802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	16.45	16.14	15.68	15.13	154.839	21.90	24.00	Pass
46	5230	16.13	16.07	15.73	15.23	152.232	21.83	24.00	Pass
54	5270	16.49	16.97	16.93	17.02	194.007	22.88	23.63	Pass
62	5310	16.58	16.81	16.79	16.76	188.649	22.76	23.63	Pass
102	5510	16.42	17.04	16.83	17.22	195.353	22.91	23.13	Pass
110	5550	16.41	17.13	16.92	17.21	197.2	22.95	23.13	Pass
134	5670	16.72	17.30	16.83	16.78	196.53	22.93	23.13	Pass
*142 (U-NII-2C Band)	5710	15.82	15.52	15.52	16.07	149.942	21.76	23.13	Pass
*142 (U-NII-3 Band)	5710	6.04	5.17	5.95	6.29	15.498	11.90	29.70	Pass
151	5755	22.76	24.07	22.26	24.91	922.079	29.65	29.70	Pass
159	5795	22.90	24.29	22.13	24.53	910.616	29.59	29.70	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	41.3	27.15 > 24
62	5310	41.33	27.16 > 24
102	5510	41.31	27.16 > 24
110	5550	41.33	27.16 > 24
134	5670	41.37	27.16 > 24
142 (U-NII-2C Band)	5710	35.57	26.51 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.71	16.20	17.02	16.76	176.7	22.47	24.00	Pass
58	5290	16.17	16.80	16.86	17.34	191.992	22.83	23.63	Pass
106	5530	16.02	16.51	16.86	16.92	182.499	22.61	23.13	Pass
*138 (U-NII-2C Band)	5690	16.13	15.85	16.36	16.36	165.982	22.20	23.13	Pass
*138 (U-NII-3 Band)	5690	2.60	1.95	2.75	3.73	7.631	8.83	29.70	Pass
155	5775	21.91	23.31	20.68	23.42	706.264	28.49	29.70	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.48	30.16 > 24
106	5530	82.52	30.16 > 24
138 (U-NII-2C Band)	5690	76.06	29.81 > 24

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	10.14	9.66	8.76	9.44	40.676	16.09	24.00	Pass
*50 (U-NII-2A Band)	5250	9.85	10.07	7.32	8.46	36.54	15.63	23.63	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
50 (U-NII-2A Band)	5250	81.43	30.1 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	13.71	13.36	12.71	12.52	81.702	19.12	24.00	Pass
40	5200	13.73	13.42	12.62	12.41	81.282	19.10	24.00	Pass
48	5240	13.75	13.33	12.75	12.57	82.15	19.15	24.00	Pass
52	5260	14.55	15.19	15.18	14.99	126.058	21.01	23.63	Pass
60	5300	14.58	15.46	15.32	14.89	128.737	21.10	23.63	Pass
64	5320	14.74	15.36	15.27	14.96	129.125	21.11	23.63	Pass
100	5500	14.87	15.65	15.34	14.00	126.735	21.03	23.13	Pass
116	5580	14.60	15.30	15.01	14.67	123.729	20.92	23.13	Pass
140	5700	14.55	15.31	15.83	14.43	128.488	21.09	23.13	Pass
*144 (U-NII-2C Band)	5720	12.89	11.00	11.77	12.19	63.632	18.04	22.14	Pass
*144 (U-NII-3 Band)	5720	8.06	5.74	6.56	7.41	20.184	13.05	29.70	Pass
149	5745	22.85	24.38	22.00	24.67	918.489	29.63	29.70	Pass
157	5785	23.00	24.26	22.11	24.63	919.169	29.63	29.70	Pass
165	5825	23.10	24.16	22.14	24.75	927.009	29.67	29.70	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.74	24.37 > 24
60	5300	21.59	24.34 > 24
64	5320	21.71	24.36 > 24
100	5500	21.72	24.36 > 24
116	5580	21.51	24.32 > 24
140	5700	21.74	24.37 > 24
144 (U-NII-2C Band)	5720	15.89	23.01 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	16.64	16.32	15.92	15.35	162.347	22.10	24.00	Pass
46	5230	16.32	16.29	15.96	15.46	160.016	22.04	24.00	Pass
54	5270	16.73	17.20	17.16	17.24	204.544	23.11	23.63	Pass
62	5310	16.81	17.03	17.02	16.98	198.678	22.98	23.63	Pass
102	5510	16.48	17.05	16.82	17.23	196.091	22.92	23.13	Pass
110	5550	16.44	17.09	16.91	17.28	197.771	22.96	23.13	Pass
134	5670	16.77	17.42	16.85	16.77	198.692	22.98	23.13	Pass
*142 (U-NII-2C Band)	5710	15.96	15.72	15.84	16.18	156.637	21.95	23.13	Pass
*142 (U-NII-3 Band)	5710	6.32	5.39	6.18	6.50	16.361	12.14	29.70	Pass
151	5755	22.75	24.09	22.27	24.92	923.925	29.66	29.70	Pass
159	5795	22.91	24.33	22.12	24.50	911.221	29.60	29.70	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	41.3	27.15 > 24
62	5310	41.33	27.16 > 24
102	5510	41.31	27.16 > 24
110	5550	41.33	27.16 > 24
134	5670	41.37	27.16 > 24
142 (U-NII-2C Band)	5710	35.57	26.51 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.99	16.47	17.25	17.02	187.519	22.73	24.00	Pass
58	5290	16.39	17.05	17.15	17.55	203.016	23.08	23.63	Pass
106	5530	16.25	16.75	17.11	17.19	193.249	22.86	23.13	Pass
*138 (U-NII-2C Band)	5690	16.31	15.95	16.73	16.72	176.198	22.46	23.13	Pass
*138 (U-NII-3 Band)	5690	2.80	2.19	2.96	3.92	8.004	9.03	29.70	Pass
155	5775	22.13	23.57	20.90	23.62	743.986	28.72	29.70	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.48	30.16 > 24
106	5530	82.52	30.16 > 24
138 (U-NII-2C Band)	5690	76.06	29.81 > 24

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	10.23	9.84	8.88	9.54	41.835	16.22	24.00	Pass
*50 (U-NII-2A Band)	5250	10.03	10.17	7.65	8.54	37.902	15.79	23.63	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
50 (U-NII-2A Band)	5250	81.43	30.1 > 24

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	13.24	12.95	12.23	12.08	73.665	18.67	19.34	Pass
40	5200	13.29	12.99	12.21	11.96	73.575	18.67	19.34	Pass
48	5240	13.31	12.93	12.28	12.15	74.373	18.71	19.34	Pass
52	5260	11.76	11.04	11.27	11.14	54.101	17.33	18.88	Pass
60	5300	11.81	11.08	11.24	11.16	54.36	17.35	18.88	Pass
64	5320	11.84	11.00	11.21	11.12	54.02	17.33	18.88	Pass
100	5500	12.55	11.91	12.08	11.81	64.827	18.12	18.29	Pass
116	5580	12.45	11.62	12.24	11.97	64.59	18.10	18.29	Pass
140	5700	12.98	11.31	11.83	12.49	66.364	18.22	18.29	Pass
*144 (U-NII-2C Band)	5720	10.56	9.52	9.98	10.12	40.564	16.08	17.30	Pass
*144 (U-NII-3 Band)	5720	5.82	4.42	5.02	5.48	13.295	11.24	24.48	Pass
149	5745	16.82	18.93	18.52	18.44	267.191	24.27	24.48	Pass
157	5785	16.92	19.02	18.51	18.23	266.489	24.26	24.48	Pass
165	5825	16.83	19.01	18.42	18.37	266.02	24.25	24.48	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 10.66 dBi > 6 dBi, so the power limit shall be reduced to 24-(10.66-6) = 19.34dBm.
2. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.12-6)”.
3. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.71-6)”.
4. For UNII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 11.52 dBi > 6 dBi, so the power limit shall be reduced to 30-(11.52-6) = 24.48dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.74	24.37 > 24
60	5300	21.59	24.34 > 24
64	5320	21.71	24.36 > 24
100	5500	21.72	24.36 > 24
116	5580	21.51	24.32 > 24
140	5700	21.74	24.37 > 24
144 (U-NII-2C Band)	5720	15.89	23.01 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	13.14	12.63	12.29	11.82	71.078	18.52	19.34	Pass
46	5230	13.21	12.69	12.31	11.88	71.958	18.57	19.34	Pass
54	5270	11.98	11.08	11.07	10.85	53.555	17.29	18.88	Pass
62	5310	11.88	11.14	11.08	11.02	53.889	17.32	18.88	Pass
102	5510	12.65	12.36	11.58	11.42	63.882	18.05	18.29	Pass
110	5550	12.61	12.23	11.85	11.32	63.813	18.05	18.29	Pass
134	5670	12.58	11.52	11.88	12.54	65.668	18.17	18.29	Pass
*142 (U-NII-2C Band)	5710	11.37	10.51	10.64	11.19	49.695	16.96	18.29	Pass
*142 (U-NII-3 Band)	5710	1.97	0.42	1.05	2.04	5.549	7.44	24.48	Pass
151	5755	17.01	18.77	18.54	18.34	265.253	24.24	24.48	Pass
159	5795	17.06	18.72	18.69	18.28	266.547	24.26	24.48	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 10.66 dBi > 6 dBi, so the power limit shall be reduced to 24-(10.66-6) = 19.34dBm.
2. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.12-6)”.
3. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.71-6)”.
4. For UNII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 11.52 dBi > 6 dBi, so the power limit shall be reduced to 30-(11.52-6) = 24.48dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	41.3	27.15 > 24
62	5310	41.33	27.16 > 24
102	5510	41.31	27.16 > 24
110	5550	41.33	27.16 > 24
134	5670	41.37	27.16 > 24
142 (U-NII-2C Band)	5710	35.57	26.51 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	13.19	12.92	12.48	11.81	73.305	18.65	19.34	Pass
58	5290	12.00	11.18	11.21	10.55	53.534	17.29	18.88	Pass
106	5530	12.83	12.26	11.48	11.42	63.941	18.06	18.29	Pass
*138 (U-NII-2C Band)	5690	11.81	10.53	11.84	11.94	57.376	17.59	18.29	Pass
*138 (U-NII-3 Band)	5690	-2.17	-2.72	-1.75	-1.16	2.5752	4.11	24.48	Pass
155	5775	16.97	18.77	18.52	18.41	265.573	24.24	24.48	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 10.66 dBi > 6 dBi, so the power limit shall be reduced to 24-(10.66-6) = 19.34dBm.
2. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.12-6)”.
3. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.71-6)”.
4. For UNII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 11.52 dBi > 6 dBi, so the power limit shall be reduced to 30-(11.52-6) = 24.48dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.48	30.16 > 24
106	5530	82.52	30.16 > 24
138 (U-NII-2C Band)	5690	76.06	29.81 > 24

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	4.83	3.45	5.12	3.28	12.054	10.81	19.34	Pass
*50 (U-NII-2A Band)	5250	4.28	4.35	4.18	2.78	11.242	10.51	18.88	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

1. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 10.66 dBi > 6 dBi, so the power limit shall be reduced to 24-(10.66-6) = 19.34dBm.
2. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.12-6)”.

Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
50 (U-NII-2A Band)	5250	81.43	30.1 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	13.44	13.09	12.46	12.25	76.858	18.86	19.34	Pass
40	5200	13.46	13.18	12.44	12.18	77.037	18.87	19.34	Pass
48	5240	13.48	13.11	12.48	12.27	77.315	18.88	19.34	Pass
52	5260	12.02	11.26	11.53	11.38	57.252	17.58	18.88	Pass
60	5300	12.03	11.36	11.50	11.41	57.597	17.60	18.88	Pass
64	5320	12.09	11.20	11.50	11.40	57.293	17.58	18.88	Pass
100	5500	12.55	11.96	12.15	11.86	65.444	18.16	18.29	Pass
116	5580	12.43	11.68	12.26	12.01	64.934	18.12	18.29	Pass
140	5700	12.99	11.32	11.86	12.52	66.67	18.24	18.29	Pass
*144 (U-NII-2C Band)	5720	10.69	9.69	10.14	10.22	41.88	16.22	17.30	Pass
*144 (U-NII-3 Band)	5720	6.02	4.63	5.08	5.63	13.78	11.39	24.48	Pass
149	5745	16.97	19.15	18.67	18.55	277.233	24.43	24.48	Pass
157	5785	17.07	19.20	18.71	18.46	278.557	24.45	24.48	Pass
165	5825	16.99	19.19	18.63	18.55	277.549	24.43	24.48	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 10.66 dBi > 6 dBi, so the power limit shall be reduced to 24-(10.66-6) = 19.34dBm.
2. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.12-6)”.
3. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.71-6)”.
4. For UNII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 11.52 dBi > 6 dBi, so the power limit shall be reduced to 30-(11.52-6) = 24.48dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.74	24.37 > 24
60	5300	21.59	24.34 > 24
64	5320	21.71	24.36 > 24
100	5500	21.72	24.36 > 24
116	5580	21.51	24.32 > 24
140	5700	21.74	24.37 > 24
144 (U-NII-2C Band)	5720	15.89	23.01 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	13.32	12.85	12.48	11.99	74.267	18.71	19.34	Pass
46	5230	13.38	12.88	12.52	12.05	75.083	18.76	19.34	Pass
54	5270	12.19	11.29	11.32	11.10	56.451	17.52	18.88	Pass
62	5310	12.17	11.34	11.36	11.27	57.17	17.57	18.88	Pass
102	5510	12.79	12.60	11.79	11.55	66.598	18.23	18.29	Pass
110	5550	12.73	12.41	11.94	11.43	65.699	18.18	18.29	Pass
134	5670	12.53	11.55	11.95	12.62	66.144	18.20	18.29	Pass
*142 (U-NII-2C Band)	5710	11.51	10.62	10.85	11.34	51.469	17.12	18.29	Pass
*142 (U-NII-3 Band)	5710	2.19	0.54	1.11	2.14	5.716	7.57	24.48	Pass
151	5755	17.19	18.97	18.77	18.53	277.867	24.44	24.48	Pass
159	5795	17.21	19.02	18.83	18.45	278.769	24.45	24.48	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 10.66 dBi > 6 dBi, so the power limit shall be reduced to 24-(10.66-6) = 19.34dBm.
2. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.12-6)”.
3. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.71-6)”.
4. For UNII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 11.52 dBi > 6 dBi, so the power limit shall be reduced to 30-(11.52-6) = 24.48dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	41.3	27.15 > 24
62	5310	41.33	27.16 > 24
102	5510	41.31	27.16 > 24
110	5550	41.33	27.16 > 24
134	5670	41.37	27.16 > 24
142 (U-NII-2C Band)	5710	35.57	26.51 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	13.38	13.14	12.66	11.98	76.61	18.84	19.34	Pass
58	5290	12.21	11.39	11.42	10.83	56.38	17.51	18.88	Pass
106	5530	13.01	12.47	11.69	11.63	66.971	18.26	18.29	Pass
*138 (U-NII-2C Band)	5690	11.95	10.67	12.09	12.12	59.809	17.77	18.29	Pass
*138 (U-NII-3 Band)	5690	-1.86	-2.57	-1.52	-1.00	2.704	4.32	24.48	Pass
155	5775	17.22	18.99	18.69	18.55	277.548	24.43	24.48	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 10.66 dBi > 6 dBi, so the power limit shall be reduced to 24-(10.66-6) = 19.34dBm.
2. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.12-6)”.
3. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.71-6)”.
4. For UNII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 11.52 dBi > 6 dBi, so the power limit shall be reduced to 30-(11.52-6) = 24.48dBm.

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.48	30.16 > 24
106	5530	82.52	30.16 > 24
138 (U-NII-2C Band)	5690	76.06	29.81 > 24

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	5.04	3.61	5.21	3.47	12.504	10.97	19.34	Pass
*50 (U-NII-2A Band)	5250	4.39	4.57	4.36	2.87	11.651	10.66	18.88	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

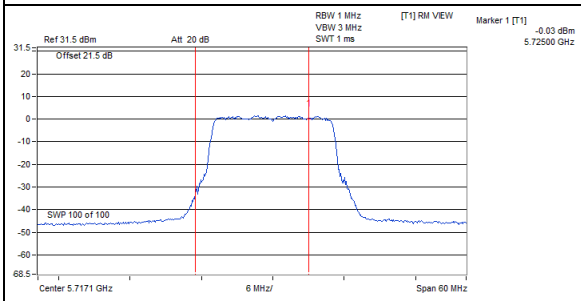
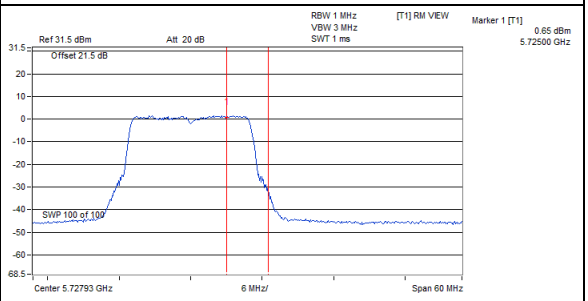
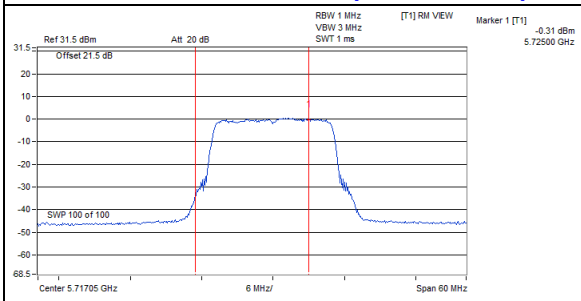
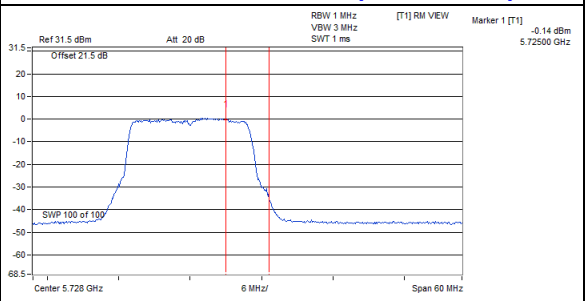
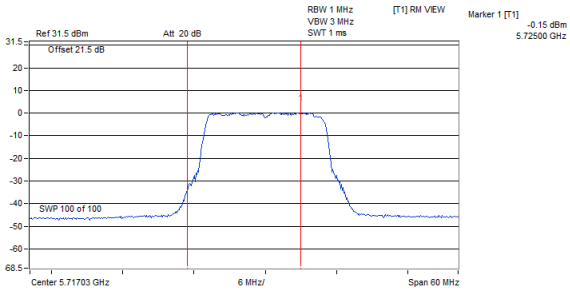
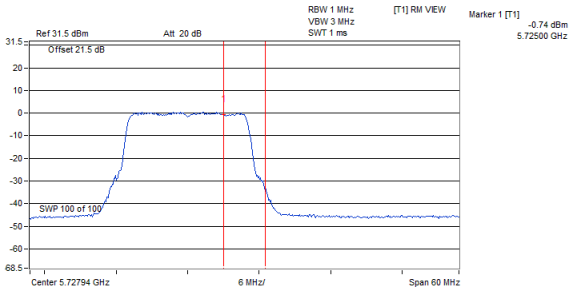
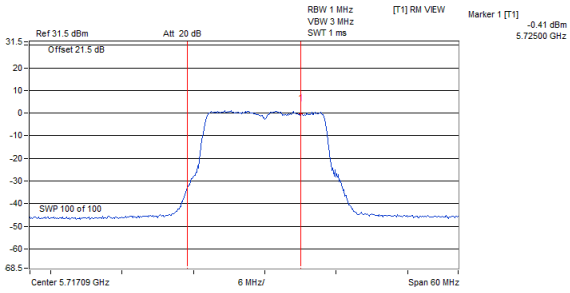
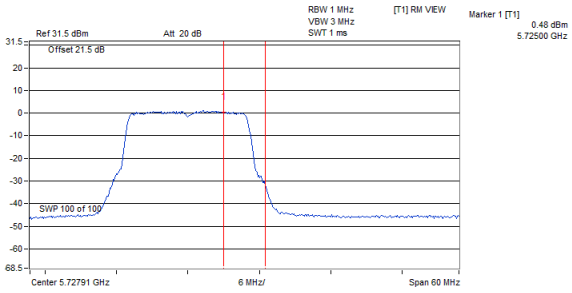
1. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4]= 10.66 dBi > 6 dBi, so the power limit shall be reduced to 24-(10.66-6) = 19.34dBm.
2. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to “Determined Conducted Limit-(11.12-6)”.

Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
50 (U-NII-2A Band)	5250	81.43	30.1 > 24

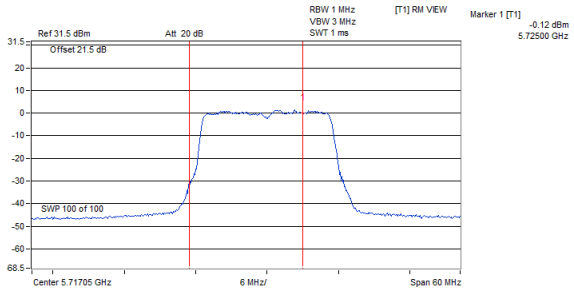
For channel straddling 5725MHz of Power

CDD Mode

Spectrum Plot Value of Power	
802.11a_Chain 0 / CH144 (U-NII-2C Band)	**802.11a_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.8 MHz Power 13.03 dBm	 TX Channel Bandwidth 5.87 MHz Power 7.46 dBm
802.11a_Chain 1 / CH144 (U-NII-2C Band)	**802.11a_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.9 MHz Power 11.81 dBm	 TX Channel Bandwidth 6.01 MHz Power 5.25 dBm
802.11a_Chain 2 / CH144 (U-NII-2C Band)	**802.11a_Chain 2 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.94 MHz Power 11.93 dBm	 TX Channel Bandwidth 5.88 MHz Power 5.8 dBm
802.11a_Chain 3 / CH144 (U-NII-2C Band)	**802.11a_Chain 3 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.82 MHz Power 12.47 dBm	 TX Channel Bandwidth 5.83 MHz Power 6.41 dBm

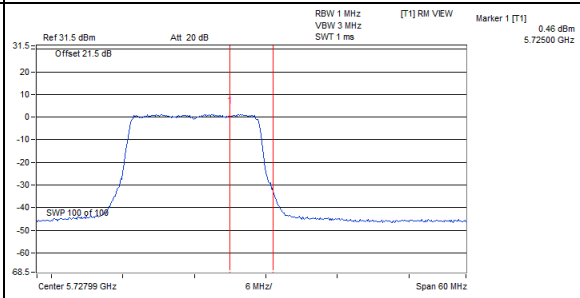
Spectrum Plot Value of Power

802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)



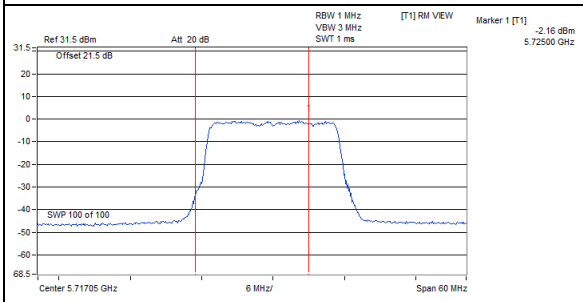
TX Channel Bandwidth 15.89 MHz Power 12.62 dBm

802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



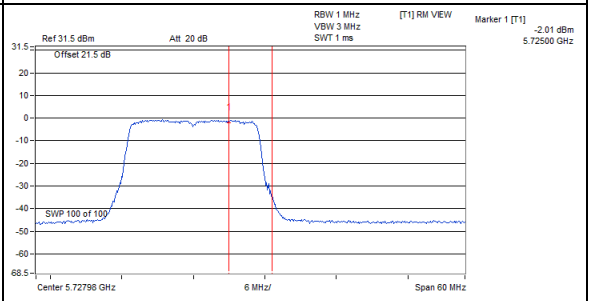
TX Channel Bandwidth 5.98 MHz Power 7.86 dBm

802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)



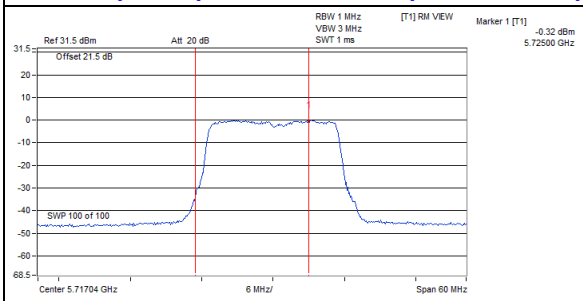
TX Channel Bandwidth 15.89 MHz Power 10.8 dBm

802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)



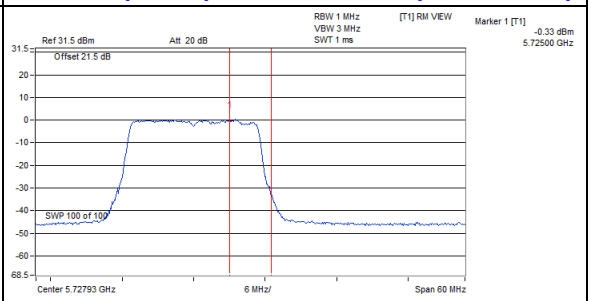
TX Channel Bandwidth 5.96 MHz Power 5.46 dBm

802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)



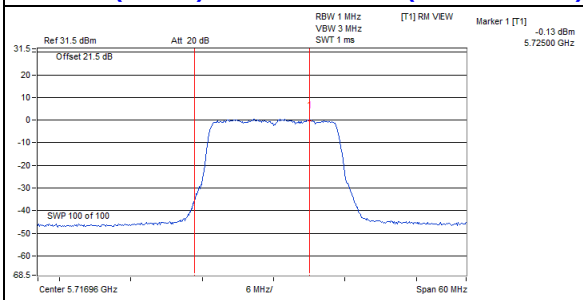
TX Channel Bandwidth 15.92 MHz Power 11.49 dBm

802.11ac (VHT20)_Chain 2 / CH144 (U-NII-3 Band)



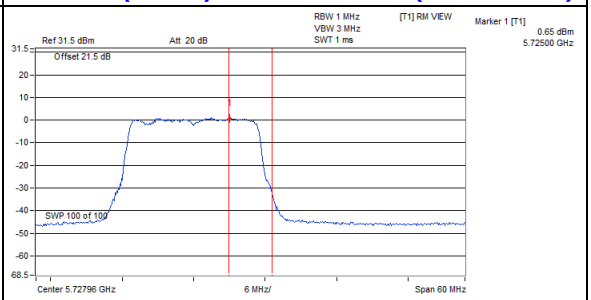
TX Channel Bandwidth 5.87 MHz Power 6.2 dBm

802.11ac (VHT20)_Chain 3 / CH144 (U-NII-2C Band)



TX Channel Bandwidth 16.08 MHz Power 12.06 dBm

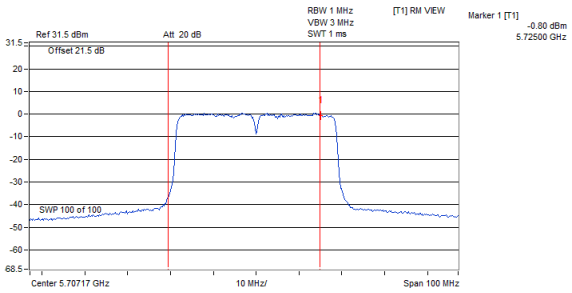
802.11ac (VHT20)_Chain 3 / CH144 (U-NII-3 Band)



TX Channel Bandwidth 5.93 MHz Power 7.27 dBm

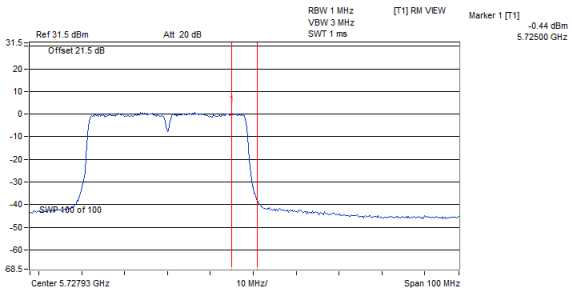
Spectrum Plot Value of Power

802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)



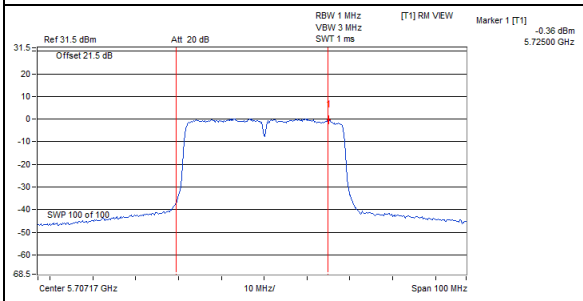
TX Channel Bandwidth 35.65 MHz Power 15.82 dBm

802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



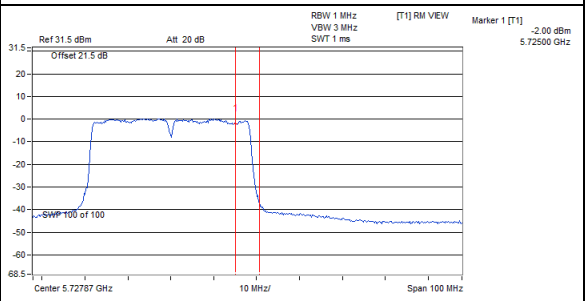
TX Channel Bandwidth 5.87 MHz Power 6.04 dBm

802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



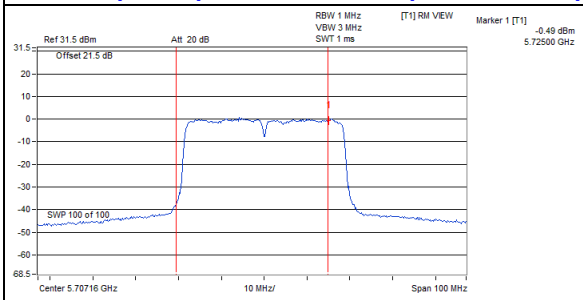
TX Channel Bandwidth 35.66 MHz Power 15.52 dBm

802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



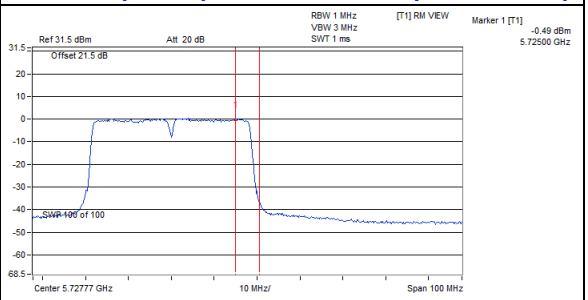
TX Channel Bandwidth 5.74 MHz Power 5.17 dBm

802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band)



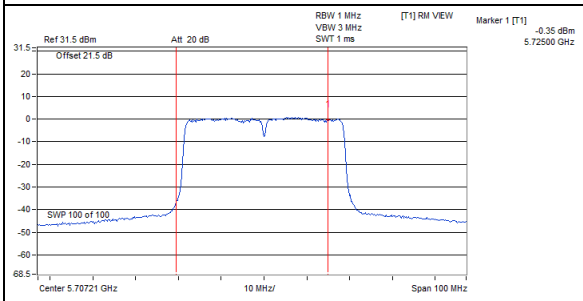
TX Channel Bandwidth 35.68 MHz Power 15.52 dBm

802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)



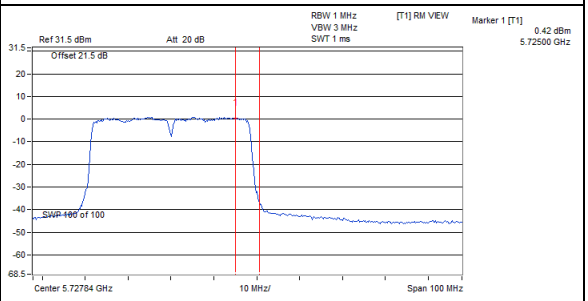
TX Channel Bandwidth 5.55 MHz Power 5.95 dBm

802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band)



TX Channel Bandwidth 35.57 MHz Power 16.07 dBm

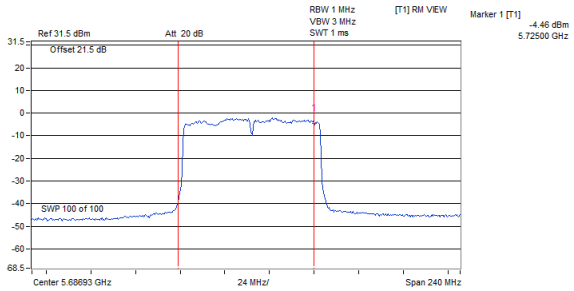
802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)



TX Channel Bandwidth 5.68 MHz Power 6.29 dBm

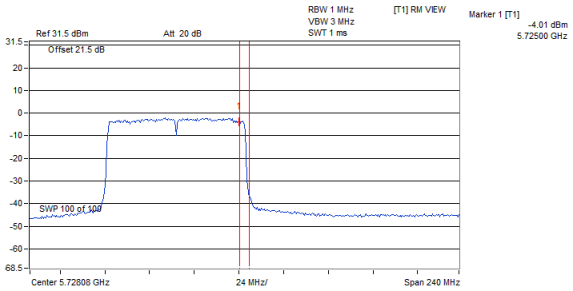
Spectrum Plot Value of Power

802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)



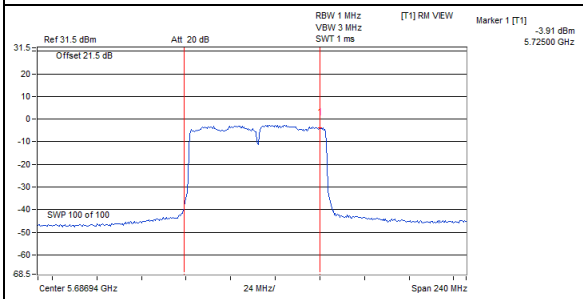
TX Channel Bandwidth 76.14 MHz Power 16.13 dBm

802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



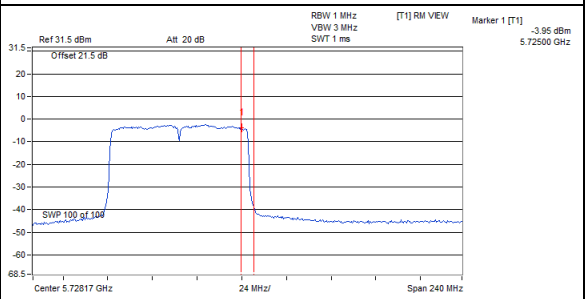
TX Channel Bandwidth 6.17 MHz Power 2.6 dBm

802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)



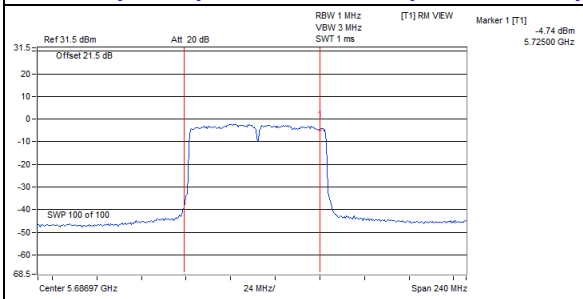
TX Channel Bandwidth 76.11 MHz Power 15.85 dBm

802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



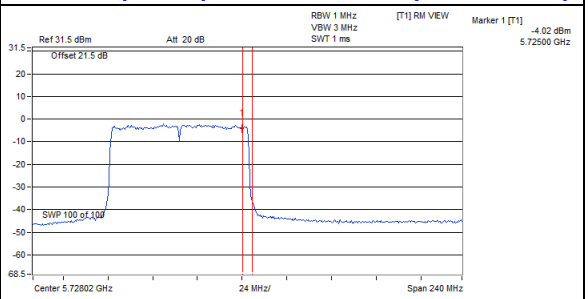
TX Channel Bandwidth 6.34 MHz Power 1.95 dBm

802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band)



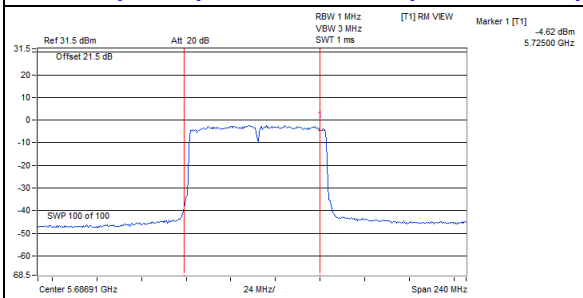
TX Channel Bandwidth 76.06 MHz Power 16.36 dBm

802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)



