Beamforming mode

802.11ax (HE20)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Pass/Fail
		Chain 0	Chain 1					
2	5935	-0.01	-0.75	2.65	8.01	10.66	24	PASS
1	5955	0.33	-0.97	2.74	8.01	10.75	24	PASS
45	6175	-0.78	-0.72	2.26	8.01	10.27	24	PASS
93	6415	-0.54	-1.32	2.10	8.01	10.11	24	PASS
97	6435	-0.41	-0.26	2.68	8.01	10.69	24	PASS
105	6475	-0.83	-0.96	2.12	8.01	10.13	24	PASS
113	6515	-0.41	-0.87	2.38	8.01	10.39	24	PASS
117	6535	-0.66	-0.41	2.48	8.01	10.49	24	PASS
149	6695	-1.03	-0.01	2.52	8.01	10.53	24	PASS
181	6855	-0.71	-1.00	2.16	8.01	10.17	24	PASS
185	6875	-0.21	-1.08	2.39	8.01	10.40	24	PASS
209	6995	-0.80	-0.79	2.22	8.01	10.23	24	PASS
229	7095	-1.62	-1.83	1.29	8.01	9.30	24	PASS
233	7115	-1.82	-2.90	0.68	8.01	8.69	24	PASS

802.11ax (HE40)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Pass/Fail
		Chain 0	Chain 1					
3	5965	2.86	2.09	5.50	8.01	13.51	24	PASS
43	6165	1.91	1.55	4.74	8.01	12.75	24	PASS
91	6405	1.77	2.09	4.94	8.01	12.95	24	PASS
99	6445	1.55	2.20	4.90	8.01	12.91	24	PASS
107	6485	2.17	2.49	5.34	8.01	13.35	24	PASS
115	6525	0.96	0.93	3.96	8.01	11.97	24	PASS
123	6565	2.18	1.73	4.97	8.01	12.98	24	PASS
155	6725	2.21	2.22	5.23	8.01	13.24	24	PASS
179	6845	2.30	2.76	5.55	8.01	13.56	24	PASS
187	6885	1.88	2.50	5.21	8.01	13.22	24	PASS
211	7005	2.61	1.37	5.04	8.01	13.05	24	PASS
227	7085	1.79	2.21	5.02	8.01	13.03	24	PASS

802.11ax (HE80)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Pass/Fail
		Chain 0	Chain 1					
7	5985	5.01	4.37	7.71	8.01	15.72	24	PASS
39	6145	3.57	3.46	6.53	8.01	14.54	24	PASS
87	6385	4.00	3.65	6.84	8.01	14.85	24	PASS
103	6465	3.99	4.56	7.29	8.01	15.30	24	PASS
119	6545	4.04	4.44	7.25	8.01	15.26	24	PASS
135	6625	5.02	4.61	7.83	8.01	15.84	24	PASS
151	6705	5.38	4.90	8.16	8.01	16.17	24	PASS
167	6785	5.75	5.85	8.81	8.01	16.82	24	PASS
183	6865	4.66	5.41	8.06	8.01	16.07	24	PASS
199	6945	5.01	5.13	8.08	8.01	16.09	24	PASS
215	7025	4.33	4.32	7.34	8.01	15.35	24	PASS

802.11ax (HE160)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Pass/Fail
		Chain 0	Chain 1					
15	6025	8.74	8.36	11.56	8.01	19.57	24	PASS
47	6185	8.26	8.05	11.17	8.01	19.18	24	PASS
79	6345	8.18	7.70	10.96	8.01	18.97	24	PASS
111	6505	8.02	7.69	10.87	8.01	18.88	24	PASS
143	6665	7.79	7.10	10.47	8.01	18.48	24	PASS
175	6825	7.65	8.02	10.85	8.01	18.86	24	PASS
207	6985	8.08	7.14	10.65	8.01	18.66	24	PASS

9.4. Power Spectral Density

Requirements

EUT Category		Operation Band	Limit
			Max Average Power Density
	Standard Power AP (6SD)	U-NII-5 U-NII-7	EIRP ≤ 23 dBm/MHz
	Fixed Client (6FC)	U-NII-5 U-NII-7	EIRP ≤ 23 dBm/MHz
	Standard Client (6FX)	U-NII-5 U-NII-7	EIRP ≤ 17 dBm/MHz
	Indoor AP (6ID)	U-NII-5, U-NII-6 U-NII-7, U-NII-8	EIRP ≤ 5 dBm/MHz
	Subordinate (6PP)	U-NII-5, U-NII-6 U-NII-7, U-NII-8	EIRP ≤ 5 dBm/MHz
√	Indoor Client (6XD)	U-NII-5, U-NII-6 U-NII-7, U-NII-8	EIRP ≤ -1 dBm/MHz
	Dual Client (6CD)	Control of a low power indoor AP: U-NII-5, U-NII-6 U-NII-7, U-NII-8	EIRP ≤ -1 dBm/MHz
		Control of a standard power AP: U-NII-5 U-NII-7	EIRP ≤ 17 dBm/MHz

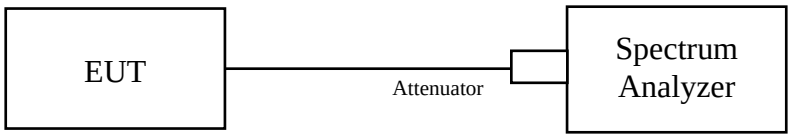
Note:
1. PSD = power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz
2. G_{TX} = the maximum transmitting antenna directional gain in dBi.
3. Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{Gn/20})^2$ / Nant] dBi.
   N*a*nt: Number of Transmit Antennas
   G1, G2,..., Gn: Gain of Individual Antennas
   Example: two antenna and gain 5 dBi / 3dBi, so if it was used for power density measurement
   Directional Gain = 10 log[$(10^{5/20} + 10^{3/20})^2$ / 2] dBi = 7.07 dBi
4. "PSD per chain" of the report shown is maximum value for each chain, at the "Total PSD" is summing entire spectra across corresponding frequency bins on the various outputs by computer, refer KDB 662911 Method a) for calculating total power density.
5. Method a) of power density measurement of KDB 662911 is used for calculating total power density with multiple transmitter output. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
6. EIRP Power Density = Sum of the conducted power density levels + Directional Gain
7. Refer to section 6.6 for duty cycle spectrum plot. (If duty cycle<98%)

Test procedure

Using method:

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 1 MHz, Set VBW ≥ 3 RBW, Detector = RMS
c. Sweep time = auto, trigger set to “free run”.
d. Trace average at least 100 traces in power averaging mode.
e. Record the max value and add 10 log (1/duty cycle) *If duty cycle<98%

Test Setup



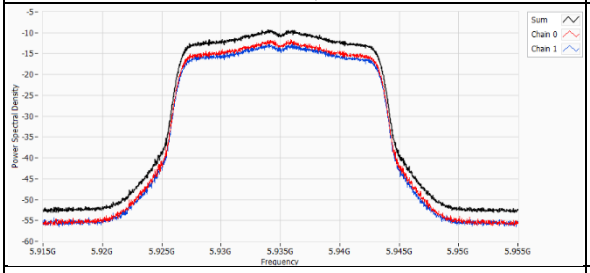
The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

Test Data

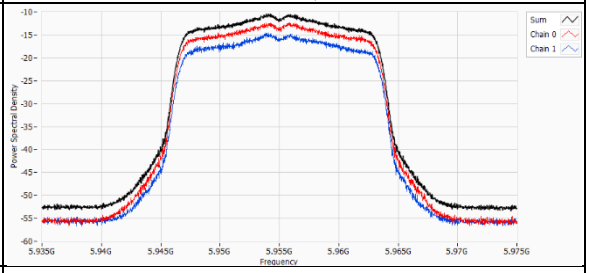
Mode	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	2	5935	8.01	-1.274	-1	Pass
	1	5955	8.01	-2.415	-1	Pass
	45	6175	8.01	-1.102	-1	Pass
	93	6415	8.01	-1.572	-1	Pass
	97	6435	8.01	-1.217	-1	Pass
	105	6475	8.01	-1.071	-1	Pass
	113	6515	8.01	-1.076	-1	Pass
	117	6535	8.01	-1.197	-1	Pass
	149	6695	8.01	-1.674	-1	Pass
	181	6855	8.01	-1.499	-1	Pass
	185	6875	8.01	-1.305	-1	Pass
	209	6995	8.01	-1.007	-1	Pass
	229	7095	8.01	-1.198	-1	Pass
	233	7115	8.01	-2.045	-1	Pass

Mode	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11a	2	5935	-11.688	-12.521
	1	5955	-12.323	-14.517
	45	6175	-11.967	-12.188
	93	6415	-11.962	-12.694
	97	6435	-11.955	-12.004
	105	6475	-11.84	-12.121
	113	6515	-11.567	-12.402
	117	6535	-11.898	-11.977
	149	6695	-12.6	-12.563
	181	6855	-12.014	-12.578
	185	6875	-11.91	-12.196
	209	6995	-11.634	-12.131
	229	7095	-12.189	-12.078
	233	7115	-12.417	-13.394

