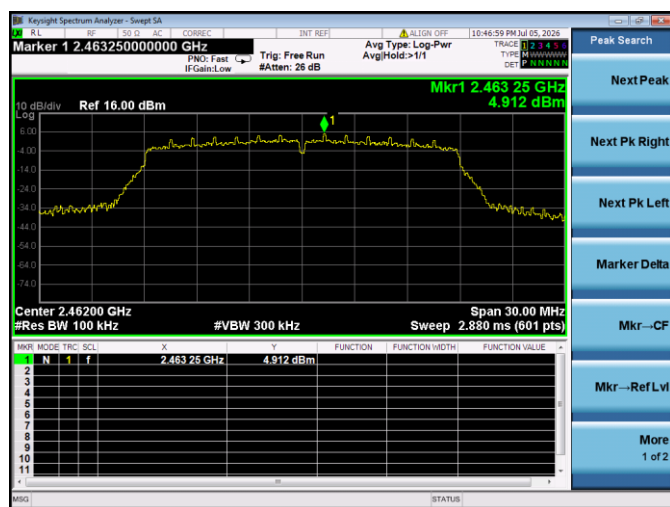
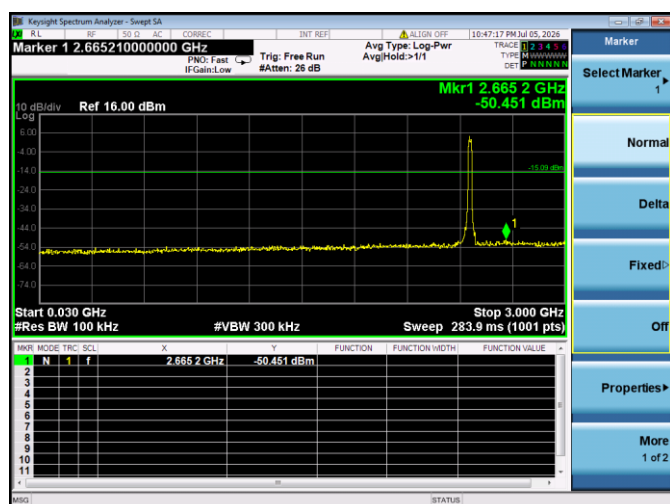
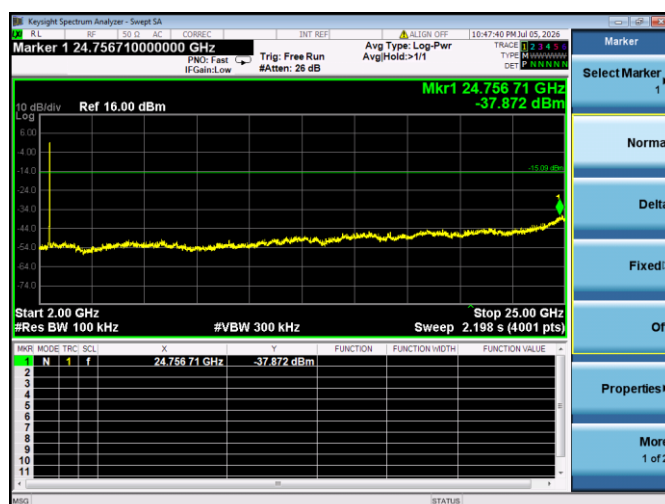


802.11n-20 MHz HIGH CHANNEL CARRIER LEVEL

802.11n-20 MHz HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz802.11n-20 MHz HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

A.4 Band Edge (Authorized-band band-edge)

Note ¹: The 99% OBW of the fundamental emission is without 2 MHz of the authorized band.

Test Data

ANT1

802.11b Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-45.46	1.70	-18.30	Pass
High Channel	-50.88	1.47	-18.53	Pass

802.11g Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-30.95	4.63	-15.38	Pass
High Channel	-44.06	5.33	-14.68	Pass

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-30.25	4.62	-15.38	Pass
High Channel	-41.52	5.32	-14.68	Pass

ANT2

802.11b Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-44.89	0.89	-19.11	Pass
High Channel	-51.72	1.09	-18.92	Pass

802.11g Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-32.97	3.82	-16.18	Pass
High Channel	-46.13	5.01	-14.99	Pass

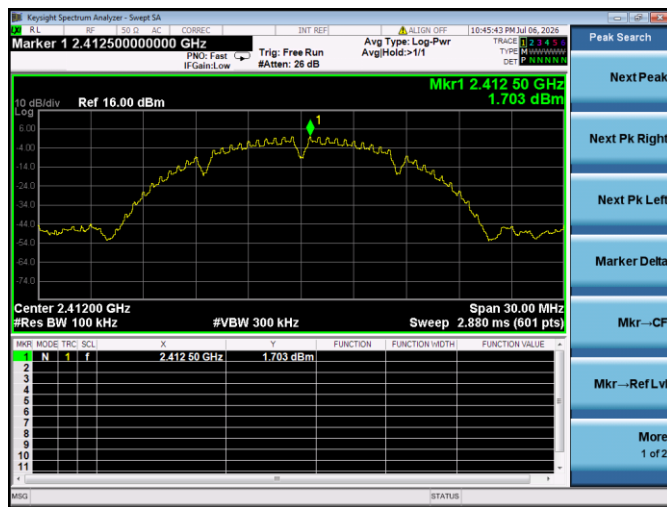
802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-32.62	3.84	-16.16	Pass
High Channel	-45.47	4.91	-15.09	Pass