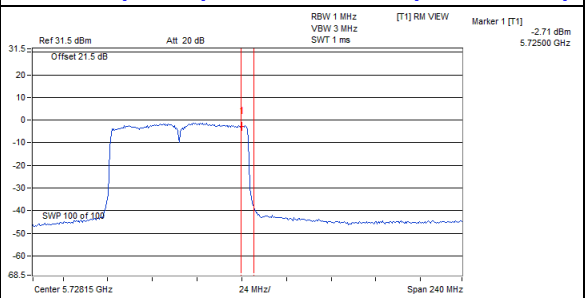
TX Channel Bandwidth 6.04 MHz Power 2.75 dBm

802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band)



TX Channel Bandwidth 76.18 MHz Power 16.36 dBm

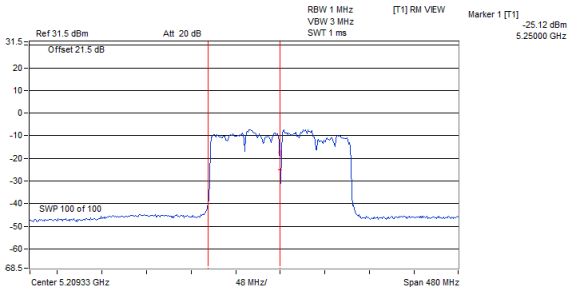
802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)



TX Channel Bandwidth 6.31 MHz Power 3.73 dBm

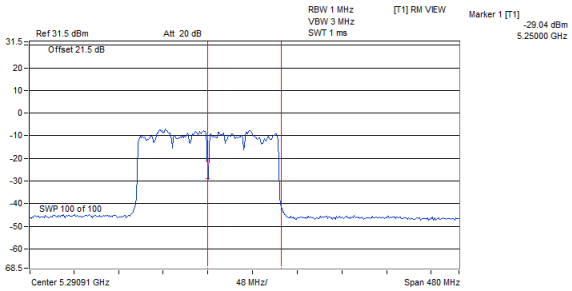
Spectrum Plot Value of Power

802.11ac (VHT160)_Chain 0 / CH50 (U-NII-1 Band)



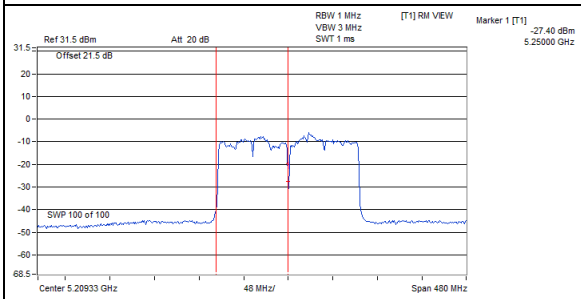
TX Channel Bandwidth 81.34 MHz Power 10.14 dBm

802.11ac (VHT160)_Chain 0 / CH50 (U-NII-2A Band)



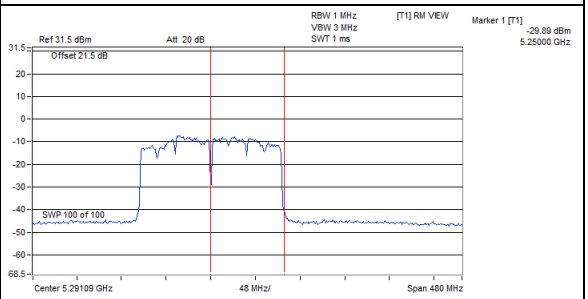
TX Channel Bandwidth 81.83 MHz Power 9.85 dBm

802.11ac (VHT160)_Chain 1 / CH50 (U-NII-1 Band)



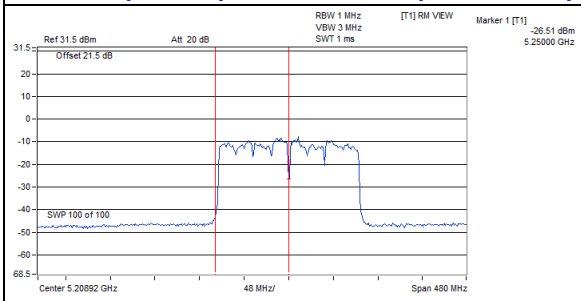
TX Channel Bandwidth 81.34 MHz Power 9.66 dBm

802.11ac (VHT160)_Chain 1 / CH50 (U-NII-2A Band)



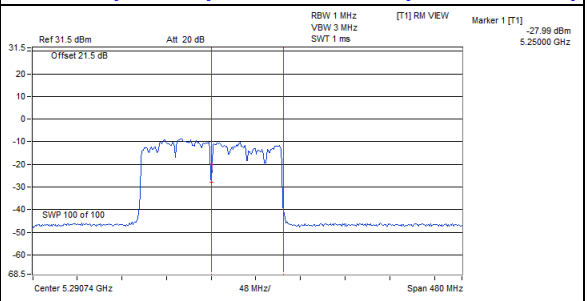
TX Channel Bandwidth 82.18 MHz Power 10.07 dBm

802.11ac (VHT160)_Chain 2 / CH50 (U-NII-1 Band)



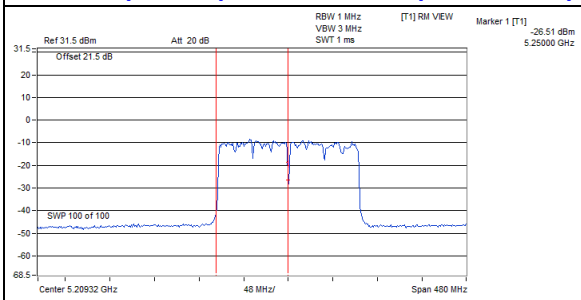
TX Channel Bandwidth 82.16 MHz Power 8.76 dBm

802.11ac (VHT160)_Chain 2 / CH50 (U-NII-2A Band)



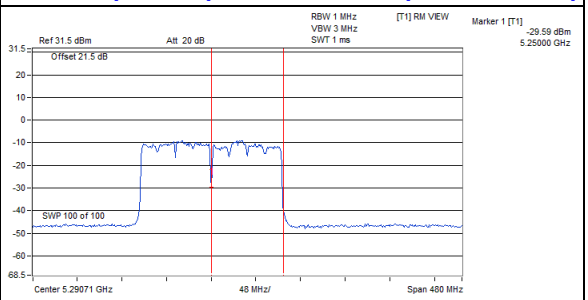
TX Channel Bandwidth 81.48 MHz Power 7.32 dBm

802.11ac (VHT160)_Chain 3 / CH50 (U-NII-1 Band)



TX Channel Bandwidth 81.36 MHz Power 9.44 dBm

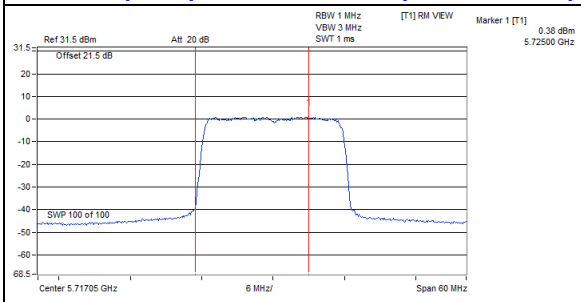
802.11ac (VHT160)_Chain 3 / CH50 (U-NII-2A Band)



TX Channel Bandwidth 81.43 MHz Power 8.46 dBm

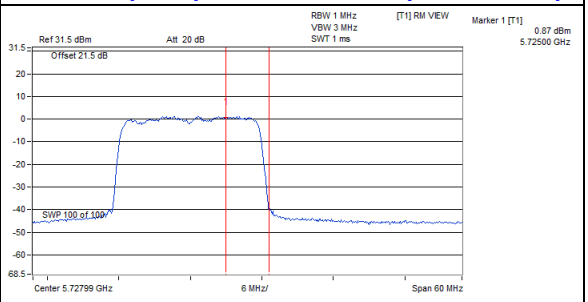
Spectrum Plot Value of Power

802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)



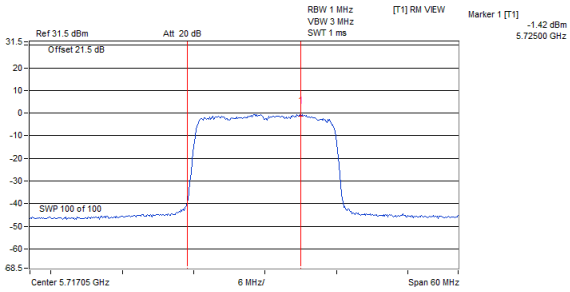
TX Channel Bandwidth 15.89 MHz Power 12.89 dBm

802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)



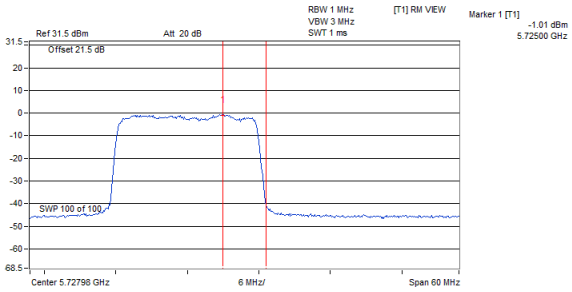
TX Channel Bandwidth 5.98 MHz Power 8.06 dBm

802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)



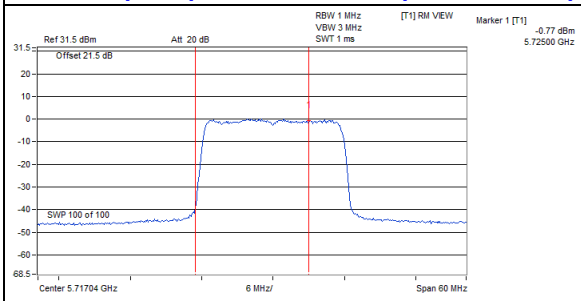
TX Channel Bandwidth 15.89 MHz Power 11 dBm

802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)



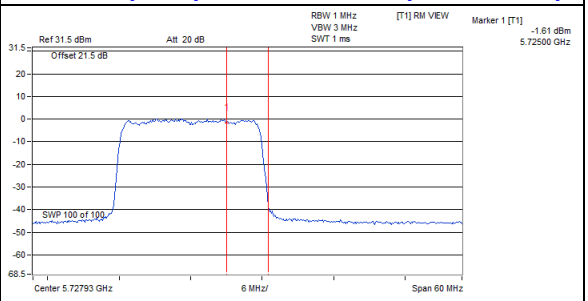
TX Channel Bandwidth 5.96 MHz Power 5.74 dBm

802.11ax (HE20)_Chain 2 / CH144 (U-NII-2C Band)



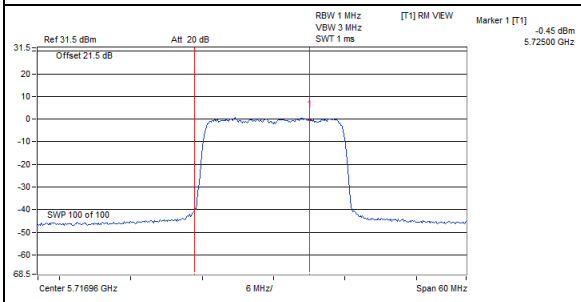
TX Channel Bandwidth 15.92 MHz Power 11.77 dBm

802.11ax (HE20)_Chain 2 / CH144 (U-NII-3 Band)



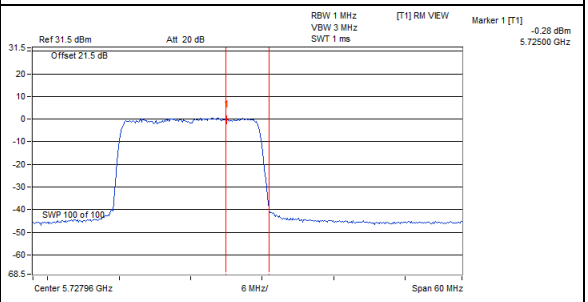
TX Channel Bandwidth 5.87 MHz Power 6.56 dBm

802.11ax (HE20)_Chain 3 / CH144 (U-NII-2C Band)



TX Channel Bandwidth 16.08 MHz Power 12.19 dBm

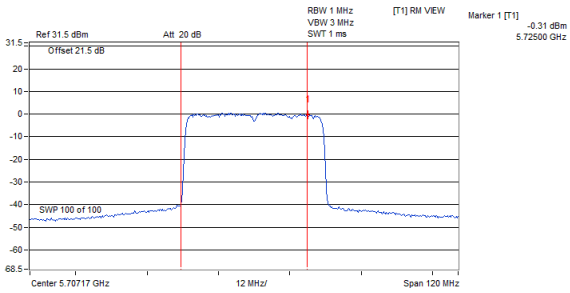
802.11ax (HE20)_Chain 3 / CH144 (U-NII-3 Band)



TX Channel Bandwidth 5.93 MHz Power 7.41 dBm

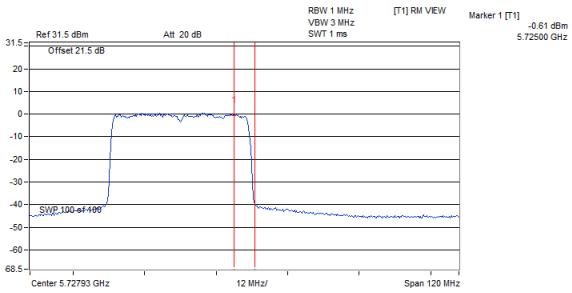
Spectrum Plot Value of Power

802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)



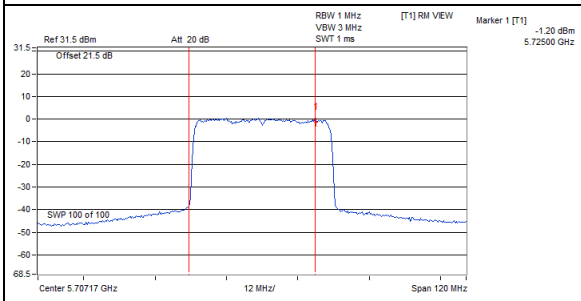
TX Channel Bandwidth 35.65 MHz Power 15.96 dBm

802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)



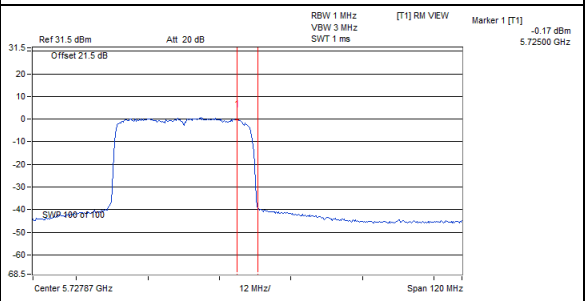
TX Channel Bandwidth 5.87 MHz Power 6.32 dBm

802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)



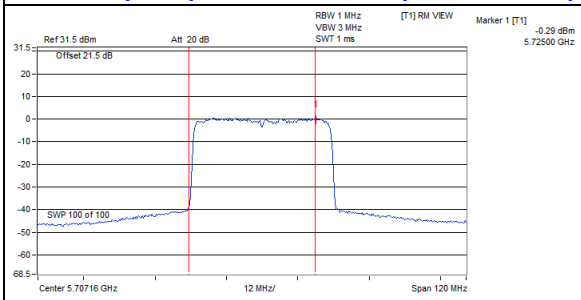
TX Channel Bandwidth 35.66 MHz Power 15.72 dBm

802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)



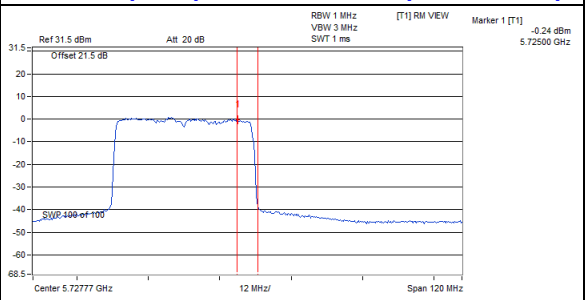
TX Channel Bandwidth 5.74 MHz Power 5.39 dBm

802.11ax (HE40)_Chain 2 / CH142 (U-NII-2C Band)



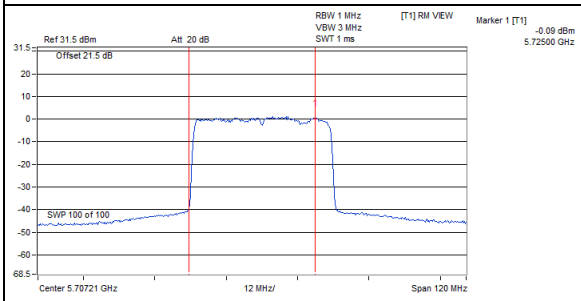
TX Channel Bandwidth 35.68 MHz Power 15.84 dBm

802.11ax (HE40)_Chain 2 / CH142 (U-NII-3 Band)



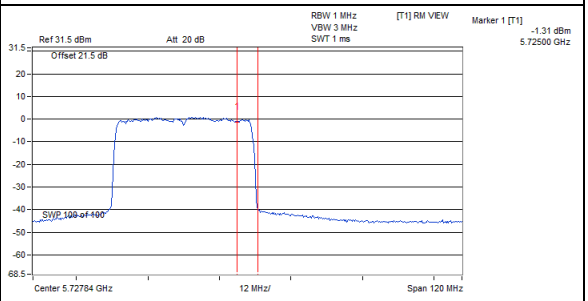
TX Channel Bandwidth 5.55 MHz Power 6.18 dBm

802.11ax (HE40)_Chain 3 / CH142 (U-NII-2C Band)



TX Channel Bandwidth 35.57 MHz Power 16.18 dBm

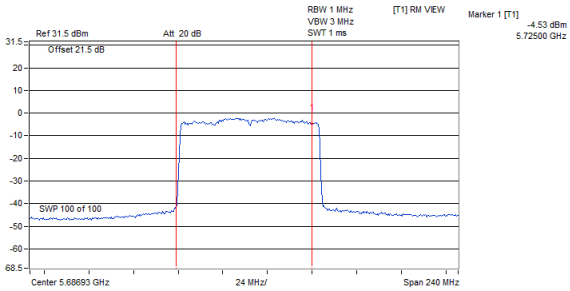
802.11ax (HE40)_Chain 3 / CH142 (U-NII-3 Band)



TX Channel Bandwidth 5.68 MHz Power 6.5 dBm

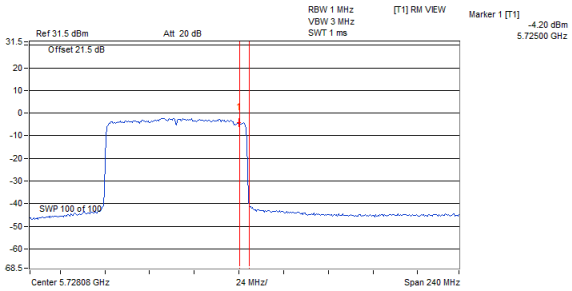
Spectrum Plot Value of Power

802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)



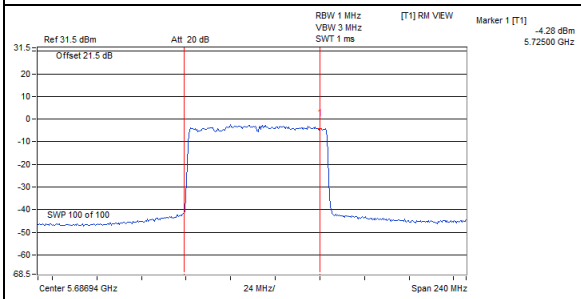
TX Channel Bandwidth 76.14 MHz Power 16.31 dBm

802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)



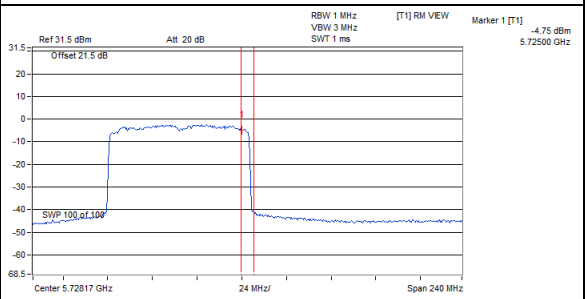
TX Channel Bandwidth 6.17 MHz Power 2.8 dBm

802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)



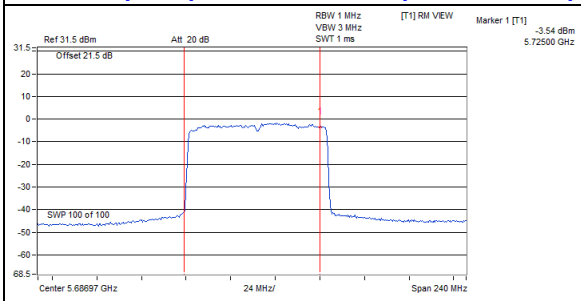
TX Channel Bandwidth 76.11 MHz Power 15.95 dBm

802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)



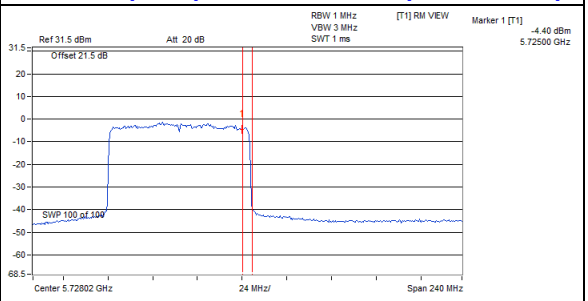
TX Channel Bandwidth 6.34 MHz Power 2.19 dBm

802.11ax (HE80)_Chain 2 / CH138 (U-NII-2C Band)



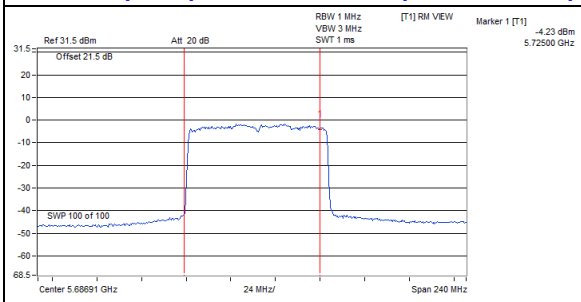
TX Channel Bandwidth 76.06 MHz Power 16.73 dBm

802.11ax (HE80)_Chain 2 / CH138 (U-NII-3 Band)



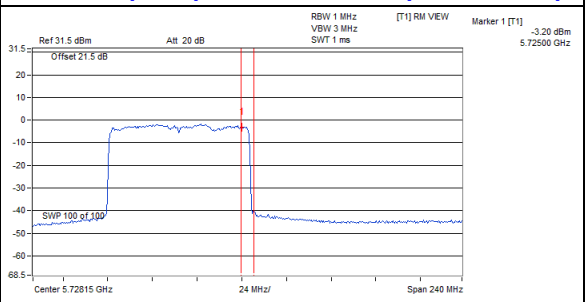
TX Channel Bandwidth 6.04 MHz Power 2.96 dBm

802.11ax (HE80)_Chain 3 / CH138 (U-NII-2C Band)



TX Channel Bandwidth 76.18 MHz Power 16.72 dBm

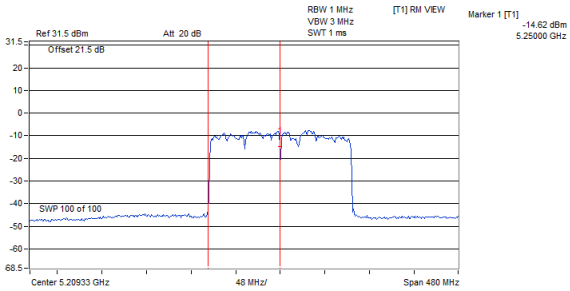
802.11ax (HE80)_Chain 3 / CH138 (U-NII-3 Band)



TX Channel Bandwidth 6.31 MHz Power 3.92 dBm

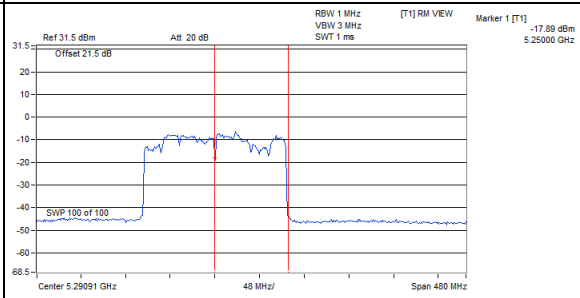
Spectrum Plot Value of Power

802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)



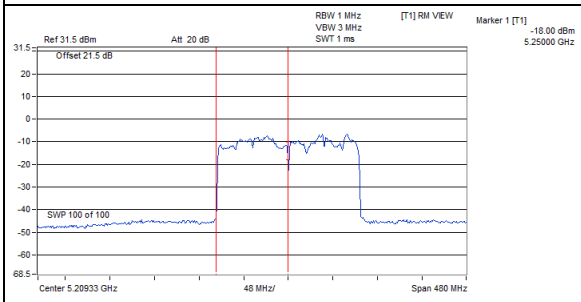
TX Channel Bandwidth 81.34 MHz Power 10.23 dBm

802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)



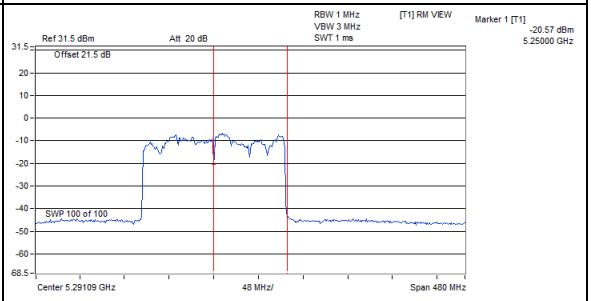
TX Channel Bandwidth 81.83 MHz Power 10.03 dBm

802.11ax (HE160)_Chain 1 / CH50 (U-NII-1 Band)



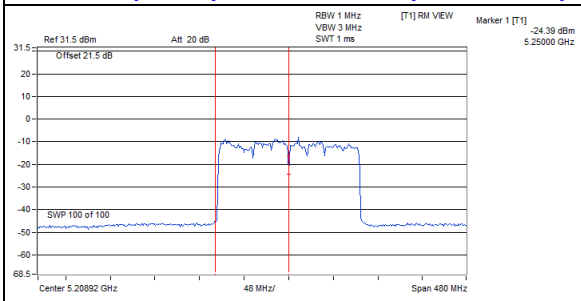
TX Channel Bandwidth 81.34 MHz Power 9.84 dBm

802.11ax (HE160)_Chain 1 / CH50 (U-NII-2A Band)



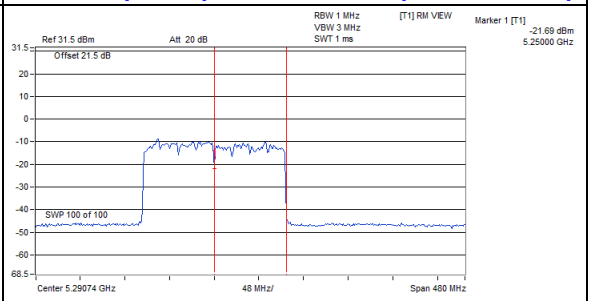
TX Channel Bandwidth 82.18 MHz Power 10.17 dBm

802.11ax (HE160)_Chain 2 / CH50 (U-NII-1 Band)



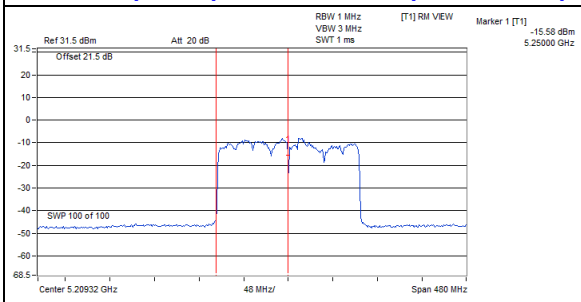
TX Channel Bandwidth 82.16 MHz Power 8.88 dBm

802.11ax (HE160)_Chain 2 / CH50 (U-NII-2A Band)



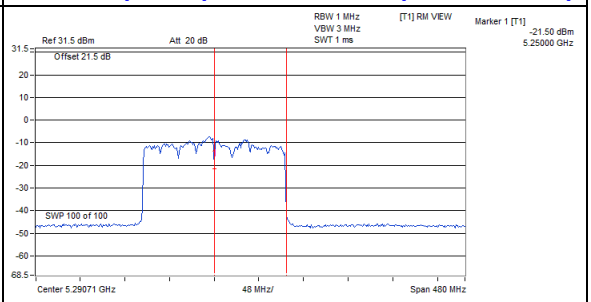
TX Channel Bandwidth 81.48 MHz Power 7.65 dBm

802.11ax (HE160)_Chain 3 / CH50 (U-NII-1 Band)



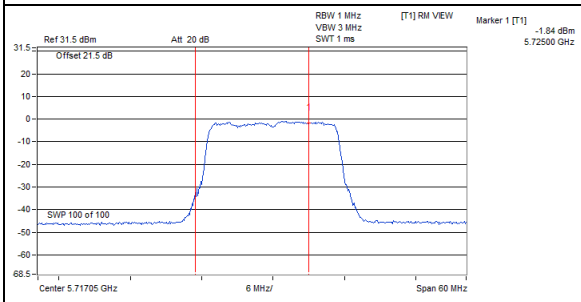
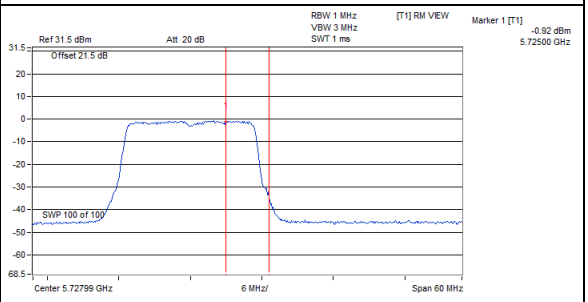
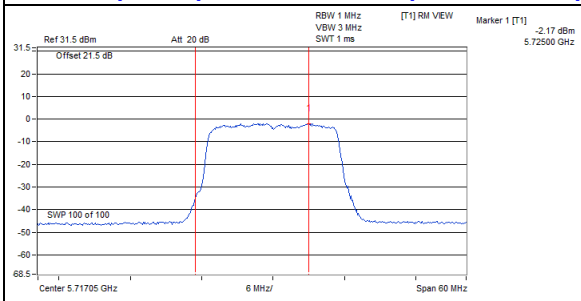
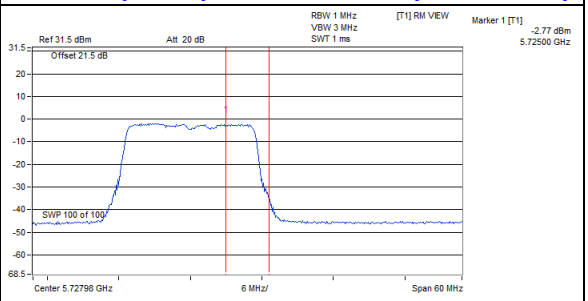
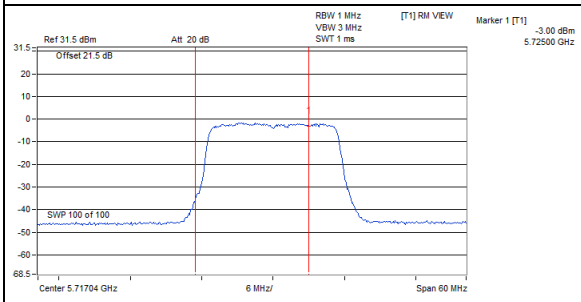
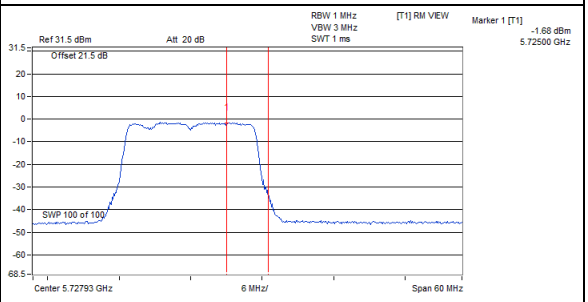
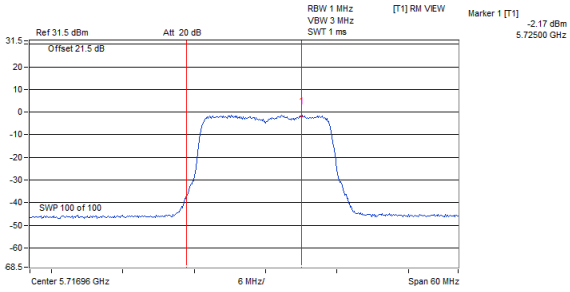
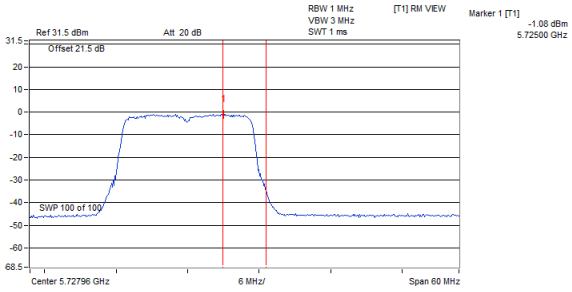
TX Channel Bandwidth 81.36 MHz Power 9.54 dBm

802.11ax (HE160)_Chain 3 / CH50 (U-NII-2A Band)



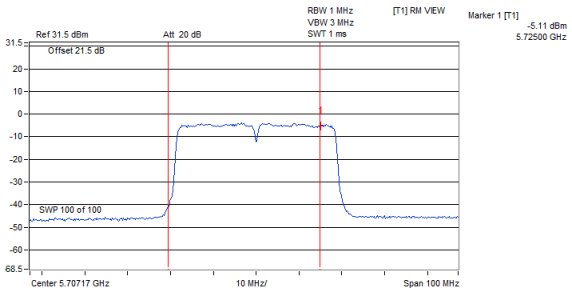
TX Channel Bandwidth 81.43 MHz Power 8.54 dBm

Beamforming Mode

Spectrum Plot Value of Power	
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)**
	
TX Channel Bandwidth 15.89 MHz Power 10.56 dBm	TX Channel Bandwidth 5.98 MHz Power 5.82 dBm
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)**
	
TX Channel Bandwidth 15.89 MHz Power 9.52 dBm	TX Channel Bandwidth 5.96 MHz Power 4.42 dBm
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 2 / CH144 (U-NII-3 Band)**
	
TX Channel Bandwidth 15.92 MHz Power 9.98 dBm	TX Channel Bandwidth 5.87 MHz Power 5.02 dBm
802.11ac (VHT20)_Chain 3 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 3 / CH144 (U-NII-3 Band)**
	
TX Channel Bandwidth 16.08 MHz Power 10.12 dBm	TX Channel Bandwidth 5.93 MHz Power 5.48 dBm

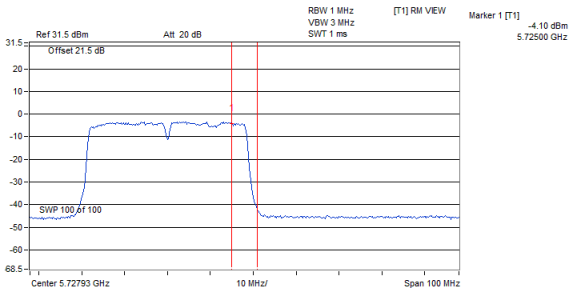
Spectrum Plot Value of Power

802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)



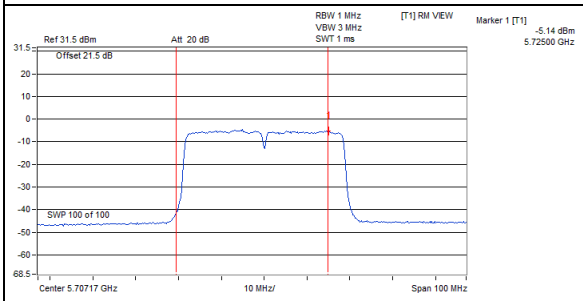
TX Channel Bandwidth 35.65 MHz Power 11.37 dBm

802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



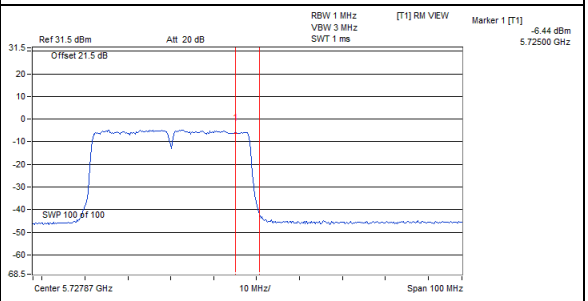
TX Channel Bandwidth 5.87 MHz Power 1.97 dBm