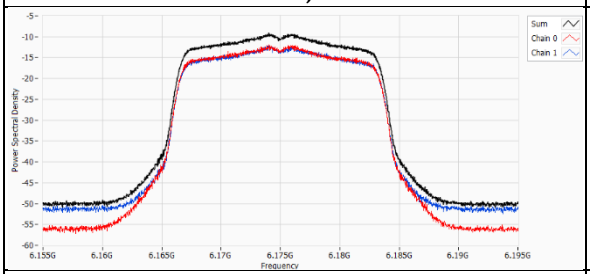
802.11a, CH2



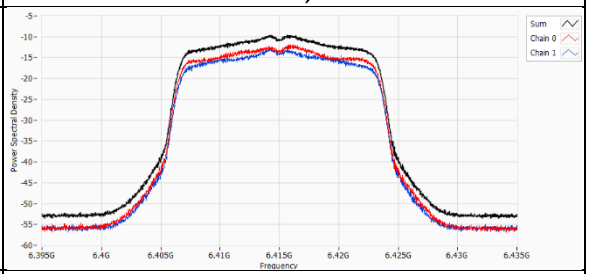
802.11a, CH1



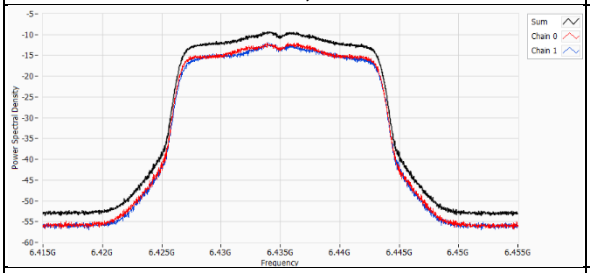
802.11a, CH45



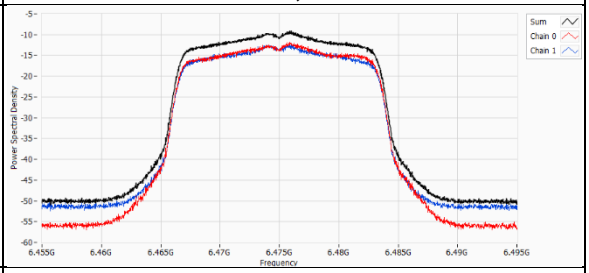
802.11a, CH93



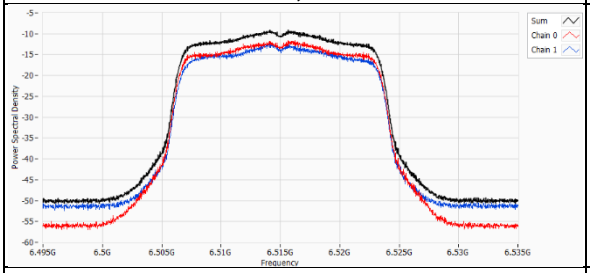
802.11a, CH97



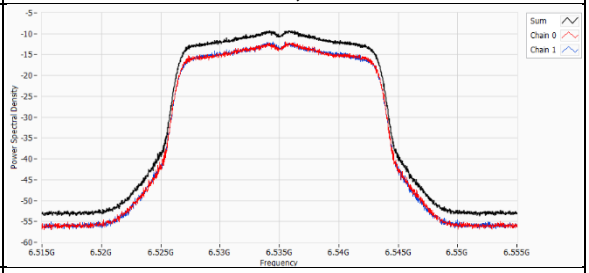
802.11a, CH105



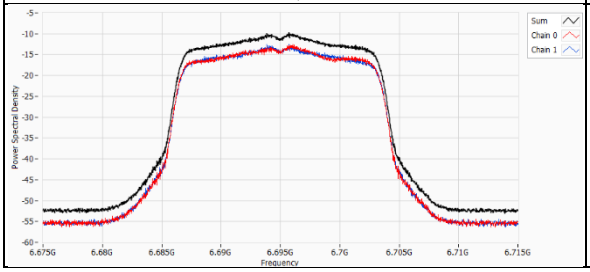
802.11a, CH113



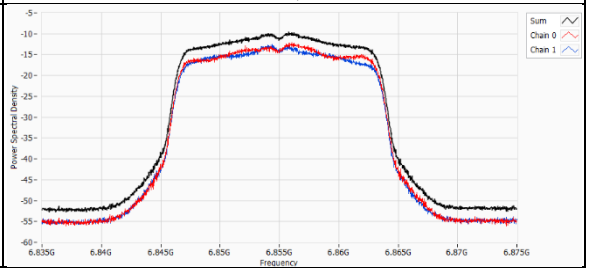
802.11a, CH117

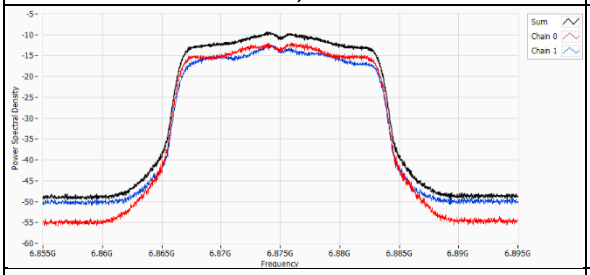
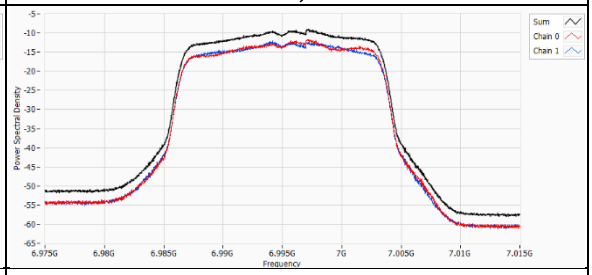
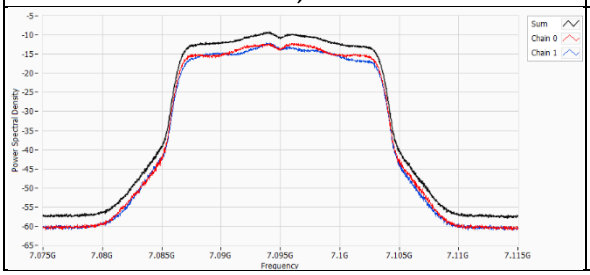
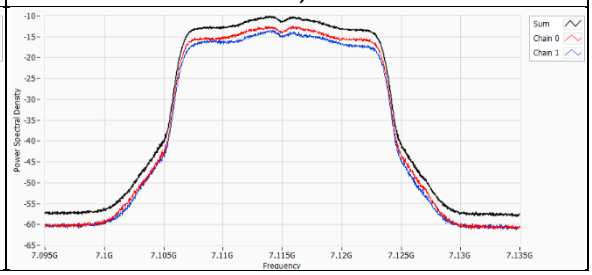


802.11a, CH149



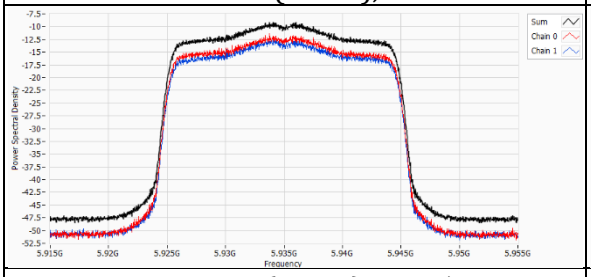
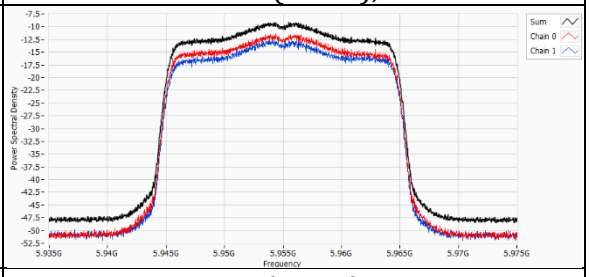
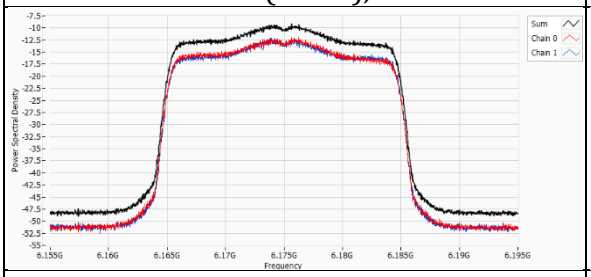
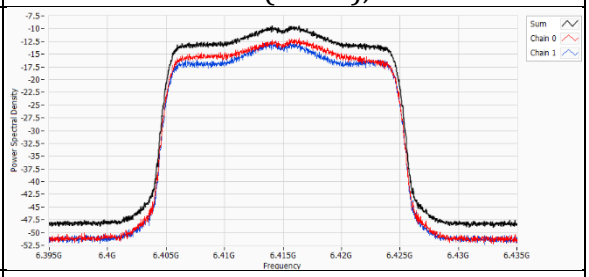
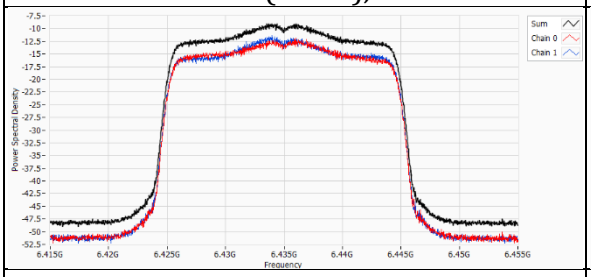
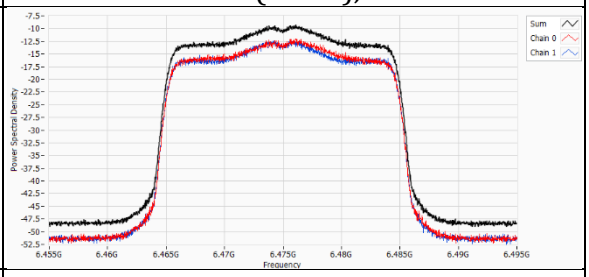
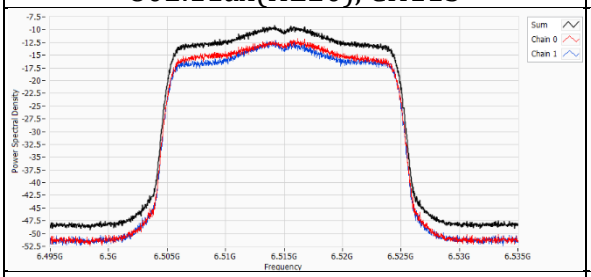
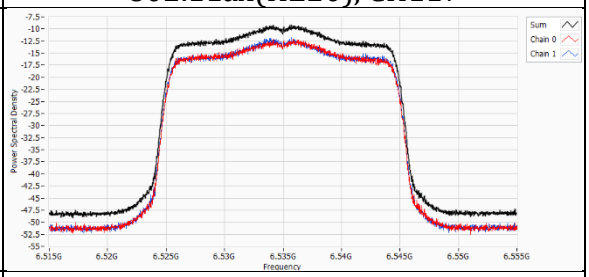
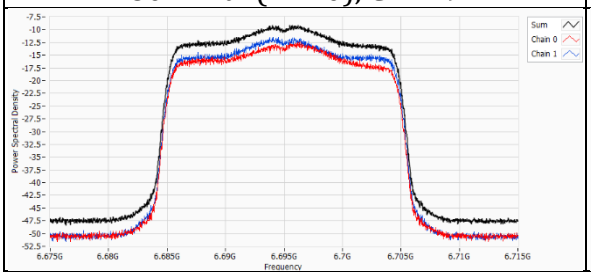
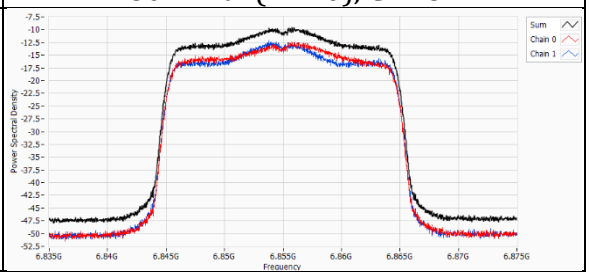
802.11a, CH181

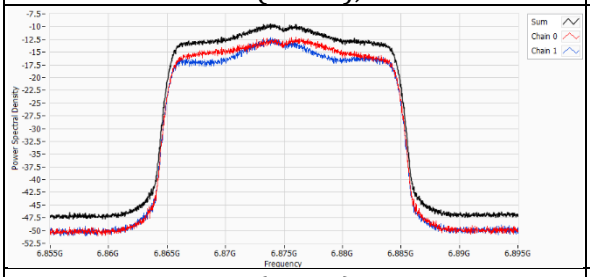
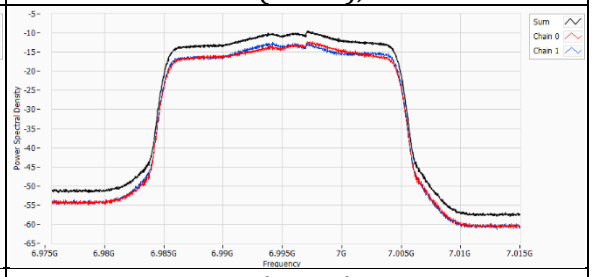
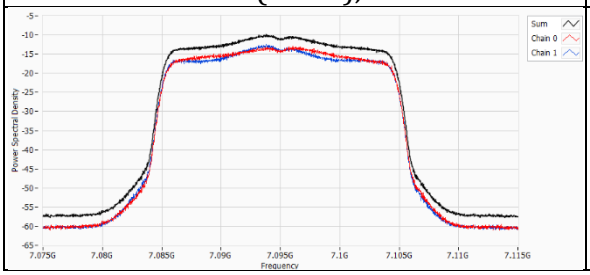
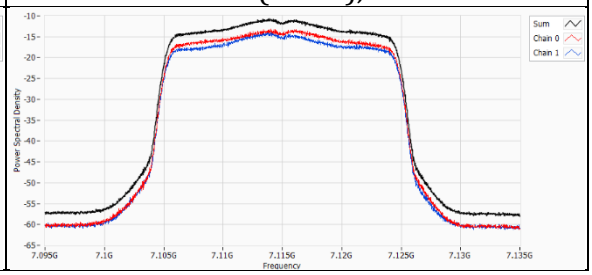


