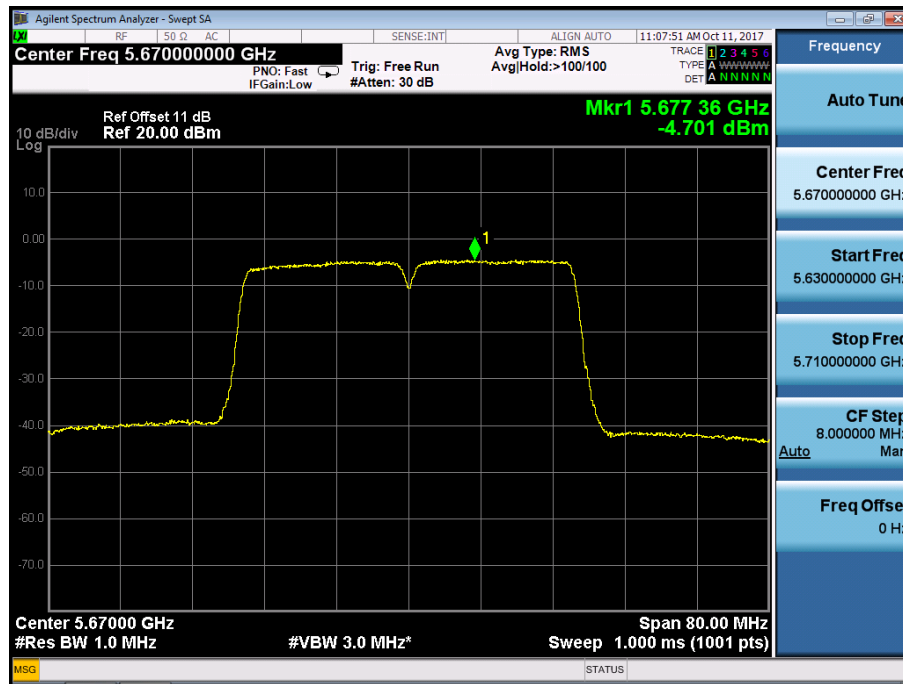
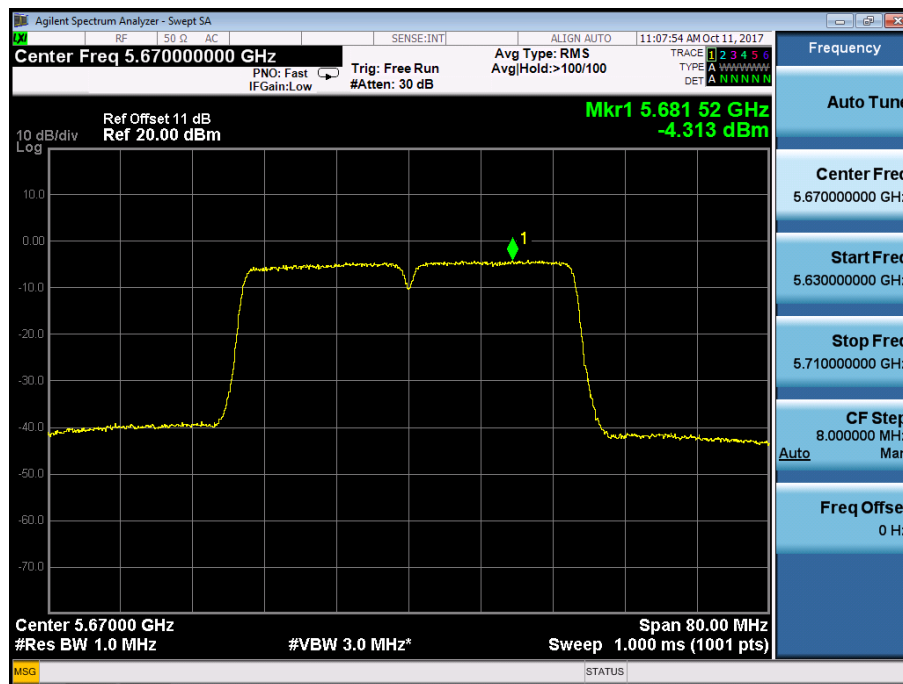


Power Spectral Density
Test Model 802.11ac(VHT40) mode
Ant0

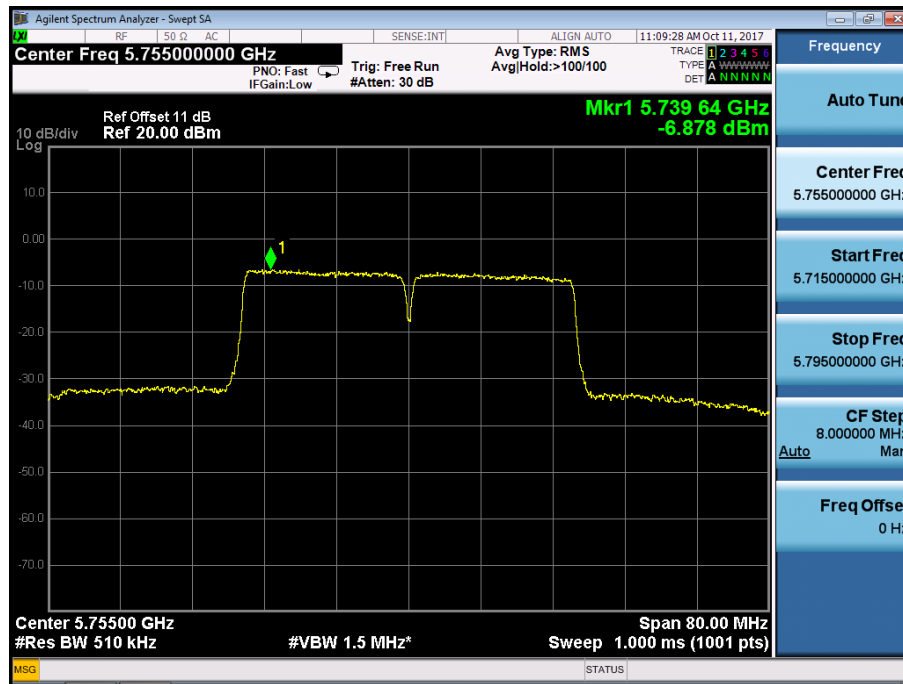
UNII Band II-C
Frequency(MHz) 5670



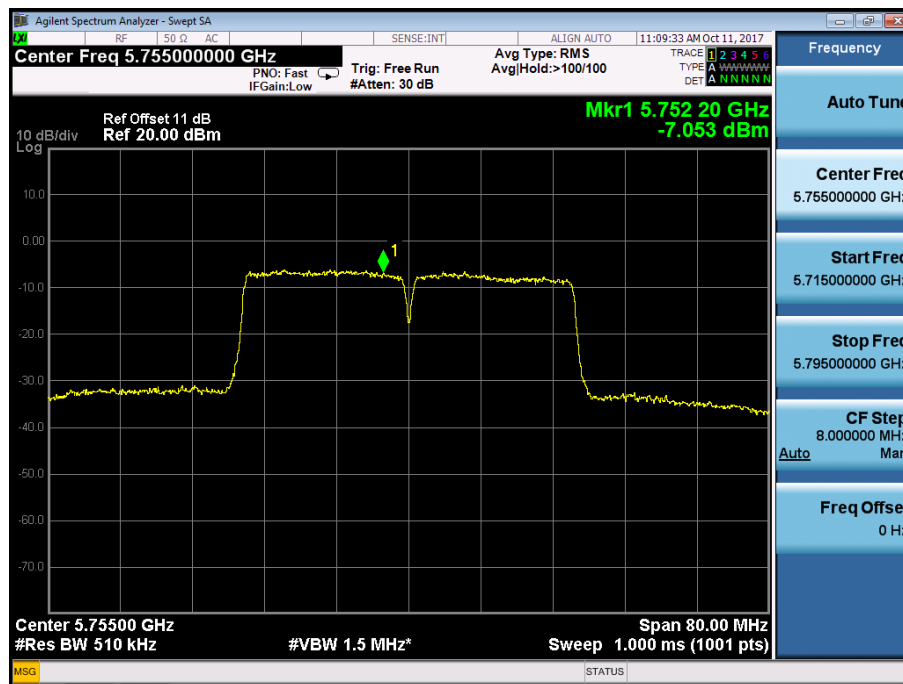
Ant1



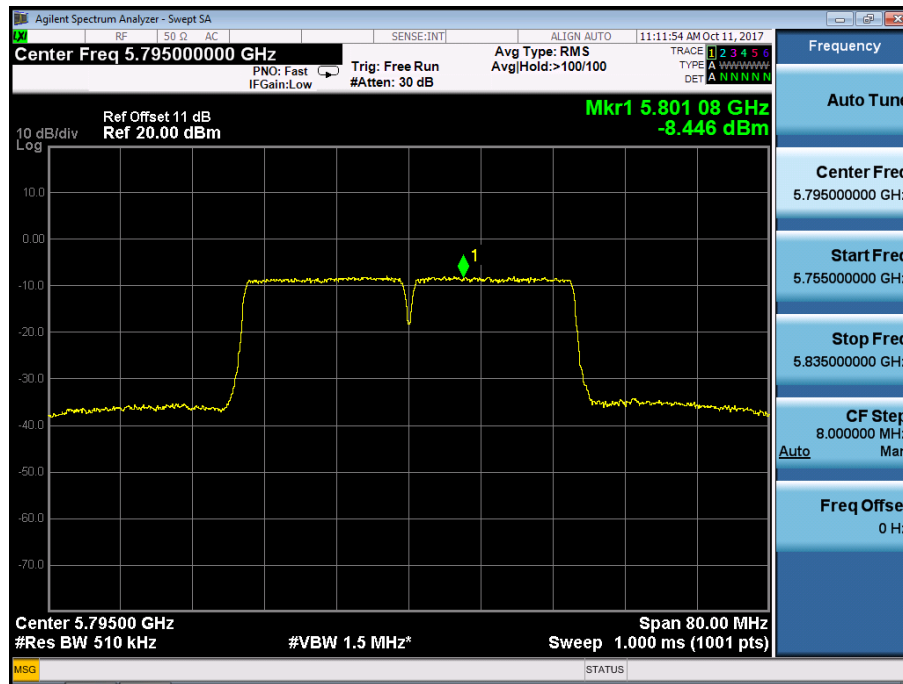
Power Spectral Density UNII Band III
Test Model 802.11ac(VHT40) mode Frequency(MHz) 5755
Ant0



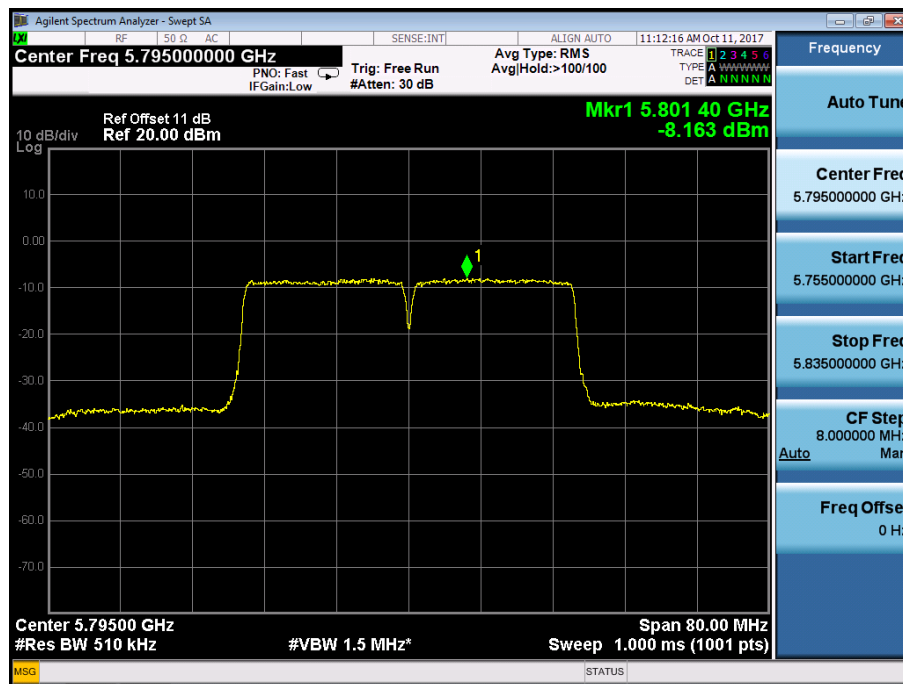
Ant1



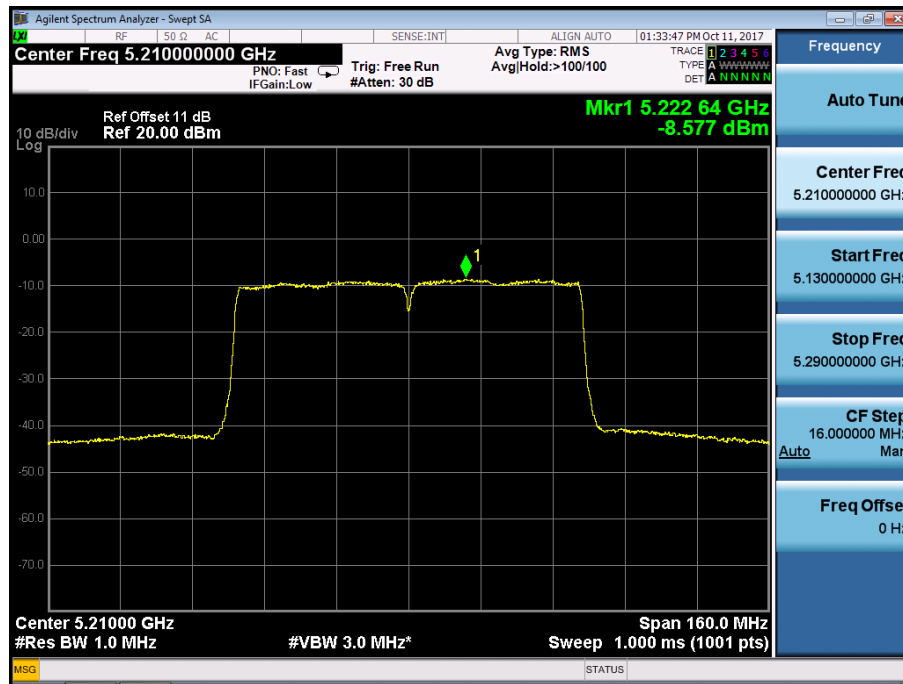
Power Spectral Density UNII Band III
Test Model 802.11ac(VHT40) mode Frequency(MHz) 5795
Ant0



