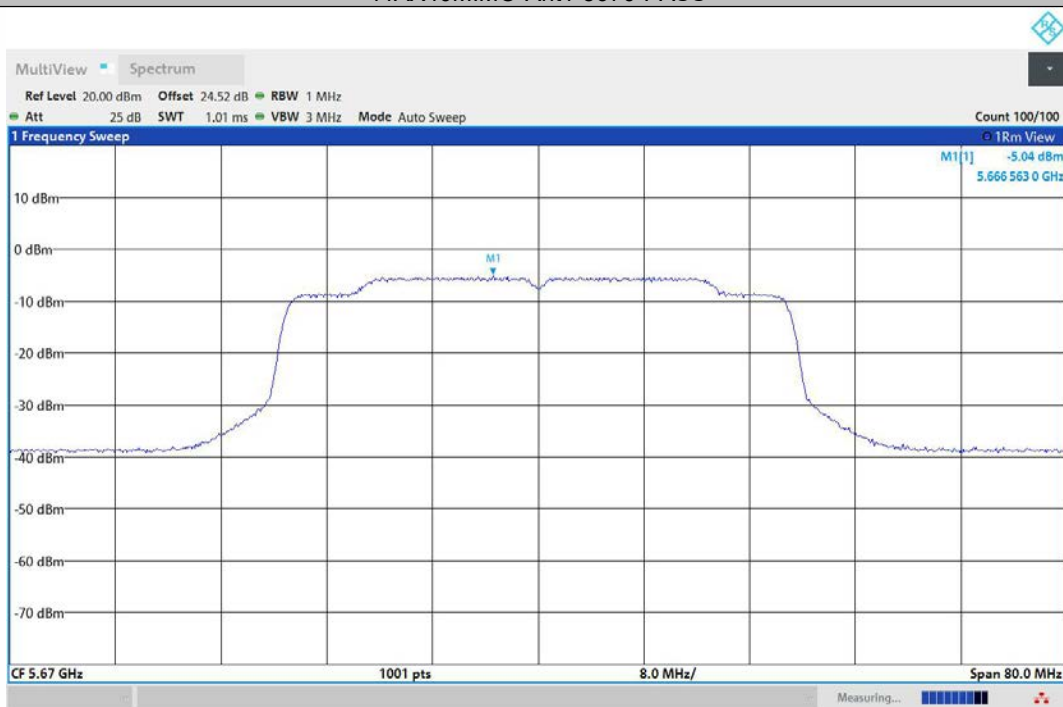
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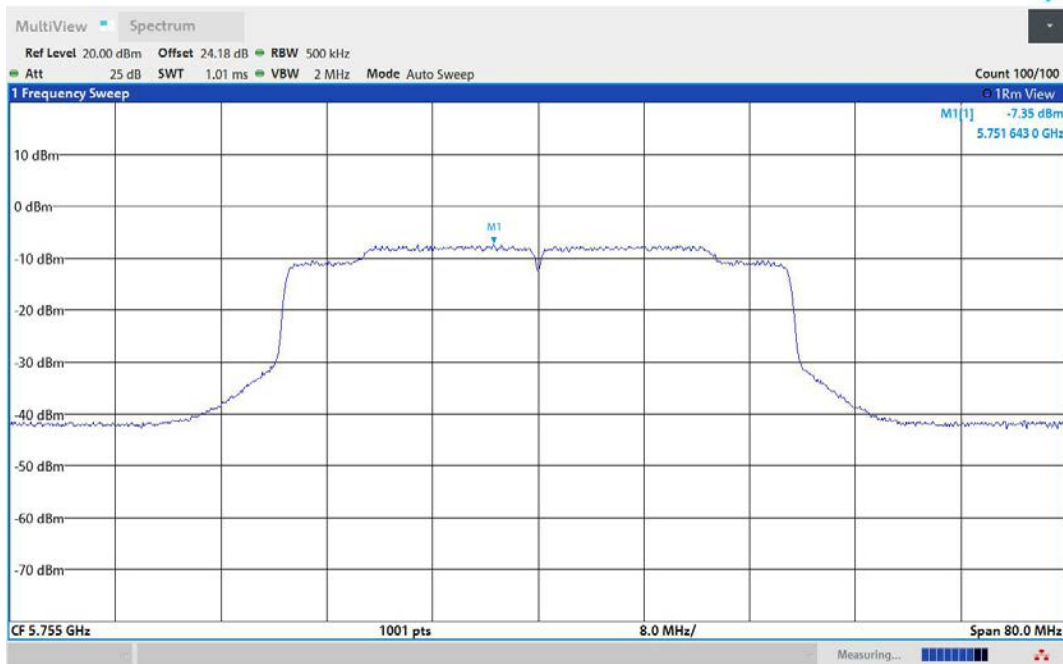
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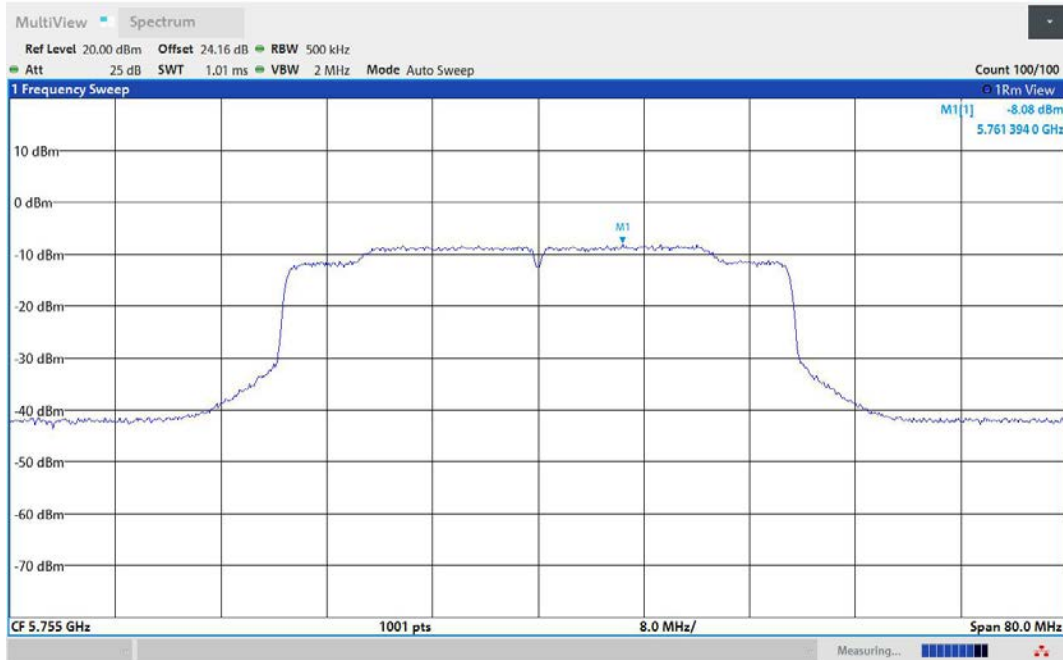
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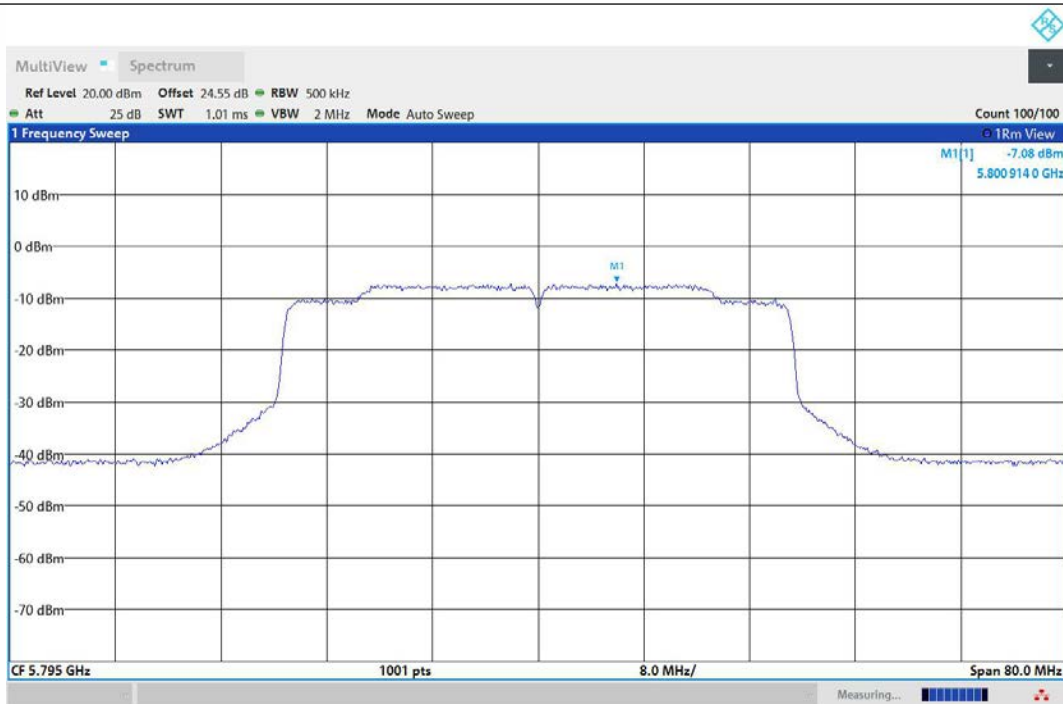
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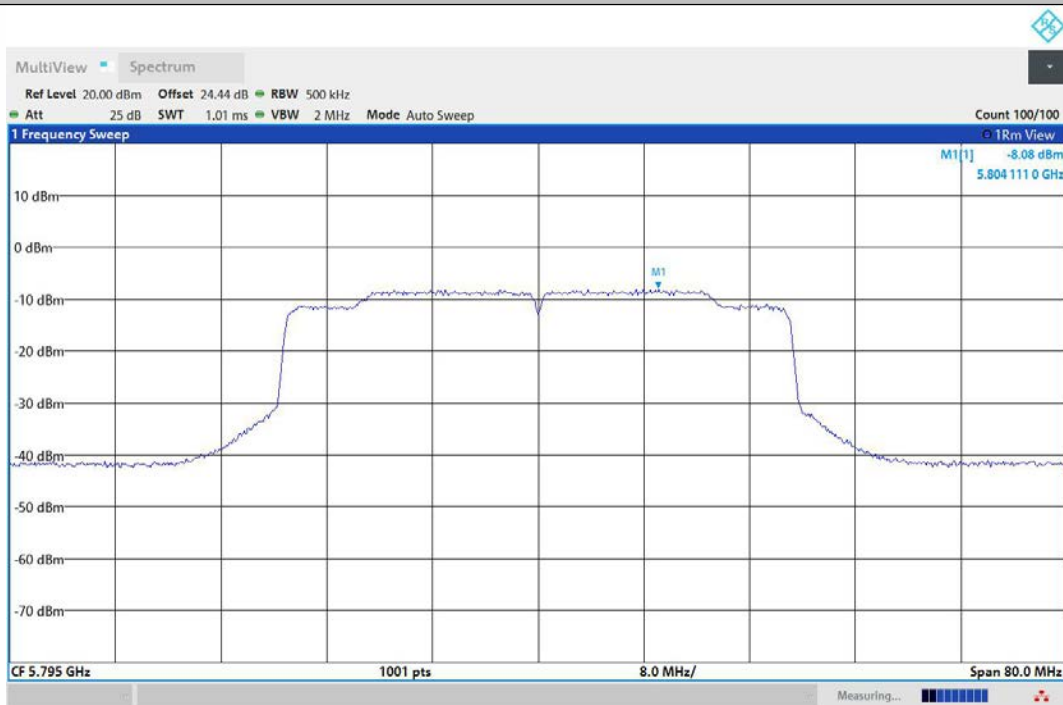
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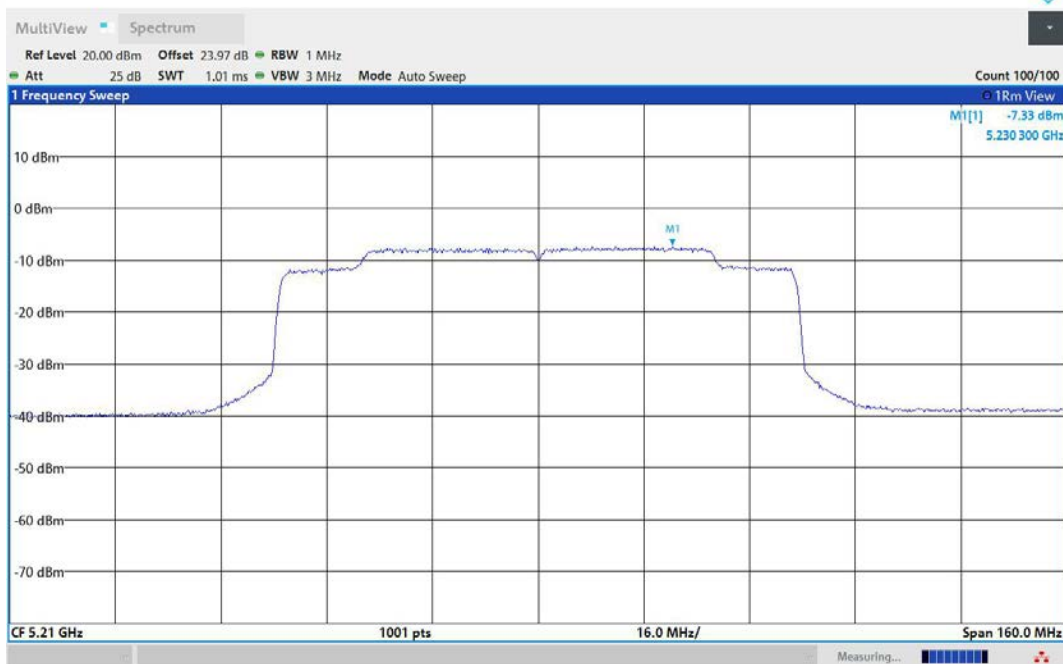
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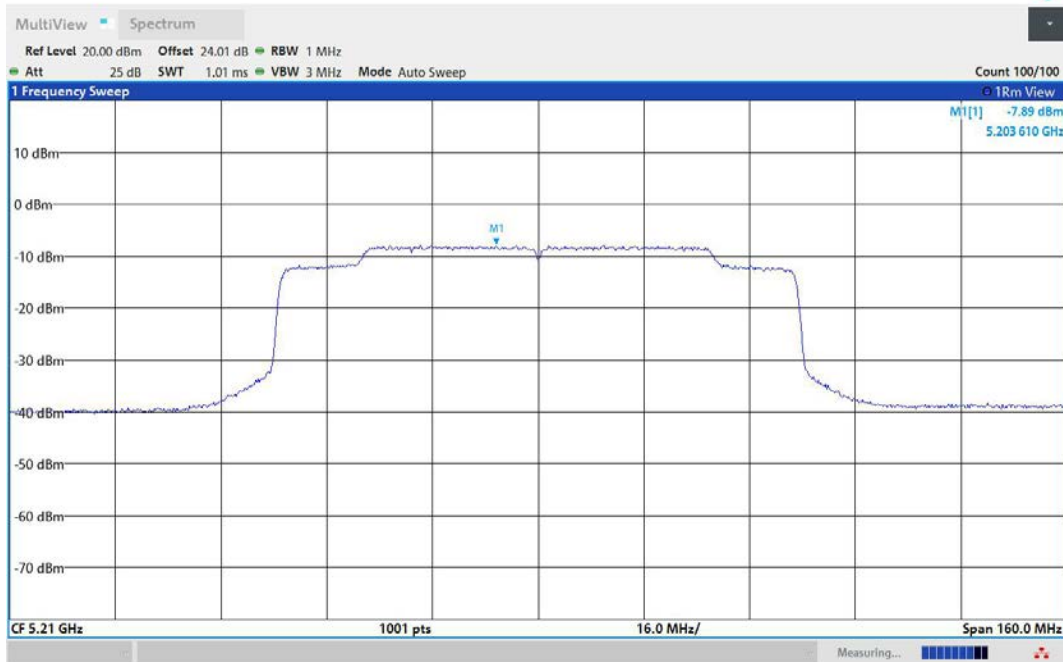
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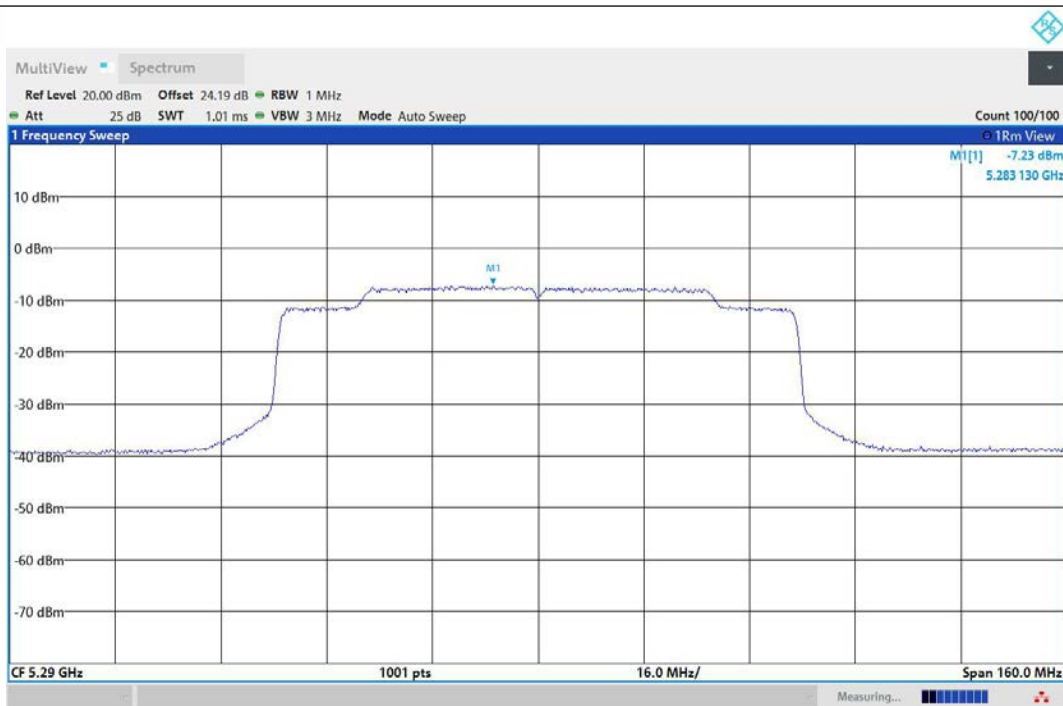