802.11a, CH185	802.11a, CH209
	
802.11a, CH229	**802.11a, CH233**
	

Mode	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ax(HE20)	2	5935	8.01	-1.104	-1	Pass
	1	5955	8.01	-1.119	-1	Pass
	45	6175	8.01	-1.18	-1	Pass
	93	6415	8.01	-1.419	-1	Pass
	97	6435	8.01	-1.008	-1	Pass
	105	6475	8.01	-1.311	-1	Pass
	113	6515	8.01	-1.225	-1	Pass
	117	6535	8.01	-1.108	-1	Pass
	149	6695	8.01	-1.179	-1	Pass
	181	6855	8.01	-1.569	-1	Pass
	185	6875	8.01	-1.391	-1	Pass
	209	6995	8.01	-1.461	-1	Pass
	229	7095	8.01	-1.888	-1	Pass
	233	7115	8.01	-2.674	-1	Pass

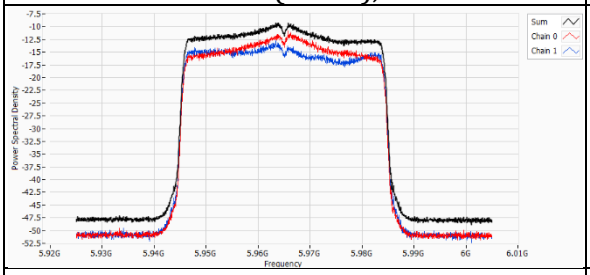
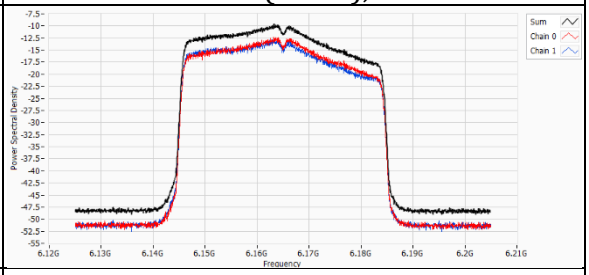
Mode	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ax(HE20)	2	5935	-11.362	-12.442
	1	5955	-11.321	-12.494
	45	6175	-11.818	-12.19
	93	6415	-11.877	-12.502
	97	6435	-11.905	-11.319
	105	6475	-12.02	-12.371
	113	6515	-11.792	-12.188
	117	6535	-12.082	-11.728
	149	6695	-12.372	-11.467
	181	6855	-12.346	-12.187
	185	6875	-12.011	-12.102
	209	6995	-12.214	-12.422
	229	7095	-12.915	-12.458
	233	7115	-13.192	-13.904

802.11ax(HE20), CH2	802.11ax(HE20), CH1
	
802.11ax(HE20), CH45	802.11ax(HE20), CH93
	
802.11ax(HE20), CH97	802.11ax(HE20), CH105
	
802.11ax(HE20), CH113	802.11ax(HE20), CH117
	
802.11ax(HE20), CH149	802.11ax(HE20), CH181
	

802.11ax(HE20), CH185	802.11ax(HE20), CH209
	
802.11ax(HE20), CH229	**802.11ax(HE20), CH233**
	

Mode	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ax(HE40)	3	5965	8.01	-1.245	-1	Pass
	43	6165	8.01	-1.542	-1	Pass
	91	6405	8.01	-1.453	-1	Pass
	99	6445	8.01	-1.184	-1	Pass
	107	6485	8.01	-1.032	-1	Pass
	115	6525	8.01	-2.619	-1	Pass
	123	6565	8.01	-1.683	-1	Pass
	155	6725	8.01	-1.649	-1	Pass
	179	6845	8.01	-1.294	-1	Pass
	187	6885	8.01	-1.116	-1	Pass
	211	7005	8.01	-1.136	-1	Pass
	227	7085	8.01	-1.458	-1	Pass

Mode	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ax(HE40)	3	5965	-10.871	-12.738
	43	6165	-12.269	-12.541
	91	6405	-12.344	-12.164
	99	6445	-13.054	-11.039
	107	6485	-11.726	-11.375
	115	6525	-13.541	-13.187
	123	6565	-11.924	-13.074
	155	6725	-12.432	-12.189
	179	6845	-12.494	-11.697
	187	6885	-12.708	-11.177
	211	7005	-11.312	-12.718
	227	7085	-12.336	-11.782

802.11ax(HE40), CH3	802.11ax(HE40), CH43
	
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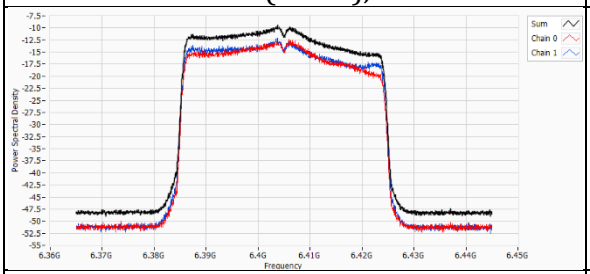	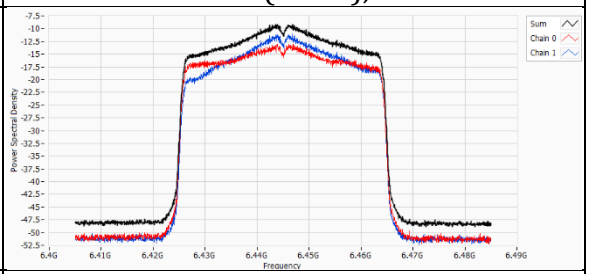
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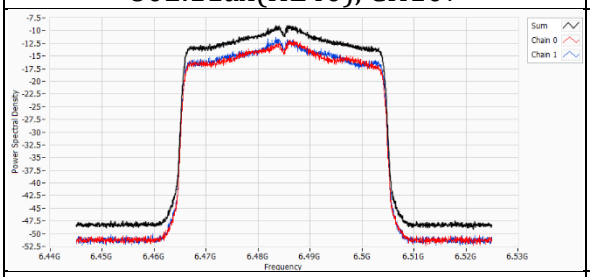	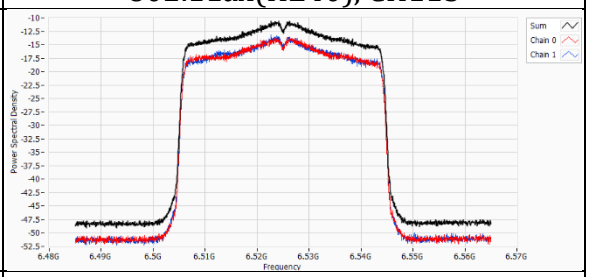
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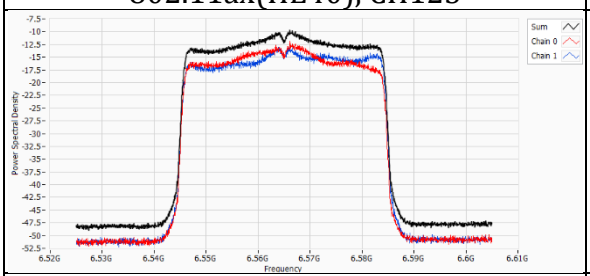	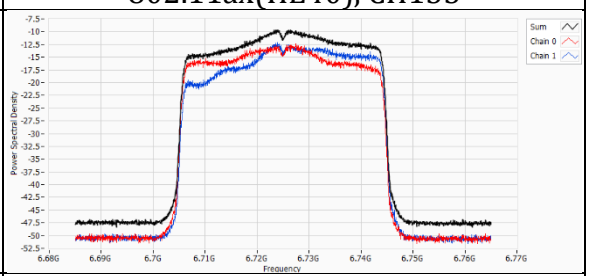
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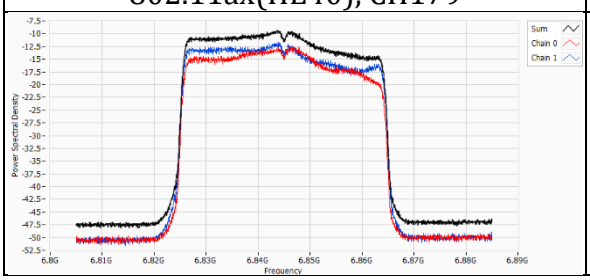	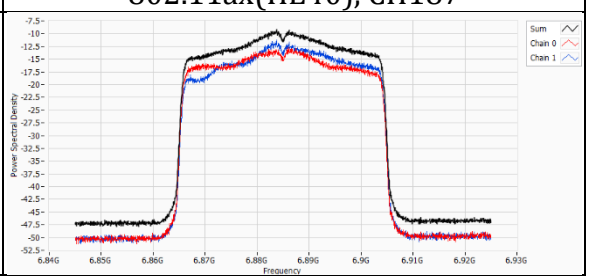

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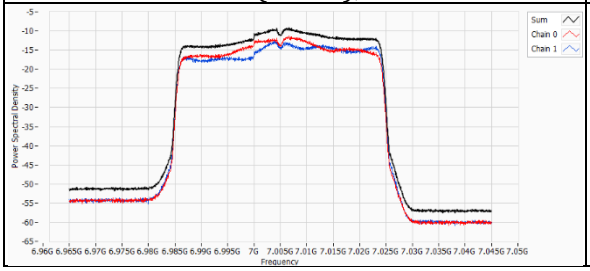
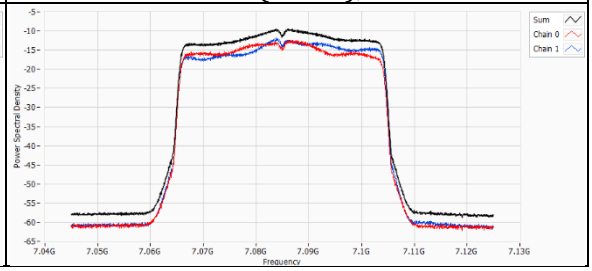
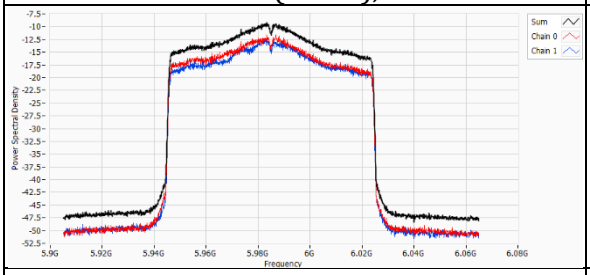
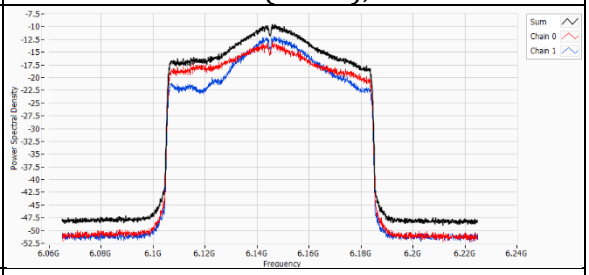
	