Test Plots

ANT1

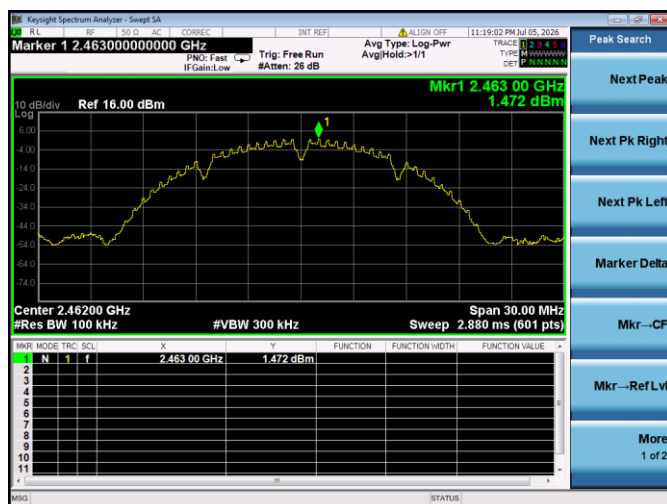
802.11b LOW CHANNEL, CARRIER LEVEL



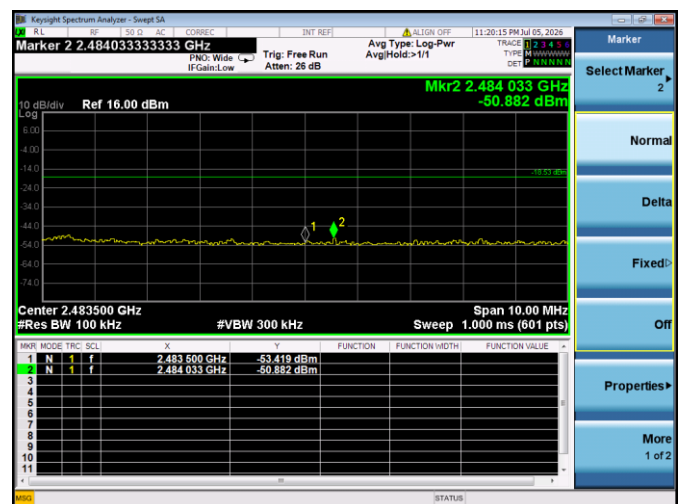
802.11b LOW CHANNEL, BAND EDGE



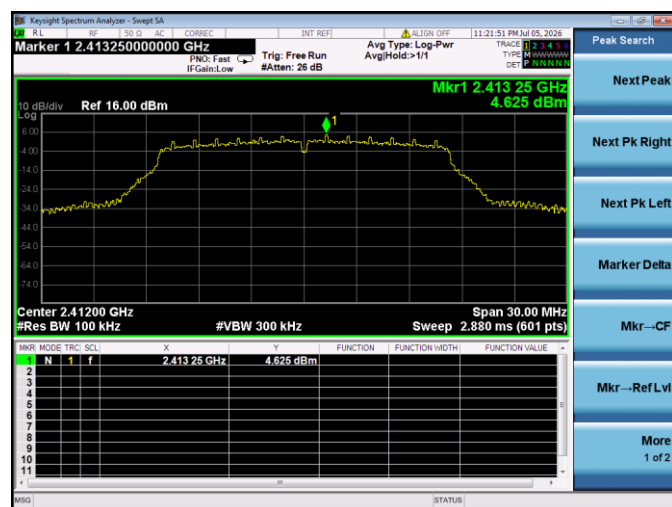
802.11b HIGH CHANNEL, CARRIER LEVEL



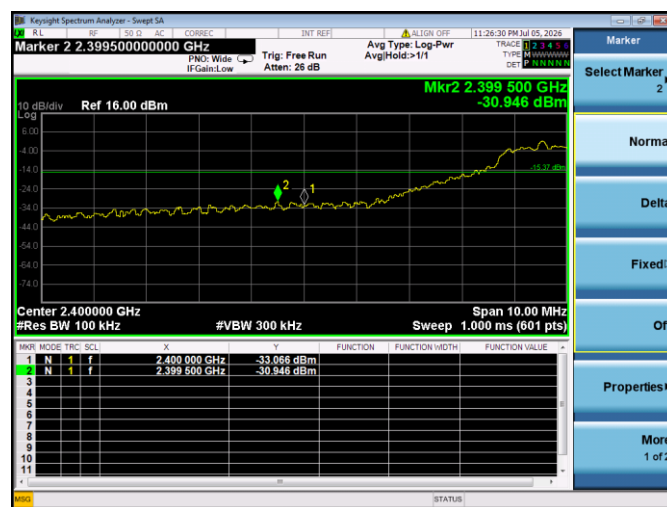
802.11b HIGH CHANNEL, BAND EDGE



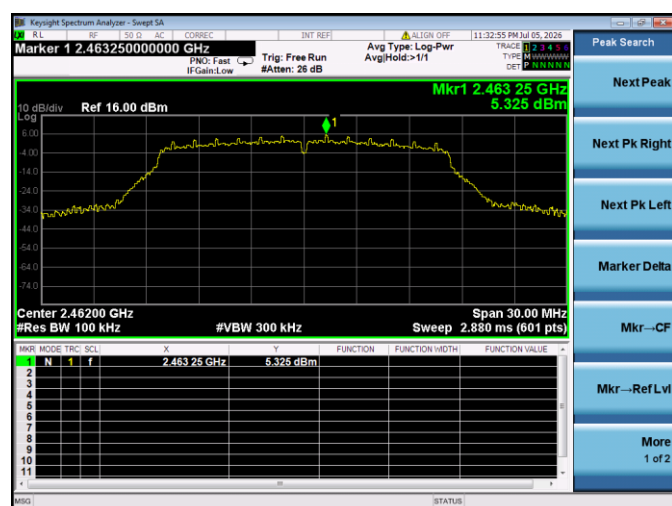
802.11g LOW CHANNEL, CARRIER LEVEL



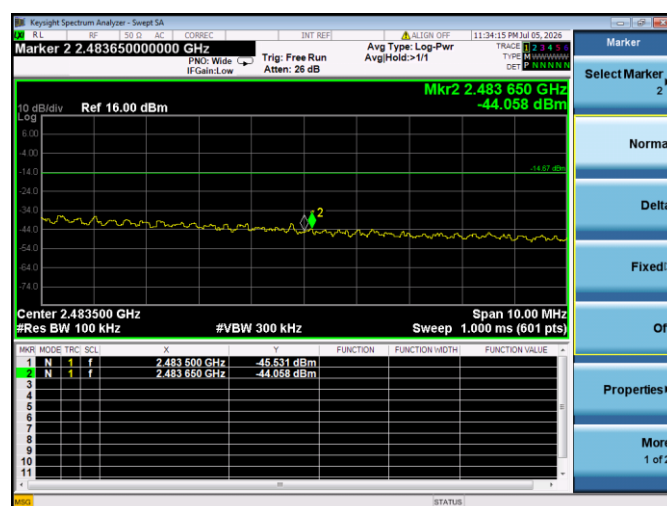
802.11g LOW CHANNEL, BAND EDGE



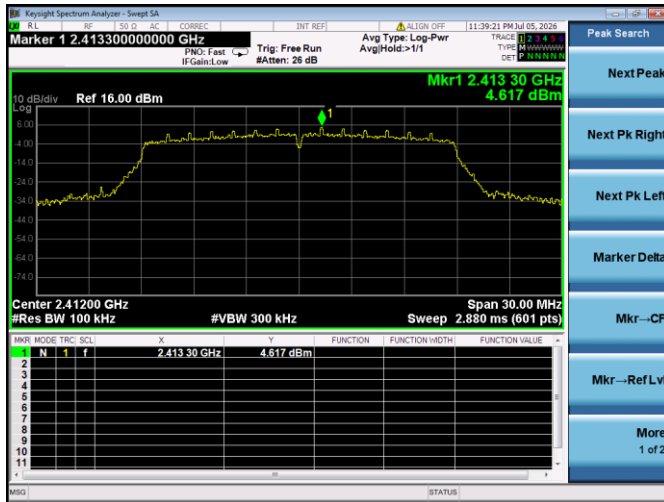
802.11g HIGH CHANNEL, CARRIER LEVEL



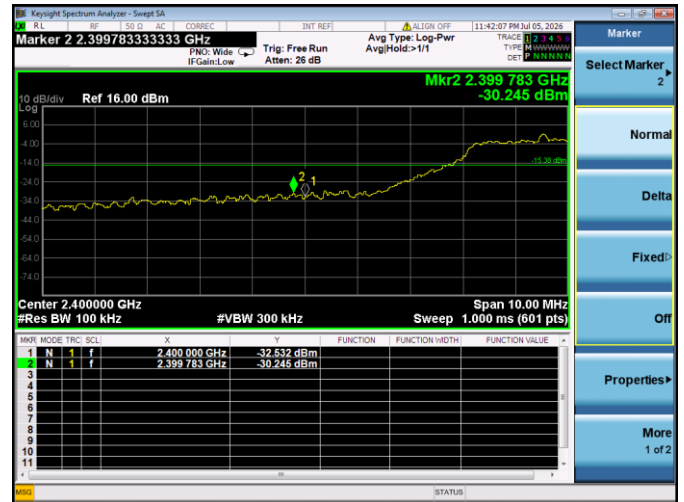
802.11g HIGH CHANNEL, BAND EDGE



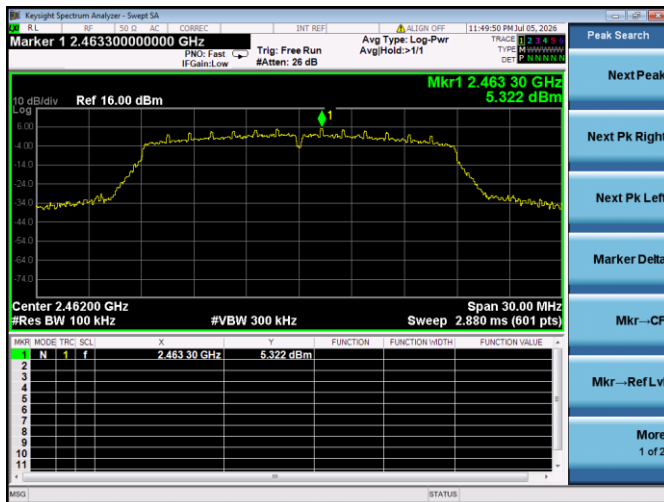
802.11n-20 MHz LOW CHANNEL, CARRIER LEVEL