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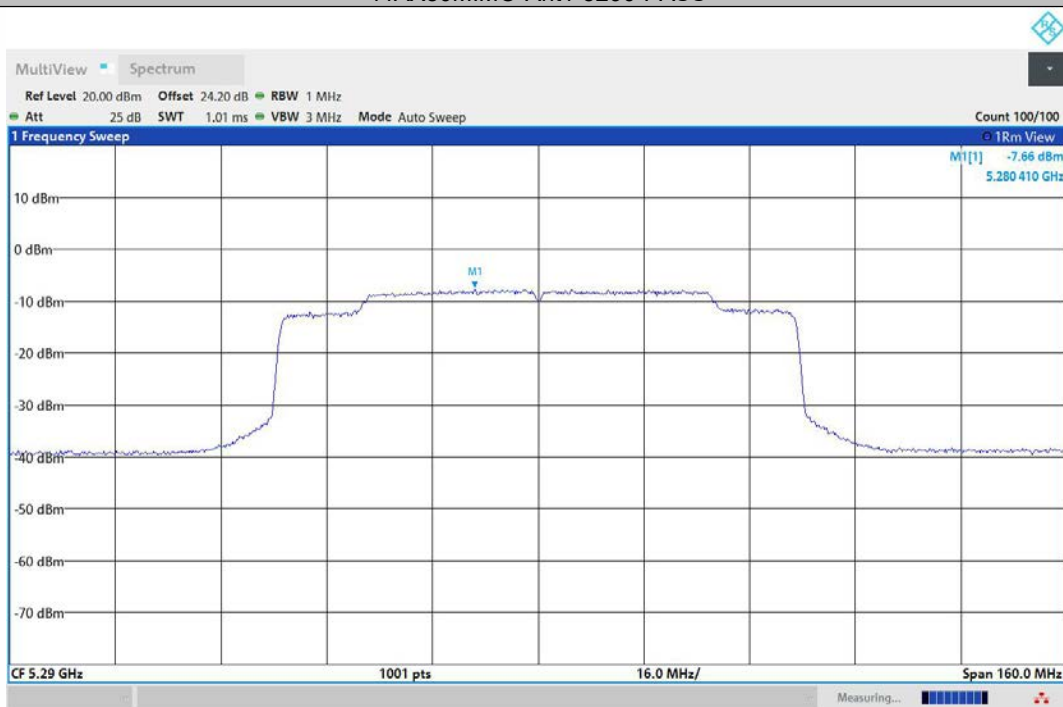
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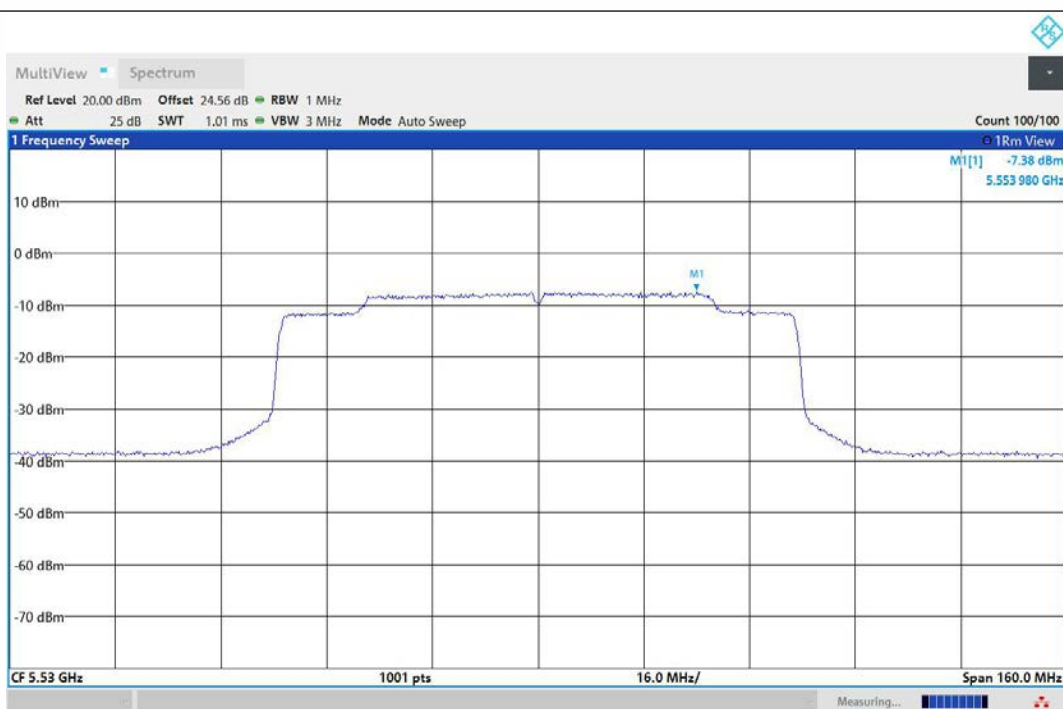
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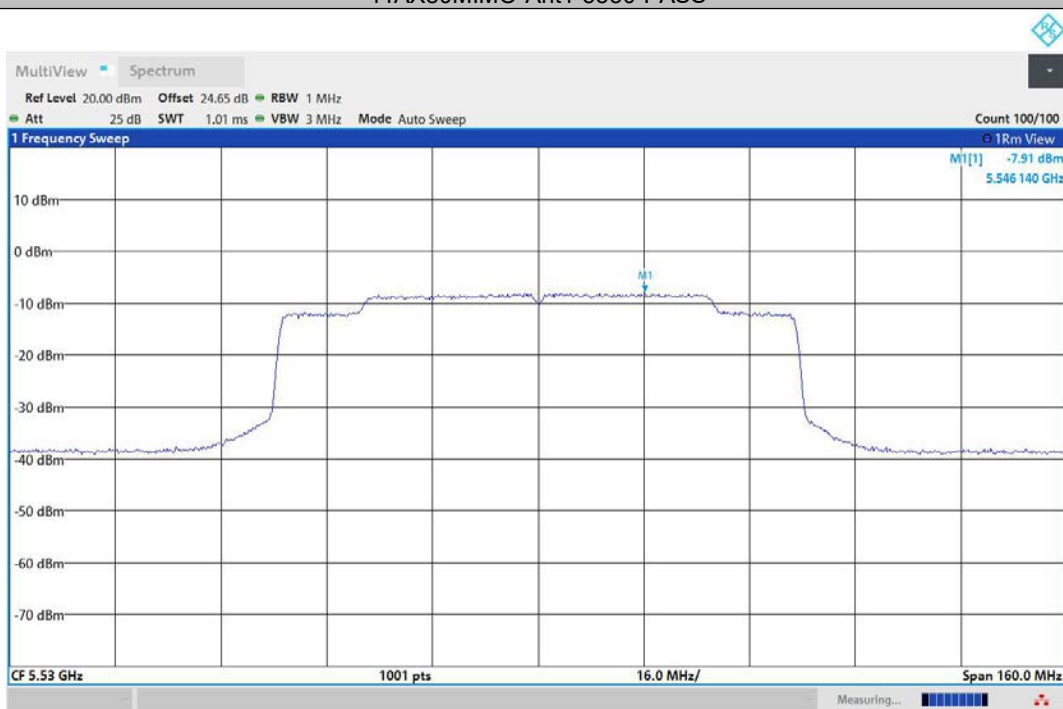
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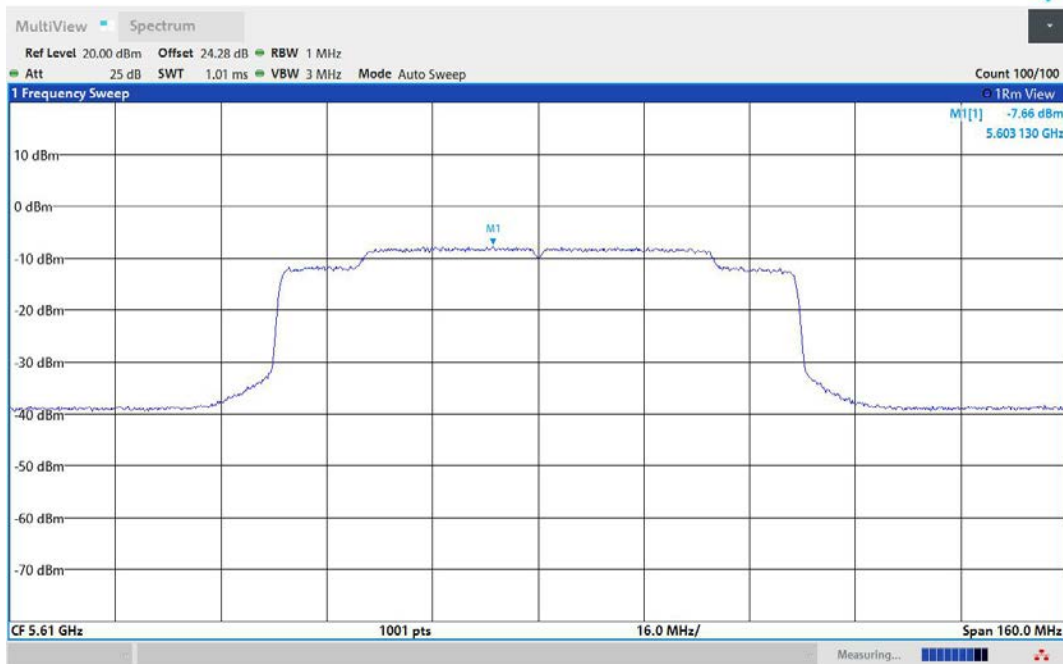
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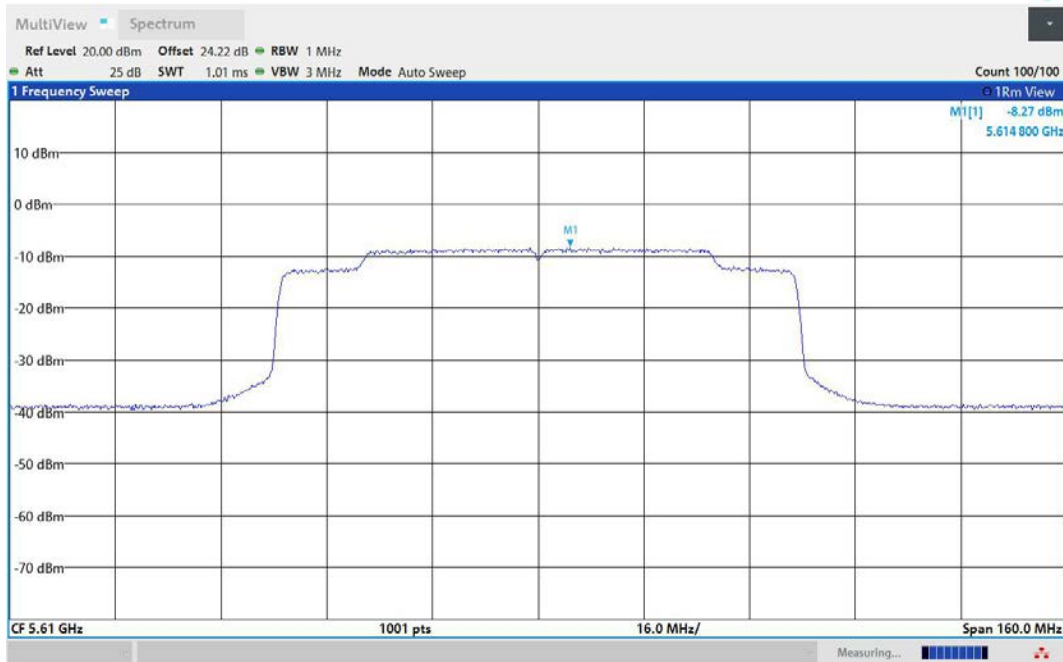
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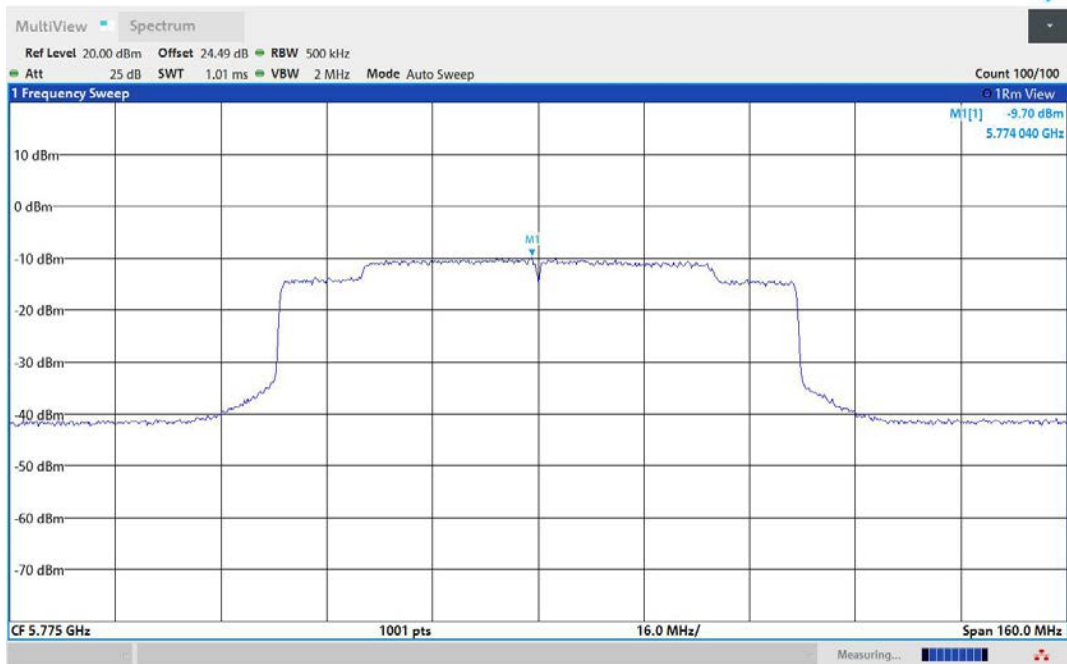
