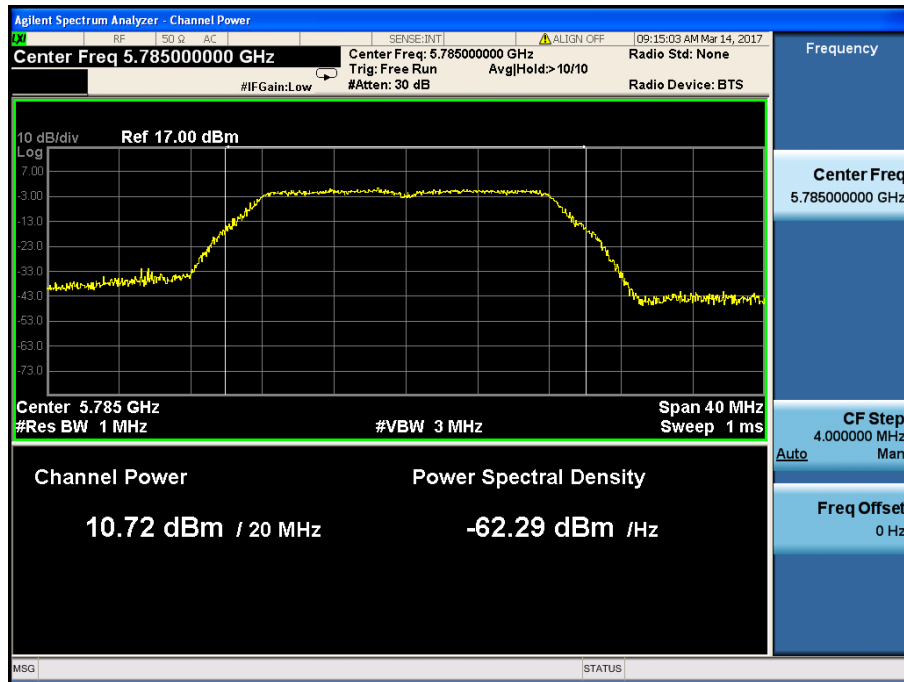
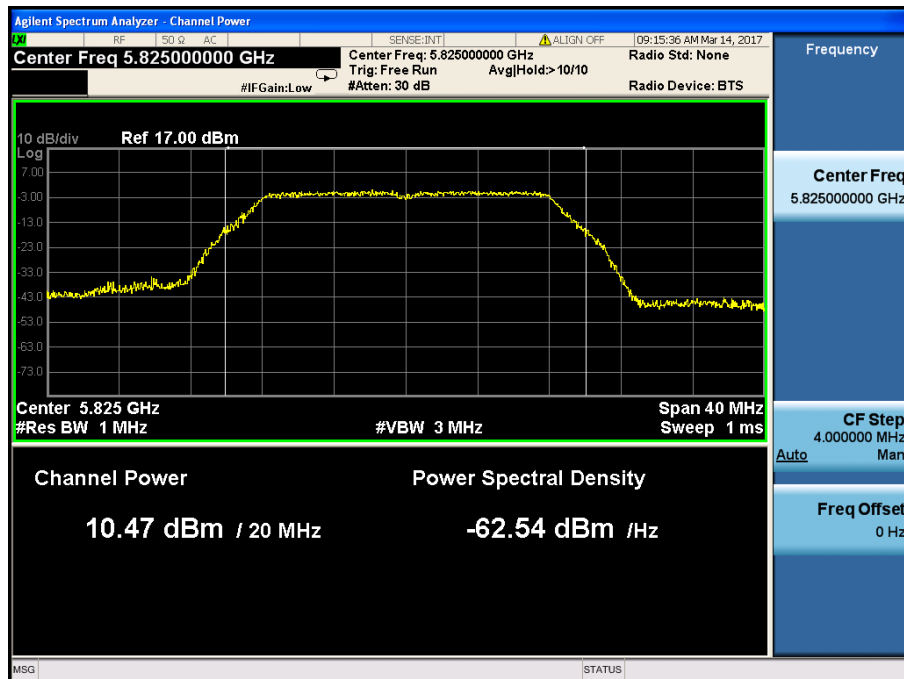


5785MHz

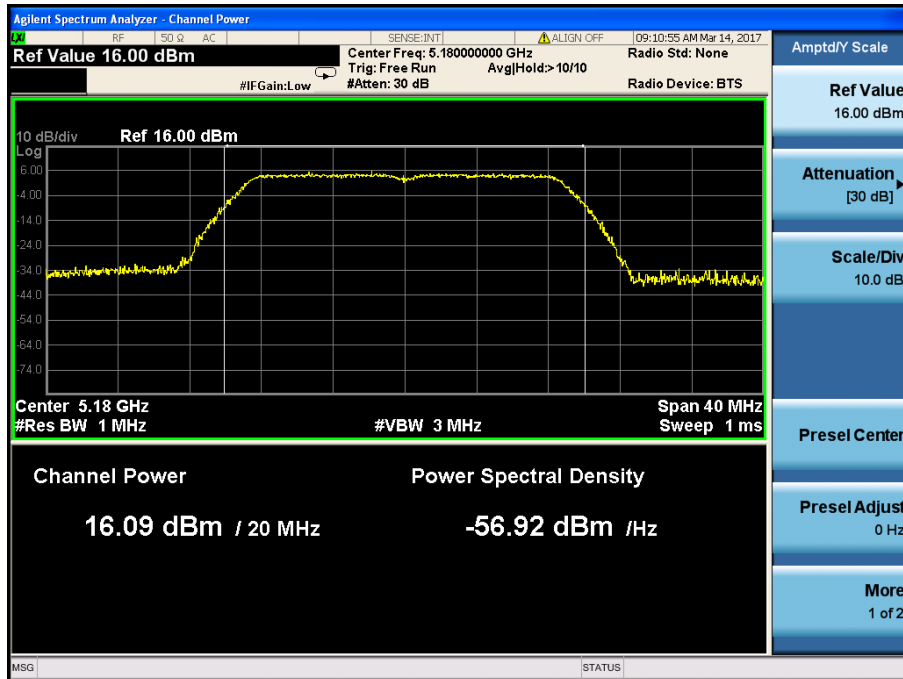


5825MHz

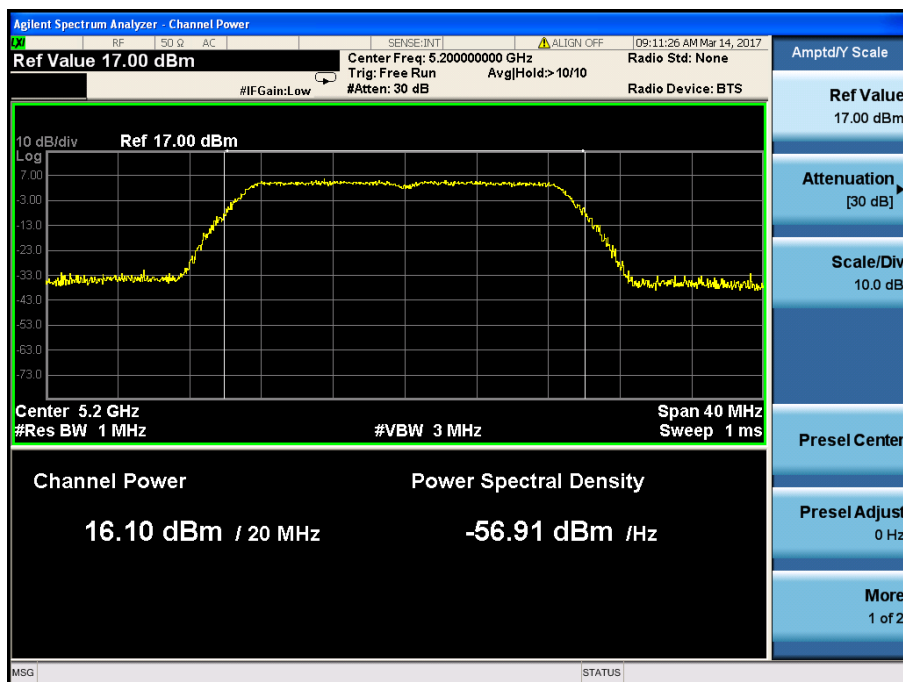


Test Mode: 802.11n-HT20

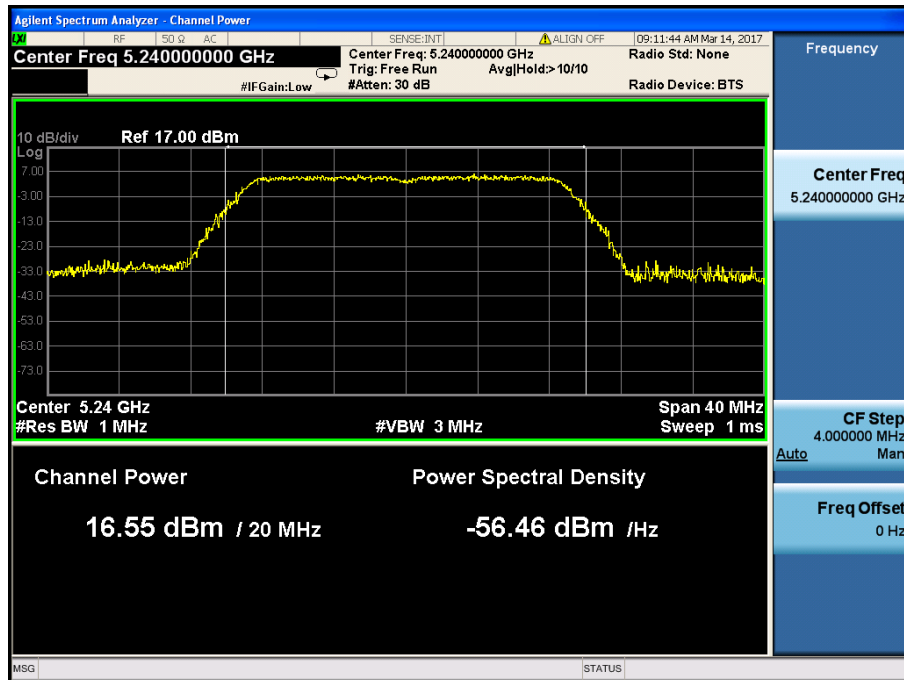
5180MHz



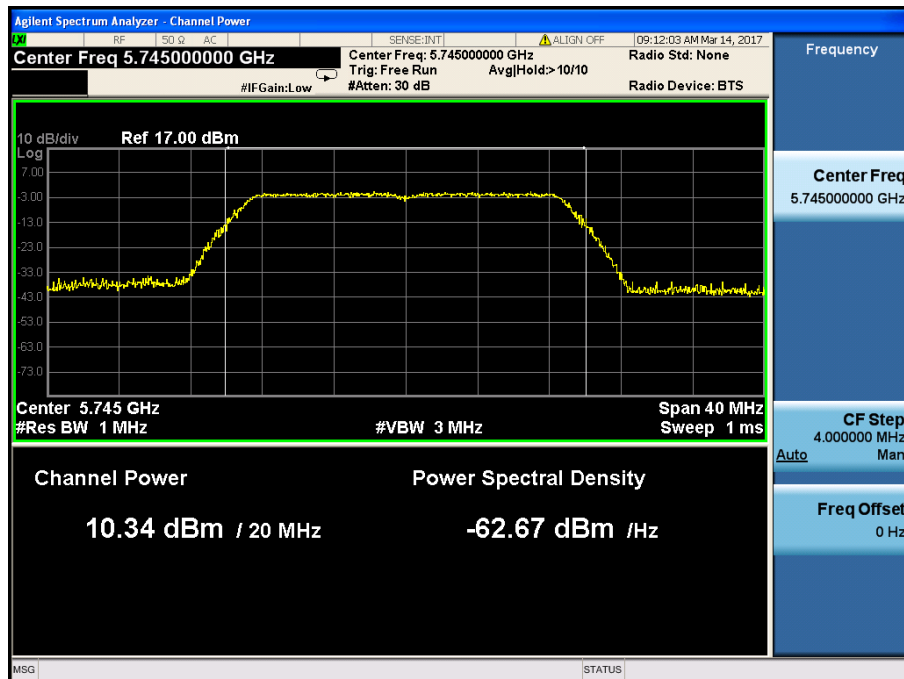
5200MHz



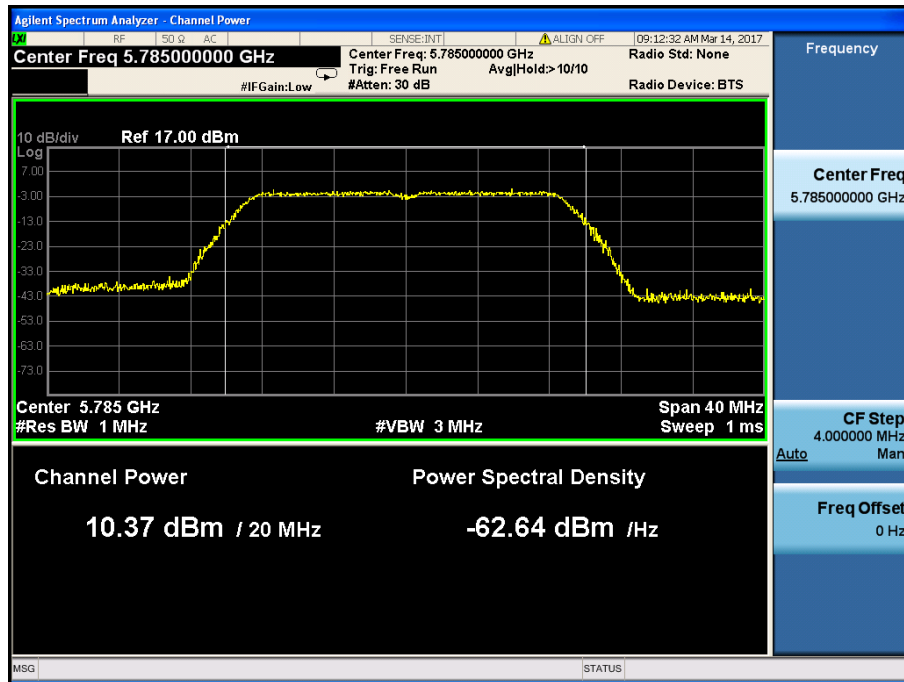
5240MHz



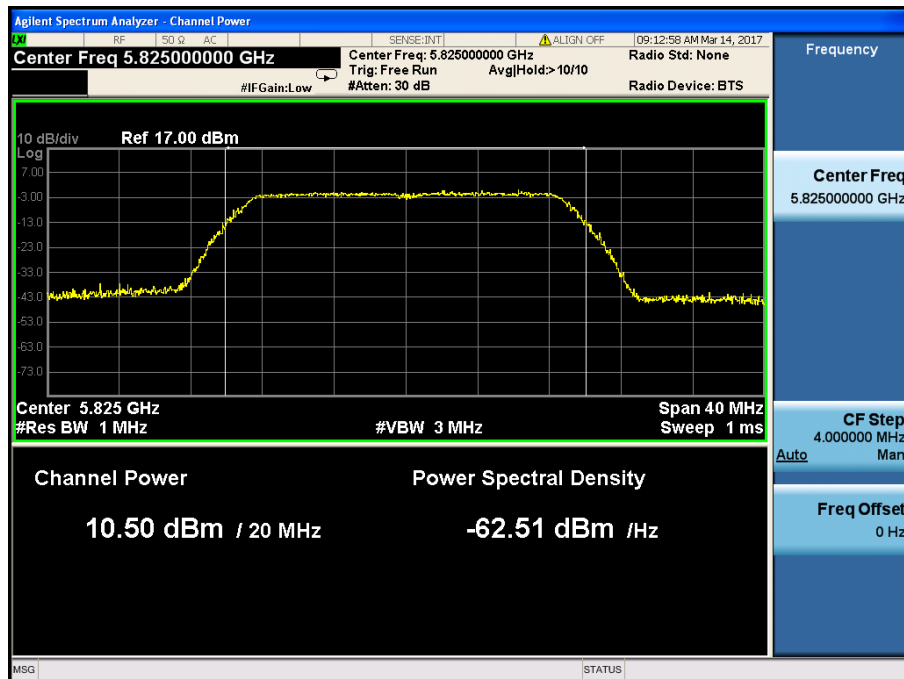
5745MHz



5785MHz

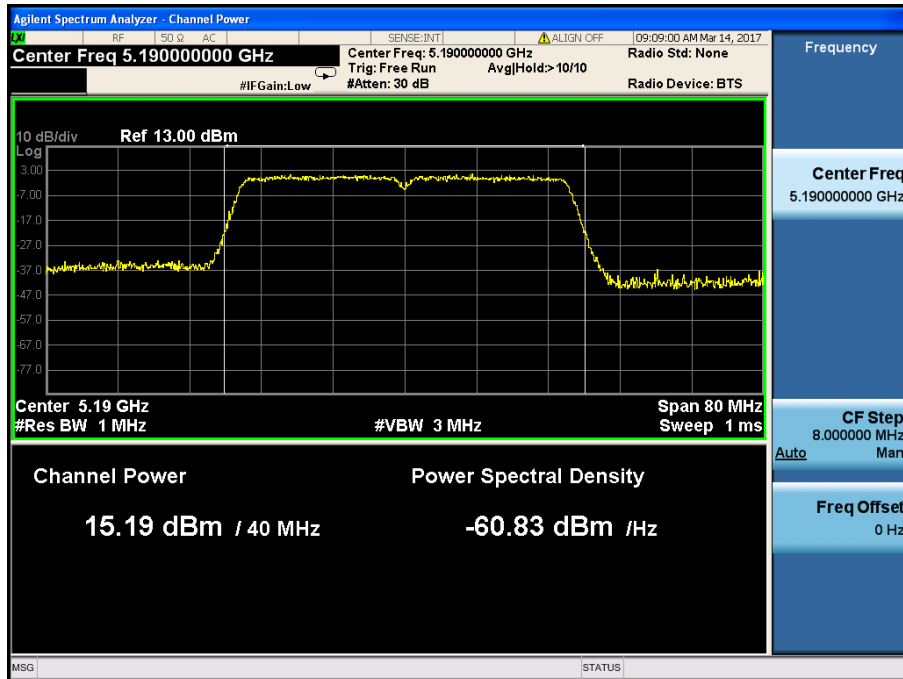


5825MHz

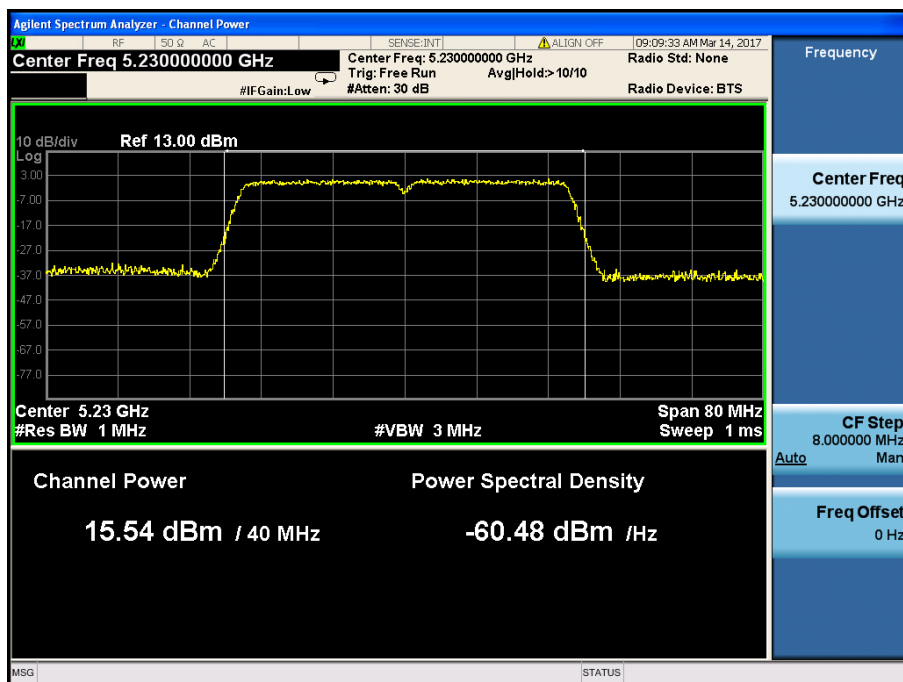


Test Mode: 802.11n-HT40

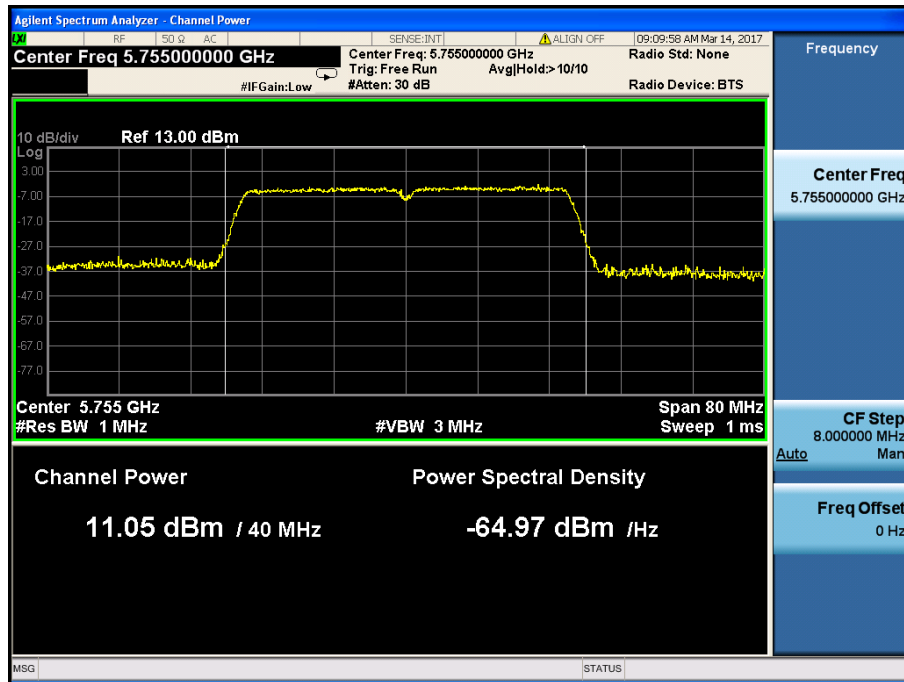
5190MHz



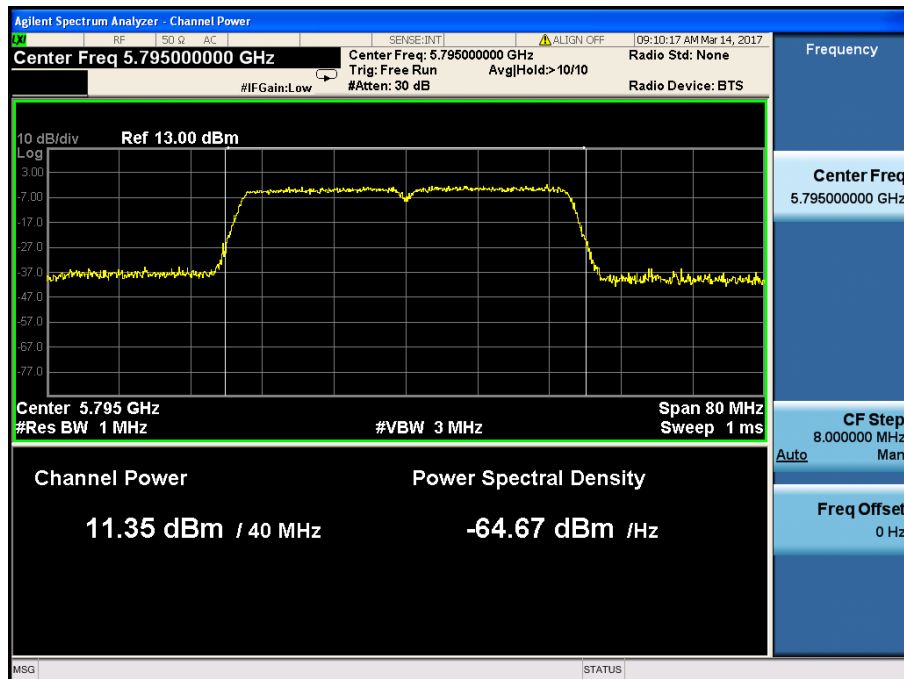
5230MHz



5755MHz

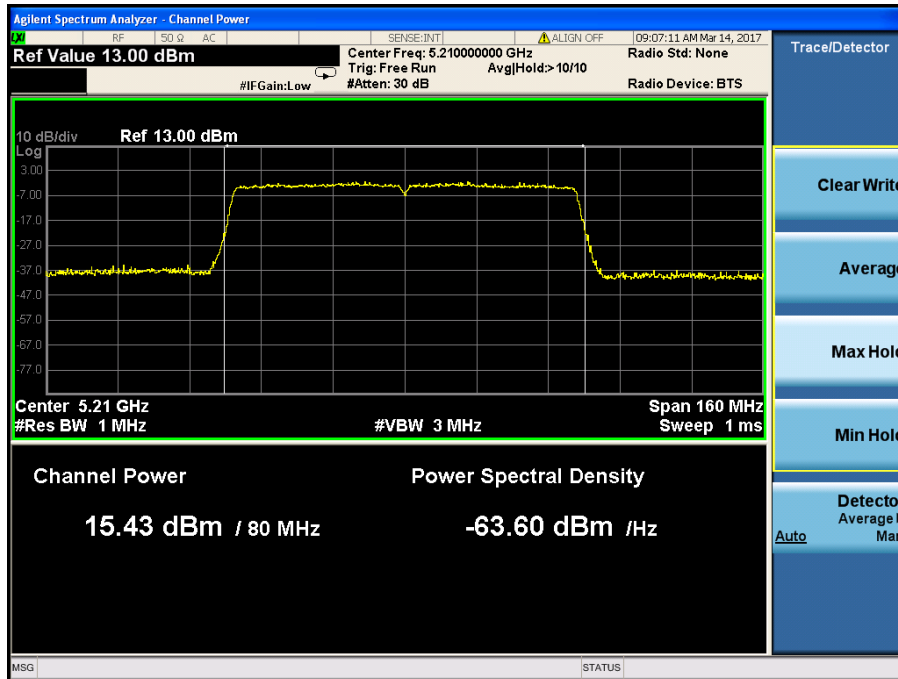


5795MHz

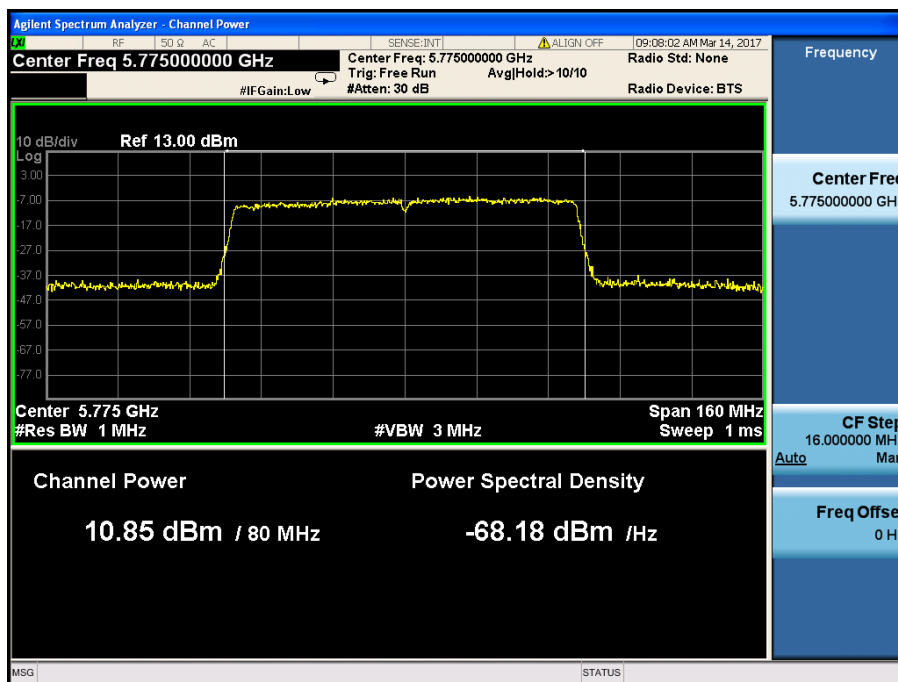


Test Mode: 802.11ac

5210MHz



5775MHz



9. Conducted Spurious Emissions

9.1 Standard Applicable

According to §15.407 (b) (b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) 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.
- (2) 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.
- (3) 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.
- (4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

9.2 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer via a RF combiner.
2. Set the spectrum analyzer as RBW = 100kHz/1MHz, VBW=300kHz/3MHz, Sweep = auto
3. Set the Lowest, Middle and Highest Transmitting Channel, observed the outside band of 30MHz to 40GHz, then mark the higher-level emission for comparing with the FCC rules.