802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



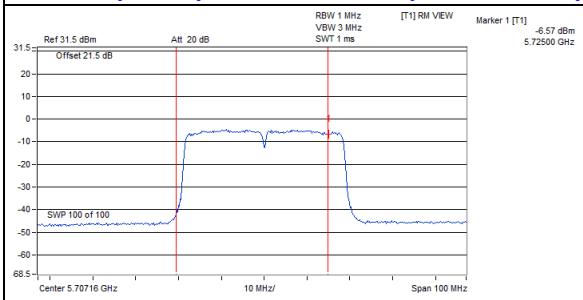
TX Channel Bandwidth 35.66 MHz Power 10.51 dBm

802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



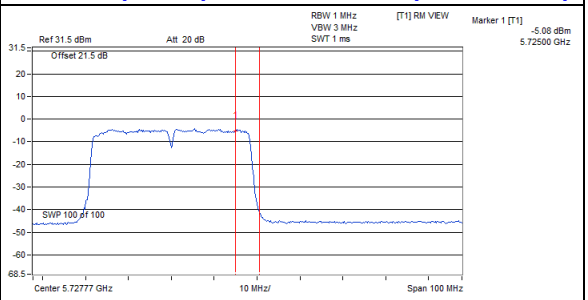
TX Channel Bandwidth 5.74 MHz Power 0.42 dBm

802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band)



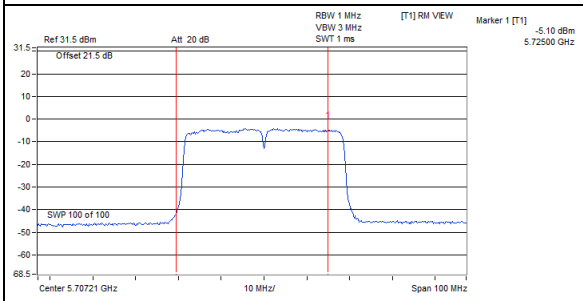
TX Channel Bandwidth 35.68 MHz Power 10.64 dBm

802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)



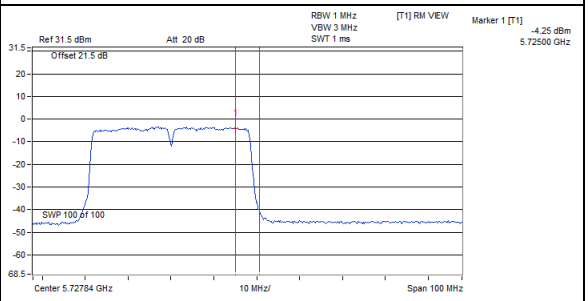
TX Channel Bandwidth 5.55 MHz Power 1.05 dBm

802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band)



TX Channel Bandwidth 35.57 MHz Power 11.19 dBm

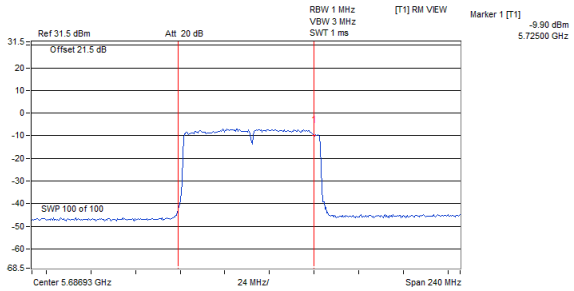
802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)



TX Channel Bandwidth 5.68 MHz Power 2.04 dBm

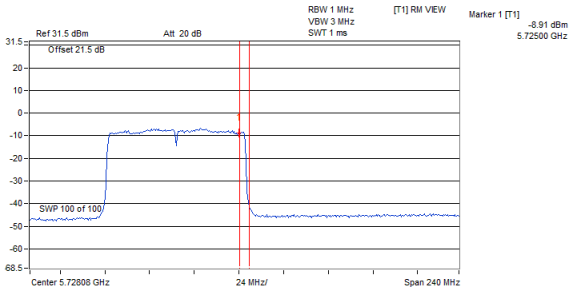
Spectrum Plot Value of Power

802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)



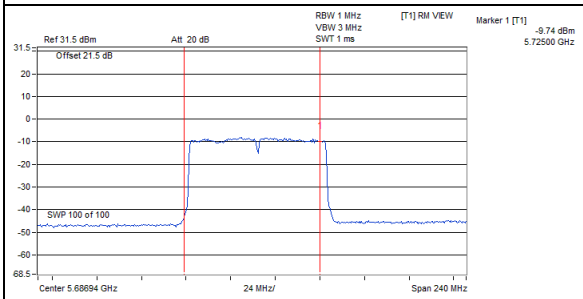
TX Channel Bandwidth 76.14 MHz Power 11.81 dBm

802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



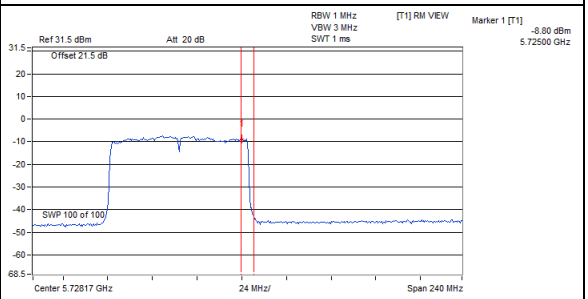
TX Channel Bandwidth 6.17 MHz Power -2.17 dBm

802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)



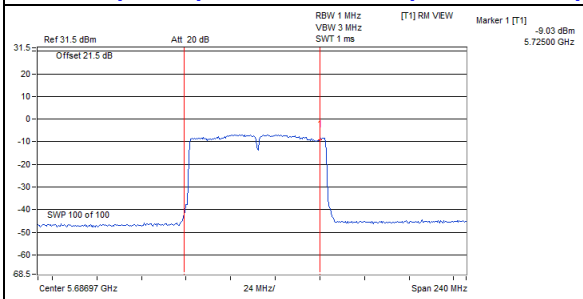
TX Channel Bandwidth 76.11 MHz Power 10.53 dBm

802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



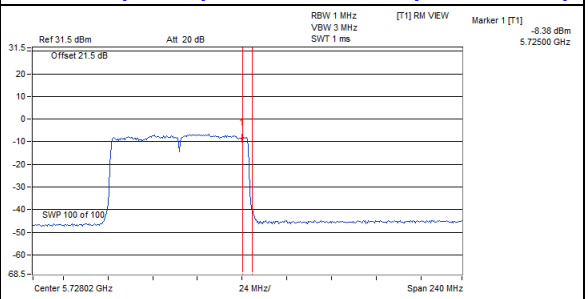
TX Channel Bandwidth 6.34 MHz Power -2.72 dBm

802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band)



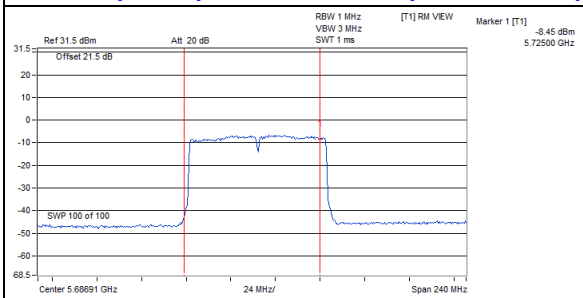
TX Channel Bandwidth 76.06 MHz Power 11.84 dBm

802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)



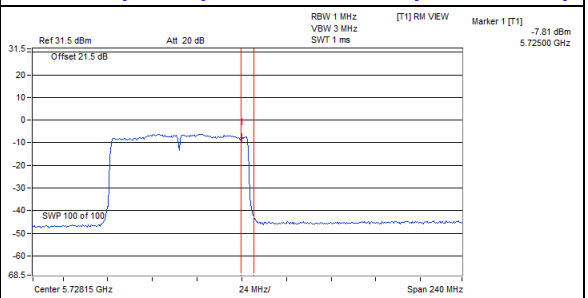
TX Channel Bandwidth 6.04 MHz Power -1.75 dBm

802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band)



TX Channel Bandwidth 76.18 MHz Power 11.94 dBm

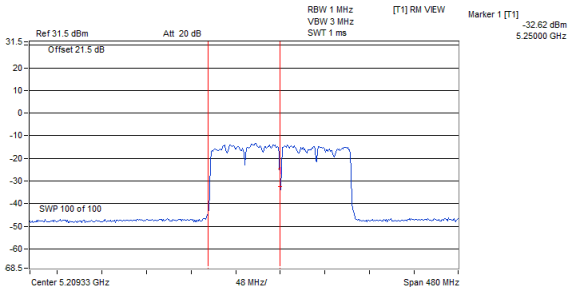
802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)



TX Channel Bandwidth 6.31 MHz Power -1.16 dBm

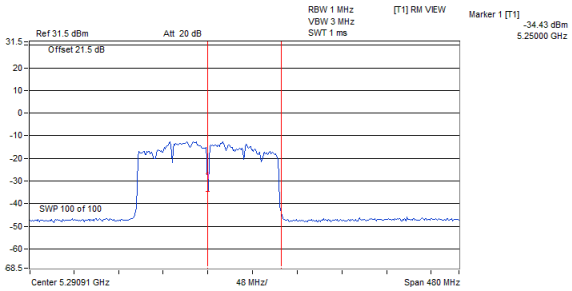
Spectrum Plot Value of Power

802.11ac (VHT160)_Chain 0 / CH50 (U-NII-1 Band)



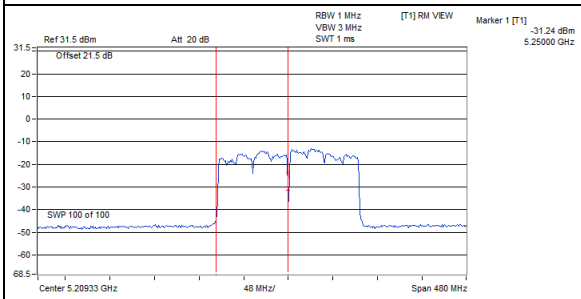
TX Channel Bandwidth 81.34 MHz Power 4.83 dBm

802.11ac (VHT160)_Chain 0 / CH50 (U-NII-2A Band)



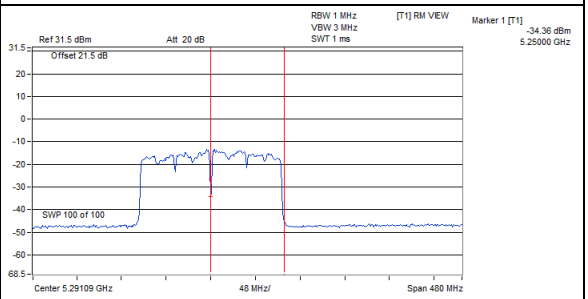
TX Channel Bandwidth 81.83 MHz Power 4.28 dBm

802.11ac (VHT160)_Chain 1 / CH50 (U-NII-1 Band)



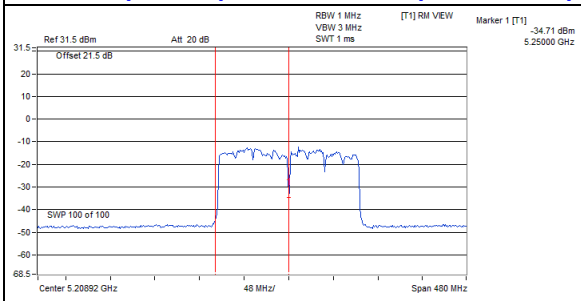
TX Channel Bandwidth 81.34 MHz Power 3.45 dBm

802.11ac (VHT160)_Chain 1 / CH50 (U-NII-2A Band)



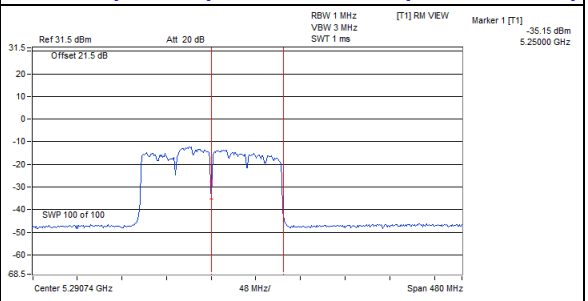
TX Channel Bandwidth 82.18 MHz Power 4.35 dBm

802.11ac (VHT160)_Chain 2 / CH50 (U-NII-1 Band)



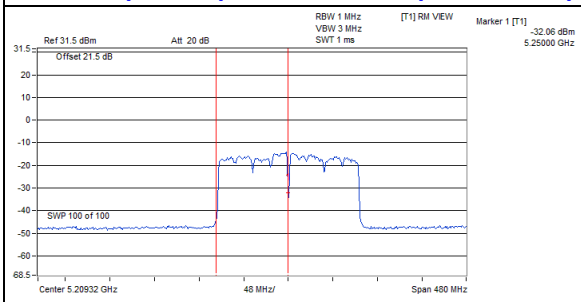
TX Channel Bandwidth 82.16 MHz Power 5.12 dBm

802.11ac (VHT160)_Chain 2 / CH50 (U-NII-2A Band)



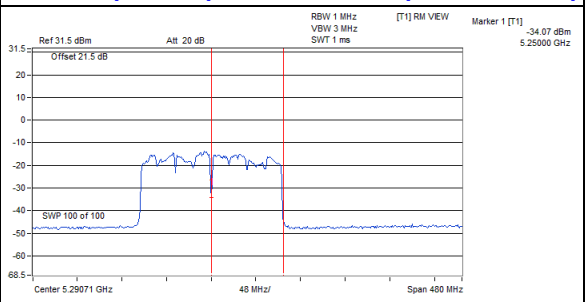
TX Channel Bandwidth 81.48 MHz Power 4.18 dBm

802.11ac (VHT160)_Chain 3 / CH50 (U-NII-1 Band)



TX Channel Bandwidth 81.36 MHz Power 3.28 dBm

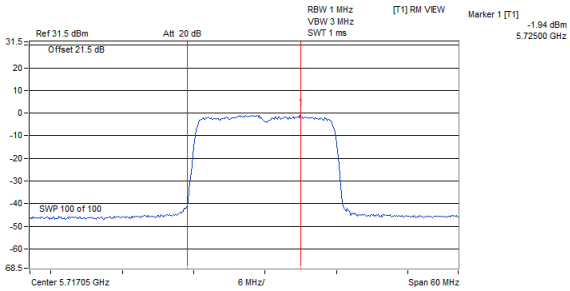
802.11ac (VHT160)_Chain 3 / CH50 (U-NII-2A Band)



TX Channel Bandwidth 81.43 MHz Power 2.78 dBm

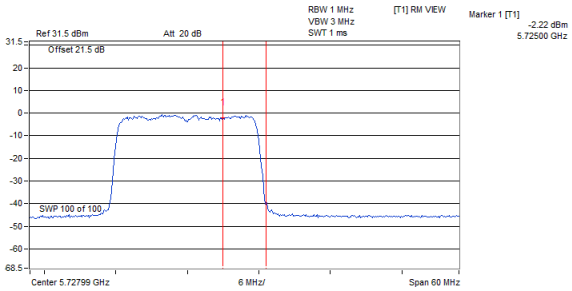
Spectrum Plot Value of Power

802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)



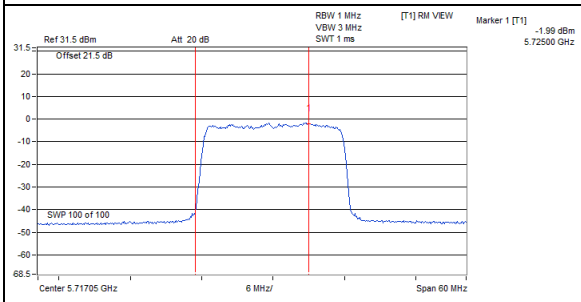
TX Channel Bandwidth 15.89 MHz Power 10.69 dBm

802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)



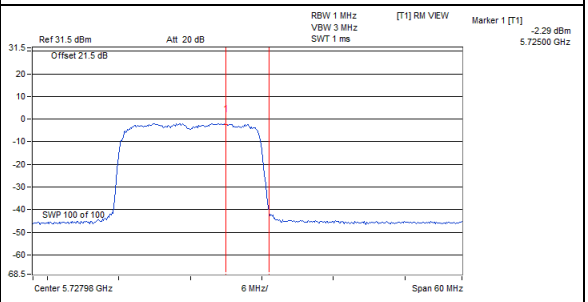
TX Channel Bandwidth 5.98 MHz Power 6.02 dBm

802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)



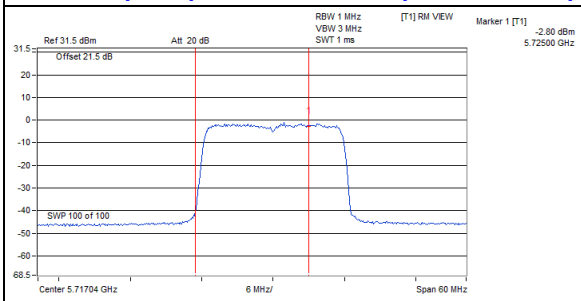
TX Channel Bandwidth 15.89 MHz Power 9.69 dBm

802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)



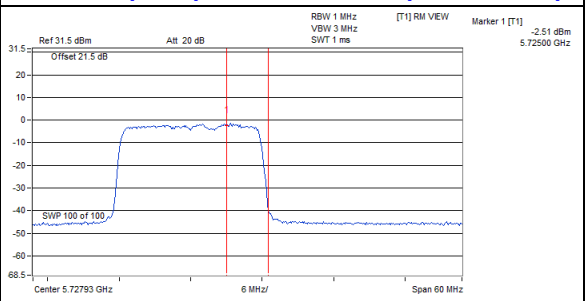
TX Channel Bandwidth 5.96 MHz Power 4.63 dBm

802.11ax (HE20)_Chain 2 / CH144 (U-NII-2C Band)



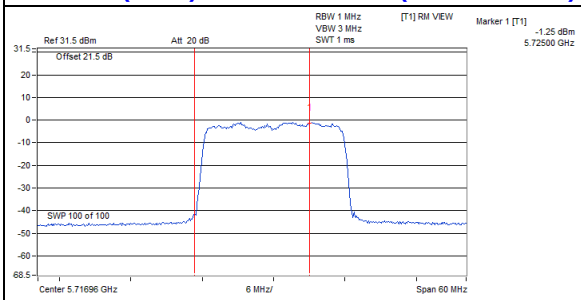
TX Channel Bandwidth 15.92 MHz Power 10.14 dBm

802.11ax (HE20)_Chain 2 / CH144 (U-NII-3 Band)



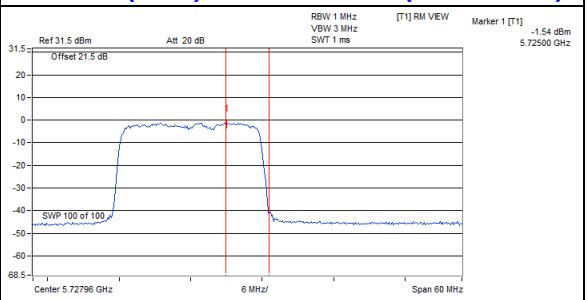
TX Channel Bandwidth 5.87 MHz Power 5.08 dBm

802.11ax (HE20)_Chain 3 / CH144 (U-NII-2C Band)



TX Channel Bandwidth 16.08 MHz Power 10.22 dBm

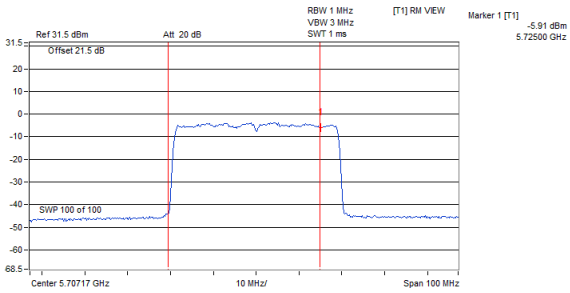
802.11ax (HE20)_Chain 3 / CH144 (U-NII-3 Band)



TX Channel Bandwidth 5.93 MHz Power 5.63 dBm

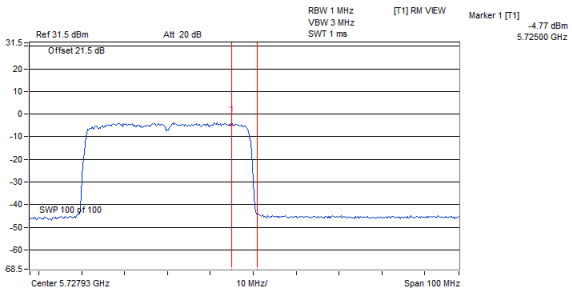
Spectrum Plot Value of Power

802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)



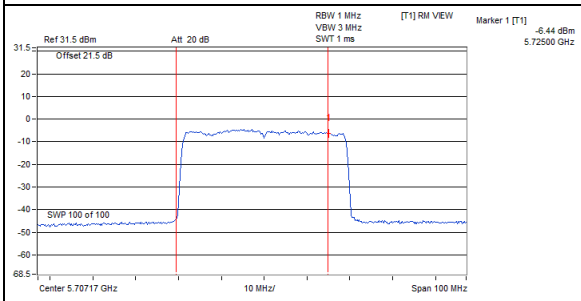
TX Channel Bandwidth 35.65 MHz Power 11.51 dBm

802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)



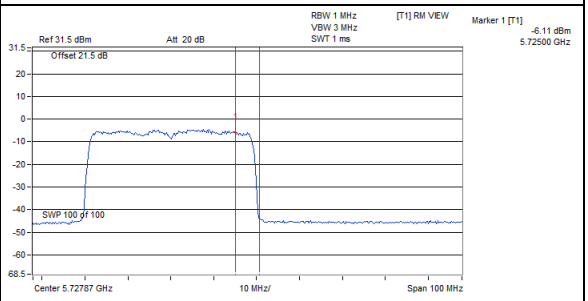
TX Channel Bandwidth 5.87 MHz Power 2.19 dBm

802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)



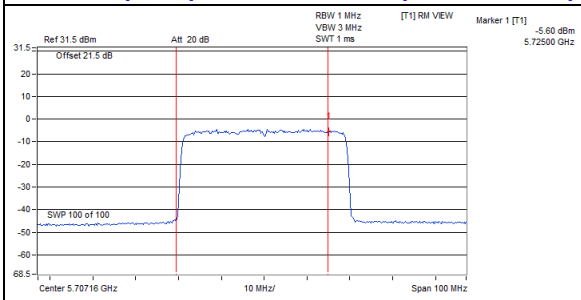
TX Channel Bandwidth 35.66 MHz Power 10.62 dBm

802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)



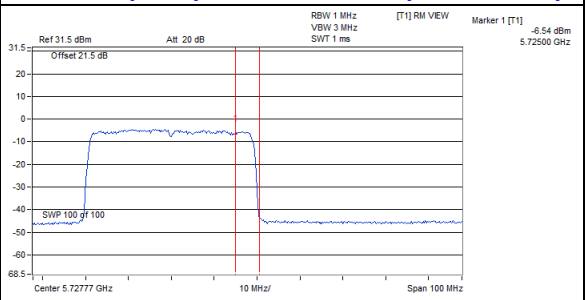
TX Channel Bandwidth 5.74 MHz Power 0.54 dBm

802.11ax (HE40)_Chain 2 / CH142 (U-NII-2C Band)



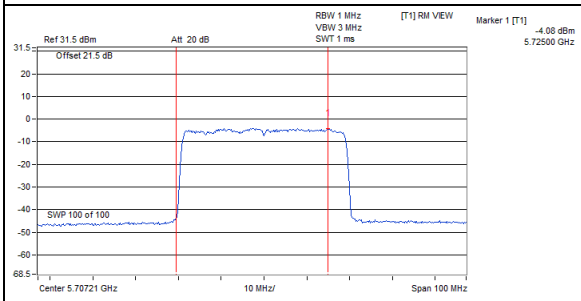
TX Channel Bandwidth 35.68 MHz Power 10.85 dBm

802.11ax (HE40)_Chain 2 / CH142 (U-NII-3 Band)



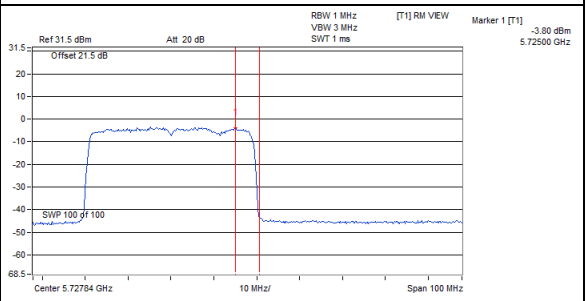
TX Channel Bandwidth 5.55 MHz Power 1.11 dBm

802.11ax (HE40)_Chain 3 / CH142 (U-NII-2C Band)



TX Channel Bandwidth 35.57 MHz Power 11.34 dBm

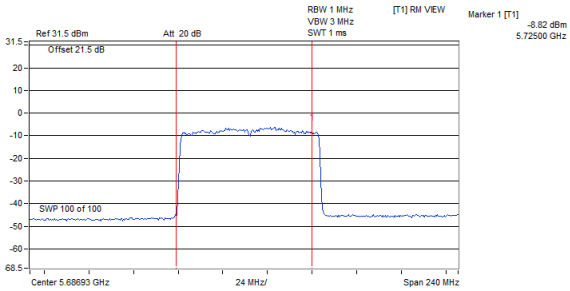
802.11ax (HE40)_Chain 3 / CH142 (U-NII-3 Band)



TX Channel Bandwidth 5.68 MHz Power 2.14 dBm

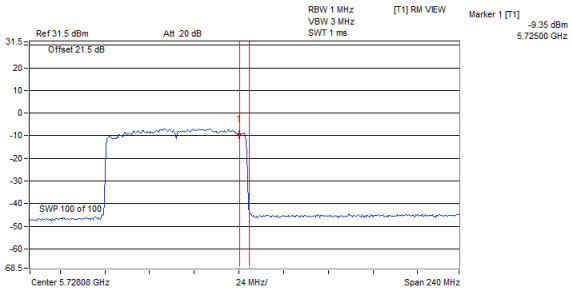
Spectrum Plot Value of Power

802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)



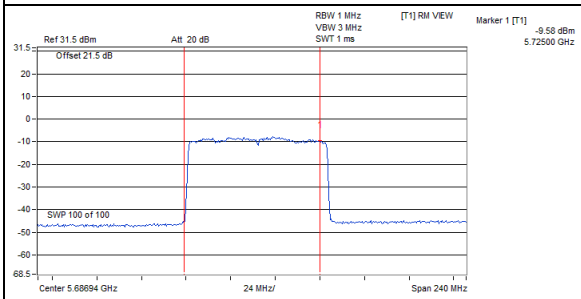
TX Channel Bandwidth 76.14 MHz Power 11.95 dBm

802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)



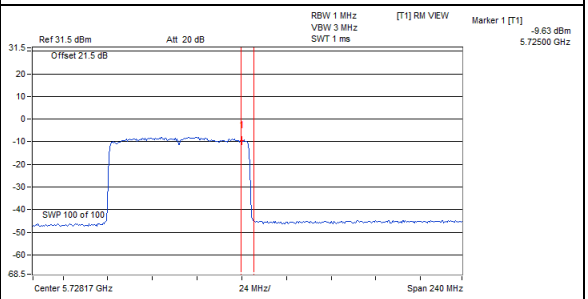
TX Channel Bandwidth 6.17 MHz Power -1.86 dBm

802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)



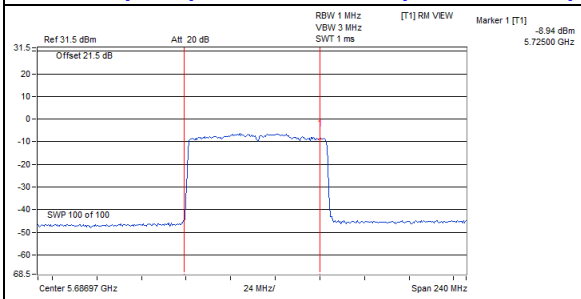
TX Channel Bandwidth 76.11 MHz Power 10.67 dBm

802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)



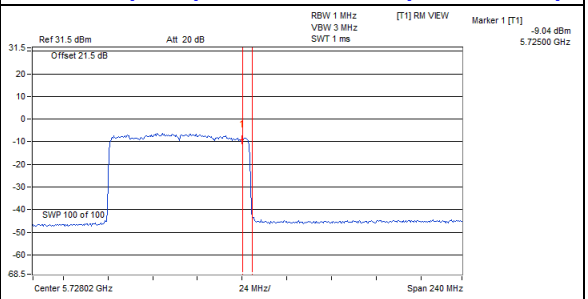
TX Channel Bandwidth 6.34 MHz Power -2.57 dBm

802.11ax (HE80)_Chain 2 / CH138 (U-NII-2C Band)



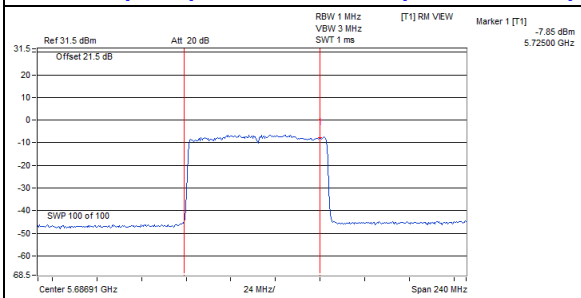
TX Channel Bandwidth 76.06 MHz Power 12.09 dBm

802.11ax (HE80)_Chain 2 / CH138 (U-NII-3 Band)



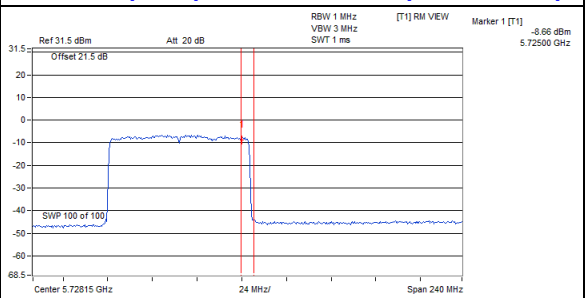
TX Channel Bandwidth 6.04 MHz Power -1.52 dBm

802.11ax (HE80)_Chain 3 / CH138 (U-NII-2C Band)



TX Channel Bandwidth 76.18 MHz Power 12.12 dBm

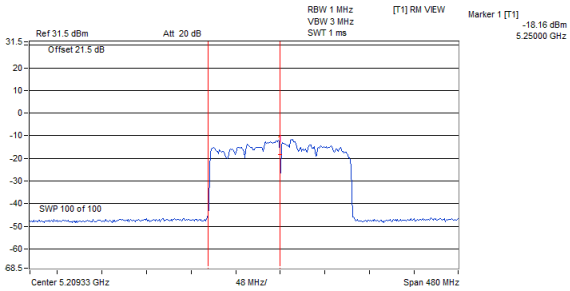
802.11ax (HE80)_Chain 3 / CH138 (U-NII-3 Band)



TX Channel Bandwidth 6.31 MHz Power -1 dBm

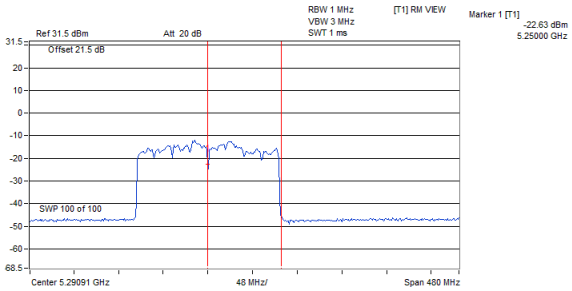
Spectrum Plot Value of Power

802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)



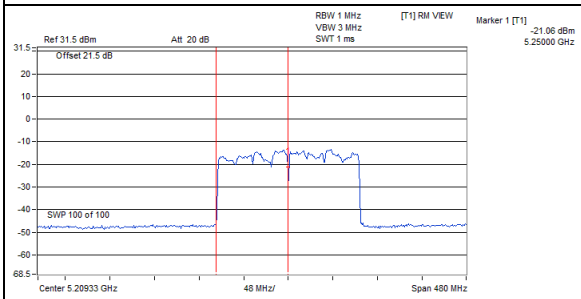
TX Channel Bandwidth 81.34 MHz Power 5.04 dBm

802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)



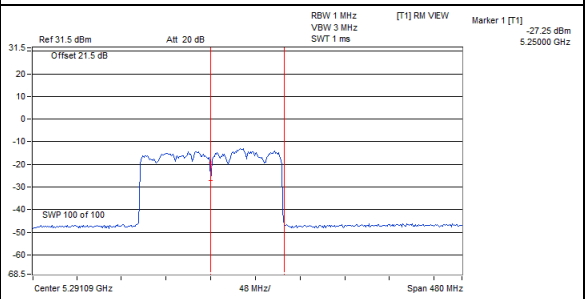
TX Channel Bandwidth 81.83 MHz Power 4.39 dBm

802.11ax (HE160)_Chain 1 / CH50 (U-NII-1 Band)



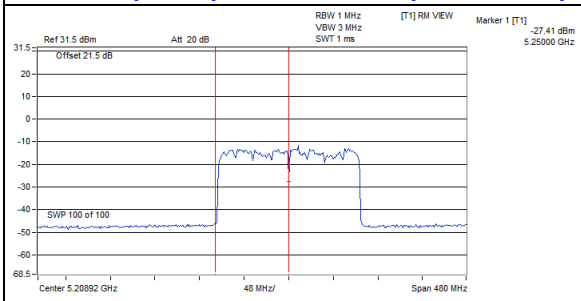
TX Channel Bandwidth 81.34 MHz Power 3.61 dBm

802.11ax (HE160)_Chain 1 / CH50 (U-NII-2A Band)



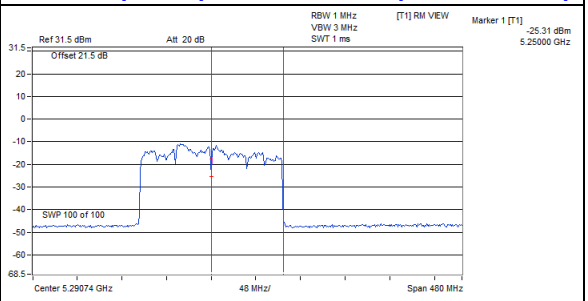
TX Channel Bandwidth 82.18 MHz Power 4.57 dBm

802.11ax (HE160)_Chain 2 / CH50 (U-NII-1 Band)



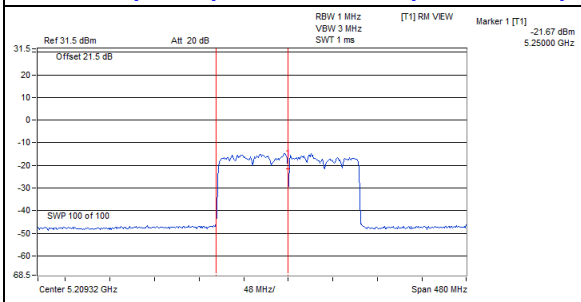
TX Channel Bandwidth 82.16 MHz Power 5.21 dBm

802.11ax (HE160)_Chain 2 / CH50 (U-NII-2A Band)



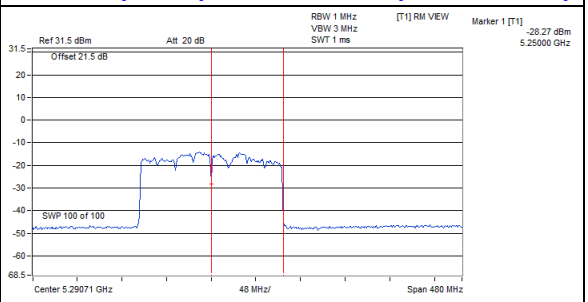
TX Channel Bandwidth 81.48 MHz Power 4.36 dBm

802.11ax (HE160)_Chain 3 / CH50 (U-NII-1 Band)



TX Channel Bandwidth 81.36 MHz Power 3.47 dBm

802.11ax (HE160)_Chain 3 / CH50 (U-NII-2A Band)



TX Channel Bandwidth 81.43 MHz Power 2.87 dBm

26dB OCCUPIED BANDWIDTH

Master

802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
36	5180	21.78	21.94	22.1	21.98
40	5200	21.79	21.91	22.08	22.06
48	5240	21.87	21.85	22.02	21.84
52	5260	21.84	21.89	21.87	21.81
60	5300	21.84	21.88	21.84	21.87
64	5320	21.69	21.67	21.84	21.57
100	5500	21.79	21.88	21.85	21.81
116	5580	21.84	21.92	21.9	21.73
140	5700	21.79	21.94	21.86	21.69
144 (U-NII-2C Band)	5720	15.8	15.9	15.94	15.82
144 (U-NII-3 Band)	5720	5.87	6.01	5.88	5.83
149	5745	28.63	43.55	26.23	43.24
157	5785	29.67	43.98	26.22	43.77
165	5825	29.79	43.53	26.26	43.7