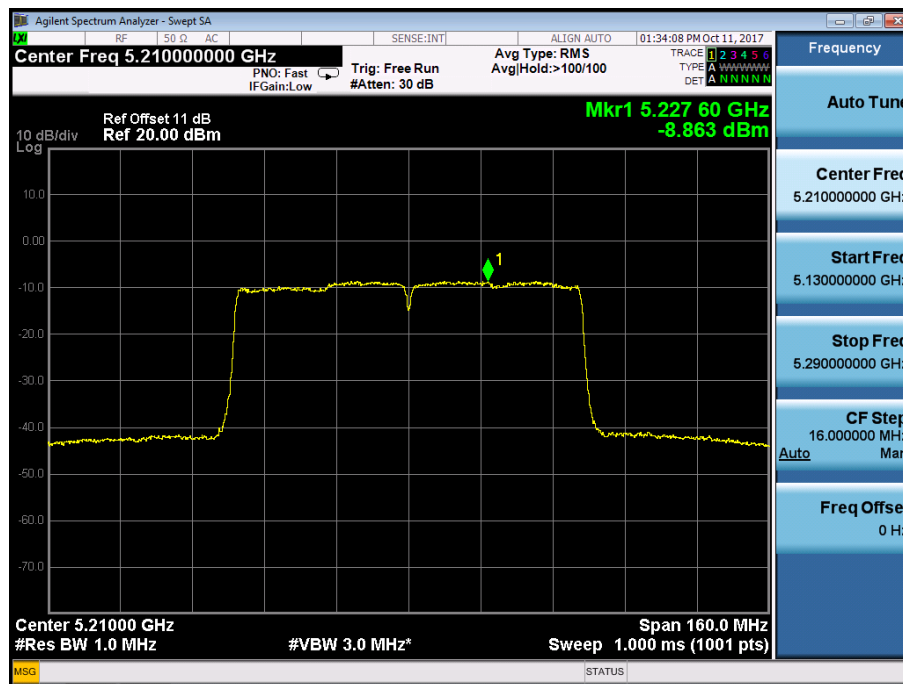
Ant1



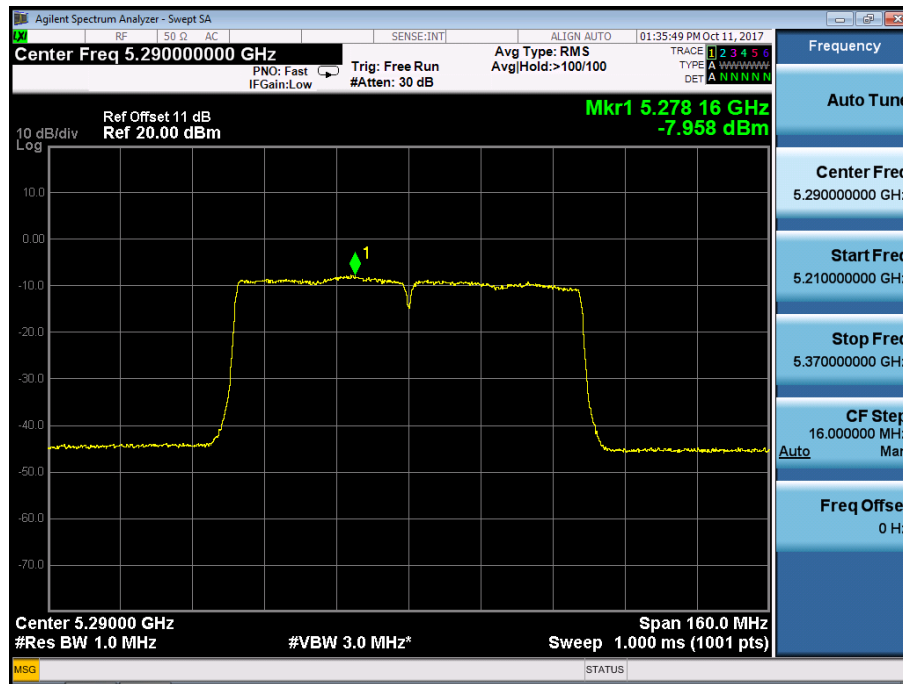
Power Spectral Density UNII Band I
Test Model 802.11ac(VHT80) mode Frequency(MHz) 5210
Ant0



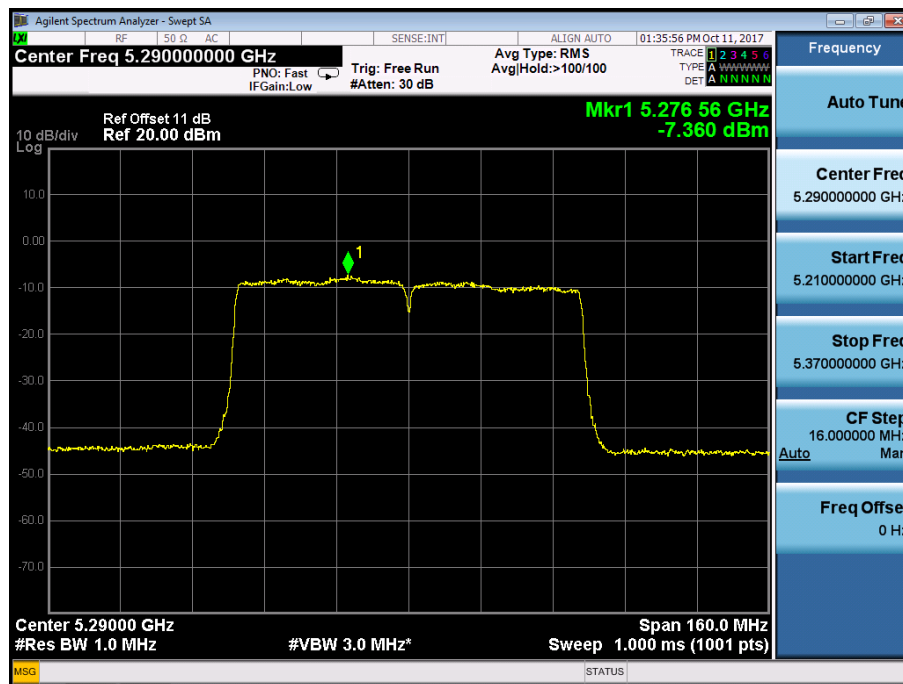
Ant1



Power Spectral Density UNII Band II-A
Test Model 802.11ac(VHT80) mode Frequency(MHz) 5290
Ant0

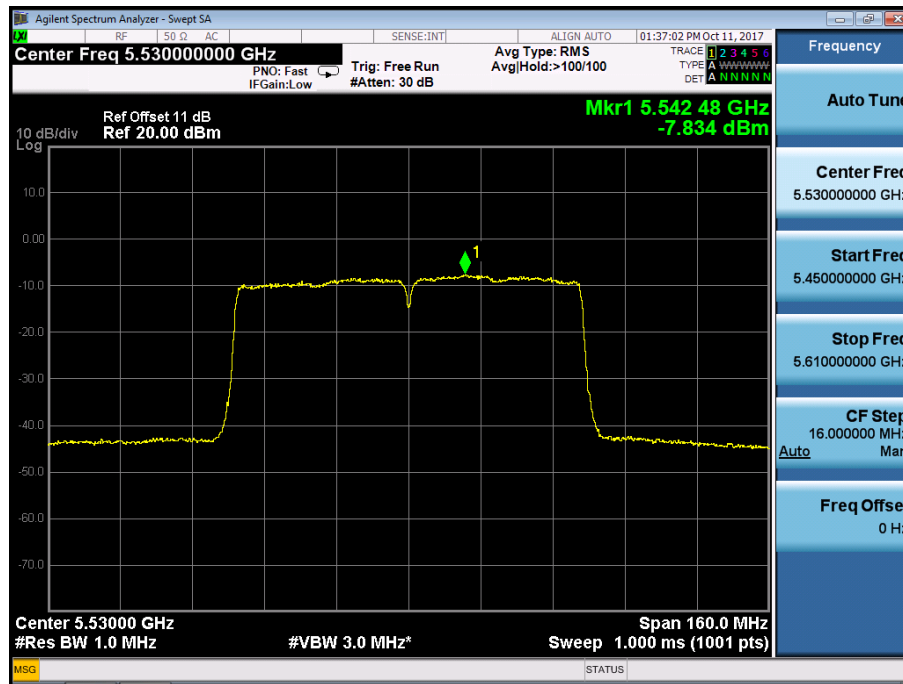


Ant1

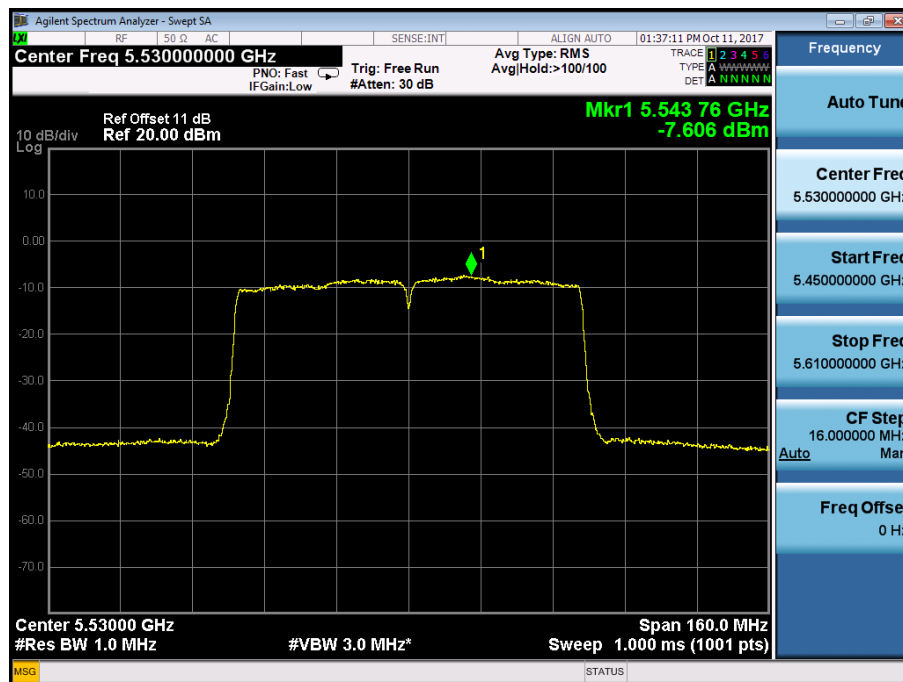


Power Spectral Density
Test Model 802.11ac(VHT80) mode
Ant0

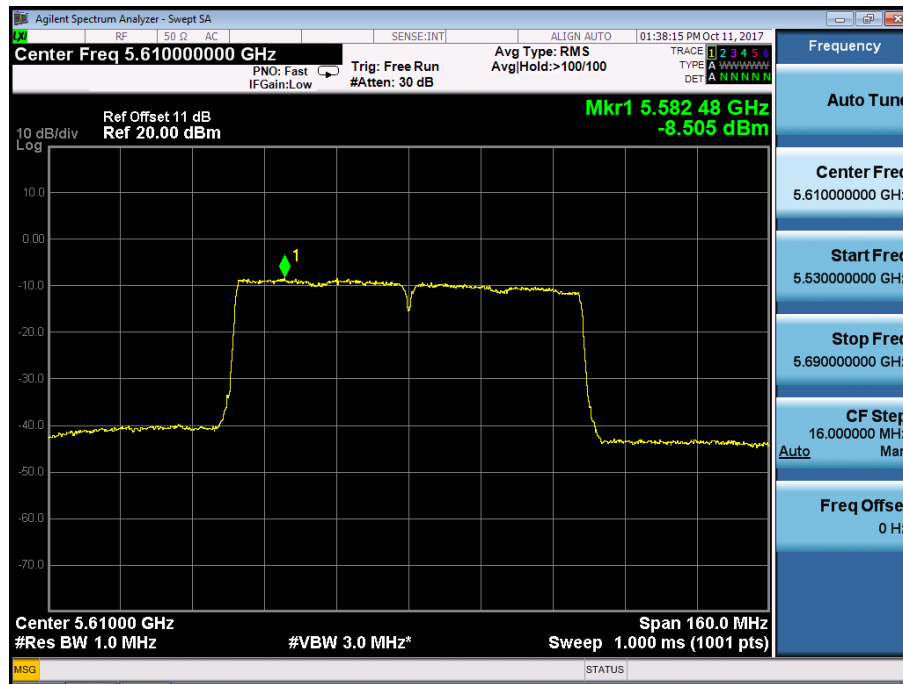
UNII Band II-C
Frequency(MHz) 5530



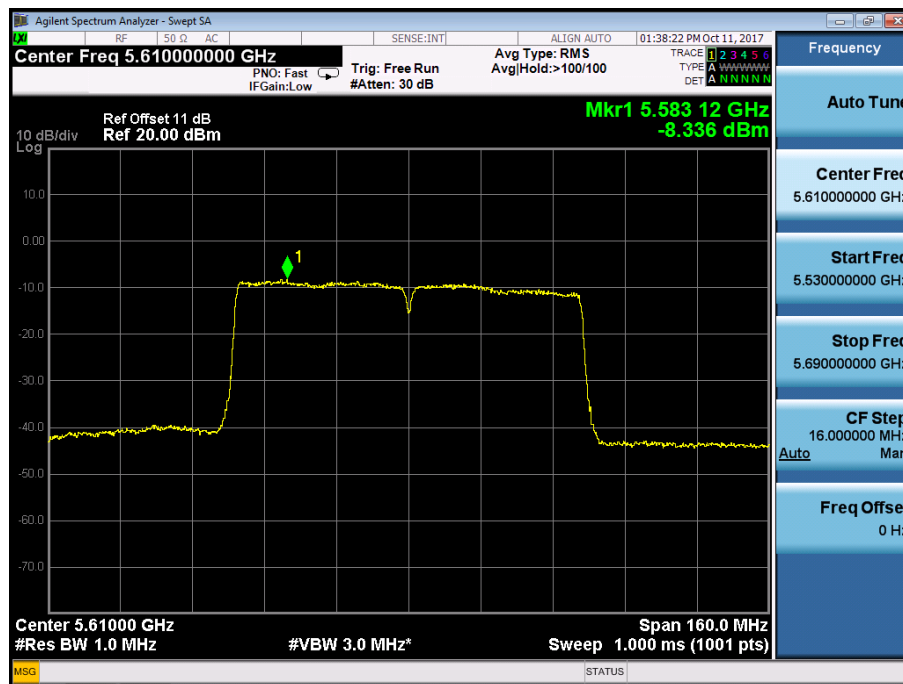
Ant1



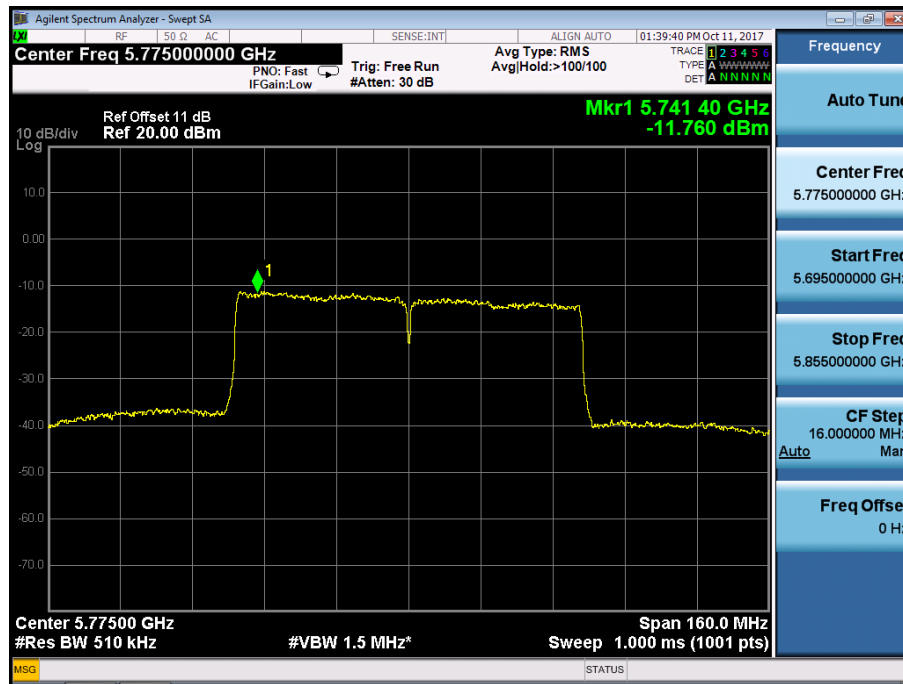
Power Spectral Density UNII Band II-C
Test Model 802.11ac(VHT80) mode Frequency(MHz) 5610
Ant0



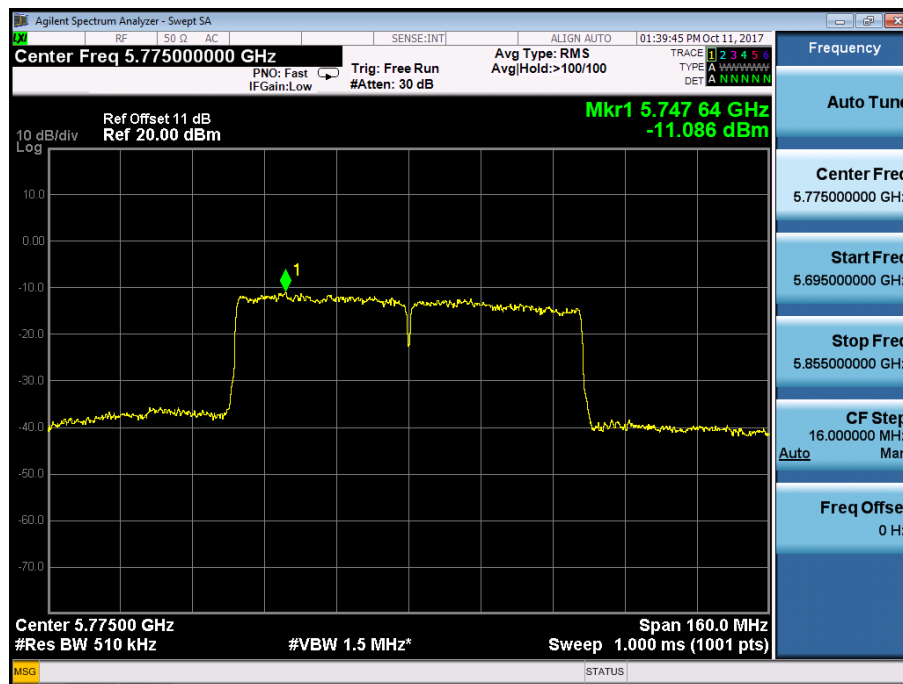
Ant1



Power Spectral Density UNII Band III
Test Model 802.11ac(VHT80) mode Frequency(MHz) 5775
Ant0



Ant1



8.4 FREQUENCY STABILITY

8.4.1 Applicable Standard

According to FCC Part 15.407(g)
ANSI C63.10 Section 6.8

8.4.2 Conformance Limit

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.