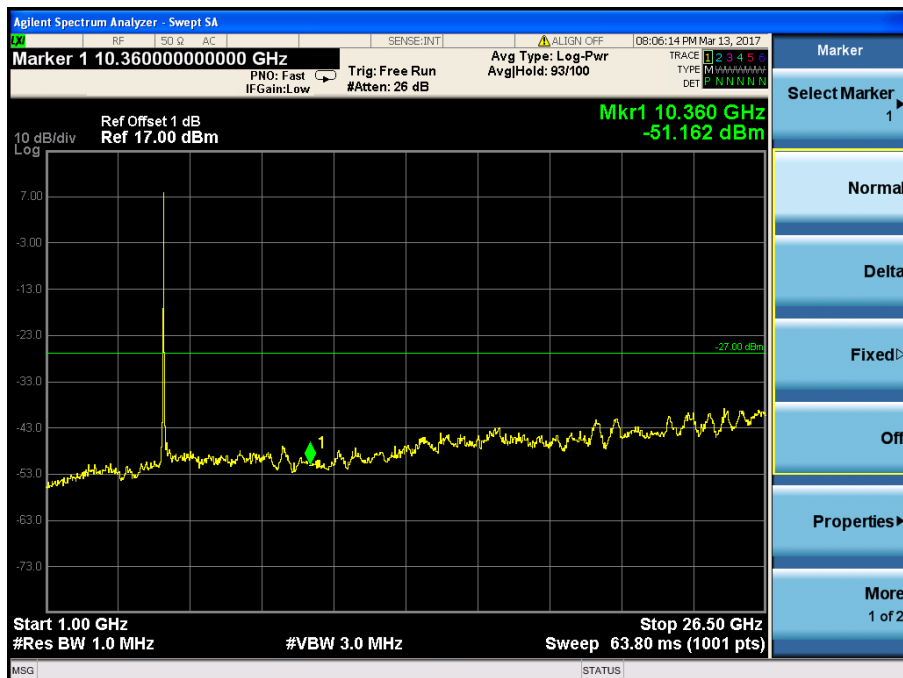
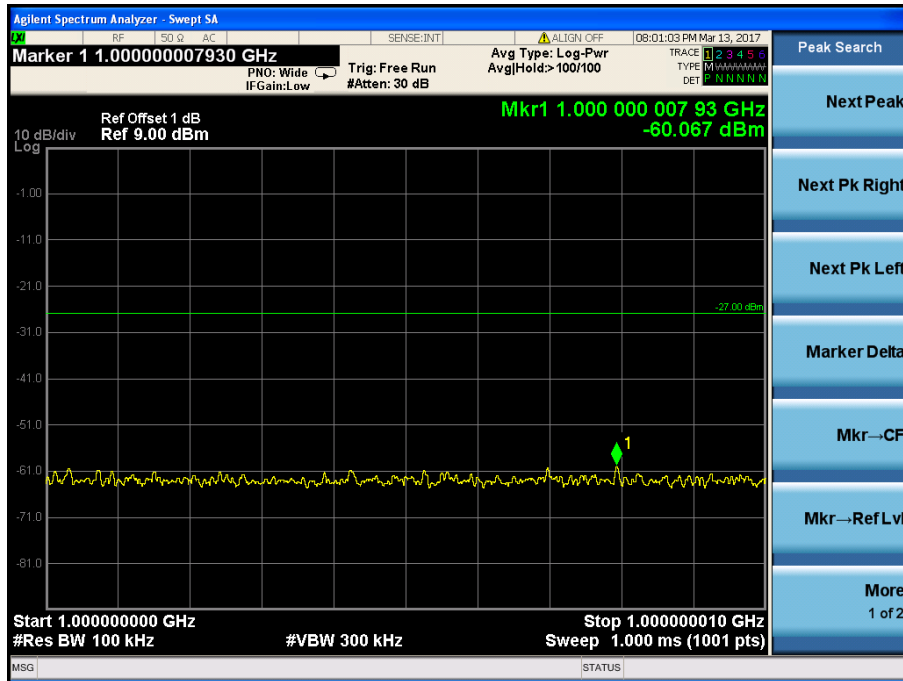
9.3 Environmental Conditions

Temperature:	21° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

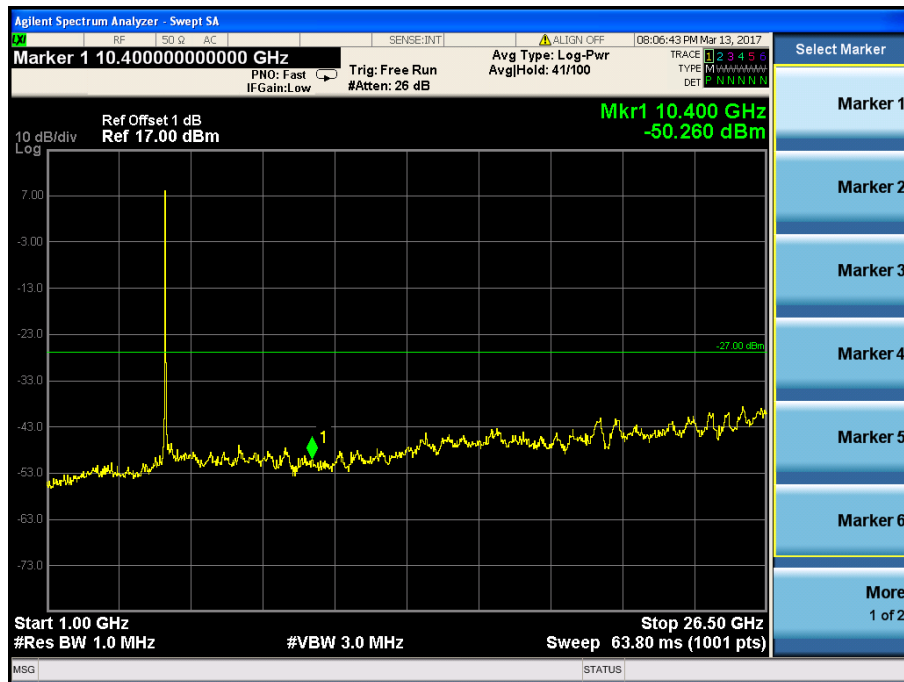
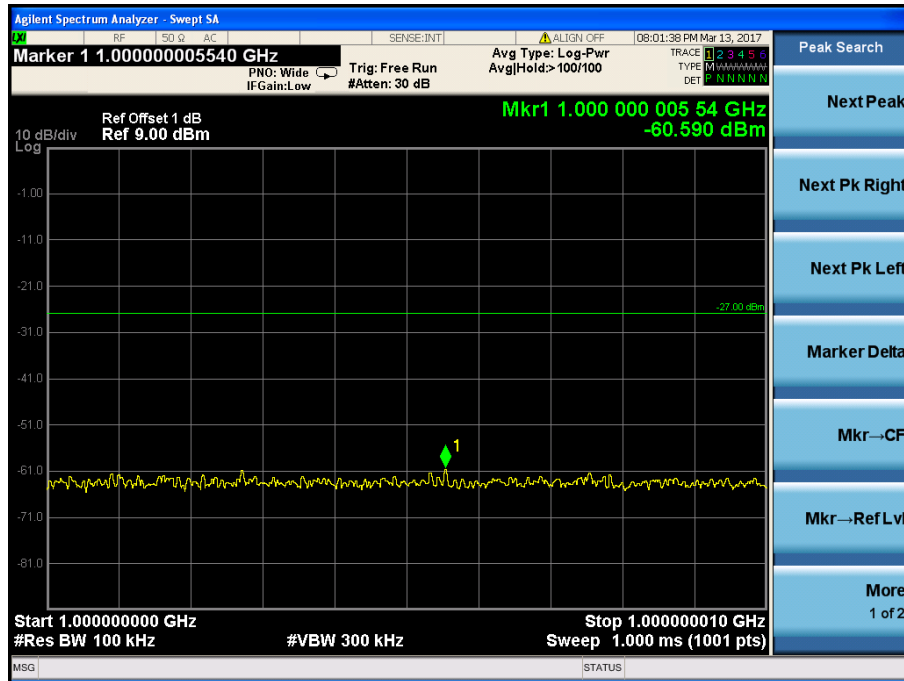
9.4 Summary of Test Results/Plots

Emissions above 26.5GHz are attenuated more than 20dB below the permissible limits and test data are not reported.

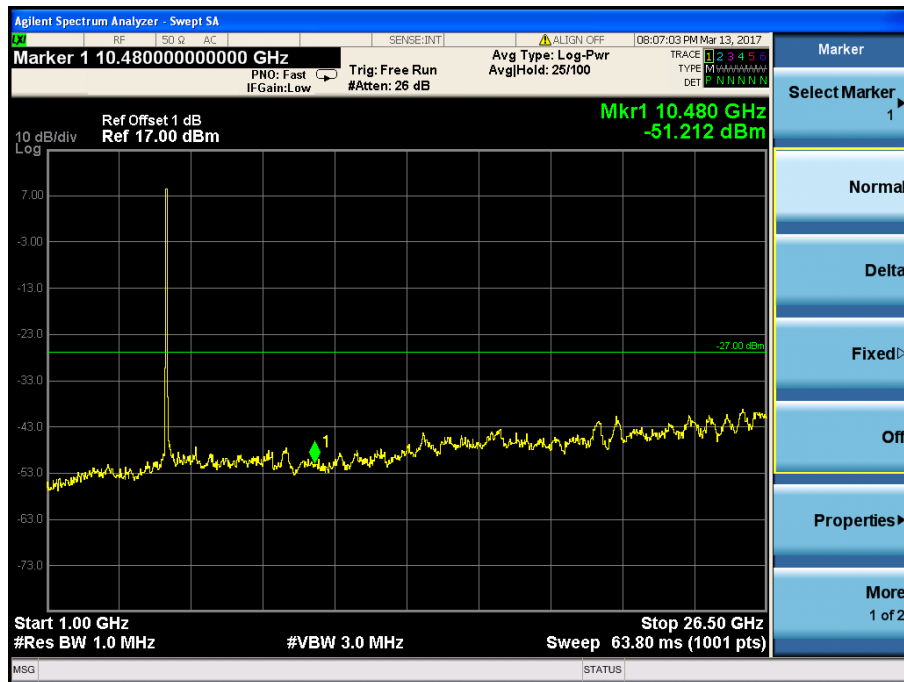
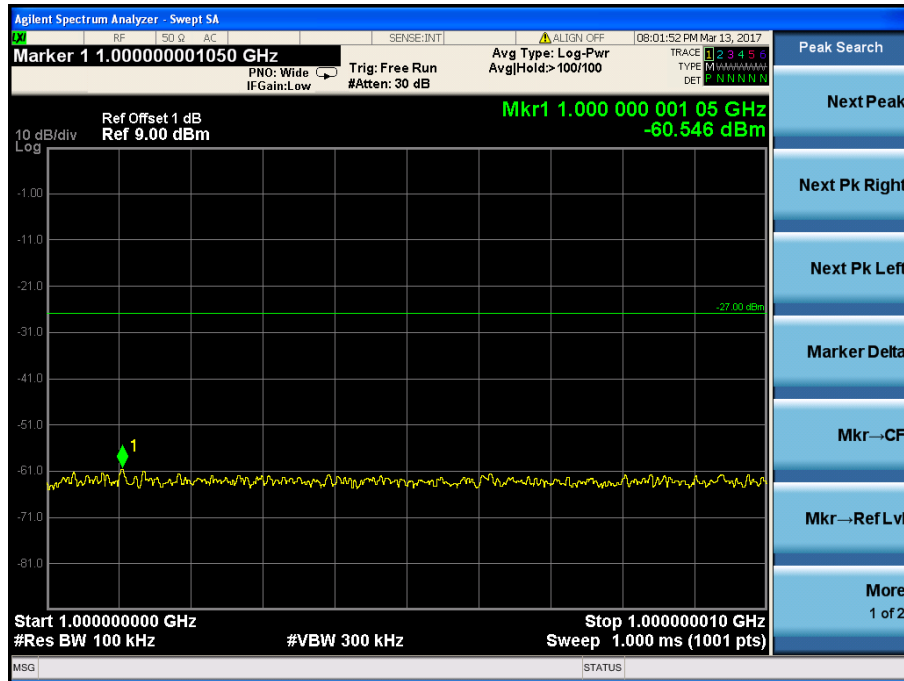
Chain 1:
802.11a
5180MHz



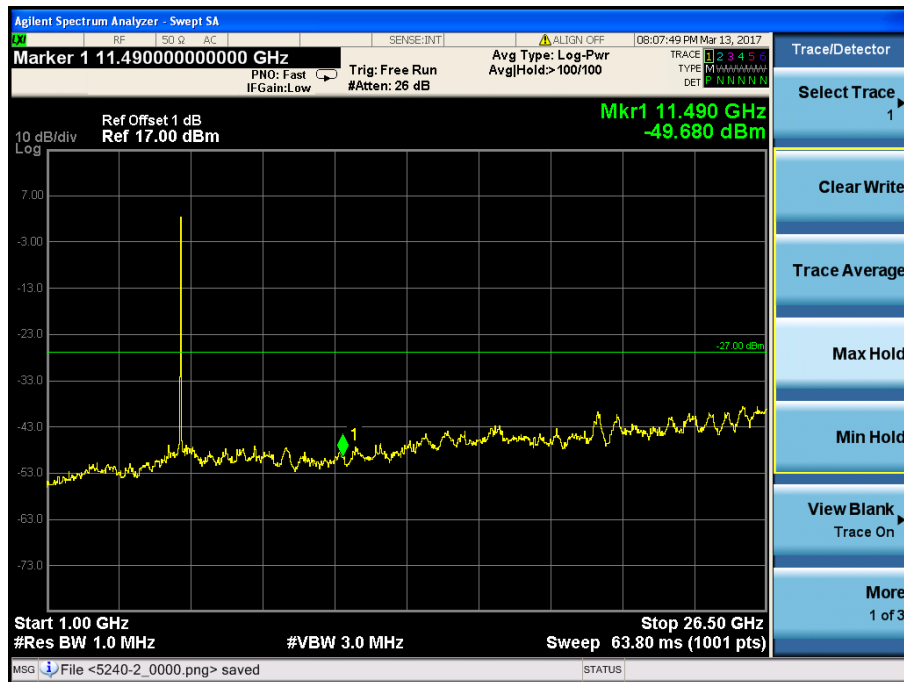
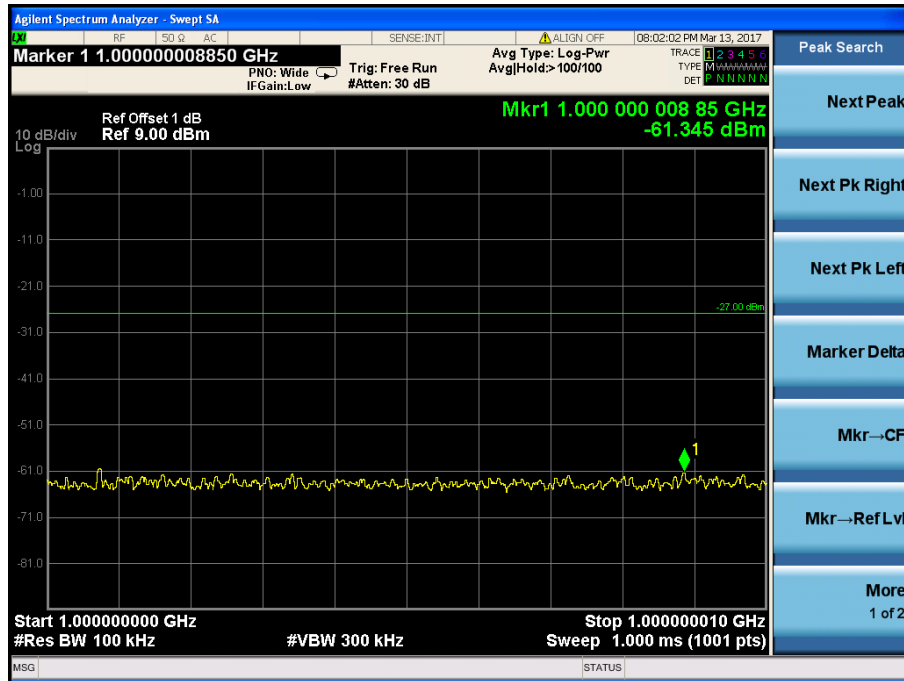
5200MHz



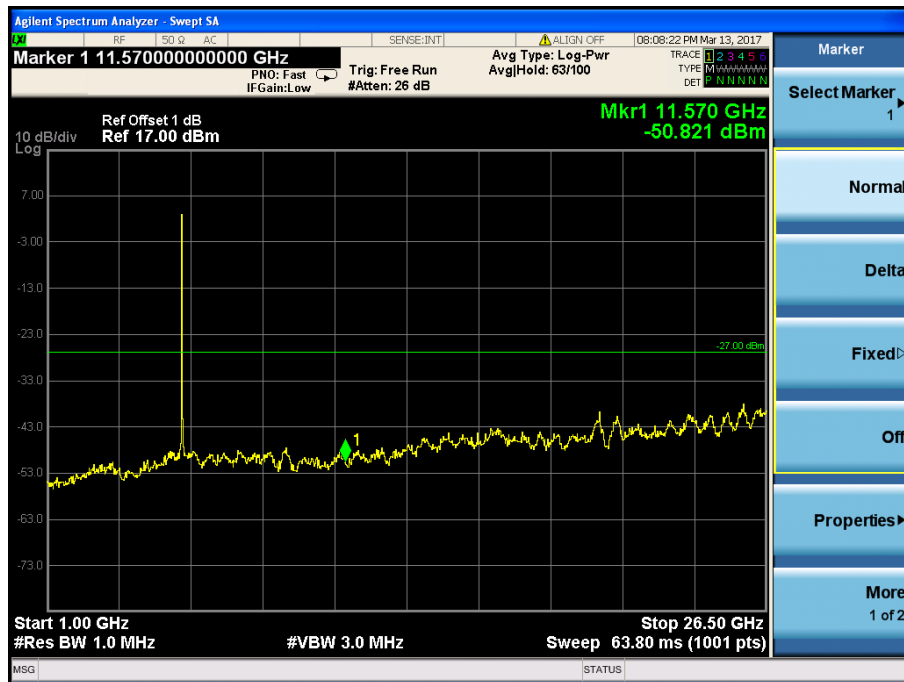
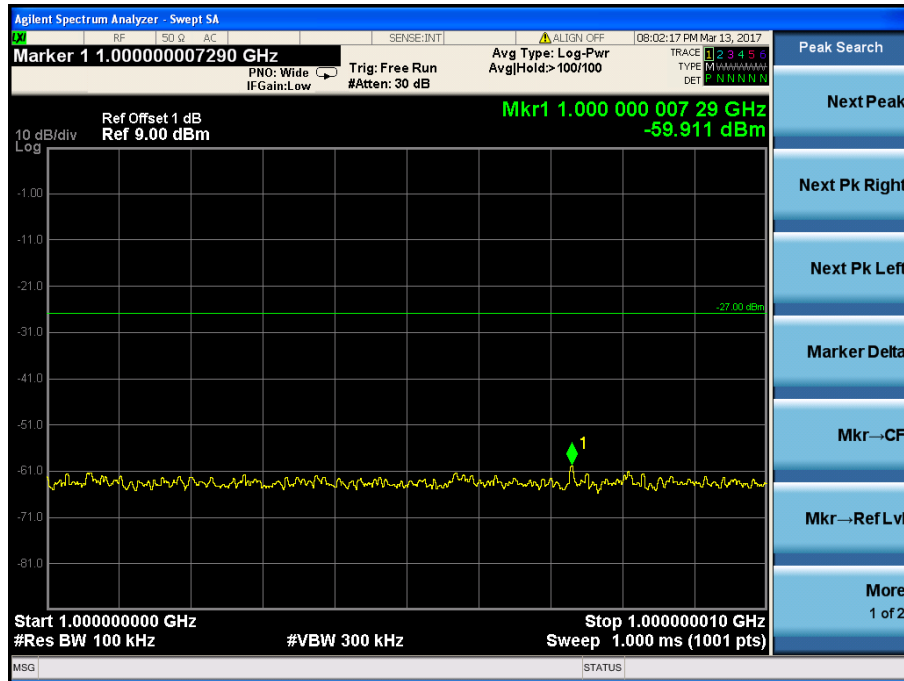
5240MHz



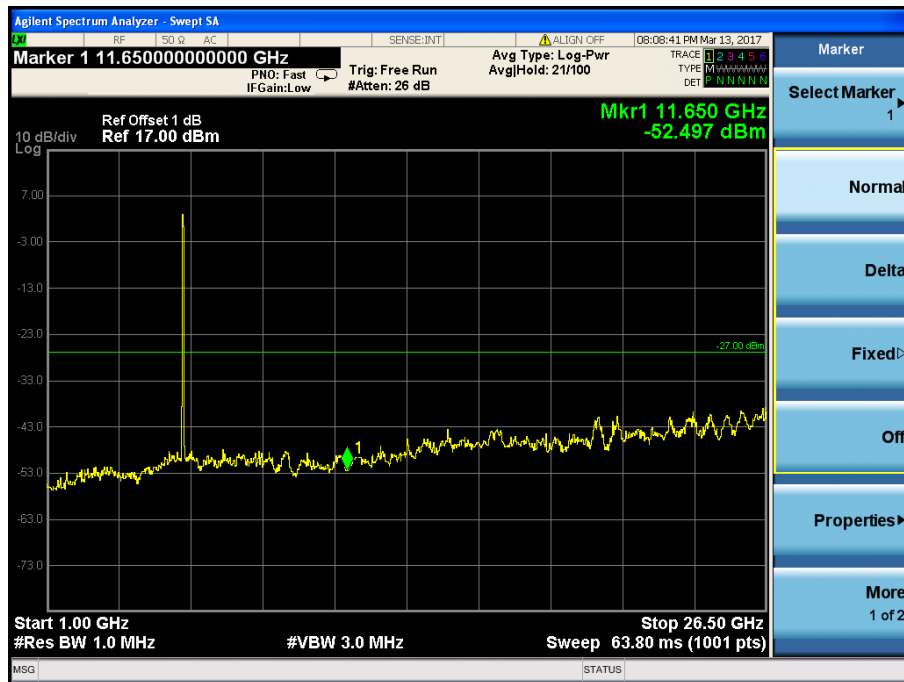
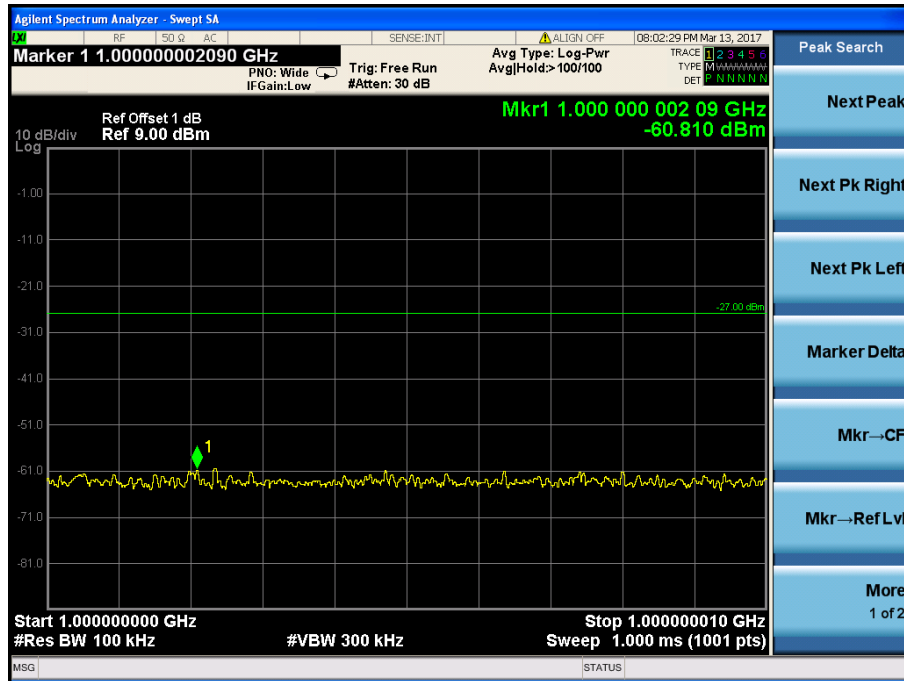
5745MHz



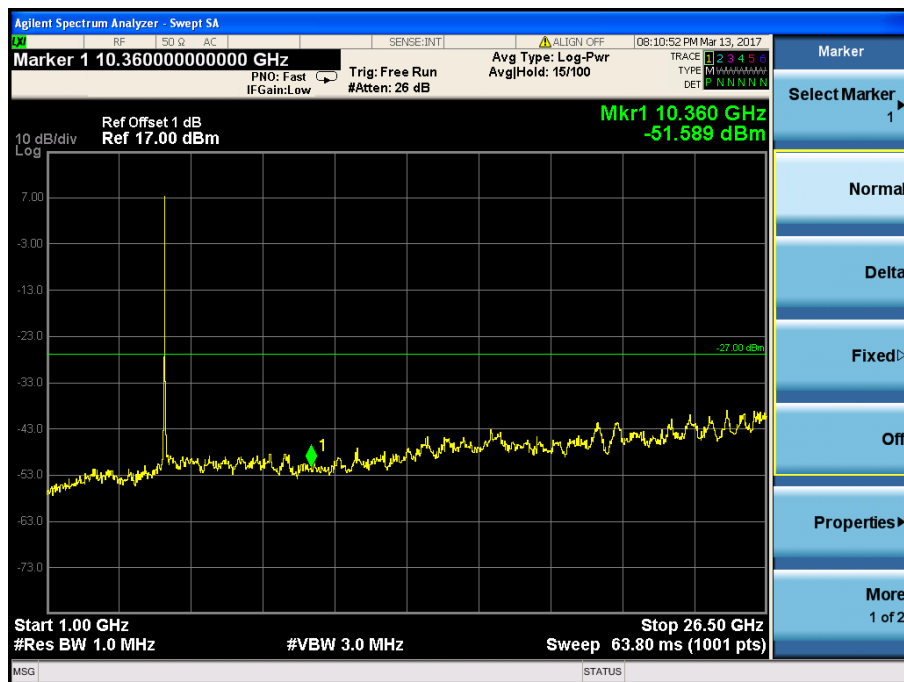
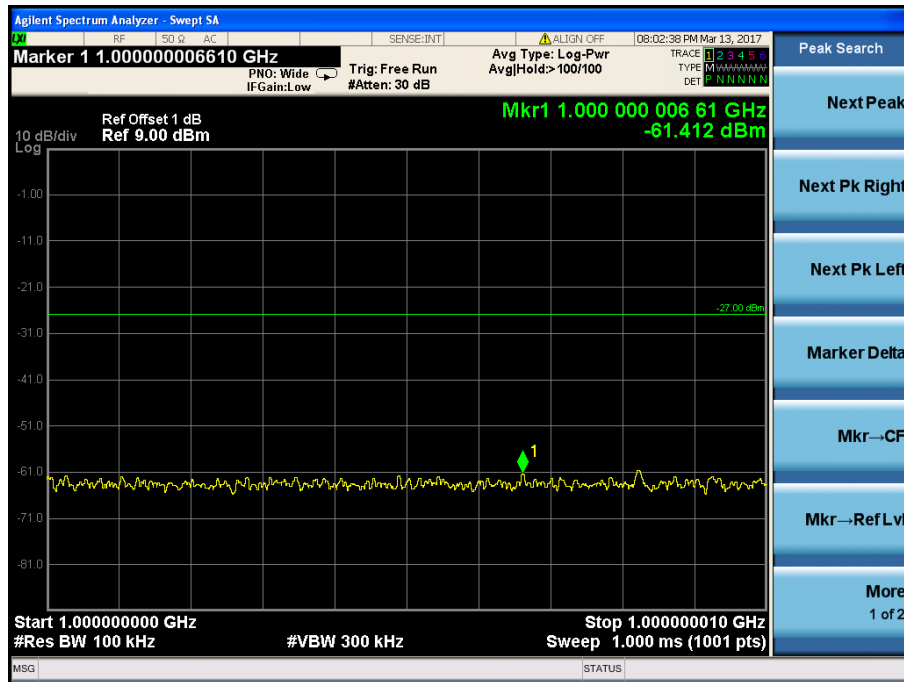
5785MHz



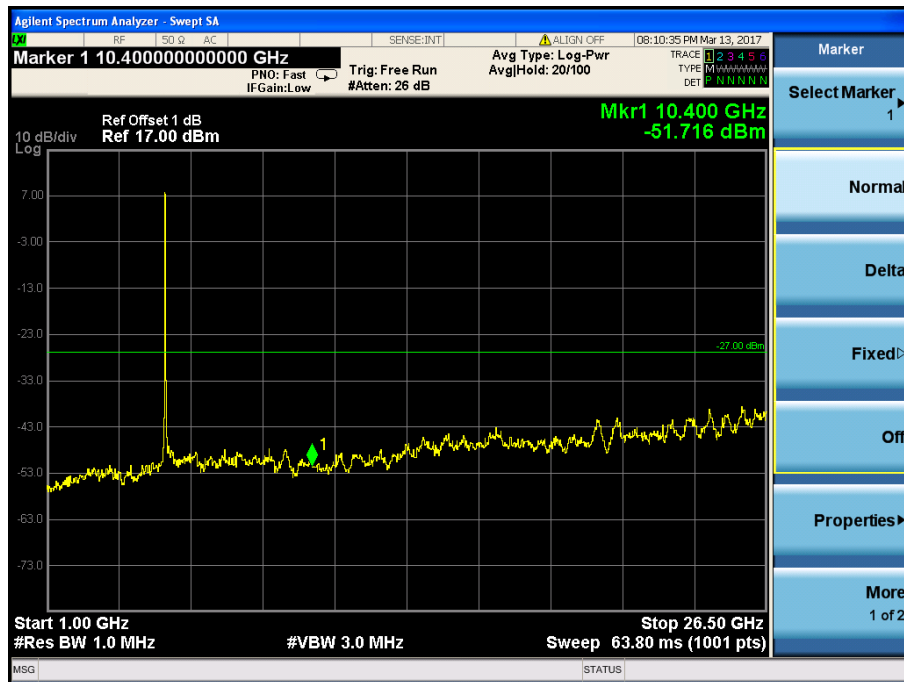
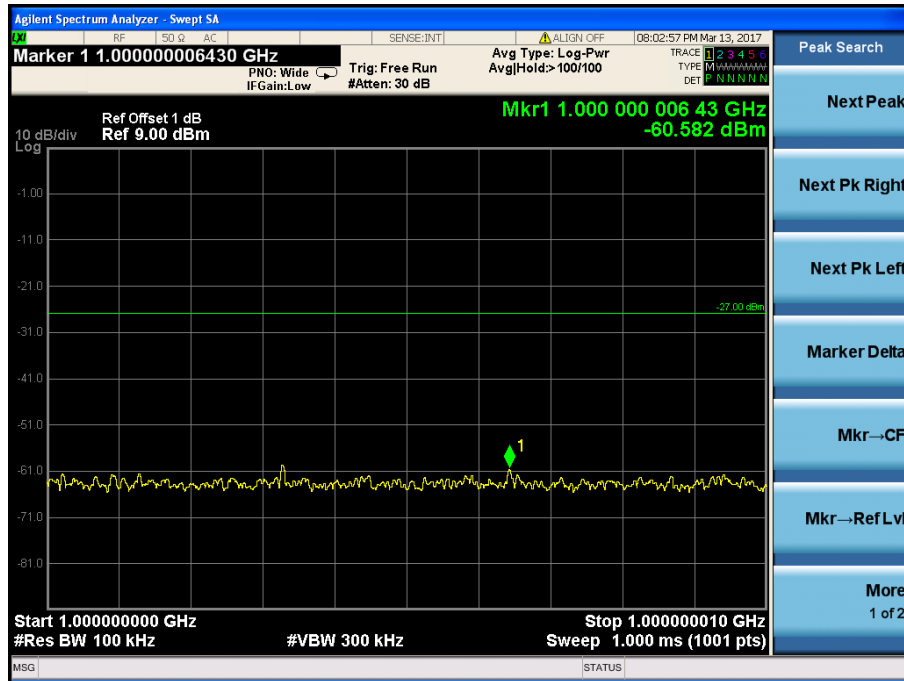
5825MHz