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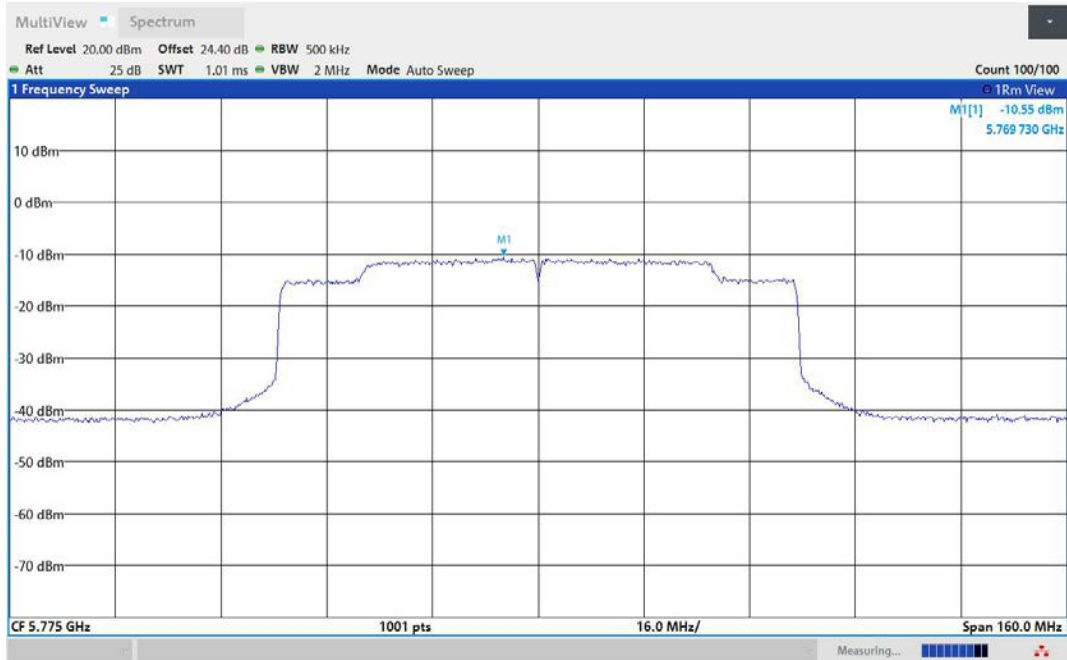
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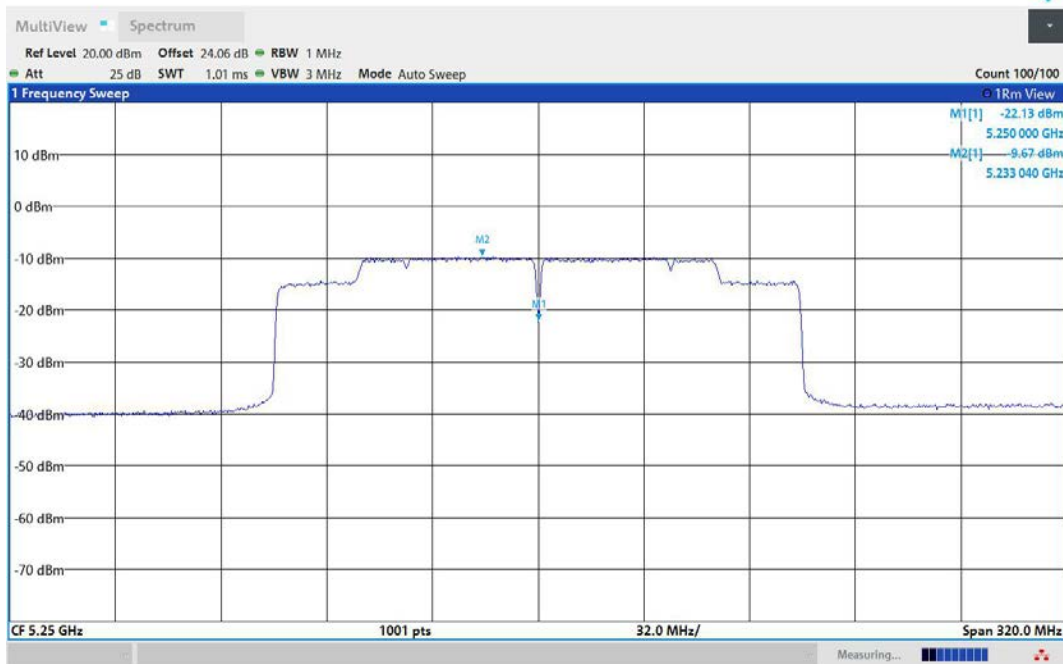
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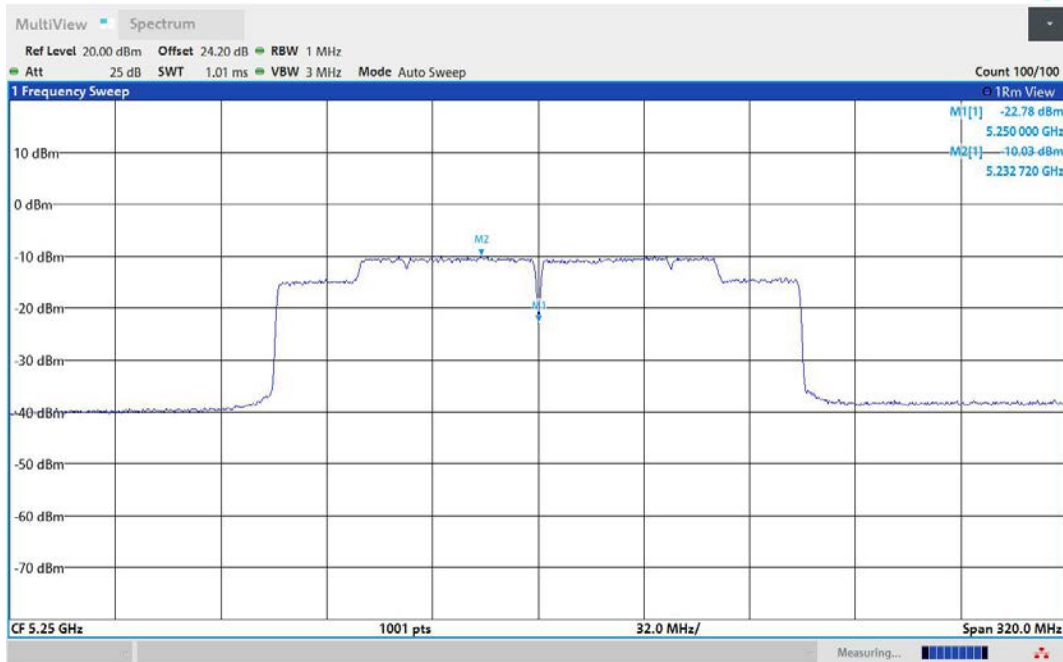
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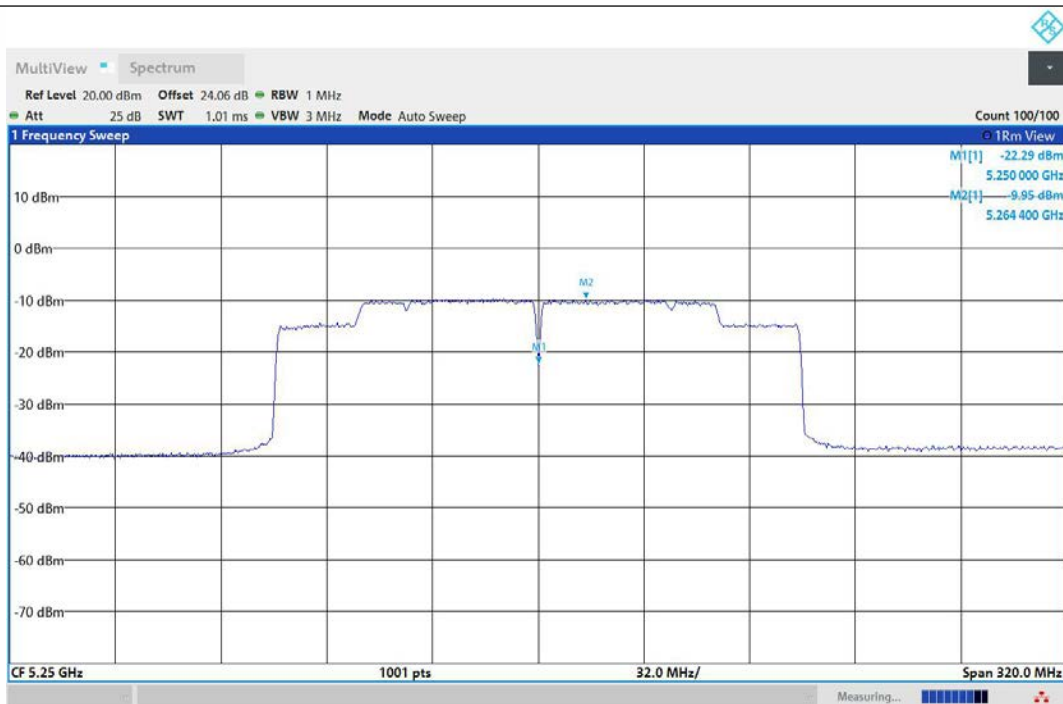
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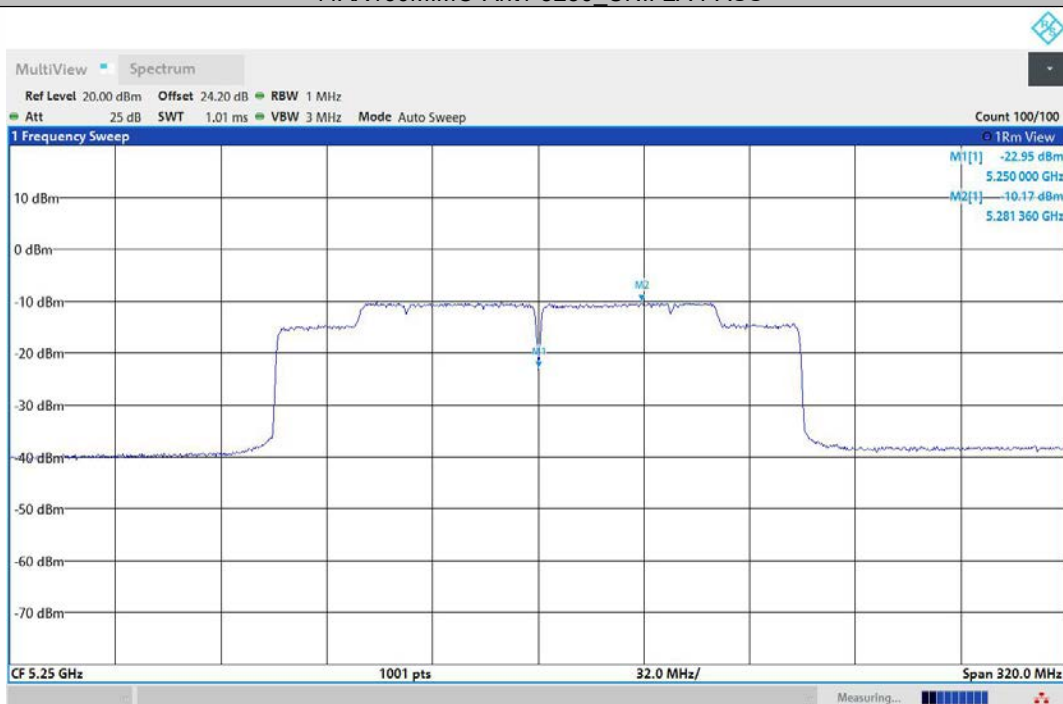
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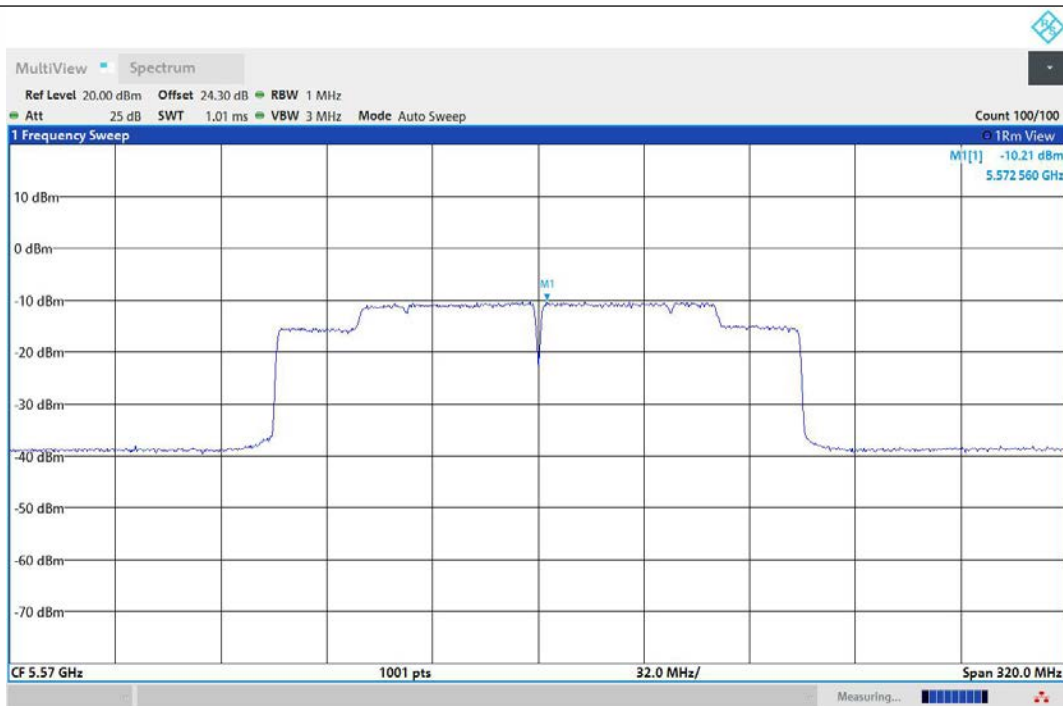
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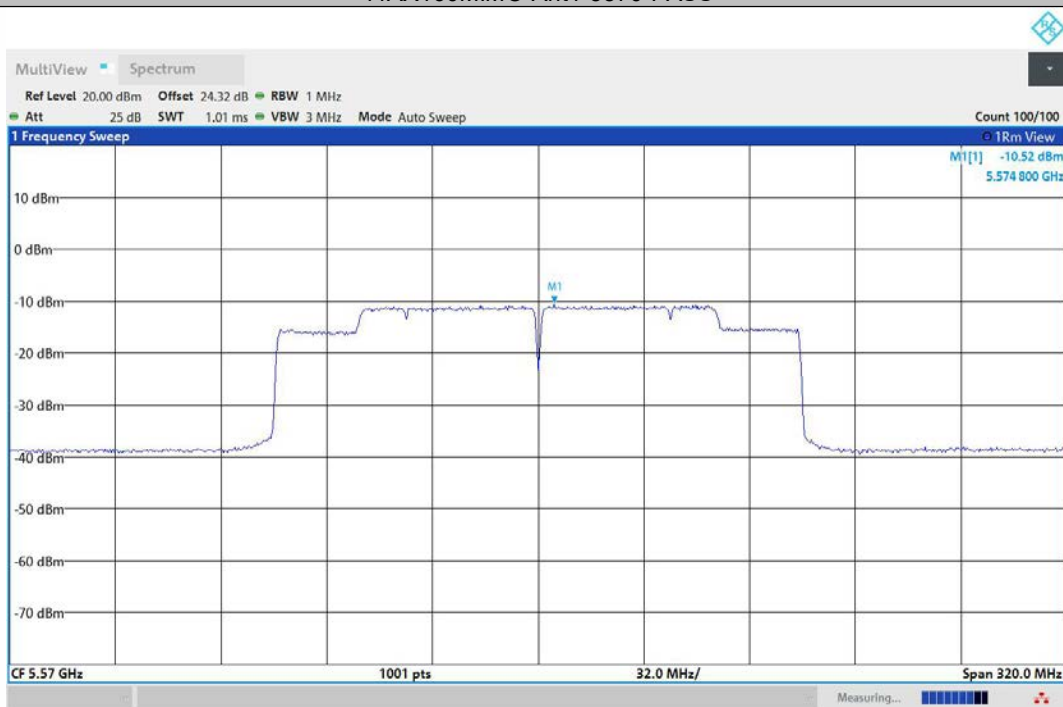
11AX160MIMO-Ant1-5250_UNII-2A-PASS