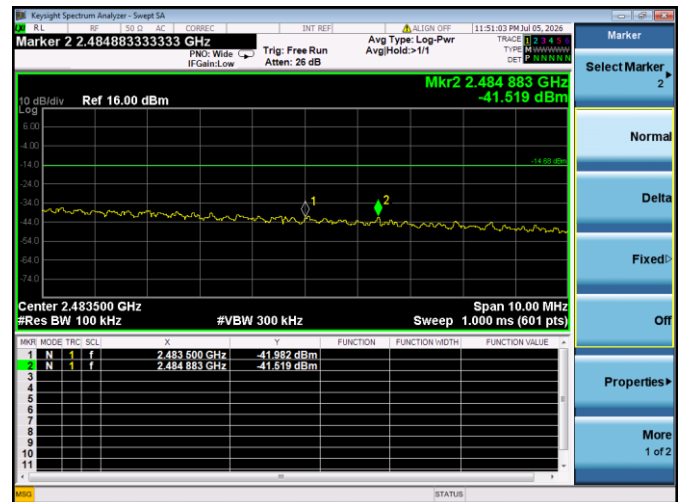
802.11n-20 MHz LOW CHANNEL, BAND EDGE



802.11n-20 MHz HIGH CHANNEL, CARRIER LEVEL

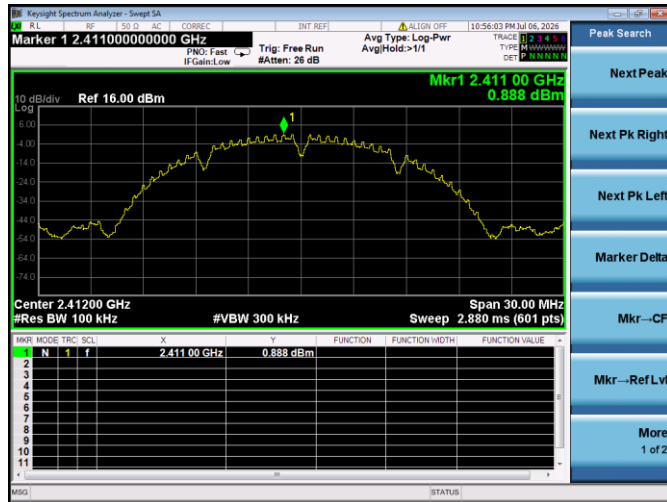


802.11n-20 MHz HIGH CHANNEL, BAND EDGE

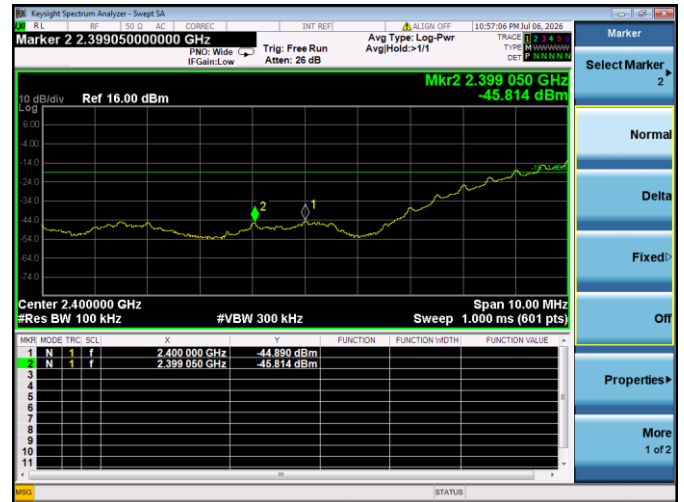


ANT2

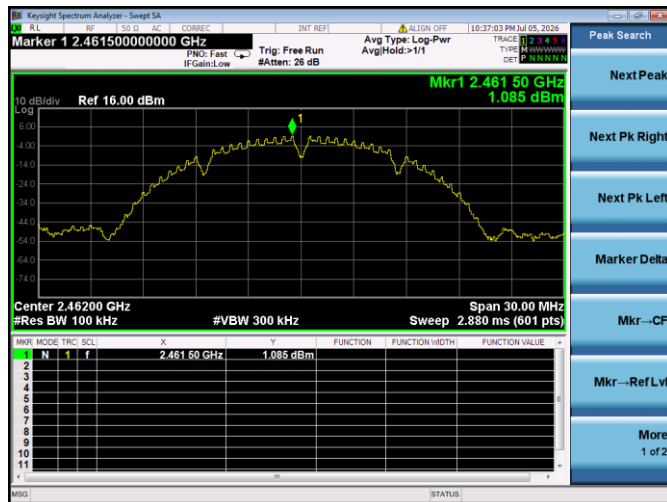
802.11b LOW CHANNEL, CARRIER LEVEL



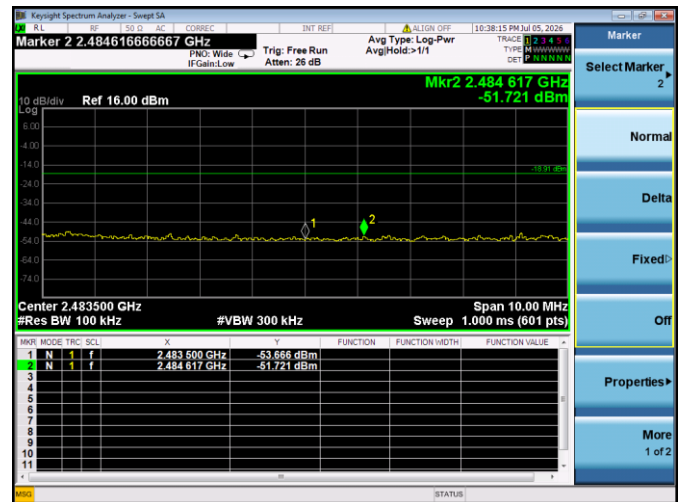
802.11b LOW CHANNEL, BAND EDGE



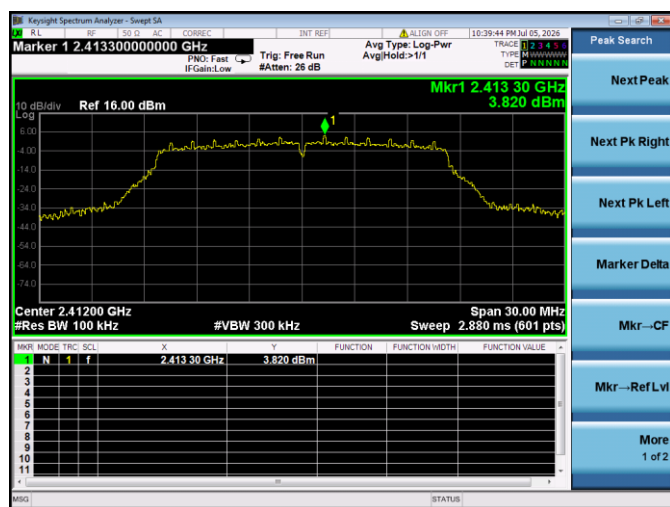
802.11b HIGH CHANNEL, CARRIER LEVEL



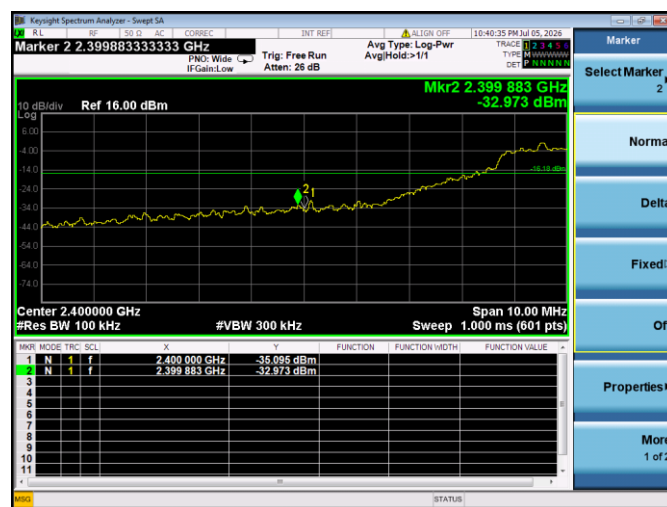
802.11b HIGH CHANNEL, BAND EDGE



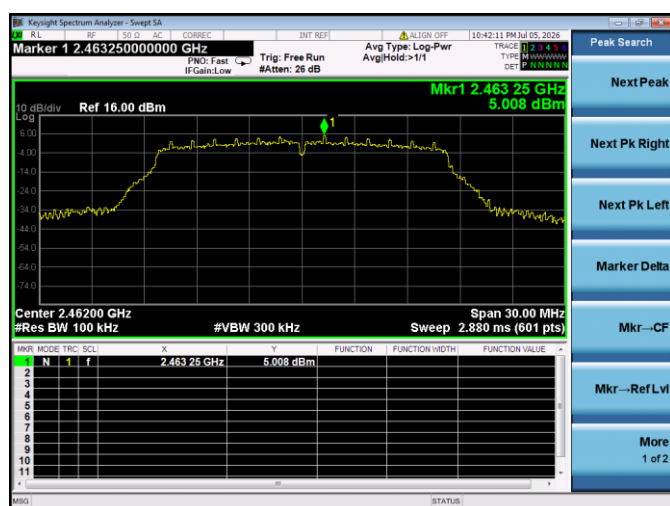
802.11g LOW CHANNEL, CARRIER LEVEL



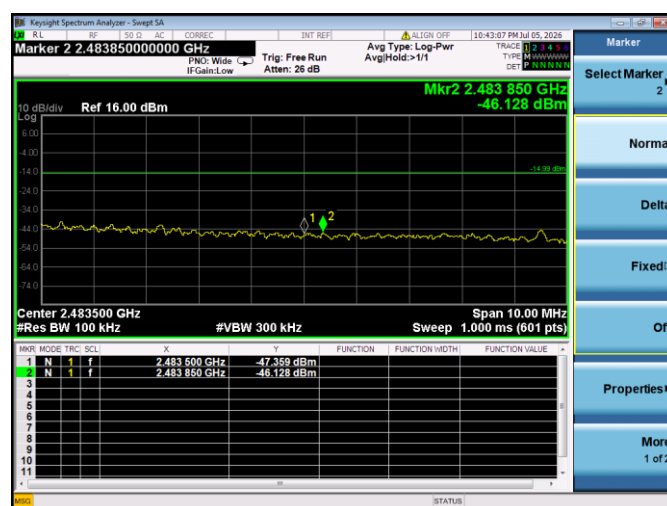
802.11g LOW CHANNEL, BAND EDGE



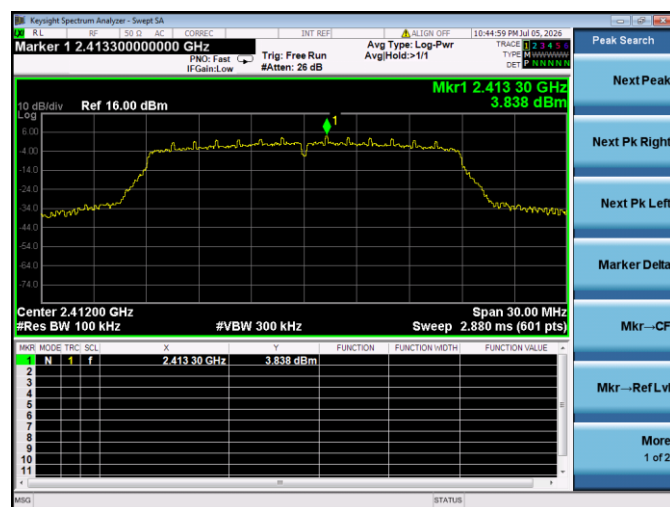
802.11g HIGH CHANNEL, CARRIER LEVEL



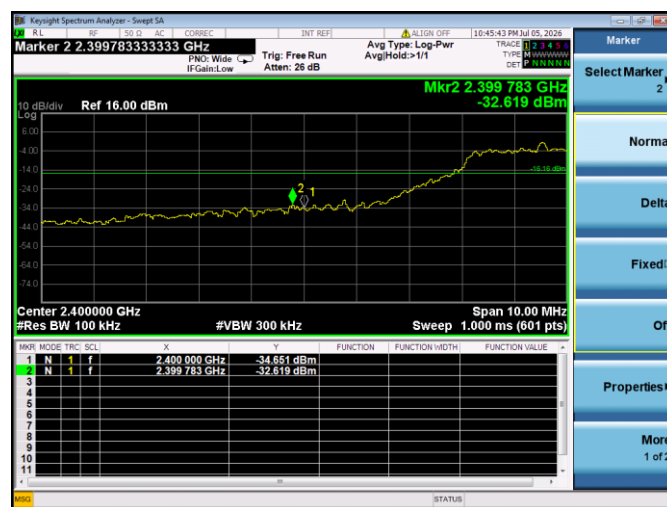
802.11g HIGH CHANNEL, BAND EDGE



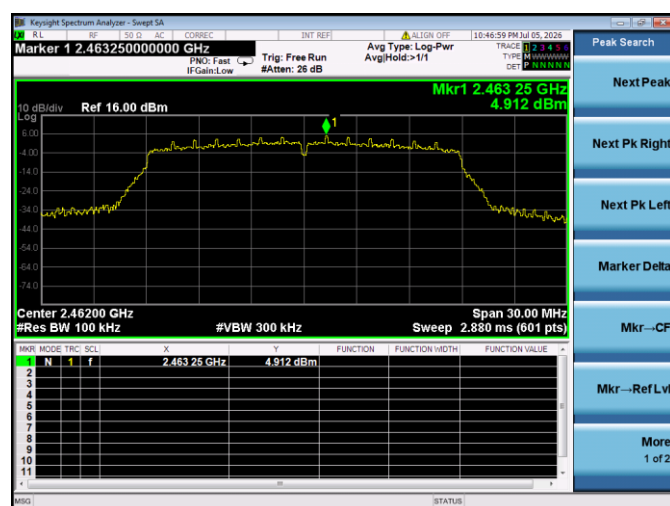
802.11n-20 MHz LOW CHANNEL, CARRIER LEVEL



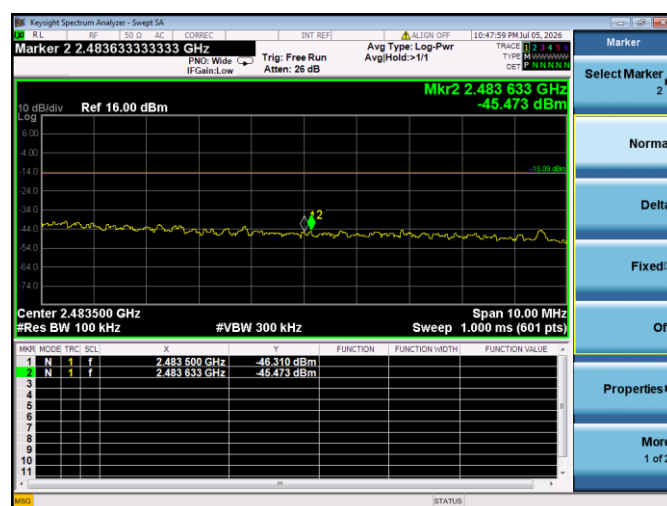
802.11n-20 MHz LOW CHANNEL, BAND EDGE



802.11n-20 MHz HIGH CHANNEL, CARRIER LEVEL



802.11n-20 MHz HIGH CHANNEL, BAND EDGE



A.5 Conducted Emissions

Note: Not applicable.

A.6 Radiated Emission

Note¹: The symbol of “--” in the table which means not application.

Note²: For the test data above 1 GHz, According the ANSI C63.10-2020, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

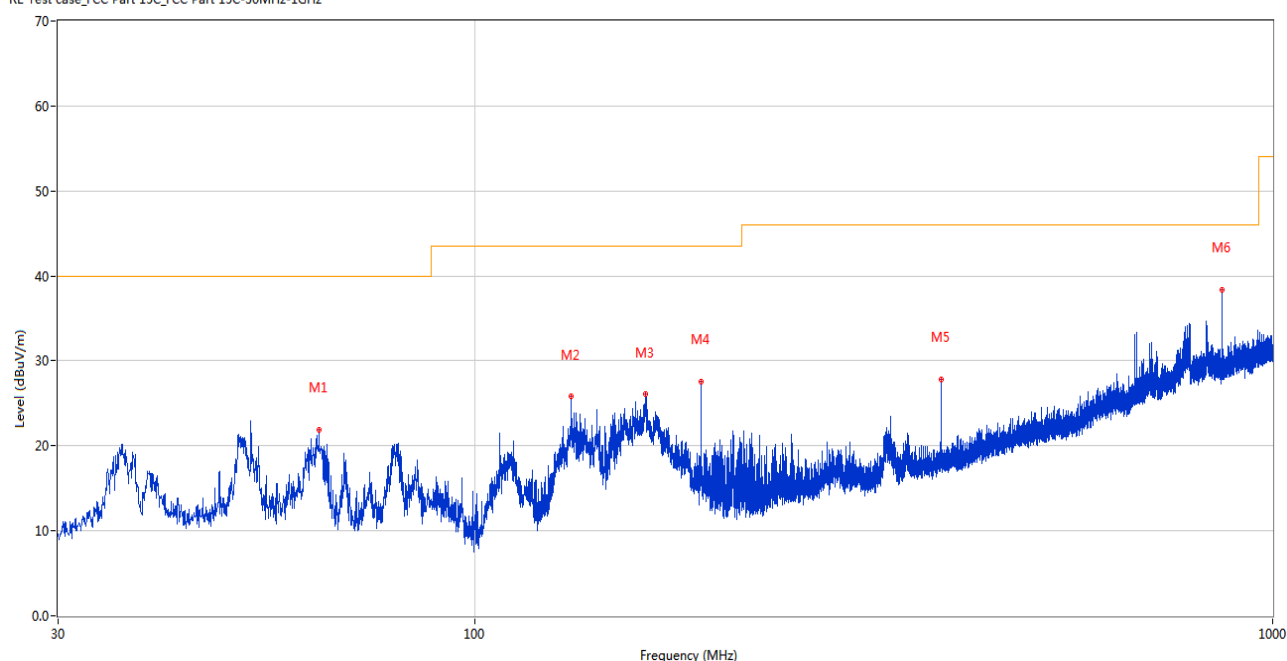
Note³: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note⁴: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