Mode	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ax(HE80)	7	5985	8.01	-1.197	-1	Pass
	39	6145	8.01	-1.547	-1	Pass
	87	6385	8.01	-1.552	-1	Pass
	103	6465	8.01	-1.078	-1	Pass
	119	6545	8.01	-1.796	-1	Pass
	135	6625	8.01	-1.867	-1	Pass
	151	6705	8.01	-2.236	-1	Pass
	167	6785	8.01	-1.214	-1	Pass
	183	6865	8.01	-1.404	-1	Pass
	199	6945	8.01	-1.095	-1	Pass
	215	7025	8.01	-1.256	-1	Pass

Mode	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ax(HE80)	7	5985	-11.608	-12.365
	39	6145	-12.893	-11.927
	87	6385	-11.798	-12.98
	103	6465	-12.222	-11.685
	119	6545	-12.424	-12.674
	135	6625	-11.767	-13.248
	151	6705	-12.127	-13.65
	167	6785	-11.123	-12.291
	183	6865	-12.125	-11.709
	199	6945	-11.934	-11.709
	215	7025	-12.593	-11.115

802.11ax(HE80), CH7	802.11ax(HE80), CH39
	
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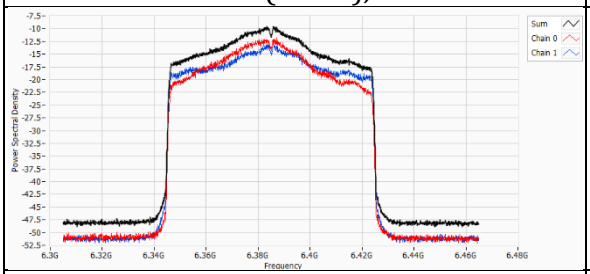	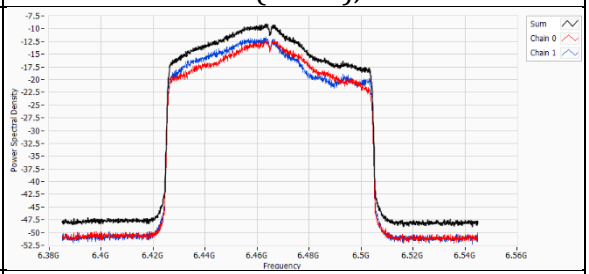
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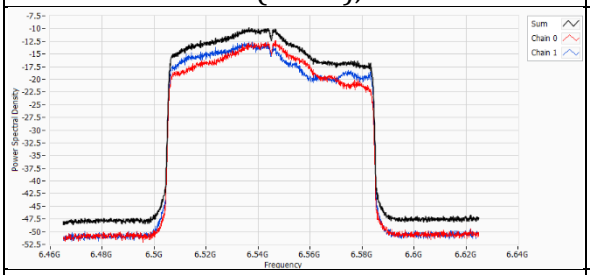	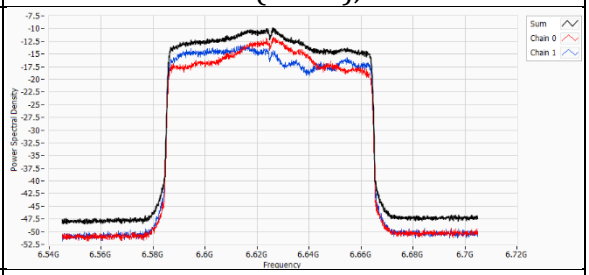
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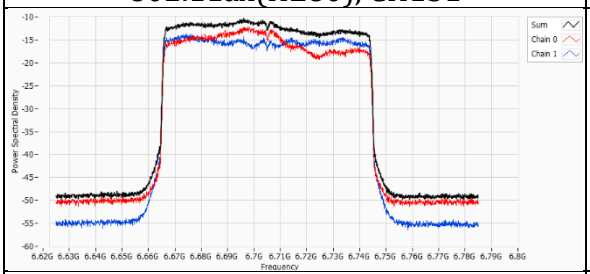
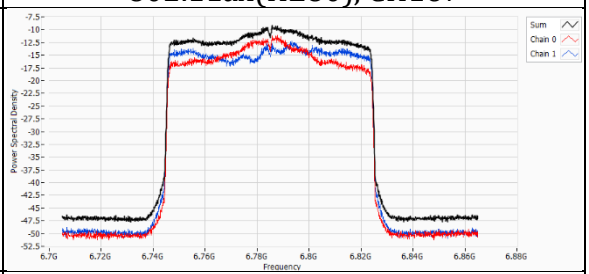
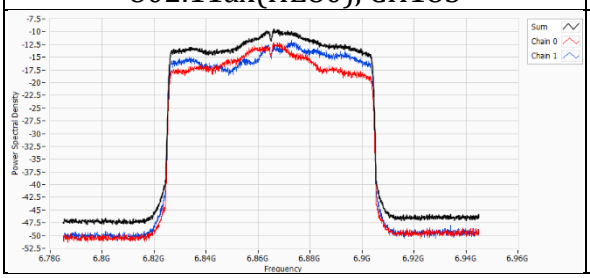
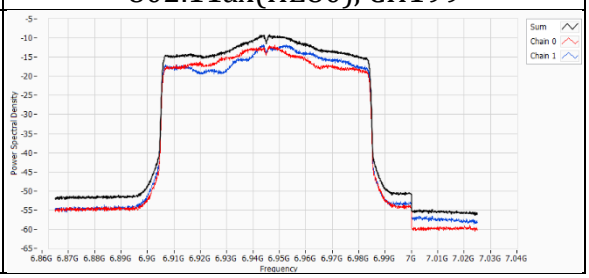
	
802.11ax(HE80), CH183	802.11ax(HE80), CH199
	

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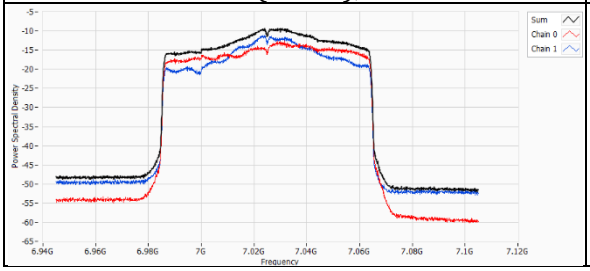
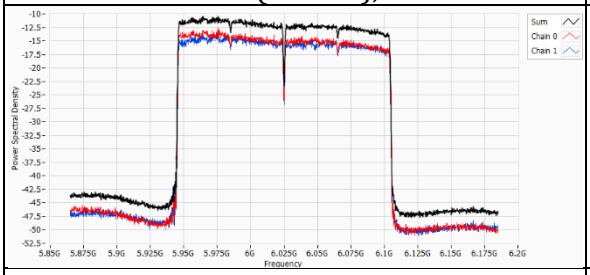
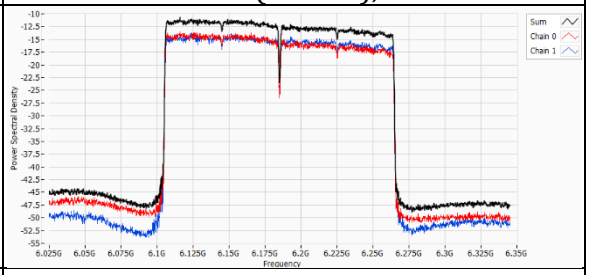
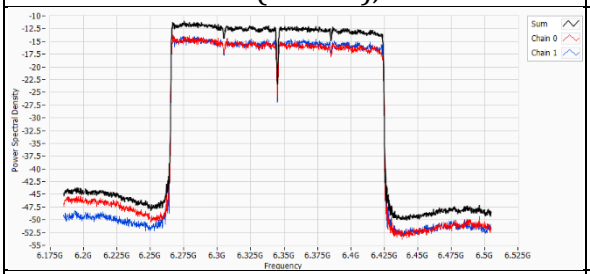
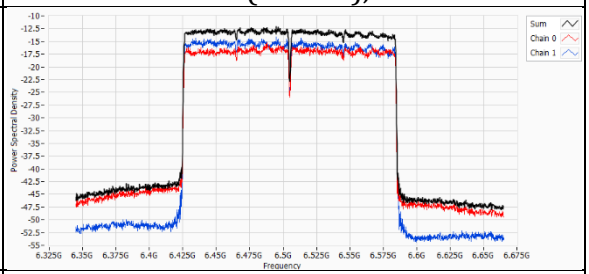
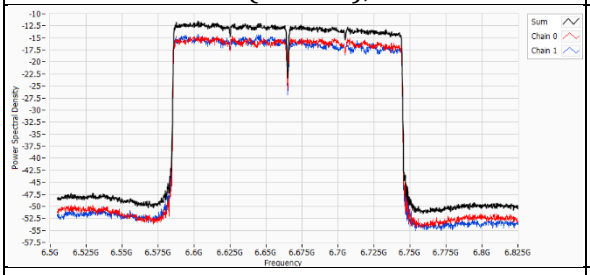
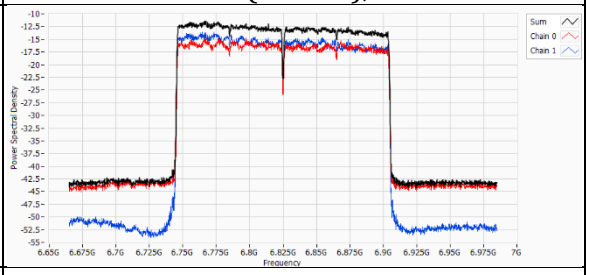
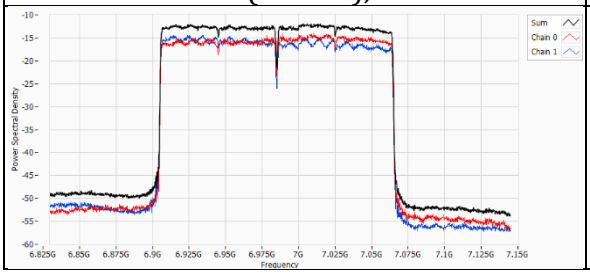
	

Mode	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ax(HE160)	15	6025	8.01	-2.424	-1	Pass
	47	6185	8.01	-2.632	-1	Pass
	79	6345	8.01	-3.058	-1	Pass
	111	6505	8.01	-3.998	-1	Pass
	143	6665	8.01	-3.554	-1	Pass
	175	6825	8.01	-3.378	-1	Pass
	207	6985	8.01	-3.928	-1	Pass

Mode	CH	Freq (MHz)	PSD per Chain (dBm/MHz)	
			Chain 0	Chain 1
802.11ax(HE160)	15	6025	-12.692	-13.646
	47	6185	-13.498	-13.752
	79	6345	-13.754	-13.97
	111	6505	-15.325	-14.166
	143	6665	-14.607	-14.246
	175	6825	-14.741	-13.633
	207	6985	-14.006	-14.425