8.4.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.4.4 Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously

Set RBW = 10 kHz.

Set the video bandwidth (VBW) =30 kHz.

Set Span= Entire absence of modulation emissions bandwidth

Set Detector = Peak.

Set Trace mode = max hold.

Set Sweep = auto couple.

Allow the trace to stabilize.

The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

Beginning at each temperature level specified in user manual , the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more than 10° centigrade above the respective beginning ambient temperature level

Measure and record the results in the test report.

8.4.5 Test Results

5180				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5179.968973	-31.027	Pass
	-10	5179.968981	-31.019	Pass
	0	5179.969225	-30.775	Pass
	10	5179.969329	-30.671	Pass
	20	5179.969321	-30.679	Pass
	30	5179.969082	-30.918	Pass
	40	5179.969782	-30.218	Pass
	50	5179.969371	-30.629	Pass
85% Vnom	20	5179.969320	-30.680	Pass
115% Vnom	20	5179.969082	-30.918	Pass

5200				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5199.961047	-38.953	Pass
	-10	5199.961407	-38.593	Pass
	0	5199.961568	-38.432	Pass
	10	5199.961525	-38.475	Pass
	20	5200.038722	38.722	Pass
	30	5199.961510	-38.490	Pass
	40	5199.961839	-38.161	Pass
	50	5199.961701	-38.299	Pass
85% Vnom	20	5199.961072	-38.928	Pass
115% Vnom	20	5199.961034	-38.966	Pass

5240				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5239.977894	-22.106	Pass
	-10	5239.977889	-22.111	Pass
	0	5239.977592	-22.408	Pass
	10	5239.977838	-22.162	Pass
	20	5239.977632	-22.368	Pass
	30	5239.977582	-22.418	Pass
	40	5239.977272	-22.728	Pass
	50	5239.977972	-22.028	Pass
85% Vnom	20	5239.977696	-22.304	Pass
115% Vnom	20	5239.977592	-22.408	Pass

5260				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5259.973846	-26.154	Pass
	-10	5259.973563	-26.437	Pass
	0	5259.973512	-26.488	Pass
	10	5259.973772	-26.228	Pass
	20	5259.973612	-26.388	Pass
	30	5259.973415	-26.585	Pass
	40	5259.973066	-26.934	Pass
	50	5259.973563	-26.437	Pass
85% Vnom	20	5259.973507	-26.493	Pass
115% Vnom	20	5259.973759	-26.241	Pass

5280				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5279.984836	-15.164	Pass
	-10	5279.984844	-15.156	Pass
	0	5279.984890	-15.110	Pass
	10	5279.984500	-15.500	Pass
	20	5279.984797	-15.203	Pass
	30	5279.984382	-15.618	Pass
	40	5279.984699	-15.301	Pass
	50	5279.984858	-15.142	Pass
85% Vnom	20	5279.984501	-15.499	Pass
115% Vnom	20	5279.984644	-15.356	Pass

5320				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5319.949621	-50.379	Pass
	-10	5319.949670	-50.330	Pass
	0	5319.949755	-50.245	Pass
	10	5319.949574	-50.426	Pass
	20	5319.949550	-50.450	Pass
	30	5319.949432	-50.568	Pass
	40	5319.949277	-50.723	Pass
	50	5319.949755	-50.245	Pass
85% Vnom	20	5319.949451	-50.549	Pass
115% Vnom	20	5319.949450	-50.550	Pass

5500				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5499.964753	-35.247	Pass
	-10	5499.964669	-35.331	Pass
	0	5499.964645	-35.355	Pass
	10	5499.964710	-35.290	Pass
	20	5499.964616	-35.384	Pass
	30	5499.964664	-35.336	Pass
	40	5499.964413	-35.587	Pass
	50	5499.964072	-35.928	Pass
85% Vnom	20	5499.964645	-35.355	Pass
115% Vnom	20	5499.964558	-35.442	Pass

5600				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5600.020549	20.549	Pass
	-10	5600.020578	20.578	Pass
	0	5600.020872	20.872	Pass
	10	5600.020935	20.935	Pass
	20	5600.021034	21.034	Pass
	30	5600.020879	20.879	Pass
	40	5600.020874	20.874	Pass
	50	5600.020773	20.773	Pass
85% Vnom	20	5600.020916	20.916	Pass
115% Vnom	20	5600.021114	21.114	Pass

5700				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5699.956040	-43.960	Pass
	-10	5699.956560	-43.440	Pass
	0	5699.956645	-43.355	Pass
	10	5699.956625	-43.375	Pass
	20	5699.956331	-43.669	Pass
	30	5699.956391	-43.609	Pass
	40	5699.956358	-43.642	Pass
	50	5699.956052	-43.948	Pass
85% Vnom	20	5699.956272	-43.728	Pass
115% Vnom	20	5699.956062	-43.938	Pass

5745				
Temperature :	--	Test Date :	May04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5744.985222	-14.778	Pass
	-10	5744.985169	-14.831	Pass
	0	5744.985550	-14.450	Pass
	10	5744.985099	-14.901	Pass
	20	5744.985295	-14.705	Pass
	30	5744.985169	-14.831	Pass
	40	5744.985058	-14.942	Pass
	50	5744.985529	-14.471	Pass
85% Vnom	20	5744.985598	-14.402	Pass
115% Vnom	20	5744.985060	-14.940	Pass

5785				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5784.989250	-10.750	Pass
	-10	5784.989942	-10.058	Pass
	0	5784.989830	-10.170	Pass
	10	5784.989373	-10.627	Pass
	20	5784.989473	-10.527	Pass
	30	5784.989942	-10.058	Pass
	40	5784.989406	-10.594	Pass
	50	5784.989935	-10.065	Pass
85% Vnom	20	5784.989962	-10.038	Pass
115% Vnom	20	5784.989938	-10.062	Pass

5825				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5824.982283	-17.717	Pass
	-10	5824.982146	-17.854	Pass
	0	5824.982536	-17.464	Pass
	10	5824.982149	-17.851	Pass
	20	5824.982446	-17.554	Pass
	30	5824.982207	-17.793	Pass
	40	5824.982153	-17.847	Pass
	50	5824.982589	-17.411	Pass
85% Vnom	20	5824.982683	-17.317	Pass
115% Vnom	20	5824.982643	-17.357	Pass

5190				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5189.975100	-24.900	Pass
	-10	5189.975683	-24.317	Pass
	0	5189.975675	-24.325	Pass
	10	5189.975637	-24.363	Pass
	20	5189.975066	-24.934	Pass
	30	5189.975346	-24.654	Pass
	40	5189.975391	-24.609	Pass
	50	5189.975341	-24.659	Pass
85% Vnom	20	5189.975544	-24.456	Pass
115% Vnom	20	5189.975214	-24.786	Pass

5230				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5229.972257	-27.743	Pass
	-10	5229.972600	-27.400	Pass
	0	5229.972505	-27.495	Pass
	10	5229.972500	-27.500	Pass
	20	5229.972670	-27.330	Pass
	30	5229.972786	-27.214	Pass
	40	5229.972281	-27.719	Pass
	50	5229.972343	-27.657	Pass
85% Vnom	20	5229.972761	-27.239	Pass
115% Vnom	20	5229.972747	-27.253	Pass

5270				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5270.025508	25.508	Pass
	-10	5270.025511	25.511	Pass
	0	5270.025111	25.111	Pass
	10	5270.025164	25.164	Pass
	20	5270.025143	25.143	Pass
	30	5270.025164	25.164	Pass
	40	5270.025247	25.247	Pass
	50	5270.025028	25.028	Pass
85% Vnom	20	5270.025198	25.198	Pass
115% Vnom	20	5270.025151	25.151	Pass

5310				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5309.982337	-17.663	Pass
	-10	5309.982250	-17.750	Pass
	0	5309.982544	-17.456	Pass
	10	5309.982366	-17.634	Pass
	20	5309.982739	-17.261	Pass
	30	5309.982310	-17.690	Pass
	40	5309.982057	-17.943	Pass
	50	5309.982435	-17.565	Pass
85% Vnom	20	5309.982744	-17.256	Pass
115% Vnom	20	5309.982303	-17.697	Pass

5510				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5510.009796	9.796	Pass
	-10	5510.009457	9.457	Pass
	0	5510.009201	9.201	Pass
	10	5510.009424	9.424	Pass
	20	5510.009380	9.380	Pass
	30	5510.009544	9.544	Pass
	40	5510.009457	9.457	Pass
	50	5510.009085	9.085	Pass
85% Vnom	20	5510.009192	9.192	Pass
115% Vnom	20	5510.009378	9.378	Pass

5590				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5590.003673	3.673	Pass
	-10	5590.003479	3.479	Pass
	0	5590.003367	3.367	Pass
	10	5590.003239	3.239	Pass
	20	5590.003470	3.470	Pass
	30	5590.003370	3.370	Pass
	40	5590.003403	3.403	Pass
	50	5590.003633	3.633	Pass
85% Vnom	20	5590.003370	3.370	Pass
115% Vnom	20	5590.003370	3.370	Pass

5670				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5669.980567	-19.433	Pass
	-10	5669.980642	-19.358	Pass
	0	5669.980643	-19.357	Pass
	10	5669.980674	-19.326	Pass
	20	5669.980682	-19.318	Pass
	30	5669.980677	-19.323	Pass
	40	5669.980692	-19.308	Pass
	50	5669.980676	-19.324	Pass
85% Vnom	20	5669.980079	-19.921	Pass
115% Vnom	20	5669.980448	-19.552	Pass

5755				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5754.994302	-5.698	Pass
	-10	5754.994402	-5.598	Pass
	0	5754.994411	-5.589	Pass
	10	5754.994206	-5.794	Pass
	20	5754.994418	-5.582	Pass
	30	5754.994082	-5.918	Pass
	40	5754.994446	-5.554	Pass
	50	5754.994336	-5.664	Pass
85% Vnom	20	5754.994446	-5.554	Pass
115% Vnom	20	5754.994421	-5.579	Pass

5795				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5794.985298	-14.702	Pass
	-10	5794.985302	-14.698	Pass
	0	5794.985214	-14.786	Pass
	10	5794.985413	-14.587	Pass
	20	5794.985423	-14.577	Pass
	30	5794.985515	-14.485	Pass
	40	5794.985026	-14.974	Pass
	50	5794.984990	-15.010	Pass
85% Vnom	20	5794.985466	-14.534	Pass
115% Vnom	20	5794.985546	-14.454	Pass

5210				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5209.969713	-30.287	Pass
	-10	5209.969391	-30.609	Pass
	0	5209.969323	-30.677	Pass
	10	5209.969391	-30.609	Pass
	20	5209.969323	-30.677	Pass
	30	5209.969391	-30.609	Pass
	40	5209.969382	-30.618	Pass
	50	5209.969382	-30.618	Pass
85% Vnom	20	5209.969022	-30.978	Pass
115% Vnom	20	5209.969611	-30.389	Pass

5290				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5290.038614	38.614	Pass
	-10	5290.038434	38.434	Pass
	0	5290.038767	38.767	Pass
	10	5290.038432	38.432	Pass
	20	5290.038410	38.410	Pass
	30	5290.038325	38.325	Pass
	40	5290.038328	38.328	Pass
	50	5290.038771	38.771	Pass
85% Vnom	20	5290.038769	38.769	Pass
115% Vnom	20	5290.038718	38.718	Pass

5530				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5529.959714	-40.286	Pass
	-10	5529.959687	-40.313	Pass
	0	5529.959287	-40.713	Pass
	10	5529.959618	-40.382	Pass
	20	5529.959314	-40.686	Pass
	30	5529.959419	-40.581	Pass
	40	5529.959396	-40.604	Pass
	50	5529.959367	-40.633	Pass
85% Vnom	20	5529.959721	-40.279	Pass
115% Vnom	20	5529.959279	-40.721	Pass

5610				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5609.969392	-30.608	Pass
	-10	5609.969421	-30.579	Pass
	0	5609.969612	-30.388	Pass
	10	5609.969192	-30.808	Pass
	20	5609.969357	-30.643	Pass
	30	5609.969287	-30.713	Pass
	40	5609.969766	-30.234	Pass
	50	5609.969227	-30.773	Pass
85% Vnom	20	5609.969308	-30.692	Pass
115% Vnom	20	5609.969329	-30.671	Pass

5775				
Temperature :	--	Test Date :	May 04, 2017	
Humidity :	65 %	Test By:	King Kong	

Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5774.980403	-19.597	Pass
	-10	5774.980403	-19.597	Pass
	0	5774.980313	-19.687	Pass
	10	5774.980313	-19.687	Pass
	20	5774.980709	-19.291	Pass
	30	5774.980669	-19.331	Pass
	40	5774.980279	-19.721	Pass
	50	5774.980709	-19.291	Pass
85% Vnom	20	5774.980809	-19.191	Pass
115% Vnom	20	5774.980669	-19.331	Pass

8.5 UNDESIRABLE RADIATED SPURIOUS EMISSION

8.5.1 Applicable Standard

According to FCC Part 15.407 (b)

According to 789033 D02 Section II(G)

8.5.2 Conformance Limit

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

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

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

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

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

8.5.3 Test Configuration

Test according to clause 6.2 radio frequency test setup

8.5.4 Test Procedure

■ Unwanted Emissions Measurements below 1000 MHz

Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.

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

And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Repeat above procedures until all frequency measured was complete.

We use software control the EUT, Let EUT hopping on and transmit with highest power, All the modes have been tested and the worst result was reported.

Use the following spectrum analyzer settings:

Set RBW=120kHz for $f < 1$ GHz (30MHz to 1GHz), 200Hz for $f < 150$ KHz (9KHz to 150KHz), 9KHz for < 30 MHz (150KHz to 30KHz).

Set the VBW > RBW.

Detector = Peak.

Trace mode = max hold.

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data. Repeat above procedures until all frequency measured was complete.

■ Unwanted Maximum peak Emissions Measurements above 1000 MHz

Maximum emission levels are measured by setting the analyzer as follows:

RBW = 1 MHz.

VBW $\geq$ 3 MHz.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately $1/x$, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

■ Unwanted Average Emissions Measurements above 1000 MHz

Method VB (Averaging using reduced video bandwidth): Alternative method.

RBW = 1 MHz.

Video bandwidth. • If the EUT is configured to transmit with duty cycle $\geq$ 98 percent, set $VBW \leq RBW/100$ (i.e., 10 kHz) but not less than 10 Hz.

• If the EUT duty cycle is < 98 percent, set $VBW \geq 1/T$, where T is defined in section II.B.1.a).

Video bandwidth mode or display mode • The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).