802.11ax (HE20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
36	5180	21.89	21.84	22.14	22.3
40	5200	21.89	21.83	22.16	22.31
48	5240	21.83	21.76	23.37	22.28
52	5260	21.96	21.74	21.81	22.06
60	5300	21.95	21.78	21.59	22.14
64	5320	21.94	21.71	21.71	21.82
100	5500	21.88	21.76	21.72	22.08
116	5580	21.79	21.51	21.54	21.91
140	5700	22.02	21.74	21.75	22.08
144 (U-NII-2C Band)	5720	15.89	15.89	15.92	16.08
144 (U-NII-3 Band)	5720	5.98	5.96	5.87	5.93
149	5745	24.12	41.32	22.42	45.69
157	5785	27.04	44.83	22.24	49.19
165	5825	37.43	43.81	23.93	45.93

802.11ax (HE40)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
38	5190	41.54	41.32	41.38	41.33
46	5230	49.63	64.13	50.17	71.71
54	5270	41.44	41.35	41.3	41.35
62	5310	41.5	41.34	41.4	41.33
102	5510	41.57	41.36	41.43	41.31
110	5550	41.55	41.34	41.4	41.33
134	5670	41.64	41.38	41.4	41.37
142 (U-NII-2C Band)	5710	35.65	35.66	35.68	35.57
142 (U-NII-3 Band)	5710	5.87	5.74	5.55	5.68
151	5755	51.72	79.71	50.09	79.25
159	5795	50.77	72.86	49.59	77.81

802.11ax (HE80)

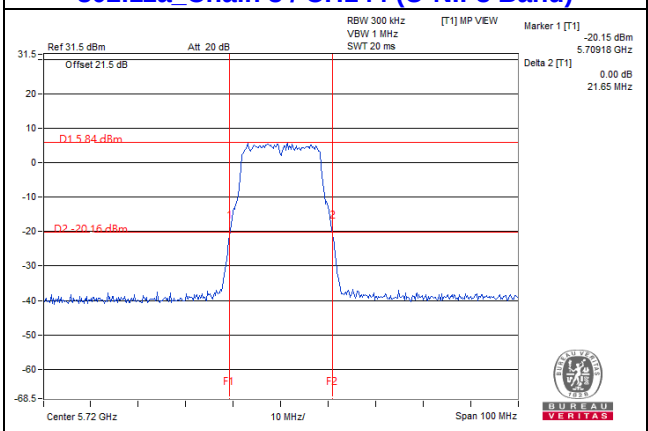
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
42	5210	82.95	82.67	82.54	82.56
58	5290	82.48	82.51	82.57	82.54
106	5530	82.81	82.65	82.59	82.52
138 (U-NII-2C Band)	5690	76.14	76.11	76.06	76.18
138 (U-NII-3 Band)	5690	6.17	6.34	6.04	6.31
155	5775	83.12	127.47	82.6	128.35

802.11ax (HE160)

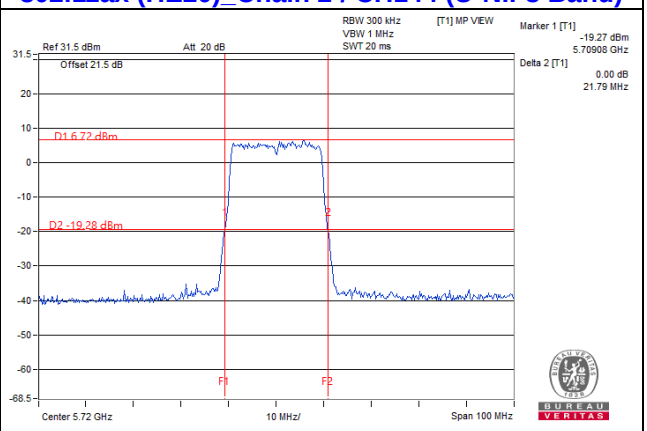
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
50 (U-NII-1 Band)	5250	81.34	81.34	82.16	81.36
50 (U-NII-2A Band)	5250	81.83	82.18	81.48	81.43

Spectrum Plot of Worst Value

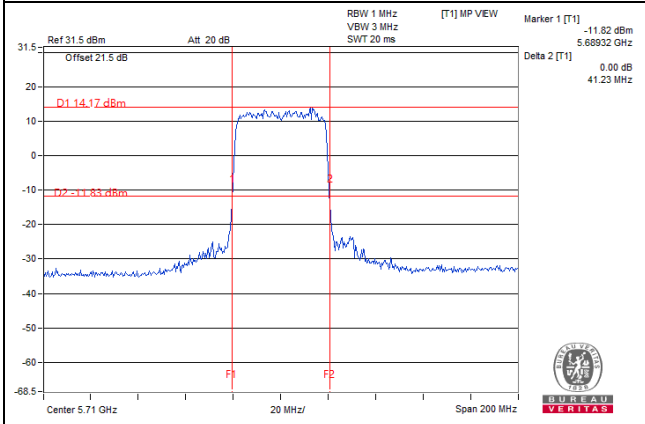
802.11a_Chain 3 / CH144 (U-NII-3 Band)



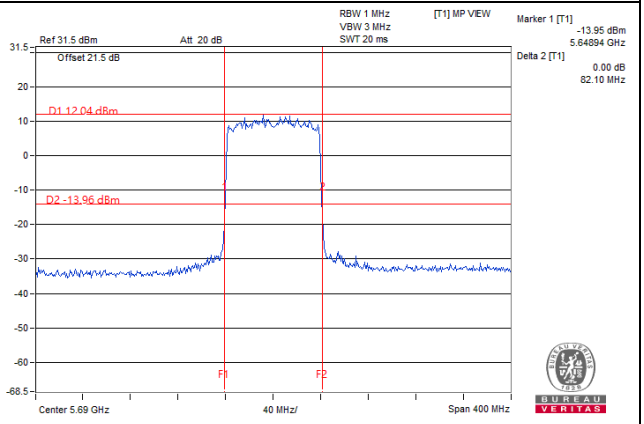
802.11ax (HE20)_Chain 2 / CH144 (U-NII-3 Band)



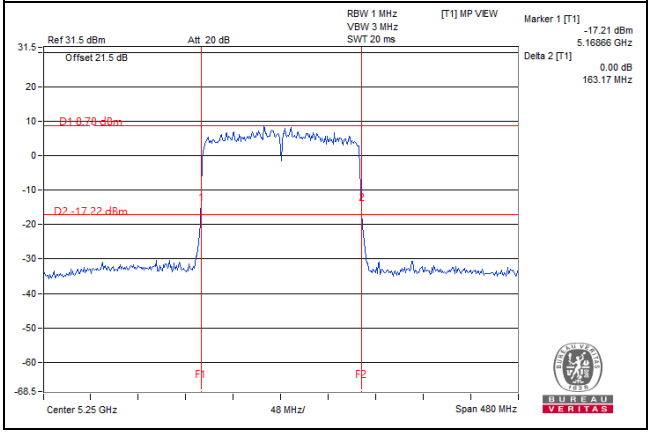
802.11ax (HE40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ax (HE80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)



Note:

For CH144 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)
For CH142 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)
For CH138 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)
For CH50 (U-NII-1) = 5250MHz - Marker 1

Client

802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
36	5180	21.87	21.88	21.85	21.81
40	5200	21.8	21.77	21.8	21.83
48	5240	21.78	21.84	21.83	21.8
52	5260	21.84	21.89	21.87	21.81
60	5300	21.84	21.88	21.84	21.87
64	5320	21.69	21.67	21.84	21.57
100	5500	21.79	21.88	21.85	21.81
116	5580	21.84	21.92	21.9	21.73
140	5700	21.79	21.94	21.86	21.69
144 (U-NII-2C Band)	5720	15.8	15.9	15.94	15.82
144 (U-NII-3 Band)	5720	5.87	6.01	5.88	5.83
149	5745	28.63	43.55	26.23	43.24
157	5785	29.67	43.98	26.22	43.77
165	5825	29.79	43.53	26.26	43.7

802.11ax (HE20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
36	5180	21.9	21.87	21.72	22.01
40	5200	21.77	21.75	21.71	22.14
48	5240	21.89	21.71	21.71	22
52	5260	21.96	21.74	21.81	22.06
60	5300	21.95	21.78	21.59	22.14
64	5320	21.94	21.71	21.71	21.82
100	5500	21.88	21.76	21.72	22.08
116	5580	21.79	21.51	21.54	21.91
140	5700	22.02	21.74	21.75	22.08
144 (U-NII-2C Band)	5720	15.89	15.89	15.92	16.08
144 (U-NII-3 Band)	5720	5.98	5.96	5.87	5.93
149	5745	24.12	41.32	22.42	45.69
157	5785	27.04	44.83	22.24	49.19
165	5825	37.43	43.81	23.93	45.93

802.11ax (HE40)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
38	5190	41.59	41.35	41.28	41.3
46	5230	41.55	41.34	41.31	41.34
54	5270	41.44	41.35	41.3	41.35
62	5310	41.5	41.34	41.4	41.33
102	5510	41.57	41.36	41.43	41.31
110	5550	41.55	41.34	41.4	41.33
134	5670	41.64	41.38	41.4	41.37
142 (U-NII-2C Band)	5710	35.65	35.66	35.68	35.57
142 (U-NII-3 Band)	5710	5.87	5.74	5.55	5.68
151	5755	51.72	79.71	50.09	79.25
159	5795	50.77	72.86	49.59	77.81

802.11ax (HE80)

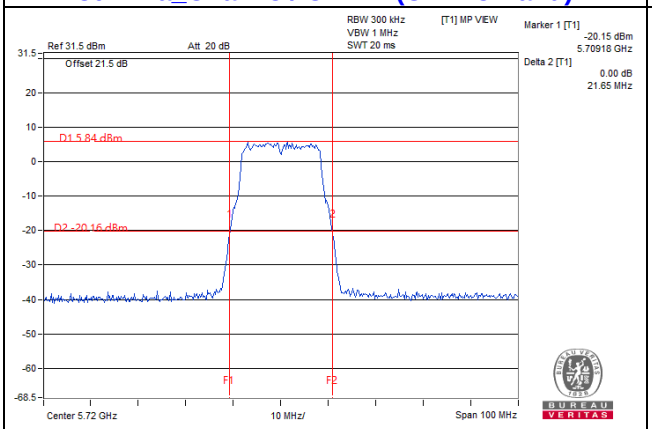
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
42	5210	82.95	82.67	82.54	82.56
58	5290	82.48	82.51	82.57	82.54
106	5530	82.81	82.65	82.59	82.52
138 (U-NII-2C Band)	5690	76.14	76.11	76.06	76.18
138 (U-NII-3 Band)	5690	6.17	6.34	6.04	6.31
155	5775	83.12	127.47	82.6	128.35

802.11ax (HE160)

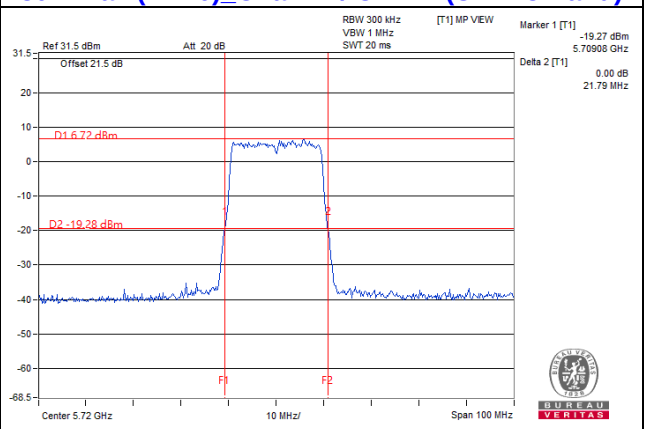
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain0	Chain1	Chain2	Chain3
50 (U-NII-1 Band)	5250	81.34	81.34	82.16	81.36
50 (U-NII-2A Band)	5250	81.83	82.18	81.48	81.43

Spectrum Plot of Worst Value

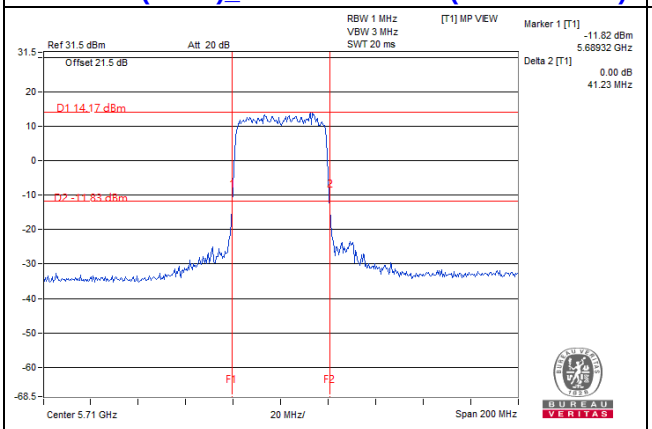
802.11a_Chain 3 / CH144 (U-NII-3 Band)



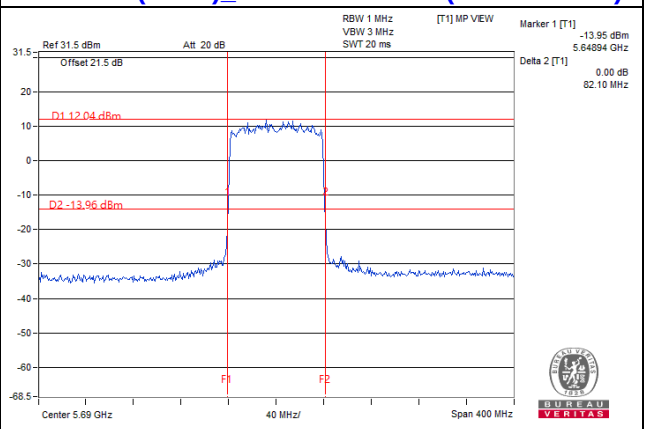
802.11ax (HE20)_Chain 2 / CH144 (U-NII-3 Band)



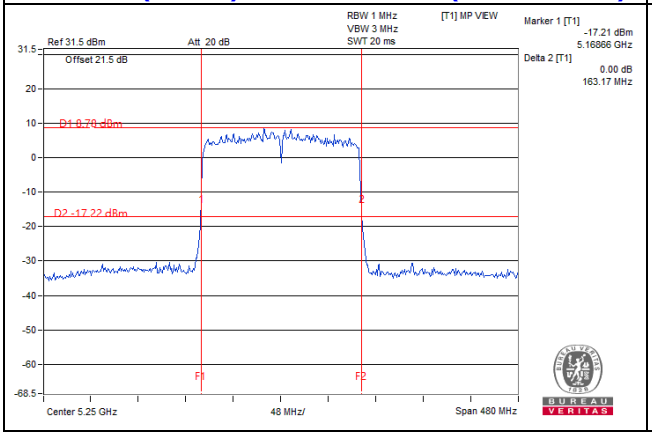
802.11ax (HE40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ax (HE80)_Chain 2 / CH138 (U-NII-3 Band)



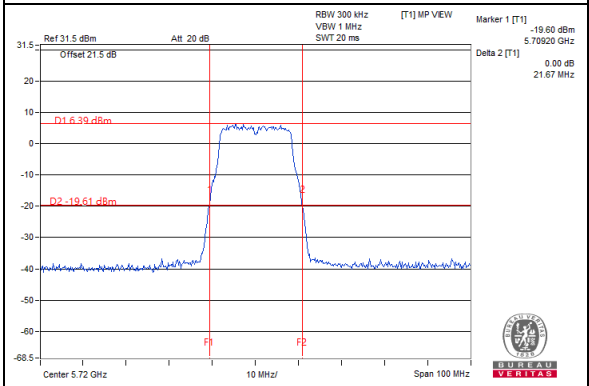
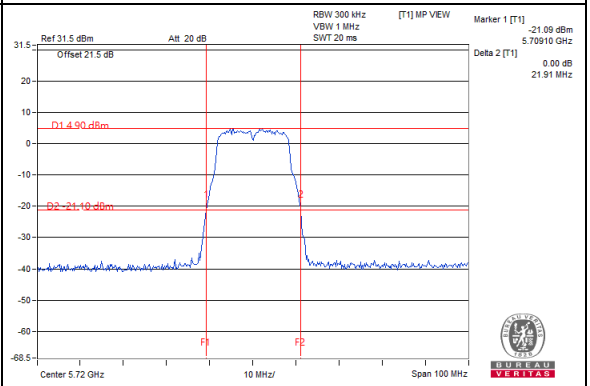
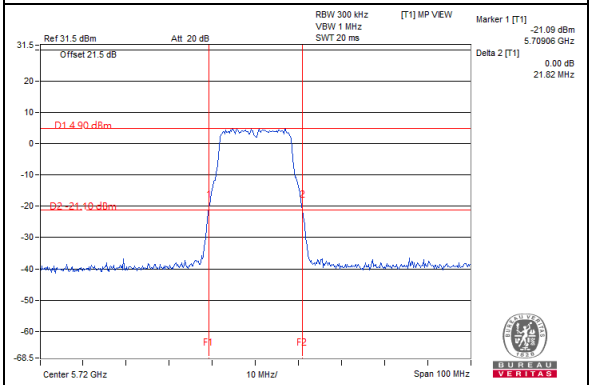
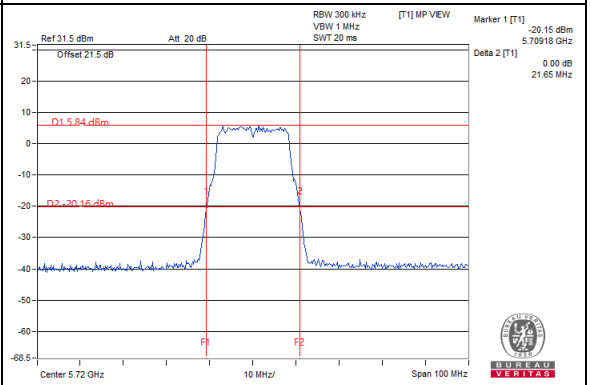
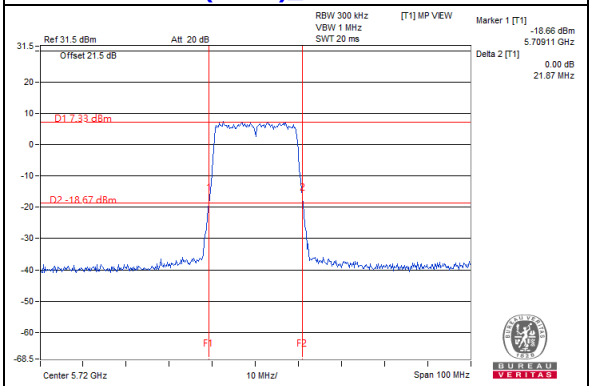
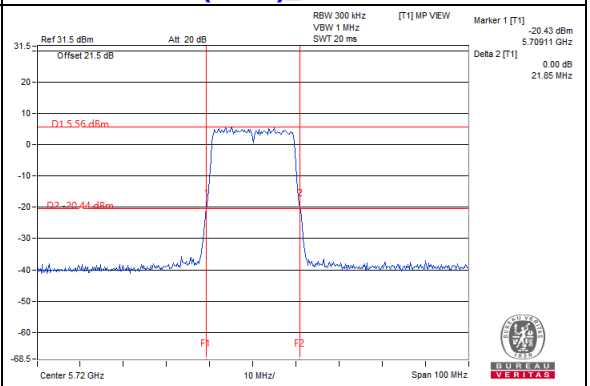
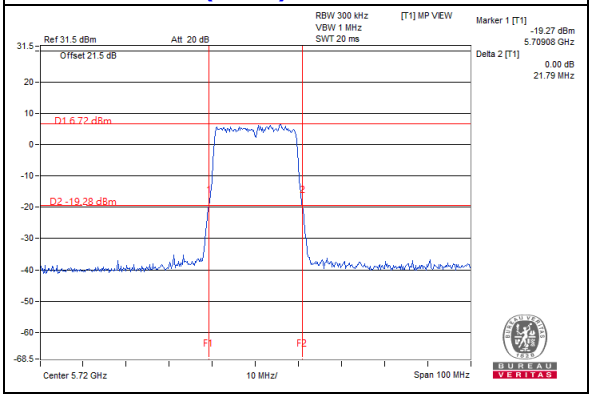
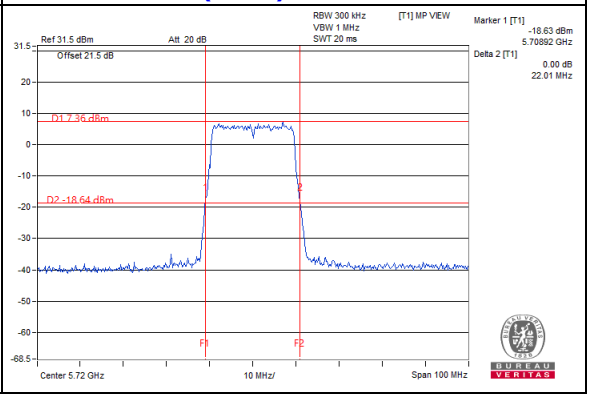
802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)



Note:

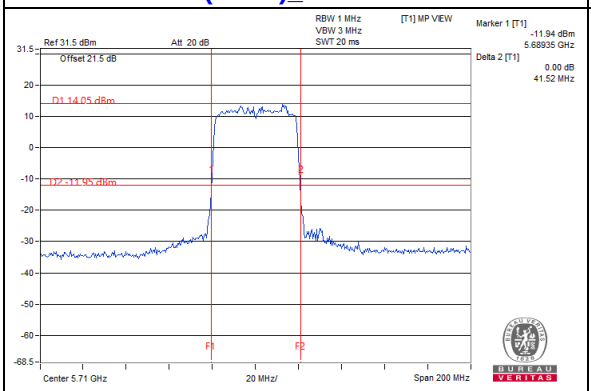
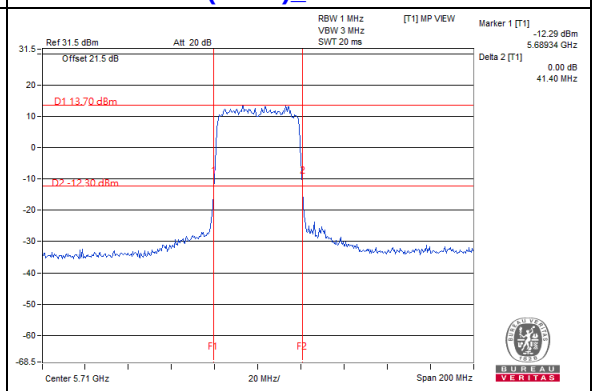
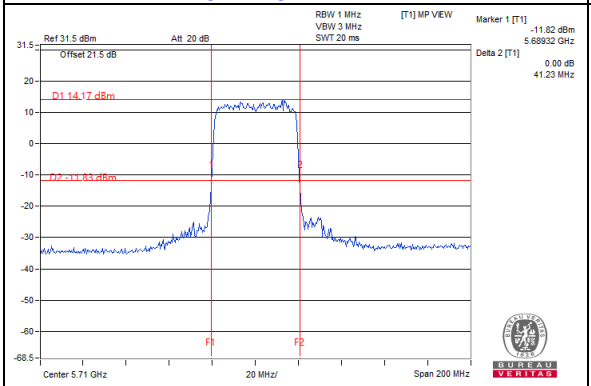
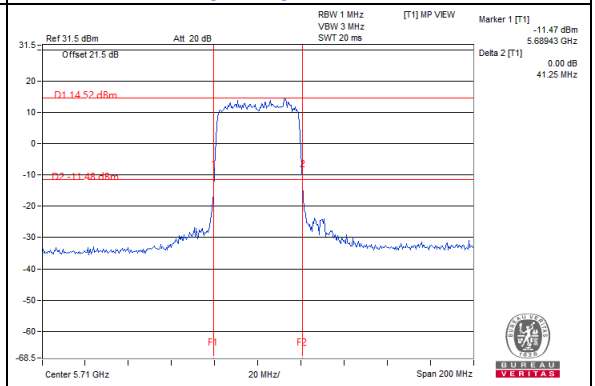
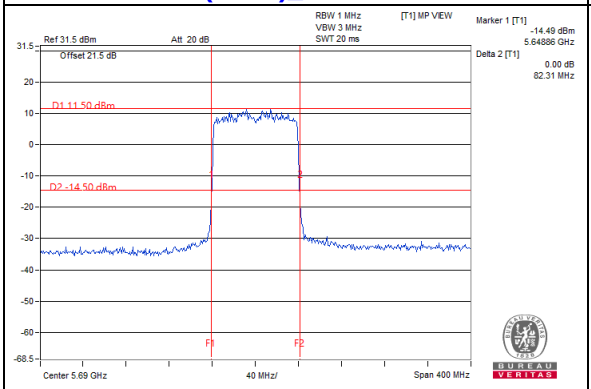
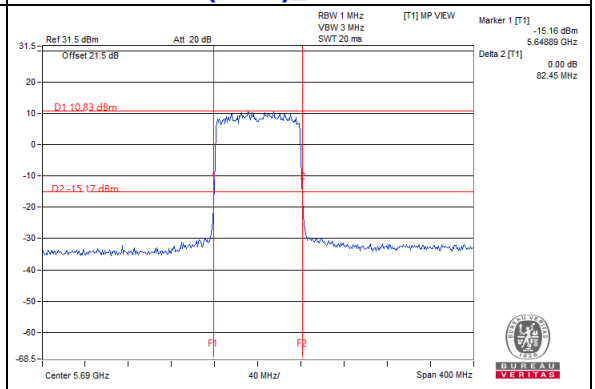
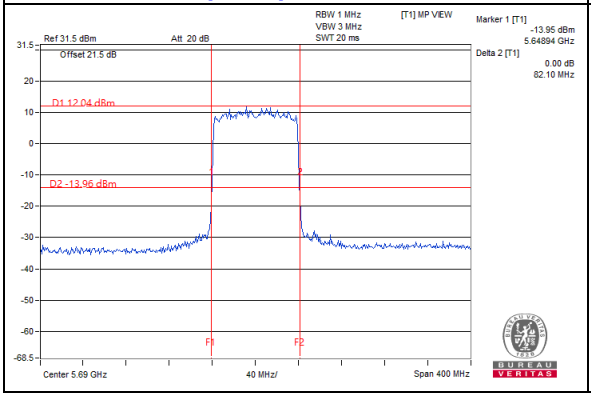
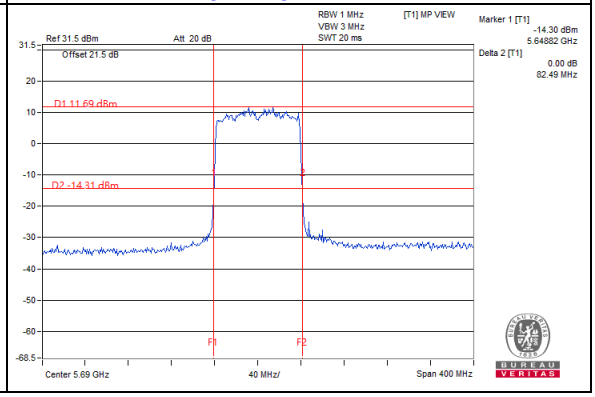
For CH144 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)
For CH142 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)
For CH138 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)
For CH50 (U-NII-1) = 5250MHz - Marker 1

For channel straddling 5725MHz of 26dB BW

Spectrum Plot Value of 26dB BW	
802.11a_Chain 0 / CH144	**802.11a_Chain 1 / CH144**
	
802.11a_Chain 2 / CH144	**802.11a_Chain 3 / CH144**
	
802.11ax (HE20)_Chain 0 / CH144	**802.11ax (HE20)_Chain 1 / CH144**
	
802.11ax (HE20)_Chain 2 / CH144	**802.11ax (HE20)_Chain 3 / CH144**
	

Note:

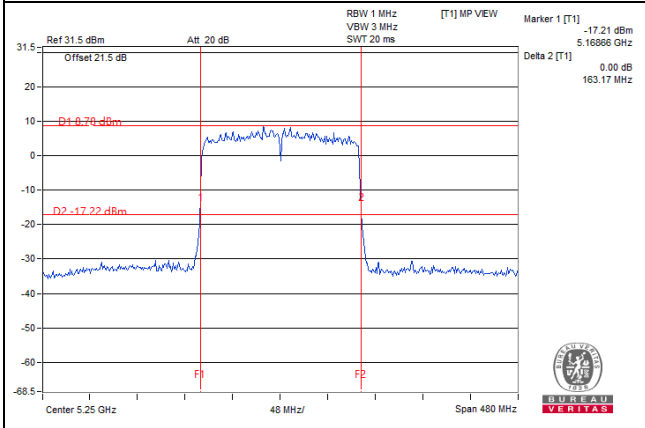
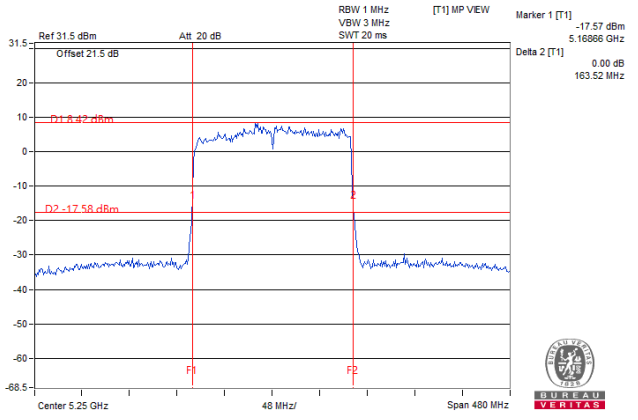
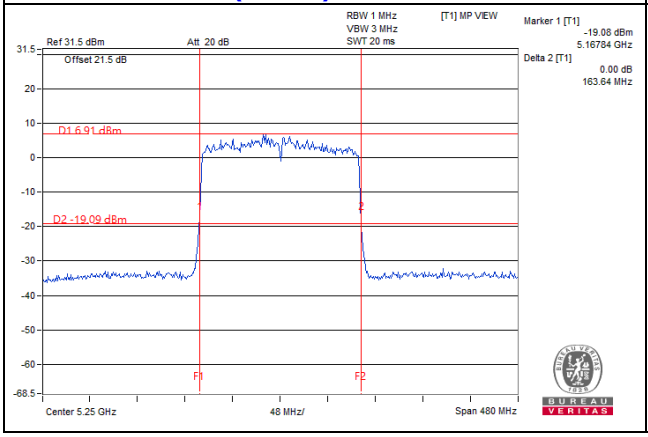
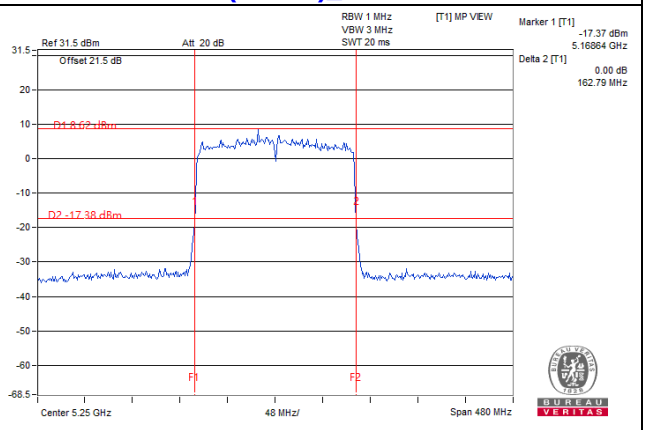
For CH144 (U-NII-2C) = 5725MHz - Marker 1

Spectrum Plot Value of 26dB BW	
802.11ax (HE40)_Chain 0 / CH142	**802.11ax (HE40)_Chain 1 / CH142**
	
802.11ax (HE40)_Chain 2 / CH142	**802.11ax (HE40)_Chain 3 / CH142**
	
802.11ax (HE80)_Chain 0 / CH138	**802.11ax (HE80)_Chain 1 / CH138**
	
802.11ax (HE80)_Chain 2 / CH138	**802.11ax (HE80)_Chain 3 / CH138**
	

Note:

For CH142 (U-NII-2C) = 5725MHz - Marker 1
For CH138 (U-NII-2C) = 5725MHz - Marker 1

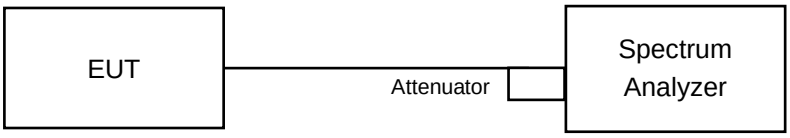
For channel straddling 5250MHz of 26dB BW

Spectrum Plot Value of 26dB BW	
802.11ax (HE160)_Chain 0 / CH50	**802.11ax (HE160)_Chain 1 / CH50**
	
802.11ax (HE160)_Chain 2 / CH50	**802.11ax (HE160)_Chain 3 / CH50**
	

Note: For CH50 (U-NII-2A) = Delta 2 – (5250MHz - Marker 1)

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to SAMPLE. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.4.4 Test Results

Master

CDD Mode

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
36	5180	17.16	17.04	17.04	16.92	Pass
40	5200	17.04	17.04	17.04	17.04	Pass
48	5240	17.04	17.04	17.04	17.04	Pass
52	5260	17.04	17.04	17.04	16.8	Pass
60	5300	17.04	17.16	16.92	16.8	Pass
64	5320	17.04	17.04	16.92	16.8	Pass
100	5500	17.04	17.04	16.92	16.92	Pass
116	5580	17.04	17.04	17.04	16.8	Pass
140	5700	17.16	17.04	16.92	16.8	Pass
144 (U-NII-2C Band)	5720	13.52	13.52	13.52	13.4	Pass
144 (U-NII-3 Band)	5720	3.52	3.52	3.4	3.52	Pass
149	5745	17.4	19.57	17.28	18.84	Pass
157	5785	17.52	19.68	17.28	19.32	Pass
165	5825	17.4	19.68	17.28	18.84	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
36	5180	19.08	19.08	19.08	19.08	Pass
40	5200	19.2	19.08	19.08	19.08	Pass
48	5240	19.2	19.2	19.08	19.2	Pass
52	5260	19.2	19.08	19.08	19.2	Pass
60	5300	19.2	19.2	19.08	19.08	Pass
64	5320	19.2	19.08	19.08	19.2	Pass
100	5500	19.2	19.08	19.08	19.2	Pass
116	5580	19.2	19.08	19.08	19.08	Pass
140	5700	19.2	19.08	19.08	19.2	Pass
144 (U-NII-2C Band)	5720	14.6	14.6	14.6	14.72	Pass
144 (U-NII-3 Band)	5720	4.6	4.48	4.48	4.48	Pass
149	5745	19.32	19.56	19.08	20.52	Pass
157	5785	19.44	19.68	19.08	20.88	Pass
165	5825	19.2	19.8	19.2	20.64	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
38	5190	37.92	37.92	37.92	37.92	Pass
46	5230	37.92	38.4	38.88	38.4	Pass
54	5270	37.92	37.92	37.68	37.68	Pass
62	5310	37.92	37.92	37.68	37.92	Pass
102	5510	37.92	37.92	37.68	37.92	Pass
110	5550	37.92	37.92	37.68	37.92	Pass
134	5670	37.92	37.92	37.92	37.92	Pass
142 (U-NII-2C Band)	5710	33.96	33.96	33.96	33.96	Pass
142 (U-NII-3 Band)	5710	3.96	3.96	3.96	3.96	Pass
151	5755	37.92	38.4	37.92	42	Pass
159	5795	37.92	38.64	37.92	38.88	Pass

802.11ax (HE80)

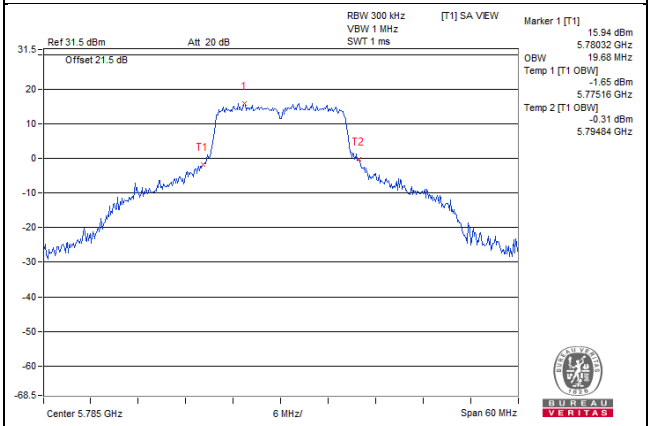
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
42	5210	77.28	76.8	77.28	77.28	Pass
58	5290	77.28	77.28	77.28	77.28	Pass
106	5530	77.28	76.8	77.28	77.28	Pass
138 (U-NII-2C Band)	5690	73.88	73.88	73.88	73.88	Pass
138 (U-NII-3 Band)	5690	3.4	3.4	3.4	3.4	Pass
155	5775	77.28	77.28	77.76	77.76	Pass