802.11ax(HE160), CH15	802.11ax(HE160), CH47
	
802.11ax(HE160), CH79	**802.11ax(HE160), CH111**
	
802.11ax(HE160), CH143	**802.11ax(HE160), CH175**
	
802.11ax(HE160), CH207	
	

9.5. Frequency Stability

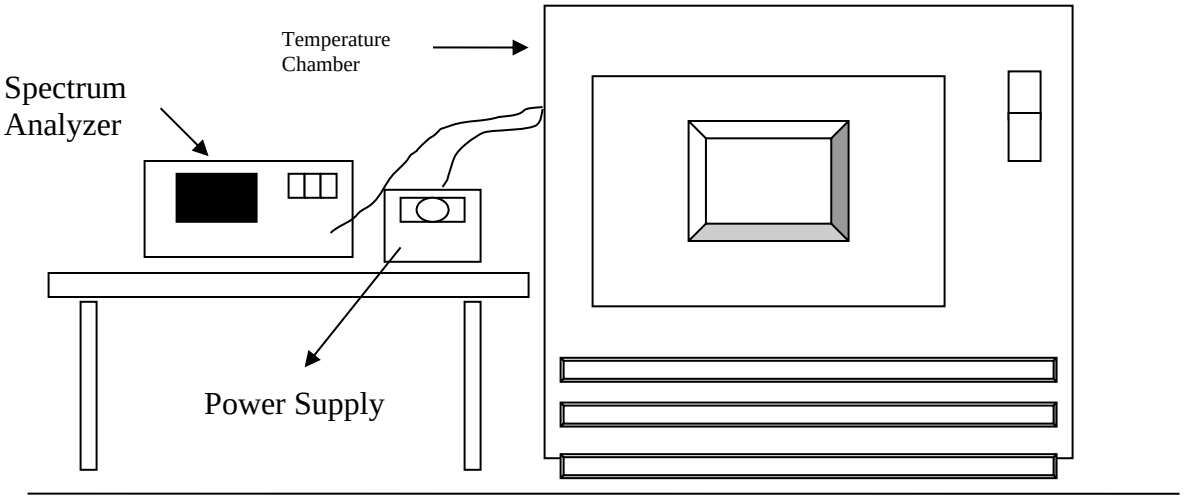
Requirements

The frequency of the carrier signal shall be maintained within band of operation.

Test procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

Test Setup



Test Data

Frequency Stability Versus Temp.									
Operating Frequency: 5955 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)
75	3.3	5954.9853	-2.47	5954.9821	-3.01	5954.9846	-2.59	5954.985	-2.52
70	3.3	5955.0003	0.05	5955.0004	0.07	5954.997	-0.50	5954.9983	-0.29
60	3.3	5954.9906	-1.58	5954.9928	-1.21	5954.9904	-1.61	5954.992	-1.34
50	3.3	5954.9823	-2.97	5954.9838	-2.72	5954.9801	-3.34	5954.9795	-3.44
40	3.3	5955.0284	4.77	5955.0295	4.95	5955.0282	4.74	5955.0303	5.09
30	3.3	5955.0087	1.46	5955.0083	1.39	5955.0088	1.48	5955.0091	1.53
20	3.3	5955.0163	2.74	5955.0175	2.94	5955.0206	3.46	5955.016	2.69
10	3.3	5954.9939	-1.02	5954.9896	-1.75	5954.9892	-1.81	5954.9906	-1.58
0	3.3	5954.9907	-1.56	5954.9911	-1.49	5954.992	-1.34	5954.9879	-2.03
-10	3.3	5955.0192	3.22	5955.0194	3.26	5955.0233	3.91	5955.0215	3.61
-20	3.3	5955.0079	1.33	5955.0033	0.55	5955.0042	0.71	5955.0054	0.91
-30	3.3	5954.9916	-1.41	5954.9946	-0.91	5954.9936	-1.07	5954.9933	-1.13
-40	3.3	5954.9705	-4.95	5954.9758	-4.06	5954.9746	-4.27	5954.9743	-4.32
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)
20	3.8	5955.017	2.85	5955.0179	3.01	5955.0207	3.48	5955.0158	2.65
	3.3	5955.0163	2.74	5955.0175	2.94	5955.0206	3.46	5955.016	2.69
	2.8	5955.0174	2.92	5955.0173	2.91	5955.0204	3.43	5955.0154	2.59

9.6. Radiated Spurious Emission

Requirements

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequency(MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Frequencies (MHz)	EIRP Limit	Equivalent Field Strength at 3m
5925MHz > F > 7125MHz	Peak:-7 (dBm/MHz)	88.2(dBµV/m)
	Average: -27 (dBm/MHz)	68.2(dBµV/m)

Note:
The following formula is used to convert the effective isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/m, where P is the eirp (Watts).

Test Procedures

[For 9 kHz ~ 30 MHz]

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.

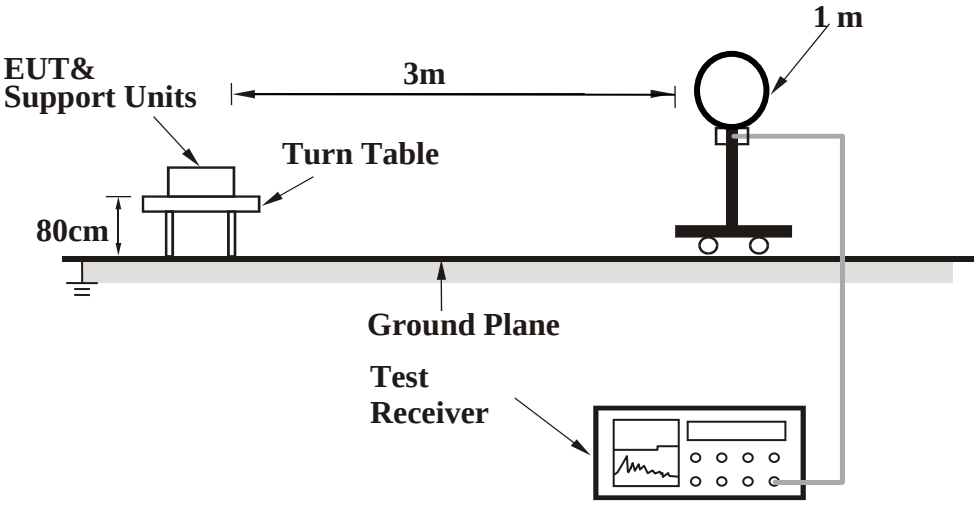
Configuration	Average	
	RBW	VBW
802.11a	1MHz	Refer to section 6.6 for duty cycle
802.11ax (HE20)		
802.11ax (HE40)		
802.11ax (HE80)		
802.11ax (HE160)		

Note: Refer to section 6.6 for duty cycle.

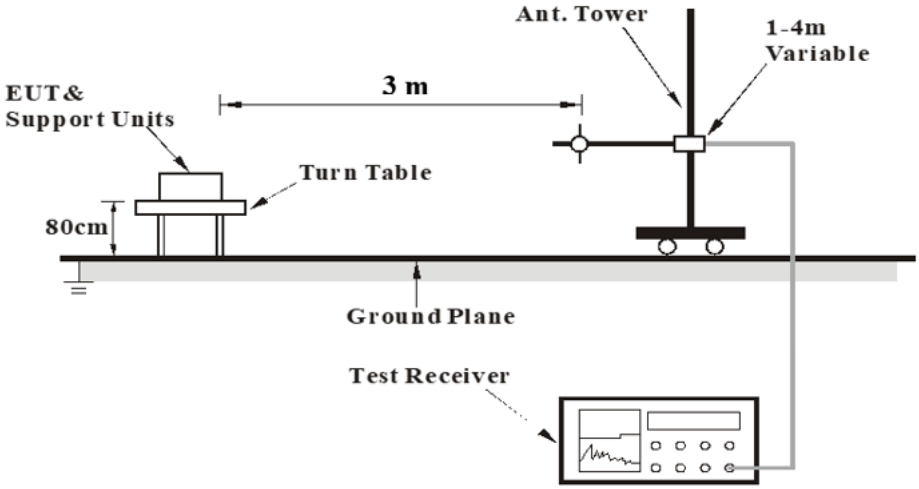
d. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
e. Test data of Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
f. Test data of Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
g. Test data of Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
h. Test data of Notation "@" = Fundamental Frequency
i. Test data of Notation " * " = The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.