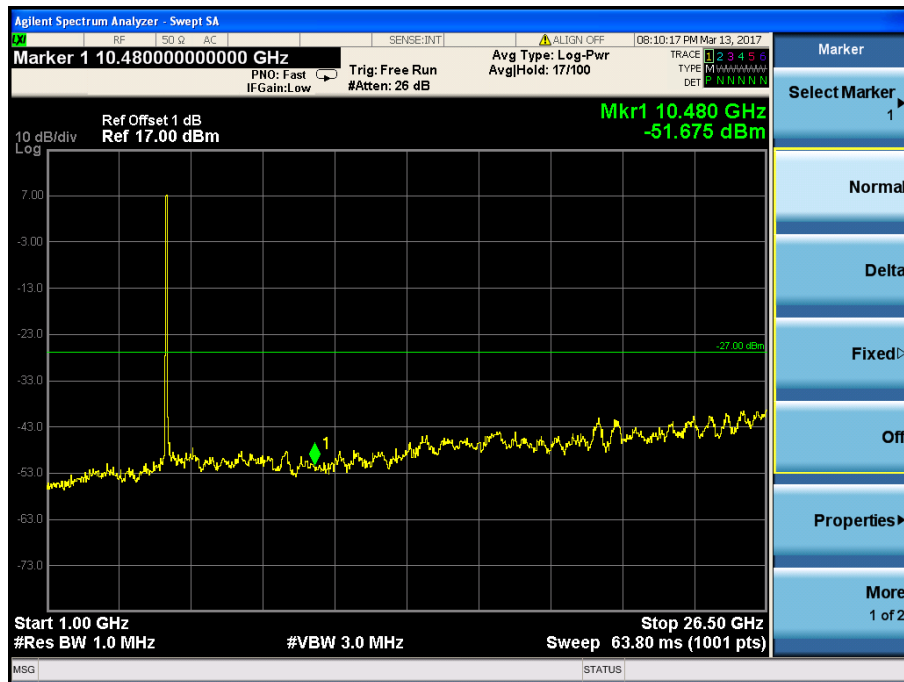
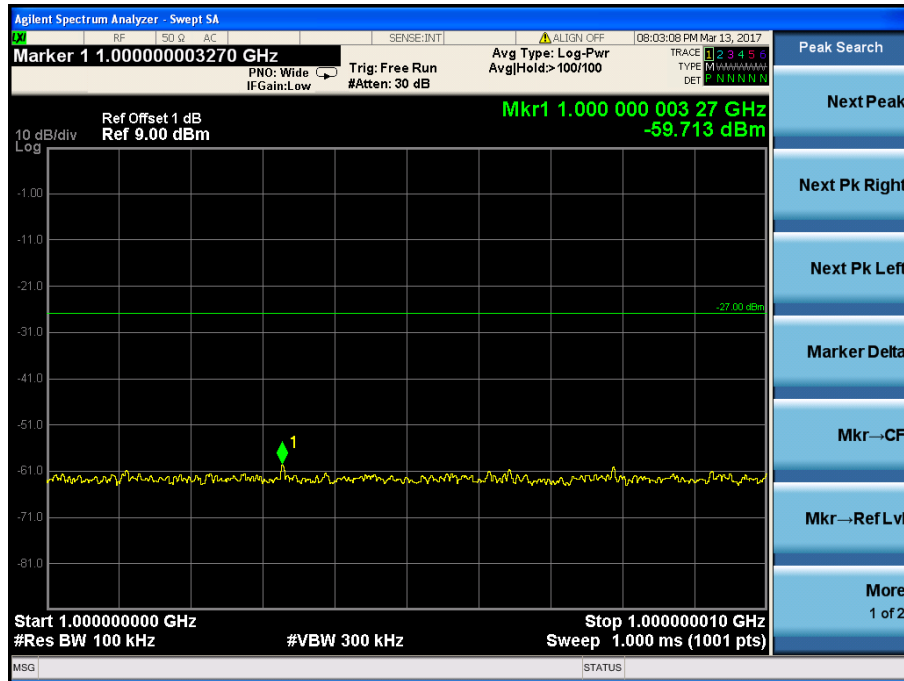
802.11n HT20
5180MHz



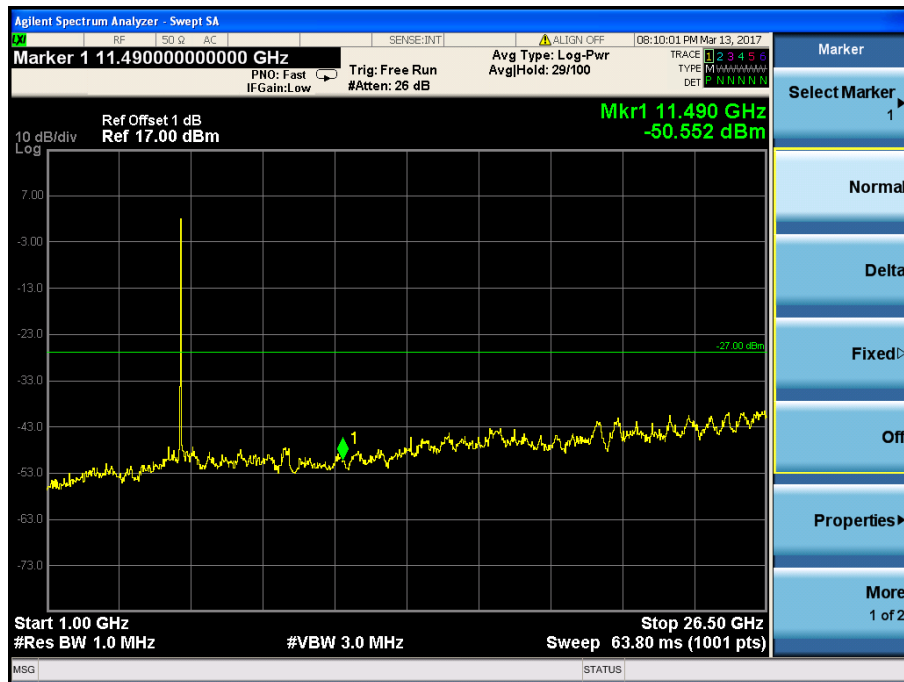
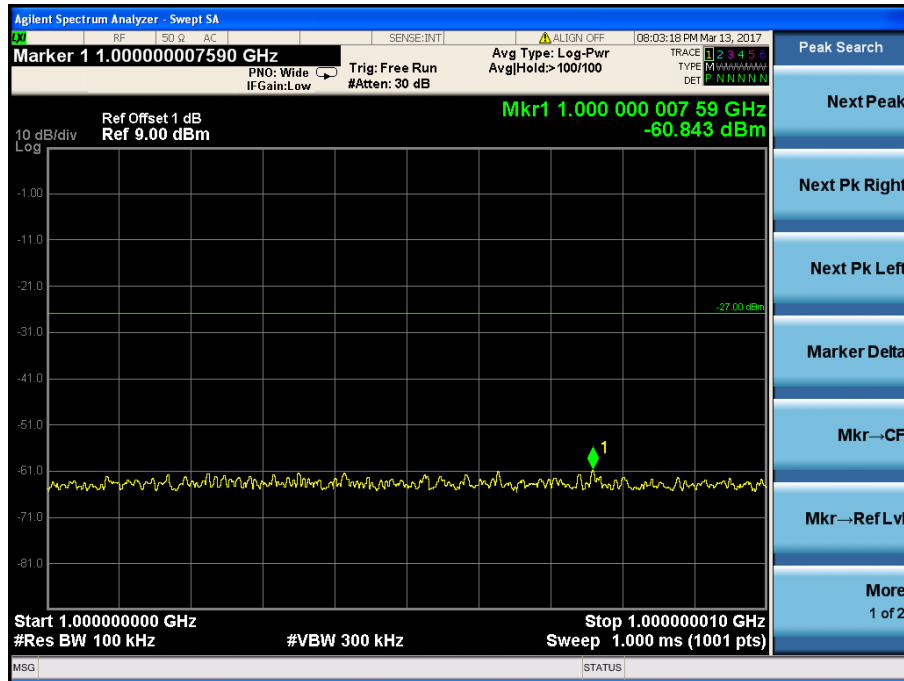
5200MHz



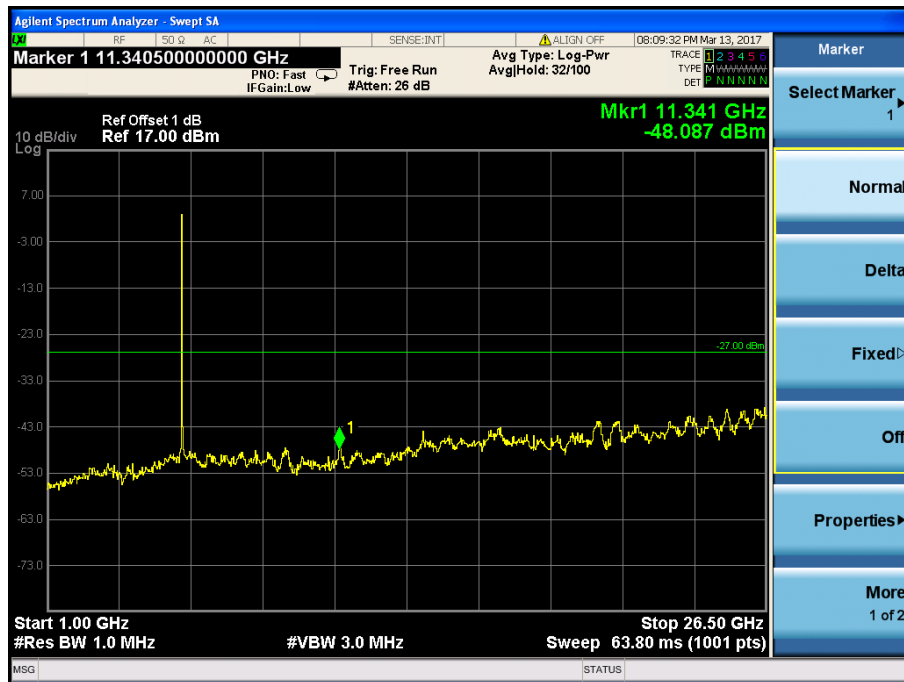
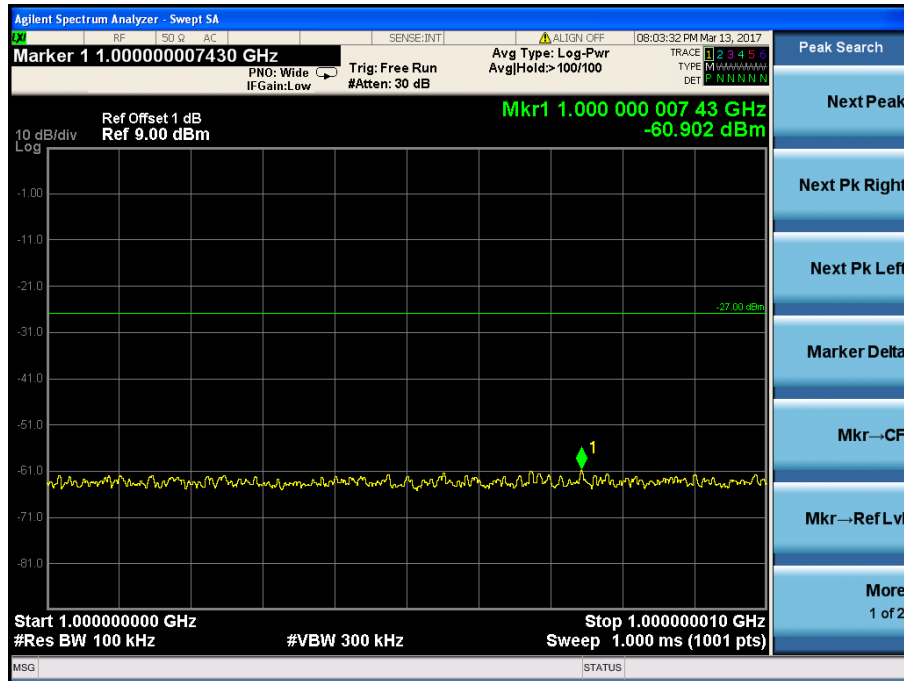
5240MHz



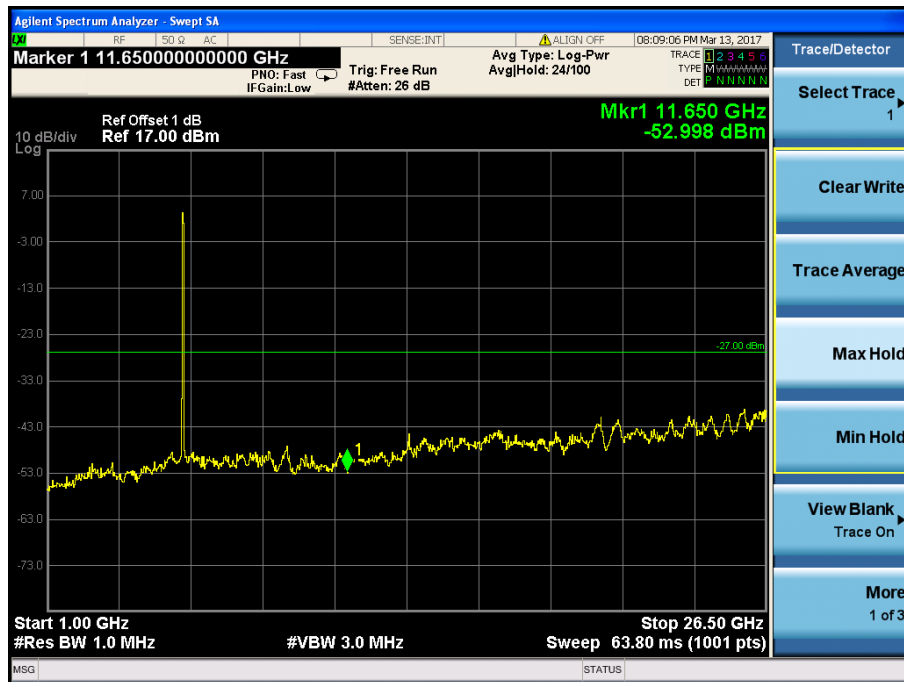
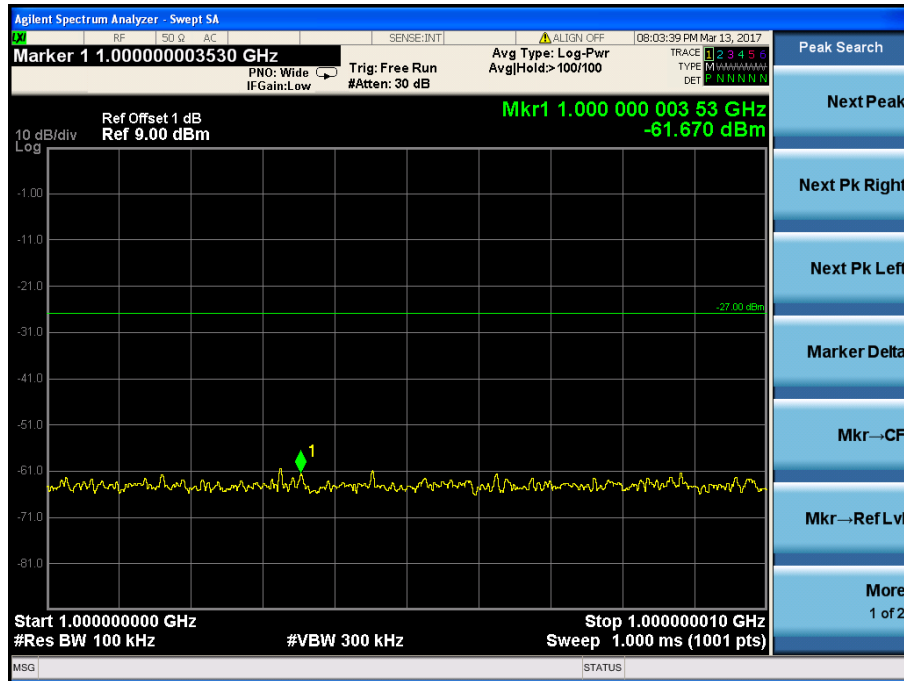
5745MHz



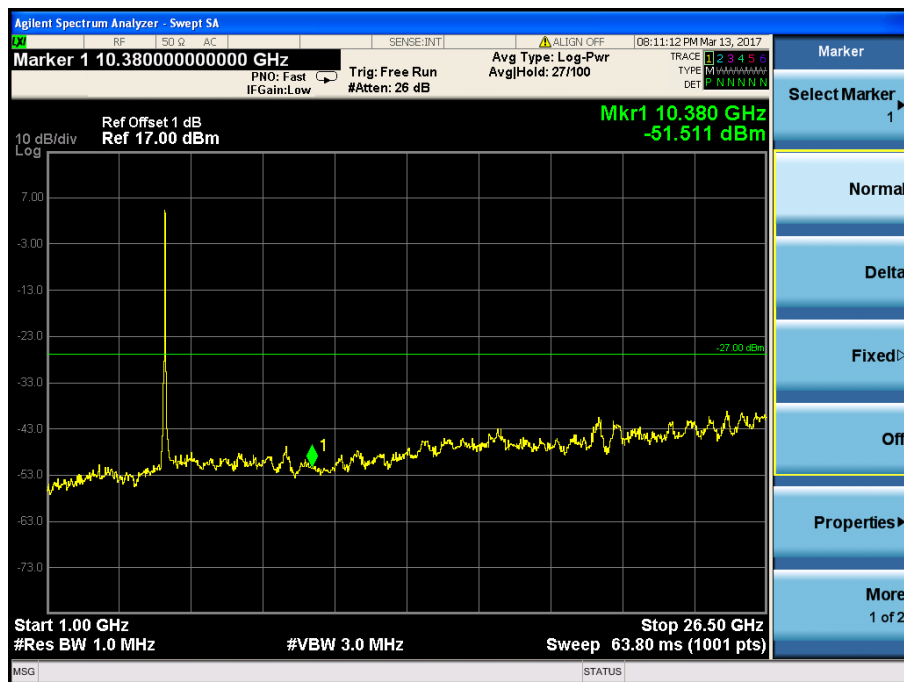
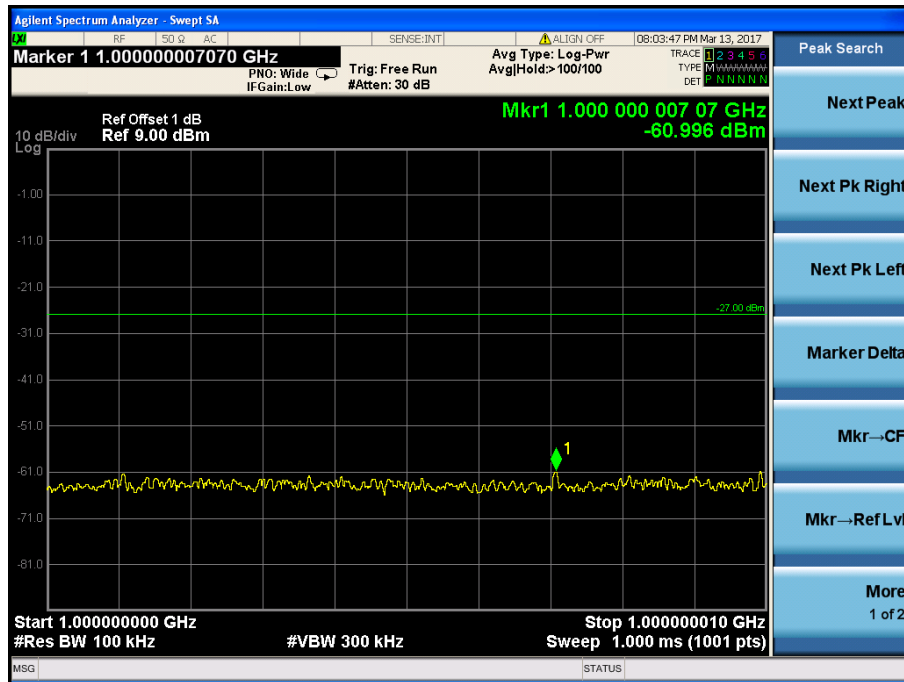
5785MHz



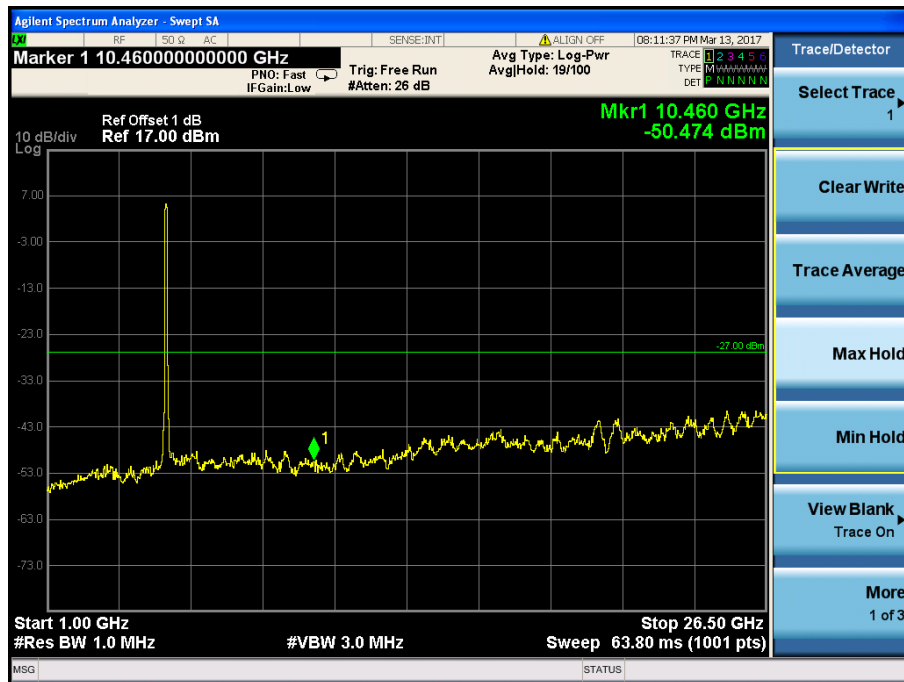
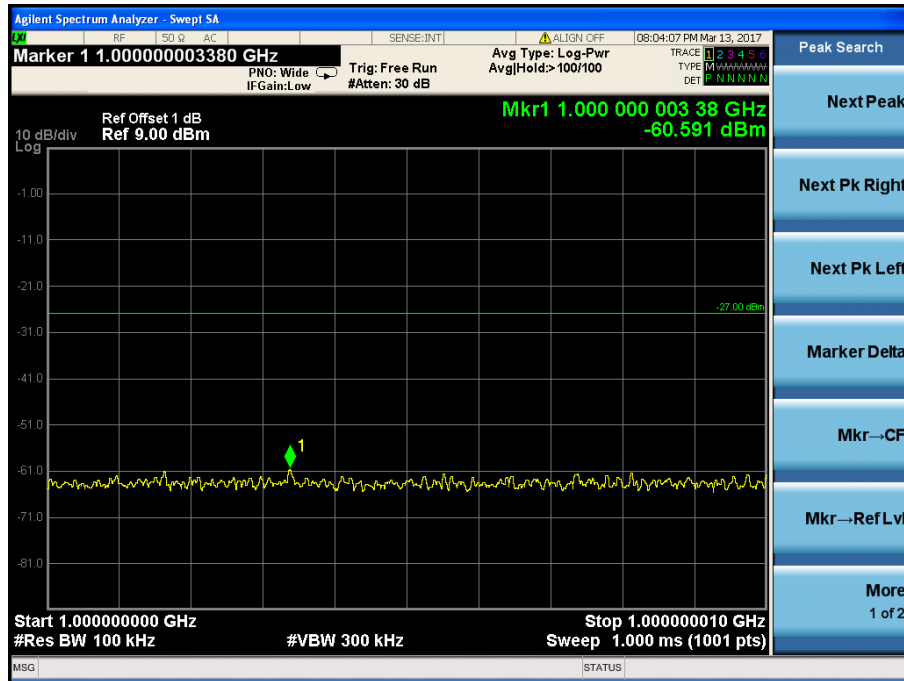
5825MHz



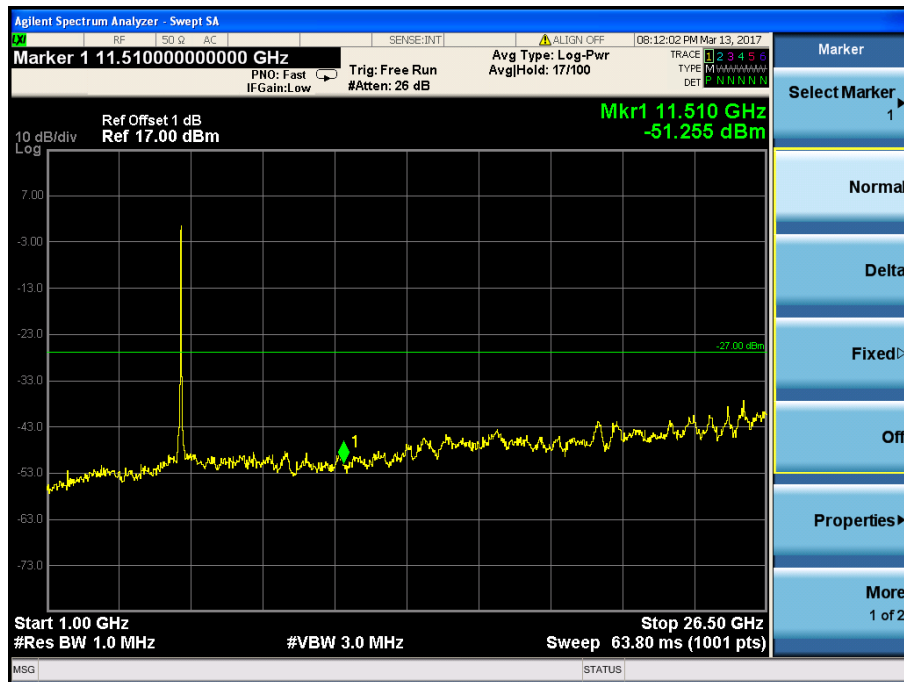
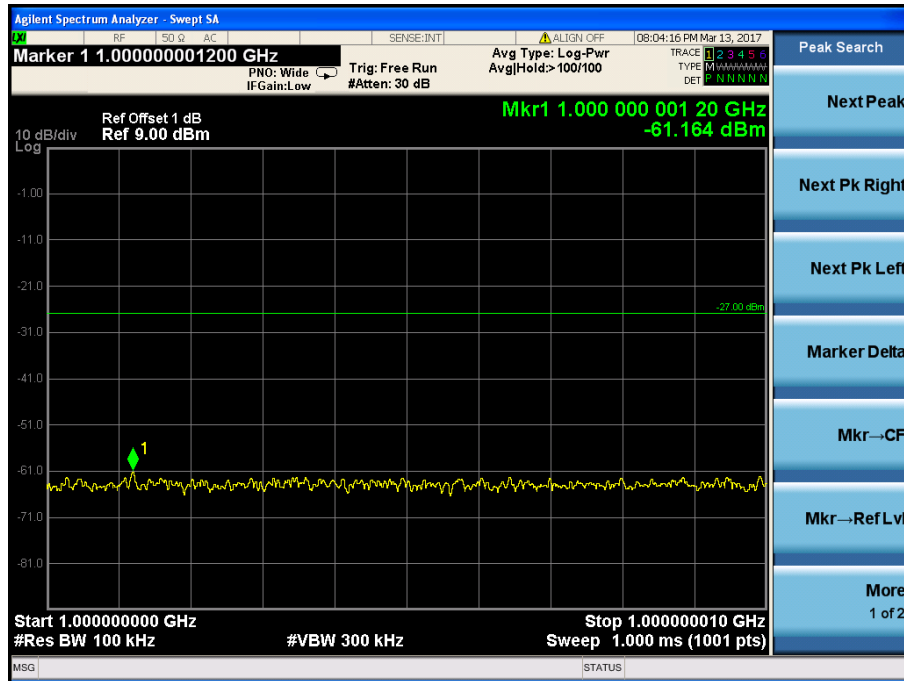
802.11n HT40
5190MHz