11AX160MIMO-Ant2-5250_UNII-2A-PASS



11AX160MIMO-Ant1-5570-PASS



11AX160MIMO-Ant2-5570-PASS

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 $\text{dBuV/m} = 20 \log (\mu\text{V/m})$
 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 $f < 1 \text{ GHz}$ (30MHz to 1GHz), 200Hz for $f < 150\text{KHz}$ (9KHz to 150KHz), 9KHz for $< 30\text{MHz}$ (150KHz to 30KHz).

Set the VBW > RBW.

Detector = Peak.

Trace mode = max hold.

Follow the guidelines in ANSI C63.10-2020/Cor 1-2021 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 $\geq 3 \text{ MHz}$.

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 $\text{VBW} \leq \text{RBW}/100$ (i.e., 10 kHz) but not less than 10 Hz.

• If the EUT duty cycle is < 98 percent, set $\text{VBW} \geq 1/T$, 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

Pass

Temperature :	25°C	ATM Pressure:	1011 mbar
Humidity :	60 %	Test Engineer:	HZB

All of the configurations or modes are tested, the data of the worst case is recorded as below.

☒ For Undesirable radiated Spurious Emission in U-NII – 1

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

All of the configurations or modes are tested, the data of the worst case is recorded in the report.

Highest gain of each antenna and highest output power is ANT1 and MIMO as below:

ANT1:

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)
8309.43	V	58.93	-36.3	-27	9.3
11630.6	V	62.80	-32.43	-27	5.43
17686.9	V	67.78	-27.45	-27	0.45
8312.43	H	58.79	-36.44	-27	9.44
10074.5	H	60.29	-34.94	-27	7.94
17764.9	H	67.34	-27.89	-27	0.89

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)
8315.43	V	58.98	-36.25	-27	9.25
11776.6	V	63.06	-32.17	-27	5.17
17778.9	V	67.84	-27.39	-27	0.39
8327.43	H	58.46	-36.77	-27	9.77
10125.5	H	60.41	-34.82	-27	7.82
17704.9	H	67.33	-27.9	-27	0.9

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)
8300.42	V	58.53	-36.7	-27	9.7
11101.5	V	62.92	-32.31	-27	5.31
17385.9	V	67.46	-27.77	-27	0.77
8323.43	H	59.05	-36.18	-27	9.18
11065.5	H	62.65	-32.58	-27	5.58
17806.9	H	67.49	-27.74	-27	0.74

MIMO:

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)
	V				
	V				
	V				
	H				
	H				
	H				

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)
	V				
	V				
	V				
	H				
	H				
	H				

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)
	V				
	V				
	V				
	H				
	H				
	H				

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

ANT1:

Test mode: 802.11a		Frequency(MHz): 5180			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8309.43	V	58.93	74.00	15.07	peak
11630.6	V	62.80	74.00	11.20	peak
17686.9	V	67.78	74.00	6.22	peak
8309.43	V	41.88	54.00	12.12	AVG
11630.6	V	43.04	54.00	10.96	AVG
17686.9	V	48.85	54.00	5.15	AVG
8312.43	H	58.79	74.00	15.21	peak
10074.5	H	60.29	74.00	13.71	peak
17764.9	H	67.34	74.00	6.66	peak
8312.43	H	42.24	54.00	11.76	AVG
10074.5	H	41.44	54.00	12.56	AVG
17764.9	H	48.14	54.00	5.86	AVG

Test mode: 802.11a		Frequency(MHz): 5200			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8315.43	V	58.98	74.00	15.02	peak
11776.6	V	63.06	74.00	10.94	peak
17778.9	V	67.84	74.00	6.16	peak
8315.43	V	41.91	54.00	12.09	AVG
11776.6	V	44.38	54.00	9.62	AVG
17778.9	V	48.76	54.00	5.24	AVG
8327.43	H	58.46	74.00	15.54	peak
10125.5	H	60.41	74.00	13.59	peak
17704.9	H	67.33	74.00	6.67	peak
8327.43	H	41.80	54.00	12.20	AVG
10125.5	H	41.97	54.00	12.03	AVG
17704.9	H	49.18	54.00	4.82	AVG

Test mode: 802.11a		Frequency(MHz): 5240			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8300.42	V	58.53	74.00	15.47	peak
11101.5	V	62.92	74.00	11.08	peak
17385.9	V	67.46	74.00	6.54	peak
8300.42	V	41.58	54.00	12.42	AVG
11101.5	V	44.91	54.00	9.09	AVG
17385.9	V	48.23	54.00	5.77	AVG
8323.43	H	59.05	74.00	14.95	peak
11065.5	H	62.65	74.00	11.35	peak
17806.9	H	67.49	74.00	6.51	peak
8323.43	H	41.79	54.00	12.21	AVG
11065.5	H	44.13	54.00	9.87	AVG
17806.9	H	48.35	54.00	5.65	AVG

MIMO:

Test mode: 802.11a		Frequency(MHz): 5180			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				AVG

Test mode: 802.11a		Frequency(MHz): 5200			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				AVG

Test mode: 802.11a		Frequency(MHz): 5240			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				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: 802.11 ax (20) Frequency(MHz): 5180

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5148.29	H	57.25	-37.98	-27	Pass
5147.07	V	54.68	-40.55	-27	Pass

Test mode: 802.11 ax (20) Frequency(MHz): 5240

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5351.03	H	54.09	-41.14	-27	Pass
5350.61	V	54.42	-40.81	-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: 802.11 ax(20) Frequency(MHz): 5180

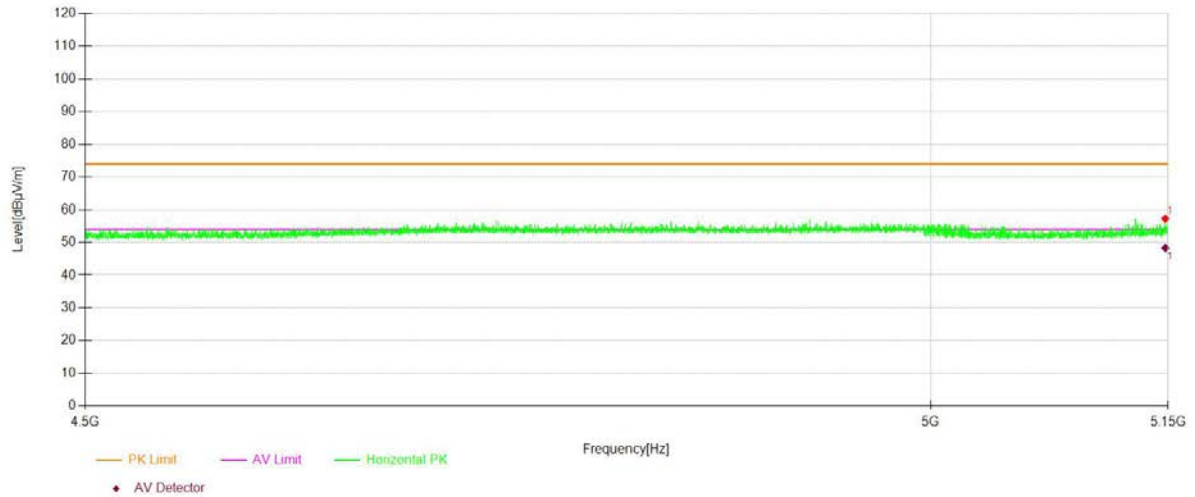
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5147.07	V	54.68	74.00	19.32	peak
5147.07	V	47.50	54.00	6.50	AVG
5148.29	H	57.25	74.00	16.75	peak
5148.29	H	48.29	54.00	5.71	AVG

Test mode: 802.11 ax (20) Frequency(MHz): 5240

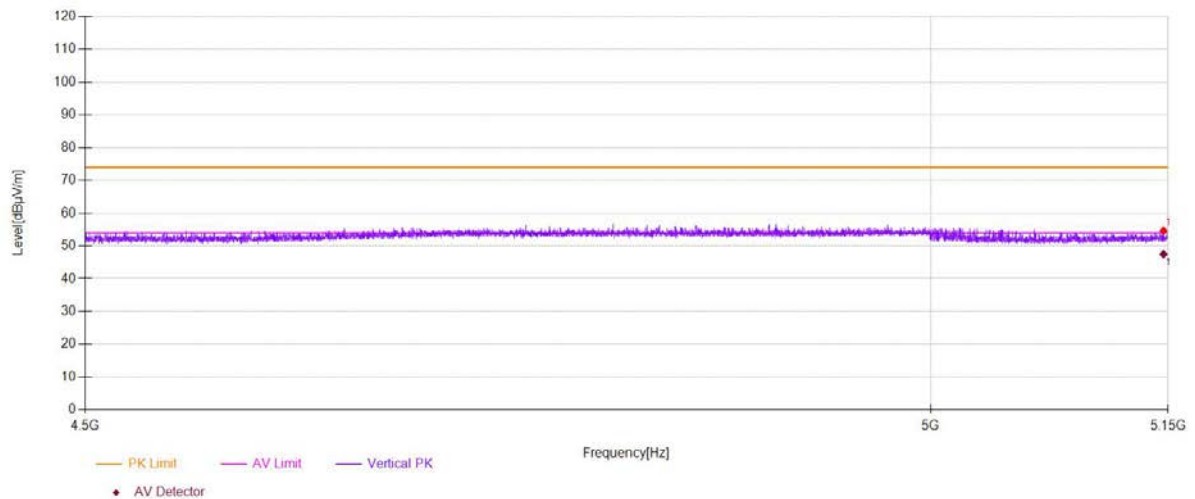
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5350.61	V	54.42	74.00	19.58	peak
5350.61	V	48.91	54.00	5.09	AVG
5351.03	H	54.09	74.00	19.91	peak
5351.03	H	47.76	54.00	6.24	AVG

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.

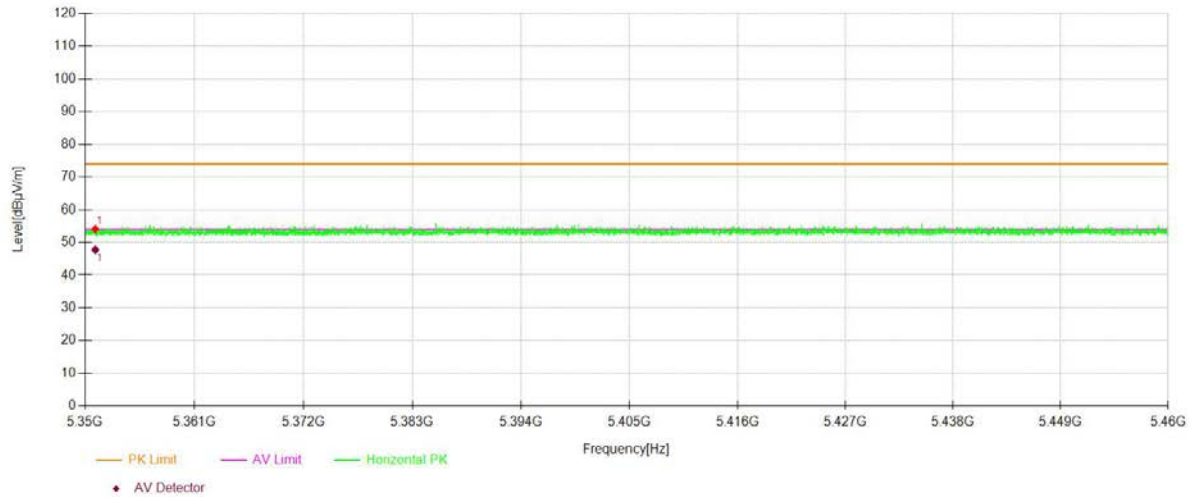
Test Model U-NII - 1
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
☐ 802.11a ☒ 802.11 ax(HT20) ☐ 802.11n(HT40)
☒ 5180 ☐ 5200 ☐ 5240 Ant.Pol H



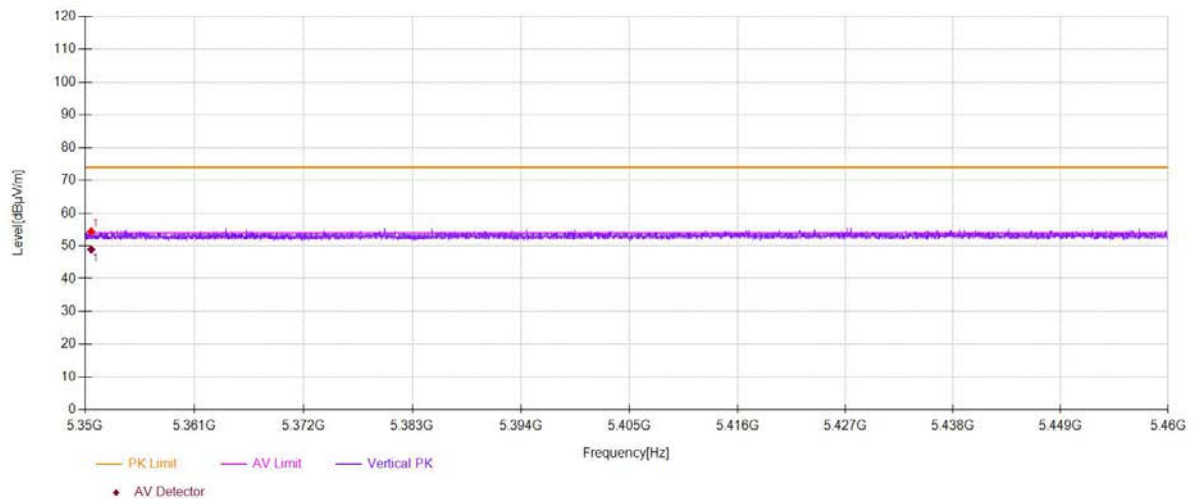
Test Model U-NII - 1
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
☐ 802.11a ☒ 802.11 ax(HT20) ☐ 802.11n(HT40)
☒ 5180 ☐ 5200 ☐ 5240 Ant.Pol V



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



☒ For Undesirable radiated Spurious Emission in U-NII -2A

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

All of the configurations or modes are tested, the data of the worst case is recorded in the report.