Test Setup

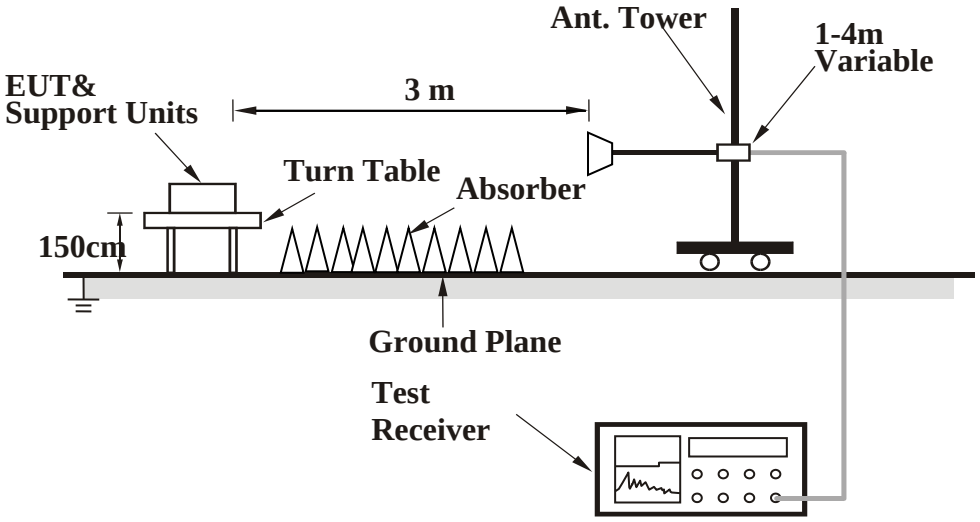
<Frequency Range 9 kHz ~ 30 MHz>



<Frequency Range 30 MHz ~ 1 GHz >



<Frequency Range above 1 GHz> 1 GHz ~ 40 GHz



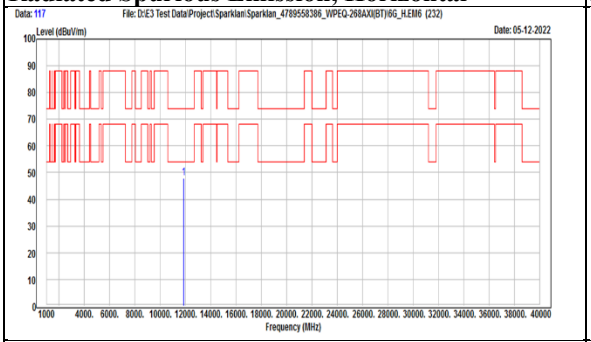
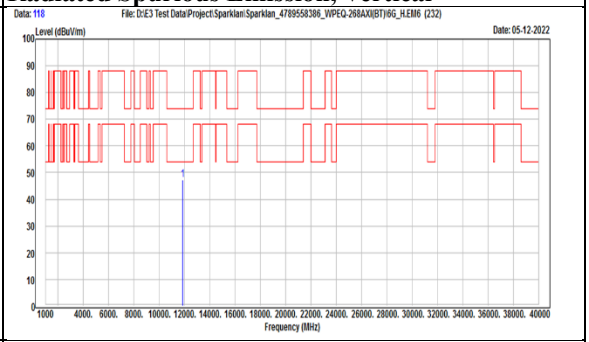
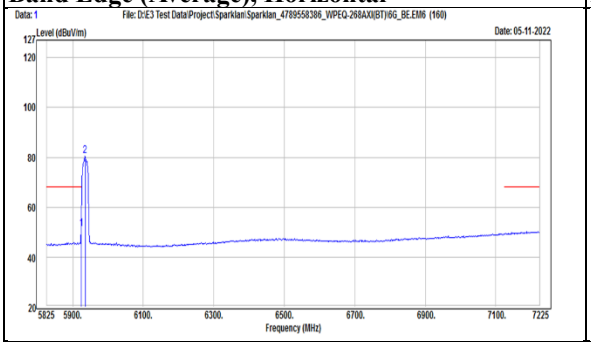
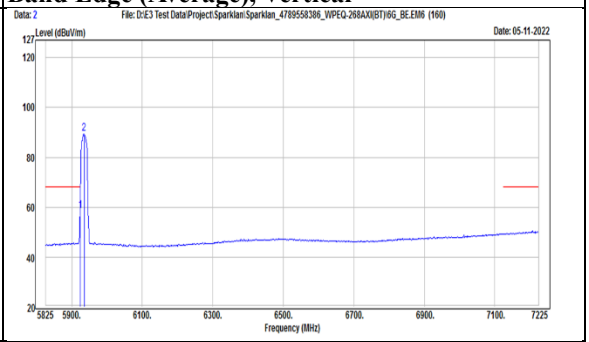
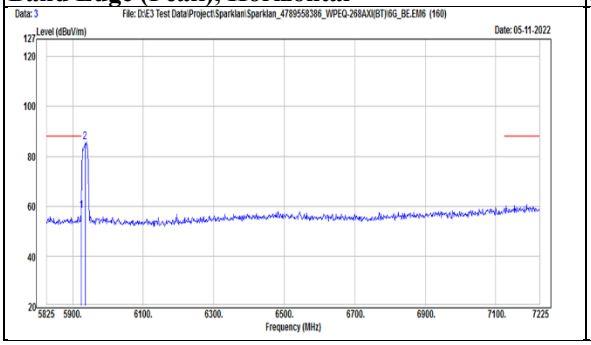
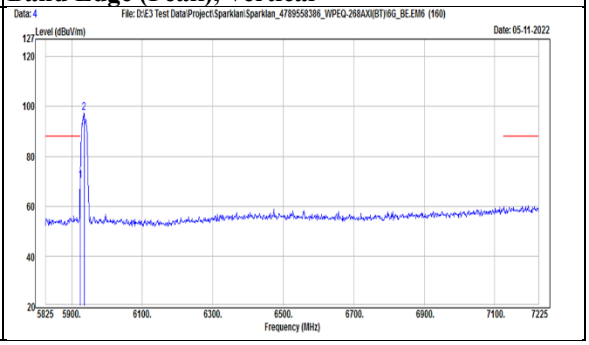
For the actual test configuration, please refer to the Setup Configurations.

Test Data

Above 1 GHz

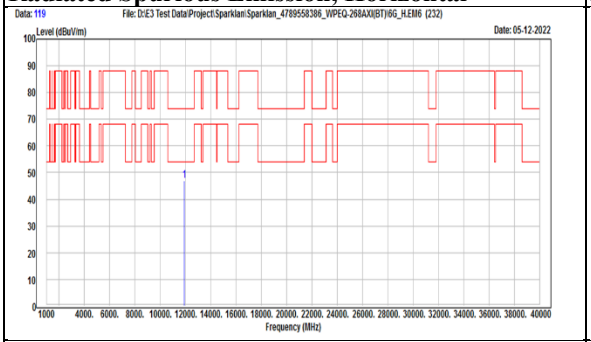
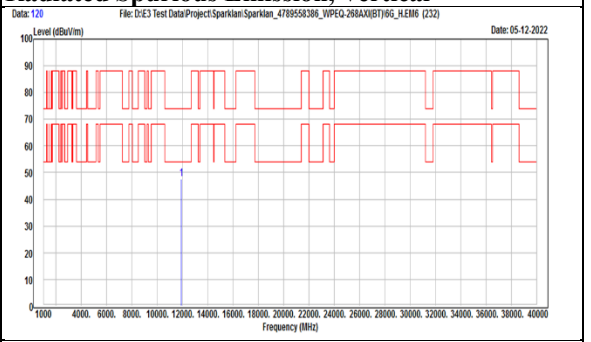
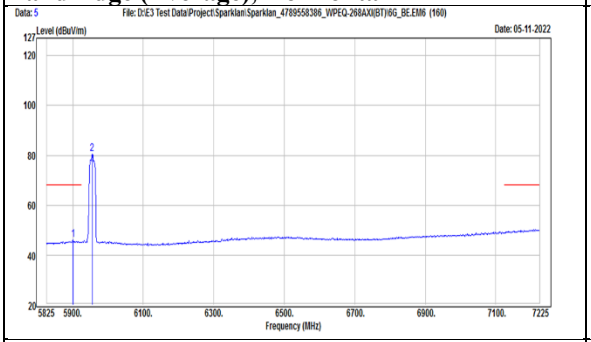
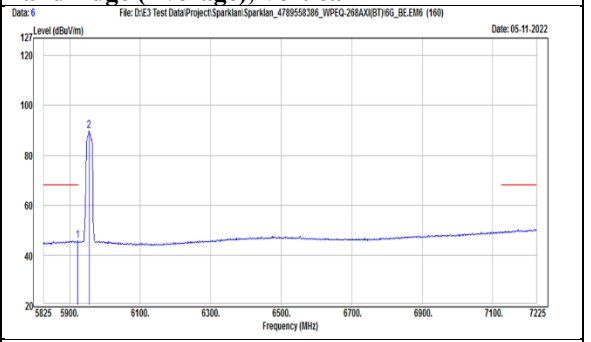
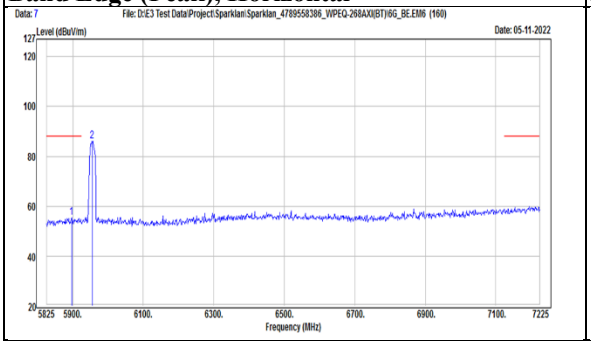
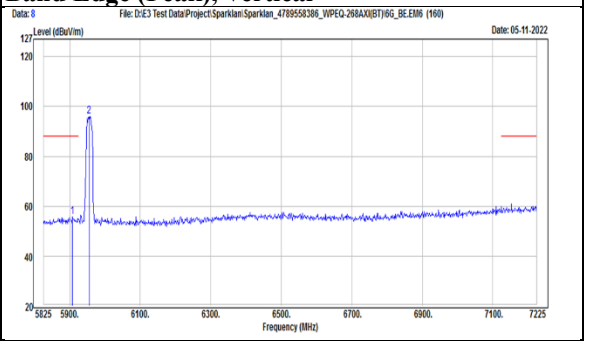
Mode	802.11a	Channel	2

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5924.4	43.24	14.96	58.2	88.2	-30	PK
		5924.4	36.26	14.96	51.22	68.2	-16.98	AVG
	@	5935	70.83	14.95	85.78	N/A	N/A	PK
	@	5935	65.53	14.95	80.48	N/A	N/A	AVG
	*	11870	29.07	18.7	47.77	74	-26.23	PK
Vertical		5924.4	55.28	14.96	70.24	88.2	-17.96	PK
		5924.4	43.48	14.96	58.44	68.2	-9.76	AVG
	@	5935	82.52	14.95	97.47	N/A	N/A	PK
	@	5935	74.53	14.95	89.48	N/A	N/A	AVG
	*	11870	28.44	18.7	47.14	74	-26.86	PK

TX, 802.11a (Ch 2) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 2)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 2) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 2)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 2) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 2)** **Band Edge (Peak), Vertical**
	

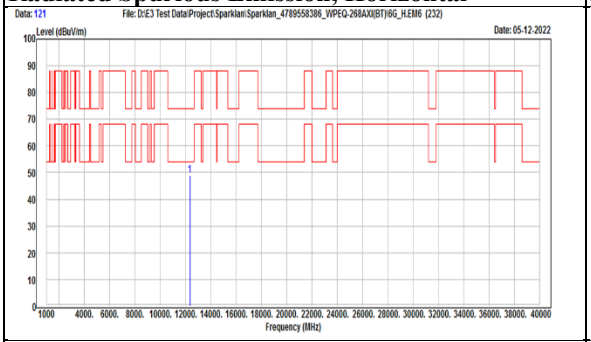
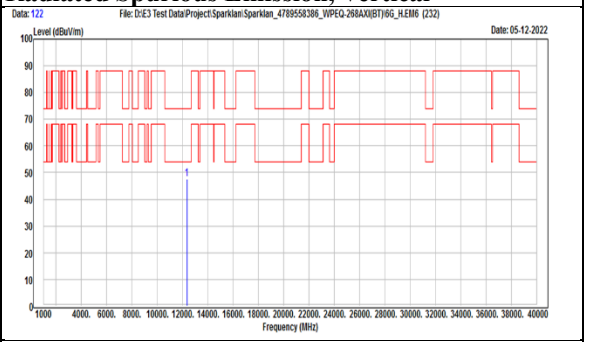
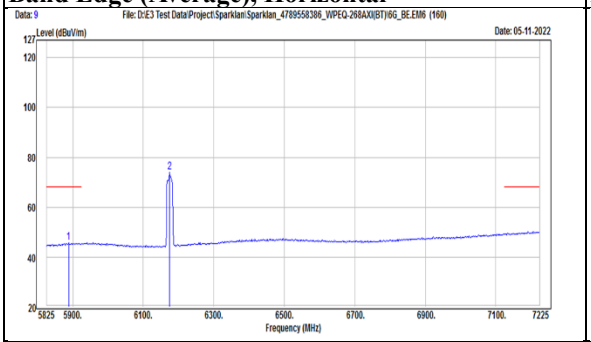
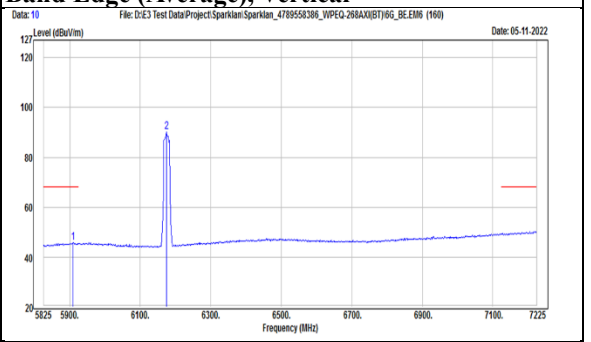
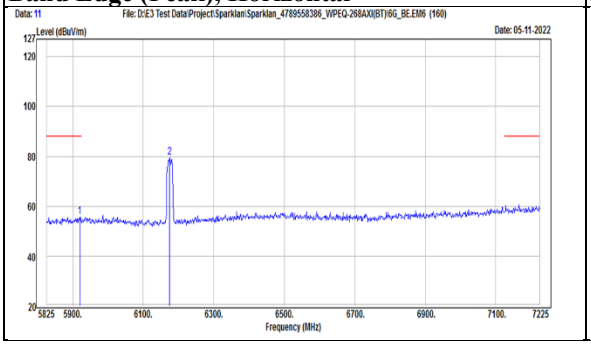
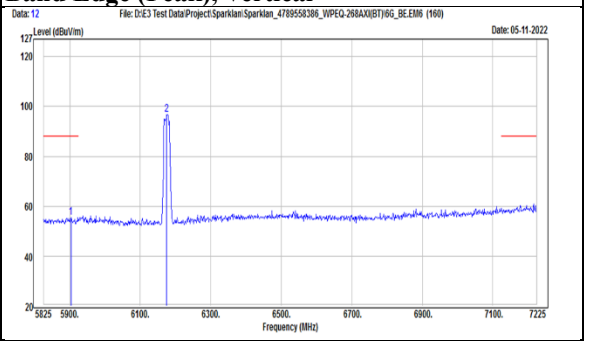
Mode	802.11a	Channel	1