• As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of $1/x$, where x is the duty cycle. For example, use at least 200 traces if the duty cycle is 25 percent. (If a specific emission is demonstrated to be continuous—i.e., 100 percent duty cycle—rather than turning on and off with the transmit cycle, at least 50 traces shall be averaged.)

■ Band edge measurements.

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

Marker-Delta Method.

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

8.5.5 Test Results

■ ☒ For Undesirable radiated Spurious Emission in UNII Band I

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

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

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7568.90	V	56.15	-39.07	-27.00	-12.07
10486.99	V	55.83	-39.40	-27.00	-12.40
13185.53	V	62.32	-32.90	-27.00	-5.90
6951.28	H	52.17	-43.06	-27.00	-16.06
10707.16	H	61.43	-33.79	-27.00	-6.79
13345.72	H	62.54	-32.69	-27.00	-5.69

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5220

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
7357.66	V	55.05	-40.17	-27.00	-13.17
10434.83	V	56.71	-38.51	-27.00	-11.51
13688.89	V	62.48	-32.75	-27.00	-5.75
7172.71	H	51.94	-43.29	-27.00	-16.29
10927.70	H	62.07	-33.16	-27.00	-6.16
13715.25	H	62.33	-32.90	-27.00	-5.90

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7386.87	V	54.69	-40.54	-27.00	-13.54
10113.65	V	56.20	-39.02	-27.00	-12.02
13385.69	V	62.39	-32.84	-27.00	-5.84
6994.09	H	53.02	-42.21	-27.00	-15.21
10845.28	H	61.70	-33.53	-27.00	-6.53
13654.22	H	63.81	-31.42	-27.00	-4.42

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

● ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5180

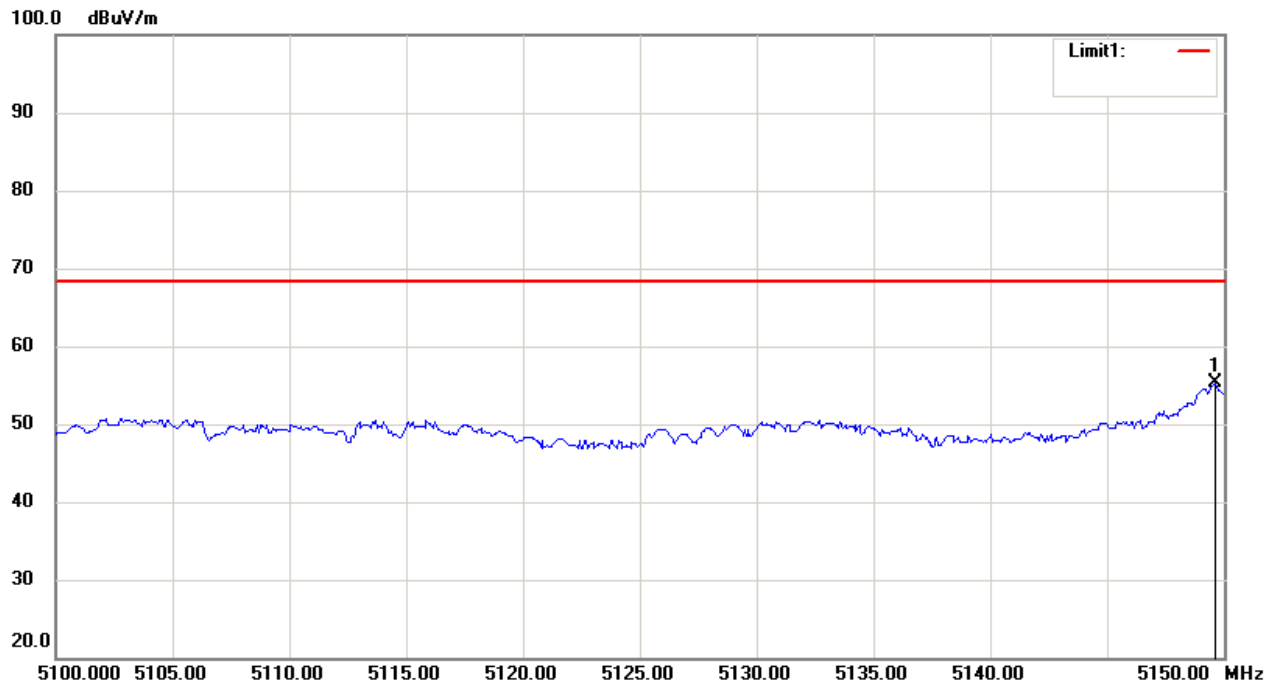
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5149.50	V	55.07	-40.16	-27.00	Pass
5149.65	H	55.28	-39.95	-27.00	Pass

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5240

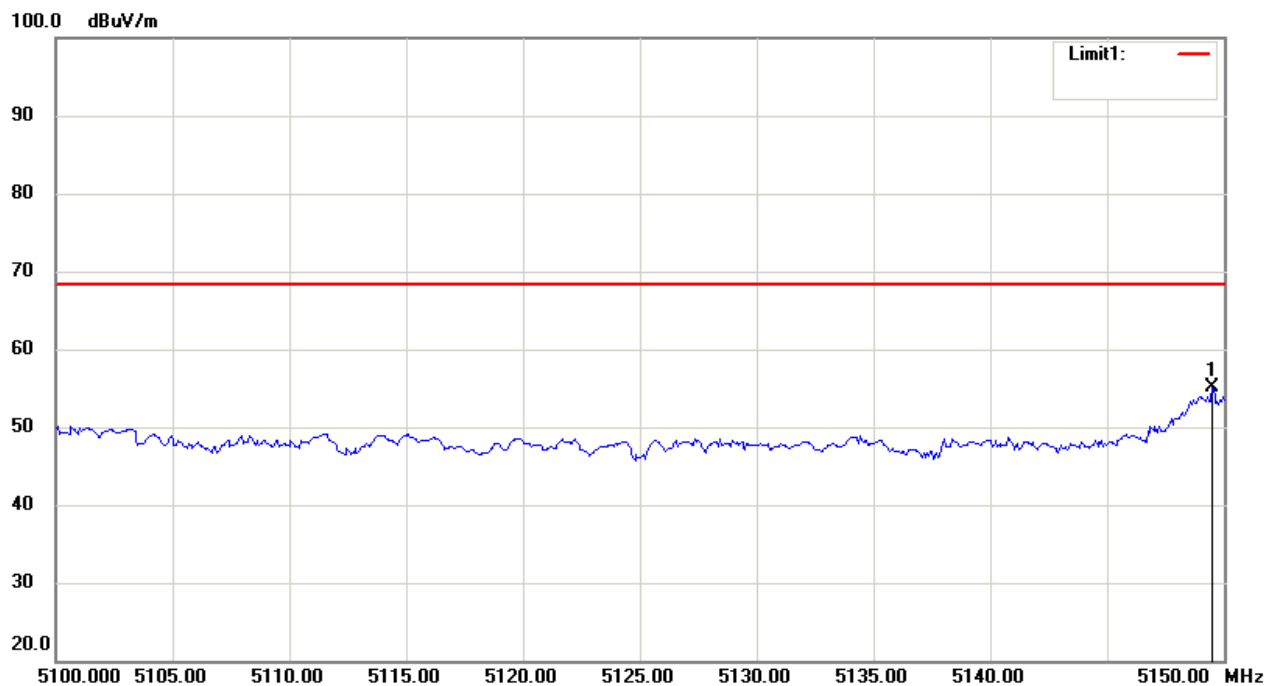
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5350.30	V	52.98	-42.25	-27.00	Pass
5350.40	H	53.86	-41.37	-27.00	Pass

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

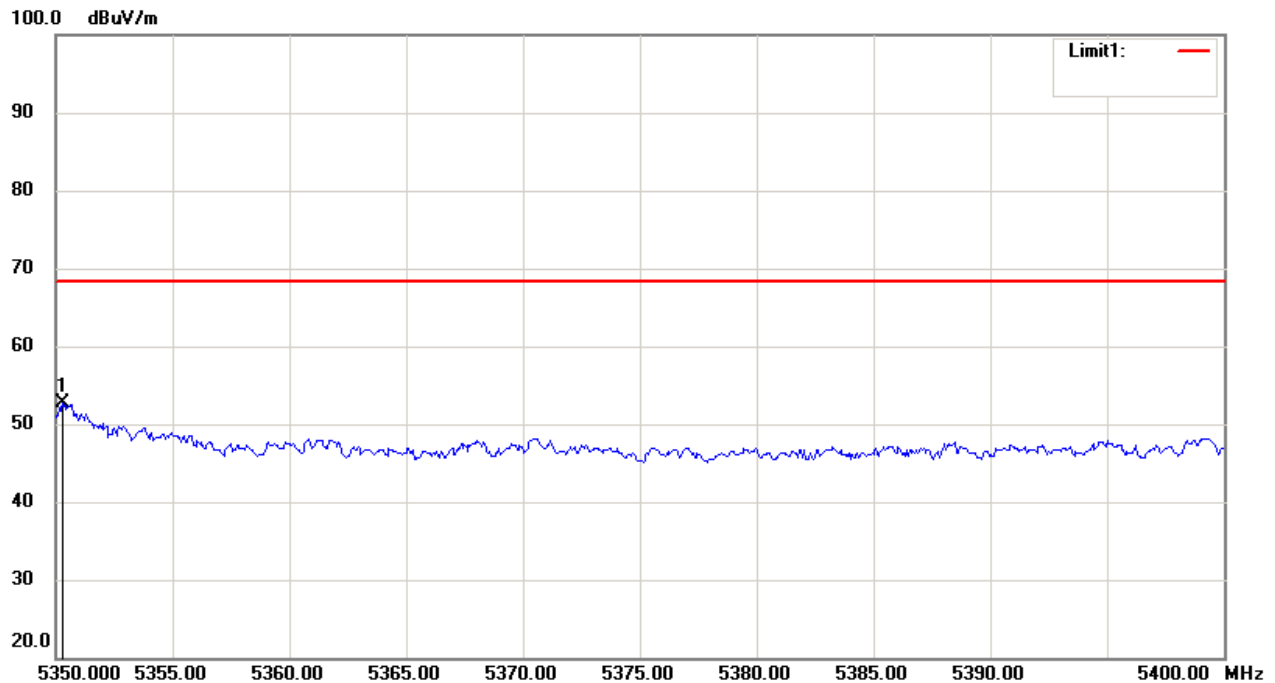
UNII Band I				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)			
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5180	☐ 5200	☐ 5240	Ant.Pol H



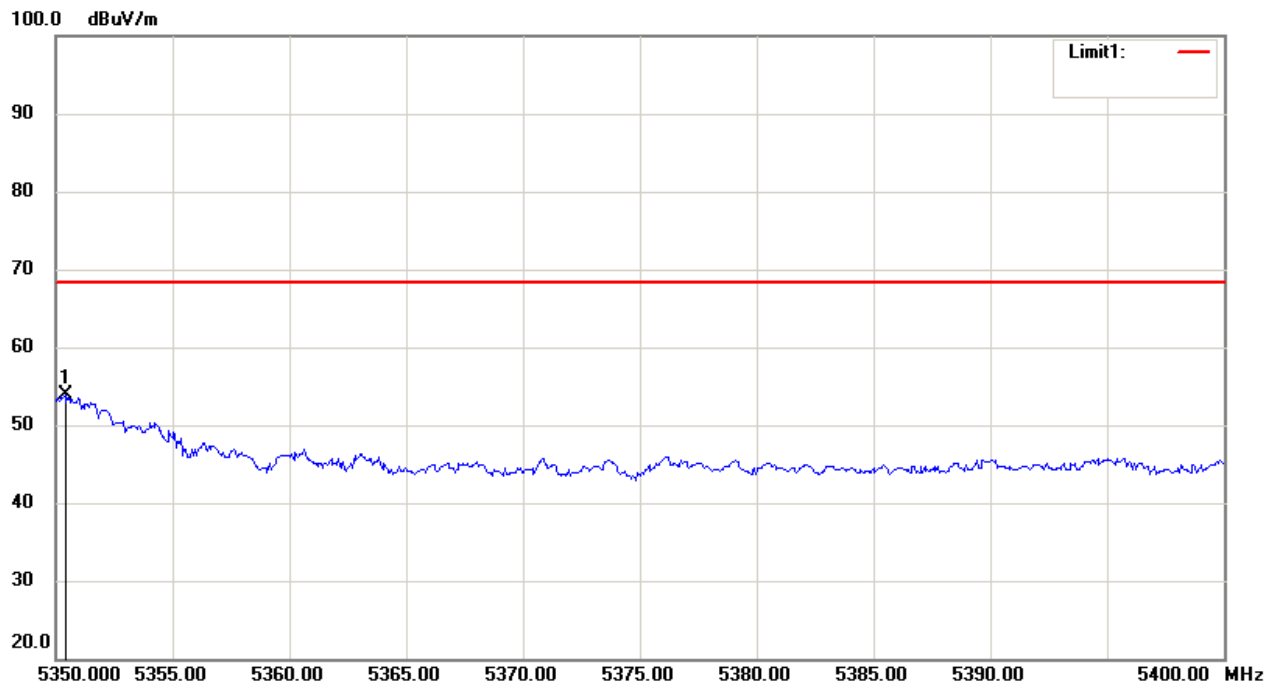
UNII Band I				
Test Model	Undesirable radiated Spurious Emission in Restricted Band (5100-5150MHz)			
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5180	☐ 5200	☐ 5240	Ant.Pol V



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



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



- ☒ For Undesirable radiated Spurious Emission in UNII Band II-A

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

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

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7666.78	V	53.93	-41.30	-27.00	-14.30
9985.88	V	58.32	-36.90	-27.00	-9.90
13304.46	V	62.45	-32.78	-27.00	-5.78
7513.78	H	51.92	-43.31	-27.00	-16.31
10792.72	H	59.37	-35.85	-27.00	-8.85
13391.93	H	62.56	-32.67	-27.00	-5.67

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
8006.98	V	55.69	-39.54	-27.00	-12.54
10376.22	V	55.98	-39.25	-27.00	-12.25
14075.77	V	64.80	-30.43	-27.00	-3.43
6951.09	H	54.08	-41.15	-27.00	-14.15
10657.40	H	60.93	-34.30	-27.00	-7.30
14072.73	H	63.37	-31.86	-27.00	-4.86

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7257.73	V	55.10	-40.13	-27.00	-13.13
9872.35	V	55.59	-39.64	-27.00	-12.64
13263.22	V	63.04	-32.19	-27.00	-5.19
7743.93	H	52.32	-42.90	-27.00	-15.90
10693.28	H	61.47	-33.76	-27.00	-6.76
13934.20	H	63.44	-31.79	-27.00	-4.79

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

● ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5260

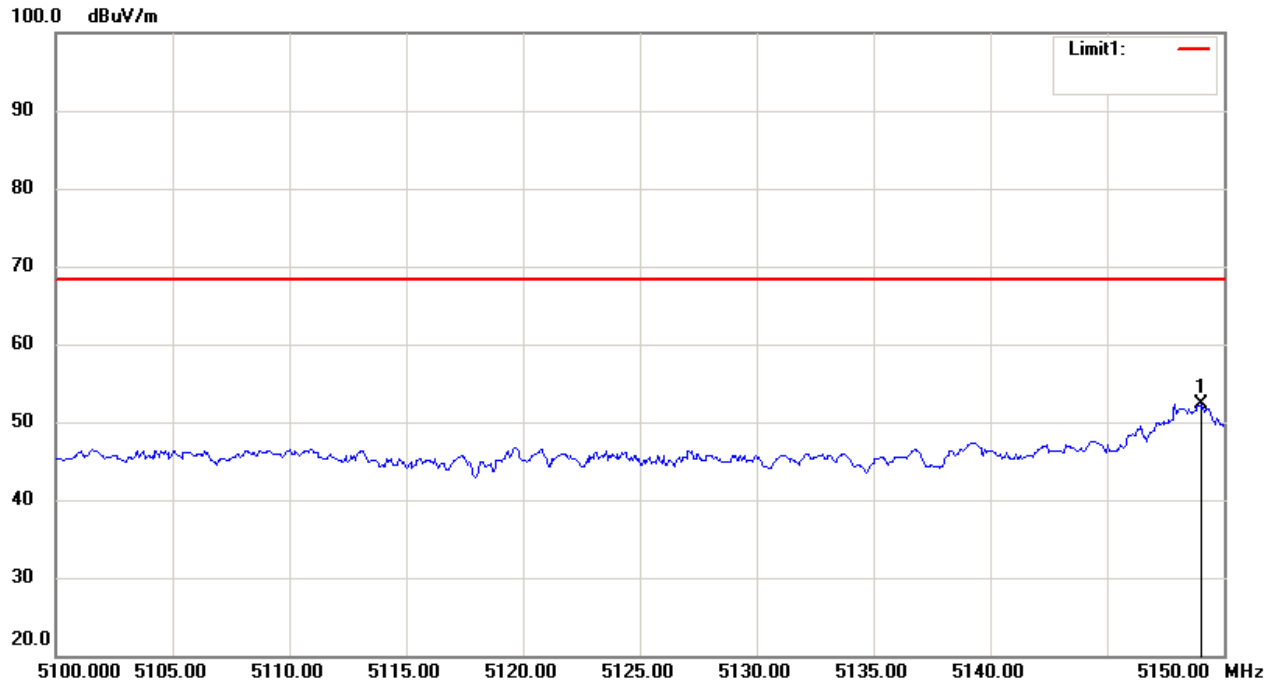
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5149.05	V	51.15	-44.08	-27.00	Pass
5149.68	H	50.05	-45.18	-27.00	Pass