802.11ax (HE160)

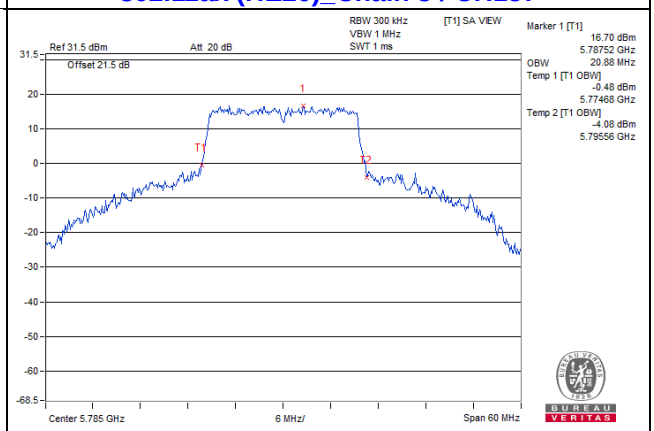
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
50 (U-NII-1 Band)	5250	77.76	77.76	77.76	77.76	Pass
50 (U-NII-2A Band)	5250	77.76	77.76	77.76	77.76	Pass

Spectrum Plot of Max. Value

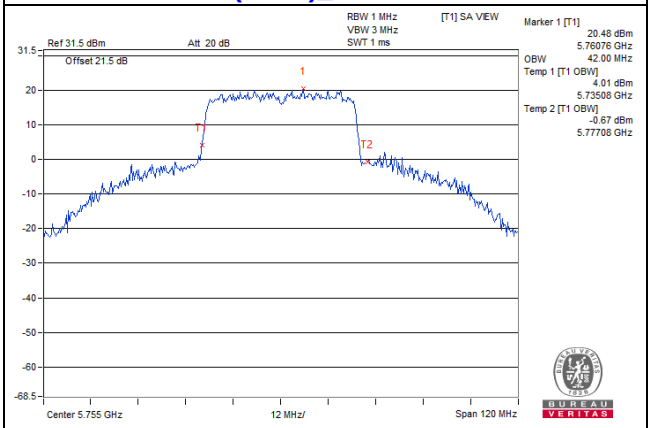
802.11a_Chain 1 / CH157



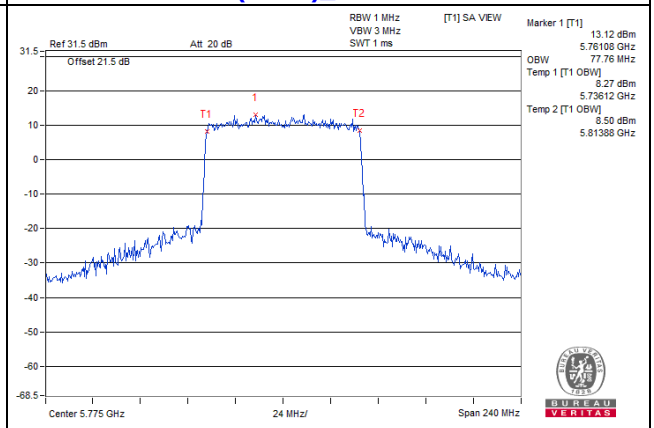
802.11ax (HE20)_Chain 3 / CH157



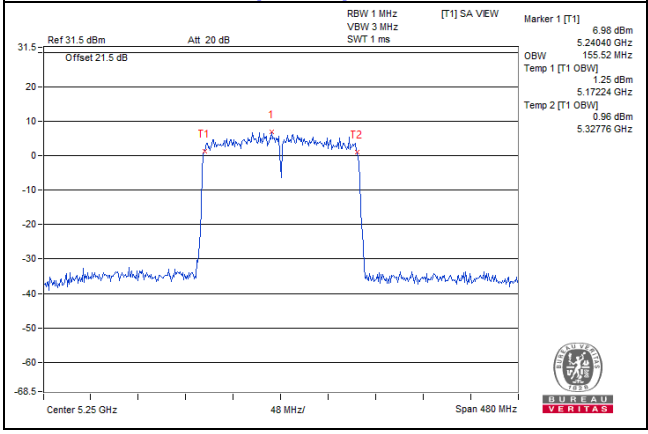
802.11ax (HE40)_Chain 3 / CH151



802.11ax (HE80)_Chain 2 / CH155

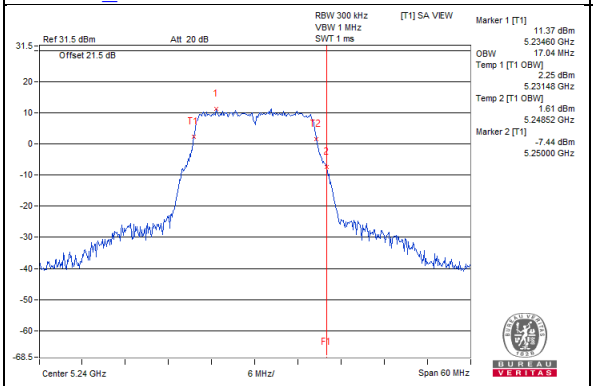


802.11ax (HE160)_Chain 0 / 50

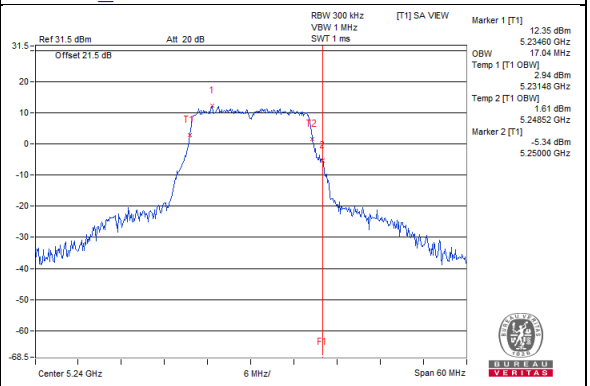


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

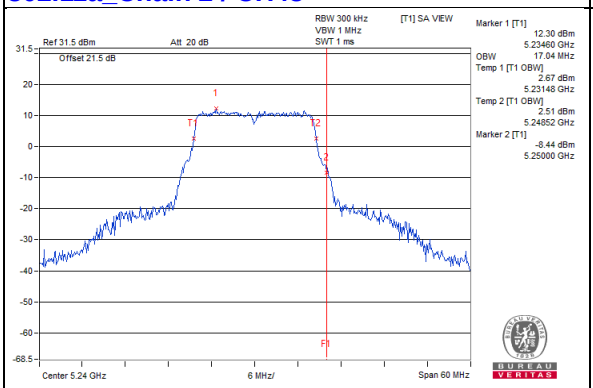
802.11a_Chain 0 / CH48



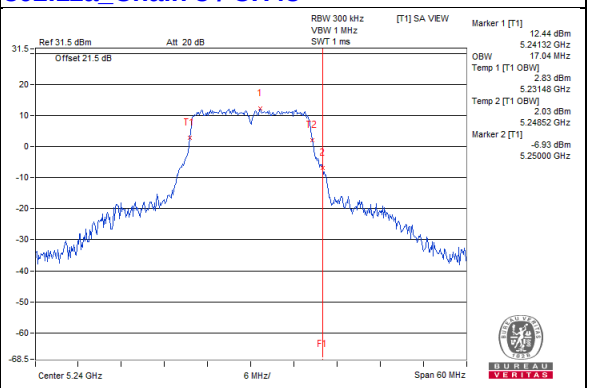
802.11a_Chain 1 / CH48



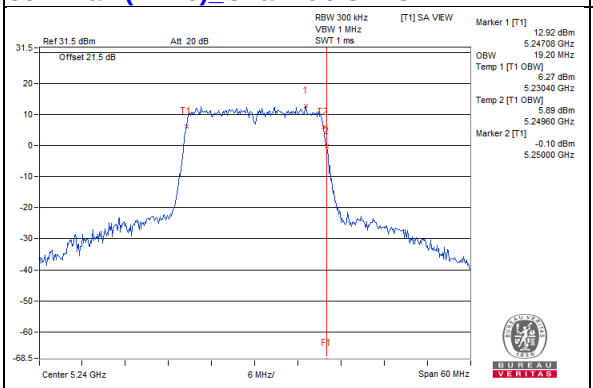
802.11a_Chain 2 / CH48



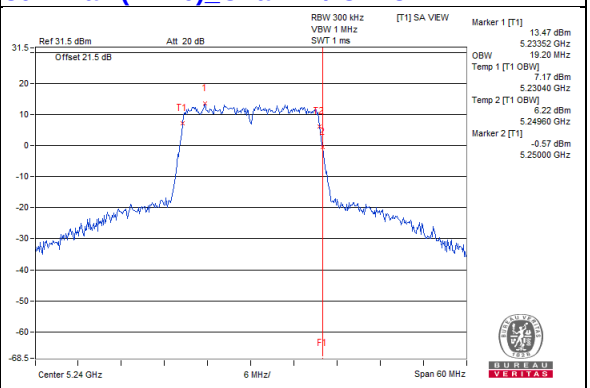
802.11a_Chain 3 / CH48



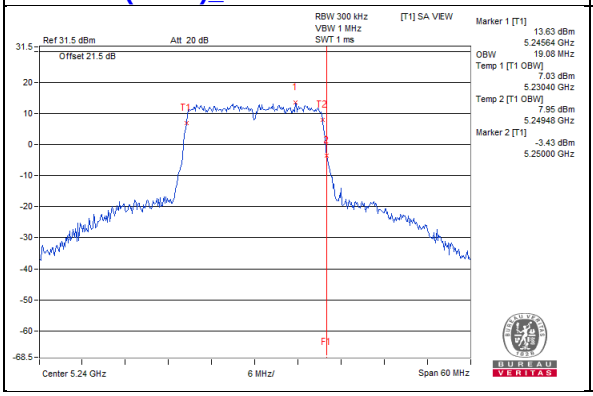
802.11ax (HE20)_Chain 0 / CH48



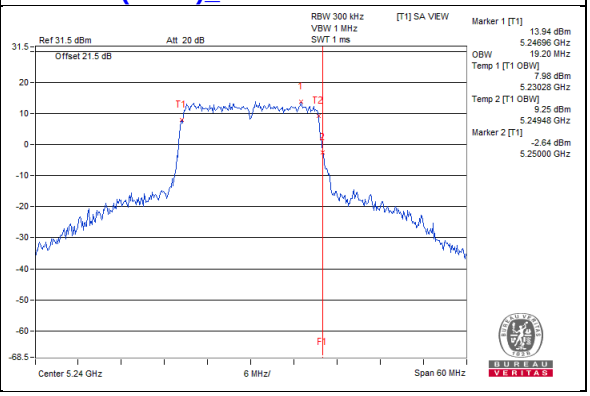
802.11ax (HE20)_Chain 1 / CH48



802.11ax (HE20)_Chain 2 / CH48

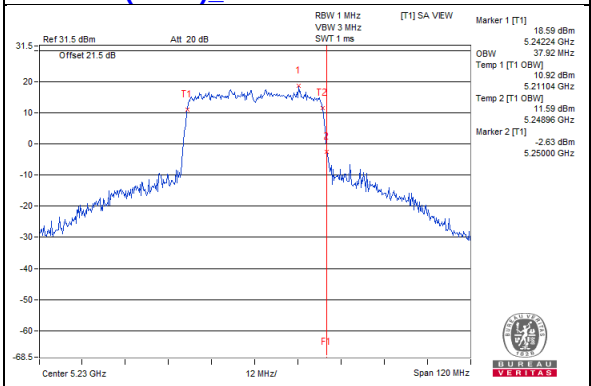


802.11ax (HE20)_Chain 3 / CH48

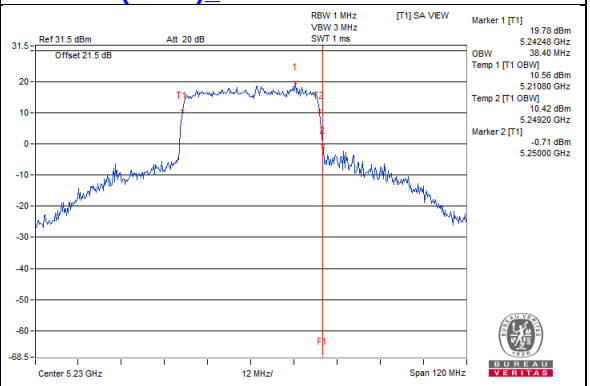


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

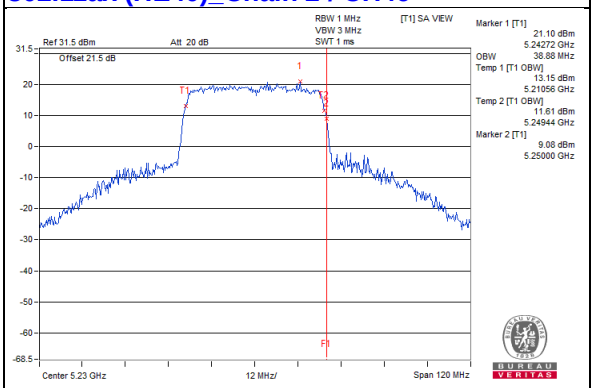
802.11ax (HE40)_Chain 0 / CH46



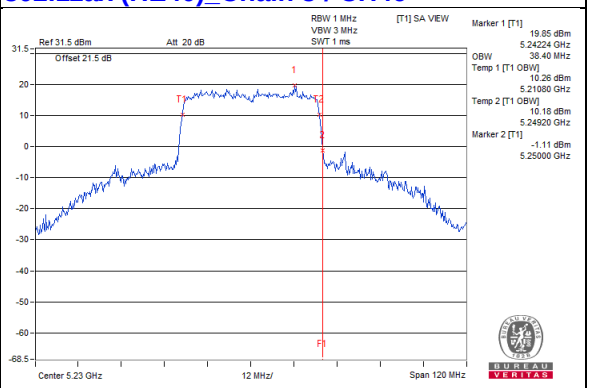
802.11ax (HE40)_Chain 1 / CH46



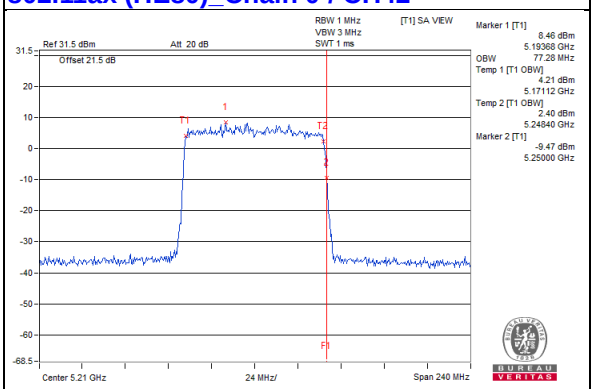
802.11ax (HE40)_Chain 2 / CH46



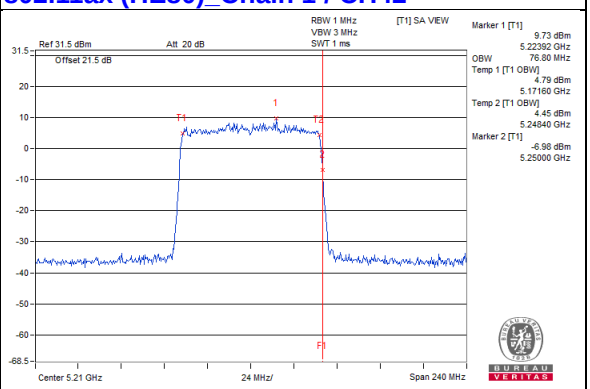
802.11ax (HE40)_Chain 3 / CH46



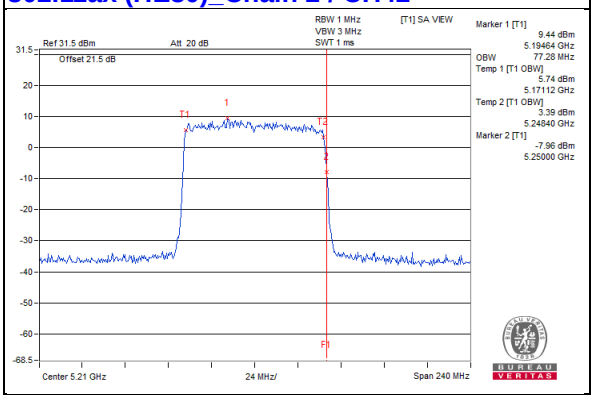
802.11ax (HE80)_Chain 0 / CH42



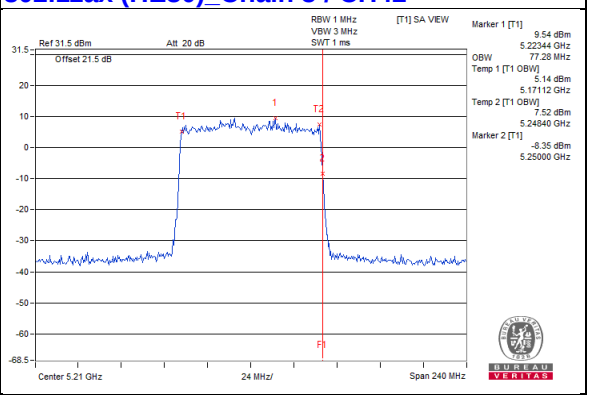
802.11ax (HE80)_Chain 1 / CH42



802.11ax (HE80)_Chain 2 / CH42

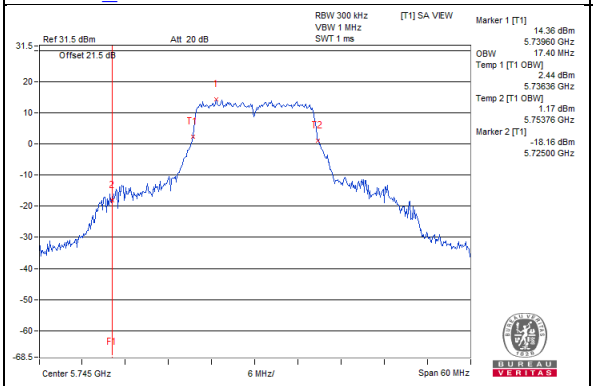


802.11ax (HE80)_Chain 3 / CH42

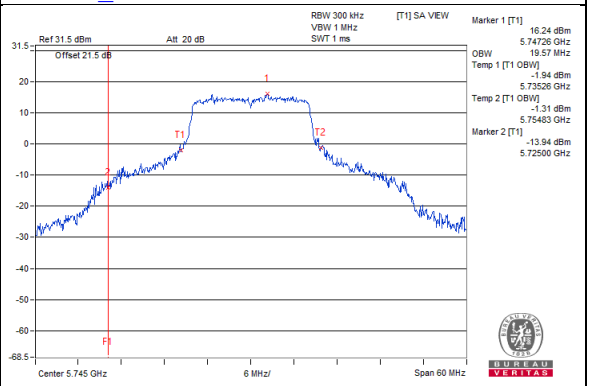


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

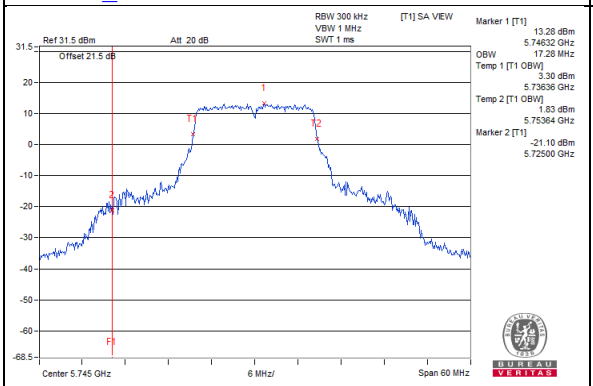
802.11a_Chain 0 / CH149



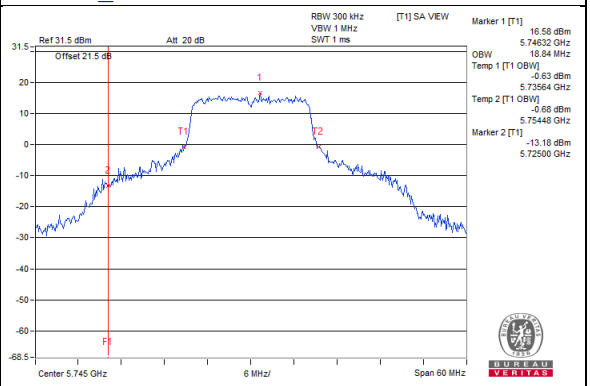
802.11a_Chain 1 / CH149



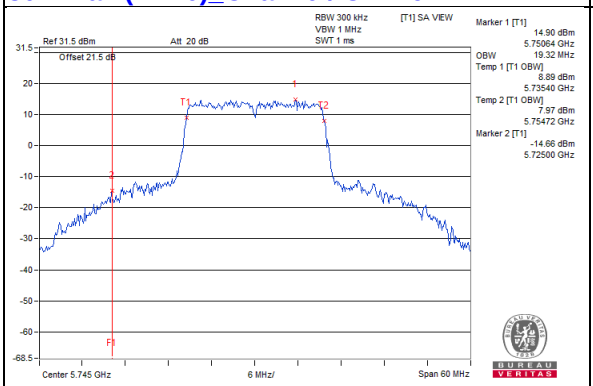
802.11a_Chain 2 / CH149



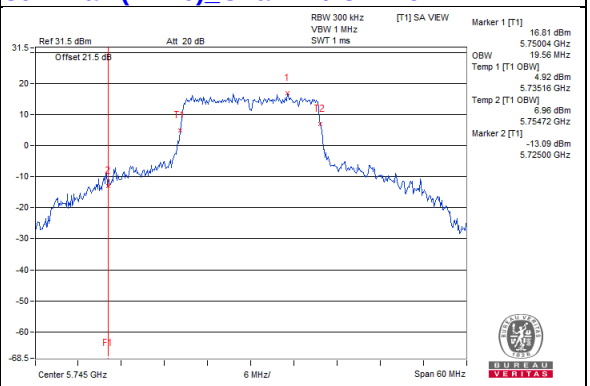
802.11a_Chain 3 / CH149



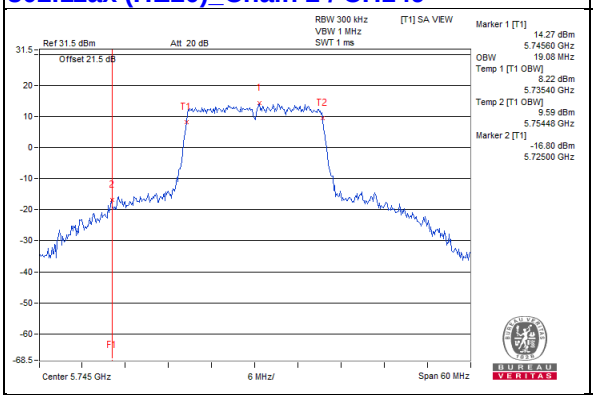
802.11ax (HE20)_Chain 0 / CH149



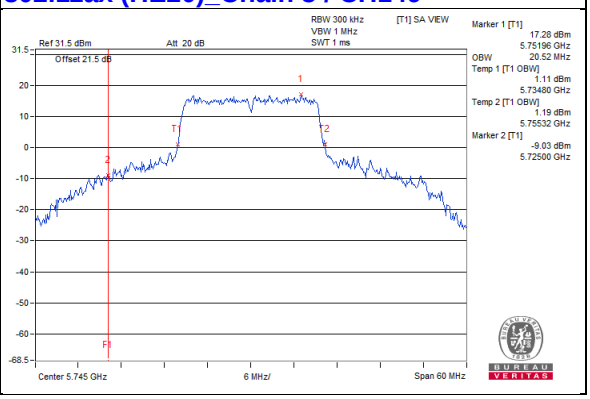
802.11ax (HE20)_Chain 1 / CH149



802.11ax (HE20)_Chain 2 / CH149

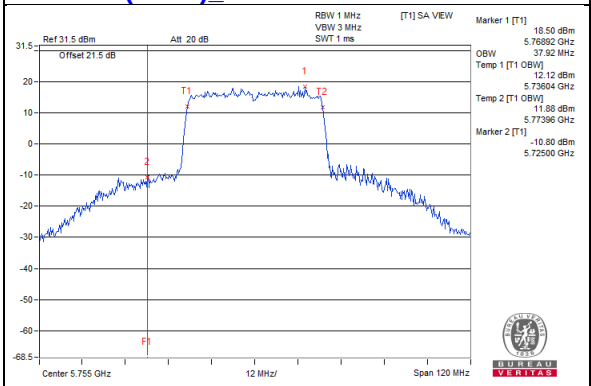


802.11ax (HE20)_Chain 3 / CH149

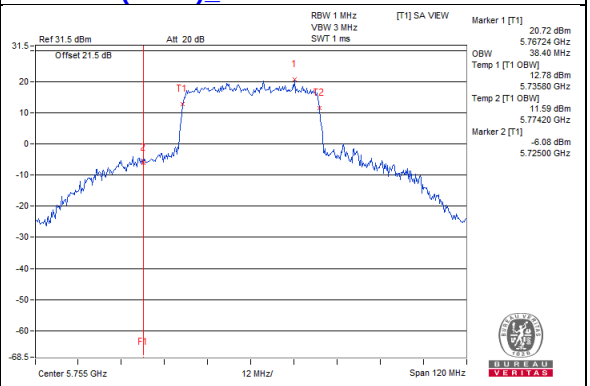


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

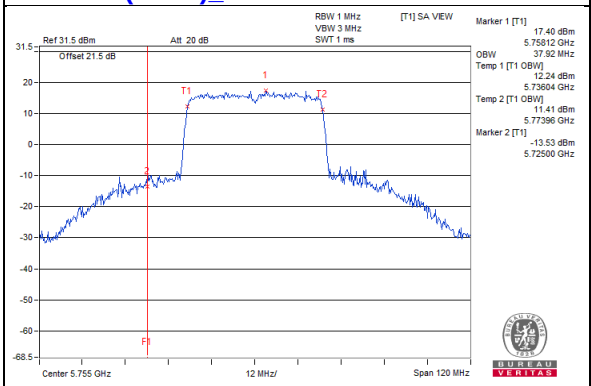
802.11ax (HE40)_Chain 0 / CH151



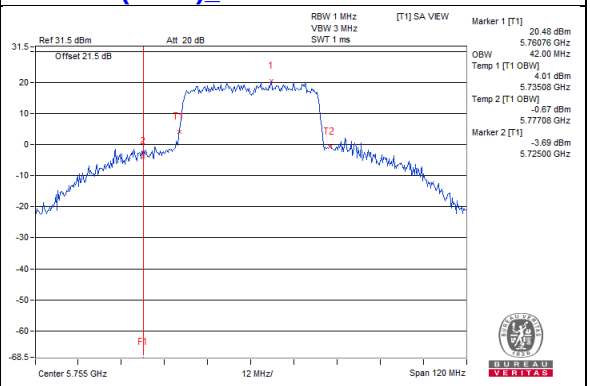
802.11ax (HE40)_Chain 1 / CH151



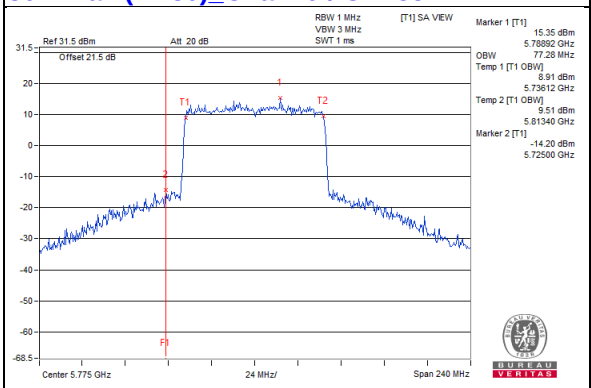
802.11ax (HE40)_Chain 2 / CH151



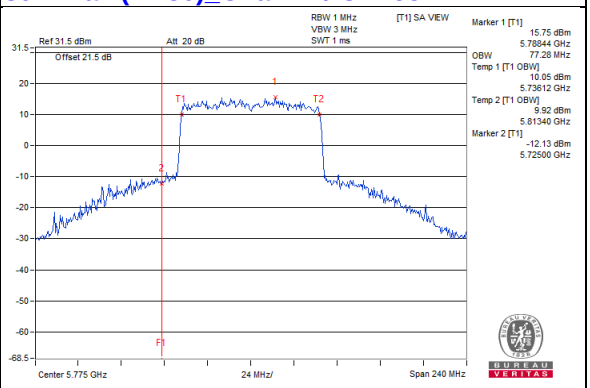
802.11ax (HE40)_Chain 3 / CH151



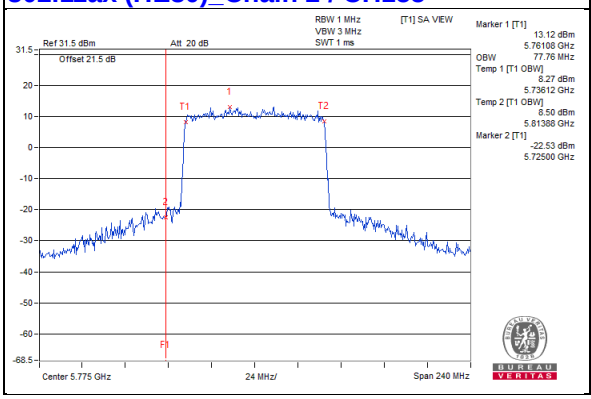
802.11ax (HE80)_Chain 0 / CH155



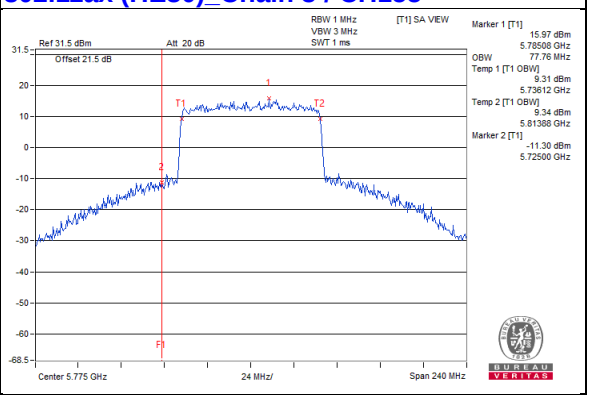
802.11ax (HE80)_Chain 1 / CH155



802.11ax (HE80)_Chain 2 / CH155



802.11ax (HE80)_Chain 3 / CH155



Client

CDD Mode

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
36	5180	17.04	17.04	16.92	16.8	Pass
40	5200	17.04	17.04	16.8	16.8	Pass
48	5240	17.04	17.04	16.92	16.8	Pass
52	5260	17.04	17.04	17.04	16.8	Pass
60	5300	17.04	17.16	16.92	16.8	Pass
64	5320	17.04	17.04	16.92	16.8	Pass
100	5500	17.04	17.04	16.92	16.92	Pass
116	5580	17.04	17.04	17.04	16.8	Pass
140	5700	17.16	17.04	16.92	16.8	Pass
144 (U-NII-2C Band)	5720	13.52	13.52	13.52	13.4	Pass
144 (U-NII-3 Band)	5720	3.52	3.52	3.4	3.52	Pass
149	5745	17.4	19.57	17.28	18.84	Pass
157	5785	17.52	19.68	17.28	19.32	Pass
165	5825	17.4	19.68	17.28	18.84	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
36	5180	19.32	19.2	19.08	19.2	Pass
40	5200	19.08	19.08	19.08	19.08	Pass
48	5240	19.2	19.08	19.08	19.2	Pass
52	5260	19.2	19.08	19.08	19.2	Pass
60	5300	19.2	19.2	19.08	19.08	Pass
64	5320	19.2	19.08	19.08	19.2	Pass
100	5500	19.2	19.08	19.08	19.2	Pass
116	5580	19.2	19.08	19.08	19.08	Pass
140	5700	19.2	19.08	19.08	19.2	Pass
144 (U-NII-2C Band)	5720	14.6	14.6	14.6	14.72	Pass
144 (U-NII-3 Band)	5720	4.6	4.48	4.48	4.48	Pass
149	5745	19.32	19.56	19.08	20.52	Pass
157	5785	19.44	19.68	19.08	20.88	Pass
165	5825	19.2	19.8	19.2	20.64	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
38	5190	37.92	37.92	37.92	37.68	Pass
46	5230	37.92	37.92	37.92	37.92	Pass
54	5270	37.92	37.92	37.68	37.68	Pass
62	5310	37.92	37.92	37.68	37.92	Pass
102	5510	37.92	37.92	37.68	37.92	Pass
110	5550	37.92	37.92	37.68	37.92	Pass
134	5670	37.92	37.92	37.92	37.92	Pass
142 (U-NII-2C Band)	5710	33.96	33.96	33.96	33.96	Pass
142 (U-NII-3 Band)	5710	3.96	3.96	3.96	3.96	Pass
151	5755	37.92	38.4	37.92	42	Pass
159	5795	37.92	38.64	37.92	38.88	Pass

802.11ax (HE80)

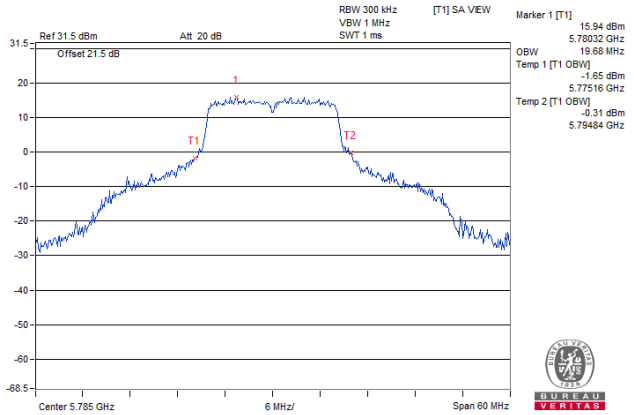
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
42	5210	77.28	76.8	77.28	77.28	Pass
58	5290	77.28	77.28	77.28	77.28	Pass
106	5530	77.28	76.8	77.28	77.28	Pass
138 (U-NII-2C Band)	5690	73.88	73.88	73.88	73.88	Pass
138 (U-NII-3 Band)	5690	3.4	3.4	3.4	3.4	Pass
155	5775	77.28	77.28	77.76	77.76	Pass

802.11ax (HE160)

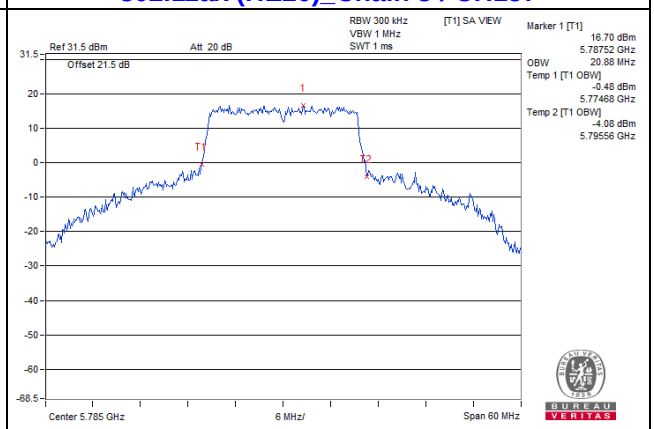
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
50 (U-NII-1 Band)	5250	77.76	77.76	77.76	77.76	Pass
50 (U-NII-2A Band)	5250	77.76	77.76	77.76	77.76	Pass