Highest gain of each antenna and highest output power is ANT1 and MIMO as below:

ANT1:

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)		
8311.43	V	59.12	-36.11	-27	9.11		
11134.5	V	62.54	-32.69	-27	5.69		
17412.9	V	67.50	-27.73	-27	0.73		
8301.42	H	59.42	-35.81	-27	8.81		
11713.6	H	62.49	-32.74	-27	5.74		
16734.9	H	66.89	-28.34	-27	1.34		

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)		
8327.43	V	58.56	-36.67	-27	9.67		
11103.5	V	62.74	-32.49	-27	5.49		
17819.9	V	67.89	-27.34	-27	0.34		
8331.43	H	59.27	-35.96	-27	8.96		
11823.6	H	62.43	-32.8	-27	5.8		
17341.9	H	66.46	-28.77	-27	1.77		

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)		
8320.43	V	59.15	-36.08	-27	9.08		
11755.6	V	62.75	-32.48	-27	5.48		
17884.9	V	67.48	-27.75	-27	0.75		
8296.42	H	59.10	-36.13	-27	9.13		
11833.6	H	62.85	-32.38	-27	5.38		
17741.9	H	67.75	-27.48	-27	0.48		

MIMO:

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)
	V				
	V				
	V				
	H				
	H				
	H				

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)
	V				
	V				
	V				
	H				
	H				
	H				

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)
	V				
	V				
	V				
	H				
	H				
	H				

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

ANT1:

Test mode: 802.11a		Frequency(MHz): 5260			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8311.43	V	59.12	74.00	14.88	peak
11134.5	V	62.54	74.00	11.46	peak
17412.9	V	67.50	74.00	6.50	peak
8311.43	V	41.59	54.00	12.41	AVG
11134.5	V	44.17	54.00	9.83	AVG
17412.9	V	48.63	54.00	5.37	AVG
8301.42	H	59.42	74.00	14.58	peak
11713.6	H	62.49	74.00	11.51	peak
16734.9	H	66.89	74.00	7.11	peak
8301.42	H	41.61	54.00	12.39	AVG
11713.6	H	43.07	54.00	10.93	AVG
16734.9	H	47.04	54.00	6.96	AVG

Test mode: 802.11a		Frequency(MHz): 5280			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8327.43	V	58.56	74.00	15.44	peak
11103.5	V	62.74	74.00	11.26	peak
17819.9	V	67.89	74.00	6.11	peak
8327.43	V	42.00	54.00	12.00	AVG
11103.5	V	44.64	54.00	9.36	AVG
17819.9	V	48.60	54.00	5.40	AVG
8331.43	H	59.27	74.00	14.73	peak
11823.6	H	62.43	74.00	11.57	peak
17341.9	H	66.46	74.00	7.54	peak
8331.43	H	42.48	54.00	11.52	AVG
11823.6	H	43.86	54.00	10.14	AVG
17341.9	H	48.83	54.00	5.17	AVG

Test mode: 802.11a		Frequency(MHz): 5320			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8320.43	V	59.15	74.00	14.85	peak
11755.6	V	62.75	74.00	11.25	peak
17884.9	V	67.48	74.00	6.52	peak
8320.43	V	41.81	54.00	12.19	AVG
11755.6	V	44.43	54.00	9.57	AVG
17884.9	V	46.90	54.00	7.10	AVG
8296.42	H	59.10	74.00	14.90	peak
11833.6	H	62.85	74.00	11.15	peak
17741.9	H	67.75	74.00	6.25	peak
8296.42	H	42.27	54.00	11.73	AVG
11833.6	H	43.86	54.00	10.14	AVG
17741.9	H	48.95	54.00	5.05	AVG

MIMO:

Test mode: 802.11a		Frequency(MHz): 5260			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				AVG

Test mode: 802.11a		Frequency(MHz): 5280			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				AVG

Test mode: 802.11a		Frequency(MHz): 5320			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				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: 802.11 ax (20) Frequency(MHz): 5260

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5140.65	H	54.32	-40.91	-27	Pass
5147.56	V	53.83	-41.4	-27	Pass

Test mode: 802.11 ax (20) Frequency(MHz): 5320

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5350.16	H	62.86	-32.37	-27	Pass
5350.56	V	57.60	-37.63	-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: 802.11 ax (20) Frequency(MHz): 5260

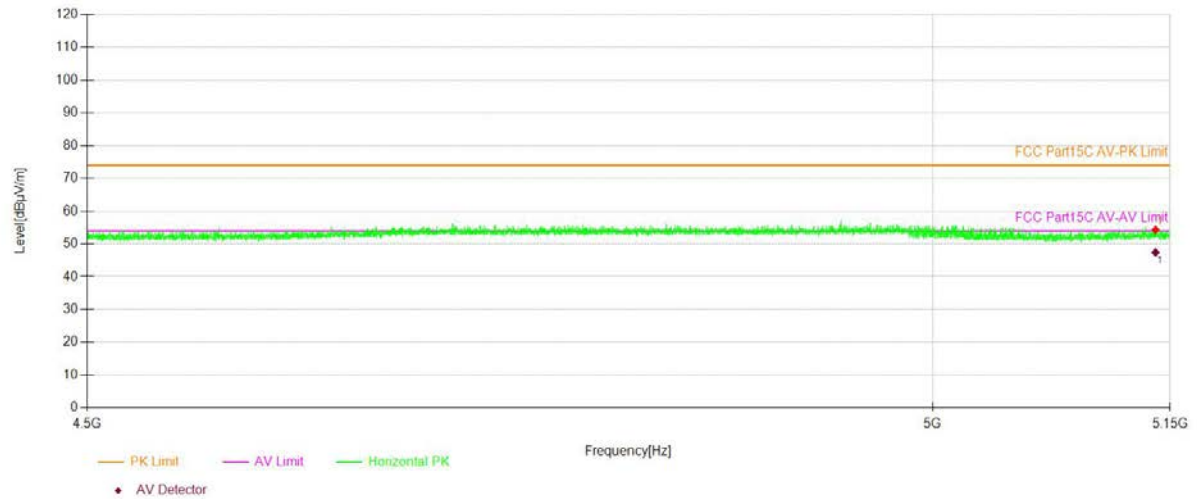
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5147.56	V	53.83	74.00	20.17	peak
5147.56	V	47.27	54.00	6.73	AVG
5140.65	H	54.32	74.00	19.68	peak
5140.65	H	47.41	54.00	6.59	AVG

Test mode: 802.11 ax (20) Frequency(MHz): 5320

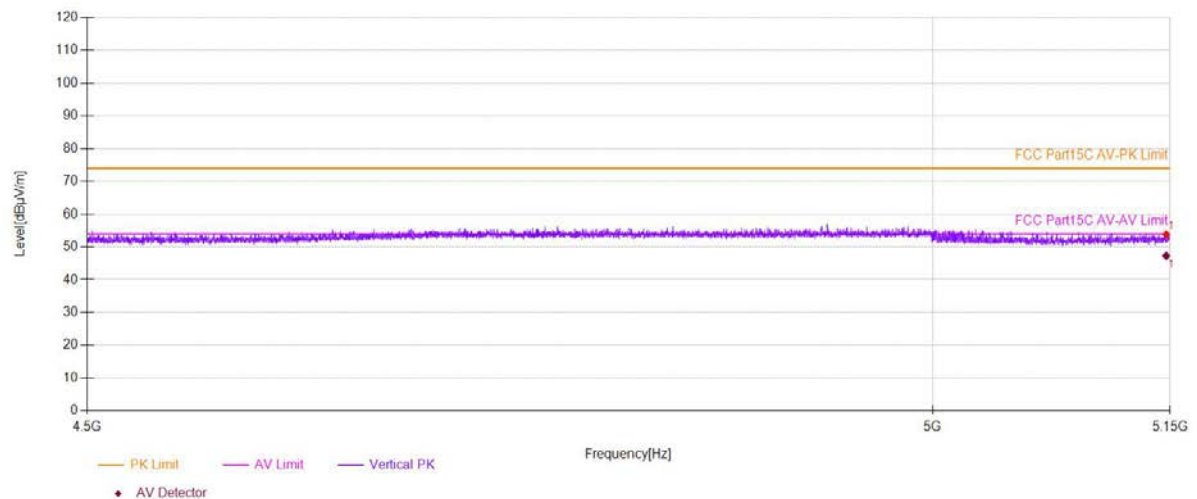
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5350.56	V	57.60	74.00	16.40	peak
5350.56	V	49.16	54.00	4.84	AVG
5350.16	H	62.86	74.00	11.14	peak
5350.16	H	49.92	54.00	4.08	AVG

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.

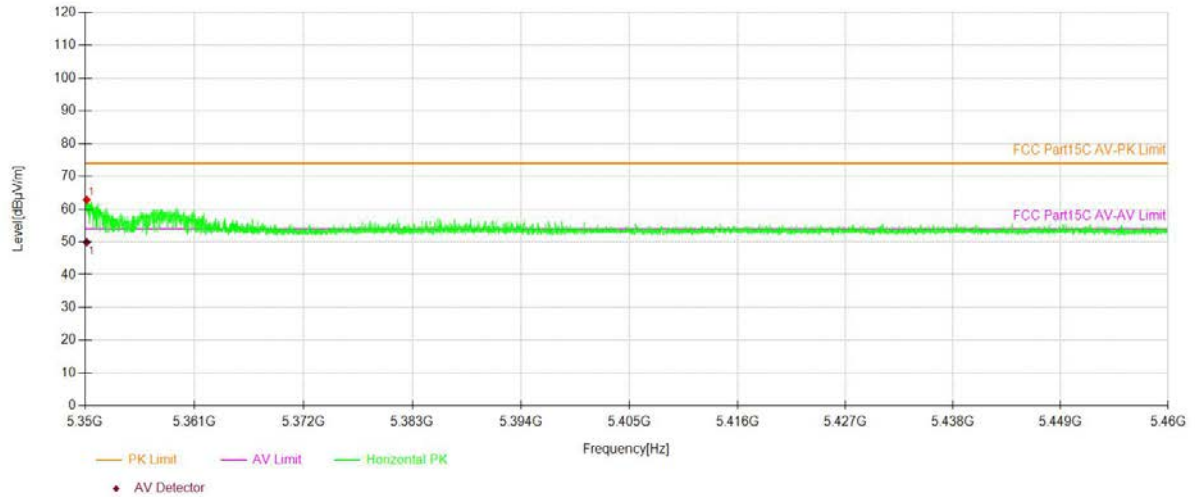
Test Model U-NII -2A
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
☐ 802.11a ☐ 802.11n(HT20) ☒ 802.11 ax (VHT20)
☒ 5260 ☐ 5300 ☐ 5320 Ant.Pol H



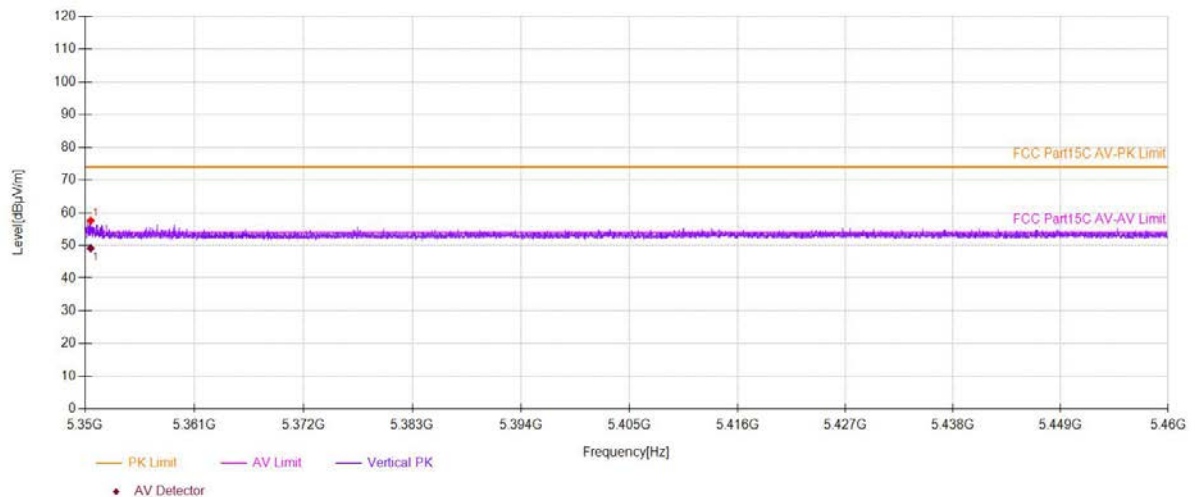
Test Model U-NII -2A
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
☐ 802.11a ☐ 802.11n(HT20) ☒ 802.11 ax (VHT20)
☒ 5260 ☐ 5300 ☐ 5320 Ant.Pol V



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



- ☒ For Undesirable radiated Spurious Emission in U-NII -2C
☒ Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

All of the configurations or modes are tested, the data of the worst case is recorded in the report.
Highest gain of each antenna and highest output power is ANT1 and MIMO as below:

ANT1:

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)
8325.43	V	59.16	-36.07	-27	9.07
10495.5	V	60.65	-34.58	-27	7.58
17713.9	V	67.48	-27.75	-27	0.75
8328.43	H	59.42	-35.81	-27	8.81
10052.5	H	60.58	-34.65	-27	7.65
17872.9	H	67.63	-27.6	-27	0.6

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)
8323.43	V	58.58	-36.65	-27	9.65
11080.5	V	62.81	-32.42	-27	5.42
17811.9	V	67.55	-27.68	-27	0.68
8338.43	H	58.35	-36.88	-27	9.88
11101.5	H	62.55	-32.68	-27	5.68
17952.9	H	67.56	-27.67	-27	0.67

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)
8339.43	V	58.93	-36.3	-27	9.3
11789.6	V	62.90	-32.33	-27	5.33
17310.9	V	67.59	-27.64	-27	0.64
8324.43	H	58.87	-36.36	-27	9.36
11106.5	H	62.43	-32.8	-27	5.8
17988.9	H	67.80	-27.43	-27	0.43

MIMO:

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)
	V				
	V				
	V				
	H				
	H				
	H				

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)
	V				
	V				
	V				
	H				
	H				
	H				

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)
	V				
	V				
	V				
	H				
	H				
	H				

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

ANT1:

Test mode: 802.11a		Frequency(MHz): 5500			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8325.43	V	59.16	74.00	14.84	peak
10495.5	V	60.65	74.00	13.35	peak
17713.9	V	67.48	74.00	6.52	peak
8325.43	V	41.87	54.00	12.13	AVG
10495.5	V	41.81	54.00	12.19	AVG
17713.9	V	48.27	54.00	5.73	AVG
8328.43	H	59.42	74.00	14.58	peak
10052.5	H	60.58	74.00	13.42	peak
17872.9	H	67.63	74.00	6.37	peak
8328.43	H	41.69	54.00	12.31	AVG
10052.5	H	41.67	54.00	12.33	AVG
17872.9	H	47.20	54.00	6.80	AVG

Test mode: 802.11a		Frequency(MHz): 5580			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8323.43	V	58.58	74.00	15.42	peak
11080.5	V	62.81	74.00	11.19	peak
17811.9	V	67.55	74.00	6.45	peak
8323.43	V	42.30	54.00	11.70	AVG
11080.5	V	44.55	54.00	9.45	AVG
17811.9	V	47.85	54.00	6.15	AVG
8338.43	H	58.35	74.00	15.65	peak
11101.5	H	62.55	74.00	11.45	peak
17952.9	H	67.56	74.00	6.44	peak
8338.43	H	42.06	54.00	11.94	AVG
11101.5	H	44.82	54.00	9.18	AVG
17952.9	H	48.90	54.00	5.10	AVG

Test mode: 802.11a		Frequency(MHz): 5700			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8339.43	V	58.93	74.00	15.07	peak
11789.6	V	62.90	74.00	11.10	peak
17310.9	V	67.59	74.00	6.41	peak
8339.43	V	42.49	54.00	11.51	AVG
11789.6	V	44.17	54.00	9.83	AVG
17310.9	V	48.28	54.00	5.72	AVG
8324.43	H	58.87	74.00	15.13	peak
11106.5	H	62.43	74.00	11.57	peak
17988.9	H	67.80	74.00	6.20	peak
8324.43	H	41.58	54.00	12.42	AVG
11106.5	H	44.77	54.00	9.23	AVG
17988.9	H	50.44	54.00	3.56	AVG