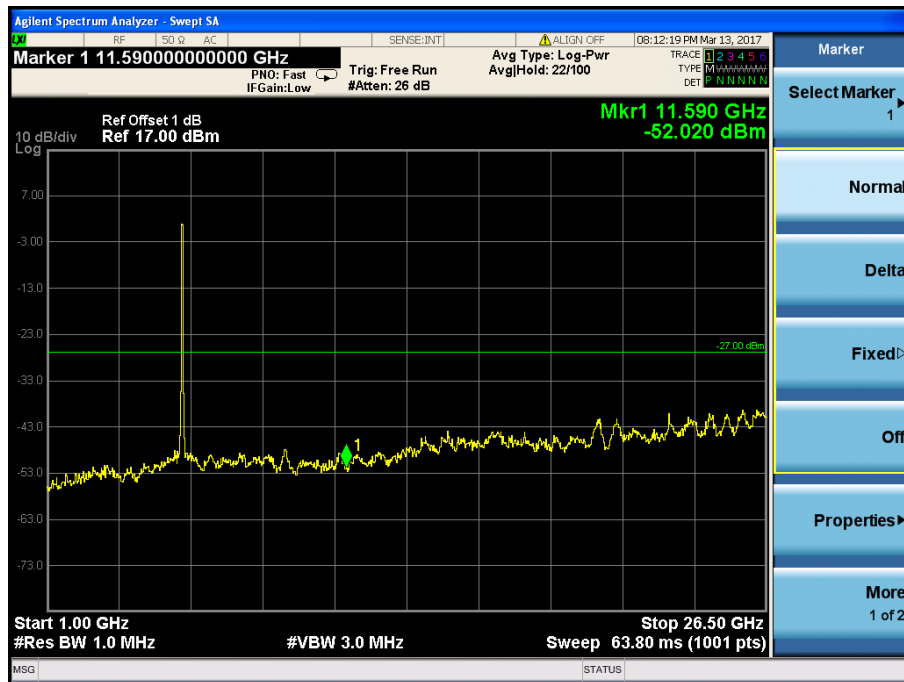
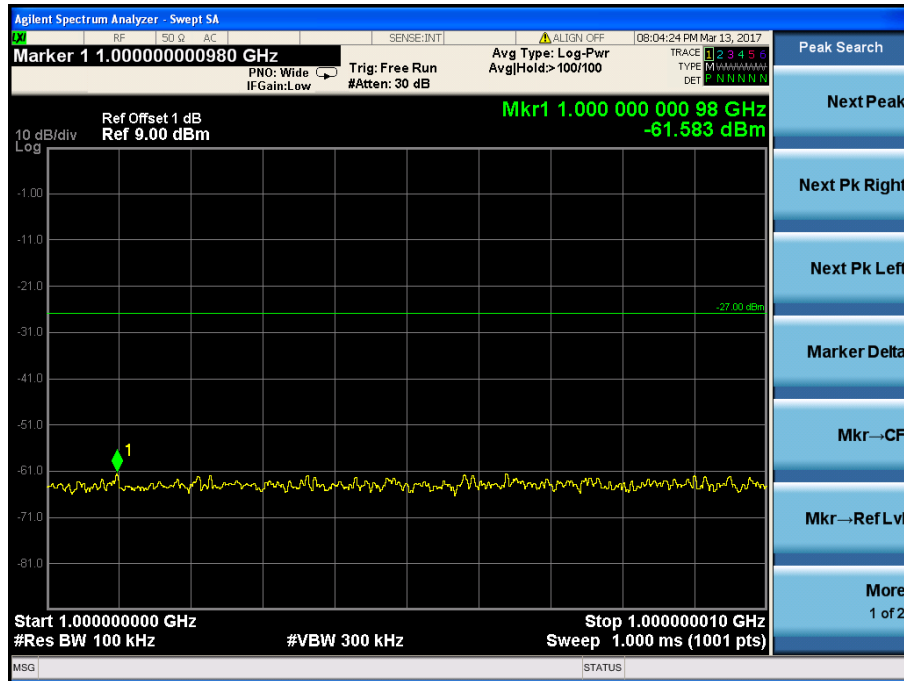
5230MHz



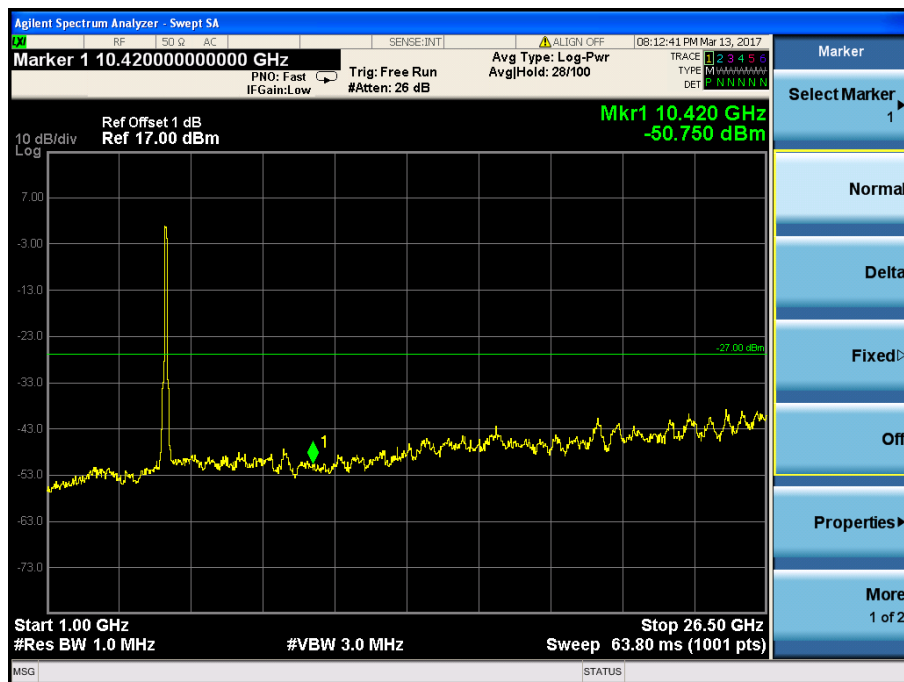
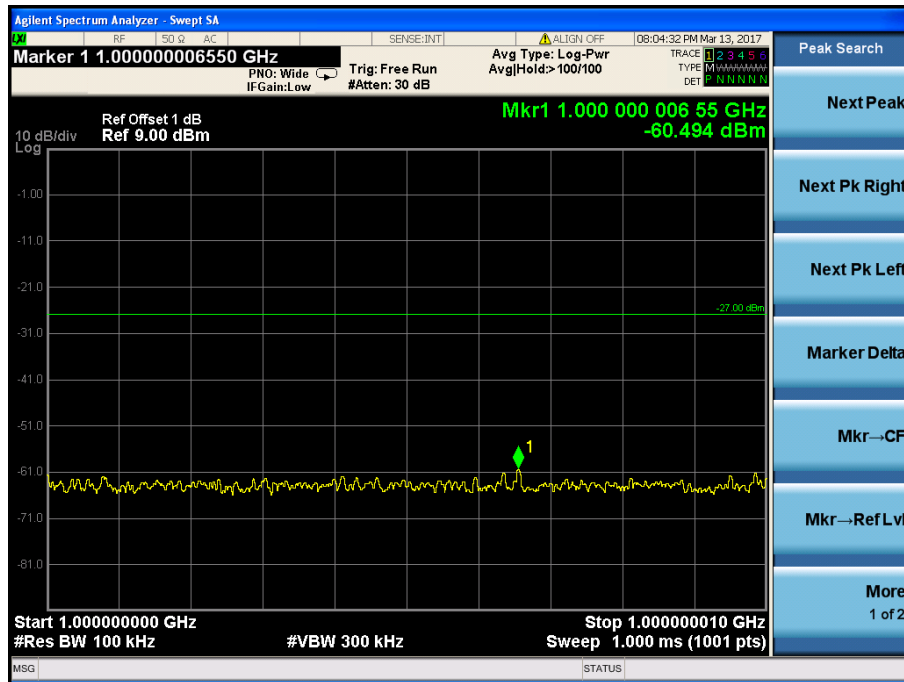
5755MHz



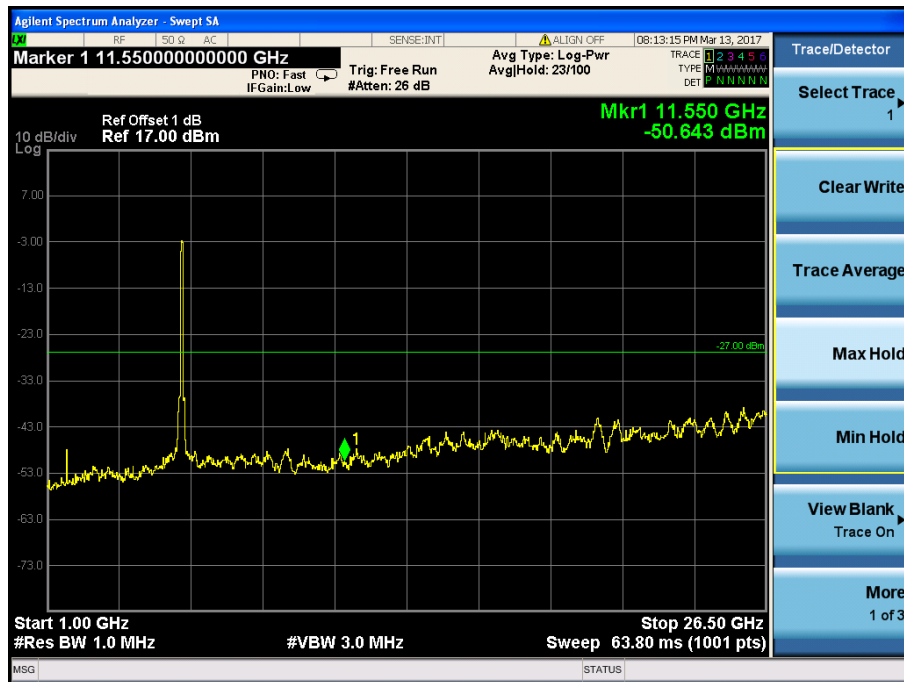
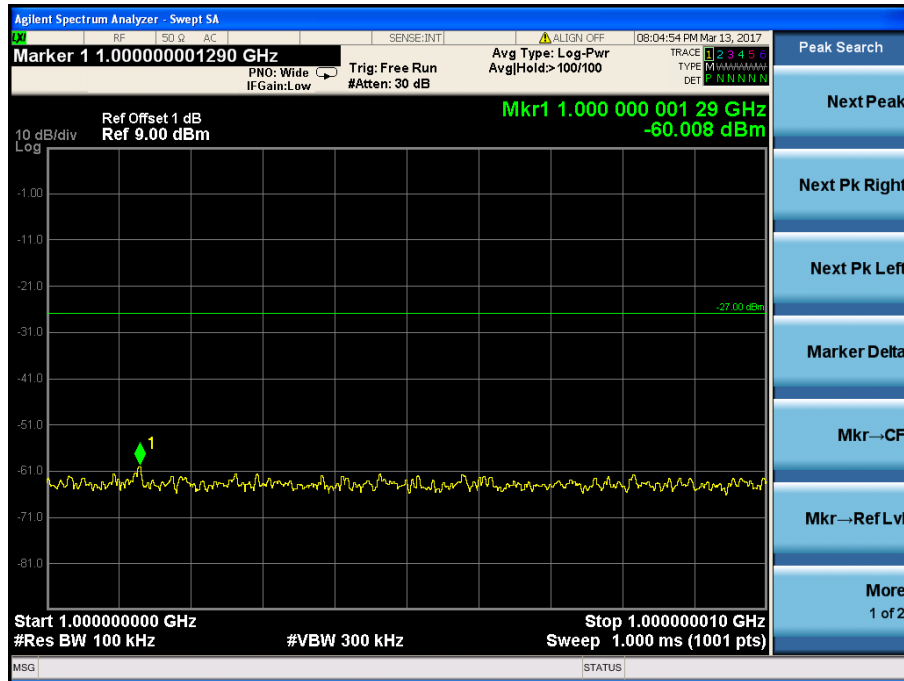
5795MHz



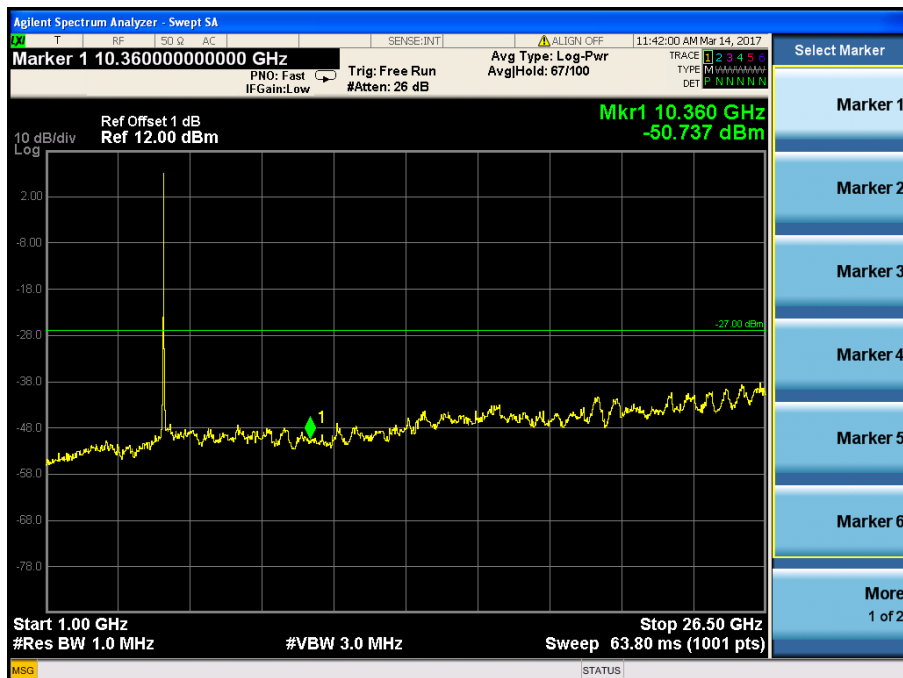
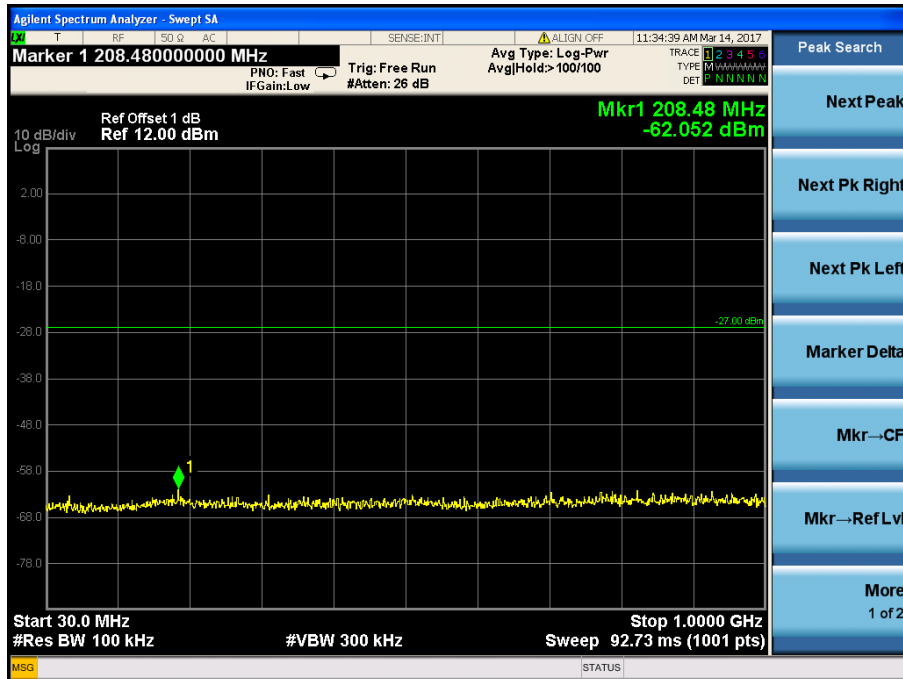
802.11ac
5210MHz



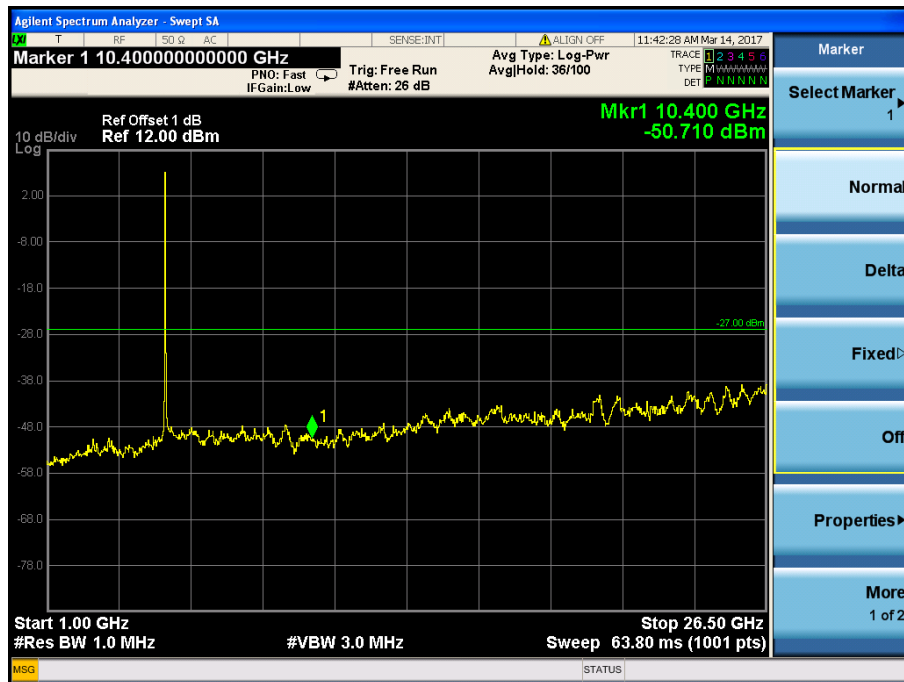
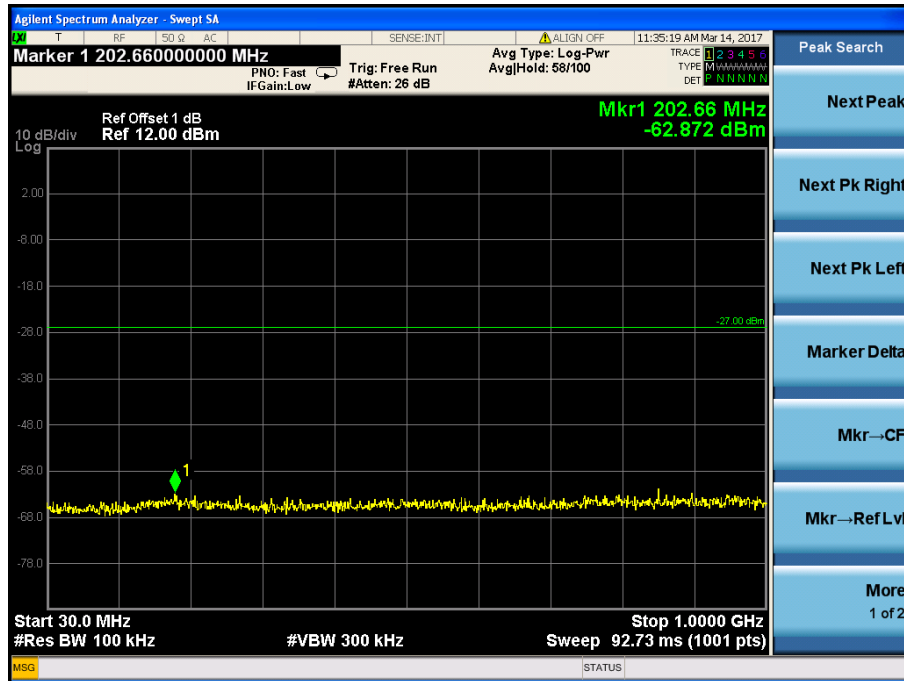
5775MHz



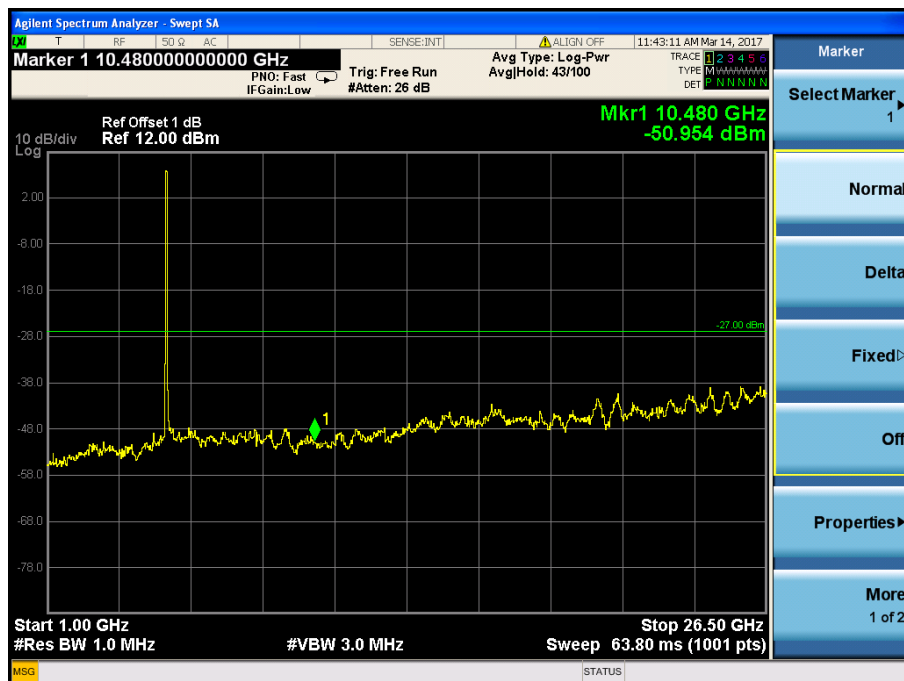
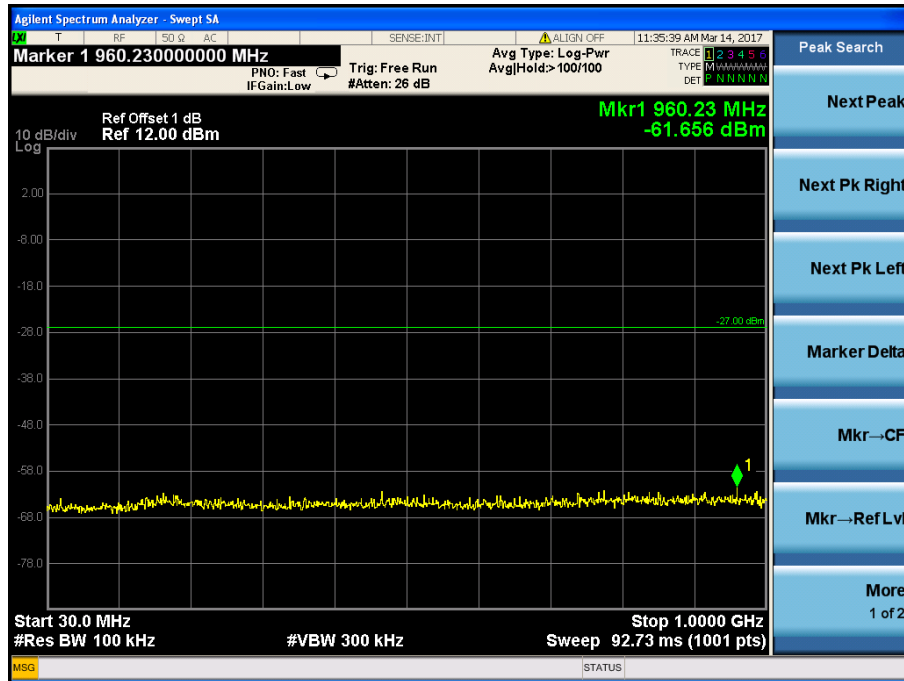
Chain 2:
802.11a
5180MHz



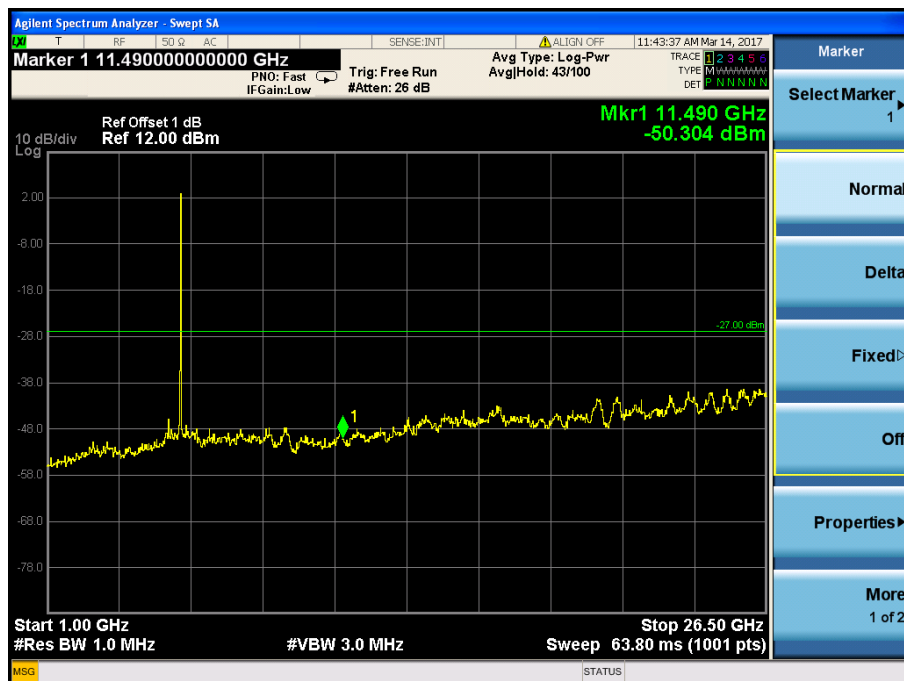
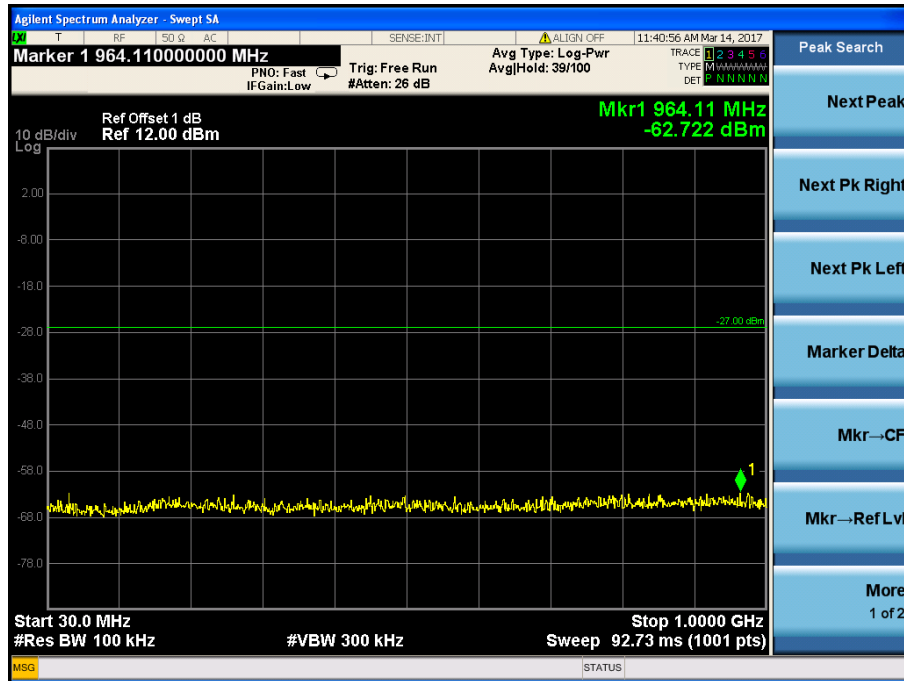
5200MHz