Spectrum Plot of Max. Value

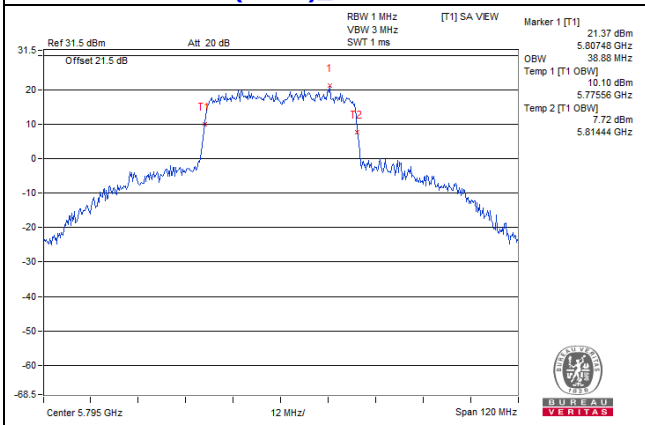
802.11a_Chain 1 / CH157



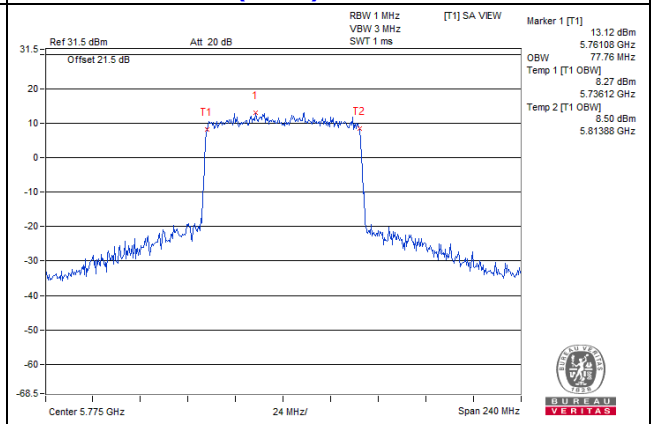
802.11ax (HE20)_Chain 3 / CH157



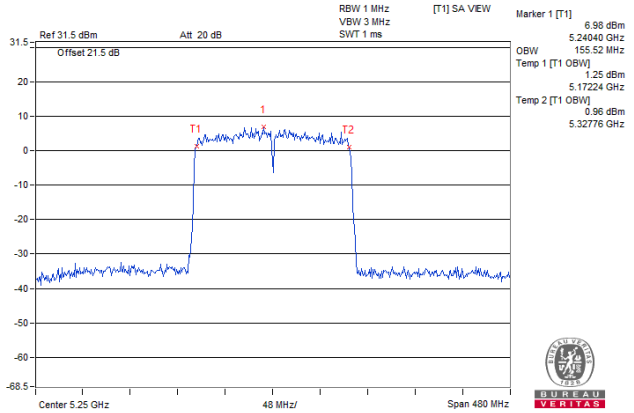
802.11ax (HE40)_Chain 3 / CH159



802.11ax (HE80)_Chain 2 / CH155

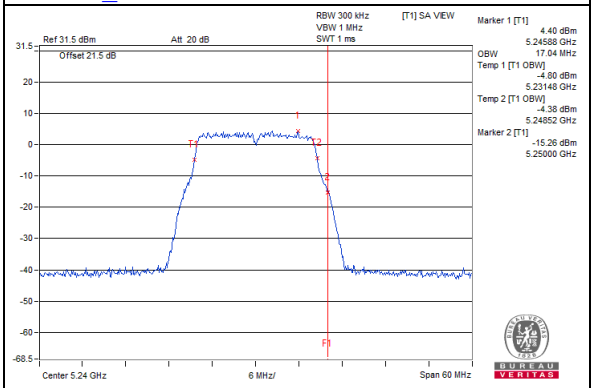


802.11ax (HE160)_Chain 0 / CH50

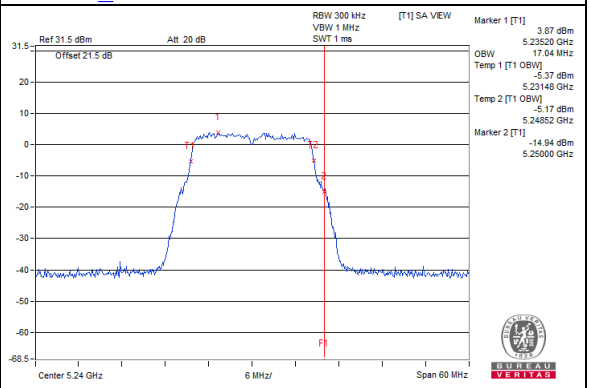


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

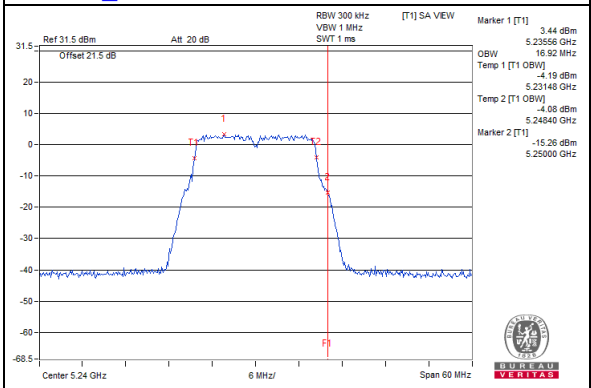
802.11a_Chain 0 / CH48



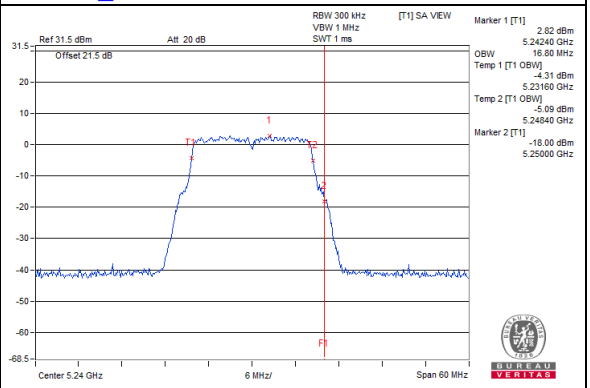
802.11a_Chain 1 / CH48



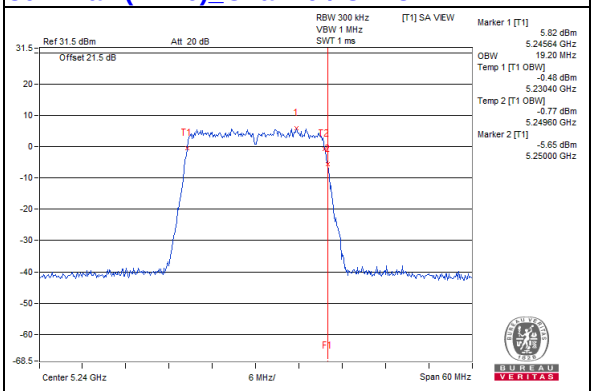
802.11a_Chain 2 / CH48



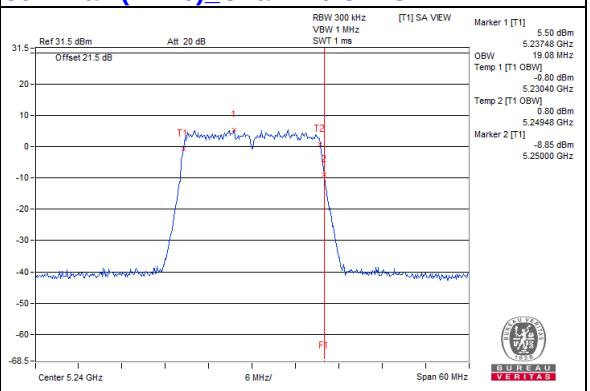
802.11a_Chain 3 / CH48



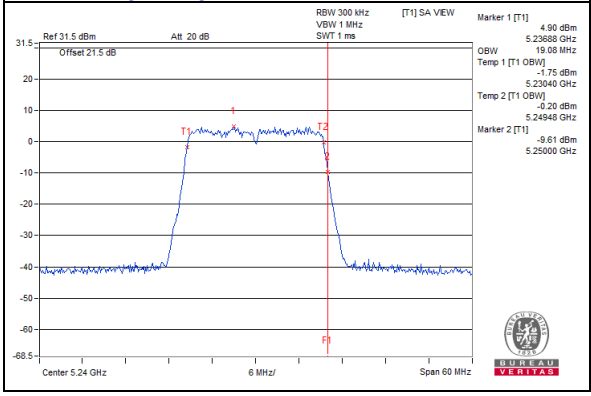
802.11ax (HE20)_Chain 0 / CH48



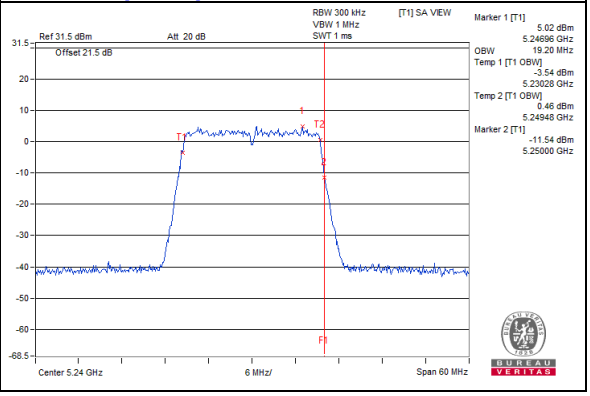
802.11ax (HE20)_Chain 1 / CH48



802.11ax (HE20)_Chain 2 / CH48

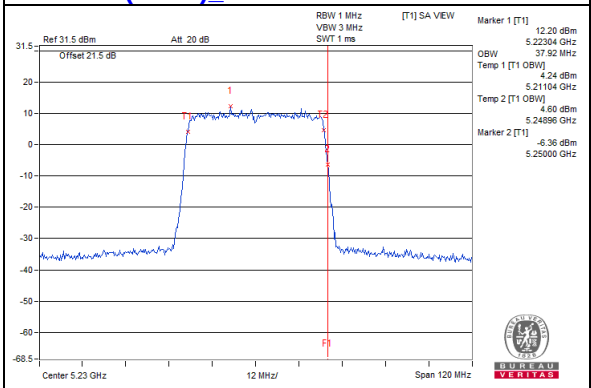


802.11ax (HE20)_Chain 3 / CH48

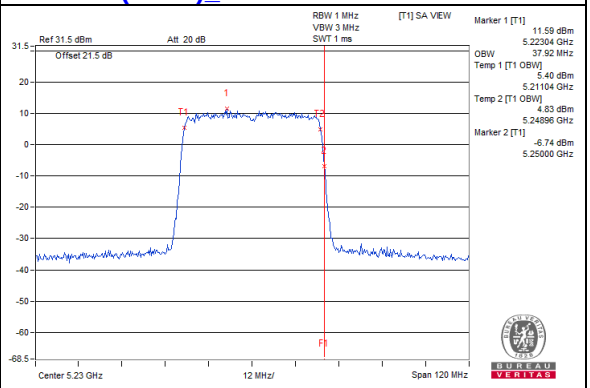


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

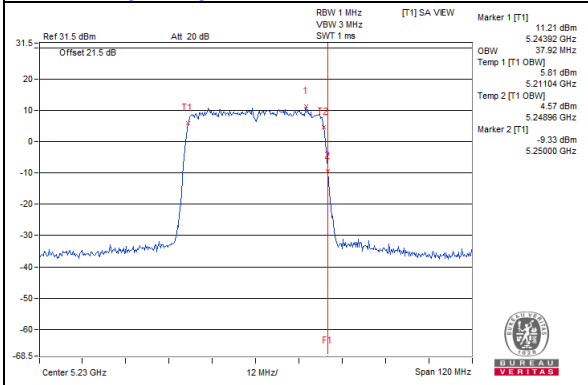
802.11ax (HE40)_Chain 0 / CH46



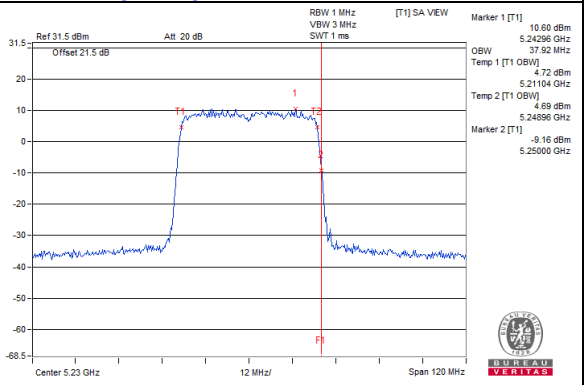
802.11ax (HE40)_Chain 1 / CH46



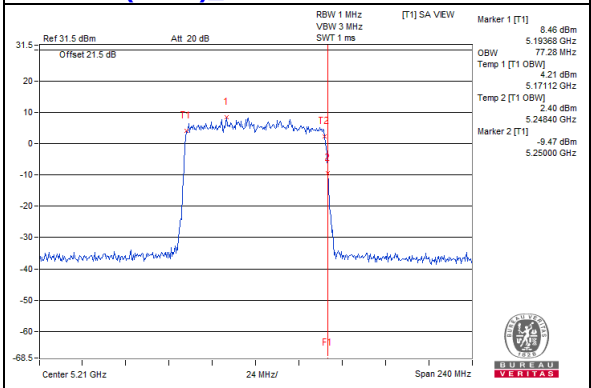
802.11ax (HE40)_Chain 2 / CH46



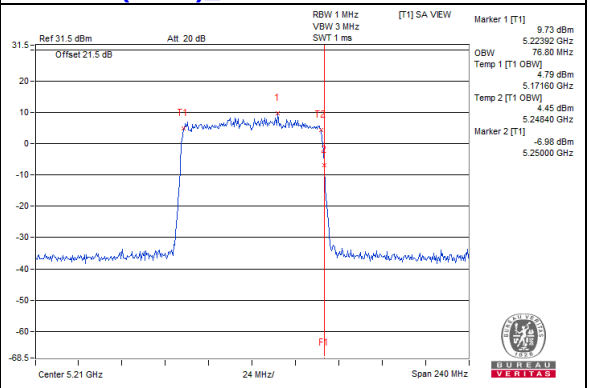
802.11ax (HE40)_Chain 3 / CH46



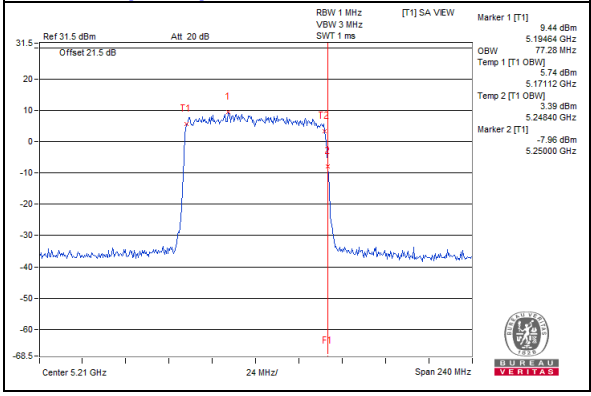
802.11ax (HE80)_Chain 0 / CH42



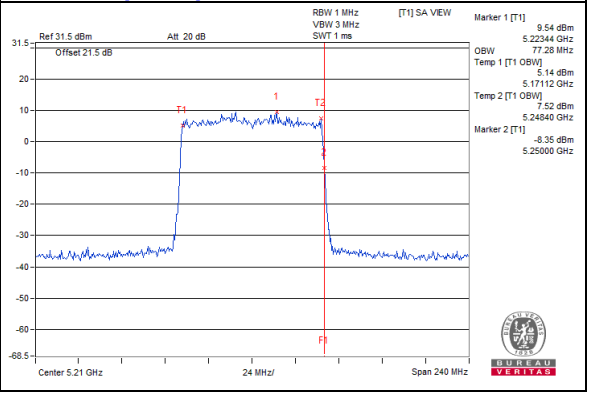
802.11ax (HE80)_Chain 1 / CH42



802.11ax (HE80)_Chain 2 / CH42

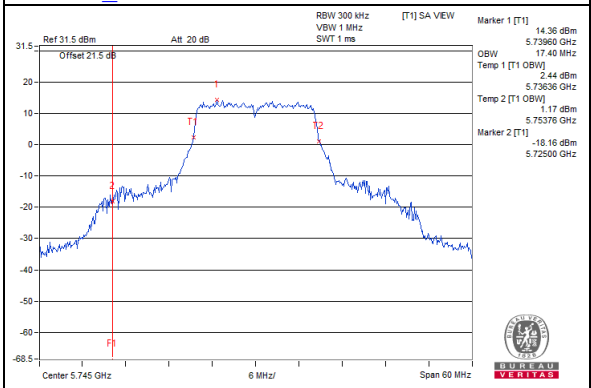


802.11ax (HE80)_Chain 3 / CH42

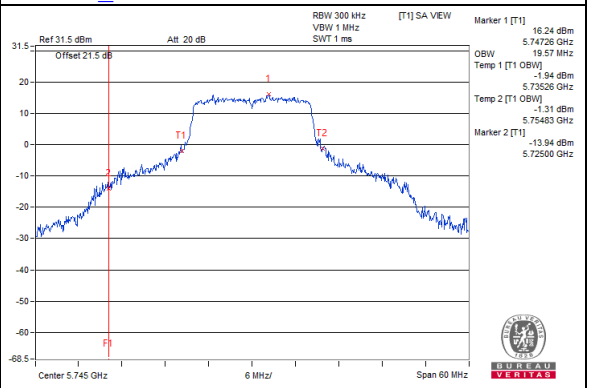


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

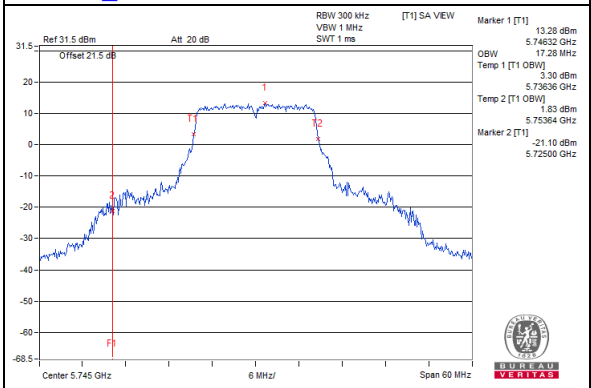
802.11a_Chain 0 / CH149



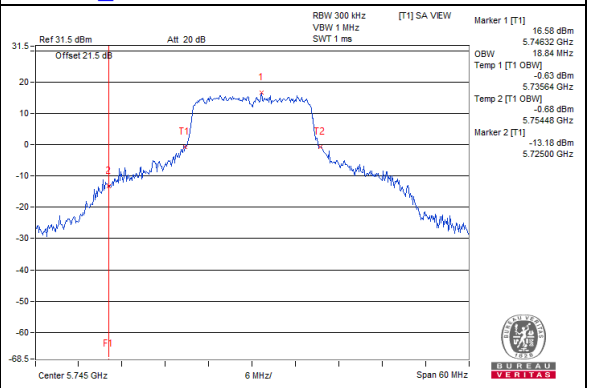
802.11a_Chain 1 / CH149



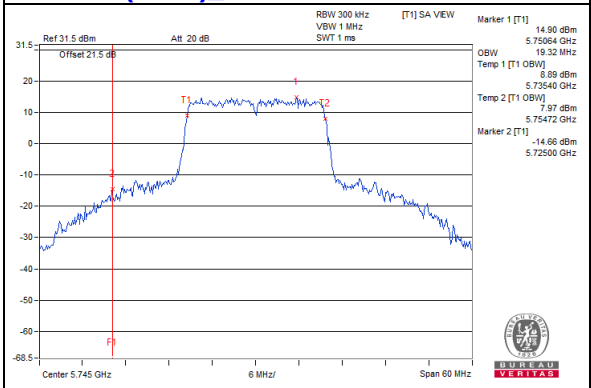
802.11a_Chain 2 / CH149



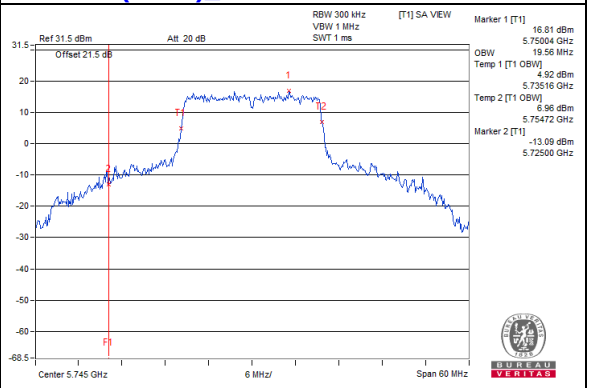
802.11a_Chain 3 / CH149



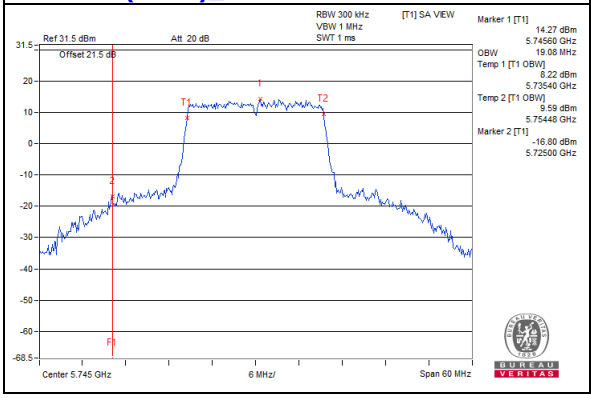
802.11ax (HE20)_Chain 0 / CH149



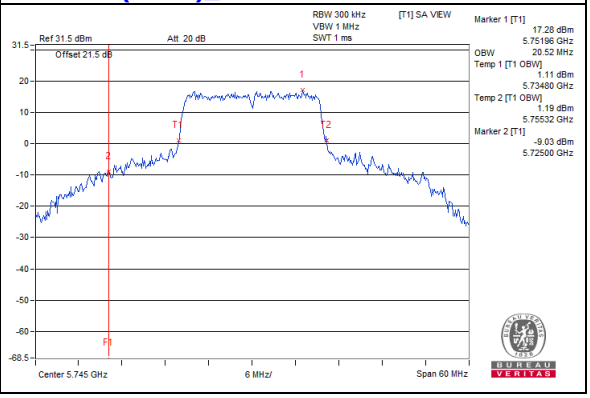
802.11ax (HE20)_Chain 1 / CH149



802.11ax (HE20)_Chain 2 / CH149

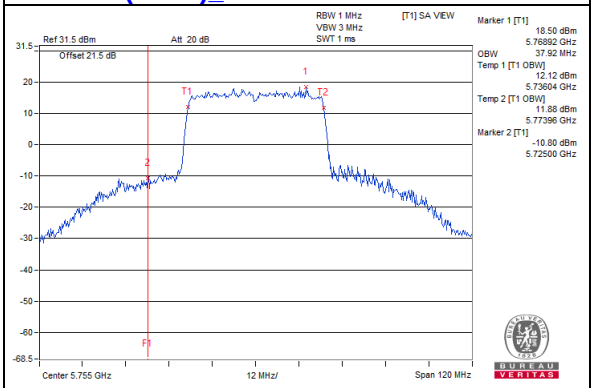


802.11ax (HE20)_Chain 3 / CH149

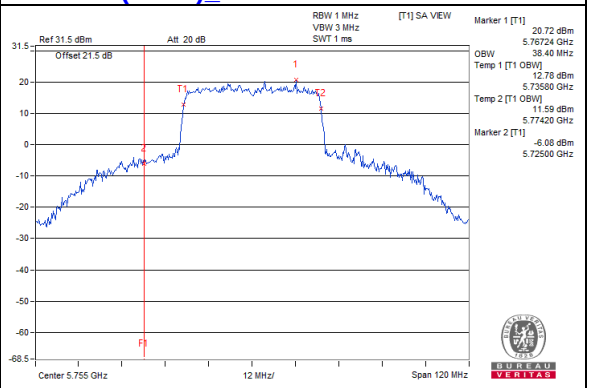


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

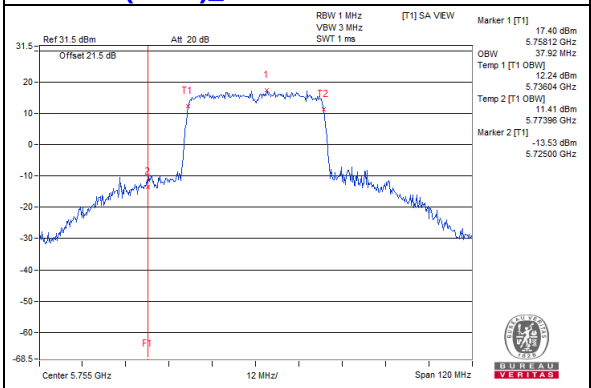
802.11ax (HE40)_Chain 0 / CH151



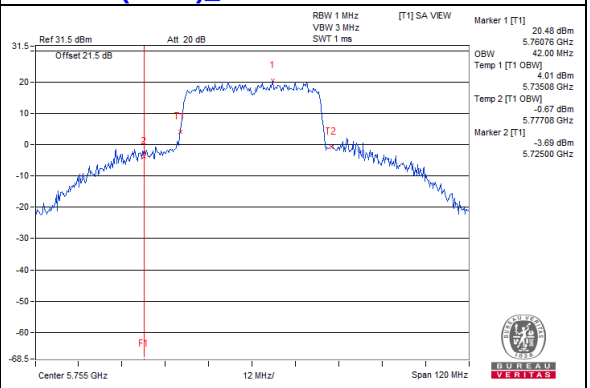
802.11ax (HE40)_Chain 1 / CH151



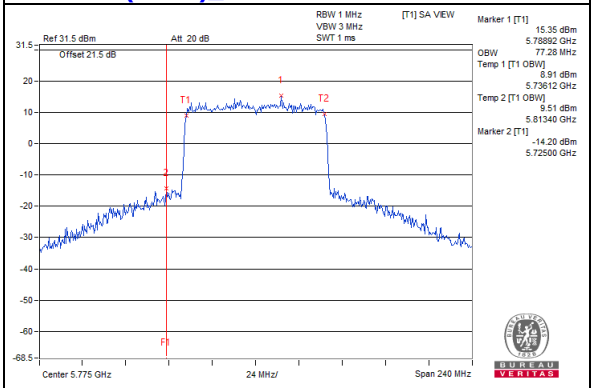
802.11ax (HE40)_Chain 2 / CH151



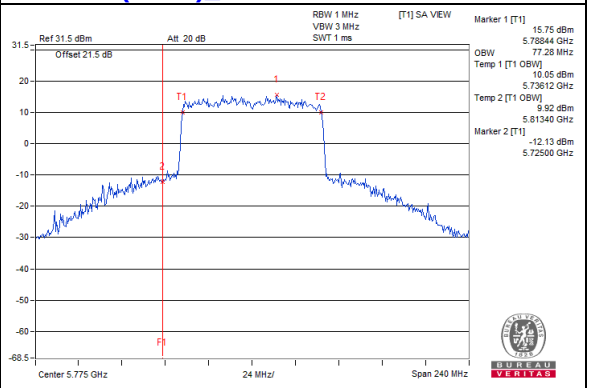
802.11ax (HE40)_Chain 3 / CH151



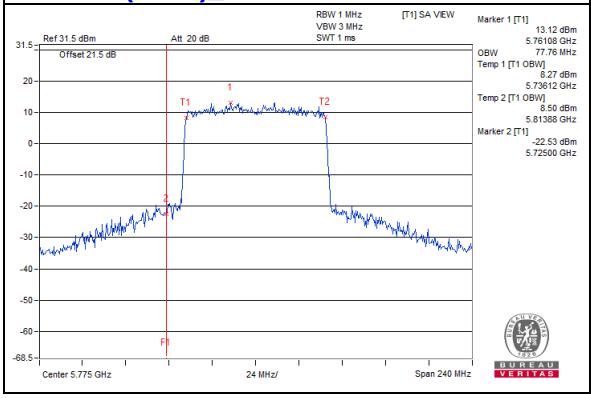
802.11ax (HE80)_Chain 0 / CH155



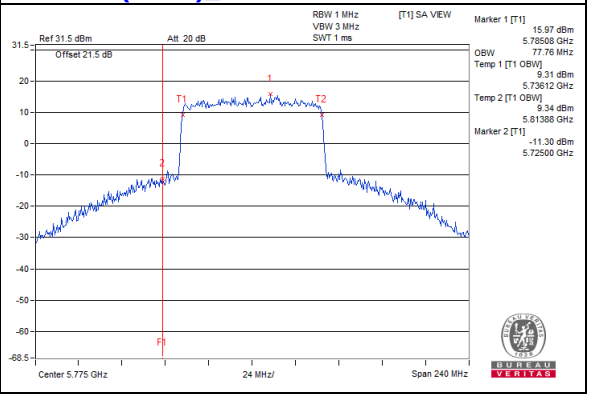
802.11ax (HE80)_Chain 1 / CH155



802.11ax (HE80)_Chain 2 / CH155



802.11ax (HE80)_Chain 3 / CH155



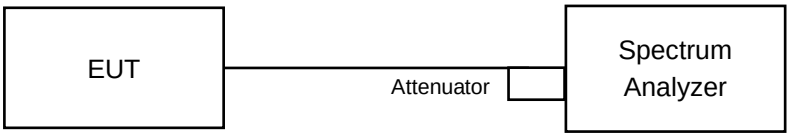
4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
	√	Indoor Access Point	
	√	Client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

Note: This device can support different category application which switched by access point mode and client mode by software.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For 802.11b, 802.11ax (HE20), 802.11ax (HE40), 802.11ax (HE80)

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value

For U-NII-3 band:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500kHz/300kHz)
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value

For 802.11ax (HE160)

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-2

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-1, U-NII-2A, U-NII-2C band:

Master

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	5.47	5.83	5.58	6.37	11.85	12.34	Pass
40	5200	5.15	5.82	5.60	5.97	11.67	12.34	Pass
48	5240	5.17	6.09	5.70	6.06	11.79	12.34	Pass
52	5260	-1.84	-1.25	-1.56	-1.53	4.48	5.88	Pass
60	5300	-1.96	-1.22	-1.43	-1.33	4.54	5.88	Pass
64	5320	-1.50	-1.78	-1.53	-1.37	4.48	5.88	Pass
100	5500	-1.41	-0.78	-1.75	-1.13	4.77	5.29	Pass
116	5580	-1.23	-0.44	-2.06	-1.27	4.81	5.29	Pass
140	5700	-1.24	-0.80	-0.37	-1.54	5.06	5.29	Pass
144 (U-NII-2C Band)	5720	-0.88	-1.84	-1.08	-0.49	4.98	5.29	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 17-(10.66-6) = 12.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.
4. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.71-6) = 5.29dBm.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	4.97	5.78	5.87	6.03	11.70	12.34	Pass
40	5200	4.93	5.65	5.84	6.12	11.68	12.34	Pass
48	5240	4.81	5.92	5.86	6.31	11.78	12.34	Pass
52	5260	-2.05	-1.49	-1.35	-1.50	4.43	5.88	Pass
60	5300	-2.11	-1.63	-1.19	-1.99	4.31	5.88	Pass
64	5320	-2.23	-1.57	-1.06	-1.97	4.34	5.88	Pass
100	5500	-1.14	-0.46	-0.55	-2.15	5.00	5.29	Pass
116	5580	-1.29	-0.65	-0.66	-1.21	5.08	5.29	Pass
140	5700	-1.12	-0.65	-0.08	-1.67	5.18	5.29	Pass
144 (U-NII-2C Band)	5720	-0.29	-1.76	-1.38	-0.82	4.99	5.29	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 17-(10.66-6) = 12.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.
4. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.71-6) = 5.29dBm.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
38	5190	0.54	1.30	1.32	1.61	7.23	12.34	Pass
46	5230	4.91	5.67	5.24	6.24	11.56	12.34	Pass
54	5270	-2.21	-1.84	-1.70	-1.47	4.22	5.88	Pass
62	5310	-1.91	-1.62	-1.95	-1.38	4.31	5.88	Pass
102	5510	-1.20	-0.98	-0.97	-0.70	5.06	5.29	Pass
110	5550	-1.61	-0.40	-0.95	-0.76	5.11	5.29	Pass
134	5670	-1.22	-0.84	-0.78	-1.19	5.02	5.29	Pass
142 (U-NII-2C Band)	5710	-1.22	-1.12	-0.79	-0.28	5.18	5.29	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 17-(10.66-6) = 12.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.
4. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.71-6) = 5.29dBm.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
42	5210	-3.91	-3.26	-1.80	-2.39	3.26	12.34	Pass
58	5290	-3.27	-2.80	-1.98	-2.20	3.49	5.88	Pass
106	5530	-3.22	-2.56	-2.58	-2.34	3.36	5.29	Pass
138 (U-NII-2C Band)	5690	-1.95	-1.92	-1.52	-1.20	4.38	5.29	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 17-(10.66-6) = 12.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.
4. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.71-6) = 5.29dBm.

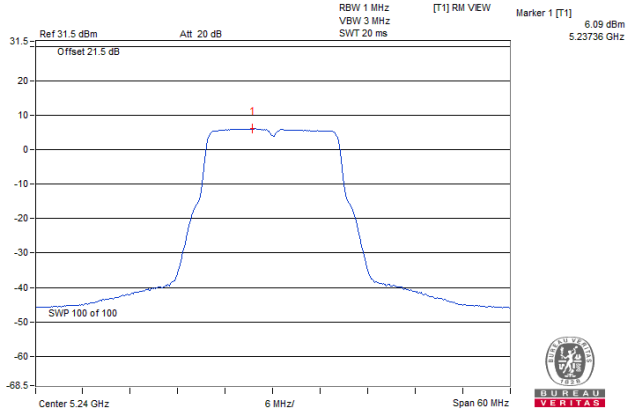
802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
50 (U-NII-1 Band)	5250	-4.41	-4.96	-6.47	-5.41	0.54	1.31	12.34	Pass
50 (U-NII-2A Band)	5250	-4.32	-4.50	-6.56	-5.99	0.54	1.32	5.88	Pass

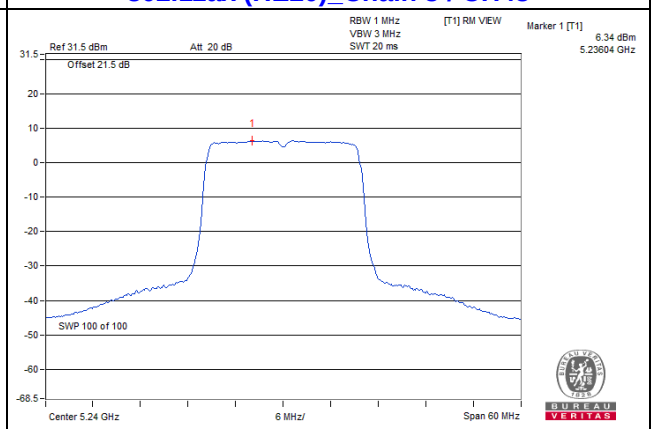
Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 17-(10.66-6) = 12.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.