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5320

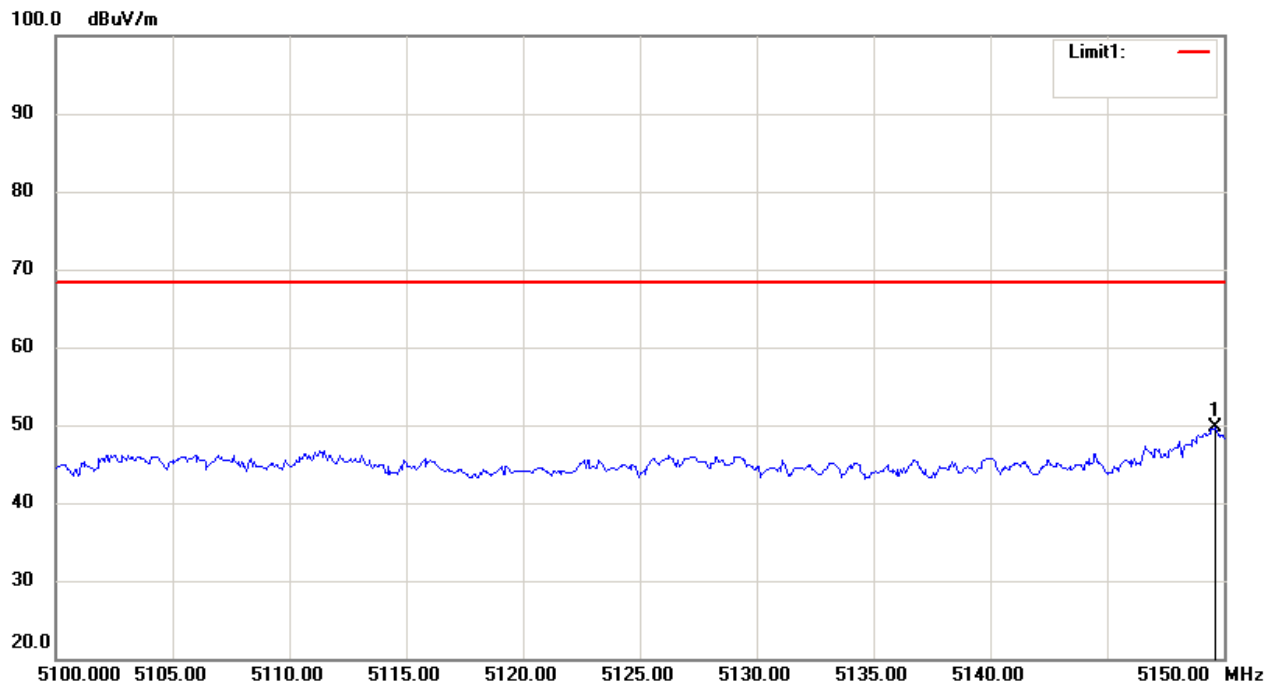
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5350.30	V	57.17	-38.06	-27.00	Pass
5350.40	H	55.60	-39.63	-27.00	Pass

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

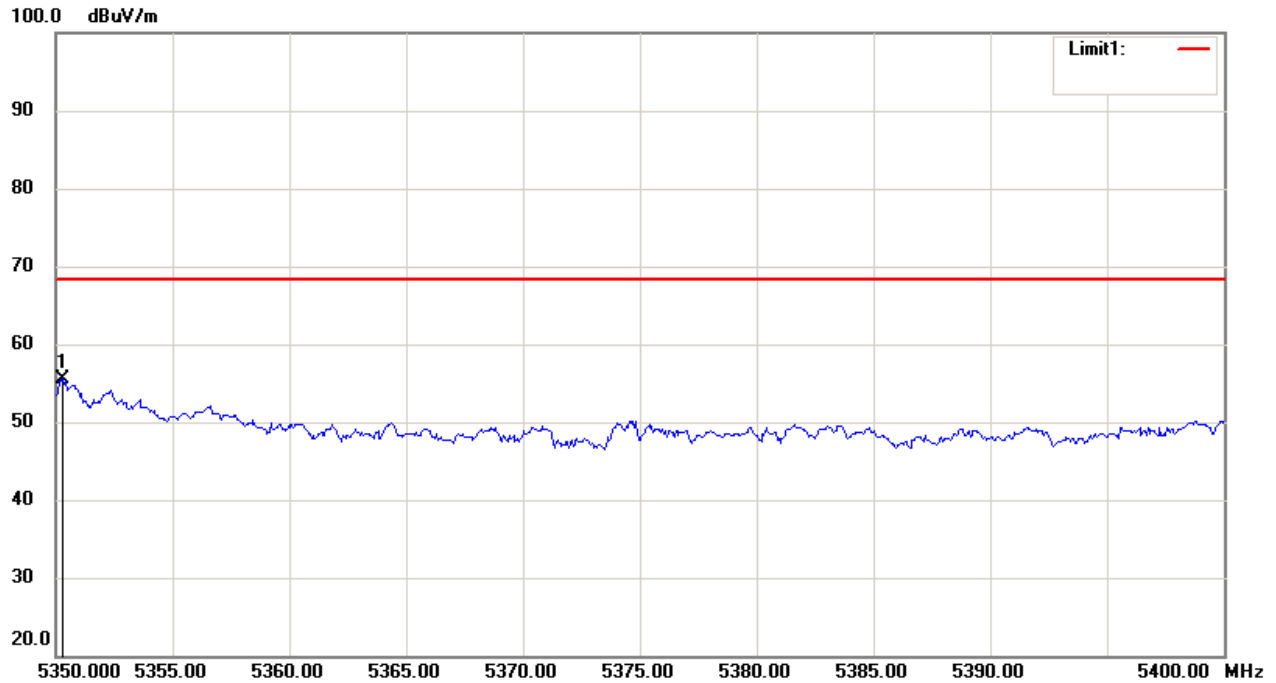
UNII Band II-A				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5260		Ant.Pol	H



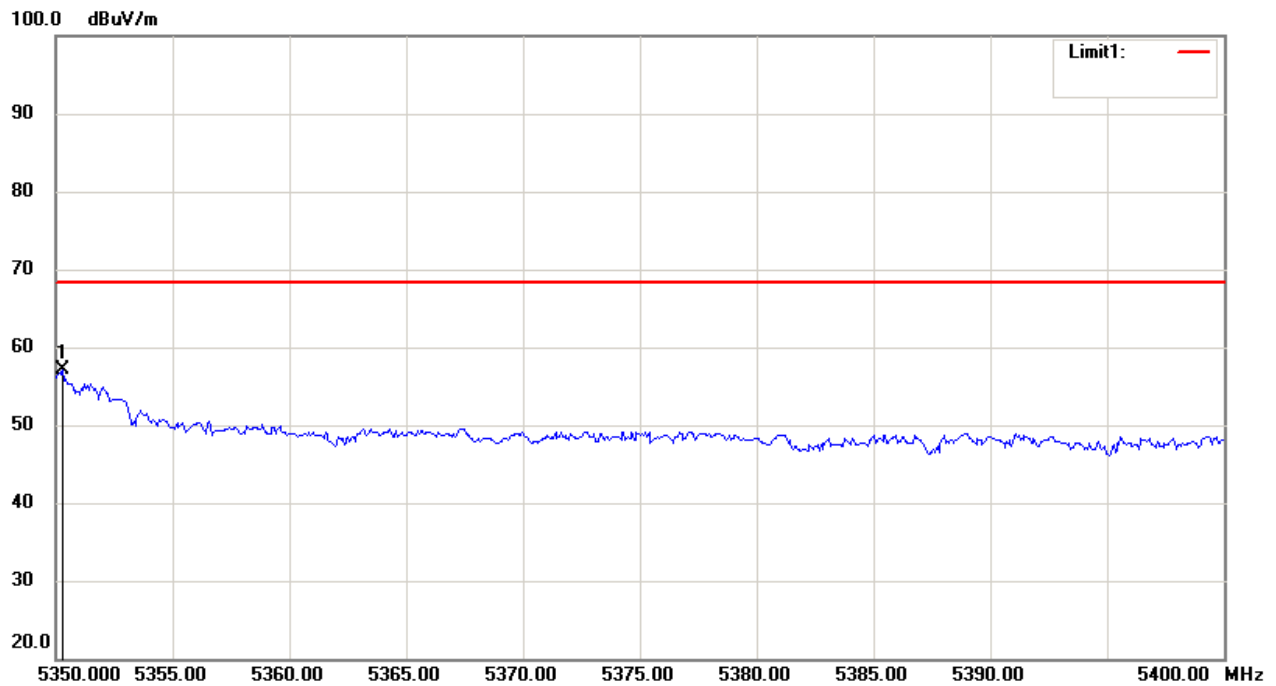
UNII Band II-A				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5260		Ant.Pol	V



UNII Band II-A				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5320		Ant.Pol	H



UNII Band II-A				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5320		Ant.Pol	V



- ☒ For Undesirable radiated Spurious Emission in UNII Band II-C

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

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

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7568.66	V	56.11	-39.11	-27.00	-12.11
9987.92	V	58.30	-36.93	-27.00	-9.93
14059.36	V	64.02	-31.21	-27.00	-4.21
7204.34	H	54.02	-41.20	-27.00	-14.20
10972.90	H	61.27	-33.95	-27.00	-6.95
13398.91	H	62.75	-32.48	-27.00	-5.48

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5600

Freq. (MHz)	Ant.Pol. H/V	Field Strength (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Over(dB)
7074.02	V	55.54	-39.69	-27.00	-12.69
10154.80	V	58.04	-37.19	-27.00	-10.19
13488.39	V	64.20	-31.02	-27.00	-4.02
6956.25	H	51.87	-43.36	-27.00	-16.36
10480.15	H	60.73	-34.50	-27.00	-7.50
13910.71	H	63.34	-31.89	-27.00	-4.89

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7606.65	V	55.17	-40.06	-27.00	-13.06
10604.80	V	57.35	-37.88	-27.00	-10.88
13822.23	V	64.69	-30.54	-27.00	-3.54
7376.93	H	53.20	-42.02	-27.00	-15.02
10443.54	H	61.30	-33.92	-27.00	-6.92
13896.19	H	63.02	-32.20	-27.00	-5.20

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

● Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5260

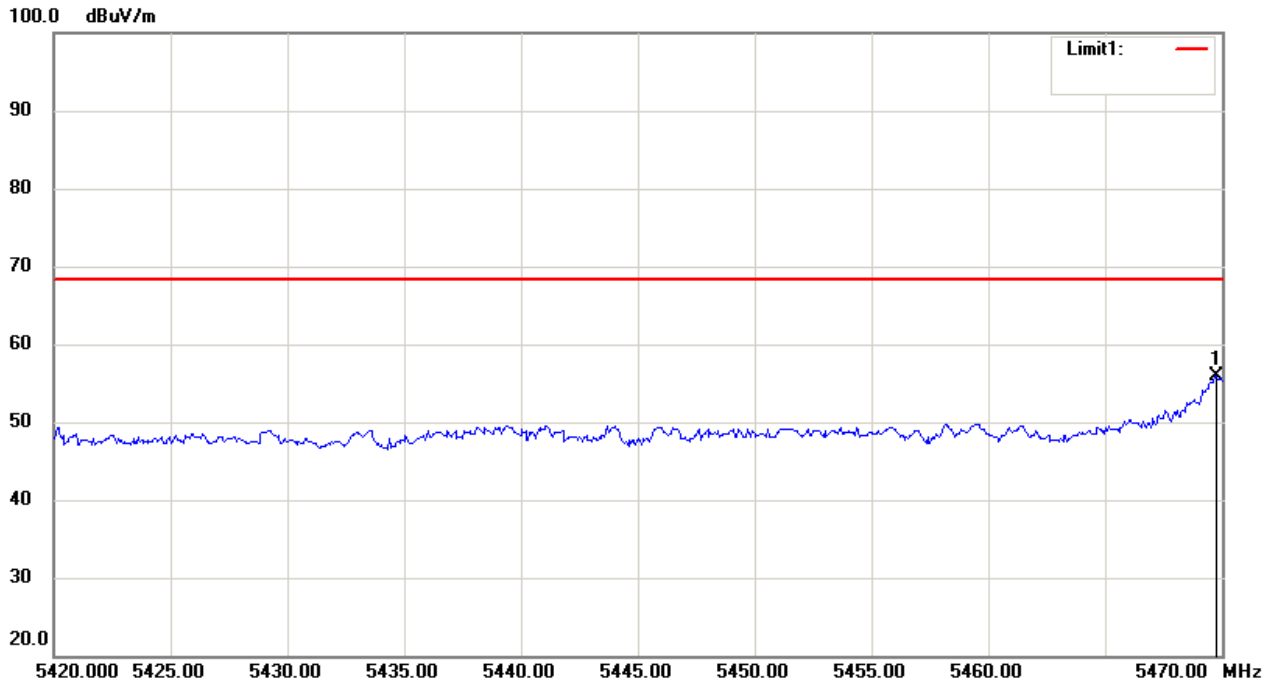
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5469.75	V	55.90	-39.33	-27.00	Pass
5470.00	H	54.68	-40.55	-27.00	Pass

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency(MHz):	5320

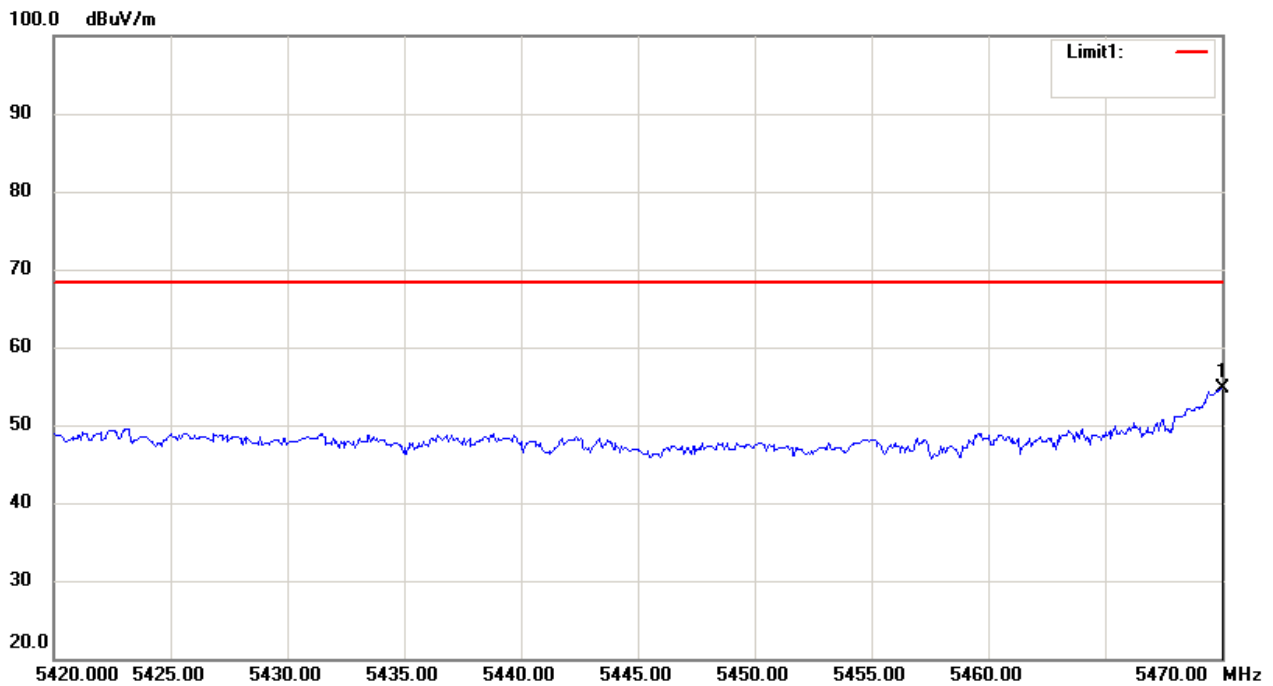
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5725.15	V	57.83	-37.40	-27.00	Pass
5726.00	H	57.40	-37.83	-27.00	Pass