Test Data and Plots

30 MHz to 1 GHz, ANT H

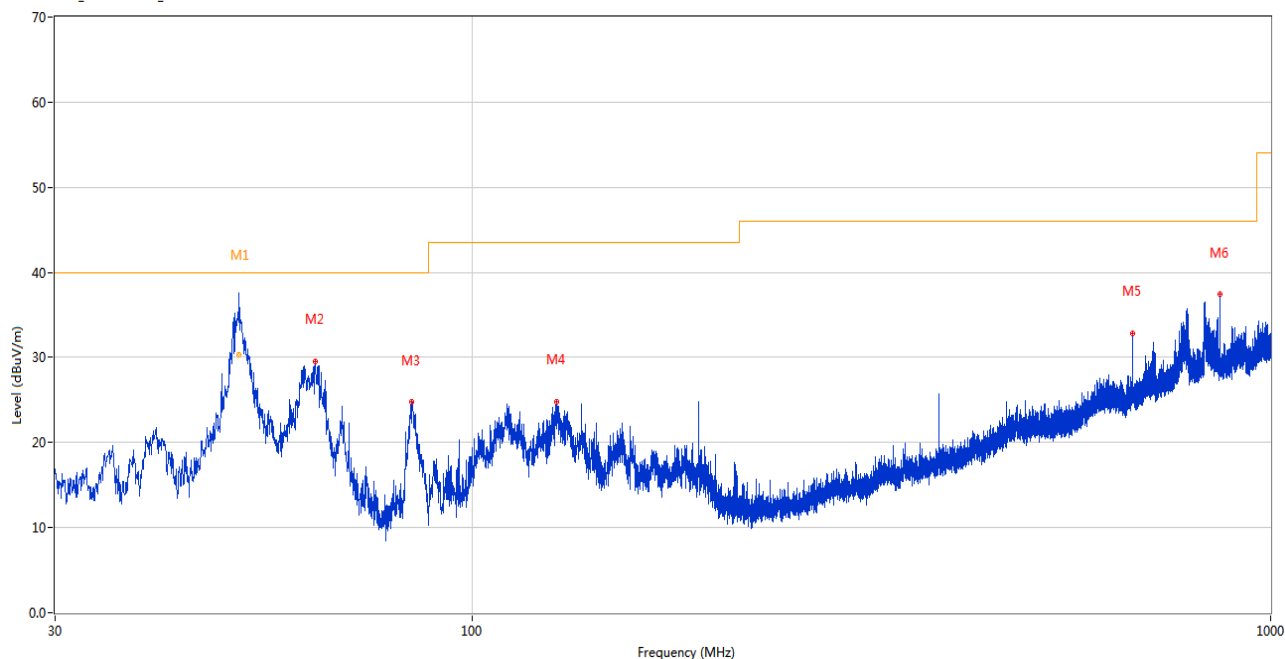
RE Test case_FCC Part 15C_FCC Part 15C-30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	63.756	21.91	-26.14	40.0	18.09	Peak	347.00	100	Horizontal	Pass
2	131.995	25.78	-25.32	43.5	17.72	Peak	110.00	200	Horizontal	Pass
3	163.327	26.05	-23.62	43.5	17.45	Peak	100.00	200	Horizontal	Pass
4	192.038	27.54	-26.54	43.5	15.96	Peak	268.00	200	Horizontal	Pass
5	384.098	27.77	-19.48	46.0	18.23	Peak	251.00	100	Horizontal	Pass
6	864.200	38.33	-8.97	46.0	7.67	Peak	231.00	100	Horizontal	Pass

30 MHz to 1 GHz, ANT V

RE Test case_FCC Part 15C_FCC Part 15C-30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.965	34.84	-24.83	40.0	5.16	Peak	56.00	185	Vertical	N/A
1*	50.965	30.33	-24.83	40.0	9.67	QP	56.00	185	Vertical	Pass
2	63.514	29.54	-26.09	40.0	10.46	Peak	165.00	100	Vertical	Pass
3	83.786	24.72	-29.55	40.0	15.28	Peak	165.00	100	Vertical	Pass
4	127.534	24.78	-26.15	43.5	18.72	Peak	320.00	100	Vertical	Pass
5	672.140	32.79	-11.58	46.0	13.21	Peak	0.00	100	Vertical	Pass
6	864.248	37.38	-8.97	46.0	8.62	Peak	281.00	100	Vertical	Pass

Note¹: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

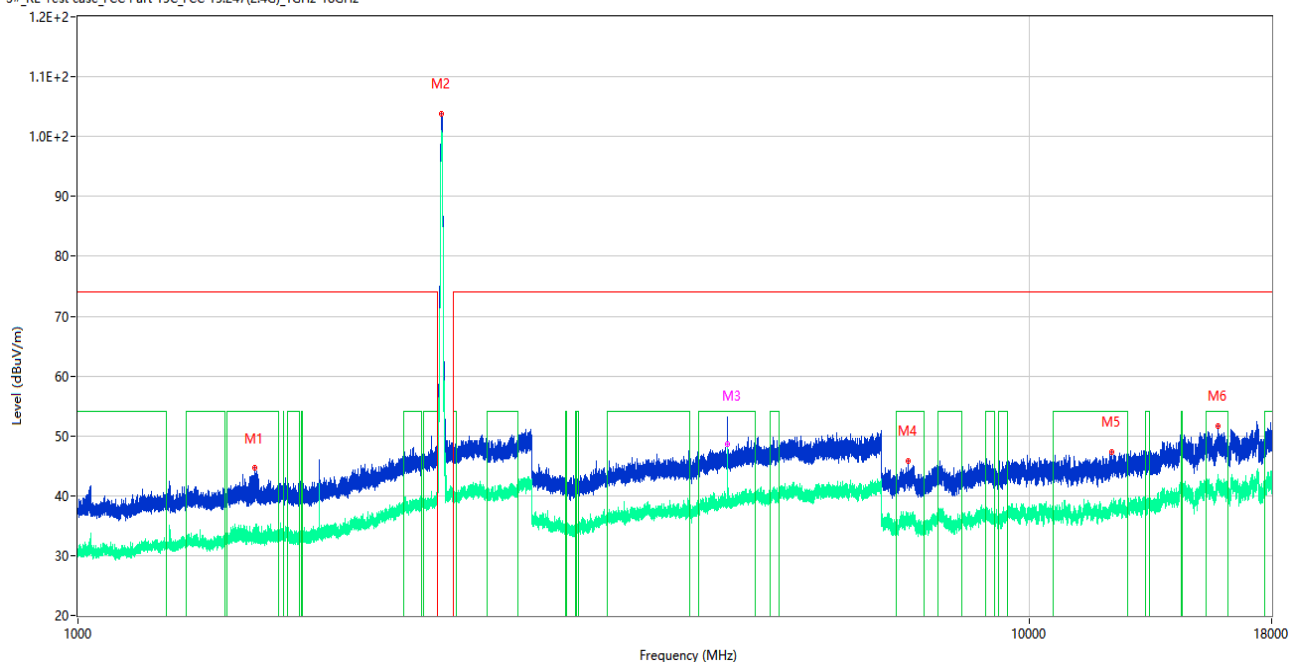
Note²: The spurious above 18G is noise only, do not show on the report.

Note³: All antenna were pre tested, but only the worst case has been reported in this report.

MIMO

1 GHz to 18 GHz, ANT H 802.11b Low Channel

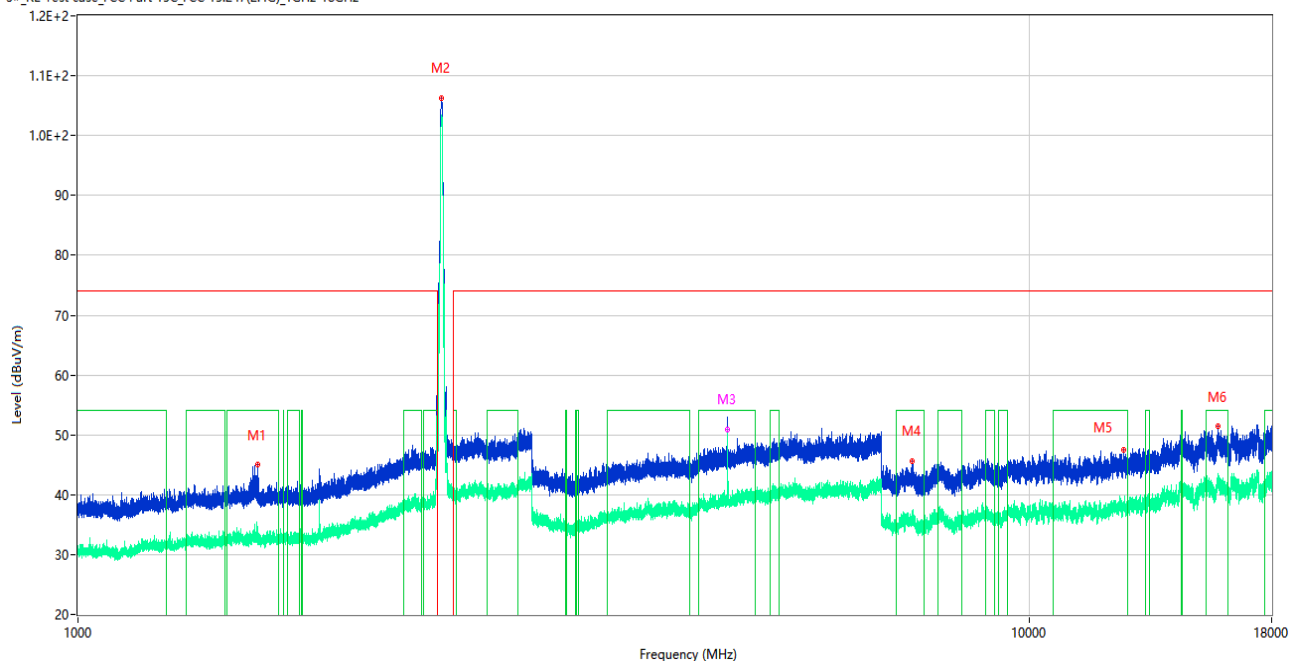
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1535.800	44.60	74.0	29.40	Peak	207.00	300	Horizontal	Pass
1**	1535.800	32.78	54.0	21.22	AV	207.00	300	Horizontal	Pass
2	2413.200	103.87	--	--	Peak	264.00	200	Horizontal	N/A
2**	2413.200	100.94	--	--	AV	264.00	200	Horizontal	N/A
3	4824.000	52.19	74.0	21.81	Peak	272.00	150	Horizontal	Pass
3**	4824.000	48.69	54.0	5.31	AV	272.00	150	Horizontal	Pass
4	7468.050	45.85	74.0	28.15	Peak	293.00	200	Horizontal	Pass
4**	7468.050	35.86	54.0	18.14	AV	293.00	200	Horizontal	Pass
5	12213.526	47.37	74.0	26.63	Peak	0.00	150	Horizontal	Pass
5**	12213.526	38.10	54.0	15.90	AV	0.00	150	Horizontal	Pass
6	15802.613	51.68	74.0	22.32	Peak	324.00	300	Horizontal	Pass
6**	15802.613	42.19	54.0	11.81	AV	324.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Low Channel