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5896.4	40.47	14.95	55.42	88.2	-32.78	PK
		5900.6	31.18	14.98	46.16	68.2	-22.04	AVG
	@	5955	71.16	14.95	86.11	N/A	N/A	PK
	@	5955	65.58	14.95	80.53	N/A	N/A	AVG
	*	11910	28.26	18.84	47.1	74	-26.9	PK
Vertical		5907.6	40.88	14.97	55.85	88.2	-32.35	PK
		5923	30.79	14.96	45.75	68.2	-22.45	AVG
	@	5955	81.07	14.95	96.02	N/A	N/A	PK
	@	5955	74.79	14.95	89.74	N/A	N/A	AVG
	*	11910	28.63	18.84	47.47	74	-26.53	PK

TX, 802.11a (Ch 1) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 1)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 1) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 1)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 1) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 1)** **Band Edge (Peak), Vertical**
	

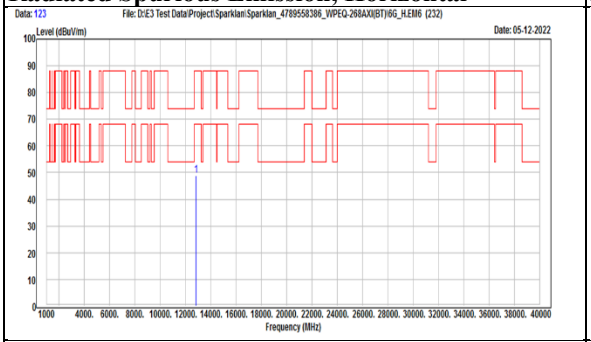
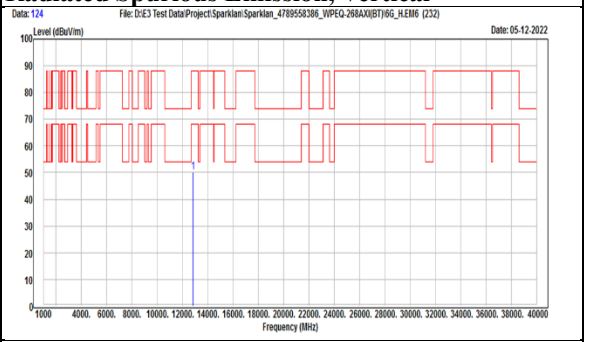
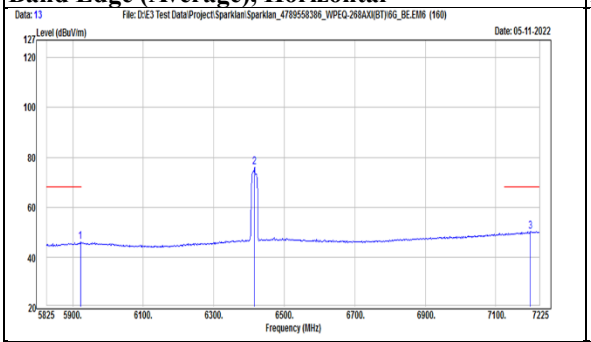
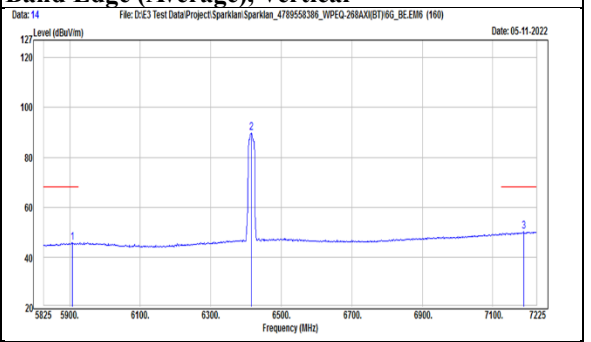
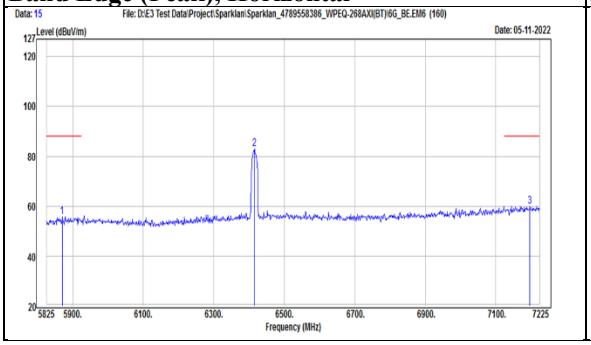
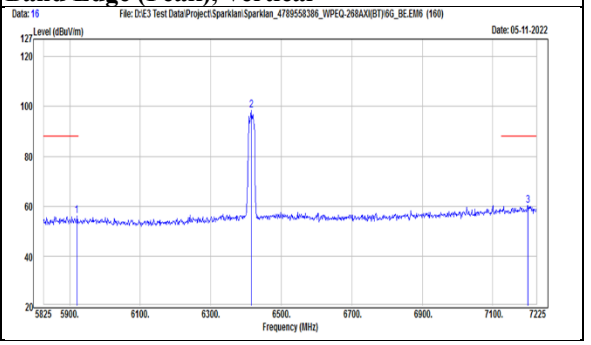
Mode	802.11a	Channel	45

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5888	30.74	14.9	45.64	68.2	-22.56	AVG
		5920.2	40.9	14.96	55.86	88.2	-32.34	PK
	@	6175	63.95	15.52	79.47	N/A	N/A	PK
	@	6175	58.52	15.52	74.04	N/A	N/A	AVG
	*	12350	29.47	19.25	48.72	74	-25.28	PK
Vertical		5903.4	40.62	14.97	55.59	88.2	-32.61	PK
		5909	30.78	14.97	45.75	68.2	-22.45	AVG
	@	6175	81.37	15.52	96.89	N/A	N/A	PK
	@	6175	74.62	15.52	90.14	N/A	N/A	AVG
	*	12350	28.22	19.25	47.47	74	-26.53	PK

TX, 802.11a (Ch 45) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 45)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 45) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 45)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 45) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 45)** **Band Edge (Peak), Vertical**
	

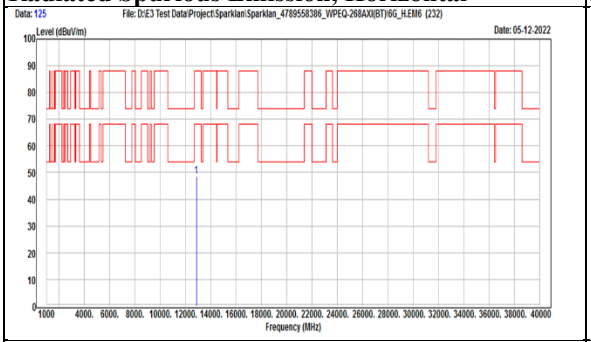
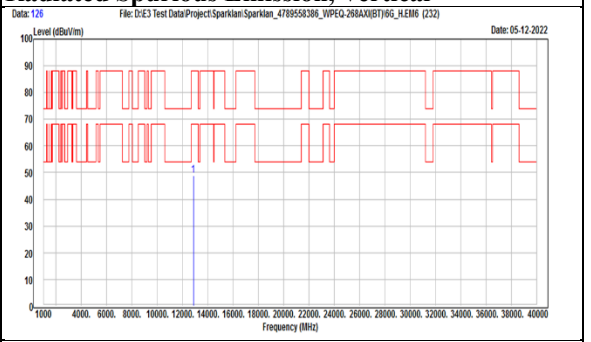
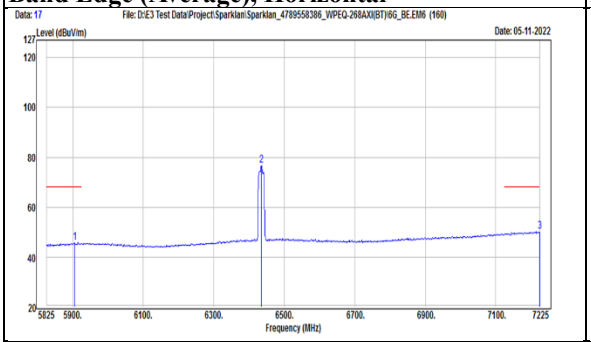
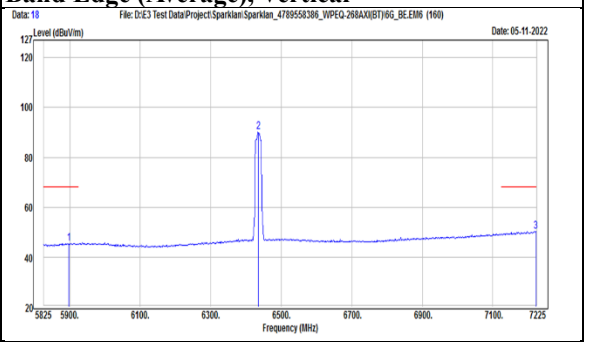
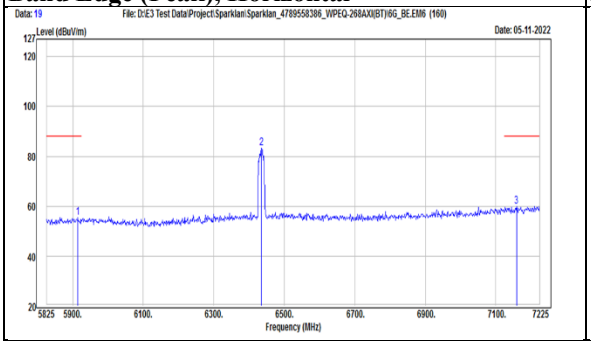
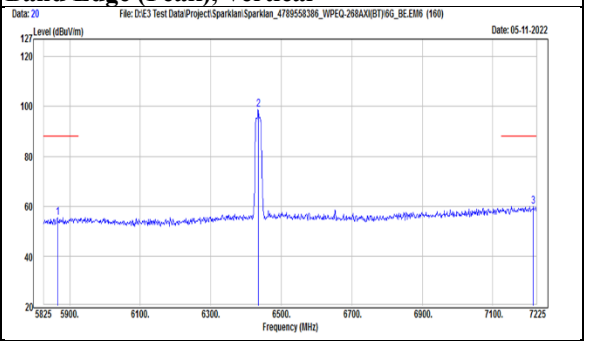
Mode	802.11a	Channel	93