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

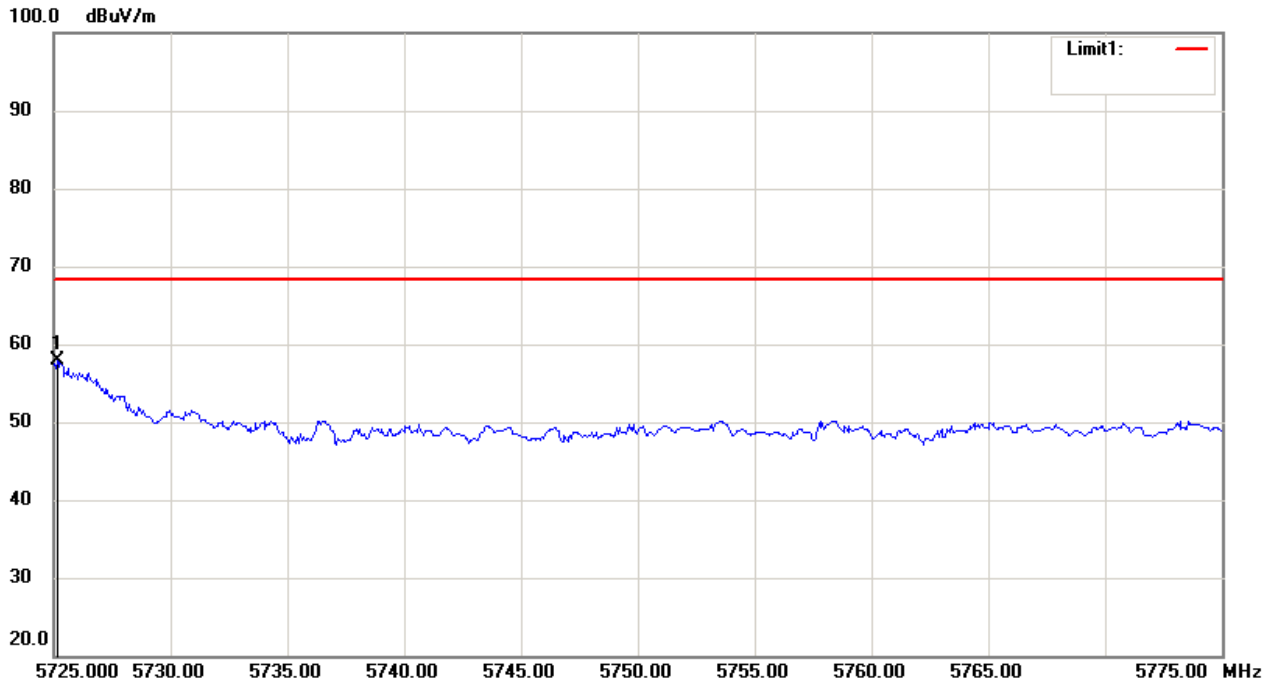
UNII Band II-C				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5500		Ant.Pol	H



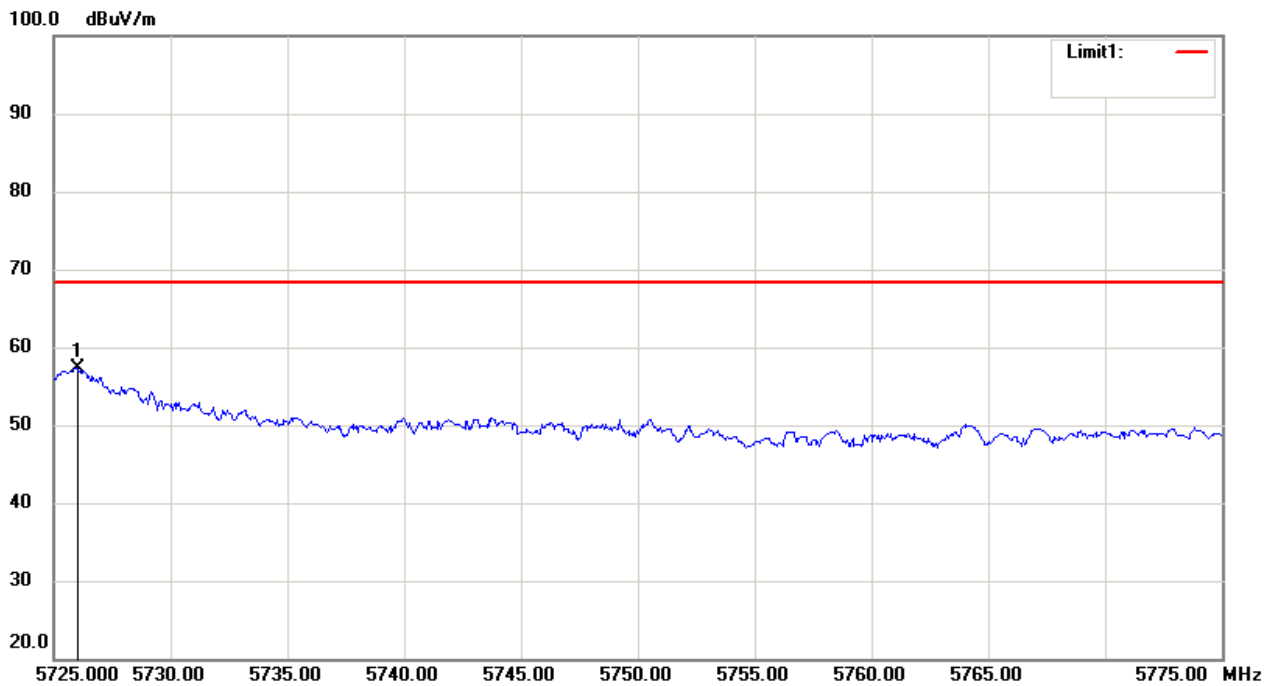
UNII Band II-C				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5500		Ant.Pol	V



UNII Band II-C				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
		☒ 5700	Ant.Pol	H



UNII Band II-C				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
		☒ 5700	Ant.Pol	V



- ☒ For Undesirable radiated Spurious Emission in UNII Band III

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

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

Temperature :	28℃	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7659.65	V	55.14	-40.09	-27.00	-13.09
10233.36	V	58.04	-37.19	-27.00	-10.19
13686.89	V	63.04	-32.19	-27.00	-5.19
7636.64	H	53.69	-41.53	-27.00	-14.53
10533.60	H	61.46	-33.77	-27.00	-6.77
14309.80	H	63.13	-32.10	-27.00	-5.10

Temperature :	28℃	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7923.95	V	55.89	-39.34	-27.00	-12.34
10519.94	V	57.46	-37.77	-27.00	-10.77
13217.41	V	62.96	-32.26	-27.00	-5.26
7601.29	H	53.43	-41.80	-27.00	-14.80
11027.85	H	59.57	-35.65	-27.00	-8.65
13424.35	H	62.52	-32.71	-27.00	-5.71

Temperature :	28℃	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
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)
7522.16	V	53.89	-41.33	-27.00	-14.33
10236.16	V	57.22	-38.00	-27.00	-11.00
13798.47	V	61.29	-33.93	-27.00	-6.93
7702.38	H	54.22	-41.01	-27.00	-14.01
10664.95	H	61.56	-33.67	-27.00	-6.67
13341.98	H	61.07	-34.16	-27.00	-7.16

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

- ☒ Undesirable radiated Spurious Emission in band edge

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency:	5745

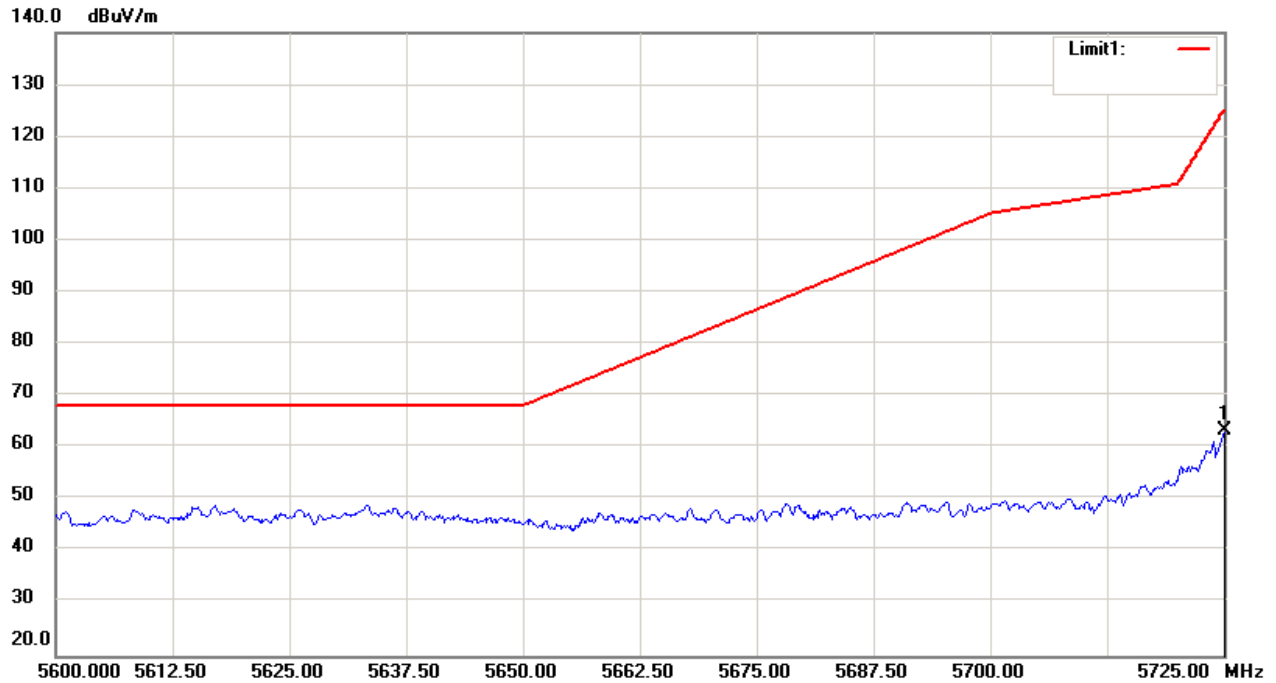
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5725.00	V	63.39	-31.84	27.0	PASS
5725.00	H	61.37	-33.86	27.0	PASS

Temperature :	28°C	Test Date :	June 13, 2017
Humidity :	65 %	Test By:	King Kong
Test mode:	802.11a	Frequency:	5825

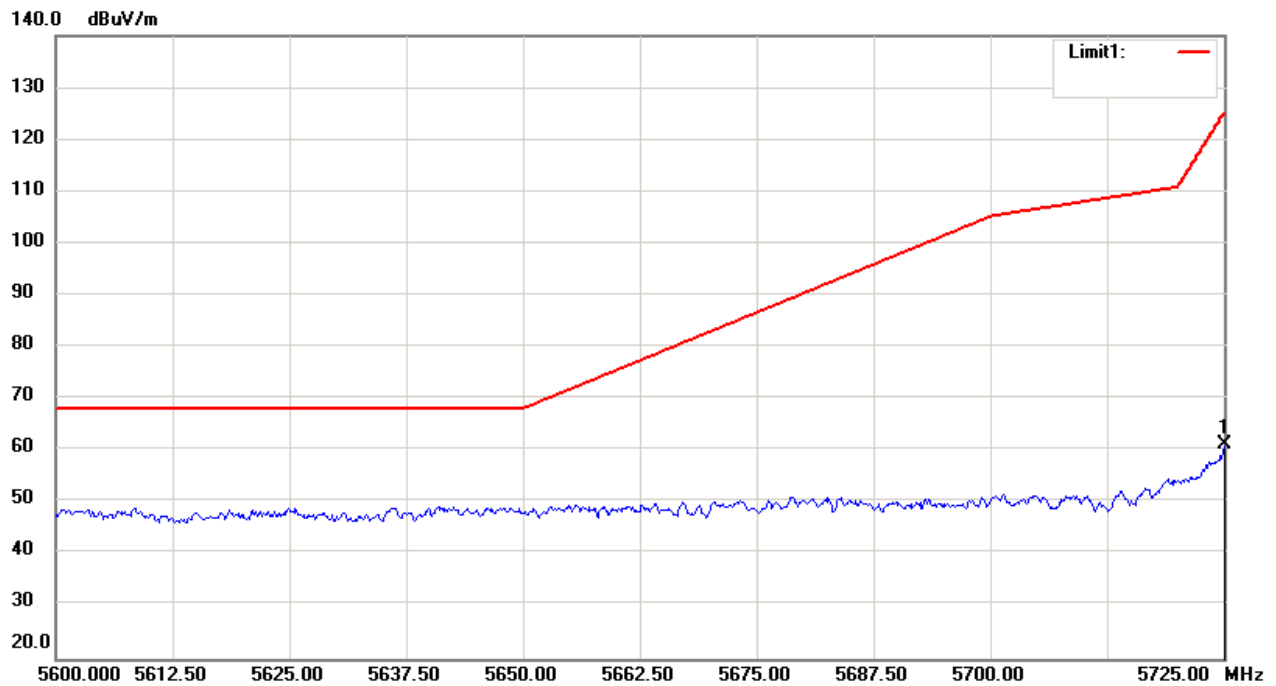
Freq. (MHz)	Ant.Pol. H/V	Field Strength (RBW=100KHz) (dBuV/m)	E.I.R.P (dBm)	Limit (dBm)	Verdict
5850.00	V	64.17	-31.06	27.0	PASS
5850.00	H	63.23	-32.00	27.0	PASS