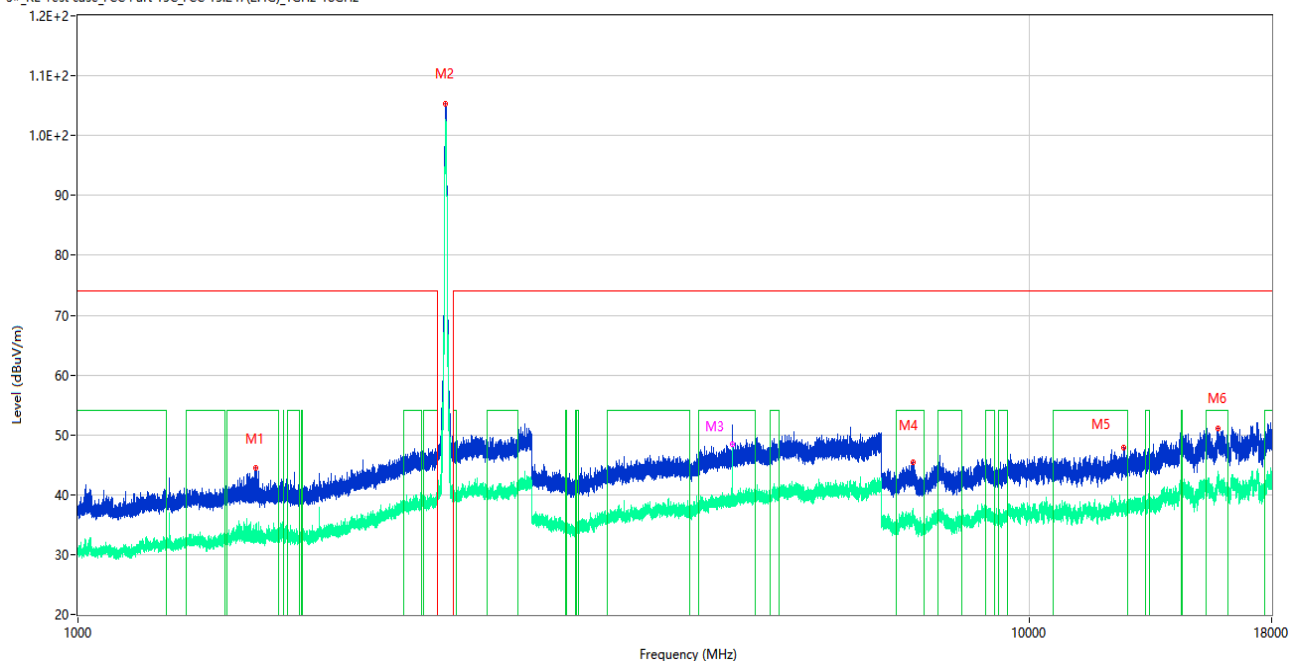
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1545.500	44.96	74.0	29.04	Peak	112.00	200	Vertical	Pass
1**	1545.500	33.46	54.0	20.54	AV	112.00	200	Vertical	Pass
2	2410.600	106.25	--	--	Peak	259.00	150	Vertical	N/A
2**	2410.600	103.40	--	--	AV	259.00	150	Vertical	N/A
3	4824.000	53.55	74.0	20.45	Peak	249.00	150	Vertical	Pass
3**	4824.000	50.99	54.0	3.01	AV	249.00	150	Vertical	Pass
4	7545.675	45.65	74.0	28.35	Peak	50.00	200	Vertical	Pass
4**	7545.675	36.82	54.0	17.18	AV	50.00	200	Vertical	Pass
5	12591.013	47.50	74.0	26.50	Peak	360.00	200	Vertical	Pass
5**	12591.013	38.53	54.0	15.47	AV	360.00	200	Vertical	Pass
6	15803.400	51.43	74.0	22.57	Peak	18.00	100	Vertical	Pass
6**	15803.400	42.28	54.0	11.72	AV	18.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Middle Channel

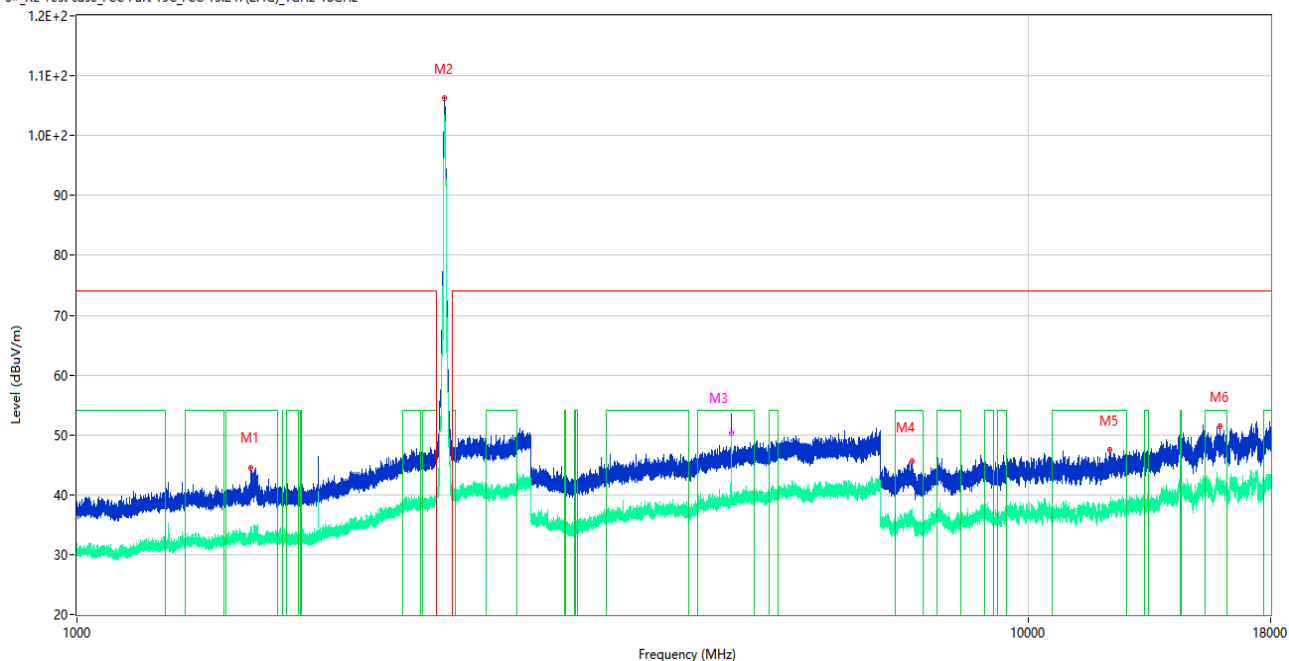
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1539.400	44.44	74.0	29.56	Peak	360.00	100	Horizontal	Pass
1**	1539.400	33.86	54.0	20.14	AV	360.00	100	Horizontal	Pass
2	2435.800	105.40	--	--	Peak	260.00	200	Horizontal	N/A
2**	2435.800	102.64	--	--	AV	260.00	200	Horizontal	N/A
3	4874.200	50.65	74.0	23.35	Peak	273.00	150	Horizontal	Pass
3**	4874.200	48.45	54.0	5.55	AV	273.00	150	Horizontal	Pass
4	7546.825	45.45	74.0	28.55	Peak	255.00	100	Horizontal	Pass
4**	7546.825	36.40	54.0	17.60	AV	255.00	100	Horizontal	Pass
5	12578.076	47.78	74.0	26.22	Peak	341.00	150	Horizontal	Pass
5**	12578.076	37.48	54.0	16.52	AV	341.00	150	Horizontal	Pass
6	15808.125	51.15	74.0	22.85	Peak	172.00	200	Horizontal	Pass
6**	15808.125	41.72	54.0	12.28	AV	172.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Middle Channel

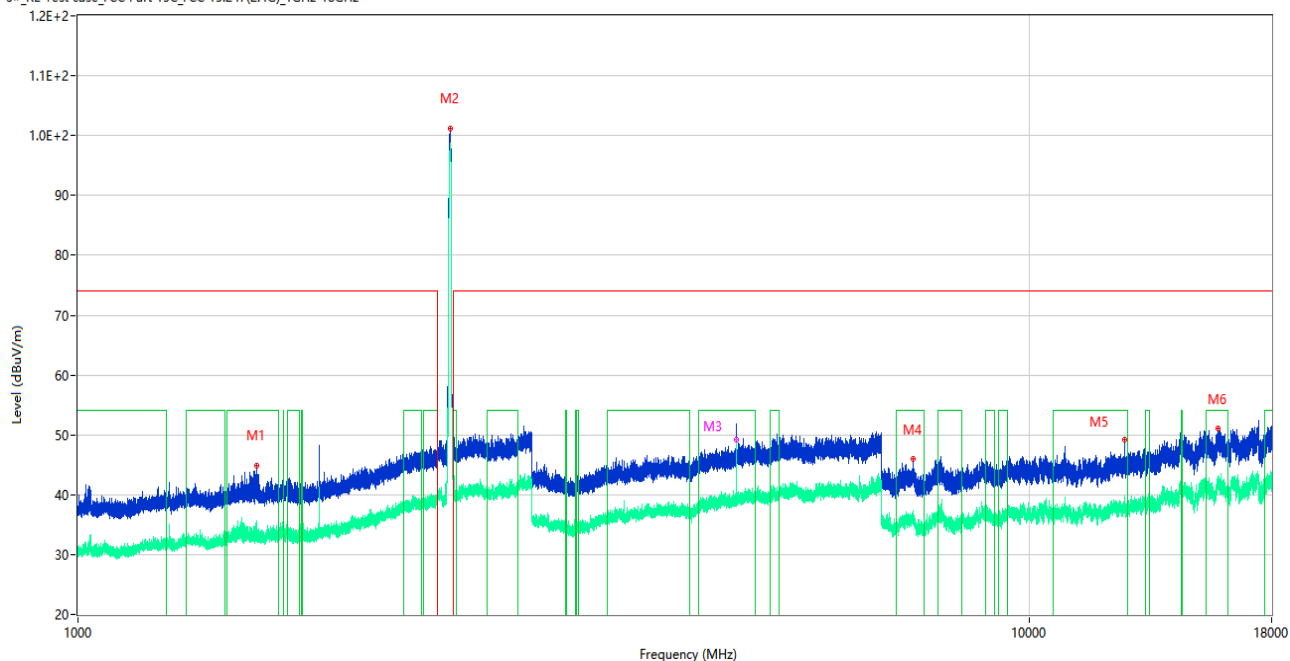
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1525.000	44.57	74.0	29.43	Peak	114.00	100	Vertical	Pass
1**	1525.000	34.62	54.0	19.38	AV	114.00	100	Vertical	Pass
2	2435.400	106.24	--	--	Peak	203.00	100	Vertical	N/A
2**	2435.400	103.45	--	--	AV	203.00	100	Vertical	N/A
3	4874.200	53.44	74.0	20.56	Peak	249.00	150	Vertical	Pass
3**	4874.200	50.26	54.0	3.74	AV	249.00	150	Vertical	Pass
4	7549.125	45.62	74.0	28.38	Peak	49.00	200	Vertical	Pass
4**	7549.125	36.64	54.0	17.36	AV	49.00	200	Vertical	Pass
5	12190.812	47.45	74.0	26.55	Peak	257.00	100	Vertical	Pass
5**	12190.812	37.90	54.0	16.10	AV	257.00	100	Vertical	Pass
6	15913.388	51.44	74.0	22.56	Peak	230.00	200	Vertical	Pass
6**	15913.388	40.98	54.0	13.02	AV	230.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b High Channel