MIMO:

Test mode: 802.11a		Frequency(MHz): 5500			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				AVG

Test mode: 802.11a		Frequency(MHz): 5580			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				AVG

Test mode: 802.11a		Frequency(MHz): 5700			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				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: 802.11ax(20) Frequency(MHz): 5500

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5468.99	H	58.39	-36.84	-27	Pass
5469.73	V	54.84	-40.39	-27	Pass

Test mode: 802.11 ax (20) Frequency(MHz): 5700

Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5728.1	H	70.83	-24.4	-27	Pass
5727.73	V	64.29	-30.94	-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: 802.11 ax (20) Frequency(MHz): 5500

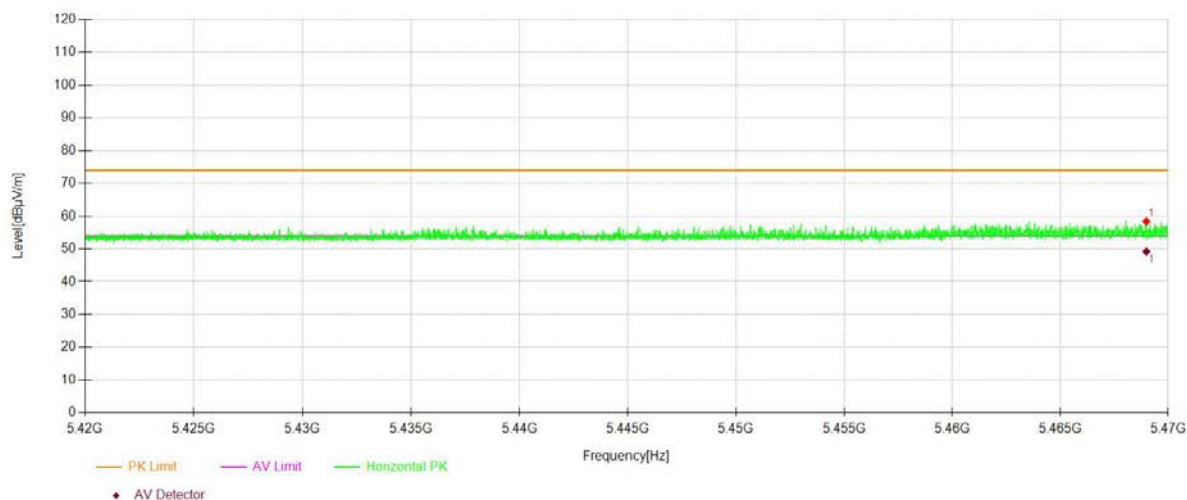
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5469.73	V	54.84	74.00	19.16	peak
5469.73	V	47.70	54.00	6.30	AVG
5468.99	H	58.39	74.00	15.61	peak
5468.99	H	49.21	54.00	4.79	AVG

Test mode: 802.11 ax (20) Frequency(MHz): 5700

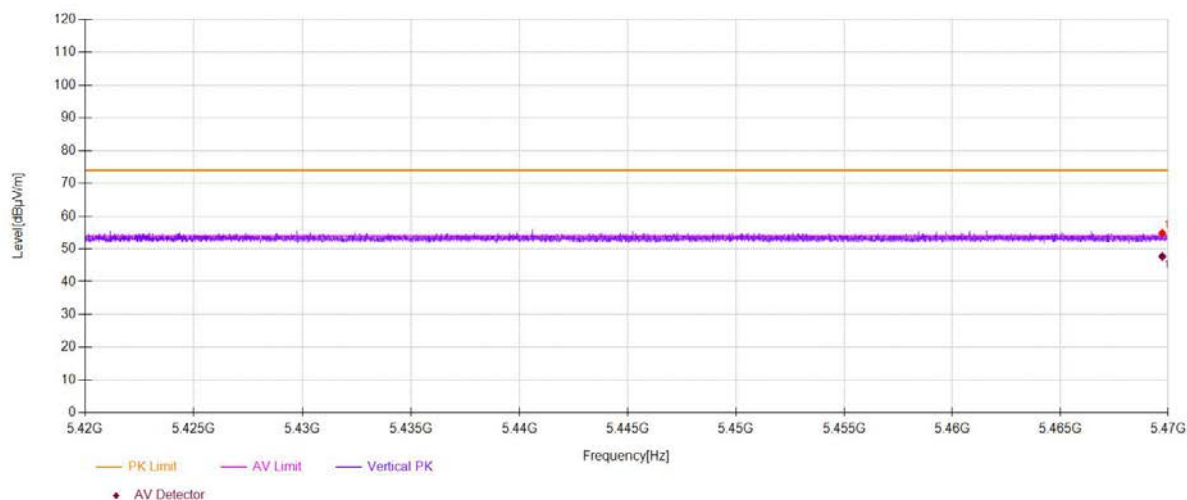
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
5727.73	V	64.29	74.00	9.71	peak
5727.73	V	47.58	54.00	6.42	AVG
5728.1	H	70.83	74.00	3.17	peak
5728.1	H	49.21	54.00	4.79	AVG

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.

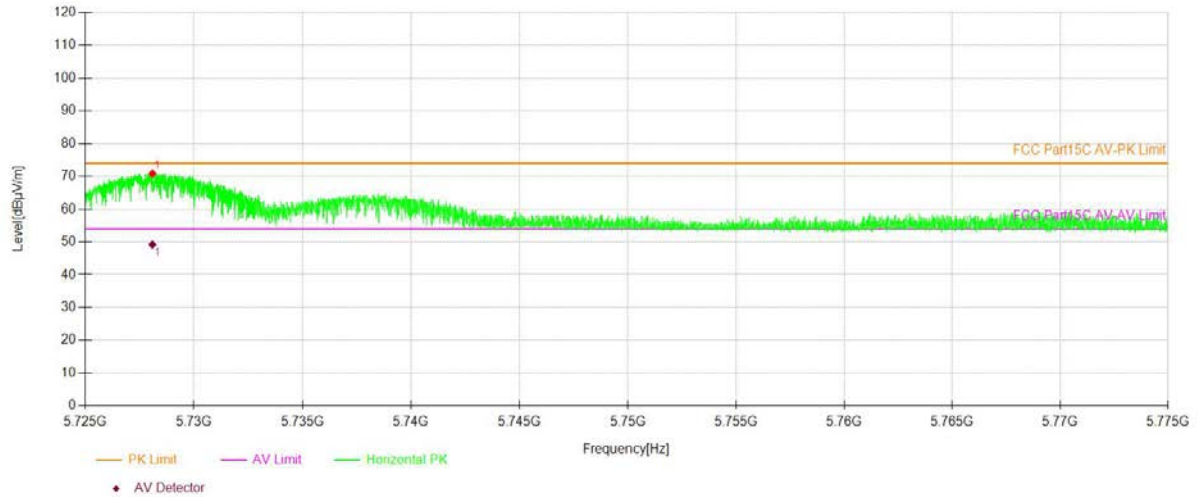
Test Model U-NII -2C
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
☐ 802.11a ☐ 802.11n(HT20) ☒ 802.11 ax (VHT20)
☒ 5500 ☐ 5580 ☐ 5700 Ant.Pol H



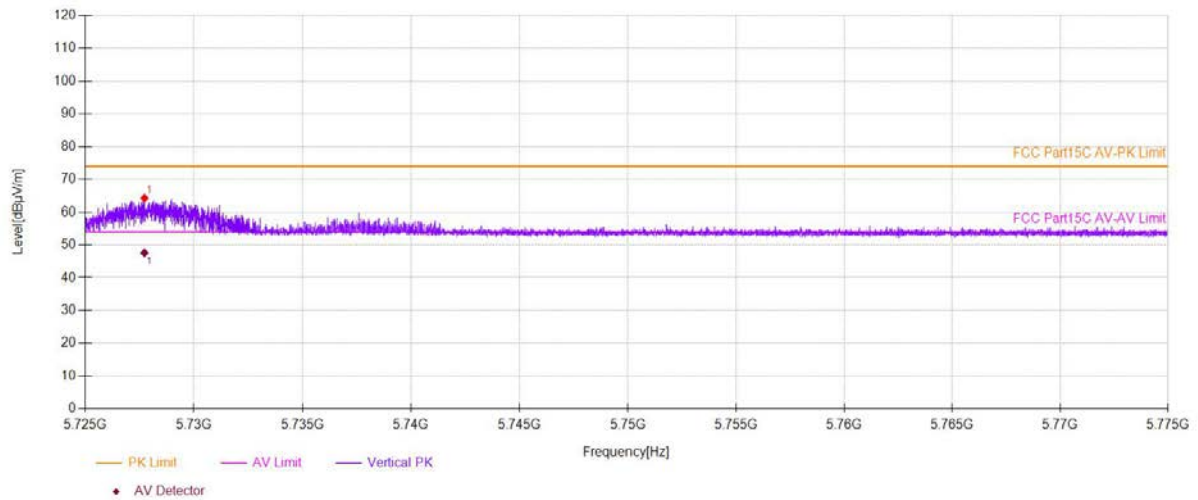
Test Model U-NII -2C
Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)
☐ 802.11a ☐ 802.11n(HT20) ☒ 802.11 ax (VHT20)
☒ 5500 ☐ 5580 ☐ 5700 Ant.Pol V



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



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

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

All of the configurations or modes are tested, the data of the worst case is recorded in the report.
Highest gain of each antenna and highest output power is ANT1 and MIMO as below:

ANT1:

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)		
8299.42	V	58.83	-36.4	-27	9.4		
13135.7	V	65.09	-30.14	-27	3.14		
17945.9	V	67.96	-27.27	-27	0.27		
8323.43	H	58.64	-36.59	-27	9.59		
11107.5	H	62.05	-33.18	-27	6.18		
17075.9	H	67.48	-27.75	-27	0.75		

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)		
8314.43	V	58.93	-36.3	-27	9.3		
11242.6	V	62.82	-32.41	-27	5.41		
17842.9	V	67.59	-27.64	-27	0.64		
8340.43	H	59.14	-36.09	-27	9.09		
11098.5	H	63.33	-31.9	-27	4.9		
17913.9	H	67.31	-27.92	-27	0.92		

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)		
8325.43	V	58.38	-36.85	-27	9.85		
11102.5	V	62.81	-32.42	-27	5.42		
17910.9	V	67.54	-27.69	-27	0.69		
8329.43	H	59.00	-36.23	-27	9.23		
11794.6	H	62.61	-32.62	-27	5.62		
17857.9	H	66.34	-28.89	-27	1.89		

MIMO:

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)
	V				
	V				
	V				
	H				
	H				
	H				

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)
	V				
	V				
	V				
	H				
	H				
	H				

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)
	V				
	V				
	V				
	H				
	H				
	H				

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

ANT1:

Test mode: 802.11a		Frequency(MHz): 5745			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8299.42	V	58.83	74.00	15.17	peak
13135.7	V	65.09	74.00	8.91	peak
17945.9	V	67.96	74.00	6.04	peak
8299.42	V	42.42	54.00	11.58	AVG
13135.7	V	48.50	54.00	5.50	AVG
17945.9	V	49.46	54.00	4.54	AVG
8323.43	H	58.64	74.00	15.36	peak
11107.5	H	62.05	74.00	11.95	peak
17075.9	H	67.48	74.00	6.52	peak
8323.43	H	41.57	54.00	12.43	AVG
11107.5	H	44.76	54.00	9.24	AVG
17075.9	H	48.94	54.00	5.06	AVG

Test mode: 802.11a		Frequency(MHz): 5785			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8314.43	V	58.93	74.00	15.07	peak
11242.6	V	62.82	74.00	11.18	peak
17842.9	V	67.59	74.00	6.41	peak
8314.43	V	42.47	54.00	11.53	AVG
11242.6	V	43.50	54.00	10.50	AVG
17842.9	V	47.90	54.00	6.10	AVG
8340.43	H	59.14	74.00	14.86	peak
11098.5	H	63.33	74.00	10.67	peak
17913.9	H	67.31	74.00	6.69	peak
8340.43	H	41.67	54.00	12.33	AVG
11098.5	H	44.87	54.00	9.13	AVG
17913.9	H	48.12	54.00	5.88	AVG

Test mode: 802.11a		Frequency(MHz): 5825			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
8325.43	V	58.38	74.00	15.62	peak
11102.5	V	62.81	74.00	11.19	peak
17910.9	V	67.54	74.00	6.46	peak
8325.43	V	41.89	54.00	12.11	AVG
11102.5	V	44.81	54.00	9.19	AVG
17910.9	V	47.08	54.00	6.92	AVG
8329.43	H	59.00	74.00	15.00	peak
11794.6	H	62.61	74.00	11.39	peak
17857.9	H	66.34	74.00	7.66	peak
8329.43	H	42.51	54.00	11.49	AVG
11794.6	H	44.07	54.00	9.93	AVG
17857.9	H	47.72	54.00	6.28	AVG

MIMO:

Test mode: 802.11a		Frequency(MHz): 5745			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				AVG

Test mode: 802.11a		Frequency(MHz): 5785			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				AVG

Test mode: 802.11a		Frequency(MHz): 5825			
Freq. (MHz)	Ant.Pol.	Emission Level(dBuV/m)	Limit 3m(dBuV/m)	Over(dB)	Detector
	V				peak
	V				peak
	V				peak
	V				AVG
	V				AVG
	V				AVG
	H				peak
	H				peak
	H				peak
	H				AVG
	H				AVG
	H				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.



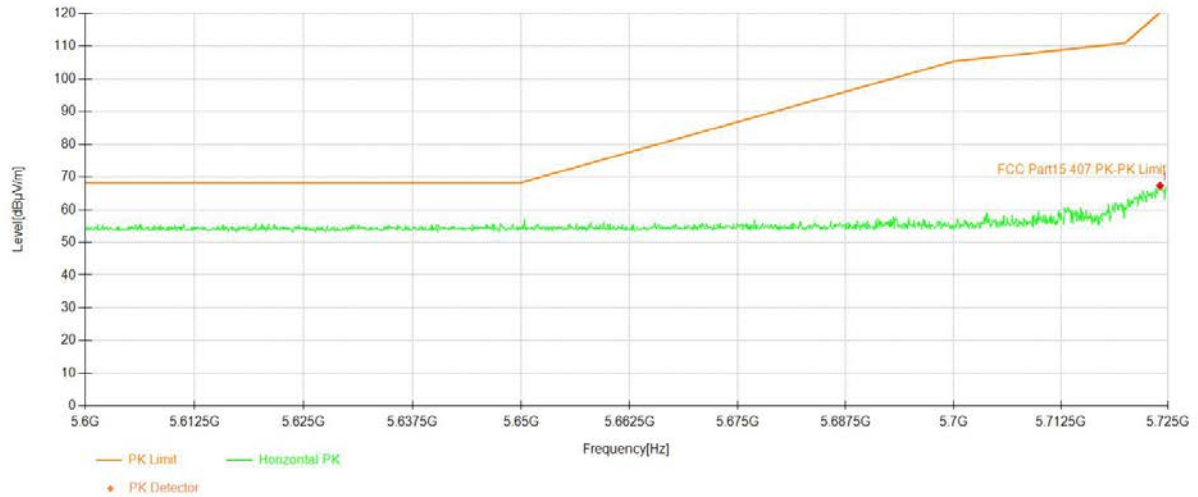
☒ Undesirable radiated Spurious Emission in band edge

Test mode:		802.11ax(20)		Frequency:		5745	
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict		
5724.06	H	67.30	-27.93	-27	PASS		
5724.62	V	59.90	-35.33	-27	PASS		