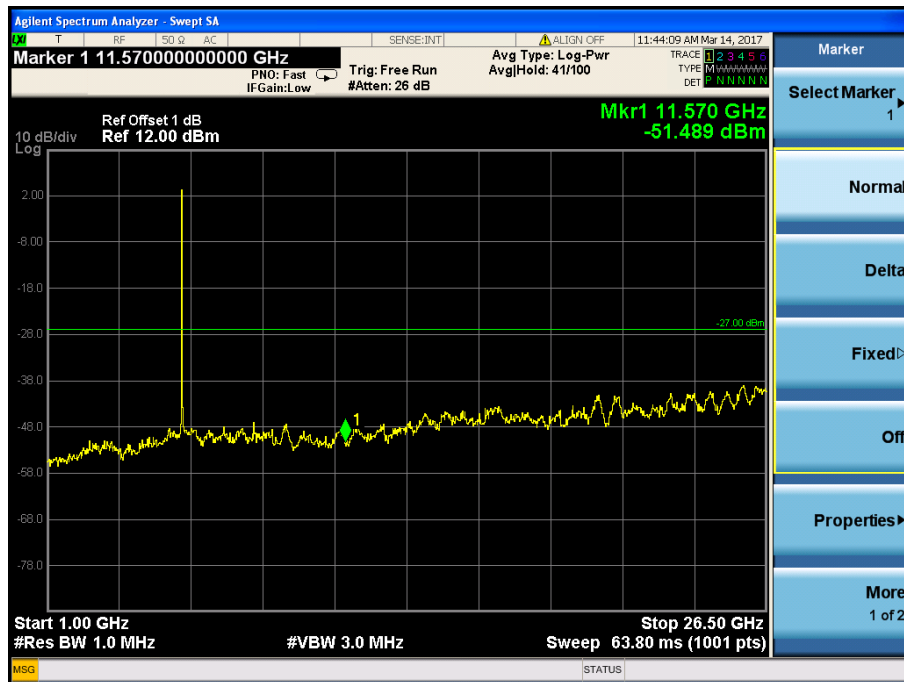
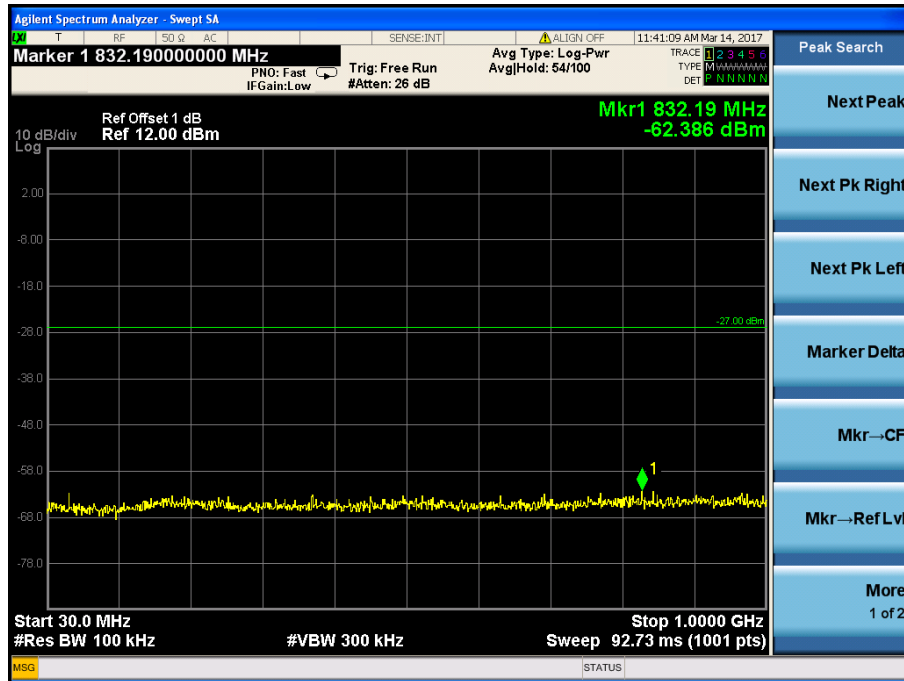
5240MHz



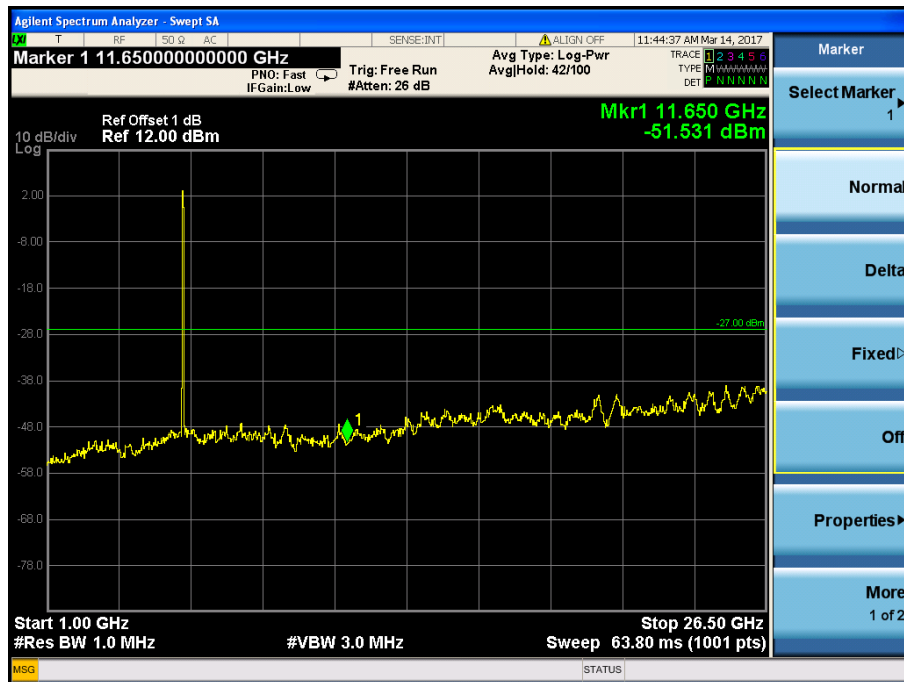
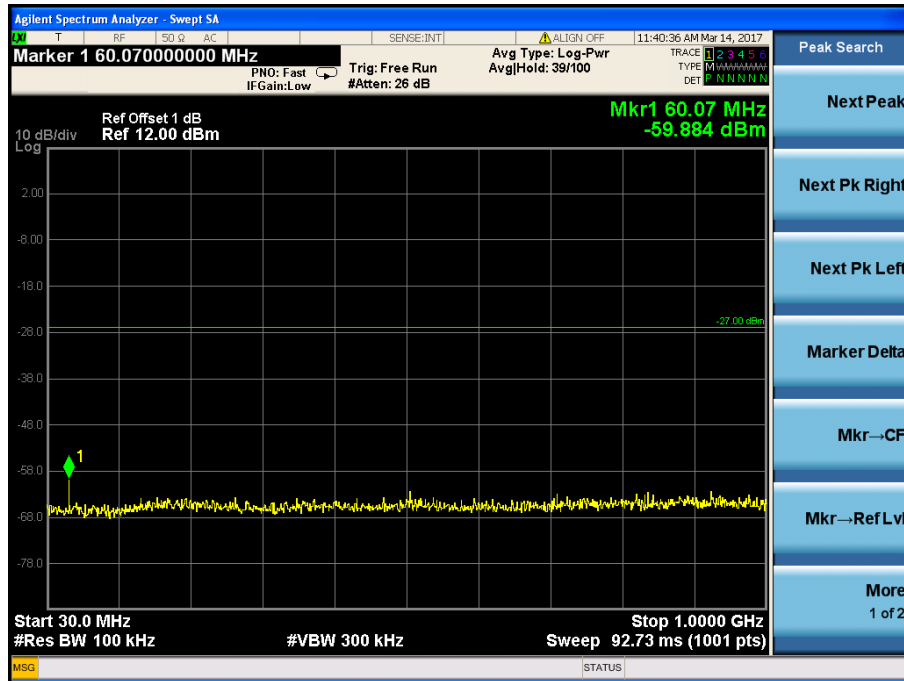
5745MHz



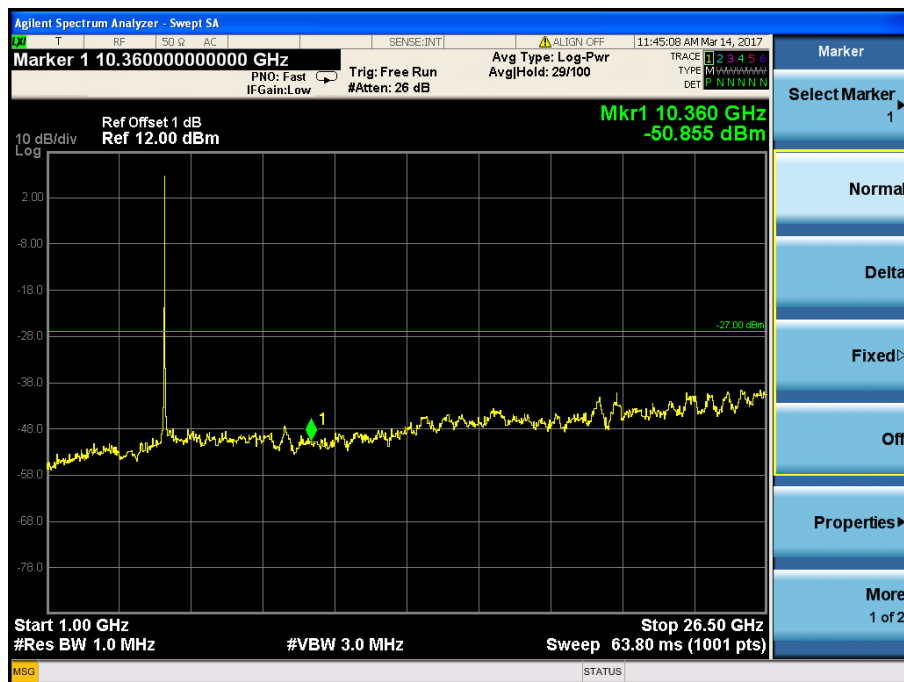
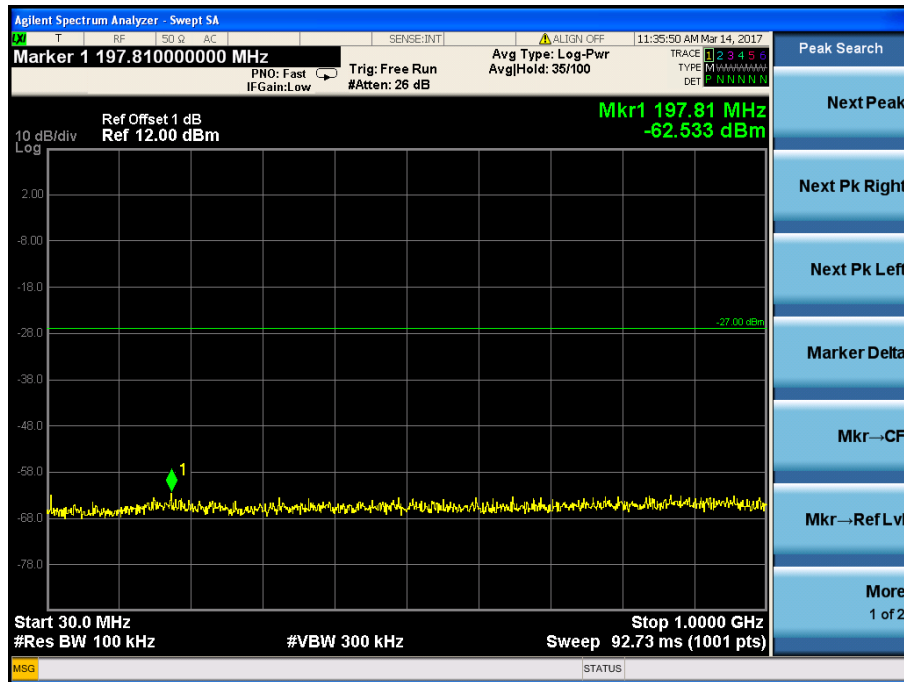
5785MHz



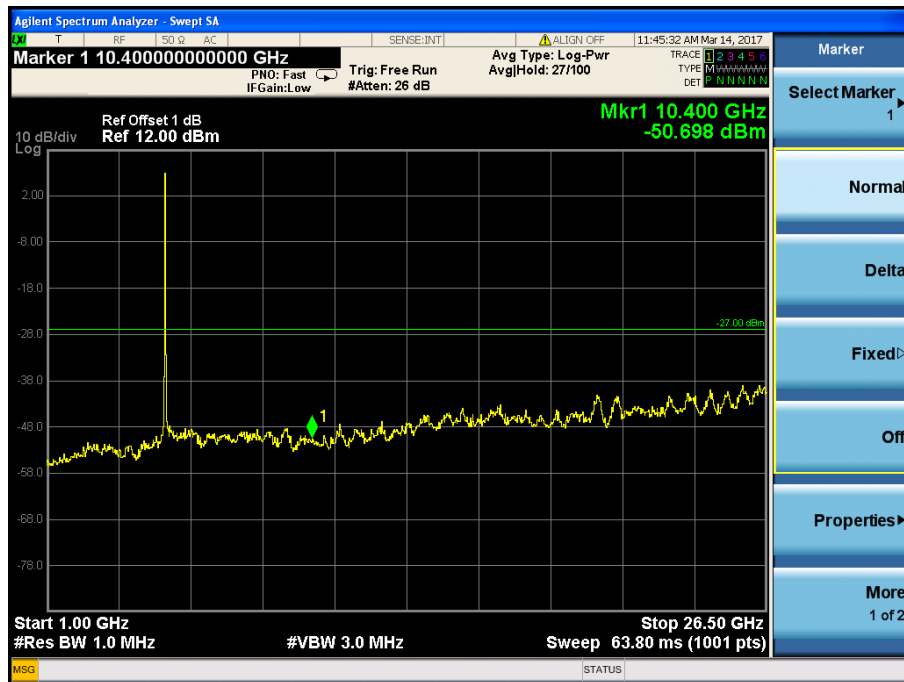
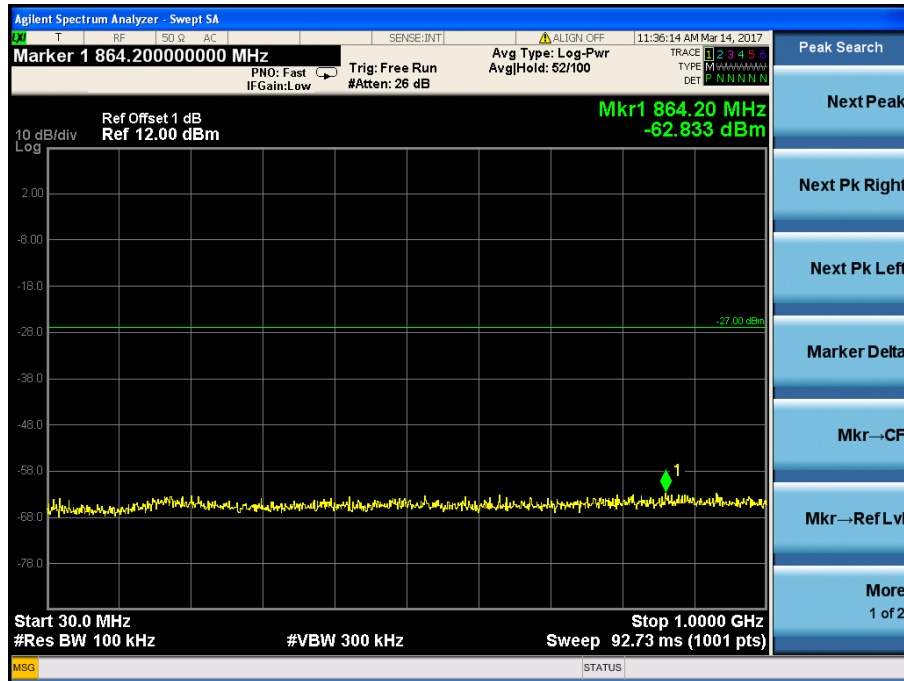
5825MHz



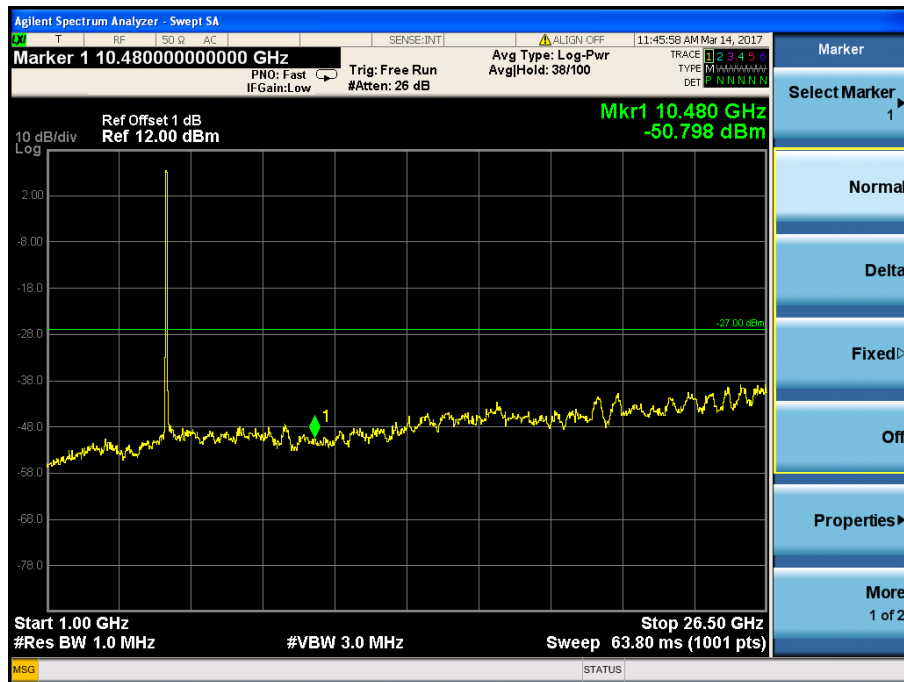
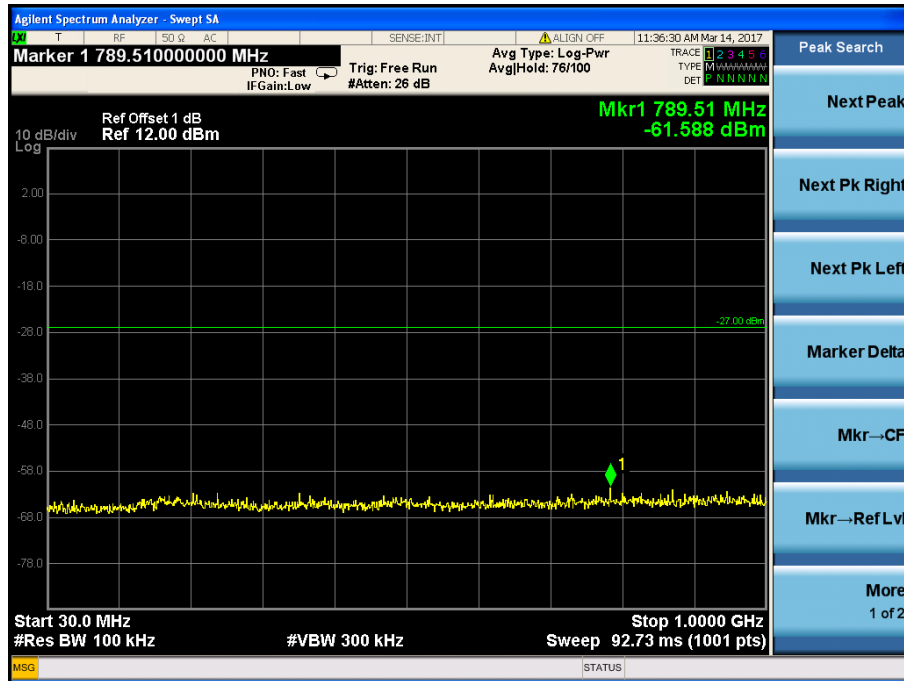
802.11n HT20
5180MHz



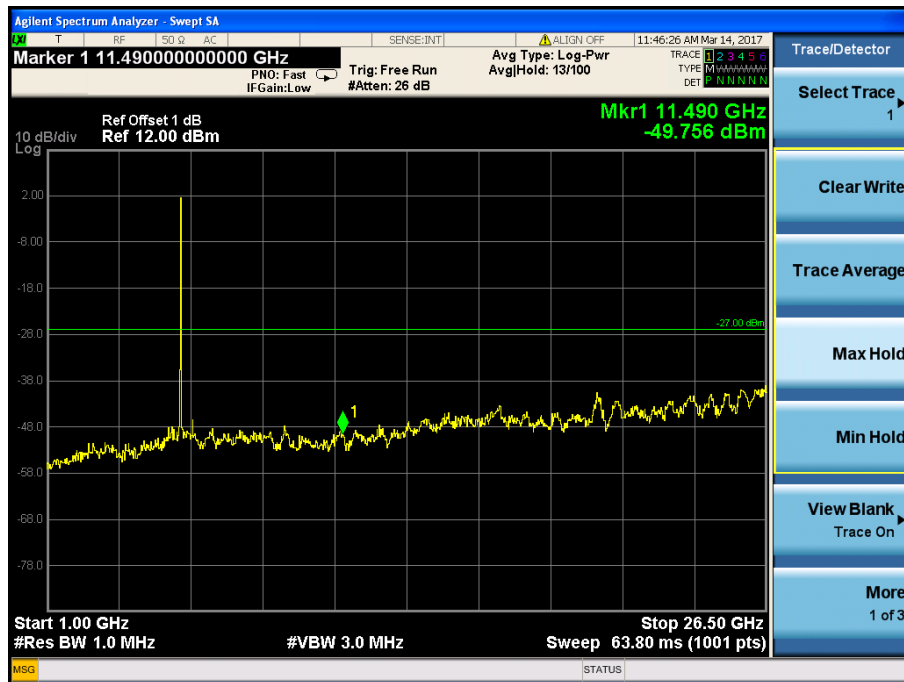
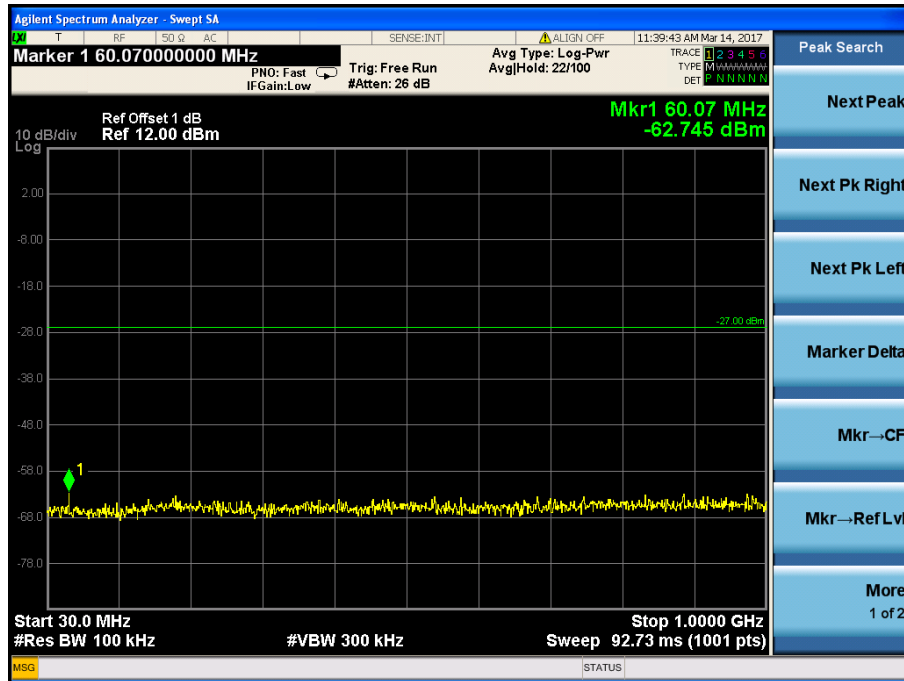
5200MHz



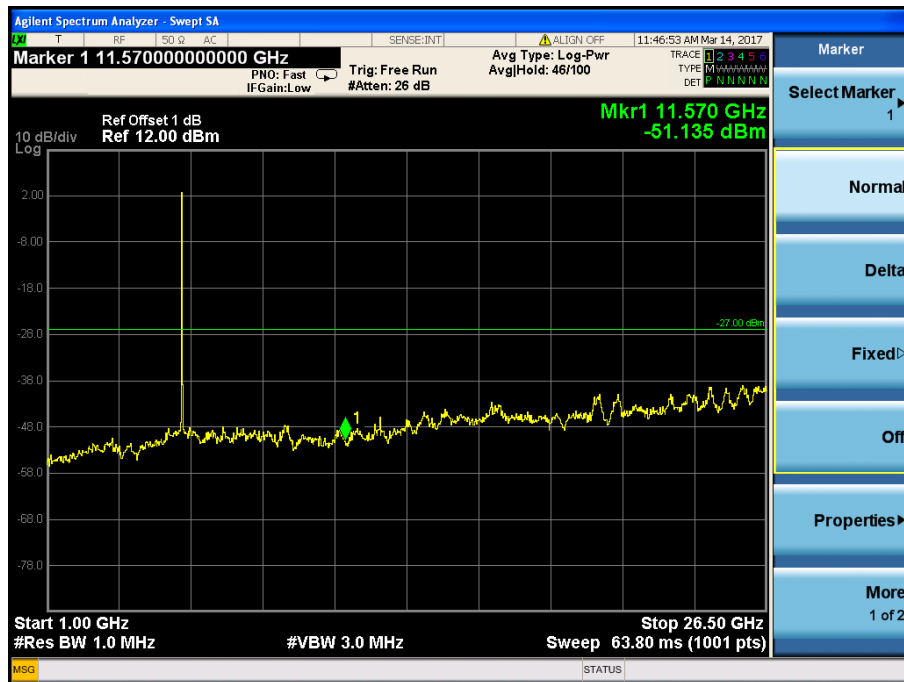
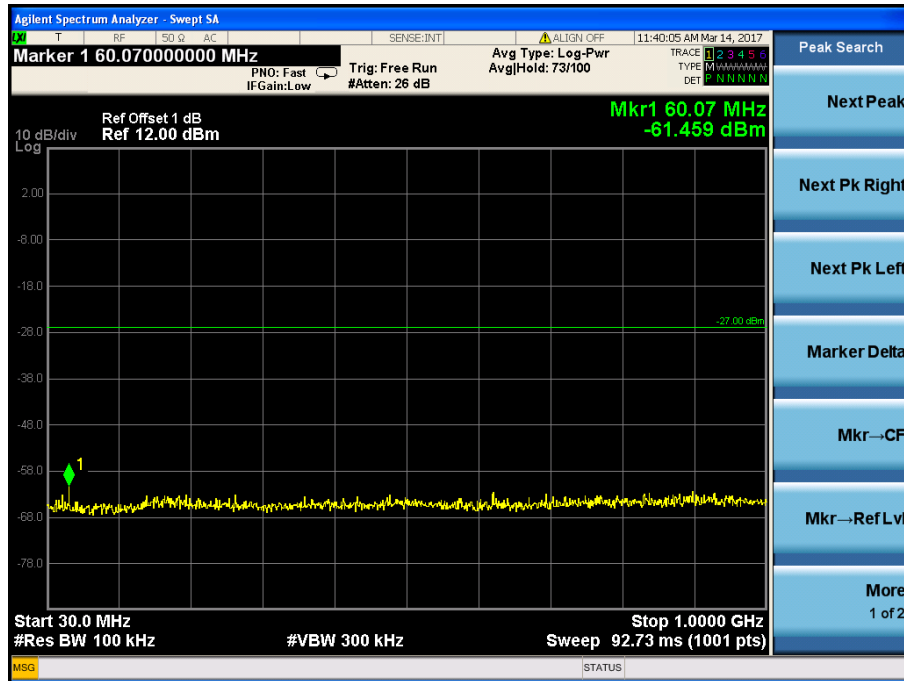
5240MHz



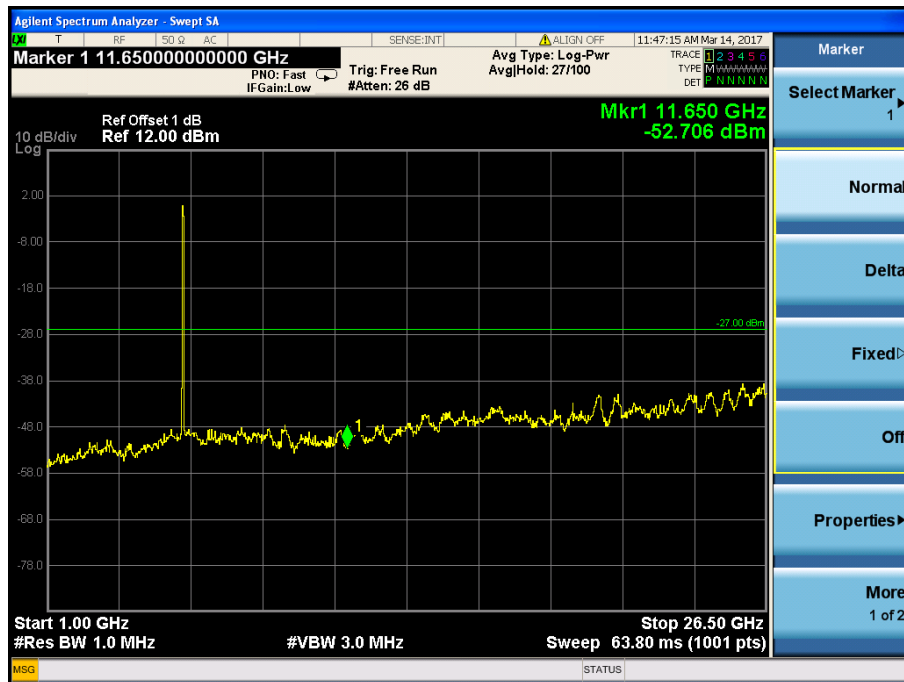
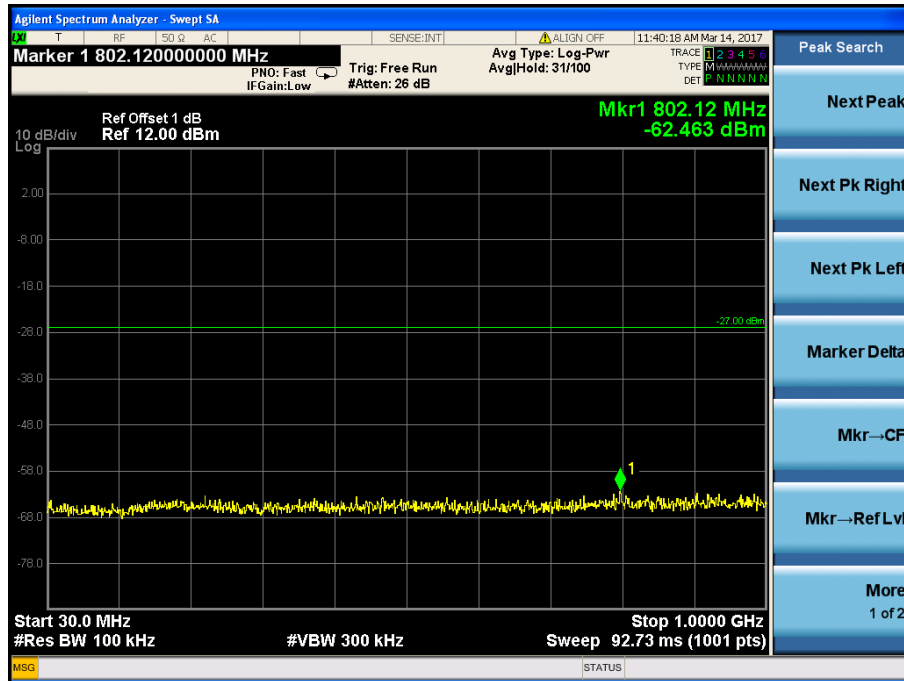
5745MHz