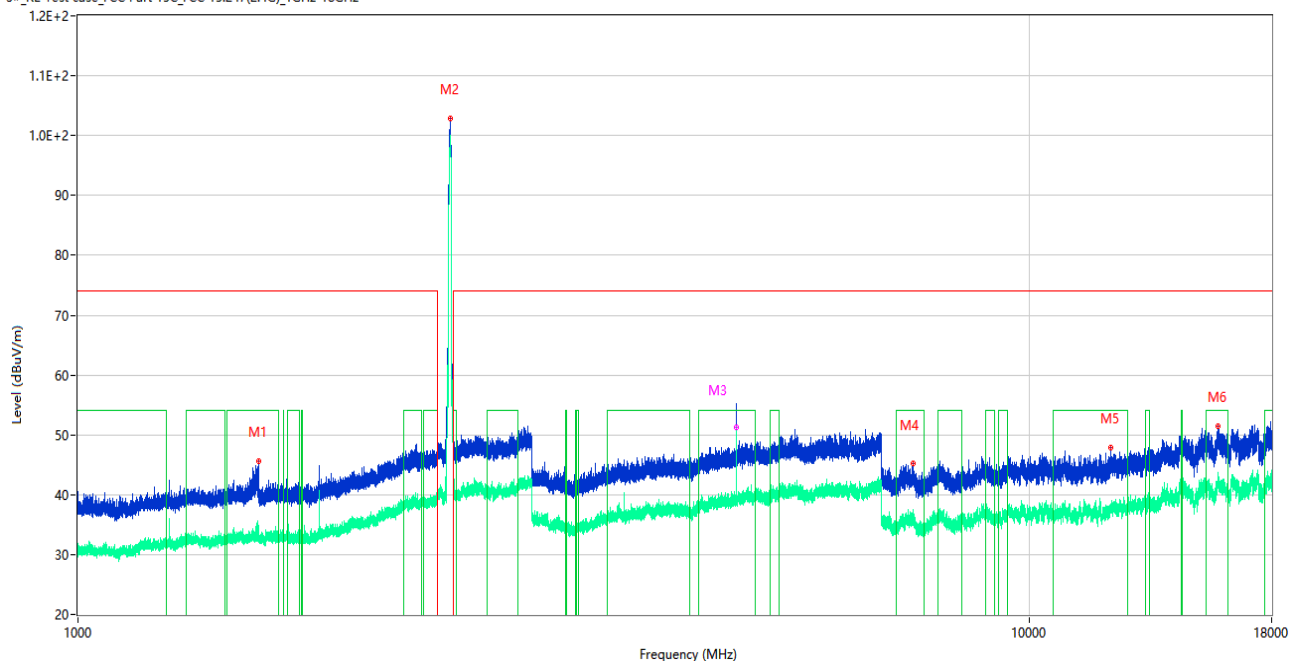
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1541.800	44.93	74.0	29.07	Peak	212.00	200	Horizontal	Pass
1**	1541.800	33.34	54.0	20.66	AV	212.00	200	Horizontal	Pass
2	2463.700	101.24	--	--	Peak	255.00	100	Horizontal	N/A
2**	2463.700	98.37	--	--	AV	255.00	100	Horizontal	N/A
3	4924.200	51.77	74.0	22.23	Peak	233.00	150	Horizontal	Pass
3**	4924.200	49.13	54.0	4.87	AV	233.00	150	Horizontal	Pass
4	7558.325	45.91	74.0	28.09	Peak	360.00	200	Horizontal	Pass
4**	7558.325	36.03	54.0	17.97	AV	360.00	200	Horizontal	Pass
5	12612.862	49.10	74.0	24.90	Peak	294.00	150	Horizontal	Pass
5**	12612.862	37.78	54.0	16.22	AV	294.00	150	Horizontal	Pass
6	15808.388	51.06	74.0	22.94	Peak	0.00	400	Horizontal	Pass
6**	15808.388	42.56	54.0	11.44	AV	0.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b High Channel

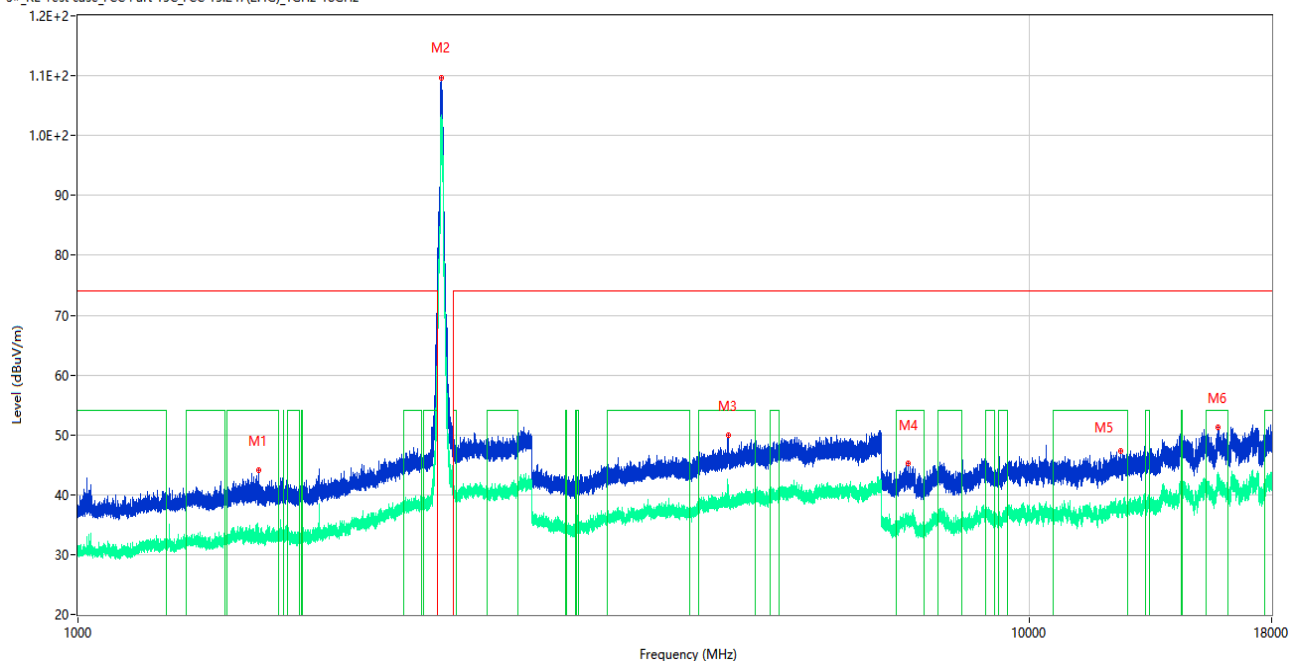
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1548.200	45.53	74.0	28.47	Peak	97.00	200	Vertical	Pass
1**	1548.200	32.94	54.0	21.06	AV	97.00	200	Vertical	Pass
2	2463.600	102.78	--	--	Peak	222.00	200	Vertical	N/A
2**	2463.600	99.99	--	--	AV	222.00	200	Vertical	N/A
3	4924.200	55.15	74.0	18.85	Peak	252.00	150	Vertical	Pass
3**	4924.200	50.98	54.0	3.02	AV	252.00	150	Vertical	Pass
4	7553.150	45.15	74.0	28.85	Peak	311.00	200	Vertical	Pass
4**	7553.150	36.87	54.0	17.13	AV	311.00	200	Vertical	Pass
5	12191.963	47.78	74.0	26.22	Peak	0.00	100	Vertical	Pass
5**	12191.963	37.42	54.0	16.58	AV	0.00	100	Vertical	Pass
6	15799.987	51.42	74.0	22.58	Peak	221.00	150	Vertical	Pass
6**	15799.987	42.01	54.0	11.99	AV	221.00	150	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Low Channel

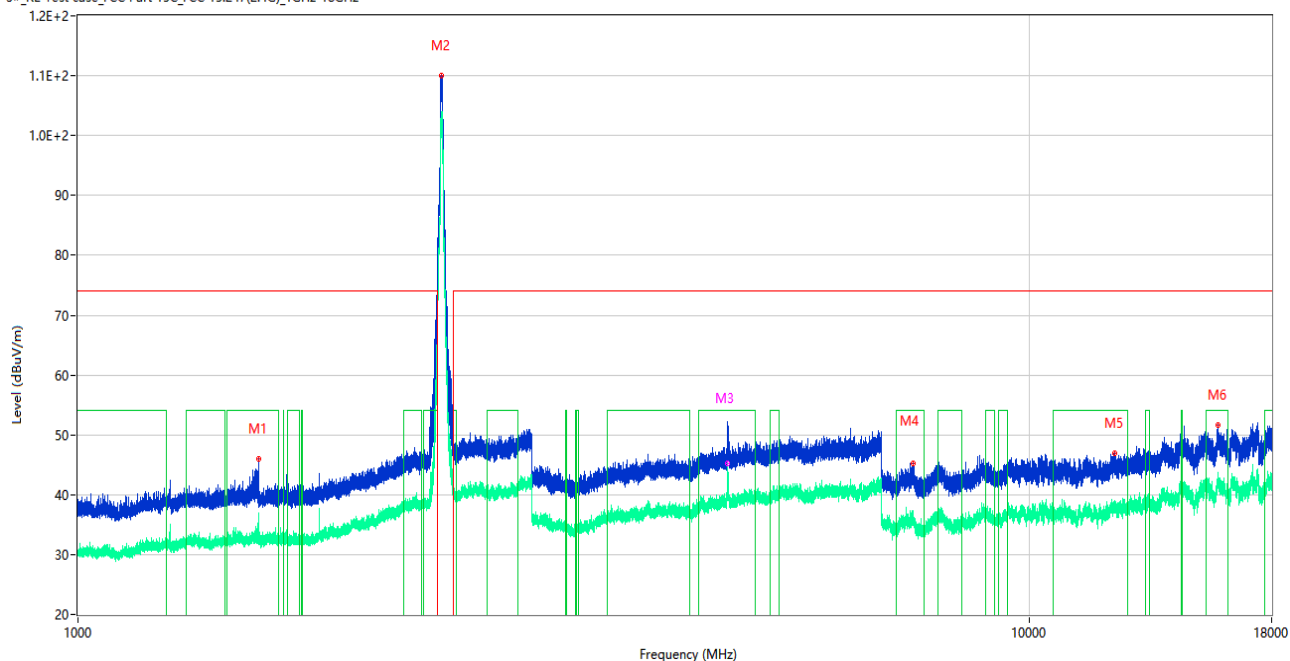
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1547.900	44.04	74.0	29.96	Peak	192.00	300	Horizontal	Pass
1**	1547.900	33.08	54.0	20.92	AV	192.00	300	Horizontal	Pass
2	2410.700	109.72	--	--	Peak	229.00	150	Horizontal	N/A
2**	2410.700	103.23	--	--	AV	229.00	150	Horizontal	N/A
3	4827.600	49.92	74.0	24.08	Peak	268.00	200	Horizontal	Pass
3**	4827.600	40.92	54.0	13.08	AV	268.00	200	Horizontal	Pass
4	7466.612	45.17	74.0	28.83	Peak	0.00	400	Horizontal	Pass
4**	7466.612	36.14	54.0	17.86	AV	0.00	400	Horizontal	Pass
5	12495.849	47.38	74.0	26.62	Peak	121.00	200	Horizontal	Pass
5**	12495.849	38.27	54.0	15.73	AV	121.00	200	Horizontal	Pass
6	15804.975	51.23	74.0	22.77	Peak	0.00	300	Horizontal	Pass
6**	15804.975	42.23	54.0	11.77	AV	0.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Low Channel