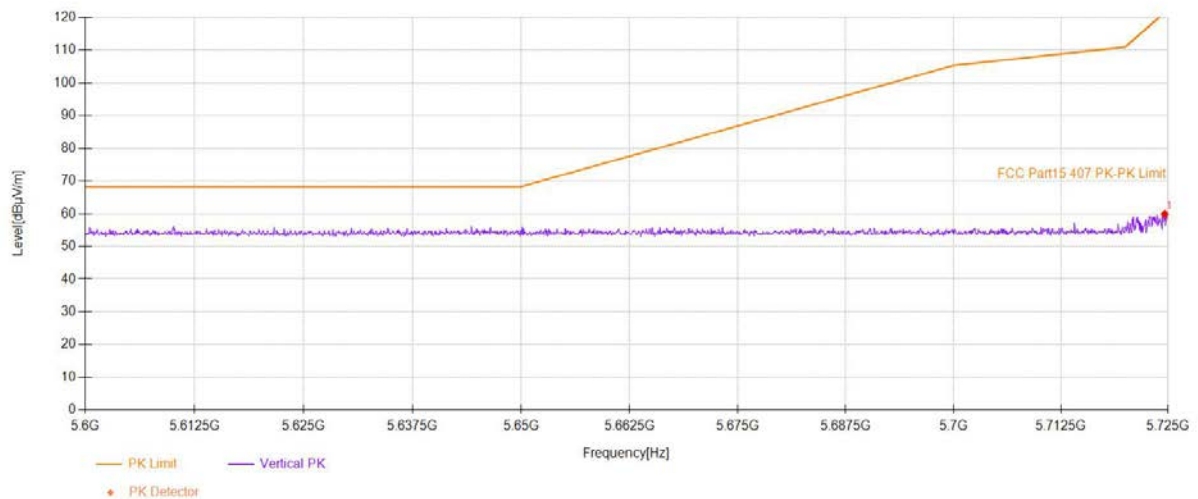
Test mode:		802.11 ax(20)		Frequency:		5825	
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict		
5853.56	H	70.23	-25	-27	PASS		
5853.00	V	59.00	-36.23	-27	PASS		

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

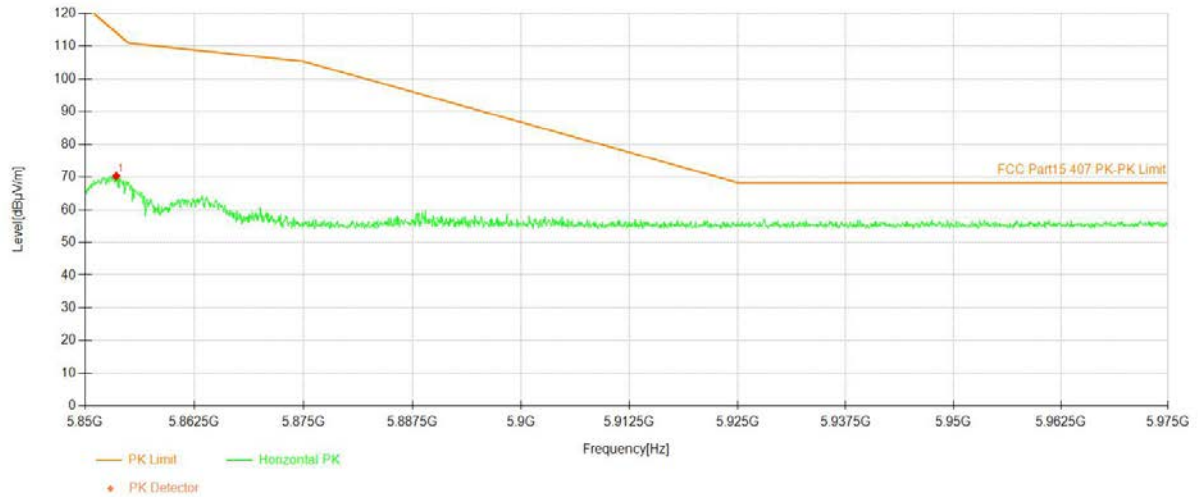
Test Model U-NII -3
 Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
☐ 802.11a ☐ 802.11n(HT20) ☒ 802.11 ax (VHT20)
☒ 5745 Ant.Pol H



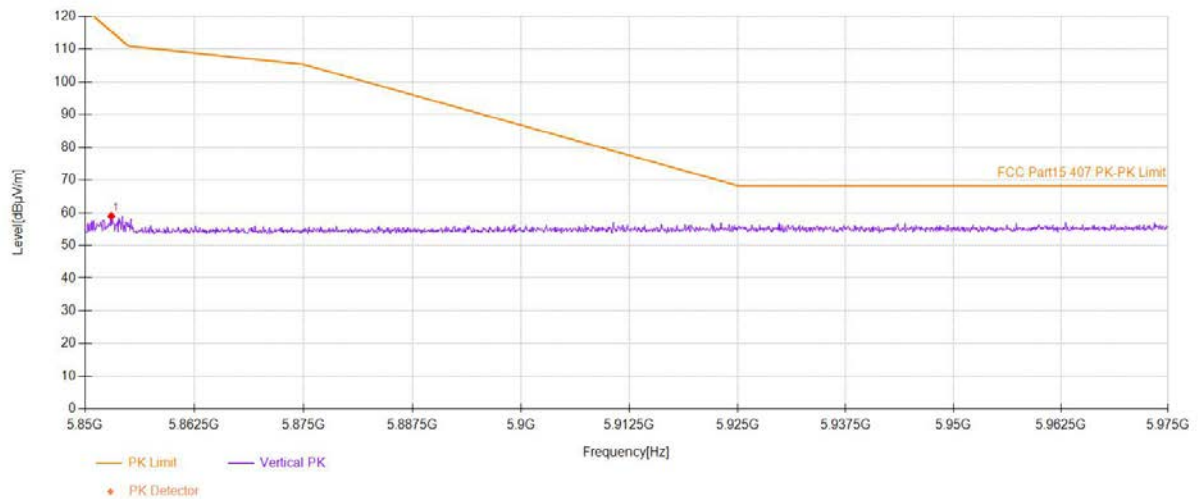
Test Model U-NII -3
 Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
☐ 802.11a ☐ 802.11n(HT20) ☒ 802.11 ax (VHT20)
☒ 5745 Ant.Pol V



Test Model U-NII -3
Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
☐ 802.11a ☐ 802.11n(HT20) ☒ 802.11 ax (VHT20)
☒ 5825 Ant.Pol H



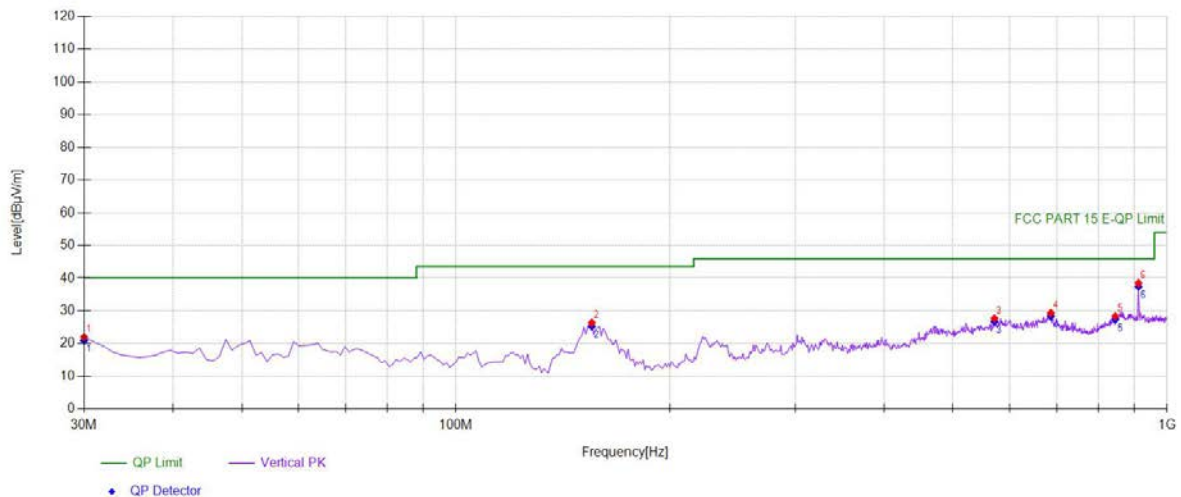
Test Model U-NII -3
Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
☐ 802.11a ☐ 802.11n(HT20) ☒ 802.11 ax (VHT20)
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Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)

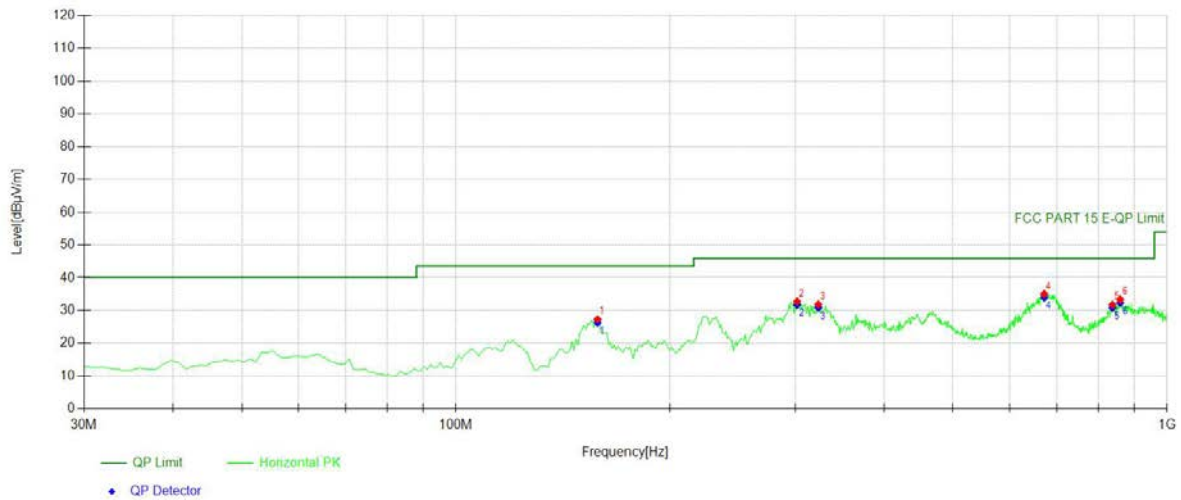
All of the configurations or modes are tested, the data of the worst case is recorded as below.

Test mode: 802.11a Frequency(MHz): 5180



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	30	40.74	-18.80	21.94	PK	40.00	18.06	Vertical
2	155.255	45.80	-19.49	26.31	PK	43.50	17.19	Vertical
3	571.801	35.29	-7.62	27.67	PK	46.00	18.33	Vertical
4	686.376	35.79	-6.43	29.36	PK	46.00	16.64	Vertical
5	845.615	32.42	-4.08	28.34	PK	46.00	17.66	Vertical
6	911.641	41.13	-2.70	38.43	PK	46.00	7.57	Vertical

Final Data List					
NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	30	-18.80	20.94	40.00	19.06
2	155.2553	-19.49	25.31	43.50	18.19
3	571.8018	-7.62	26.67	46.00	19.33
4	686.3764	-6.43	28.36	46.00	17.64
5	845.6156	-4.08	27.34	46.00	18.66
6	911.6416	-2.70	37.43	46.00	8.57



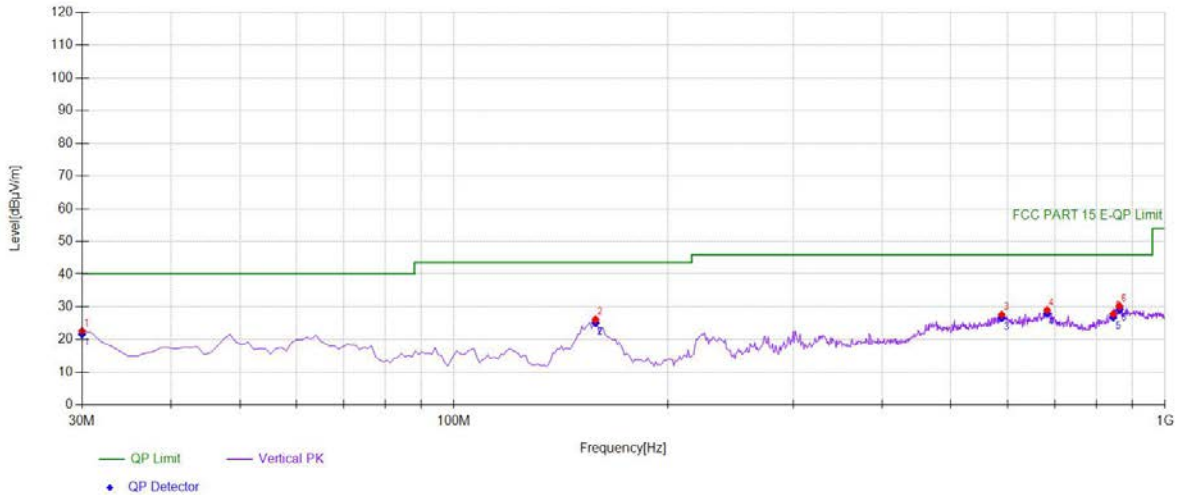
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	158.168	46.74	-19.45	27.29	PK	43.50	16.21	Horizontal
2	301.871	46.65	-13.91	32.74	PK	46.00	13.26	Horizontal
3	323.233	45.24	-13.37	31.87	PK	46.00	14.13	Horizontal
4	671.811	41.68	-6.68	35.00	PK	46.00	11.00	Horizontal
5	837.847	36.19	-4.41	31.78	PK	46.00	14.22	Horizontal
6	859.209	36.75	-3.42	33.33	PK	46.00	12.67	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	158.1682	-19.45	26.29	43.50	17.21
2	301.8719	-13.91	31.74	46.00	14.26
3	323.2332	-13.37	30.87	46.00	15.13
4	671.8118	-6.68	34.00	46.00	12.00
5	837.8478	-4.41	30.78	46.00	15.22
6	859.2092	-3.42	32.33	46.00	13.67

Test mode: 802.11a Frequency(MHz): 5200

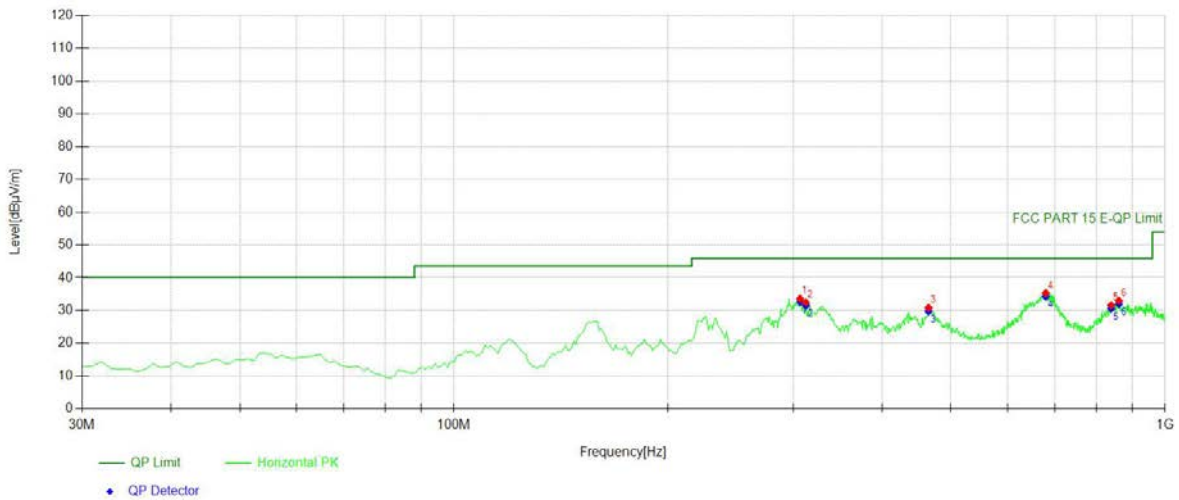


Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	30	41.42	-18.80	22.62	PK	40.00	17.38	Vertical
2	158.168	45.55	-19.45	26.10	PK	43.50	17.40	Vertical
3	589.279	34.33	-6.73	27.60	PK	46.00	18.40	Vertical
4	682.492	35.50	-6.53	28.97	PK	46.00	17.03	Vertical
5	845.615	31.89	-4.08	27.81	PK	46.00	18.19	Vertical
6	863.093	33.59	-3.40	30.19	PK	46.00	15.81	Vertical