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

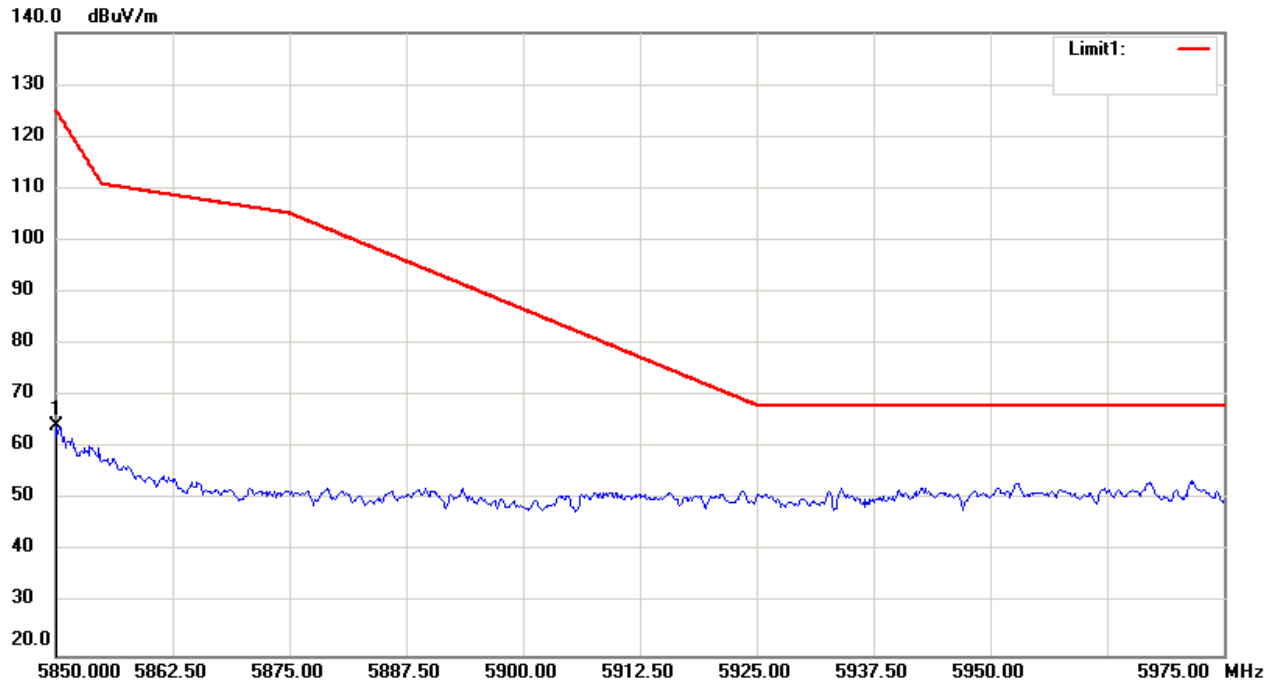
UNII Band III				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5745		Ant.Pol	H



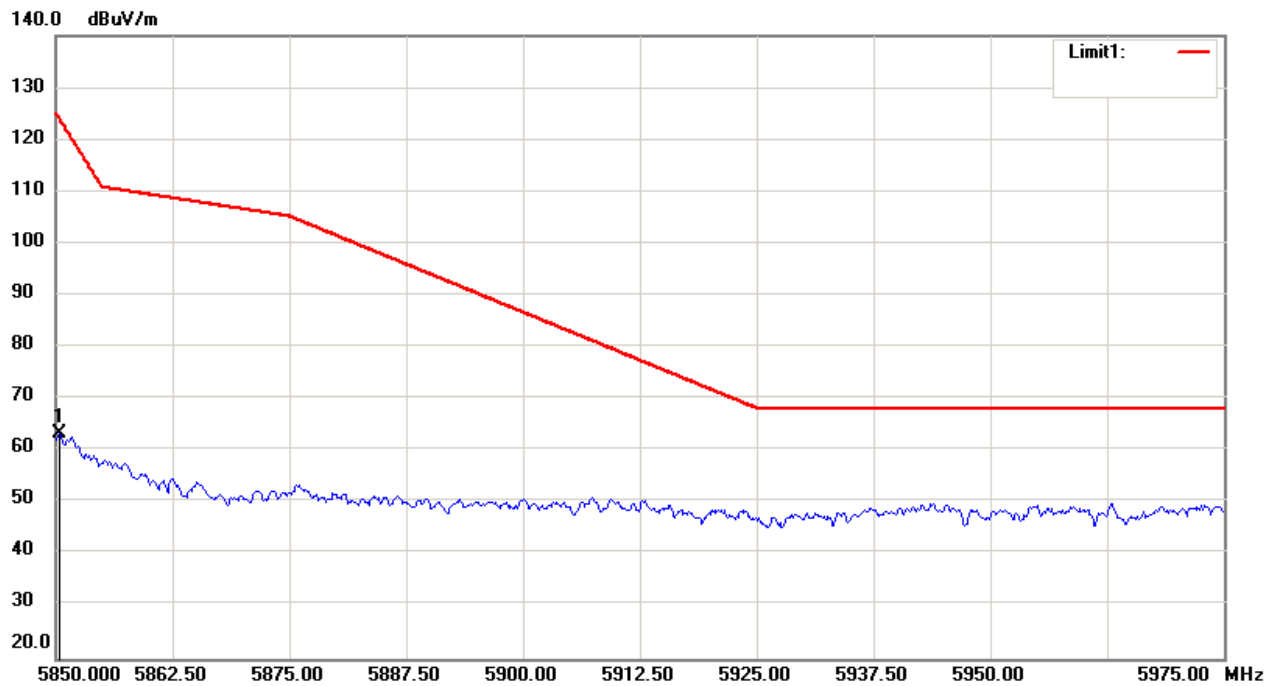
UNII Band III				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5745		Ant.Pol	V



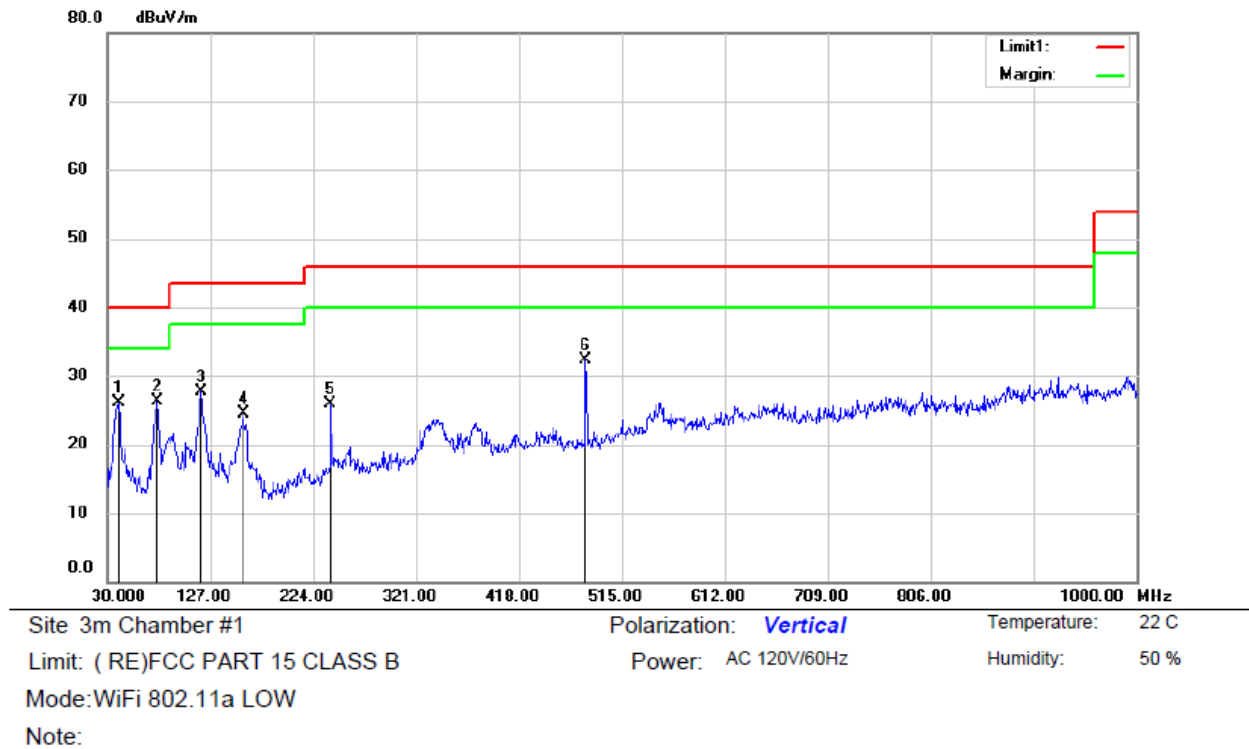
UNII Band III				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5825		Ant.Pol	H



UNII Band III				
Test Model	Undesirable radiated	Undesirable radiated	Spurious Emission in Band Edge	
	☒ 802.11a	☐ 802.11n(HT20)	☐ 802.11n(HT40)	
	☒ 5825		Ant.Pol	V



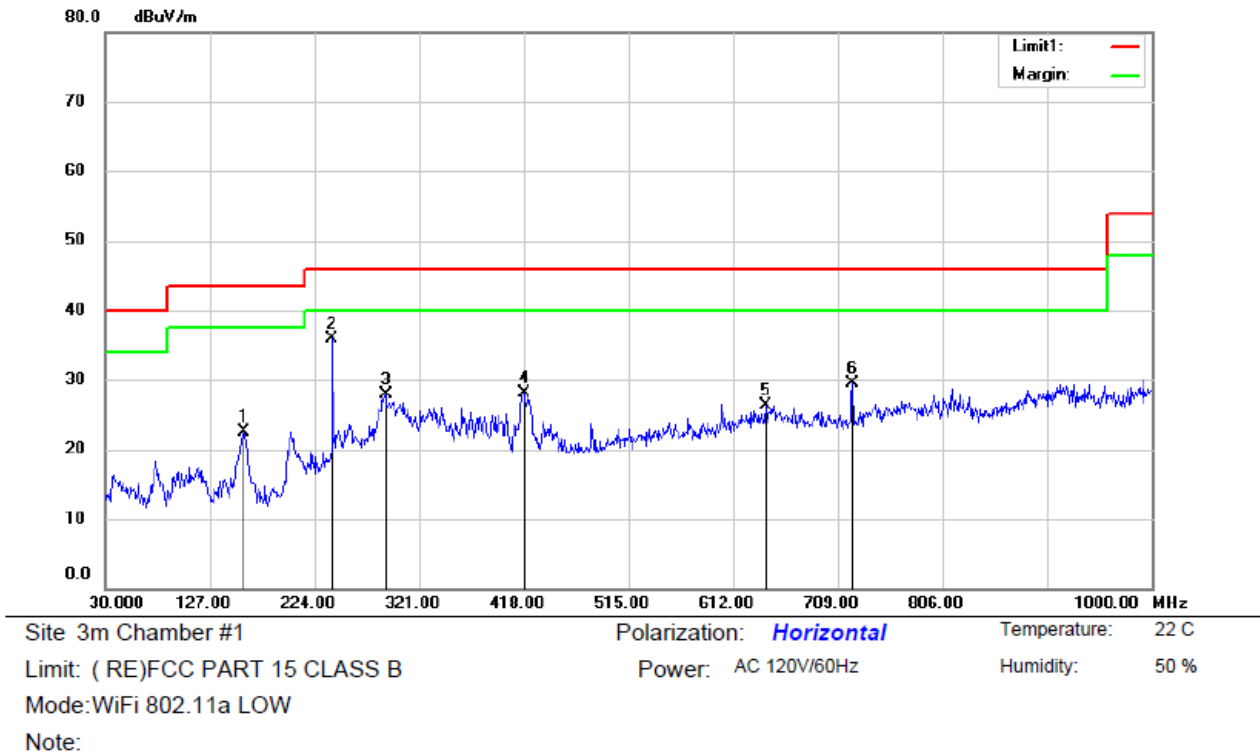
- Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)
All mode have been tested, and the worst results have been recorded in the report.



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		40.6700	38.52	-12.51	26.01	40.00	-13.99	QP		
2	*	77.5300	44.16	-17.92	26.24	40.00	-13.76	QP		
3		118.2700	42.38	-14.68	27.70	43.50	-15.80	QP		
4		158.0400	40.95	-16.36	24.59	43.50	-18.91	QP		
5		240.4900	37.37	-11.52	25.85	46.00	-20.15	QP		
6		481.0500	39.80	-7.58	32.22	46.00	-13.78	QP		

*:Maximum data x:Over limit !:over margin

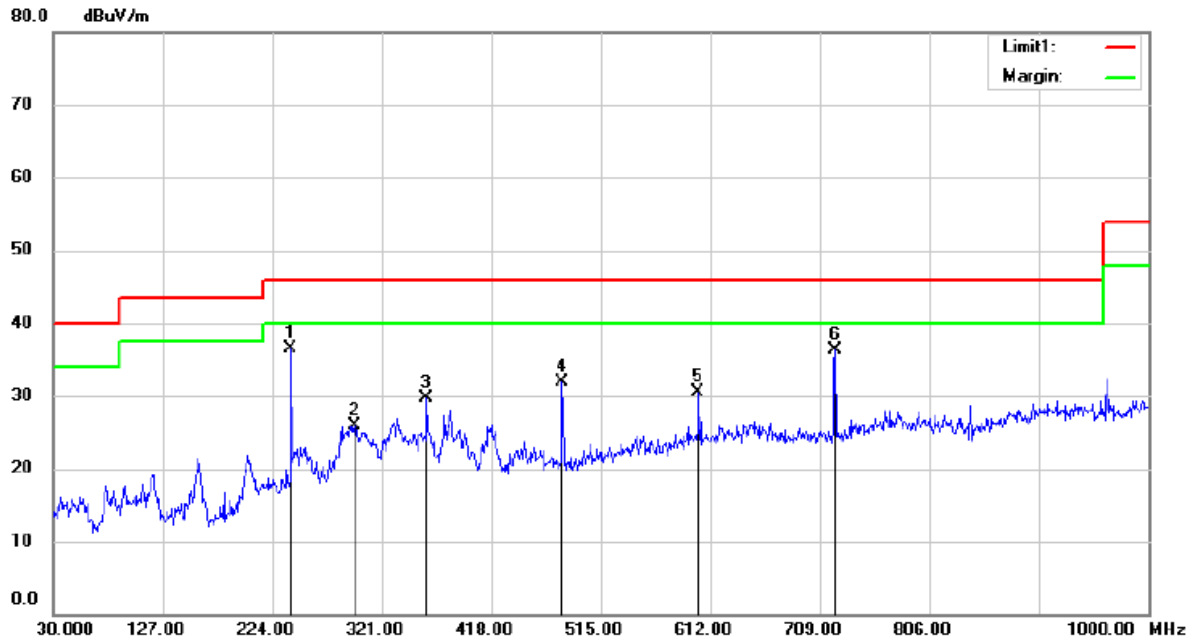
Operator: CSL



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		40.6700	38.52	-12.51	26.01	40.00	-13.99	QP		
2	*	77.5300	44.16	-17.92	26.24	40.00	-13.76	QP		
3		118.2700	42.38	-14.68	27.70	43.50	-15.80	QP		
4		158.0400	40.95	-16.36	24.59	43.50	-18.91	QP		
5		240.4900	37.37	-11.52	25.85	46.00	-20.15	QP		
6		481.0500	39.80	-7.58	32.22	46.00	-13.78	QP		

*:Maximum data x:Over limit !:over margin

Operator: CSL



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 22 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 50 %

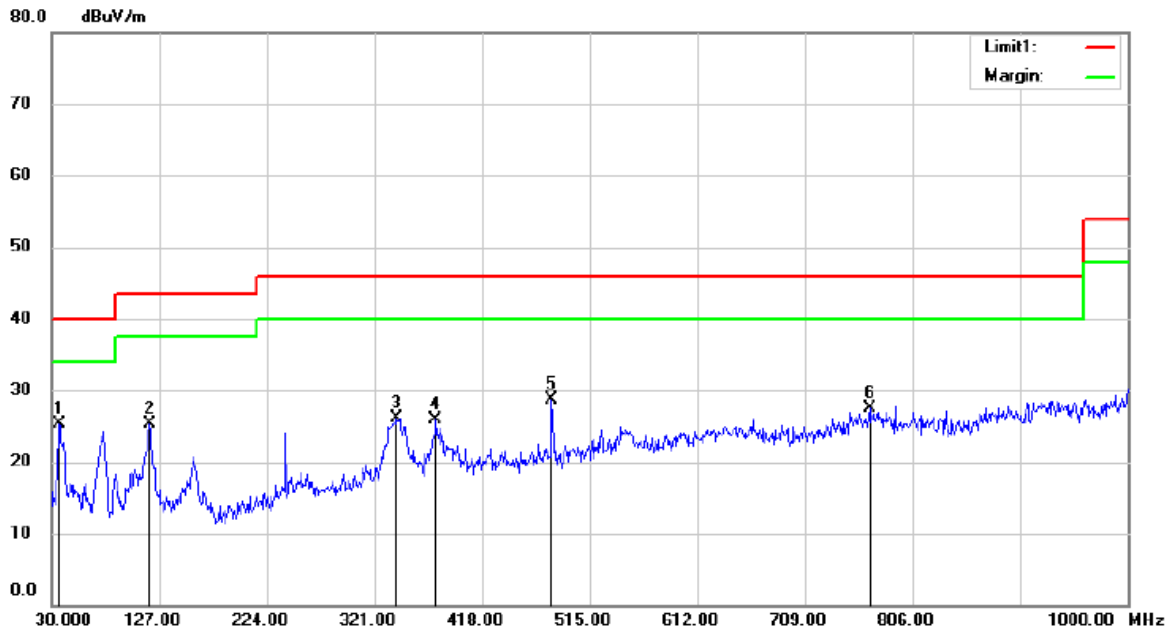
Mode:WiFi 802.11a MID

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	240.4900	47.94	-11.52	36.42	46.00	-9.58	QP		
2		296.7500	35.80	-9.89	25.91	46.00	-20.09	QP		
3		360.7700	38.90	-9.19	29.71	46.00	-16.29	QP		
4		481.0500	39.44	-7.58	31.86	46.00	-14.14	QP		
5		601.3300	35.10	-4.67	30.43	46.00	-15.57	QP		
6		722.5800	40.41	-4.10	36.31	46.00	-9.69	QP		