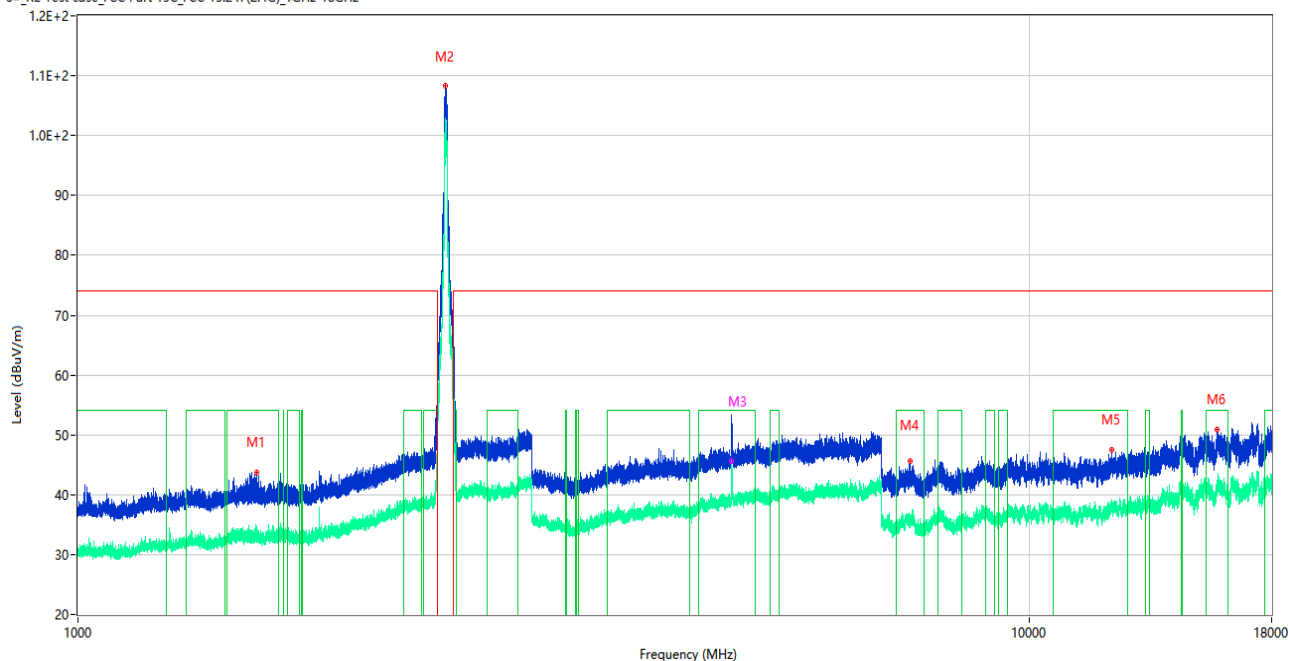
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1547.400	46.00	74.0	28.00	Peak	85.00	300	Vertical	Pass
1**	1547.400	32.61	54.0	21.39	AV	85.00	300	Vertical	Pass
2	2411.100	110.07	--	--	Peak	175.00	200	Vertical	N/A
2**	2411.100	103.59	--	--	AV	175.00	200	Vertical	N/A
3	4824.200	52.17	74.0	21.83	Peak	262.00	150	Vertical	Pass
3**	4824.200	45.25	54.0	8.75	AV	262.00	150	Vertical	Pass
4	7548.550	45.21	74.0	28.79	Peak	345.00	400	Vertical	Pass
4**	7548.550	37.05	54.0	16.95	AV	345.00	400	Vertical	Pass
5	12306.962	46.96	74.0	27.04	Peak	222.00	200	Vertical	Pass
5**	12306.962	37.71	54.0	16.29	AV	222.00	200	Vertical	Pass
6	15822.825	51.63	74.0	22.37	Peak	172.00	300	Vertical	Pass
6**	15822.825	41.40	54.0	12.60	AV	172.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Middle Channel

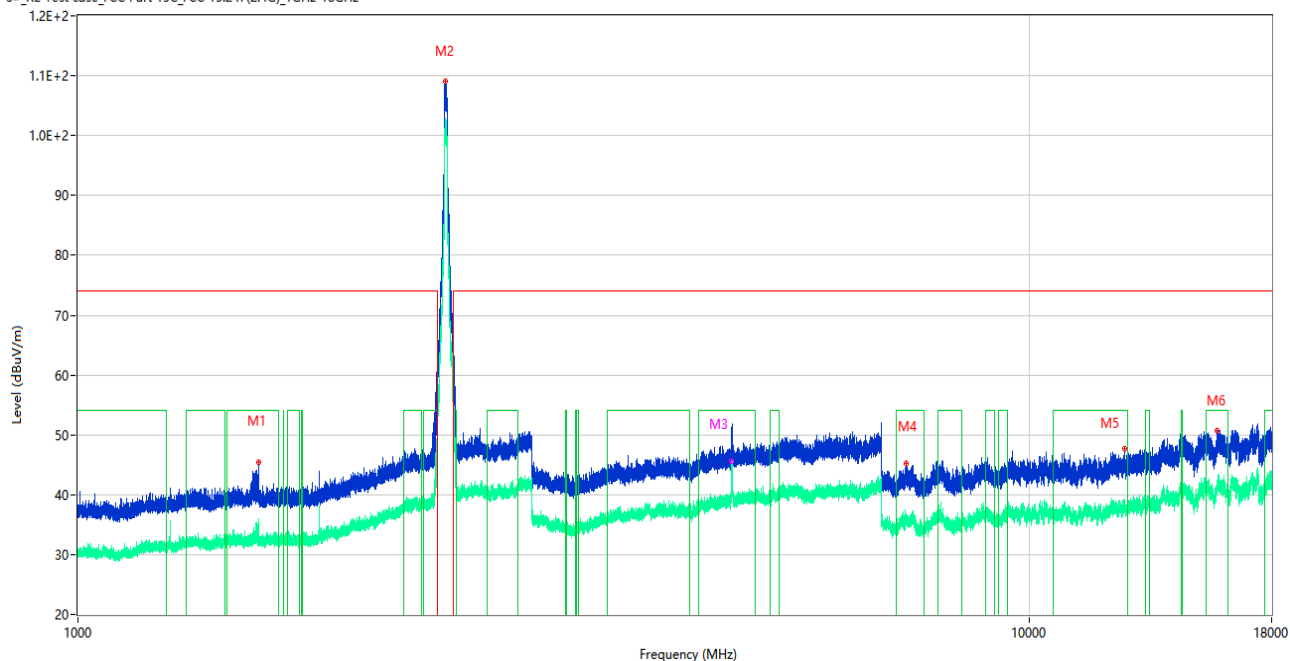
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1540.500	43.82	74.0	30.18	Peak	200.00	300	Horizontal	Pass
1**	1540.500	33.29	54.0	20.71	AV	200.00	300	Horizontal	Pass
2	2436.000	108.27	--	--	Peak	259.00	100	Horizontal	N/A
2**	2436.000	102.88	--	--	AV	259.00	100	Horizontal	N/A
3	4869.000	52.41	74.0	21.59	Peak	284.00	150	Horizontal	Pass
3**	4869.000	45.63	54.0	8.37	AV	284.00	150	Horizontal	Pass
4	7506.000	45.59	74.0	28.41	Peak	310.00	300	Horizontal	Pass
4**	7506.000	35.85	54.0	18.15	AV	310.00	300	Horizontal	Pass
5	12225.599	47.52	74.0	26.48	Peak	31.00	200	Horizontal	Pass
5**	12225.599	37.89	54.0	16.11	AV	31.00	200	Horizontal	Pass
6	15787.125	50.81	74.0	23.19	Peak	126.00	150	Horizontal	Pass
6**	15787.125	40.52	54.0	13.48	AV	126.00	150	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Middle Channel

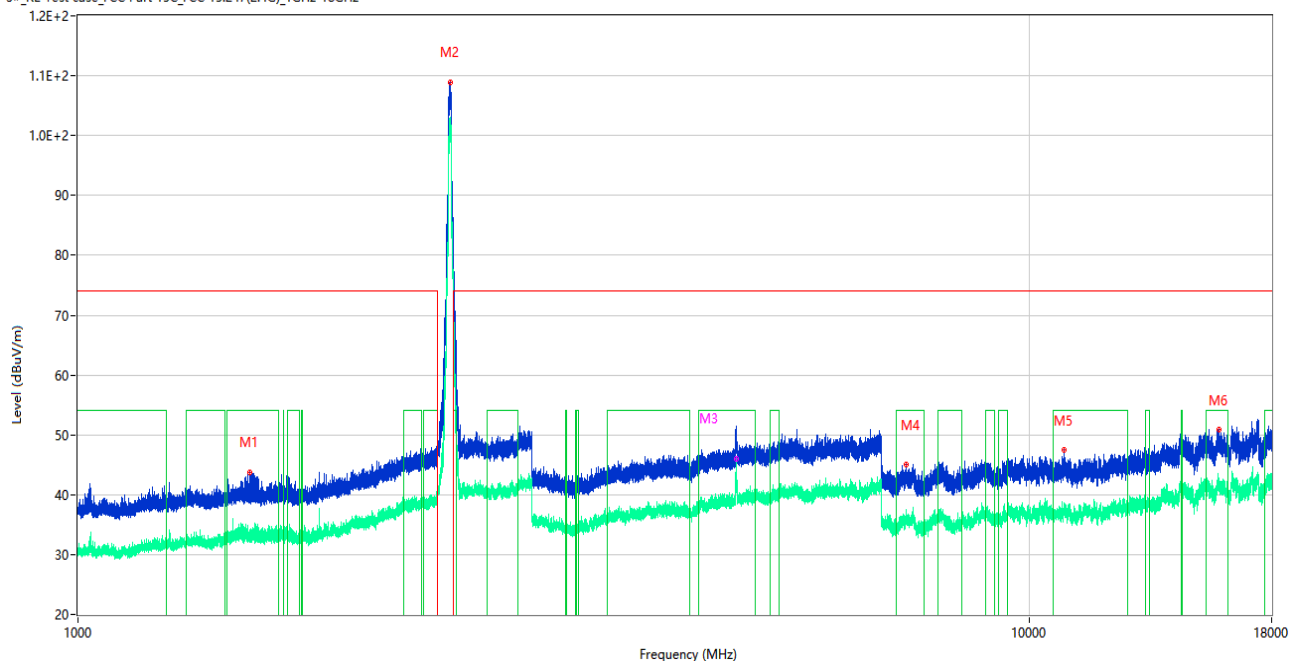
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1547.700	45.49	74.0	28.51	Peak	90.00	200	Vertical	Pass
1**	1547.700	33.90	54.0	20.10	AV	90.00	200	Vertical	Pass
2	2435.900	109.11	--	--	Peak	196.00	100	Vertical	N/A
2**	2435.900	102.40	--	--	AV	196.00	100	Vertical	N/A
3	4871.000	49.27	74.0	24.73	Peak	255.00	150	Vertical	Pass
3**	4871.000	45.57	54.0	8.43	AV	255.00	150	Vertical	Pass
4	7424.350	45.21	74.0	28.79	Peak	52.00	100	Vertical	Pass
4**	7424.350	35.73	54.0	18.27	AV	52.00	100	Vertical	Pass
5	12601.362	47.67	74.0	26.33	Peak	69.00	150	Vertical	Pass
5**	12601.362	38.34	54.0	15.66	AV	69.00	150	Vertical	Pass
6	15778.987	50.77	74.0	23.23	Peak	360.00	200	Vertical	Pass
6**	15778.987	41.28	54.0	12.72	AV	360.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g High Channel