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	30	-18.80	21.62	40.00	18.38
2	158.1682	-19.45	25.10	43.50	18.40
3	589.2793	-6.73	26.60	46.00	19.40
4	682.4925	-6.53	27.97	46.00	18.03
5	845.6156	-4.08	26.81	46.00	19.19
6	863.0931	-3.40	29.19	46.00	16.81



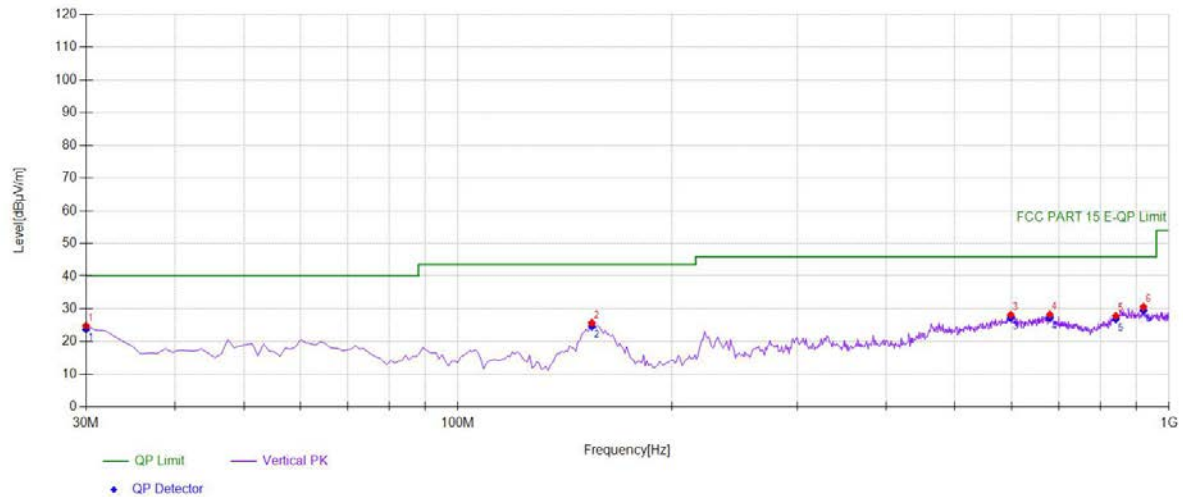
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	306.726	47.41	-13.80	33.61	PK	46.00	12.39	Horizontal
2	312.552	46.14	-13.68	32.46	PK	46.00	13.54	Horizontal
3	464.995	40.96	-10.18	30.78	PK	46.00	15.22	Horizontal
4	679.579	41.86	-6.59	35.27	PK	46.00	10.73	Horizontal
5	839.789	35.97	-4.37	31.60	PK	46.00	14.40	Horizontal
6	861.151	36.37	-3.39	32.98	PK	46.00	13.02	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	306.7267	-13.80	32.61	46.00	13.39
2	312.5526	-13.68	31.46	46.00	14.54
3	464.995	-10.18	29.78	46.00	16.22
4	679.5796	-6.59	34.27	46.00	11.73
5	839.7898	-4.37	30.60	46.00	15.40
6	861.1512	-3.39	31.98	46.00	14.02

Test mode: 802.11a Frequency(MHz): 5240

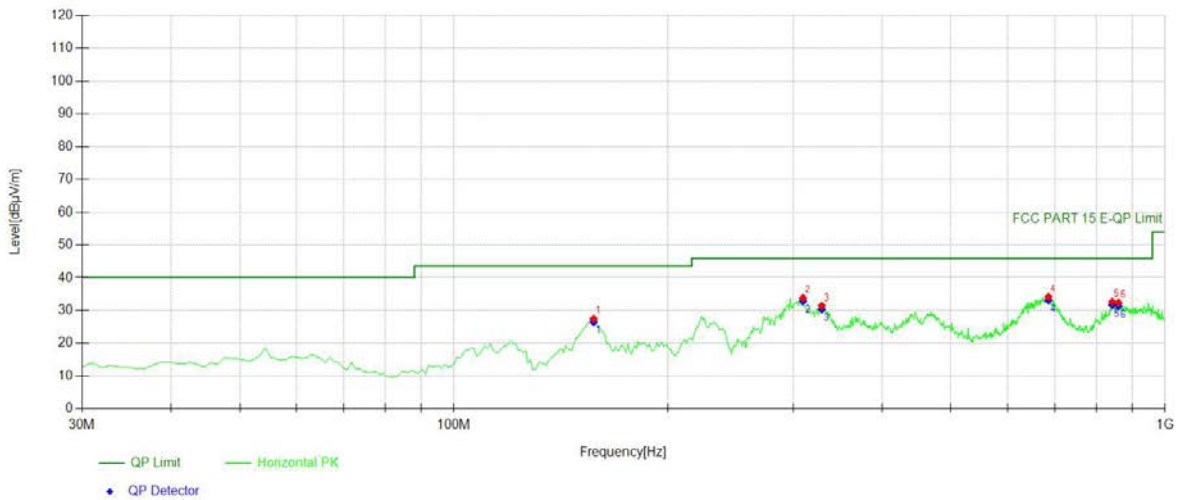


Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	30	43.60	-18.80	24.80	PK	40.00	15.20	Vertical
2	154.284	45.18	-19.51	25.67	PK	43.50	17.83	Vertical
3	598.989	34.33	-6.16	28.17	PK	46.00	17.83	Vertical
4	679.579	34.83	-6.59	28.24	PK	46.00	17.76	Vertical
5	841.731	32.13	-4.28	27.85	PK	46.00	18.15	Vertical
6	920.380	33.12	-2.58	30.54	PK	46.00	15.46	Vertical

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	30	-18.80	23.80	40.00	16.20
2	154.2843	-19.51	24.67	43.50	18.83
3	598.989	-6.16	27.17	46.00	18.83
4	679.5796	-6.59	27.24	46.00	18.76
5	841.7317	-4.28	26.85	46.00	19.15
6	920.3804	-2.58	29.54	46.00	16.46



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Detector	Limit [dBμV/m]	Margin [dB]	Polarity
1	157.197	46.92	-19.46	27.46	PK	43.50	16.04	Horizontal
2	309.639	47.55	-13.73	33.82	PK	46.00	12.18	Horizontal
3	329.059	44.40	-12.99	31.41	PK	46.00	14.59	Horizontal
4	685.405	40.58	-6.45	34.13	PK	46.00	11.87	Horizontal
5	842.702	36.88	-4.23	32.65	PK	46.00	13.35	Horizontal
6	860.180	35.75	-3.38	32.37	PK	46.00	13.63	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]
1	157.1972	-19.46	26.46	43.50	17.04
2	309.6396	-13.73	32.82	46.00	13.18
3	329.0591	-12.99	30.41	46.00	15.59
4	685.4054	-6.45	33.13	46.00	12.87
5	842.7027	-4.23	31.65	46.00	14.35
6	860.1802	-3.38	31.37	46.00	14.63

8.5 POWER LINE CONDUCTED EMISSIONS

8.5.1 Applicable Standard

According to FCC Part 15.207(a)

8.5.2 Conformance Limit

Frequency(MHz)	Conducted Emission Limit	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

8.5.3 Test Configuration

Test according to clause 6.3 conducted emission test setup

8.5.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

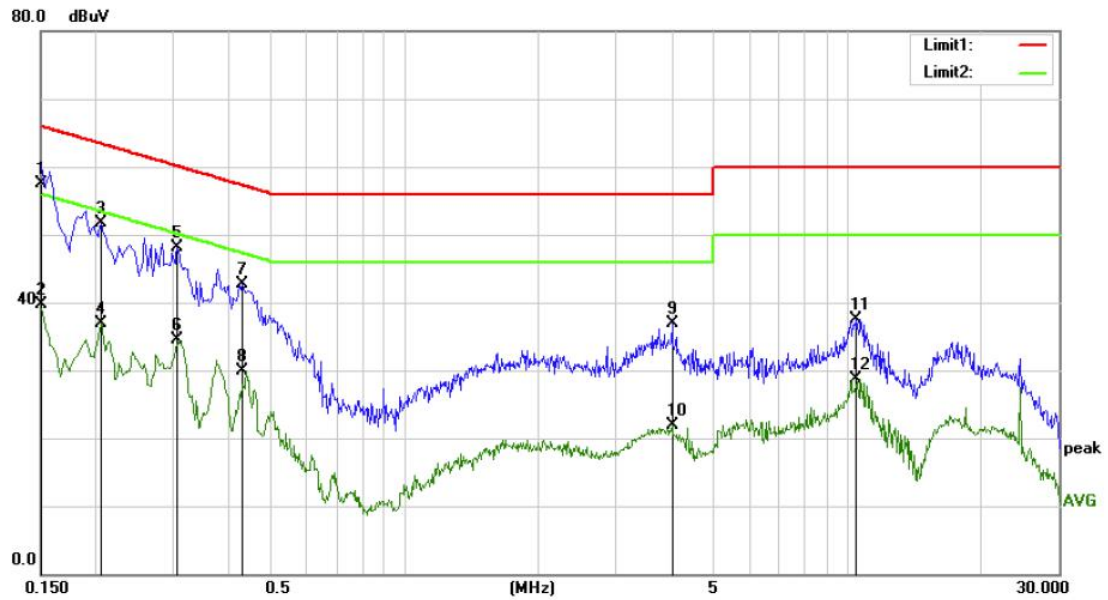
Repeat above procedures until all frequency measured were complete.

8.5.5 Test Results

Pass

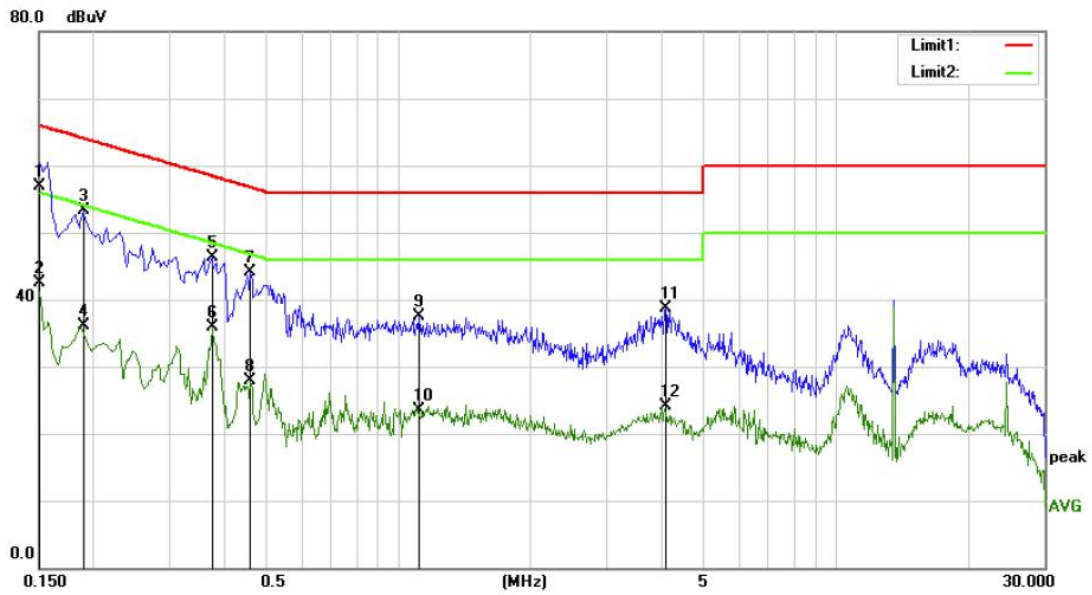
Temperature :	24.8°C	ATM Pressure:	1011 mbar
Humidity :	55%	Test Engineer:	HuanYang

All of the configurations or modes are tested, the data of the worst case is recorded as below.



Site Conduction #1 Phase: **N** Temperature: 24.8

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1500	47.89	9.71	57.60	66.00	-8.40	QP	
2		0.1500	30.04	9.71	39.75	56.00	-16.25	AVG	
3		0.2060	41.95	9.73	51.68	63.37	-11.69	QP	
4		0.2060	27.25	9.73	36.98	53.37	-16.39	AVG	
5		0.3060	38.36	9.73	48.09	60.08	-11.99	QP	
6		0.3060	24.78	9.73	34.51	50.08	-15.57	AVG	
7		0.4300	32.95	9.71	42.66	57.25	-14.59	QP	
8		0.4300	20.17	9.71	29.88	47.25	-17.37	AVG	
9		4.0260	27.22	9.72	36.94	56.00	-19.06	QP	
10		4.0260	12.13	9.72	21.85	46.00	-24.15	AVG	
11		10.5060	27.46	9.95	37.41	60.00	-22.59	QP	
12		10.5060	18.71	9.95	28.66	50.00	-21.34	AVG	



Site Conduction #1				Phase: L1		Temperature: 24.8		
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector Comment
1	*	0.1500	47.30	9.70	57.00	66.00	-9.00	QP
2		0.1500	32.75	9.70	42.45	56.00	-13.55	AVG
3		0.1900	43.55	9.70	53.25	64.04	-10.79	QP
4		0.1900	26.50	9.70	36.20	54.04	-17.84	AVG
5		0.3740	36.55	9.70	46.25	58.41	-12.16	QP
6		0.3740	26.30	9.70	36.00	48.41	-12.41	AVG
7		0.4580	34.33	9.71	44.04	56.73	-12.69	QP
8		0.4580	18.13	9.71	27.84	46.73	-18.89	AVG
9		1.1140	27.77	9.71	37.48	56.00	-18.52	QP
10		1.1140	13.81	9.71	23.52	46.00	-22.48	AVG
11		4.0820	29.04	9.75	38.79	56.00	-17.21	QP
12		4.0820	14.29	9.75	24.04	46.00	-21.96	AVG

8.6 ANTENNA APPLICATION

8.6.1 Antenna Requirement

Standard	Requirement
FCC CRF Part 15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

8.6.2 Result

PASS

Temperature : 25°C ATM Pressure: 1011 mbar
Humidity : 60 % Test Engineer: GJ

The EUT is integrated antenna, the antenna gain as below:

Ant1: 4.81 dBi, Ant2: 4.76dBi

- ☒ Antennas use a permanently attached antenna which is not replaceable.
- ☐ Not using a standard antenna jack or electrical connector for antenna replacement
- ☐ The antenna has to be professionally installed (please provide method of installation)

Which in accordance to section 15.203, please refer to the internal photos.

Detail of factor for radiated emission:

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

--- End of Report ---

声 明 Statement

1. 本报告无授权批准人签字及“检验检测专用章”无效。
1. This report is invalid without the signature of the authorized approver and "special seal for testing".
2. 未经许可本报告不得部分复制。
2. This report shall not be copied partly without authorization.
3. 本报告的检测结果仅对送测样品有效，委托方对样品的代表性和资料的真实性负责。
3. The test results or observations are applicable only to tested sample. Client shall be responsible for representativeness of the sample and authenticity of the material.
4. 本检测报告中检测项目标注有特殊符号则该项目不在资质认定范围内，仅作为客户委托、科研、教学或内部质量控制等目的使用。
4. The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.
5. 本检测报告以实测值进行符合性判定，未考虑不确定度所带来的风险，本实验室不承担相关责任，特别约定、标准或规范中有明确规定的除外。
5. The test results or observations are provided in accordance with measured value, without taking risks caused by uncertainty into account. Without explicit stipulation in special agreements, standards or regulations, EMTEK shall not assume any responsibility.
6. 对本检验报告若有异议，请于收到报告之日起 20 日内提出。
6. Objections shall be raised within 20 days from the date receiving the report.