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5869.8	40.99	14.76	55.75	88.2	-32.45	PK
		5921.6	31.07	14.96	46.03	68.2	-22.17	AVG
	@	6415	66.28	16.72	83	N/A	N/A	PK
	@	6415	59.46	16.72	76.18	N/A	N/A	AVG
		7197	39.95	20.11	60.06	88.2	-28.14	PK
		7198.4	30.19	20.11	50.3	68.2	-17.9	AVG
	*	12830	28.41	20.62	49.03	88.2	-39.17	PK
Vertical		5907.6	30.7	14.97	45.67	68.2	-22.53	AVG
		5920.2	41.1	14.96	56.06	88.2	-32.14	PK
	@	6415	81.67	16.72	98.39	N/A	N/A	PK
	@	6415	73.01	16.72	89.73	N/A	N/A	AVG
		7188.6	30.07	20.06	50.13	68.2	-18.07	AVG
		7199.8	40.3	20.12	60.42	88.2	-27.78	PK
	*	12830	29.67	20.62	50.29	88.2	-37.91	PK

TX, 802.11a (Ch 93) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 93)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 93) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 93)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 93) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 93)** **Band Edge (Peak), Vertical**
	

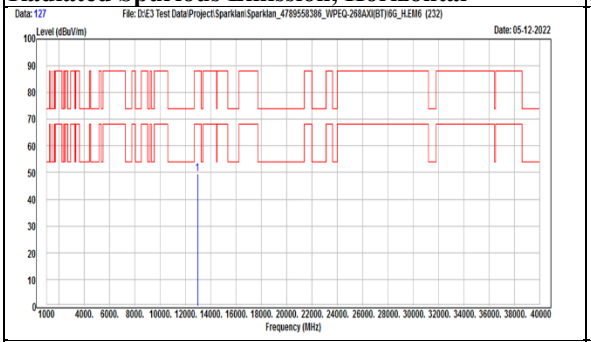
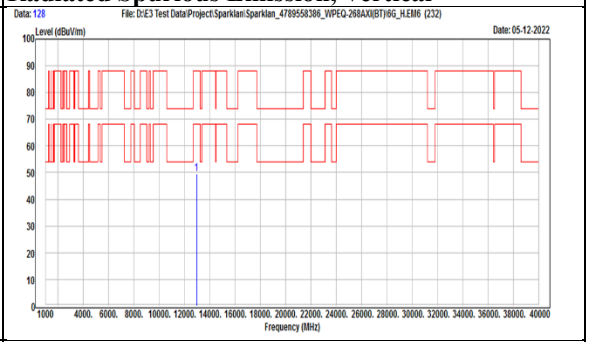
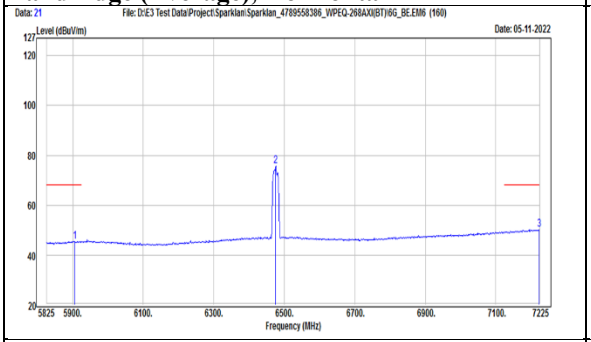
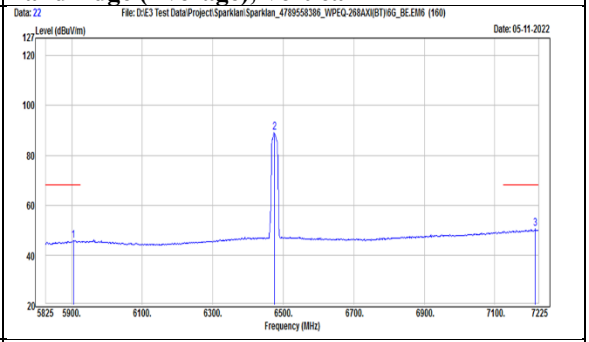
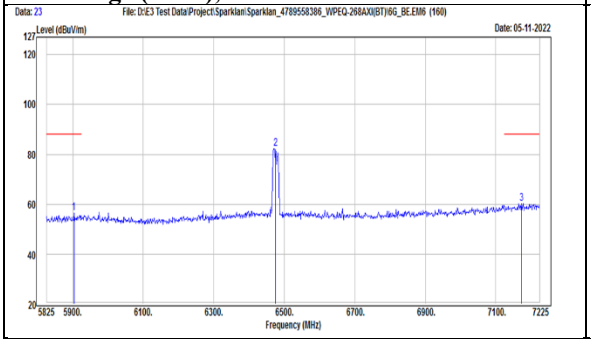
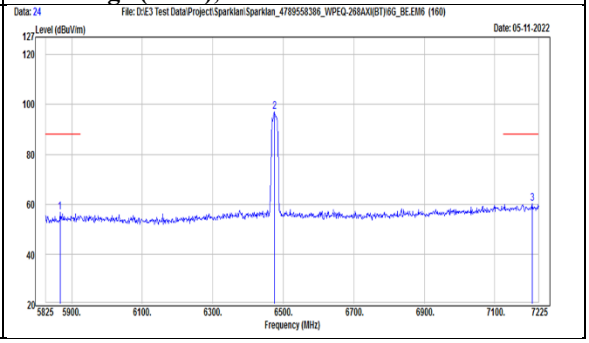
Mode	802.11a	Channel	97

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5906.2	30.83	14.97	45.8	68.2	-22.4	AVG
		5914.6	40.63	14.96	55.59	88.2	-32.61	PK
	@	6435	66.46	16.78	83.24	N/A	N/A	PK
	@	6435	60.05	16.78	76.83	N/A	N/A	AVG
		7159.2	40.1	19.9	60	88.2	-28.2	PK
		7225	29.93	20.26	50.19	68.2	-18.01	AVG
	*	12870	27.78	20.73	48.51	88.2	-39.69	PK
Vertical		5865.6	40.68	14.73	55.41	88.2	-32.79	PK
		5897.8	30.63	14.96	45.59	68.2	-22.61	AVG
	@	6435	82.17	16.78	98.95	N/A	N/A	PK
	@	6435	73.27	16.78	90.05	N/A	N/A	AVG
		7215.2	39.83	20.21	60.04	88.2	-28.16	PK
		7222.2	29.96	20.25	50.21	68.2	-17.99	AVG
	*	12870	28.24	20.73	48.97	88.2	-39.23	PK

TX, 802.11a (Ch 97) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 97)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 97) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 97)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 97) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 97)** **Band Edge (Peak), Vertical**
	

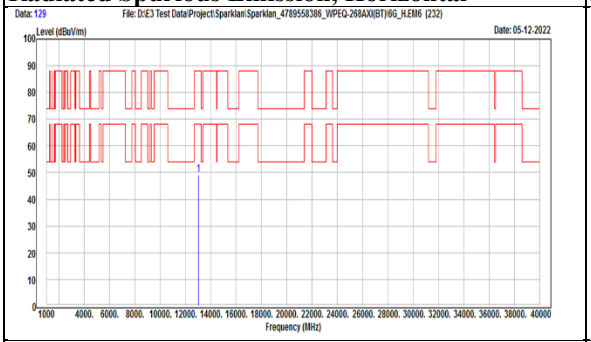
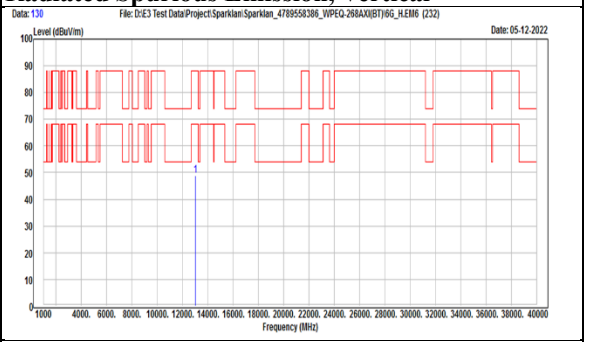
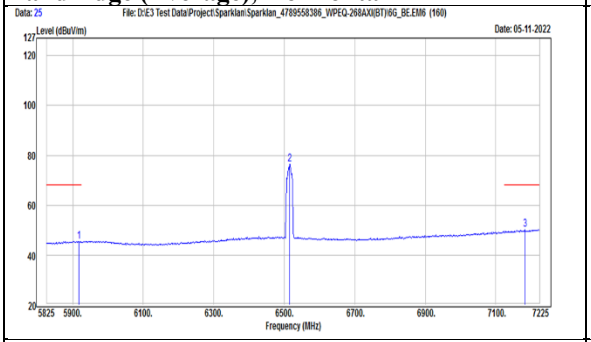
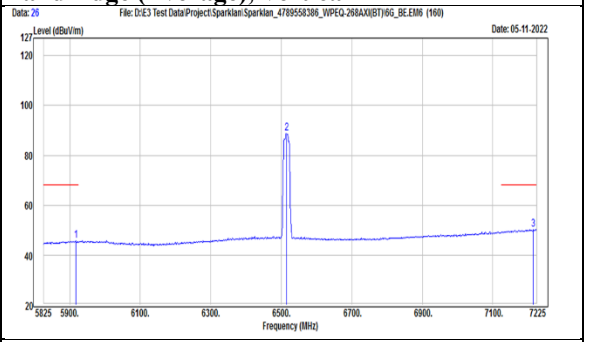
Mode	802.11a	Channel	105

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5903.4	41.35	14.97	56.32	88.2	-31.88	PK
		5906.2	30.6	14.97	45.57	68.2	-22.63	AVG
	@	6475	65.2	17.06	82.26	N/A	N/A	PK
	@	6475	58.54	17.06	75.6	N/A	N/A	AVG
		7173.2	40.35	19.98	60.33	88.2	-27.87	PK
		7223.6	30.13	20.25	50.38	68.2	-17.82	AVG
	*	12950	28.51	20.86	49.37	88.2	-38.83	PK
Vertical		5867	41.9	14.74	56.64	88.2	-31.56	PK
		5904.8	30.88	14.97	45.85	68.2	-22.35	AVG
	@	6475	79.85	17.06	96.91	N/A	N/A	PK
	@	6475	71.94	17.06	89	N/A	N/A	AVG
		7206.8	40.11	20.16	60.27	88.2	-27.93	PK
		7215.2	30.27	20.21	50.48	68.2	-17.72	AVG
	*	12950	28.82	20.86	49.68	88.2	-38.52	PK

TX, 802.11a (Ch 105) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 105)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 105) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 105)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 105) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 105)** **Band Edge (Peak), Vertical**
	

Mode	802.11a	Channel	113

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5860	42.45	14.69	57.14	88.2	-31.06	PK
		5917.4	30.58	14.97	45.55	68.2	-22.65	AVG
	@	6515	64.4	17.31	81.71	N/A	N/A	PK
	@	6515	59.23	17.31	76.54	N/A	N/A	AVG
		7183	30.24	20.03	50.27	68.2	-17.93	AVG
		7190	42	20.07	62.07	88.2	-26.13	PK
	*	13030	28.16	20.95	49.11	88.2	-39.09	PK
Vertical		5913.2	41.4	14.96	56.36	88.2	-31.84	PK
		5917.4	30.69	14.97	45.66	68.2	-22.54	AVG
	@	6515	78.83	17.31	96.14	N/A	N/A	PK
	@	6515	71.64	17.31	88.95	N/A	N/A	AVG
		7206.8	40.92	20.16	61.08	88.2	-27.12	PK
		7215.2	30.14	20.21	50.35	68.2	-17.85	AVG
	*	13030	27.92	20.95	48.87	88.2	-39.33	PK

TX, 802.11a (Ch 113) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 113)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 113) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 113)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 113) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 113)** **Band Edge (Peak), Vertical**