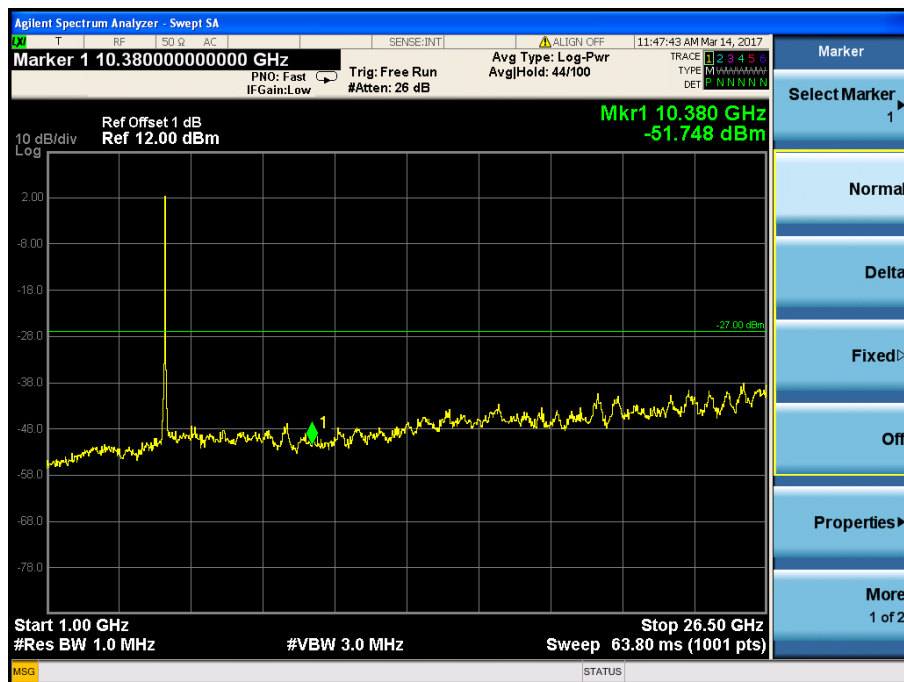
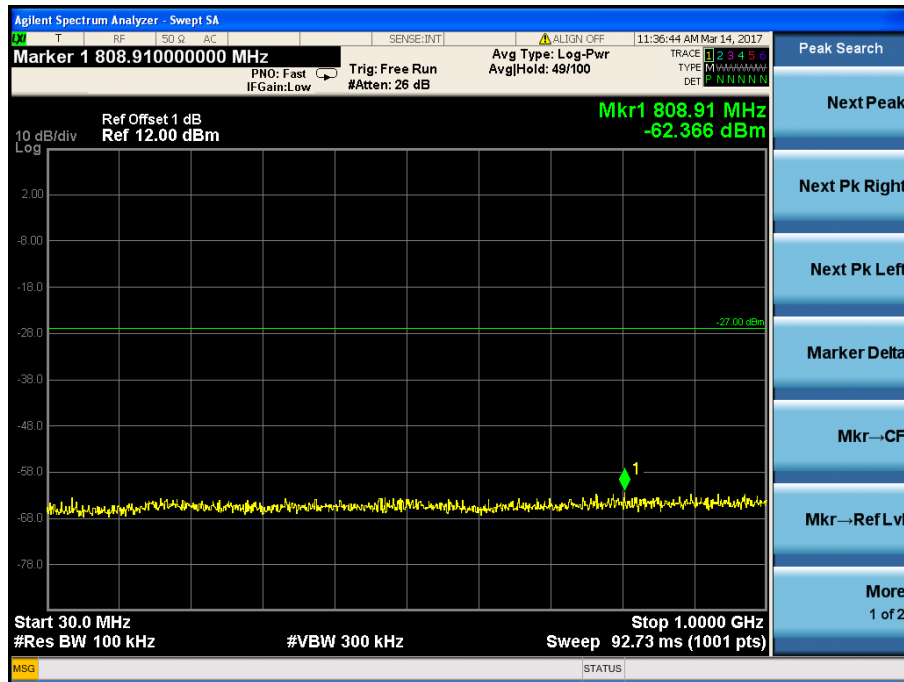
5785MHz



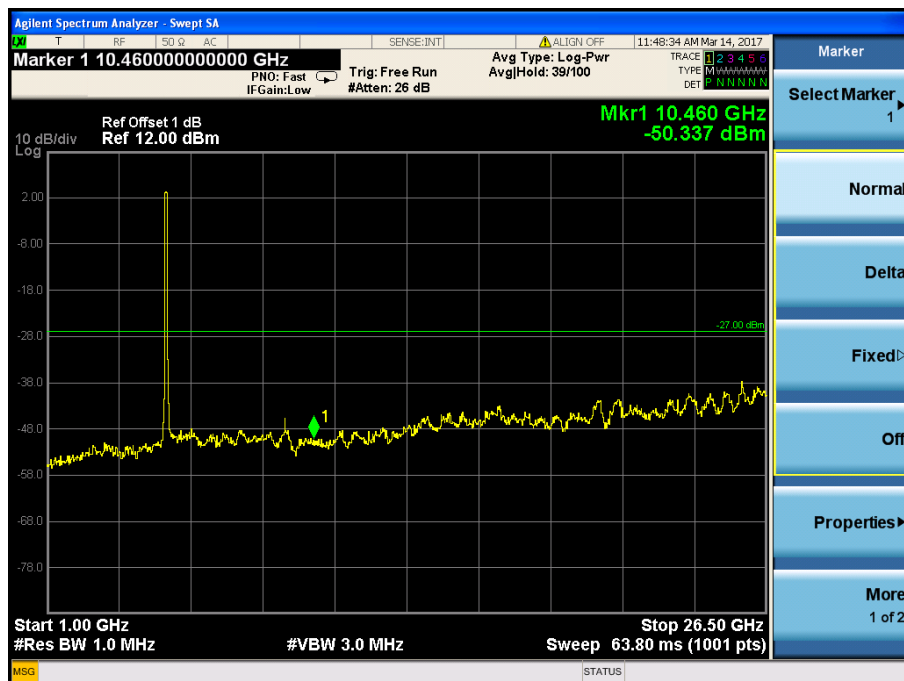
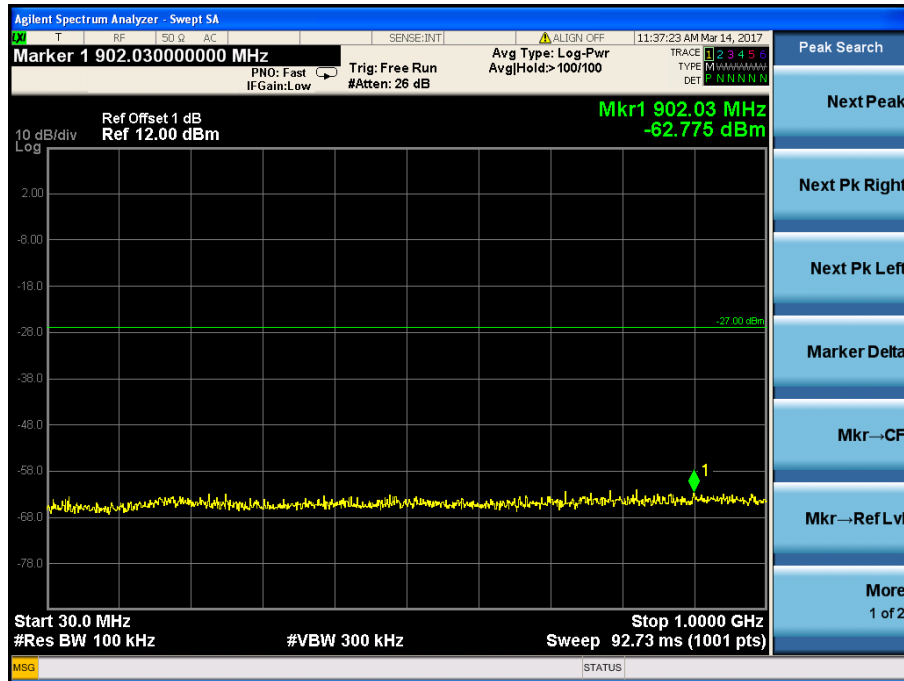
5825MHz



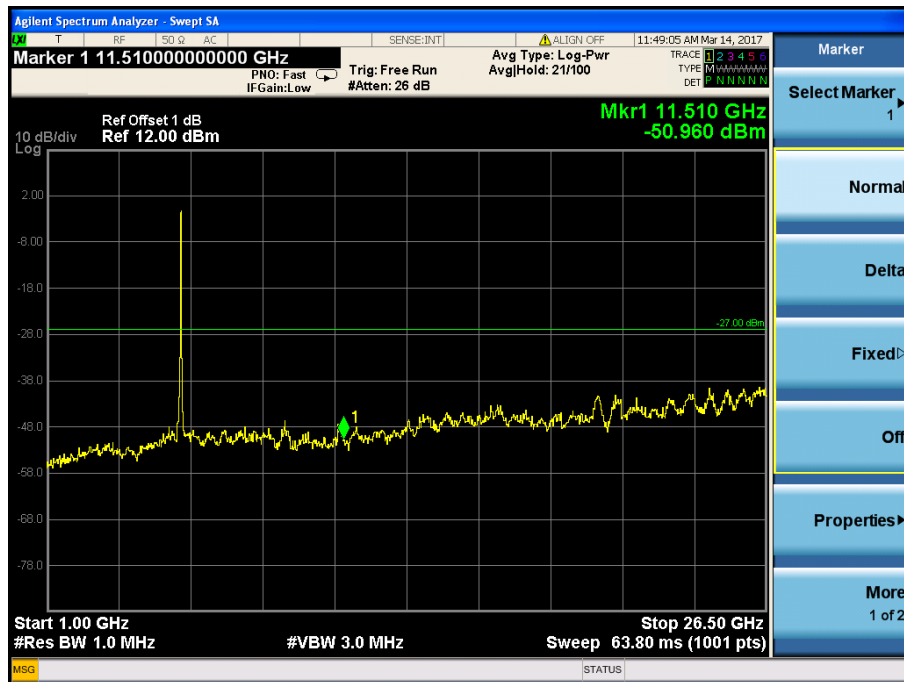
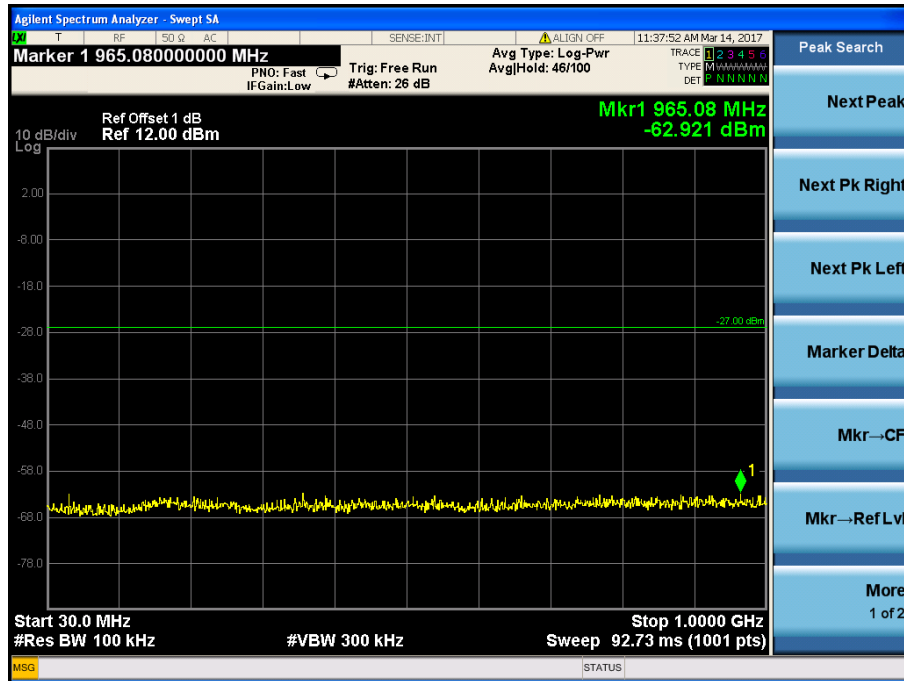
802.11n HT40
5190MHz



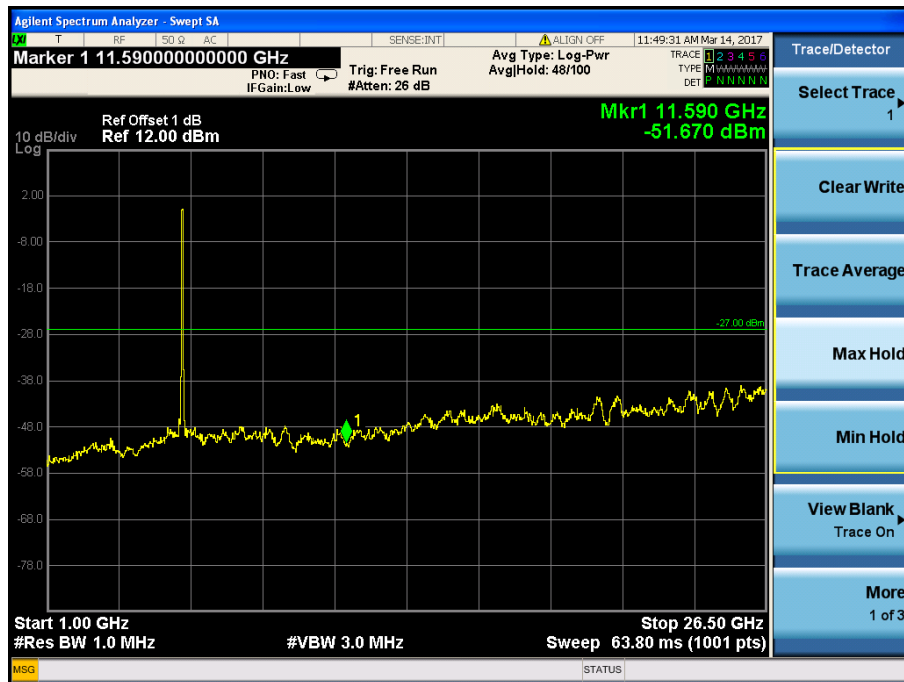
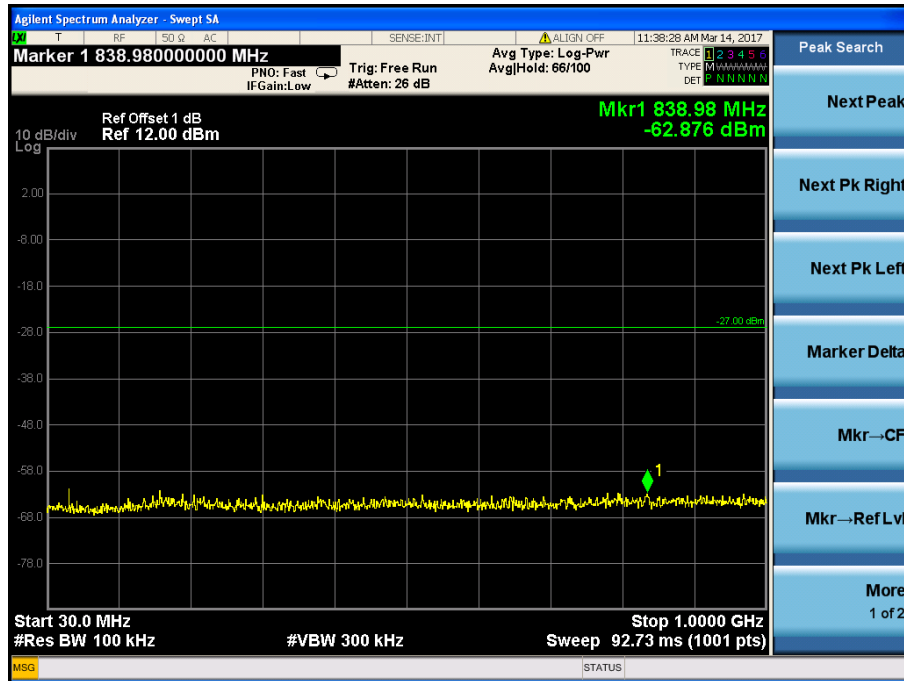
5230MHz



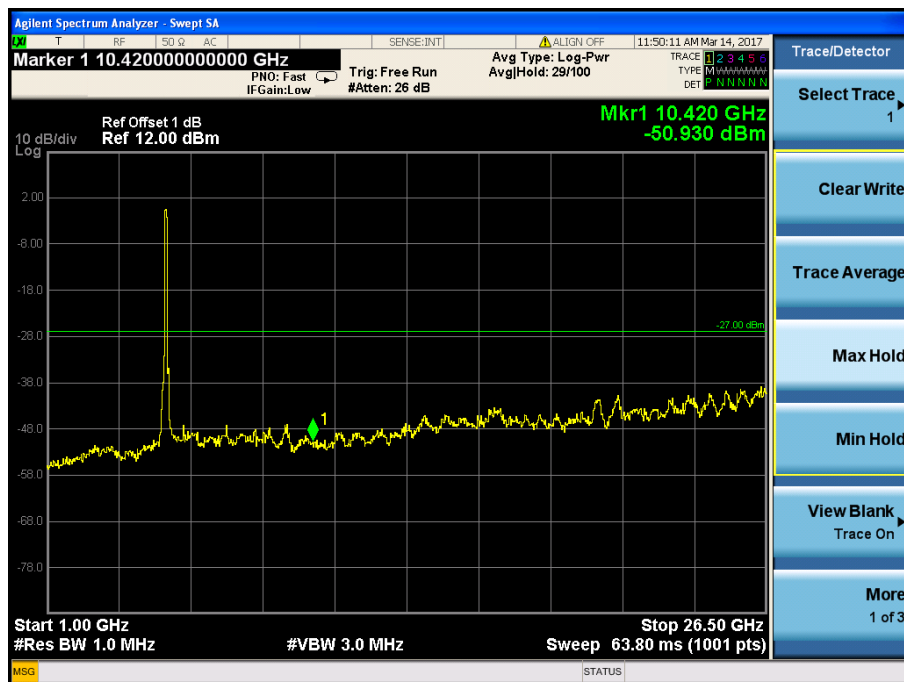
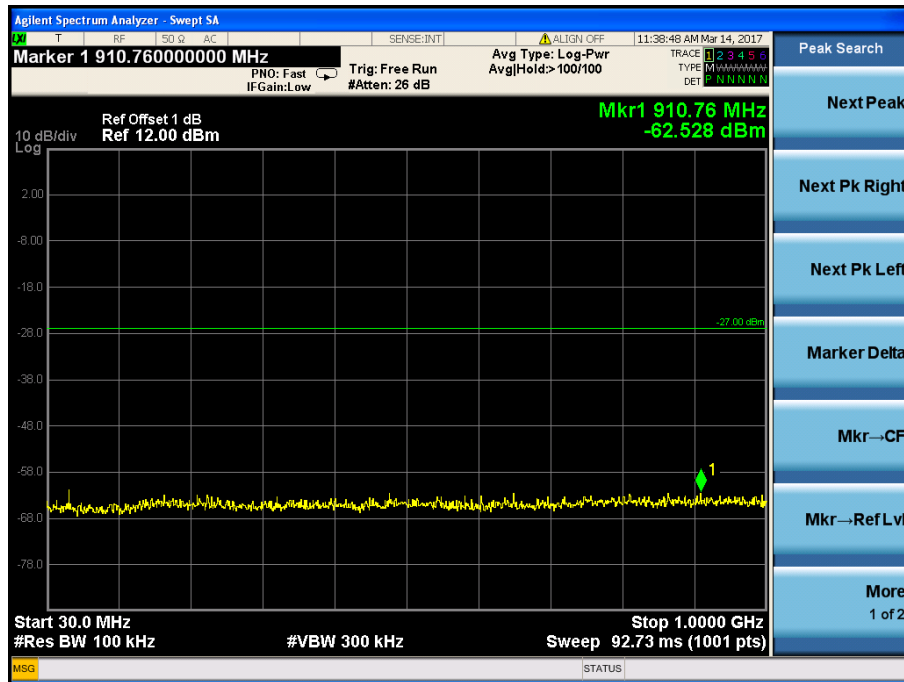
5755MHz



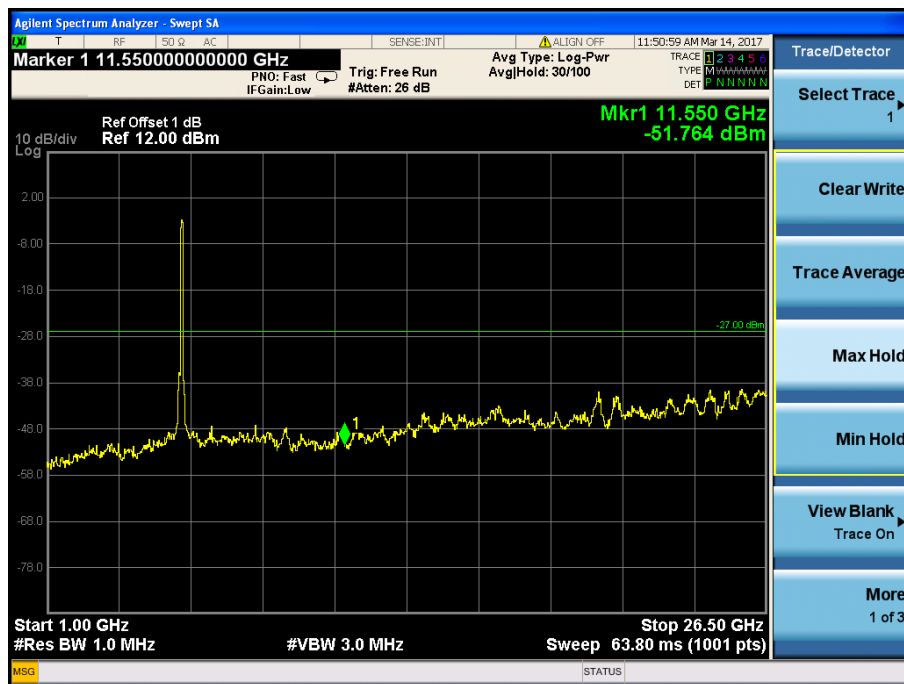
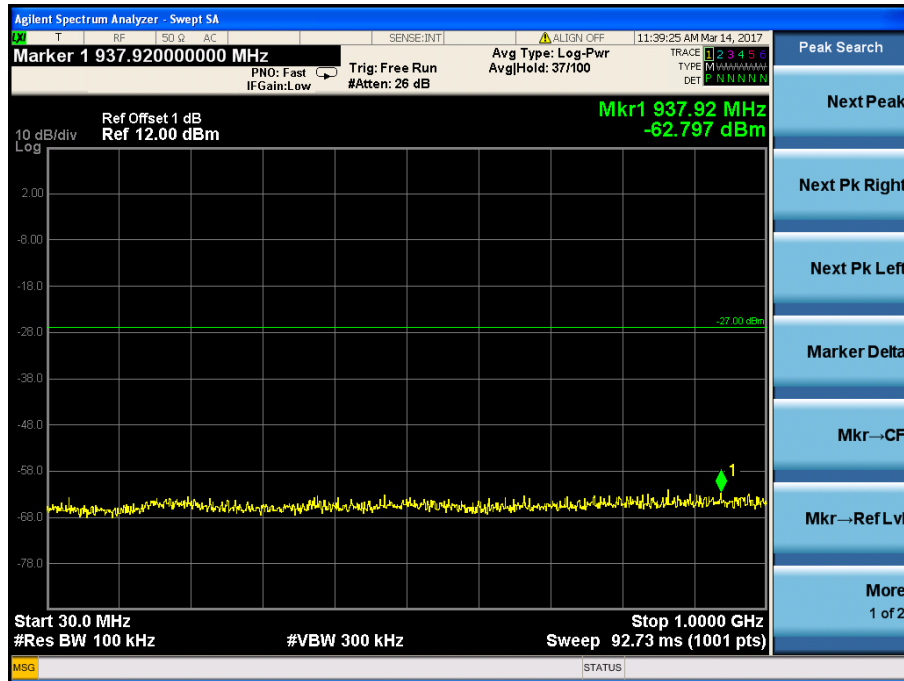
5795MHz



802.11ac
5210MHz



5775MHz



10. Radiated Spurious Emissions

10.1 Standard Applicable

According to §15.407(b)(6), Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209.

According to §15.407(b)(7), The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

789033 D02 v01r04 General UNII Test Procedures New Rules v01

If radiated measurements are performed, field strength is then converted to EIRP as follows:

$$\text{EIRP} = ((E \cdot d)^2) / 30$$

where:

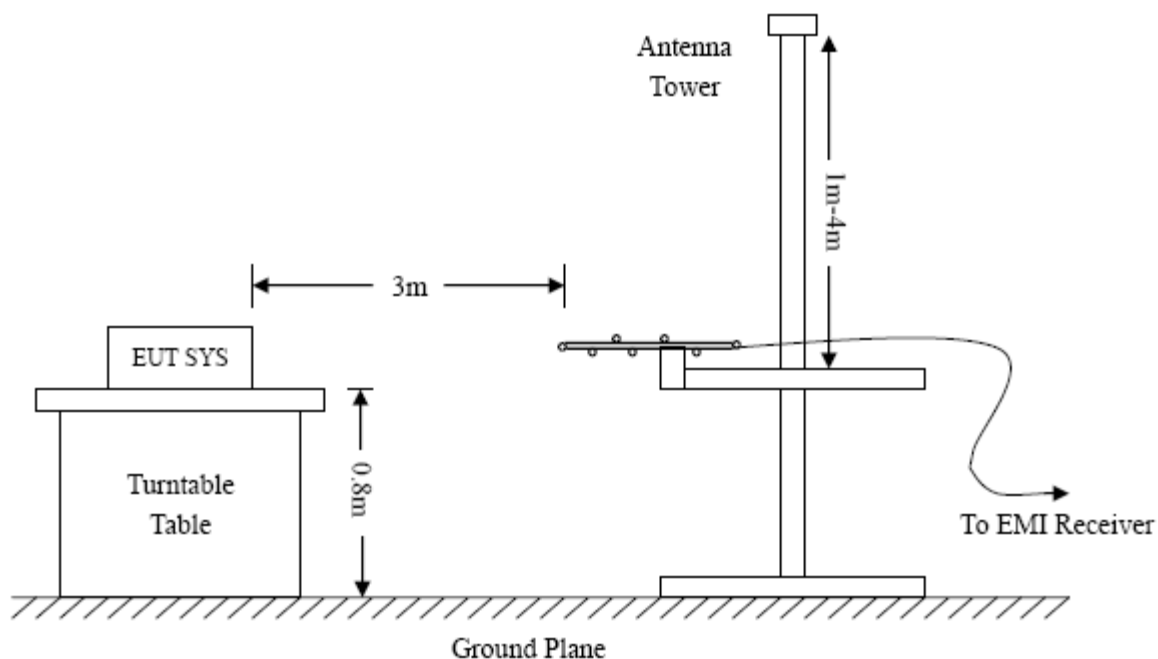
- E is the field strength in V/m;
- d is the measurement distance in meters;
- EIRP is the equivalent isotropically radiated power in watts.

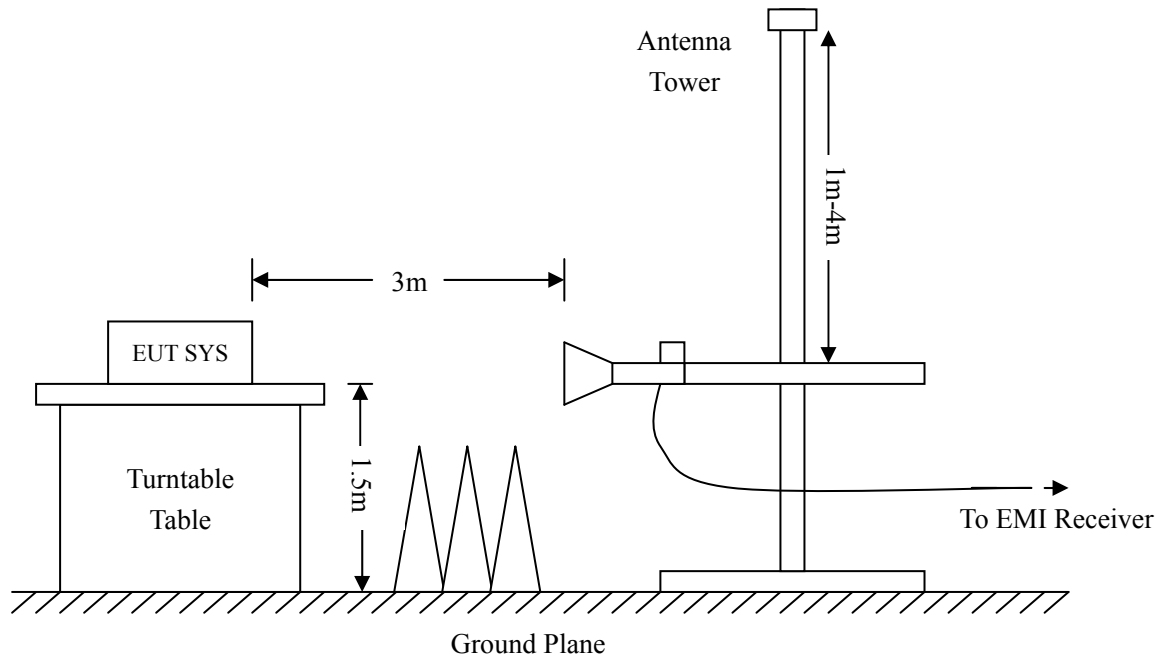
10.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.407(b)(6) and FCC Part 15.209 Limit..