Spectrum Plot of Worst Value

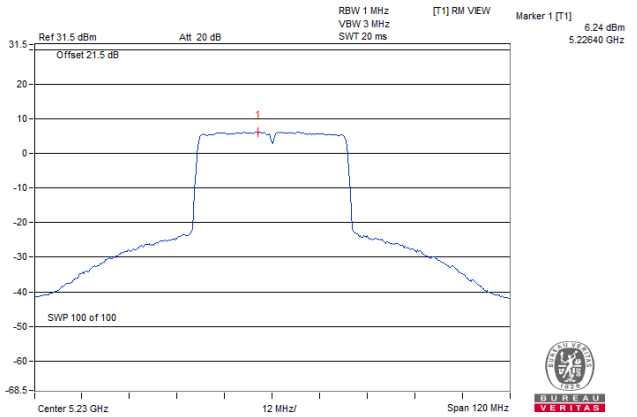
802.11a_Chain 1 / CH48



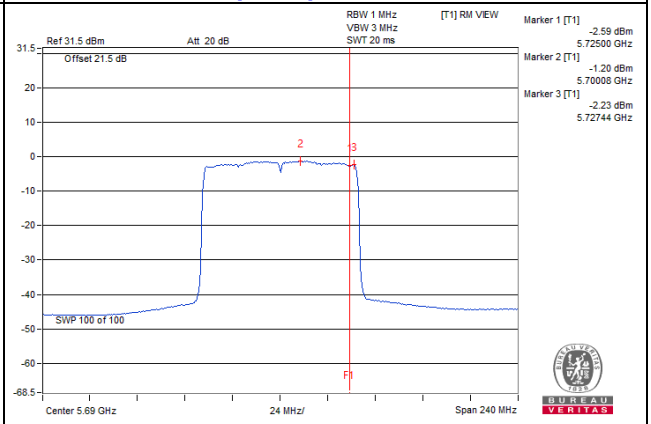
802.11ax (HE20)_Chain 3 / CH48



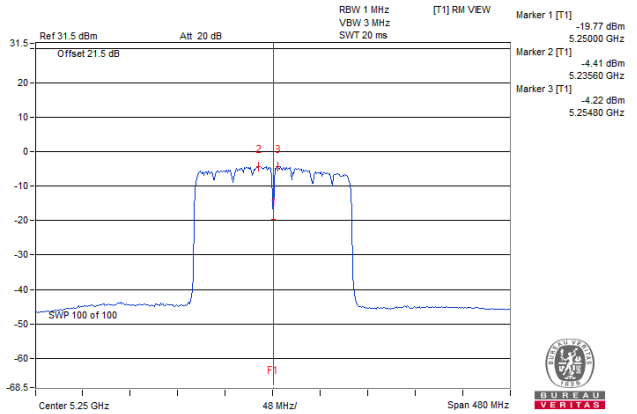
802.11ax (HE40)_Chain 3 / CH46



802.11ax (HE80)_Chain 3 / CH138



802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)



Client

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	0.08	-0.07	-0.77	-1.28	5.54	6.34	Pass
40	5200	0.26	-0.15	-0.54	-1.28	5.63	6.34	Pass
48	5240	0.19	-0.05	-0.62	-1.15	5.64	6.34	Pass
52	5260	-1.84	-1.25	-1.56	-1.53	4.48	5.88	Pass
60	5300	-1.96	-1.22	-1.43	-1.33	4.54	5.88	Pass
64	5320	-1.50	-1.78	-1.53	-1.37	4.48	5.88	Pass
100	5500	-1.41	-0.78	-1.75	-1.13	4.77	5.29	Pass
116	5580	-1.23	-0.44	-2.06	-1.27	4.81	5.29	Pass
140	5700	-1.24	-0.80	-0.37	-1.54	5.06	5.29	Pass
144 (U-NII-2C Band)	5720	-0.88	-1.84	-1.08	-0.49	4.98	5.29	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(10.66-6) = 6.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.
4. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.71-6) = 5.29dBm.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	0.07	-0.60	-0.89	-1.18	5.40	6.34	Pass
40	5200	0.02	-0.67	-0.81	-1.22	5.37	6.34	Pass
48	5240	0.00	-0.34	-0.87	-0.92	5.51	6.34	Pass
52	5260	-2.05	-1.49	-1.35	-1.50	4.43	5.88	Pass
60	5300	-2.11	-1.63	-1.19	-1.99	4.31	5.88	Pass
64	5320	-2.23	-1.57	-1.06	-1.97	4.34	5.88	Pass
100	5500	-1.14	-0.46	-0.55	-2.15	5.00	5.29	Pass
116	5580	-1.29	-0.65	-0.66	-1.21	5.08	5.29	Pass
140	5700	-1.12	-0.65	-0.08	-1.67	5.18	5.29	Pass
144 (U-NII-2C Band)	5720	-0.29	-1.76	-1.38	-0.82	4.99	5.29	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(10.66-6) = 6.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.
4. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.71-6) = 5.29dBm.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
38	5190	-0.10	-0.24	-0.55	-1.27	5.50	6.34	Pass
46	5230	-0.20	-0.51	-0.39	-1.05	5.49	6.34	Pass
54	5270	-2.21	-1.84	-1.70	-1.47	4.22	5.88	Pass
62	5310	-1.91	-1.62	-1.95	-1.38	4.31	5.88	Pass
102	5510	-1.20	-0.98	-0.97	-0.70	5.06	5.29	Pass
110	5550	-1.61	-0.40	-0.95	-0.76	5.11	5.29	Pass
134	5670	-1.22	-0.84	-0.78	-1.19	5.02	5.29	Pass
142 (U-NII-2C Band)	5710	-1.22	-1.12	-0.79	-0.28	5.18	5.29	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(10.66-6) = 6.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.
4. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.71-6) = 5.29dBm.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
42	5210	-3.91	-3.26	-1.80	-2.39	3.26	6.34	Pass
58	5290	-3.27	-2.80	-1.98	-2.20	3.49	5.88	Pass
106	5530	-3.22	-2.56	-2.58	-2.34	3.36	5.29	Pass
138 (U-NII-2C Band)	5690	-1.95	-1.92	-1.52	-1.20	4.38	5.29	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(10.66-6) = 6.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.
4. For UNII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.71 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.71-6) = 5.29dBm.

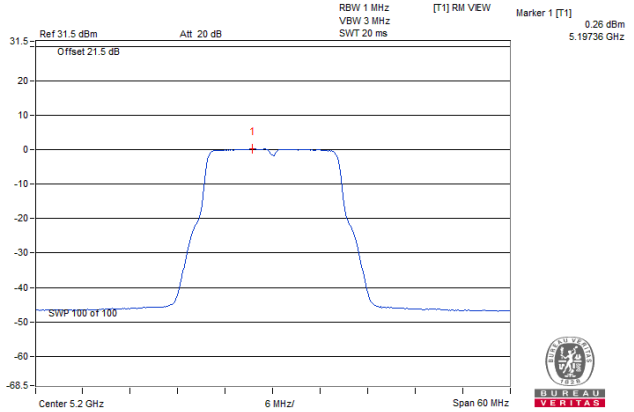
802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
50 (U-NII-1 Band)	5250	-4.41	-4.96	-6.47	-5.41	0.54	1.31	6.34	Pass
50 (U-NII-2A Band)	5250	-4.32	-4.50	-6.56	-5.99	0.54	1.32	5.88	Pass

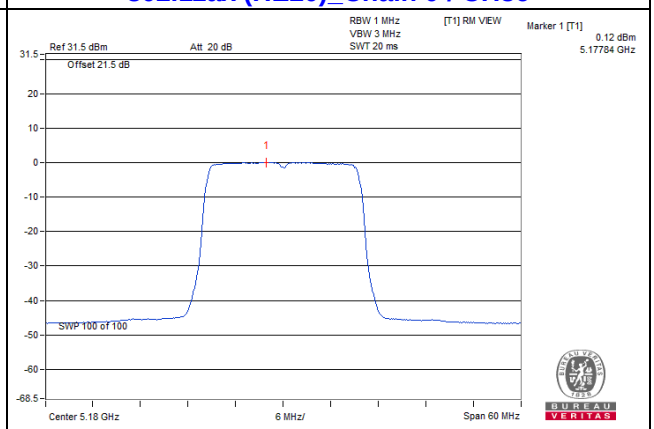
Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.66 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(10.66-6) = 6.34dBm.
3. For UNII-2A: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.12 dBi > 6 dBi, so the so the power density limit shall be reduced to 11-(11.12-6) = 5.88dBm.

Spectrum Plot of Worst Value

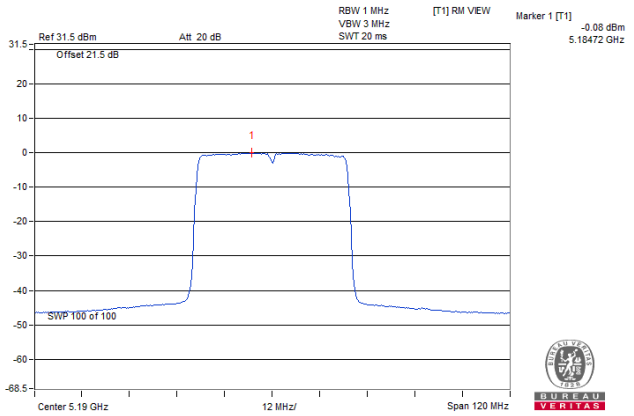
802.11a_Chain 0 / CH40



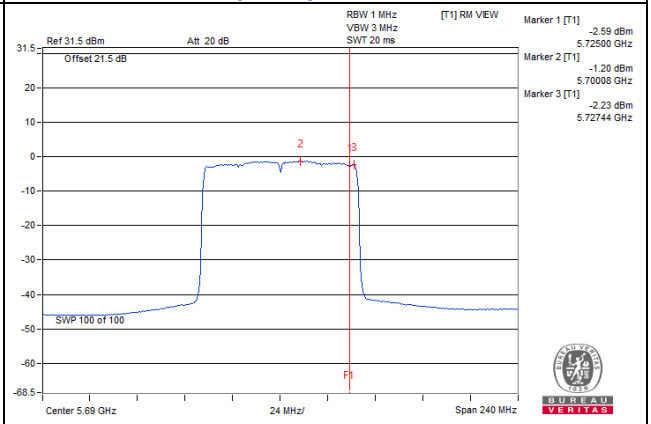
802.11ax (HE20)_Chain 0 / CH36



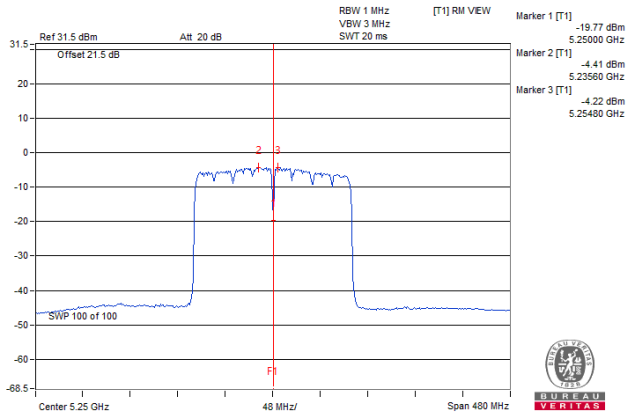
802.11ax (HE40)_Chain 0 / CH38



802.11ax (HE80)_Chain 3 / CH138



802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)



For U-NII-3 band:

Master / Client

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
144 (U-NII-3 Band)	5720	-9.77	-10.65	-9.88	-9.34	-3.86	-1.64	24.48	Pass
149	5745	1.08	2.78	0.48	3.06	8.01	10.23	24.48	Pass
157	5785	1.28	2.95	0.67	2.87	8.07	10.29	24.48	Pass
165	5825	1.31	2.82	0.72	2.92	8.07	10.29	24.48	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.52 dBi > 6 dBi, so the so the power density limit shall be reduced to 30-(11.52-6) = 24.48dBm.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
144 (U-NII-3 Band)	5720	-9.73	-11.15	-10.68	-10.29	-4.41	-2.19	24.48	Pass
149	5745	0.07	1.68	-0.73	2.05	6.93	9.15	24.48	Pass
157	5785	0.19	1.62	-0.71	2.18	6.99	9.21	24.48	Pass
165	5825	0.21	1.64	-0.31	2.14	7.06	9.28	24.48	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.52 dBi > 6 dBi, so the so the power density limit shall be reduced to 30-(11.52-6) = 24.48dBm.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
142 (U-NII-3 Band)	5710	-10.78	-10.95	-10.56	-9.92	-4.51	-2.29	24.48	Pass
151	5755	-2.93	-1.44	-3.32	-0.92	3.98	6.20	24.48	Pass
159	5795	-2.82	-1.30	-3.36	-0.88	4.05	6.27	24.48	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.52 dBi > 6 dBi, so the so the power density limit shall be reduced to 30-(11.52-6) = 24.48dBm.

802.11ax (HE80)

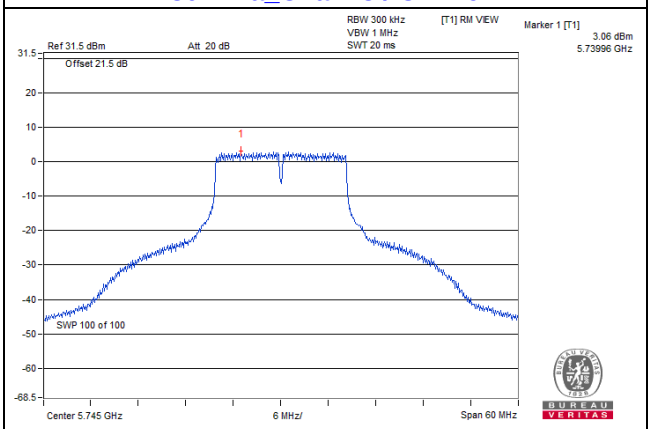
Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
138 (U-NII-3 Band)	5690	-12.06	-12.66	-11.90	-11.65	-6.03	-3.81	24.48	Pass
155	5775	-6.66	-5.14	-7.89	-5.23	-0.07	2.15	24.48	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

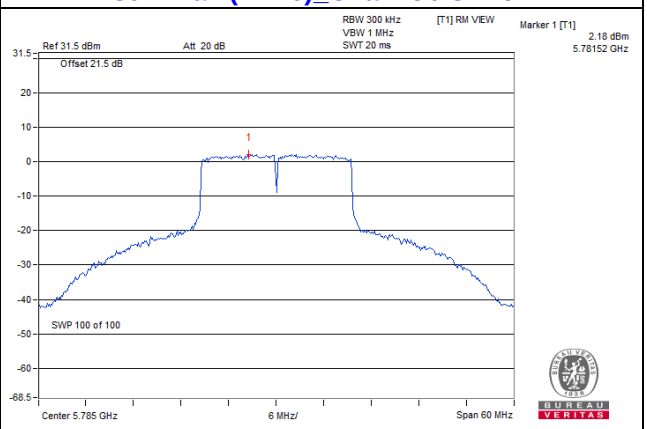
2. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 11.52 dBi > 6 dBi, so the so the power density limit shall be reduced to 30-(11.52-6) = 24.48dBm.

Spectrum Plot of Worst Value

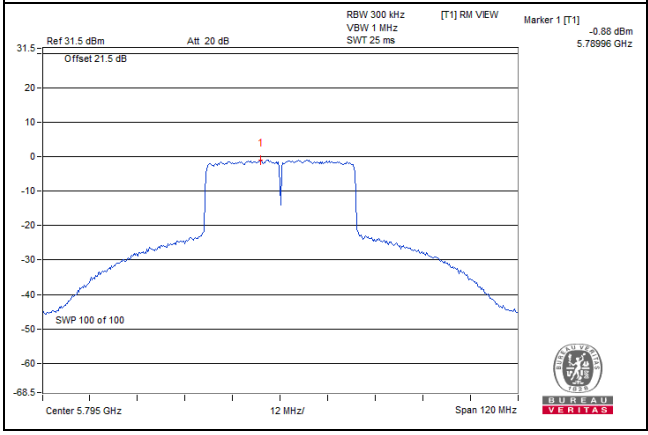
802.11a_Chain 3 / CH149



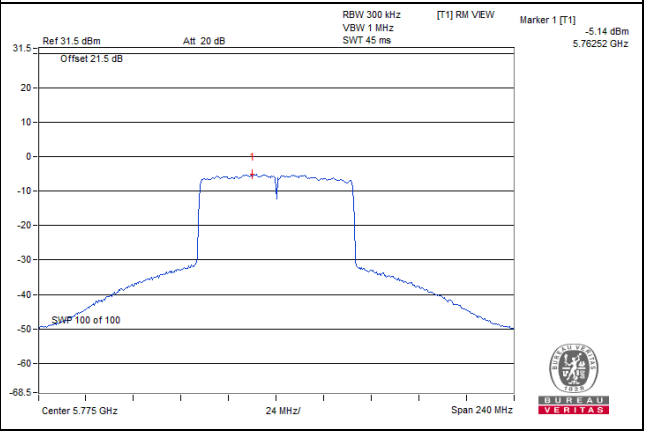
802.11ax (HE20)_Chain 3 / CH157



802.11ax (HE40)_Chain 3 / CH159



802.11ax (HE80)_Chain 1 / CH155

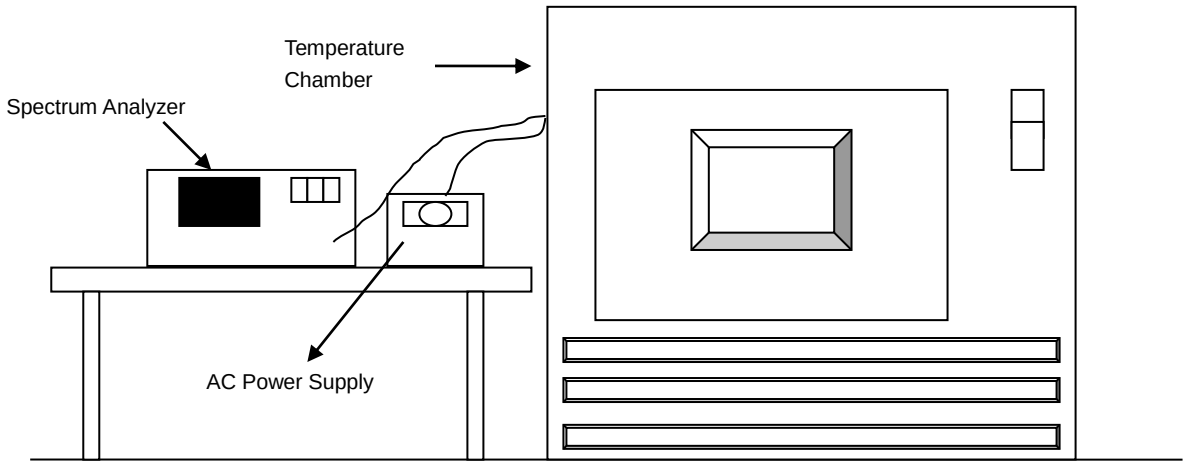


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC 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 (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.

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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
40	120	5180.0048	Pass	5180.0025	Pass	5180.0031	Pass	5180.003	Pass
30	120	5179.9983	Pass	5179.9949	Pass	5179.9973	Pass	5179.9978	Pass
20	120	5179.978	Pass	5179.9808	Pass	5179.9814	Pass	5179.98	Pass
10	120	5180.0053	Pass	5180.0072	Pass	5180.0071	Pass	5180.0076	Pass
0	120	5179.9751	Pass	5179.9746	Pass	5179.9777	Pass	5179.9772	Pass

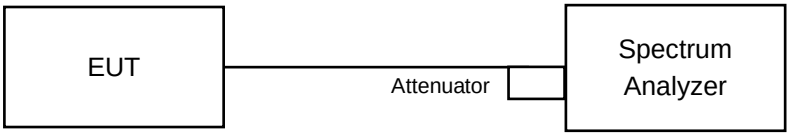
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5179.9789	Pass	5179.9801	Pass	5179.9824	Pass	5179.9797	Pass
	120	5179.978	Pass	5179.9808	Pass	5179.9814	Pass	5179.98	Pass
	102	5179.9786	Pass	5179.9816	Pass	5179.9805	Pass	5179.9797	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.7.7 Test Results

Master / Client

CDD Mode

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
144 (U-NII-3 Band)	5720	3.21	3.2	3.22	3.22	Pass
149	5745	16.43	16.37	16.45	16.41	Pass
157	5785	16.45	16.4	16.44	16.42	Pass
165	5825	16.41	16.4	16.45	16.43	Pass

802.11ax (HE20)

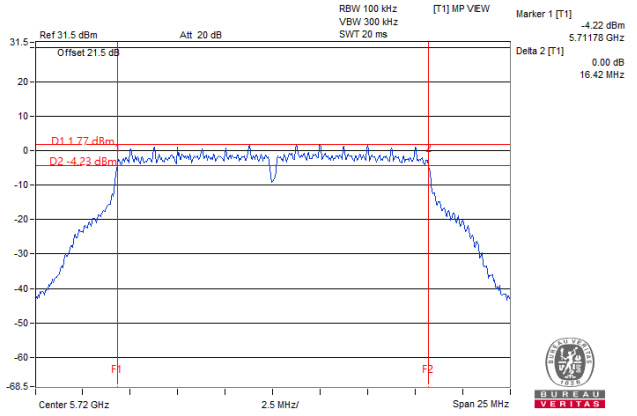
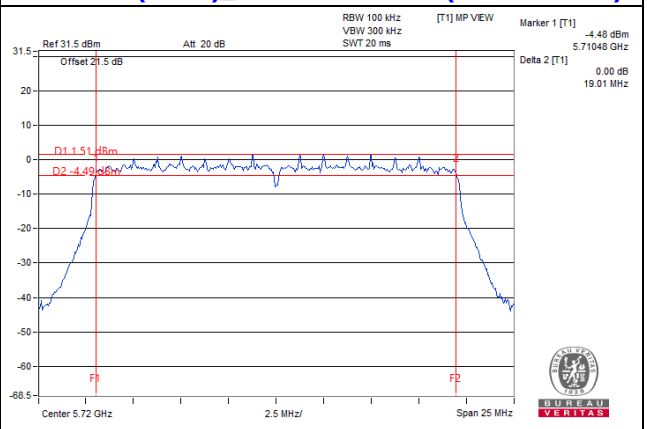
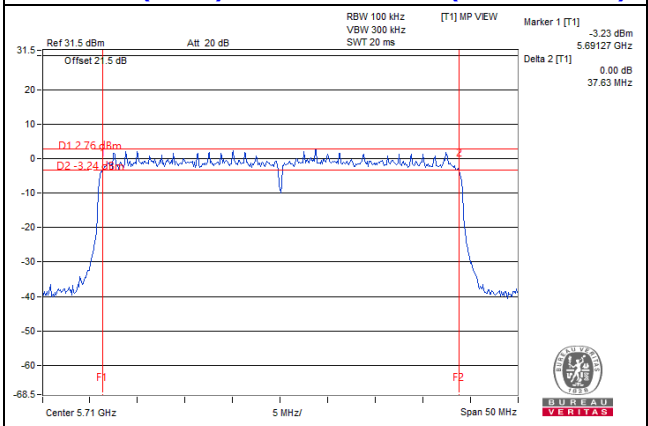
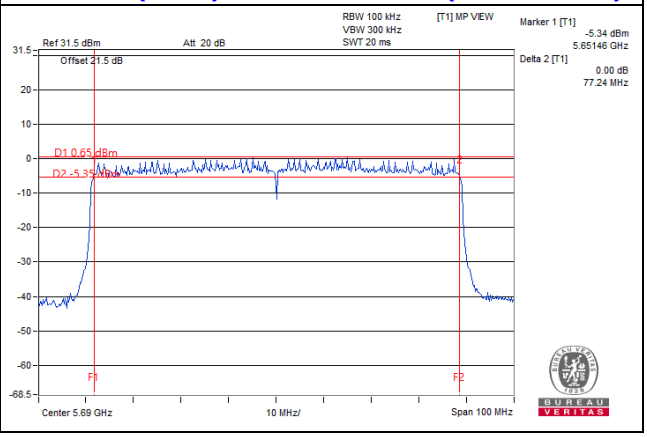
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
144 (U-NII-3 Band)	5720	4.52	4.49	4.49	4.51	Pass
149	5745	19.04	18.99	18.99	18.95	Pass
157	5785	19.06	19	18.99	18.87	Pass
165	5825	19.03	18.97	19	18.88	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
142 (U-NII-3 Band)	5710	3.98	3.9	3.91	3.95	Pass
151	5755	37.92	37.49	37.74	37.7	Pass
159	5795	37.84	37.51	37.8	37.49	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
138 (U-NII-3 Band)	5690	3.9	3.71	3.75	3.7	Pass
155	5775	77.93	77.16	77.73	76.98	Pass

Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH144 (U-NII-3 Band)	**802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)**
	
802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)	**802.11ax (HE80)_Chain 3 / CH138 (U-NII-3 Band)**
	

Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

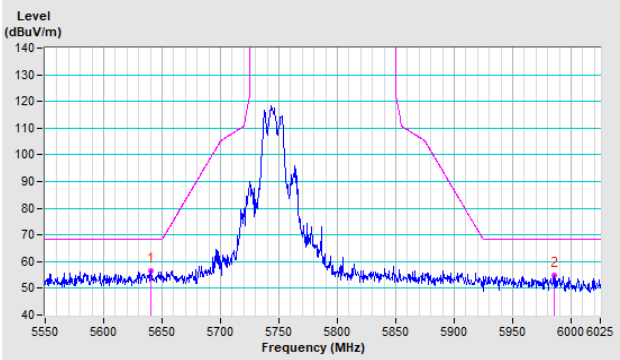
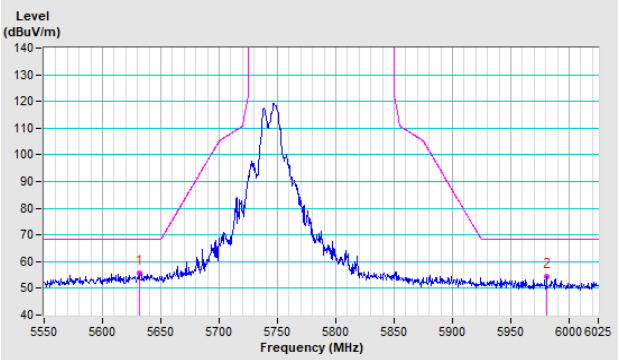
5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

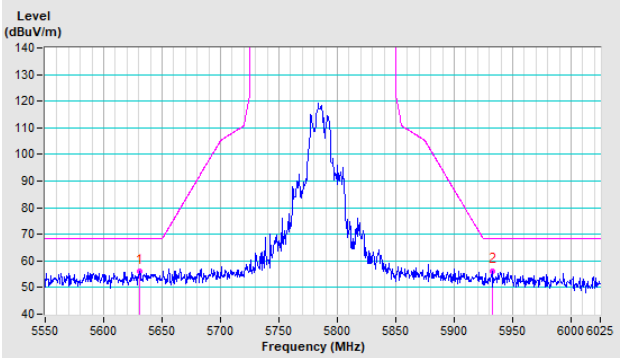
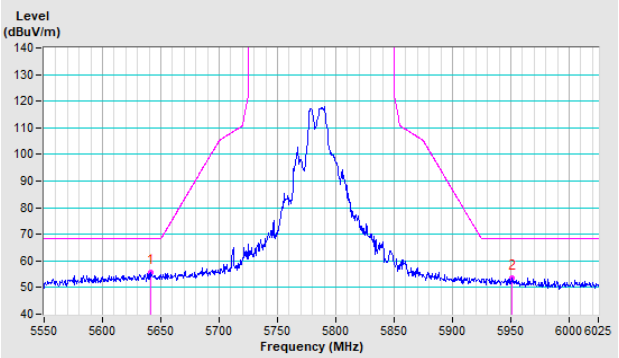
Annex A - Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

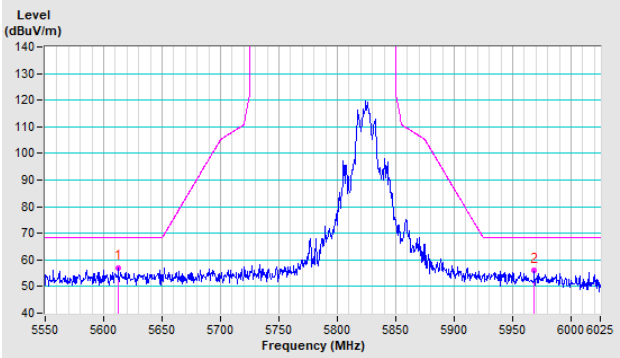
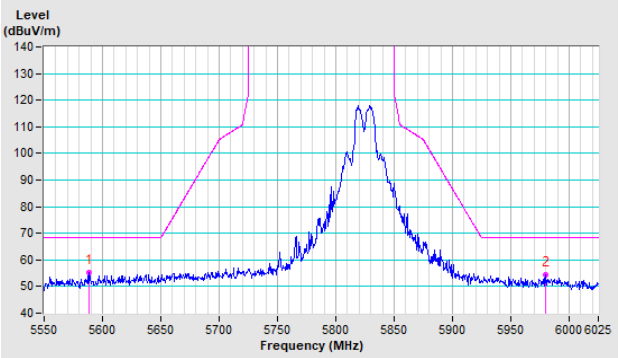
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

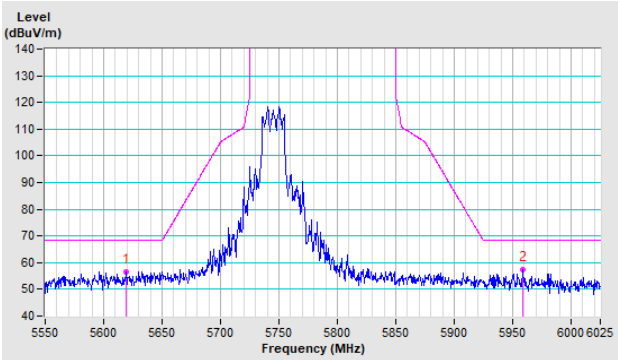
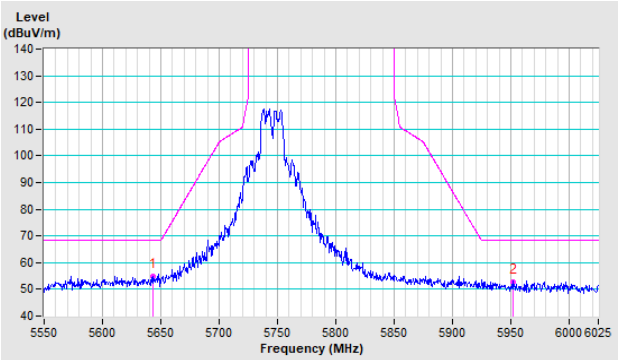
Horizontal	Vertical
	

CH 165 5825 MHz

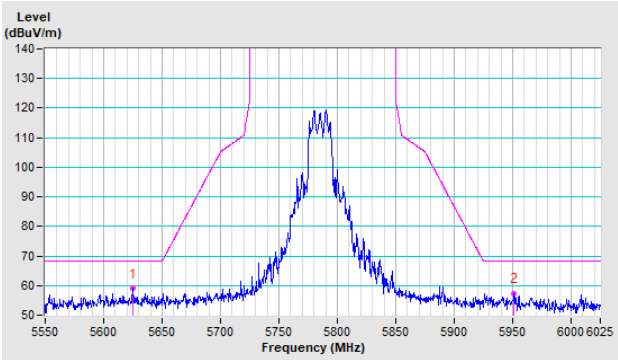
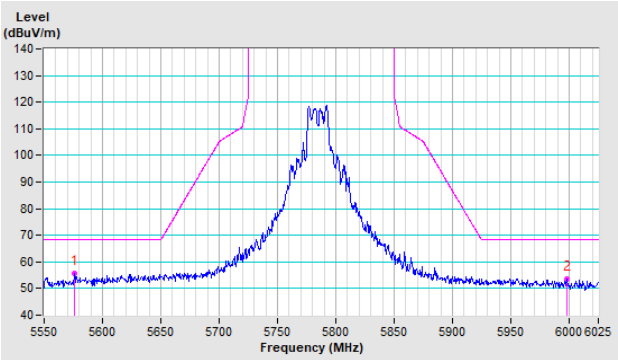
Horizontal	Vertical
	

802.11ax (HE20)

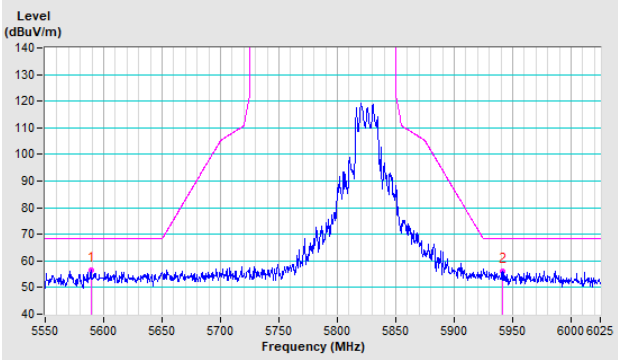
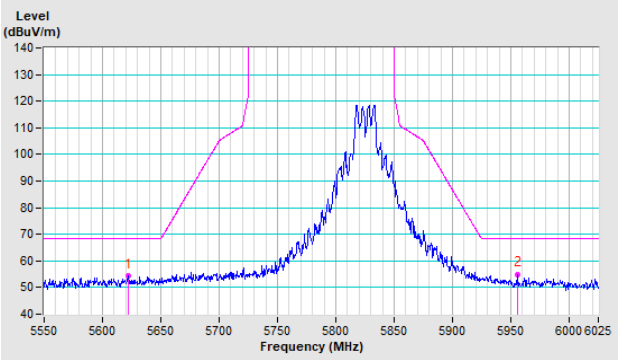
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

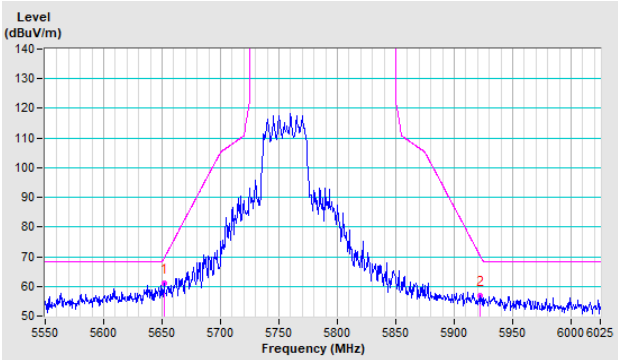
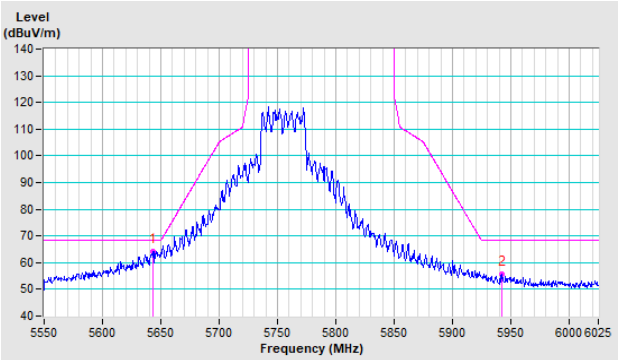
Horizontal	Vertical
	

CH 165 5825 MHz

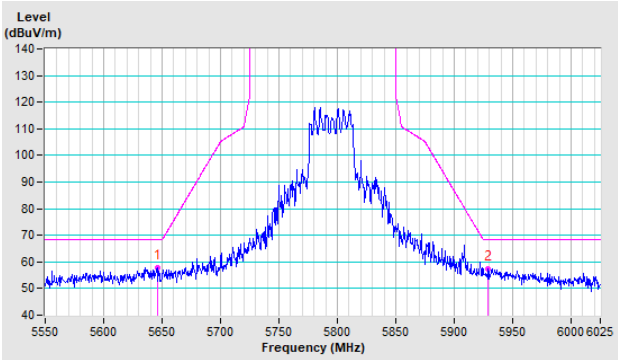
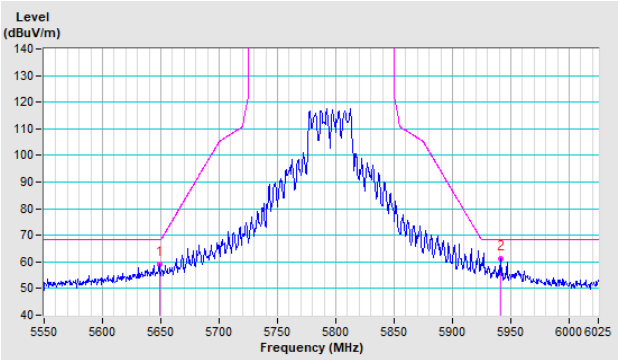
Horizontal	Vertical
	

802.11ax (HE40)

CH 151 5755 MHz

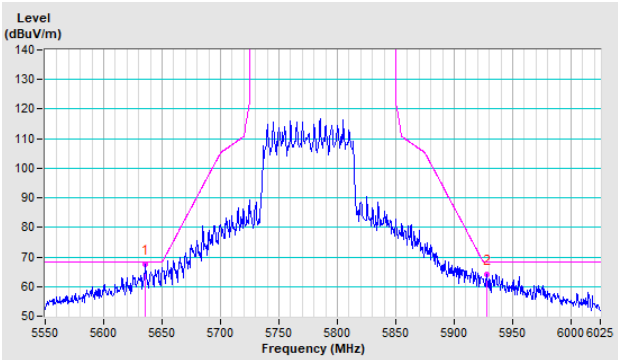
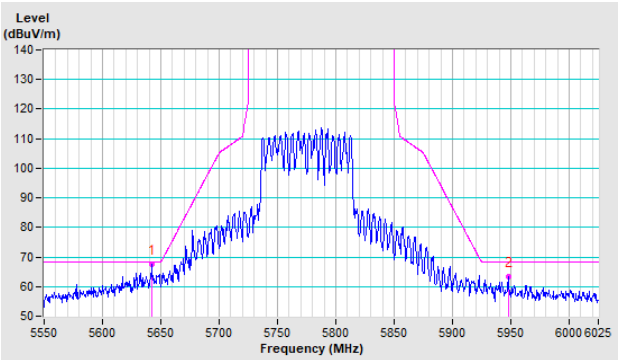
Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

802.11ax (HE80)

CH 155 5775 MHz

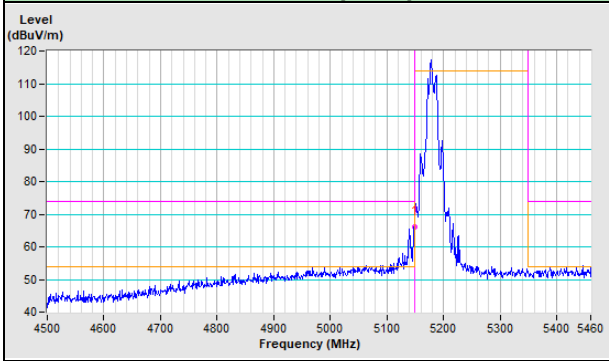
Horizontal	Vertical
	

Annex B - Band-Edge Measurement (For U-NII-1, U-NII-2A, U-NII-2C band)