*:Maximum data x:Over limit !:over margin

Operator: CSL

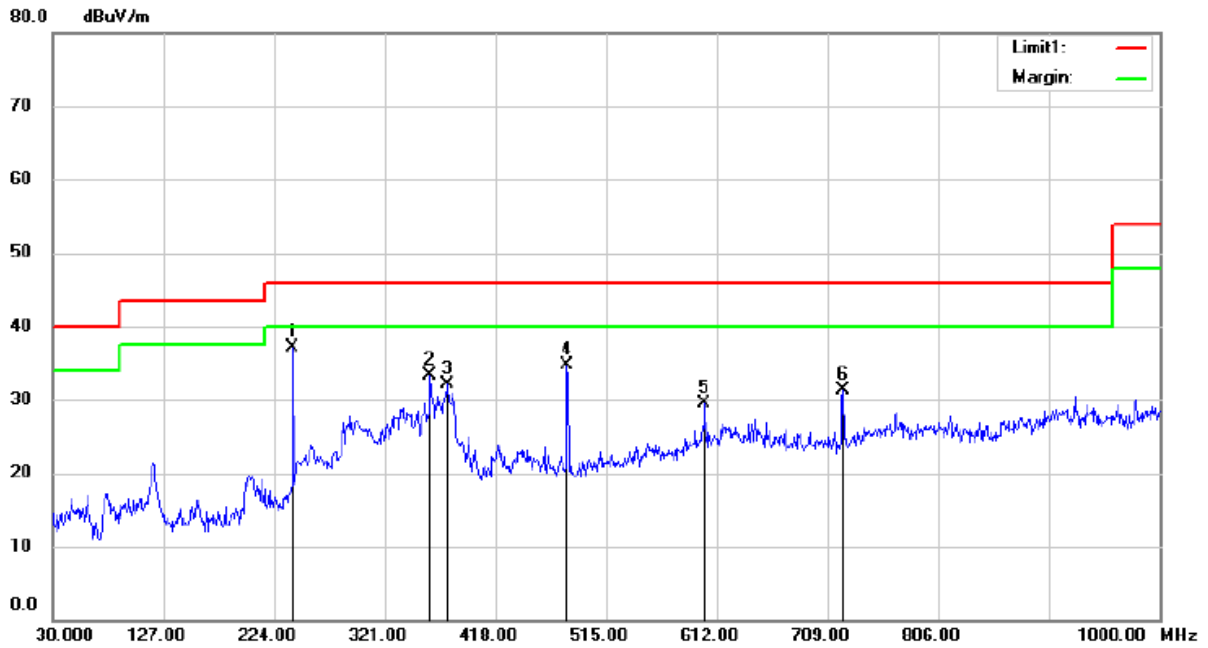


Site 3m Chamber #1 Polarization: **Vertical** Temperature: 22 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %
 Mode:WiFi 802.11a MID
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	36.7900	38.69	-13.39	25.30	40.00	-14.70	peak		
2		118.2700	39.97	-14.68	25.29	43.50	-18.21	peak		
3		341.3700	35.23	-9.09	26.14	46.00	-19.86	peak		
4		376.2900	34.69	-8.87	25.82	46.00	-20.18	peak		
5		481.0500	36.26	-7.58	28.68	46.00	-17.32	peak		
6		767.2000	29.84	-2.32	27.52	46.00	-18.48	peak		

*:Maximum data x:Over limit !:over margin

Operator: CSL

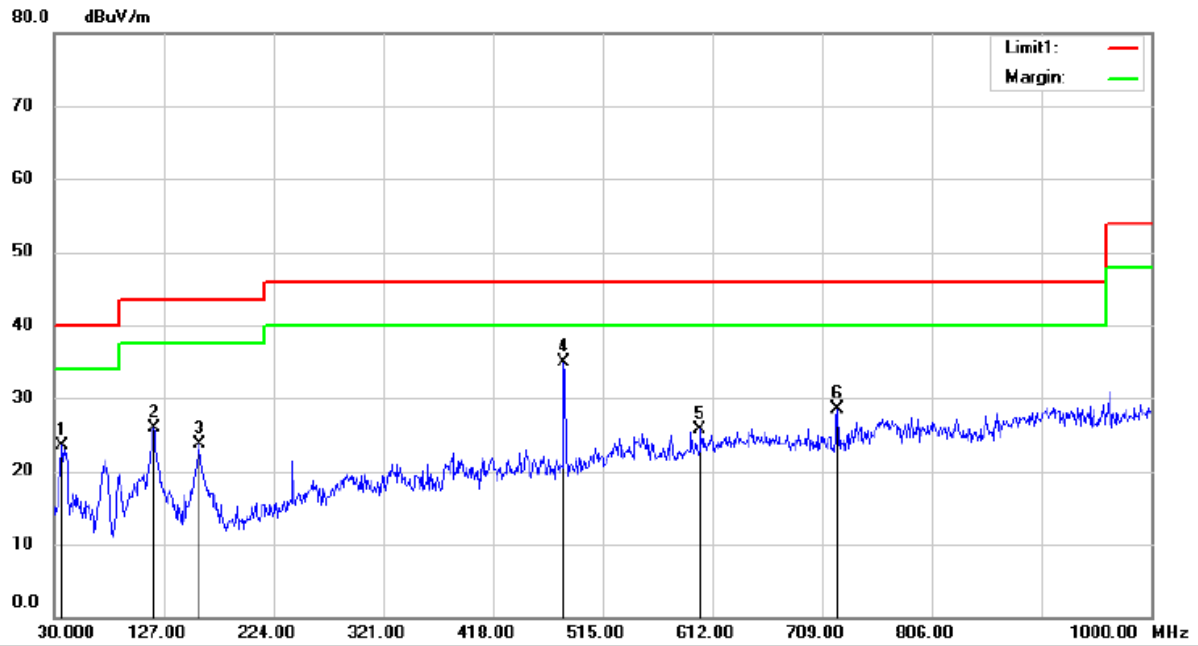


Site 3m Chamber #1 Polarization: **Horizontal** Temperature: 22 C
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 50 %
 Mode:WiFi 802.11a HIGH
 Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table
		MHz	Level	Factor	ment			Height	Degree
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree
1	*	240.4900	48.71	-11.52	37.19	46.00	-8.81	QP	
2		360.7700	42.41	-9.19	33.22	46.00	-12.78	QP	
3		376.2900	40.95	-8.87	32.08	46.00	-13.92	QP	
4		481.0500	42.30	-7.58	34.72	46.00	-11.28	QP	
5		601.3300	34.12	-4.67	29.45	46.00	-16.55	QP	
6		722.5800	35.44	-4.10	31.34	46.00	-14.66	QP	

*:Maximum data x:Over limit !:over margin

Operator: CSL



Site: 3m Chamber #1
 Limit: (RE)FCC PART 15 CLASS B
 Mode: WiFi 802.11a HIGH
 Note:

Polarization: **Vertical**
 Power: AC 120V/60Hz
 Temperature: 22 C
 Humidity: 50 %

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		36.7900	36.96	-13.39	23.57	40.00	-16.43	QP		
2		118.2700	40.55	-14.68	25.87	43.50	-17.63	QP		
3		158.0400	40.14	-16.36	23.78	43.50	-19.72	QP		
4	*	481.0500	42.55	-7.58	34.97	46.00	-11.03	QP		
5		601.3300	30.28	-4.67	25.61	46.00	-20.39	QP		
6		722.5800	32.51	-4.10	28.41	46.00	-17.59	QP		

*:Maximum data x:Over limit !:over margin

Operator: CSL

8.6 POWER LINE CONDUCTED EMISSIONS

8.6.1 Applicable Standard

According to FCC Part 15.207(a)

8.6.2 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.

8.6.3 Test Configuration

Test according to clause 6.3 conducted emission test setup

8.6.4 Test Procedure

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

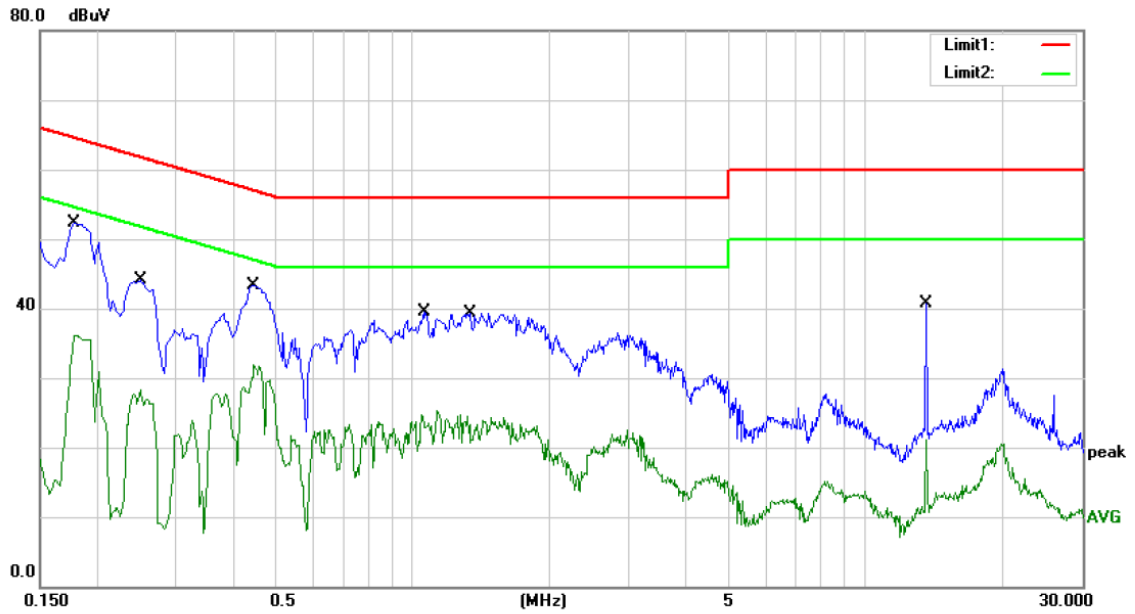
Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Repeat above procedures until all frequency measured were complete.

8.6.5 Test Results

Pass

All mode and the voltage 120V and 240V have been tested, and show the worst result(WIFI ON,120V~ 60Hz) as bellow.



Site Conduction #2

Phase: **L1**

Temperature: 21

Limit: (CE)FCC PART 15 C

Power: AC 120V/60Hz

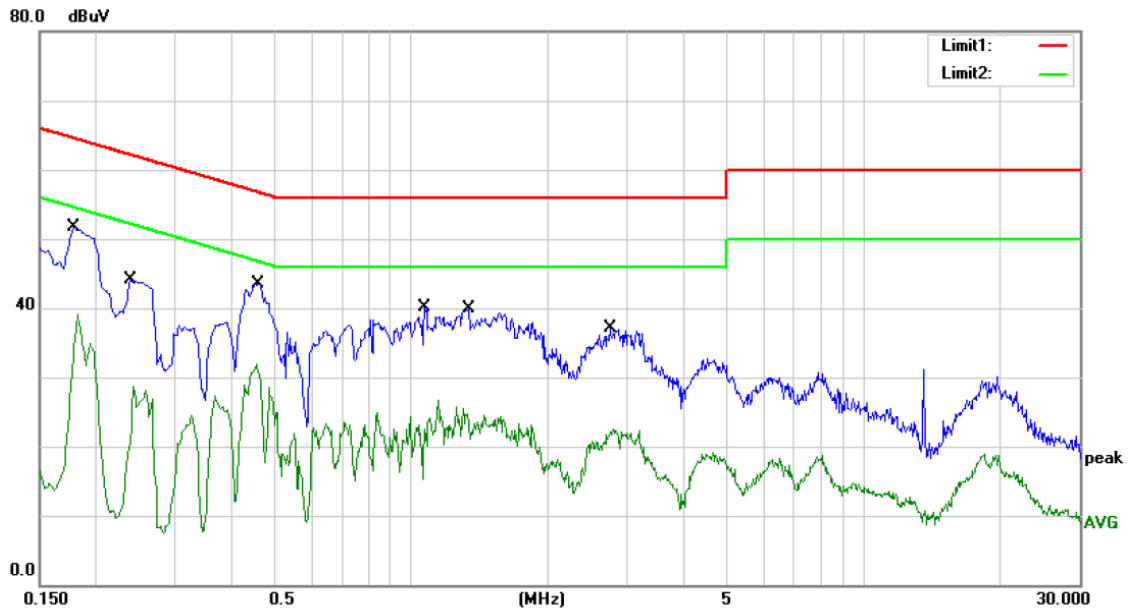
Humidity: 53 %

Mode: WIFI ON

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1780	42.70	9.63	52.33	64.58	-12.25	QP	
2		0.1780	26.40	9.63	36.03	54.58	-18.55	AVG	
3		0.2500	34.35	9.65	44.00	61.76	-17.76	QP	
4		0.2500	18.72	9.65	28.37	51.76	-23.39	AVG	
5		0.4460	33.62	9.70	43.32	56.95	-13.63	QP	
6		0.4460	22.12	9.70	31.82	46.95	-15.13	AVG	
7		1.0580	29.56	9.85	39.41	56.00	-16.59	QP	
8		1.0580	15.47	9.85	25.32	46.00	-20.68	AVG	
9		1.3340	29.52	9.85	39.37	56.00	-16.63	QP	
10		1.3340	14.90	9.85	24.75	46.00	-21.25	AVG	
11		13.5660	30.08	10.63	40.71	60.00	-19.29	QP	
12		13.5660	10.52	10.63	21.15	50.00	-28.85	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Cai



Site: Conduction #2

Phase: **N**

Temperature: 21

Limit: (CE)FCC PART 15 C

Power: AC 120V/60Hz

Humidity: 53 %

Mode: WIFI ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1780	42.10	9.63	51.73	64.58	-12.85	QP	
2		0.1780	29.56	9.63	39.19	54.58	-15.39	AVG	
3		0.2380	34.50	9.64	44.14	62.17	-18.03	QP	
4		0.2380	19.04	9.64	28.68	52.17	-23.49	AVG	
5		0.4580	33.86	9.70	43.56	56.73	-13.17	QP	
6		0.4580	22.14	9.70	31.84	46.73	-14.89	AVG	
7		1.0700	30.16	9.85	40.01	56.00	-15.99	QP	
8		1.0700	16.94	9.85	26.79	46.00	-19.21	AVG	
9		1.3380	30.02	9.85	39.87	56.00	-16.13	QP	
10		1.3380	15.83	9.85	25.68	46.00	-20.32	AVG	
11		2.7460	27.19	9.86	37.05	56.00	-18.95	QP	
12		2.7460	12.61	9.86	22.47	46.00	-23.53	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: Cai

8.7 ANTENNA APPLICATION

8.7.1 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.

8.7.2 Result

PASS.

The EUT has two FPC antennas for WIFI, the antenna0 max gain is 5.86 dBi, the antenna1 max gain is 2.60dBi;

Note:

- ☒ Antenna 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)

W

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