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.





10.3 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:

RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:

RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

10.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

10.5 Environmental Conditions

Temperature:	22° C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

10.6 Summary of Test Results/Plots

According to the data below, the FCC Part 15.205, 15.209 and 15.407(b)(6) standards, and had the worst margin of:

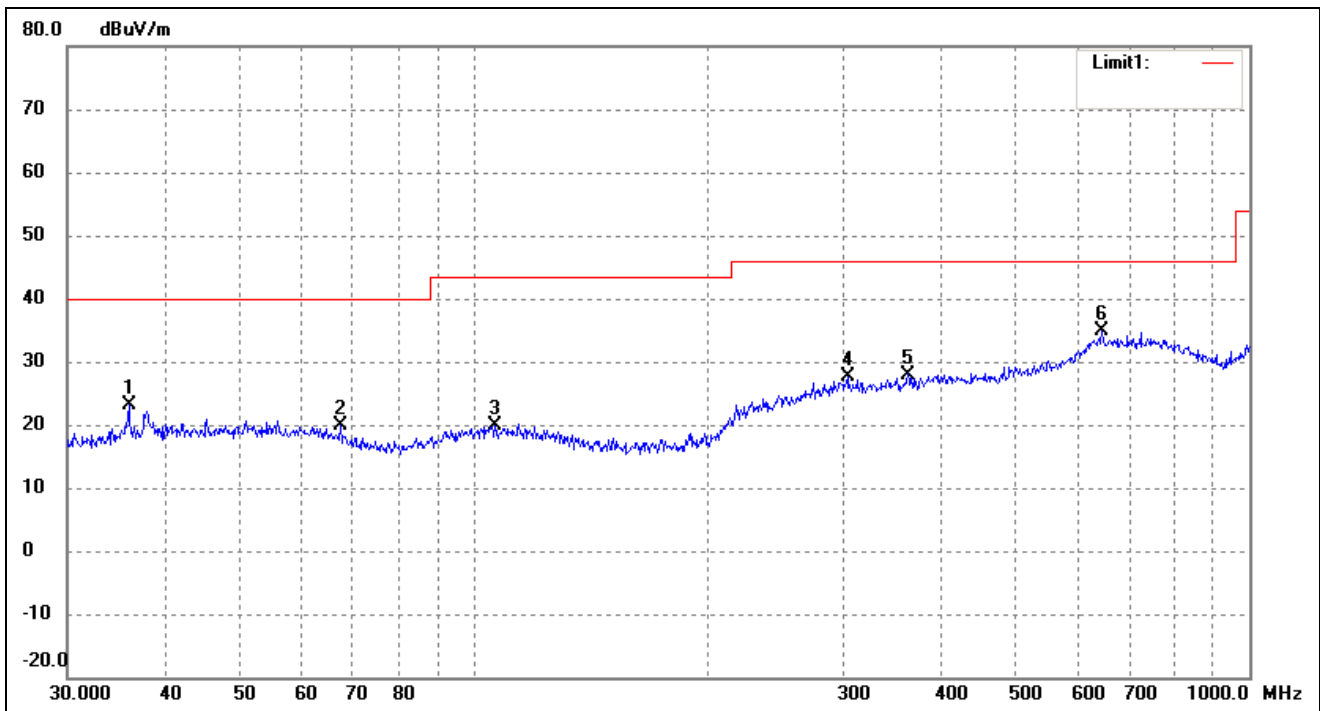
Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

For 802.11a

Spurious Emission From 30 MHz to 1 GHz

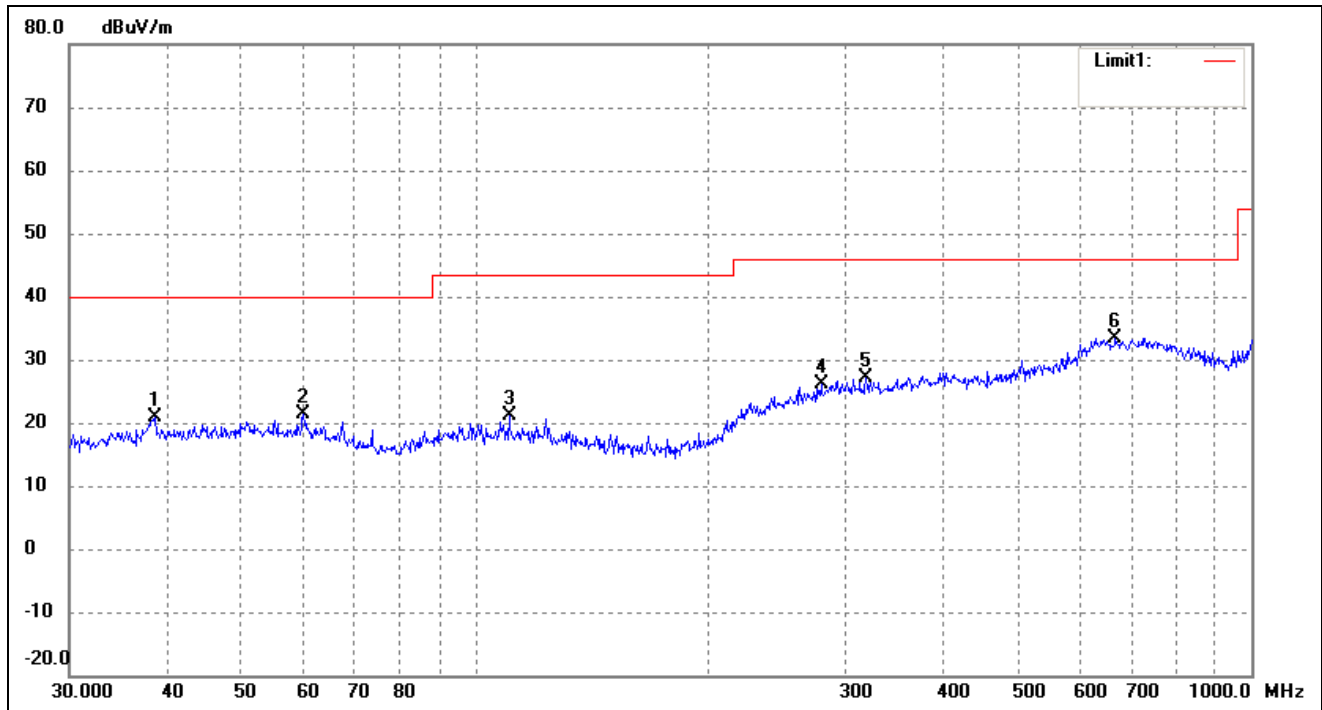
Test mode: Transmitting Channel 5180MHz (worst case)

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	36.0007	18.88	4.33	23.21	40.00	-16.79	149	100	peak
2	67.4382	16.40	3.45	19.85	40.00	-20.15	151	100	peak
3	106.7587	15.09	4.88	19.97	43.50	-23.53	137	100	peak
4	303.5437	15.77	11.94	27.71	46.00	-18.29	96	100	peak
5	362.9845	16.11	11.89	28.00	46.00	-18.00	236	100	peak
6	645.1195	17.02	17.94	34.96	46.00	-11.04	165	100	peak

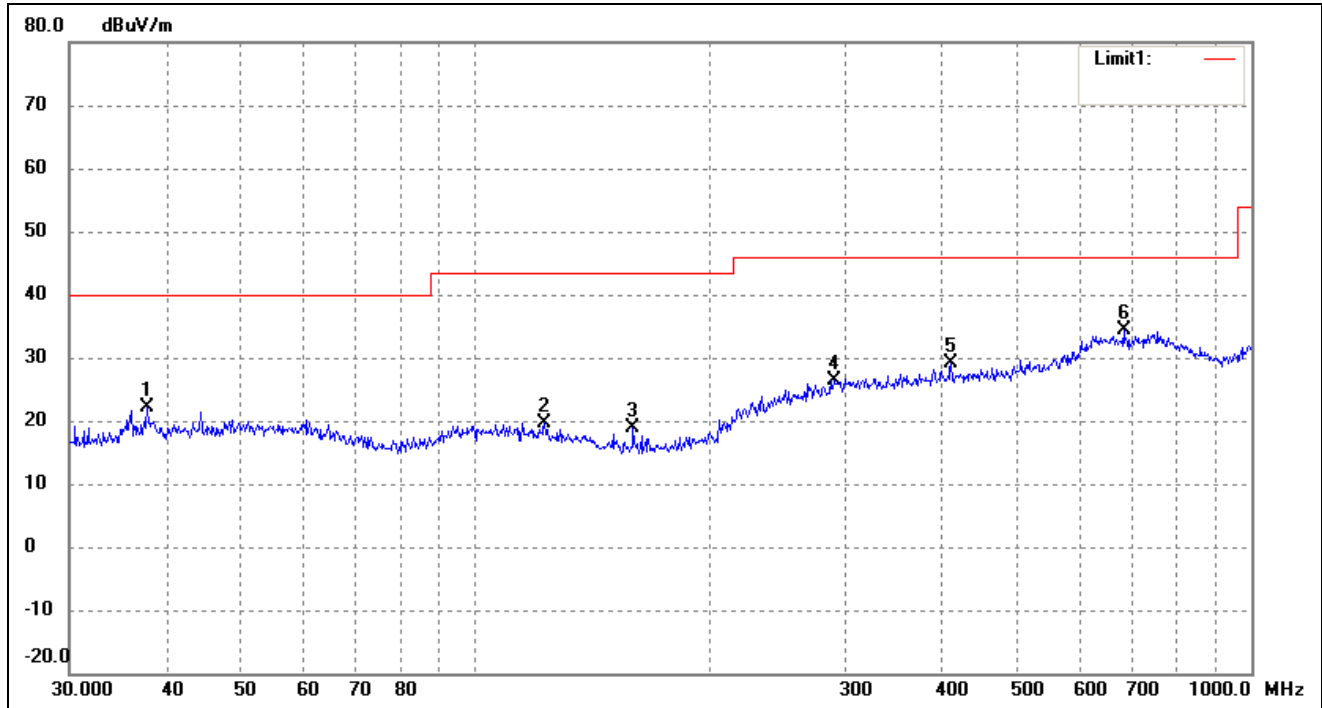
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	38.6161	16.11	4.72	20.83	40.00	-19.17	53	100	peak
2	60.0691	16.31	5.02	21.33	40.00	-18.67	116	100	peak
3	110.5687	16.22	4.87	21.09	43.50	-22.41	82	100	peak
4	279.0436	14.99	11.07	26.06	46.00	-19.94	91	100	peak
5	318.8170	15.24	11.95	27.19	46.00	-18.81	116	100	peak
6	668.1423	15.32	18.03	33.35	46.00	-12.65	206	100	peak

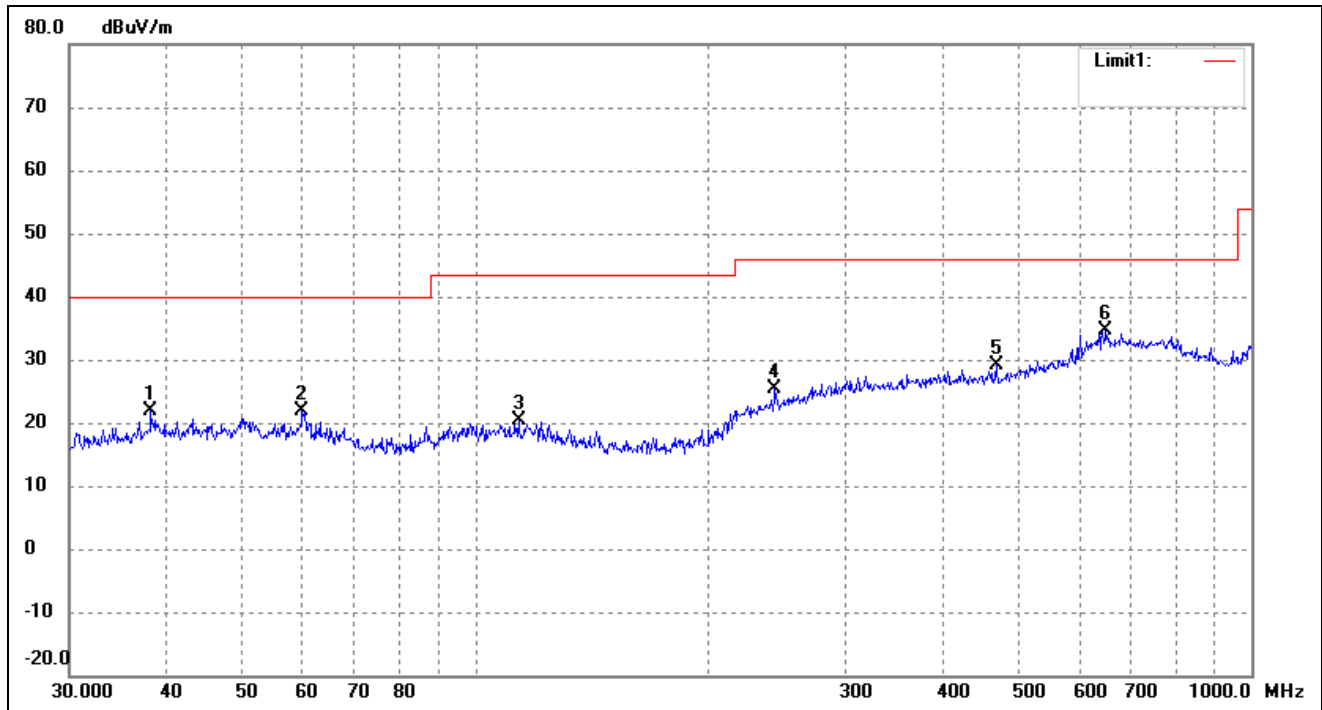
Test mode: Transmitting Channel 5200MHz (worst case)

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	37.8121	17.51	4.61	22.12	40.00	-17.88	318	100	peak
2	122.8340	15.13	4.59	19.72	43.50	-23.78	278	100	peak
3	159.7844	16.48	2.41	18.89	43.50	-24.61	66	100	peak
4	290.0172	14.80	11.57	26.37	46.00	-19.63	171	100	peak
5	410.3825	16.80	12.27	29.07	46.00	-16.93	185	100	peak
6	684.7454	16.02	18.33	34.35	46.00	-11.65	239	100	peak

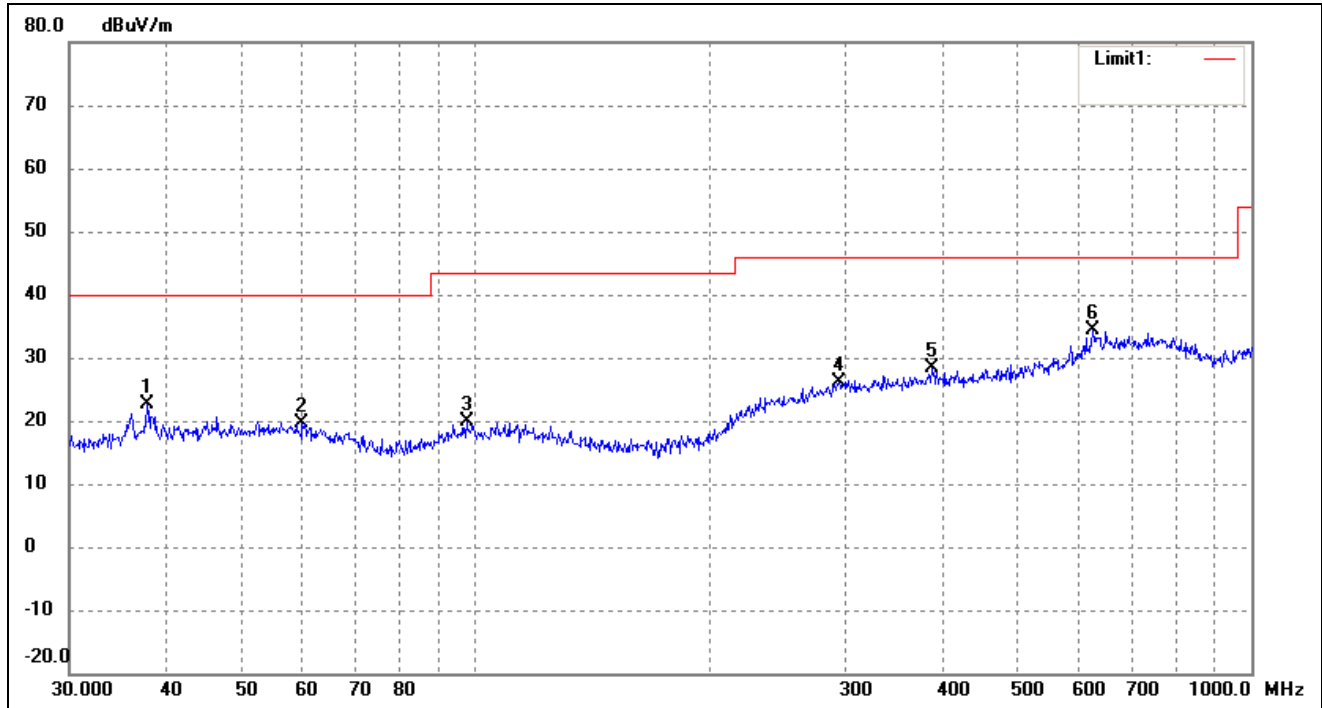
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	38.2120	17.12	4.66	21.78	40.00	-18.22	248	100	peak
2	59.8588	16.74	5.03	21.77	40.00	-18.23	91	100	peak
3	113.7143	15.42	4.85	20.27	43.50	-23.23	343	100	peak
4	243.3772	16.22	9.06	25.28	46.00	-20.72	121	100	peak
5	468.8762	16.29	12.82	29.11	46.00	-16.89	188	100	peak
6	649.6597	16.67	17.84	34.51	46.00	-11.49	313	100	peak

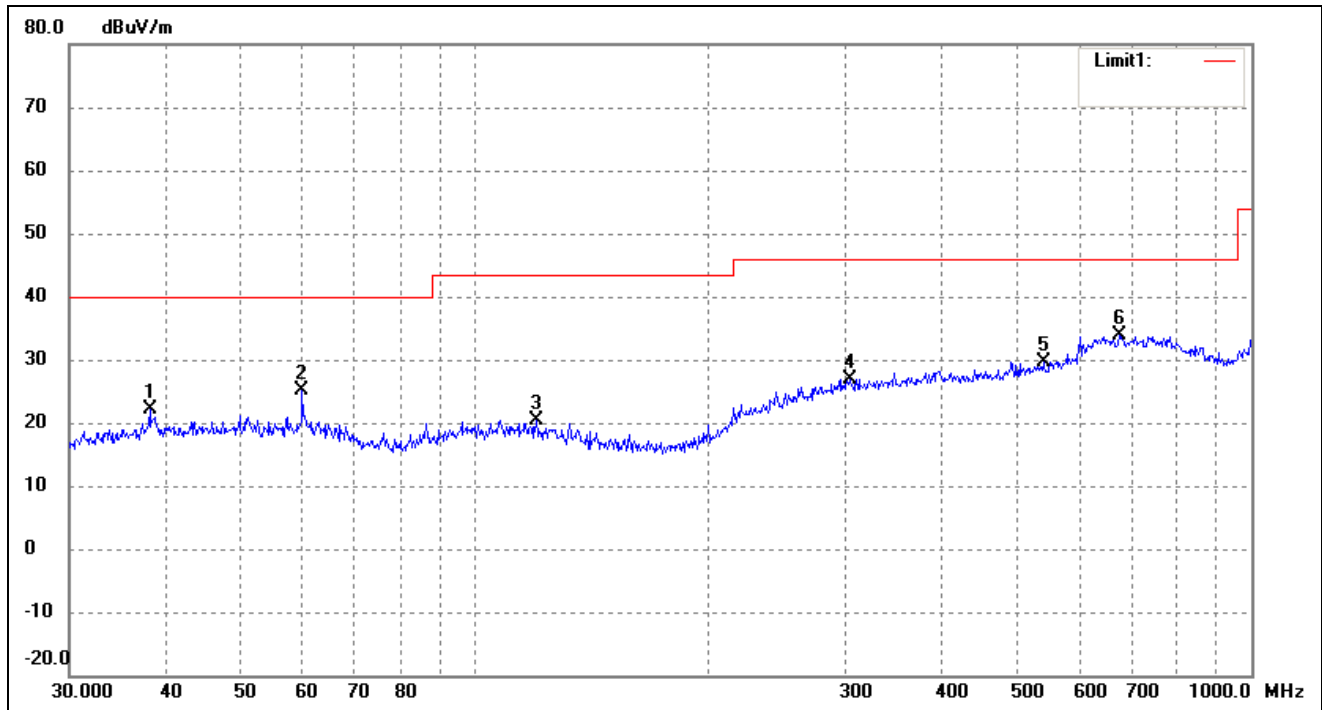
Test mode: Transmitting Channel 5240MHz (worst case)

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	37.8121	17.99	4.61	22.60	40.00	-17.40	344	100	peak
2	59.8588	14.69	5.03	19.72	40.00	-20.28	99	100	peak
3	97.4560	15.34	4.56	19.90	43.50	-23.60	332	100	peak
4	294.1137	14.33	11.74	26.07	46.00	-19.93	104	100	peak
5	387.9920	16.32	12.14	28.46	46.00	-17.54	115	100	peak
6	625.0780	16.89	17.55	34.44	46.00	-11.56	349	100	peak

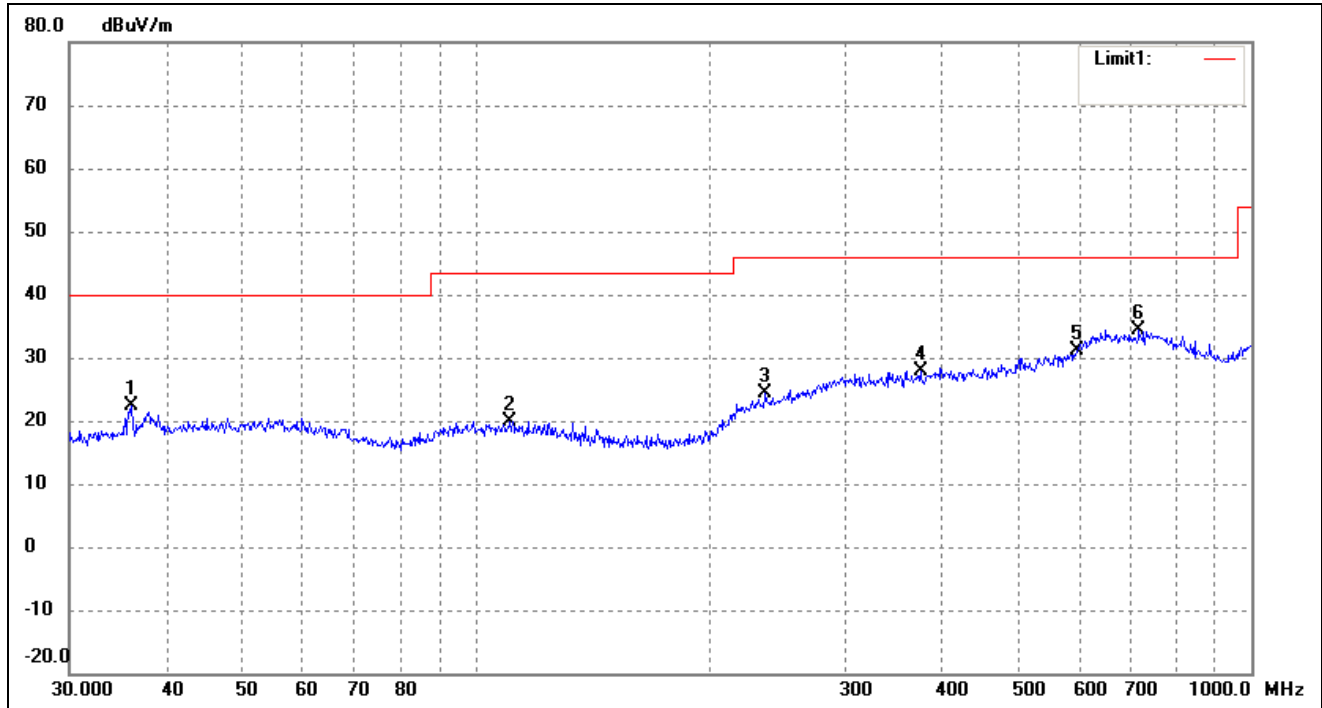
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	38.0783	17.59	4.64	22.23	40.00	-17.77	323	100	peak
2	59.8588	20.13	5.03	25.16	40.00	-14.84	227	100	peak
3	119.8556	15.62	4.82	20.44	43.50	-23.06	91	100	peak
4	303.5437	14.97	11.94	26.91	46.00	-19.09	245	100	peak
5	539.4775	15.80	13.81	29.61	46.00	-16.39	324	100	peak
6	675.2080	15.58	18.42	34.00	46.00	-12.00	317	100	peak

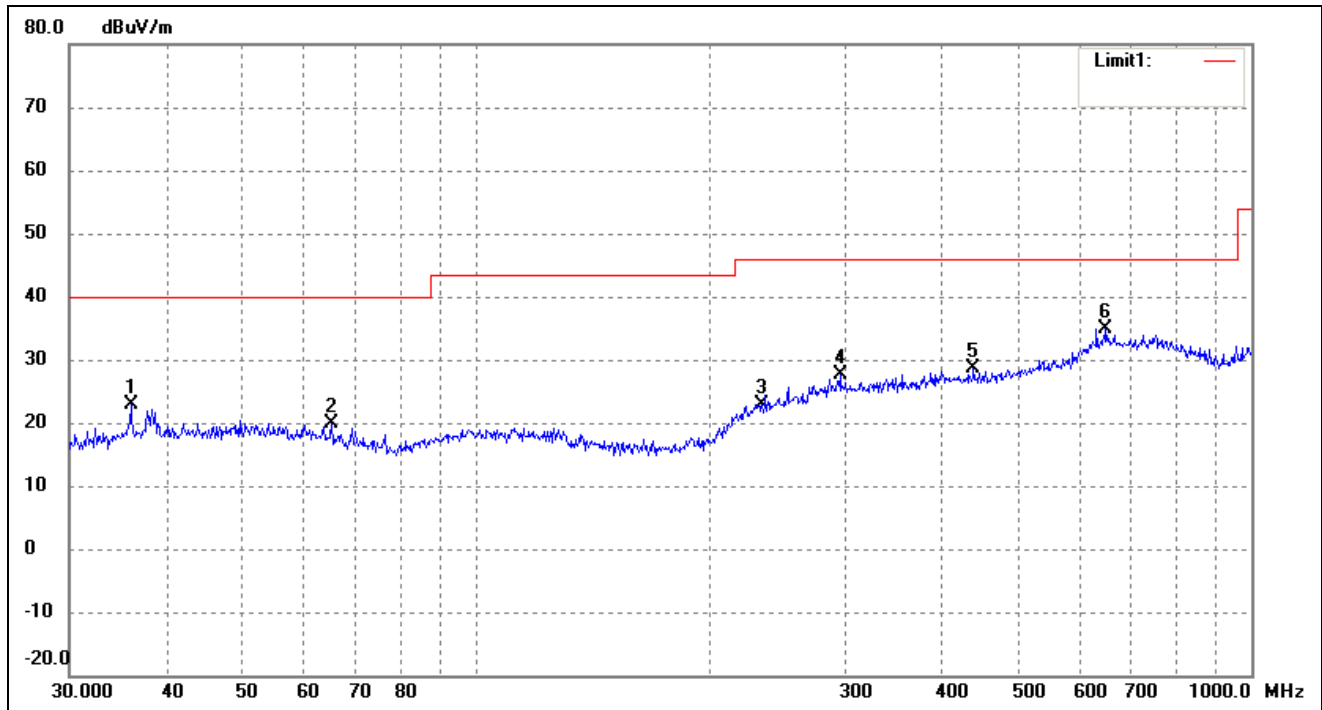
Test mode: Transmitting Channel 5745MHz (worst case)

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	36.1272	17.92	4.35	22.27	40.00	-17.73	271	100	peak
2	110.9571	15.07	4.87	19.94	43.50	-23.56	96	100	peak
3	236.6447	15.60	8.72	24.32	46.00	-21.68	187	100	peak
4	374.6226	16.14	11.82	27.96	46.00	-18.04	94	100	peak
5	595.1329	13.21	17.85	31.06	46.00	-14.94	232	100	peak
6	716.6820	16.67	17.70	34.37	46.00	-11.63	312	100	peak