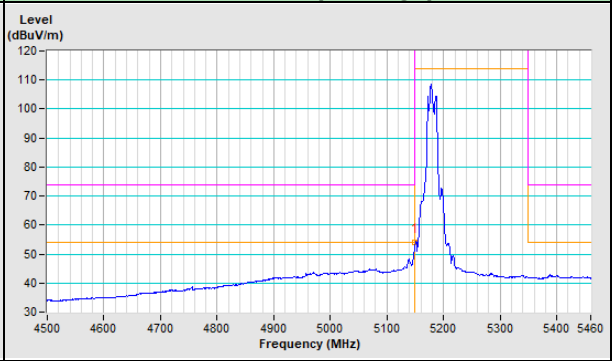
802.11a

Channel 36

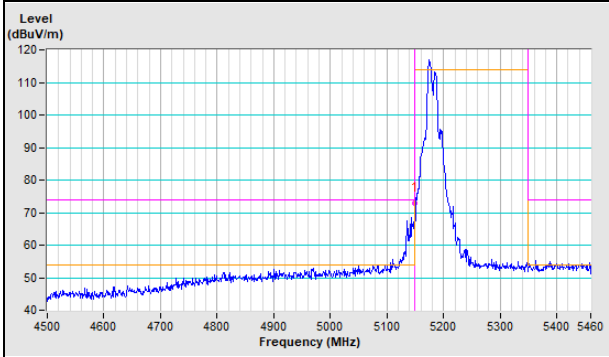
Horizontal (Peak)



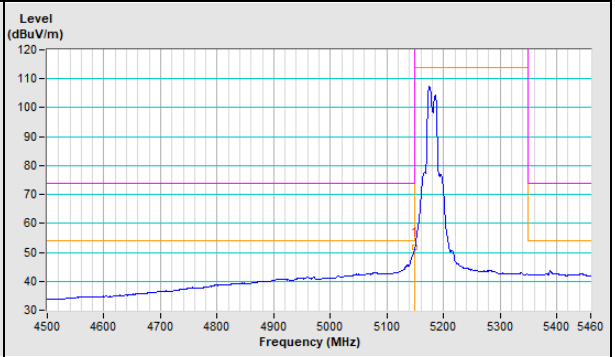
Horizontal (Average)



Vertical (Peak)

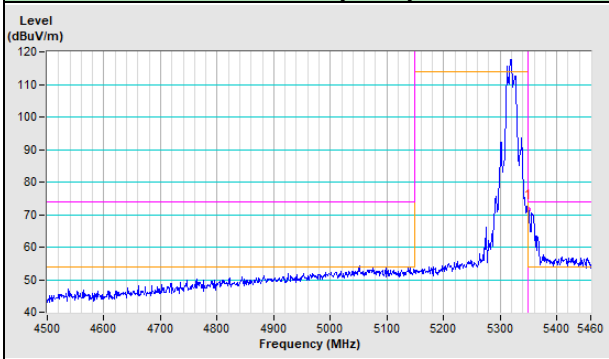


Vertical (Average)

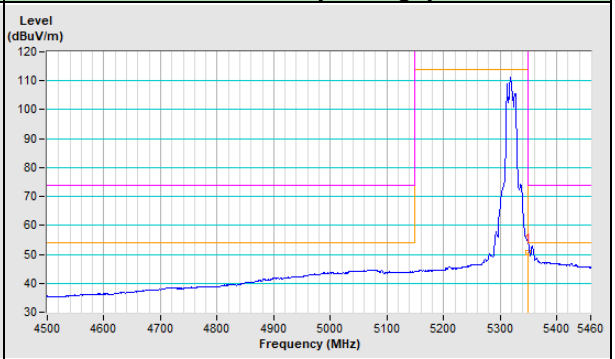


Channel 64

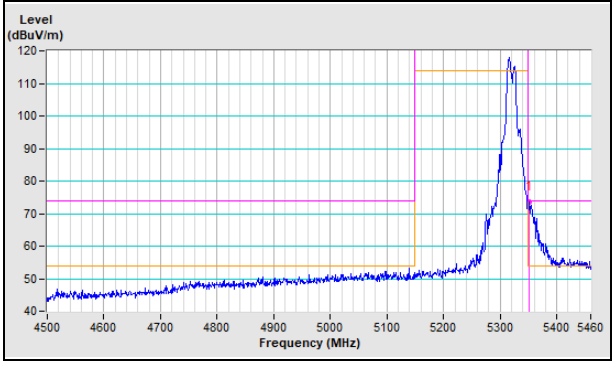
Horizontal (Peak)



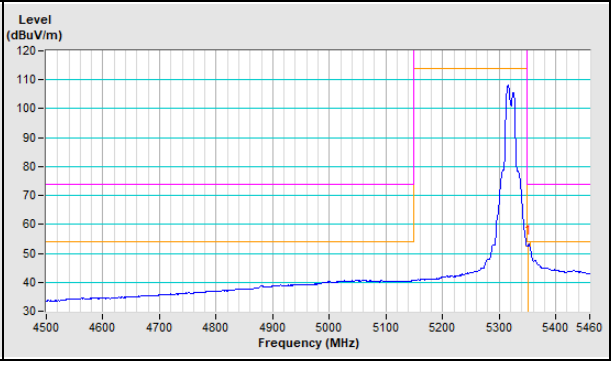
Horizontal (Average)

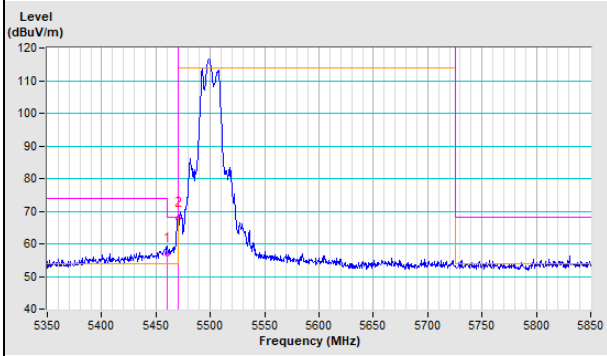
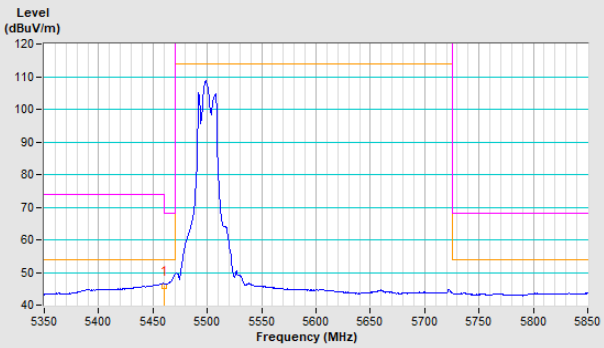
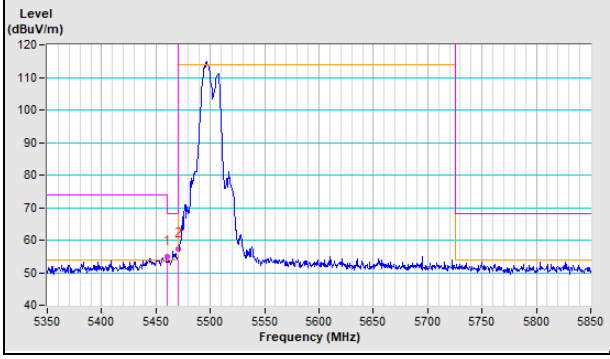
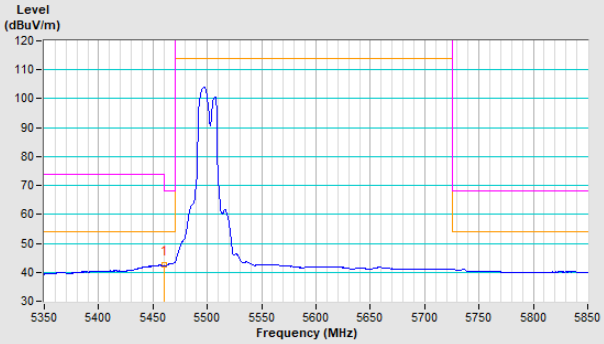


Vertical (Peak)



Vertical (Average)

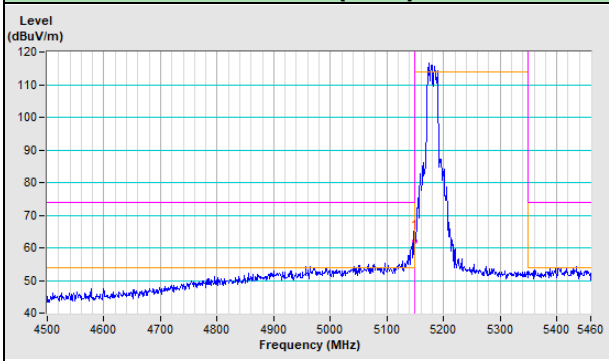


Channel 100	
Horizontal (Peak)	**Horizontal (Average)**
	
Vertical (Peak)	**Vertical (Average)**
	

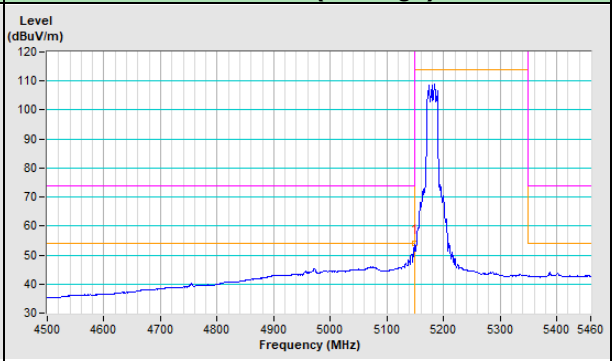
802.11ax (HE20)

Channel 36

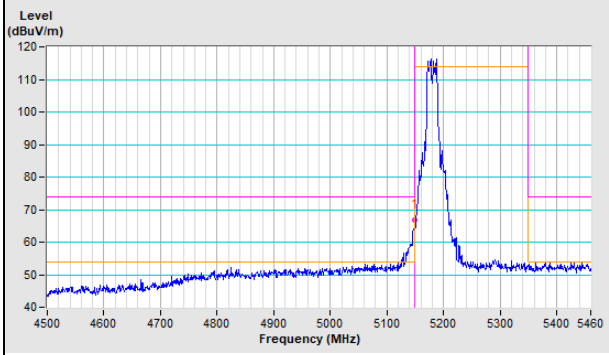
Horizontal (Peak)



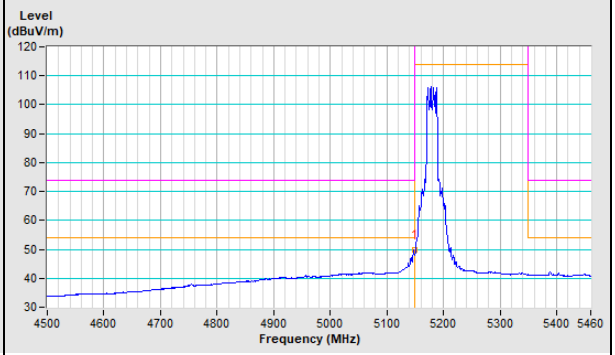
Horizontal (Average)



Vertical (Peak)

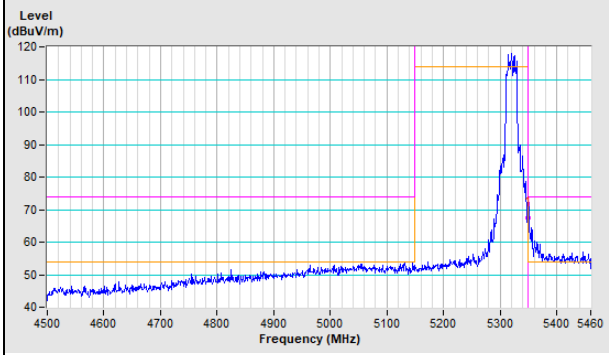


Vertical (Average)

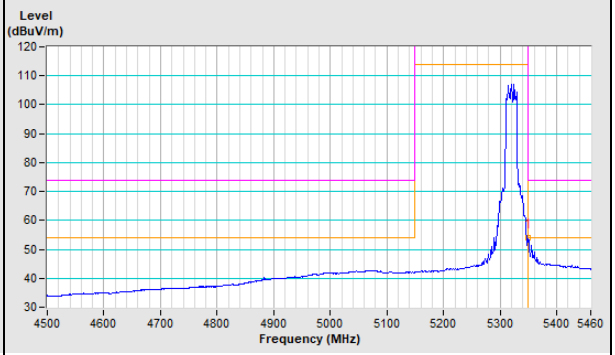


Channel 64

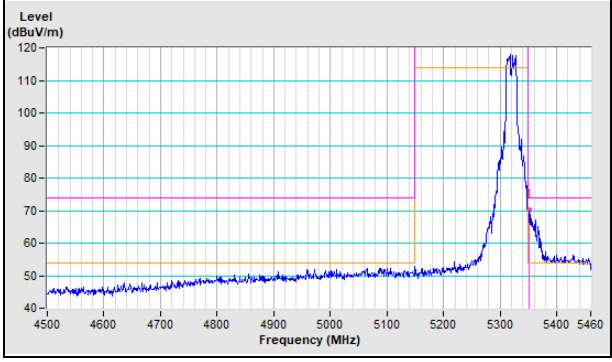
Horizontal (Peak)



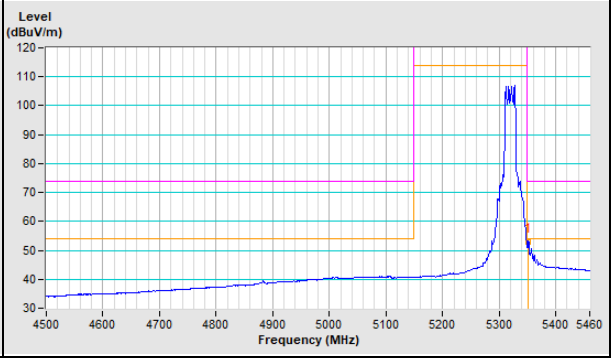
Horizontal (Average)

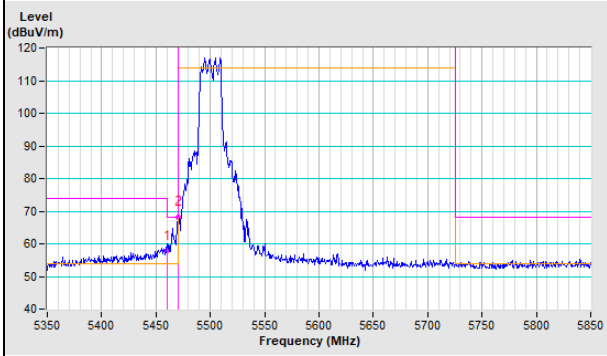
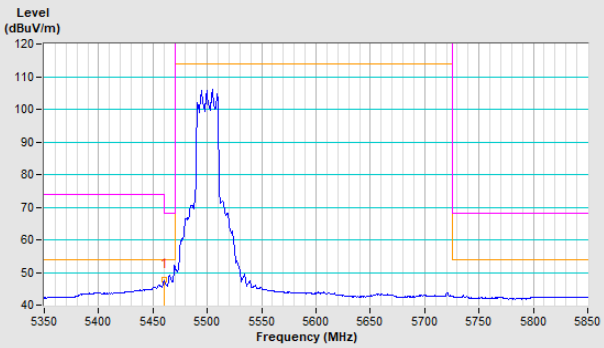
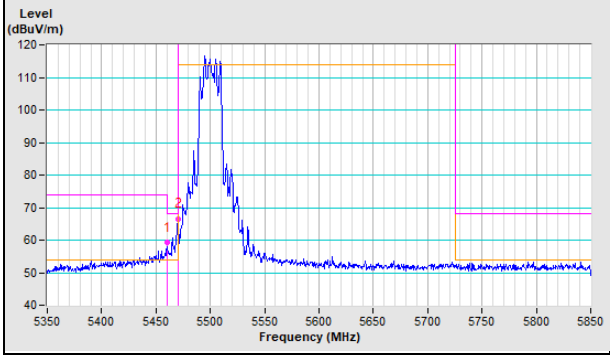
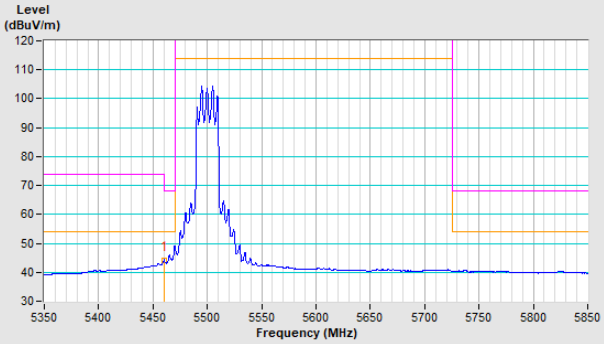


Vertical (Peak)



Vertical (Average)

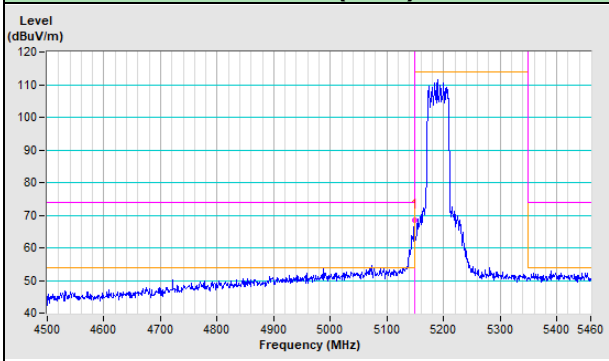


Channel 100	
Horizontal (Peak)	**Horizontal (Average)**
	
Vertical (Peak)	**Vertical (Average)**
	

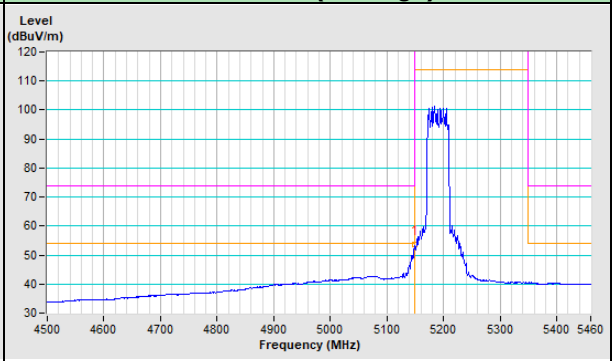
802.11ax (HE40)

Channel 38

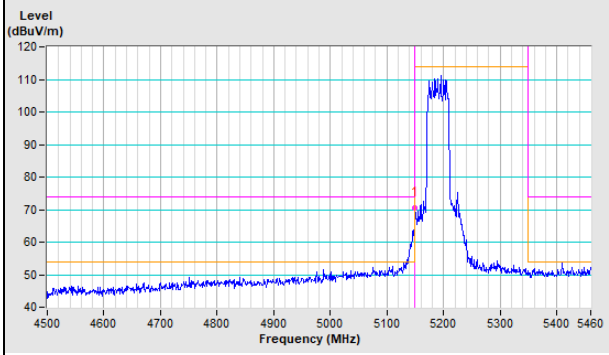
Horizontal (Peak)



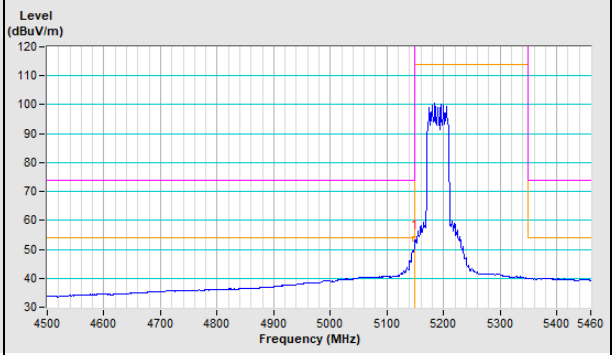
Horizontal (Average)



Vertical (Peak)

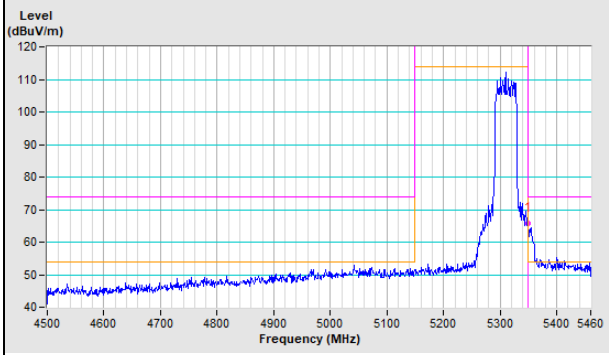


Vertical (Average)

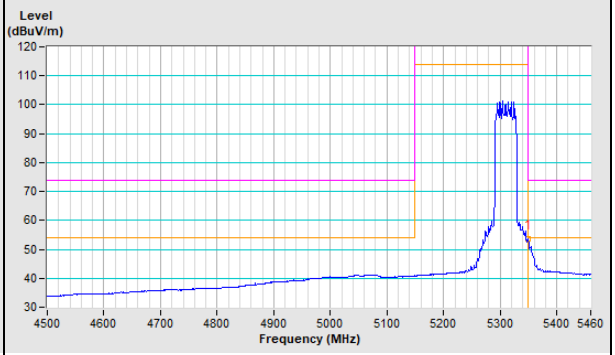


Channel 62

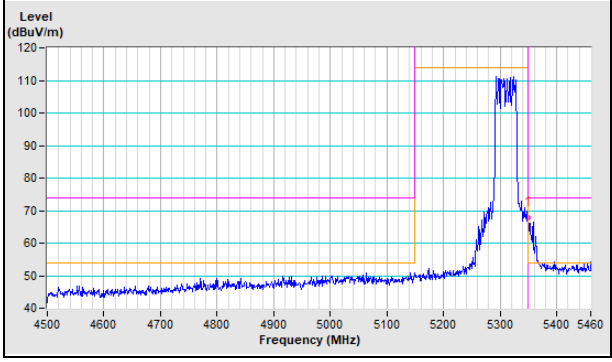
Horizontal (Peak)



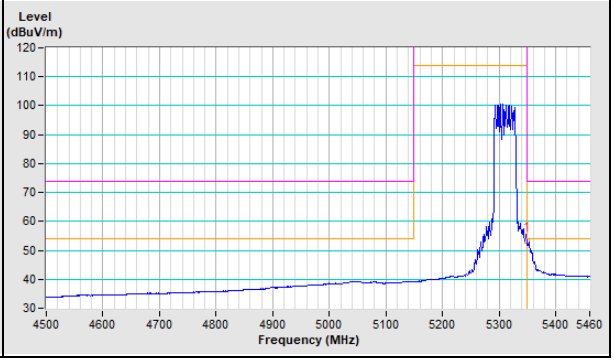
Horizontal (Average)

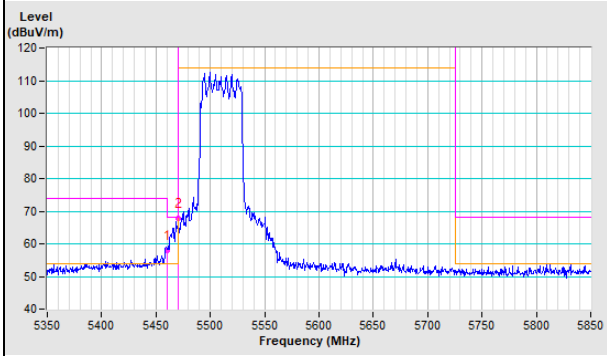
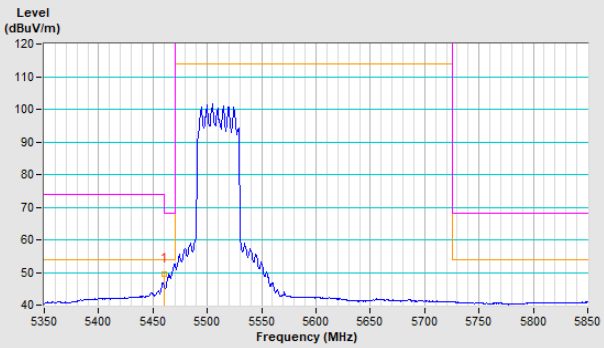
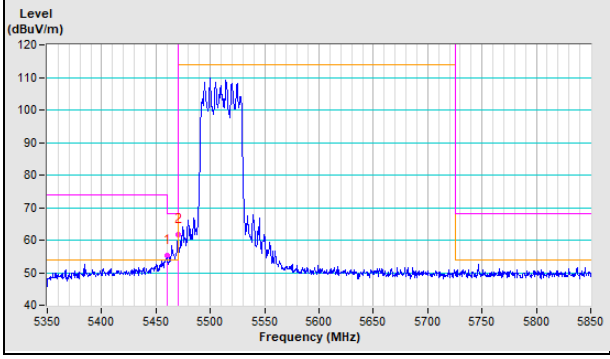
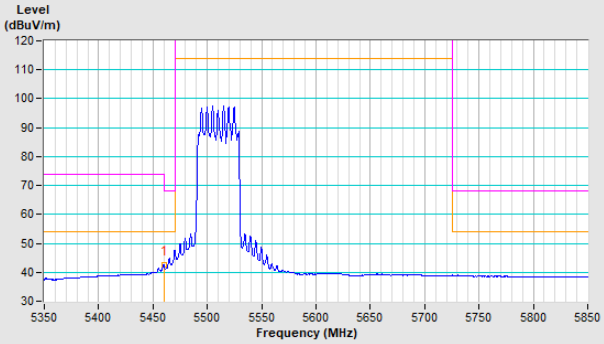


Vertical (Peak)



Vertical (Average)

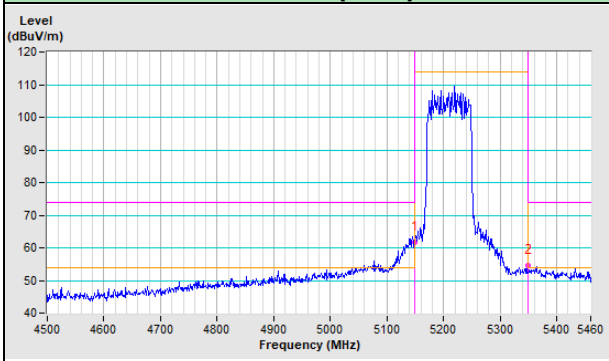


Channel 102	
Horizontal (Peak)	**Horizontal (Average)**
	
Vertical (Peak)	**Vertical (Average)**
	

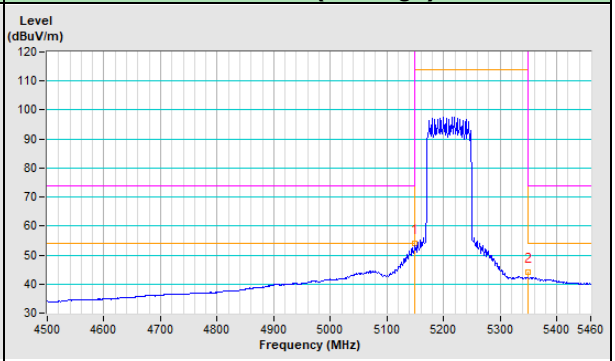
802.11ax (HE80)

Channel 42

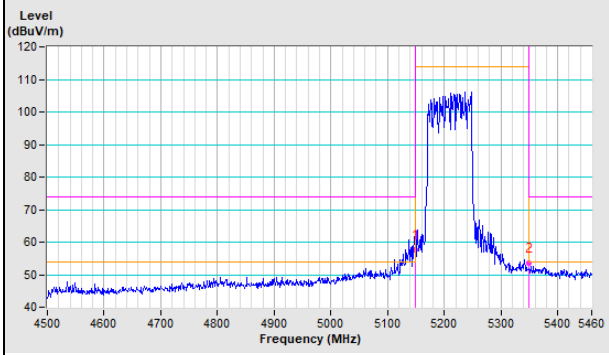
Horizontal (Peak)



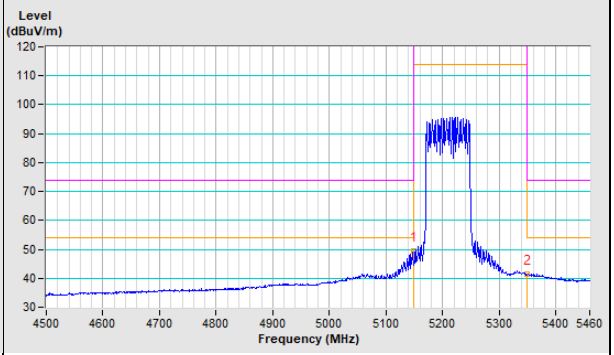
Horizontal (Average)



Vertical (Peak)

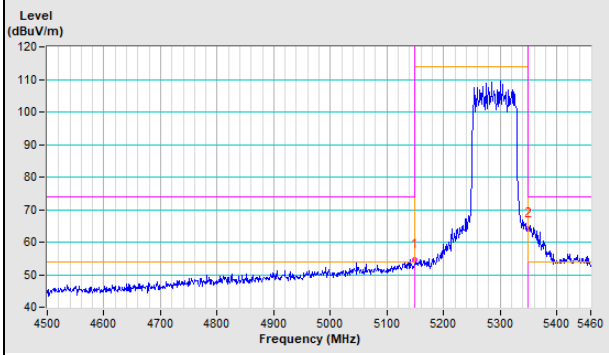


Vertical (Average)

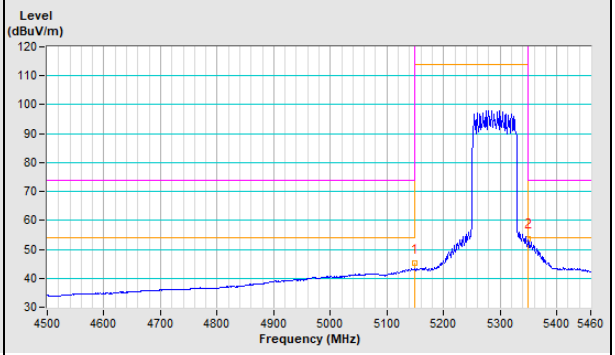


Channel 58

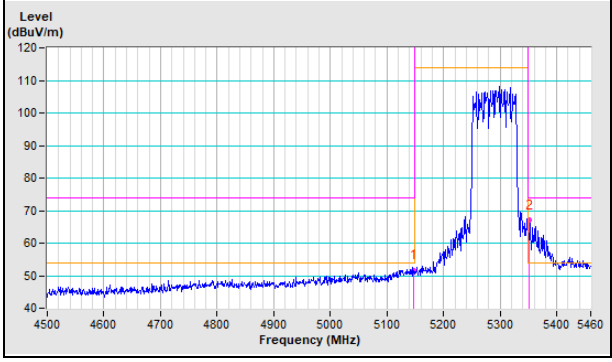
Horizontal (Peak)



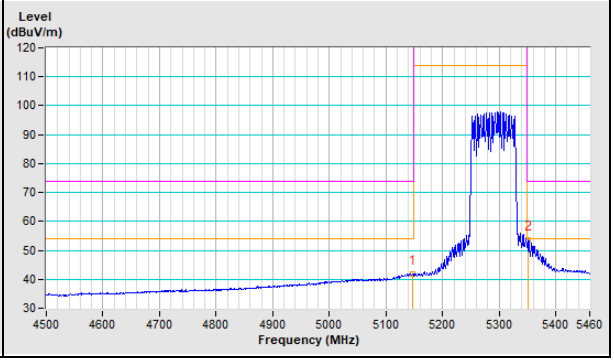
Horizontal (Average)

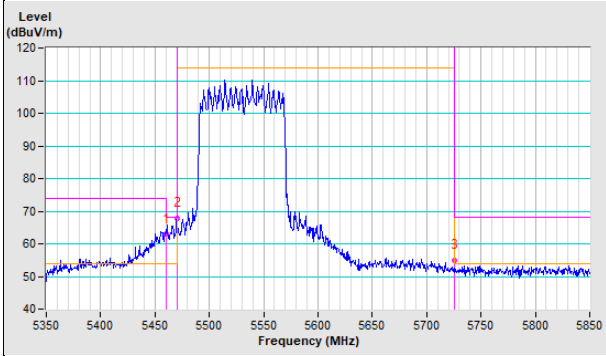
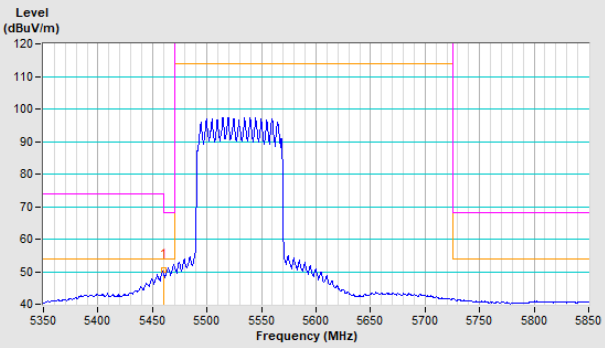
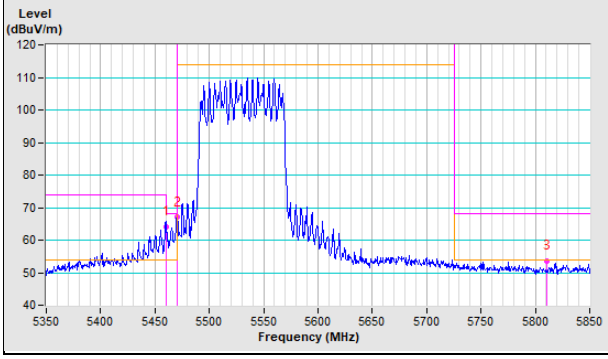
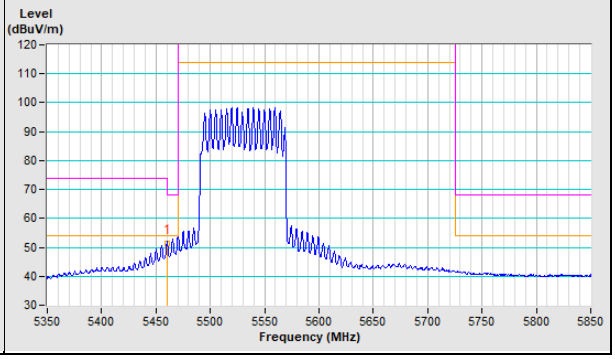


Vertical (Peak)

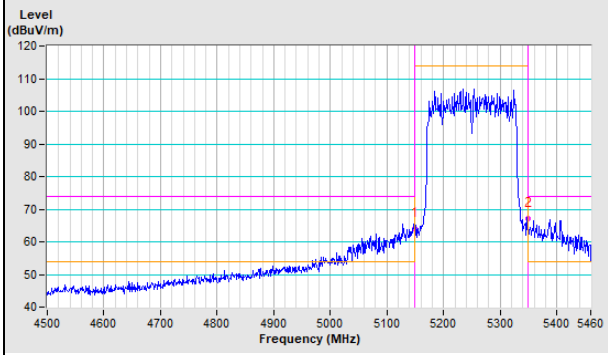
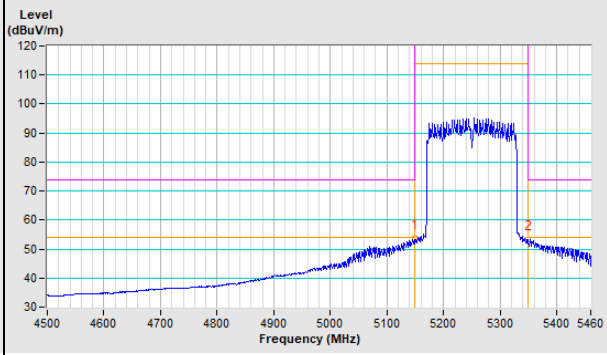
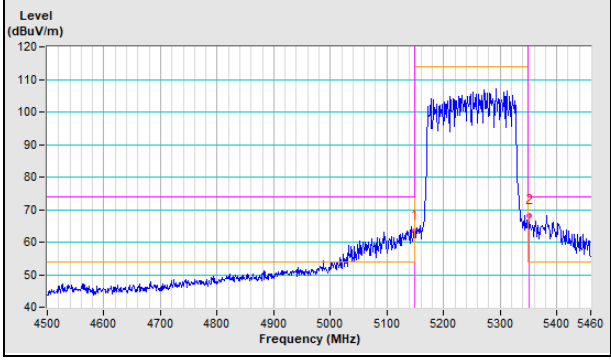
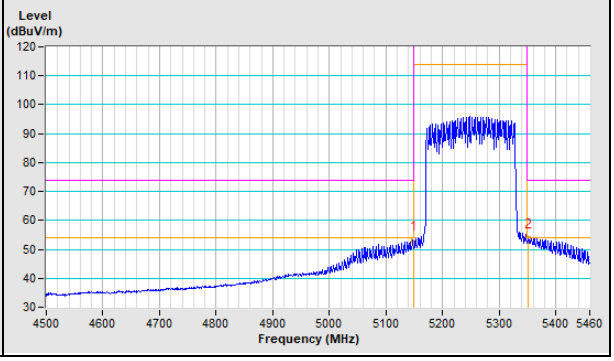


Vertical (Average)



Channel 106	
Horizontal (Peak)	**Horizontal (Average)**
	
Vertical (Peak)	**Vertical (Average)**
	

802.11ax (HE160)

Channel 50	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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