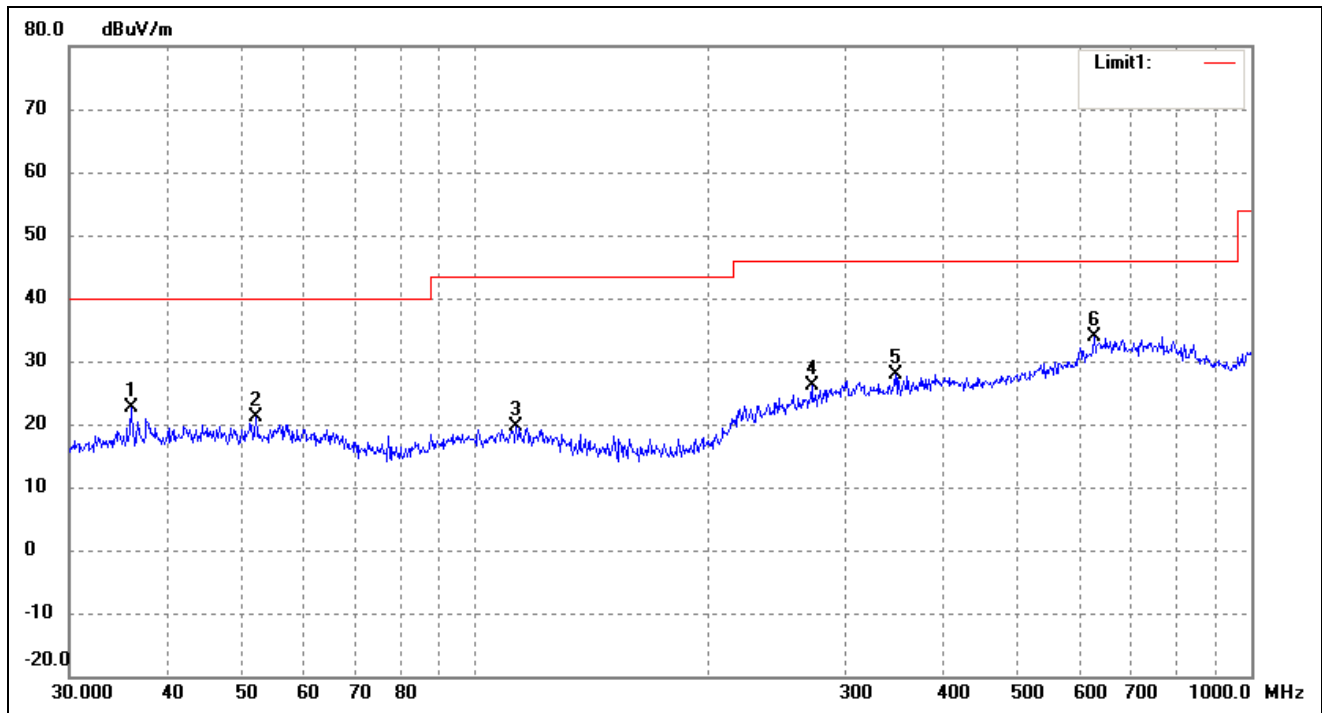
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	36.0007	18.59	4.33	22.92	40.00	-17.08	345	100	peak
2	65.3432	15.92	3.90	19.82	40.00	-20.18	94	100	peak
3	234.1684	14.40	8.56	22.96	46.00	-23.04	234	100	peak
4	295.1469	15.77	11.78	27.55	46.00	-18.45	106	100	peak
5	438.6554	16.15	12.46	28.61	46.00	-17.39	213	100	peak
6	649.6597	16.96	17.84	34.80	46.00	-11.20	177	100	peak

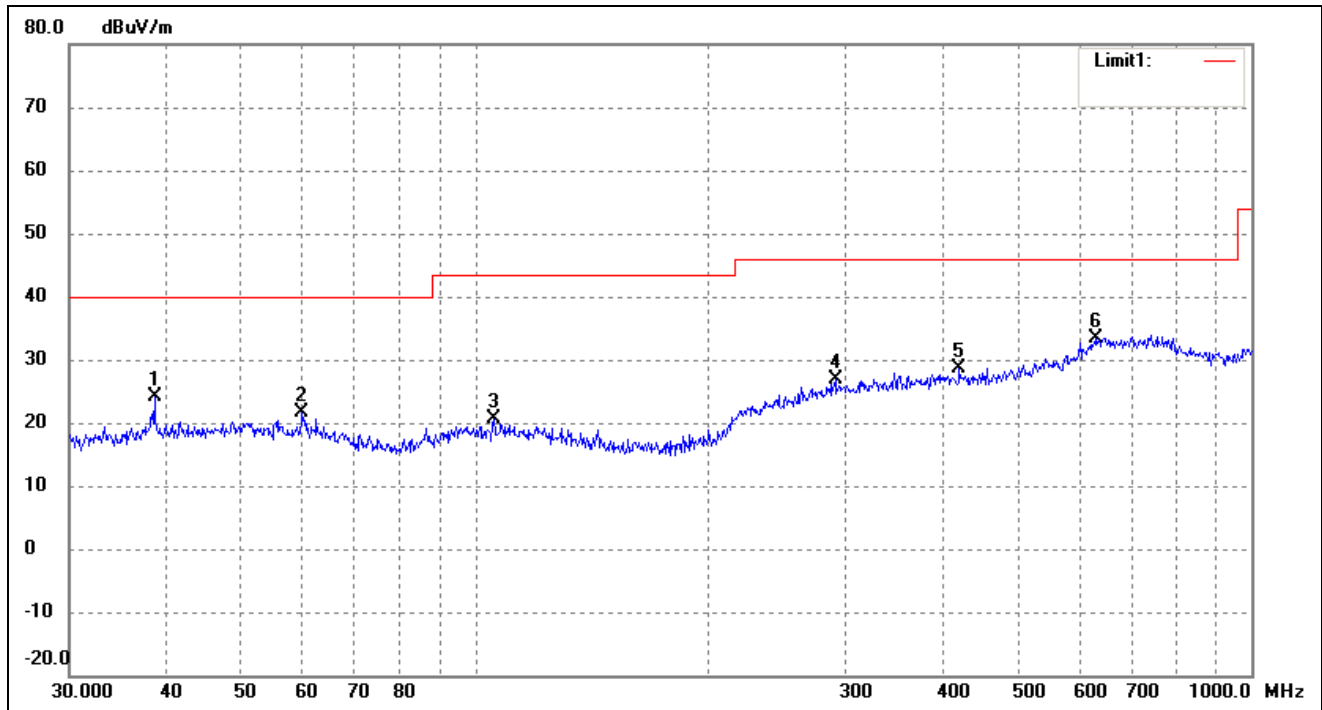
Test mode: Transmitting Channel 5785MHz (worst case)

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	36.0007	18.33	4.33	22.66	40.00	-17.34	119	100	peak
2	52.2079	15.98	5.04	21.02	40.00	-18.98	91	100	peak
3	112.9196	14.78	4.86	19.64	43.50	-23.86	92	100	peak
4	271.3246	15.71	10.51	26.22	46.00	-19.78	135	100	peak
5	348.0274	16.19	11.59	27.78	46.00	-18.22	110	100	peak
6	627.2738	16.23	17.61	33.84	46.00	-12.16	97	100	peak

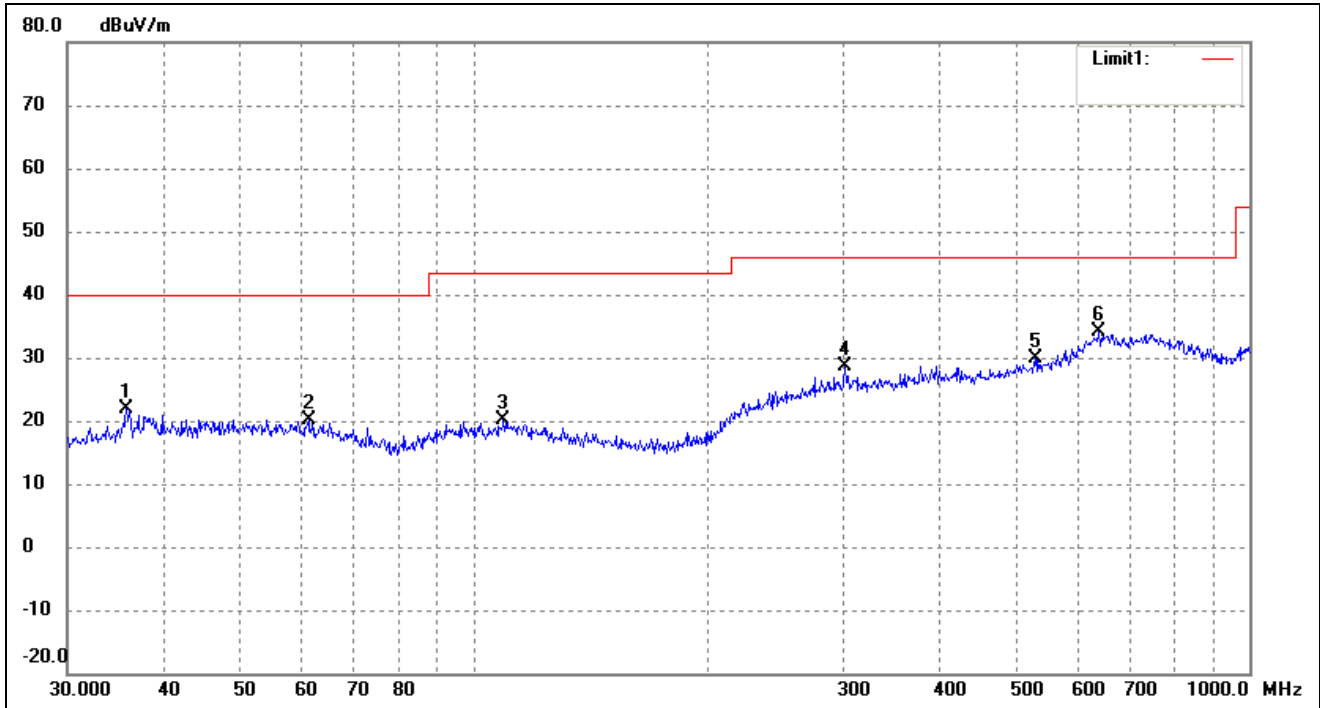
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	38.6161	19.53	4.72	24.25	40.00	-15.75	270	100	peak
2	59.8588	16.62	5.03	21.65	40.00	-18.35	343	100	peak
3	105.6415	15.83	4.88	20.71	43.50	-22.79	57	100	peak
4	291.0360	15.35	11.61	26.96	46.00	-19.04	92	100	peak
5	420.5803	16.77	11.90	28.67	46.00	-17.33	160	100	peak
6	631.6884	15.55	17.78	33.33	46.00	-12.67	95	100	peak

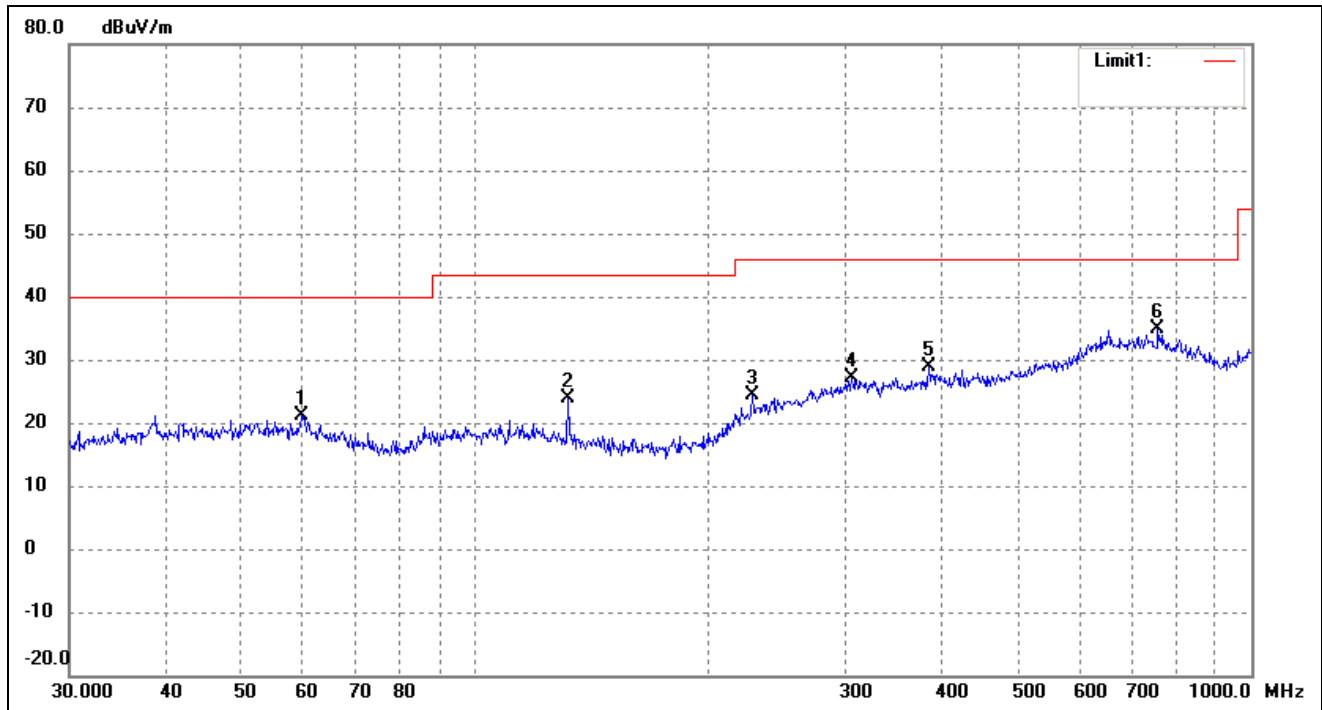
Test mode: Transmitting Channel 5825MHz (worst case)

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	35.7491	17.51	4.29	21.80	40.00	-18.20	356	100	peak
2	61.3463	15.35	4.75	20.10	40.00	-19.90	93	100	peak
3	109.4116	15.31	4.87	20.18	43.50	-23.32	321	100	peak
4	301.4224	16.73	11.94	28.67	46.00	-17.33	94	100	peak
5	530.1014	15.93	13.84	29.77	46.00	-16.23	236	100	peak
6	640.6110	16.05	18.05	34.10	46.00	-11.90	110	100	peak

Test Specification: Vertical



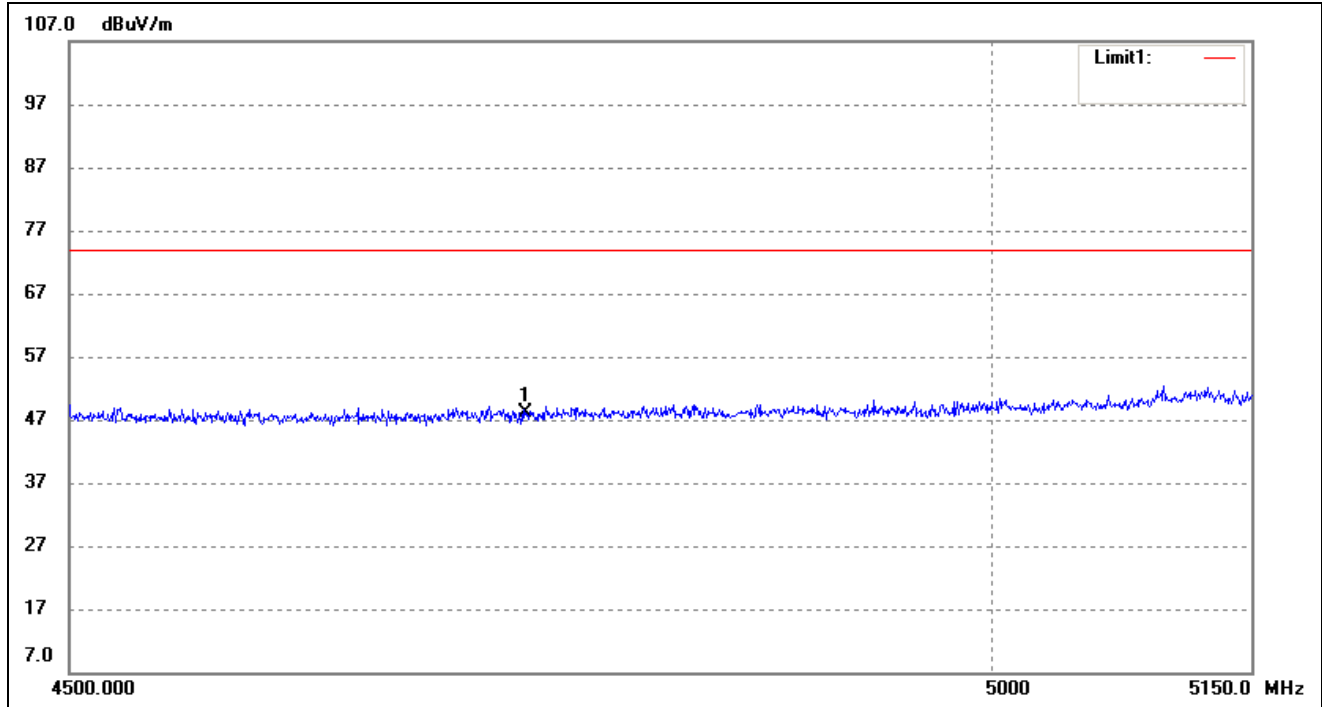
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	59.8588	16.17	5.03	21.20	40.00	-18.80	253	100	peak
2	131.7577	20.06	3.84	23.90	43.50	-19.60	95	100	peak
3	227.6906	16.18	8.14	24.32	46.00	-21.68	299	100	peak
4	305.6800	15.13	11.94	27.07	46.00	-18.93	105	100	peak
5	383.9318	16.93	11.97	28.90	46.00	-17.10	272	100	peak
6	758.0408	16.66	18.23	34.89	46.00	-11.11	278	100	peak

For 802.11a

Spurious Emission above 1GHz

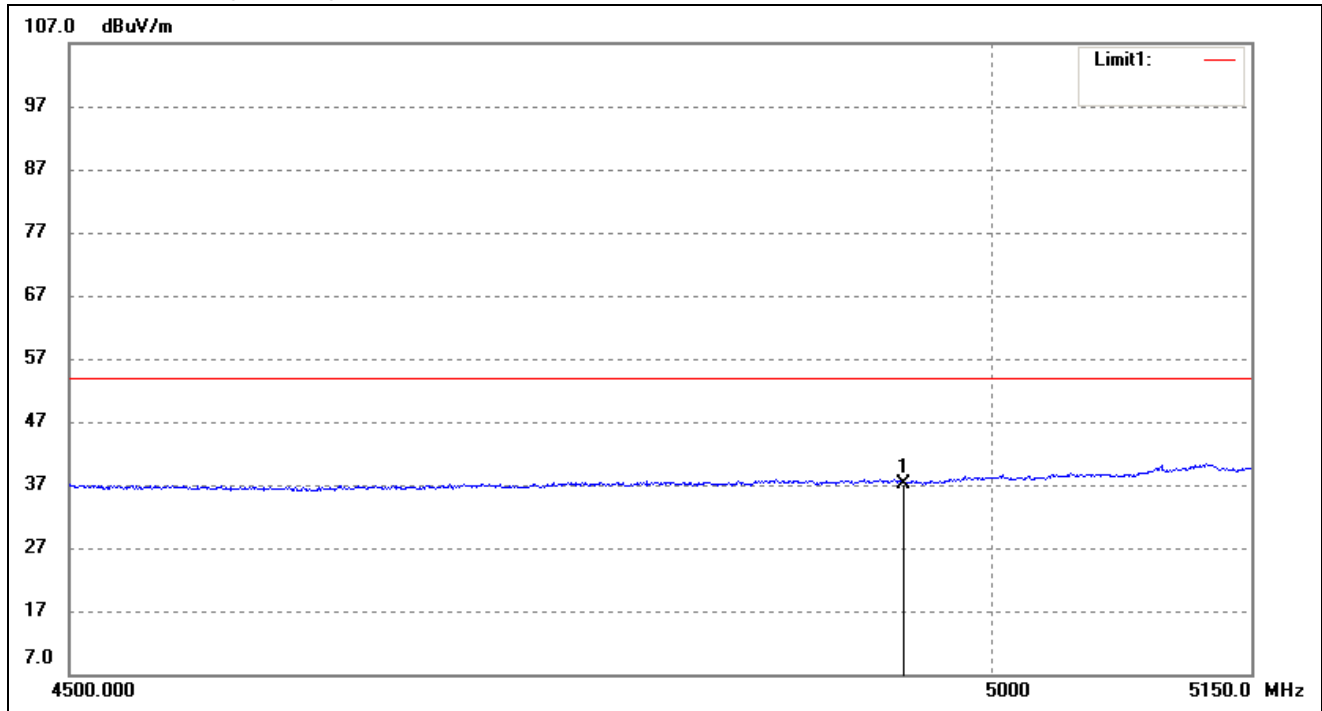
For the frequency band 5.15-5.25GHz (worst case)

Restricted Bandedge Peak



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4740.500	49.27	-1.16	48.11	74.00	-25.89	130	100	peak

Restricted Bandedge Average



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4949.800	37.82	-0.61	37.21	54.00	-16.79	210	100	AVG

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

Harmonics And Spurious Emissions

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (5180MHz)										
10360	PK	50.81	360	V	40.7	10.9	39.6	62.81	74	-10.85
10360	PK	49.46	360	H	40.7	10.9	39.6	61.46	74	-10.85
10360	AV	35.60	360	V	40.7	10.9	39.6	47.60	54	9.15
10360	AV	34.79	360	H	40.7	10.9	39.6	46.79	54	9.15
High Channel (5240MHz)										
10480	PK	51.54	360	V	40.7	10.9	39.6	63.54	74	-10.14
10480	PK	50.62	360	H	40.7	10.9	39.6	62.62	74	-11.10
10480	AV	35.63	360	V	40.7	10.9	39.6	47.63	54	-6.29
10480	AV	34.58	360	H	40.7	10.9	39.6	46.58	54	-7.08

Out of Band edge

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-44.52	-27
Highest	Above 5350	-45.69	-27
Note: the data just list the worst cases			

For the frequency band 5.725-5.850GHz (worst case)

Harmonics And Spurious Emissions

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (5745MHz)										
11490	PK	55.82	360	V	38.9	9.8	40.1	64.42	74	-9.24
11490	PK	54.59	360	H	38.9	9.8	40.1	63.19	74	-10.58
11490	AV	36.75	360	V	38.9	9.8	40.1	45.35	54	-8.56
11490	AV	36.95	360	H	38.9	9.8	40.1	45.55	54	-8.13
High Channel (5825MHz)										
11610	PK	54.67	360	V	38.9	9.8	40.1	63.27	74	-10.72
11610	PK	53.57	360	H	38.9	9.8	40.1	62.17	74	-11.86
11610	AV	37.94	360	V	38.9	9.8	40.1	46.54	54	-7.45
11610	AV	35.72	360	H	38.9	9.8	40.1	44.32	54	-9.69

Out of Band edge

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-47.54	-27
	5715 to 5725	-45.24	-17
Highest	5850 to 5860	-46.13	-17
	Above 5860	-47.28	-27
Note: the data just list the worst cases			

Note: Testing is carried out with frequency rang 30MHz to 40GHz, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

11. Frequency Stability

11.1 Standard Applicable

According to §15.407(g), Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

11.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

Temperature:	Supply Voltage
20°C	DC 3.3-4.2 of declared nominal voltage
-30°C to +50°C	Normal

11.3 Environmental Conditions

Temperature:	20°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

11.4 Summary of Test Results/Plots

Antenna 1:

5150-5250MHz

802.11a_20MHz

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	68	0.0131
40	3.7	60	0.0115
30	3.7	51	0.0098
20	3.7	46	0.0088
10	3.7	42	0.0081
0	3.7	35	0.0067
-10	3.7	38	0.0073
-20	3.7	46	0.0088
-30	3.7	51	0.0098

802.11n_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	50	0.0096
40	3.7	45	0.0087
30	3.7	35	0.0067
20	3.7	32	0.0062
10	3.7	28	0.0054
0	3.7	23	0.0044
-10	3.7	28	0.0054
-20	3.7	35	0.0067
-30	3.7	42	0.0081

802.11n_HT40

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	45	0.0087
40	3.7	42	0.0081
30	3.7	38	0.0073
20	3.7	32	0.0062
10	3.7	28	0.0054
0	3.7	23	0.0044
-10	3.7	30	0.0058
-20	3.7	37	0.0071
-30	3.7	44	0.0085

802.11ac

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	60	0.0115
40	3.7	45	0.0086
30	3.7	38	0.0073
20	3.7	30	0.0057
10	3.7	23	0.0044
0	3.7	19	0.0036
-10	3.7	23	0.0044
-20	3.7	27	0.0052
-30	3.7	31	0.0059

5725-5850MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	77	0.0133
40	3.7	63	0.0109
30	3.7	55	0.0095
20	3.7	50	0.0086
10	3.7	45	0.0078
0	3.7	38	0.0066
-10	3.7	43	0.0074
-20	3.7	51	0.0088
-30	3.7	58	0.0100

802.11n_HT20

Reference Frequency(Middle Channel): 5785MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	55	0.0095
40	3.7	45	0.0078
30	3.7	38	0.0066
20	3.7	32	0.0055
10	3.7	28	0.0048
0	3.7	21	0.0036
-10	3.7	26	0.0045
-20	3.7	31	0.0054
-30	3.7	36	0.0062

802.11n_HT40

Reference Frequency(Middle Channel): 5795MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	62	0.0107
40	3.7	55	0.0095
30	3.7	45	0.0078
20	3.7	40	0.0069
10	3.7	32	0.0055
0	3.7	27	0.0047
-10	3.7	33	0.0057
-20	3.7	39	0.0067
-30	3.7	45	0.0078

802.11ac

Reference Frequency(Middle Channel): 5795MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	52	0.0090
40	3.7	46	0.0079
30	3.7	42	0.0072
20	3.7	37	0.0064
10	3.7	33	0.0057
0	3.7	25	0.0043
-10	3.7	29	0.0050
-20	3.7	35	0.0060
-30	3.7	42	0.0072

So, Frequency Stability Versus Input Voltage is:

Antenna 1:

5150-5250MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	48	0.0092
	3.7	46	0.0088
	4.2	45	0.0087

802.11n_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	35	0.0067
	3.7	32	0.0062
	4.2	37	0.0071

802.11n_HT40

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	32	0.0061
	3.7	32	0.0061
	4.2	28	0.0054

802.11ac

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	33	0.0063
	3.7	30	0.0057
	4.2	25	0.0048

5725-5850MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	46	0.0080
	3.7	50	0.0086
	4.2	51	0.0088

802.11n_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	35	0.0061
	3.7	32	0.0055
	4.2	41	0.0071

802.11n_HT40

Reference Frequency(Middle Channel): 5795 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	36	0.0062
	3.7	40	0.0069
	4.2	40	0.0069

802.11ac

Reference Frequency(Middle Channel): 5795 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	42	0.0072
	3.7	37	0.0064
	4.2	42	0.0072

Antenna 2:

5150-5250MHz

802.11a_20MHz

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	69	0.0133
40	3.7	56	0.0108
30	3.7	49	0.0094
20	3.7	42	0.0081
10	3.7	35	0.0067
0	3.7	28	0.0054
-10	3.7	35	0.0067
-20	3.7	43	0.0083
-30	3.7	50	0.0096

802.11n_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	69	0.0133
40	3.7	60	0.0115
30	3.7	50	0.0096
20	3.7	45	0.0087
10	3.7	39	0.0075
0	3.7	32	0.0062
-10	3.7	39	0.0075
-20	3.7	47	0.0090
-30	3.7	52	0.0100

802.11n_HT40

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	56	0.0107
40	3.7	45	0.0086
30	3.7	35	0.0067
20	3.7	30	0.0057
10	3.7	25	0.0048
0	3.7	19	0.0036
-10	3.7	25	0.0048
-20	3.7	28	0.0054
-30	3.7	34	0.0065

802.11ac

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	68	0.0130
40	3.7	59	0.0113
30	3.7	49	0.0094
20	3.7	44	0.0084
10	3.7	36	0.0069
0	3.7	29	0.0055
-10	3.7	35	0.0067
-20	3.7	42	0.0080
-30	3.7	48	0.0092

5725-5850MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	64	0.0111
40	3.7	52	0.0090
30	3.7	42	0.0073
20	3.7	38	0.0066
10	3.7	32	0.0055
0	3.7	25	0.0043
-10	3.7	32	0.0055
-20	3.7	37	0.0064
-30	3.7	44	0.0076

802.11n_HT20

Reference Frequency(Middle Channel): 5785MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	47	0.0081
40	3.7	43	0.0074
30	3.7	38	0.0066
20	3.7	34	0.0059
10	3.7	28	0.0048
0	3.7	23	0.0040
-10	3.7	30	0.0052
-20	3.7	34	0.0059
-30	3.7	40	0.0069

802.11n_HT40

Reference Frequency(Middle Channel): 5795MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	54	0.0093
40	3.7	45	0.0078
30	3.7	41	0.0071
20	3.7	33	0.0057
10	3.7	28	0.0048
0	3.7	23	0.0040
-10	3.7	30	0.0052
-20	3.7	37	0.0064
-30	3.7	42	0.0072

802.11ac

Reference Frequency(Middle Channel): 5795MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	47	0.0081
40	3.7	42	0.0072
30	3.7	35	0.0060
20	3.7	28	0.0048
10	3.7	23	0.0040
0	3.7	18	0.0031
-10	3.7	22	0.0038
-20	3.7	29	0.0050
-30	3.7	33	0.0057

So, Frequency Stability Versus Input Voltage is:

Antenna 1:

5150-5250MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	39	0.0075
	3.7	42	0.0081
	4.2	43	0.0083

802.11n_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	44	0.0085
	3.7	45	0.0087
	4.2	50	0.0096

802.11n_HT40

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	28	0.0054
	3.7	30	0.0057
	4.2	32	0.0061

802.11ac

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	35	0.0067
	3.7	44	0.0084
	4.2	38	0.0073

5725-5850MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	26	0.0045
	3.7	38	0.0066
	4.2	25	0.0043

802.11n_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	32	0.0055
	3.7	34	0.0059
	4.2	32	0.0055

802.11n_HT40

Reference Frequency(Middle Channel): 5795 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	28	0.0048
	3.7	33	0.0057
	4.2	30	0.0052

802.11ac

Reference Frequency(Middle Channel): 5795 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	23	0.0040
	3.7	28	0.0048
	4.2	22	0.0038

***** END OF REPORT *****