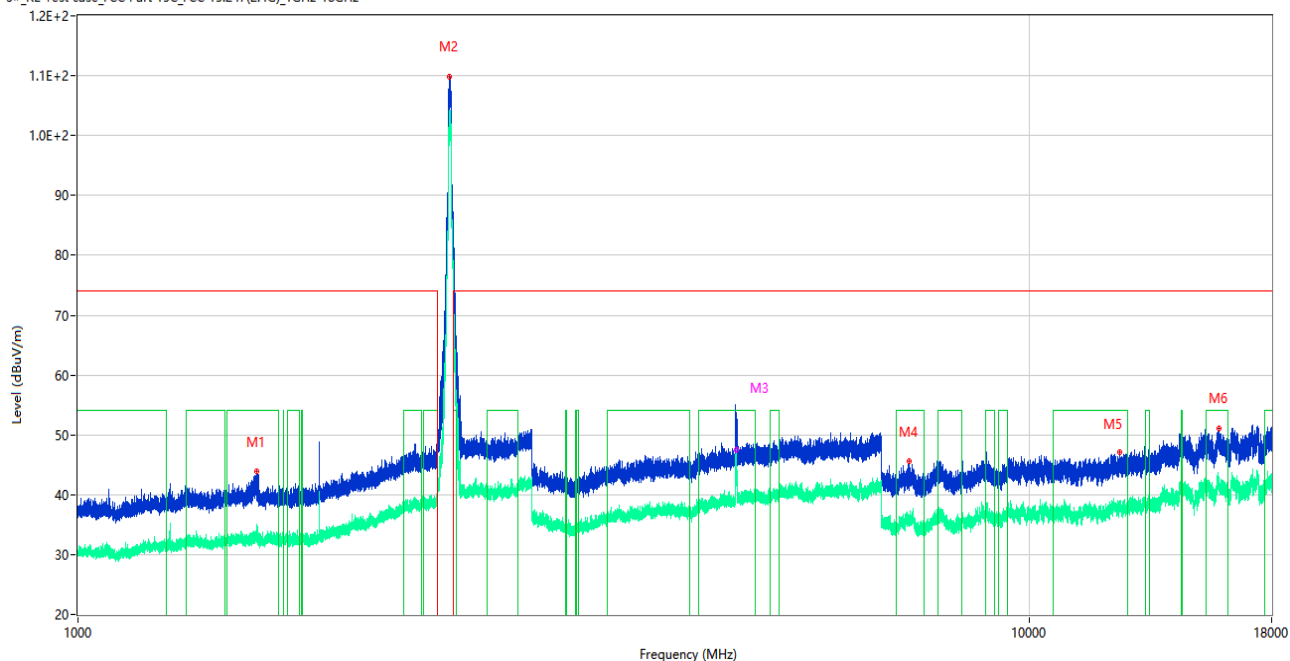
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1514.800	43.81	74.0	30.19	Peak	194.00	300	Horizontal	Pass
1**	1514.800	33.08	54.0	20.92	AV	194.00	300	Horizontal	Pass
2	2461.000	108.95	--	--	Peak	251.00	150	Horizontal	N/A
2**	2461.000	103.06	--	--	AV	251.00	150	Horizontal	N/A
3	4921.800	50.20	74.0	23.80	Peak	222.00	150	Horizontal	Pass
3**	4921.800	46.06	54.0	7.94	AV	222.00	150	Horizontal	Pass
4	7436.425	45.11	74.0	28.89	Peak	89.00	300	Horizontal	Pass
4**	7436.425	36.37	54.0	17.63	AV	89.00	300	Horizontal	Pass
5	10891.600	47.41	74.0	26.59	Peak	295.00	200	Horizontal	Pass
5**	10891.600	37.35	54.0	16.65	AV	295.00	200	Horizontal	Pass
6	15840.938	50.84	74.0	23.16	Peak	133.00	300	Horizontal	Pass
6**	15840.938	41.88	54.0	12.12	AV	133.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g High Channel

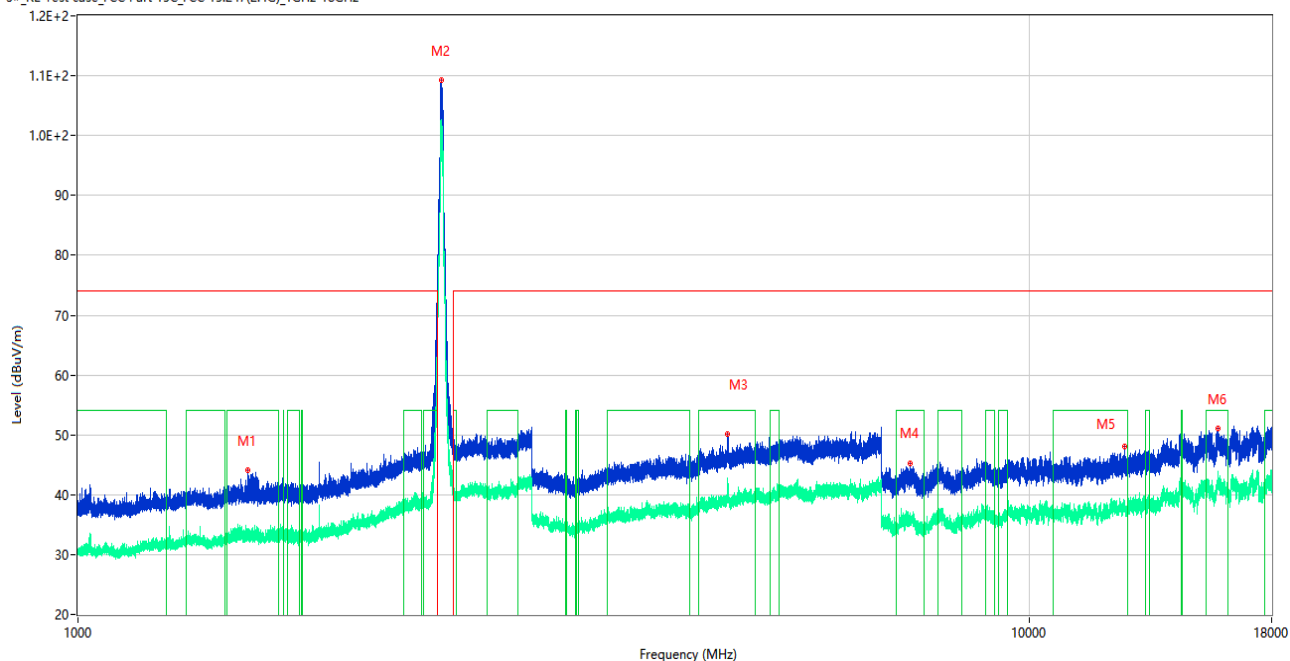
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1543.300	43.89	74.0	30.11	Peak	105.00	100	Vertical	Pass
1**	1543.300	33.95	54.0	20.05	AV	105.00	100	Vertical	Pass
2	2460.500	109.87	--	--	Peak	174.00	100	Vertical	N/A
2**	2460.500	103.39	--	--	AV	174.00	100	Vertical	N/A
3	4929.800	51.20	74.0	22.80	Peak	235.00	150	Vertical	Pass
3**	4929.800	47.46	54.0	6.54	AV	235.00	150	Vertical	Pass
4	7477.250	45.55	74.0	28.45	Peak	346.00	200	Vertical	Pass
4**	7477.250	35.68	54.0	18.32	AV	346.00	200	Vertical	Pass
5	12461.924	47.11	74.0	26.89	Peak	207.00	100	Vertical	Pass
5**	12461.924	37.71	54.0	16.29	AV	207.00	100	Vertical	Pass
6	15843.826	51.14	74.0	22.86	Peak	284.00	200	Vertical	Pass
6**	15843.826	41.25	54.0	12.75	AV	284.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 Low Channel

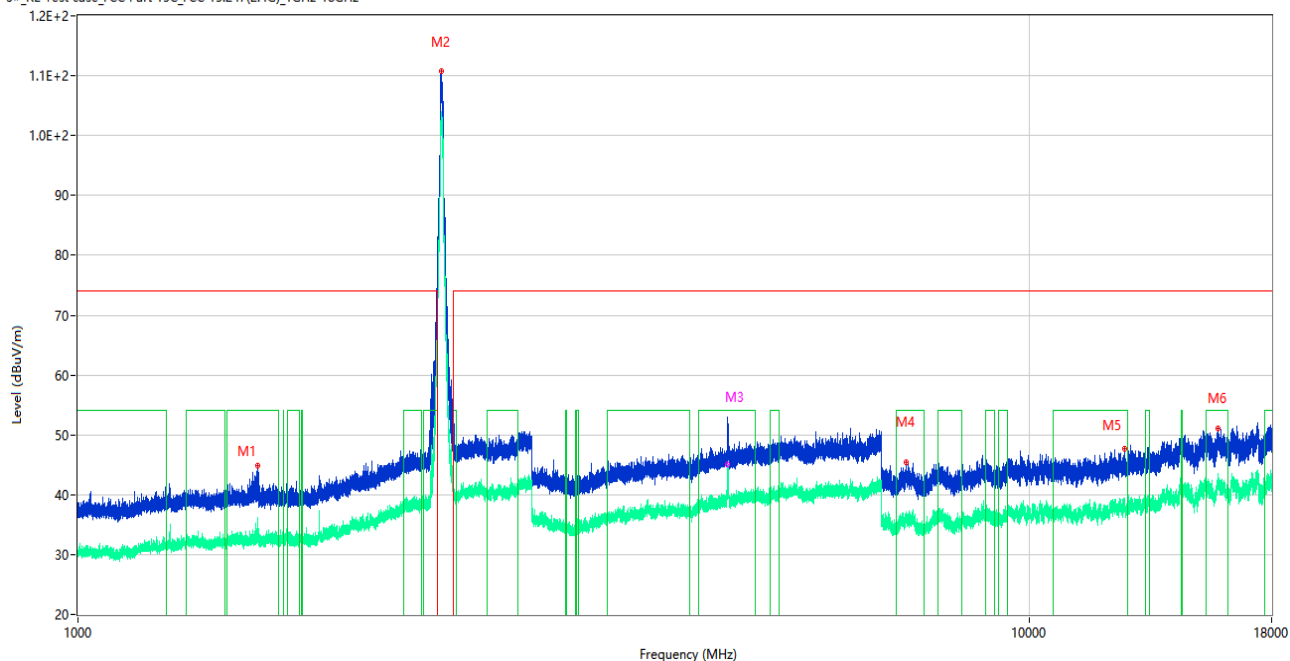
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1509.100	44.07	74.0	29.93	Peak	189.00	100	Horizontal	Pass
1**	1509.100	33.63	54.0	20.37	AV	189.00	100	Horizontal	Pass
2	2410.700	109.18	--	--	Peak	225.00	150	Horizontal	N/A
2**	2410.700	102.33	--	--	AV	225.00	150	Horizontal	N/A
3	4823.200	50.14	74.0	23.86	Peak	155.00	200	Horizontal	Pass
3**	4823.200	40.12	54.0	13.88	AV	155.00	200	Horizontal	Pass
4	7504.563	45.27	74.0	28.73	Peak	360.00	300	Horizontal	Pass
4**	7504.563	36.22	54.0	17.78	AV	360.00	300	Horizontal	Pass
5	12595.037	48.00	74.0	26.00	Peak	67.00	200	Horizontal	Pass
5**	12595.037	38.43	54.0	15.57	AV	67.00	200	Horizontal	Pass
6	15814.950	51.01	74.0	22.99	Peak	211.00	300	Horizontal	Pass
6**	15814.950	43.00	54.0	11.00	AV	211.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 Low Channel

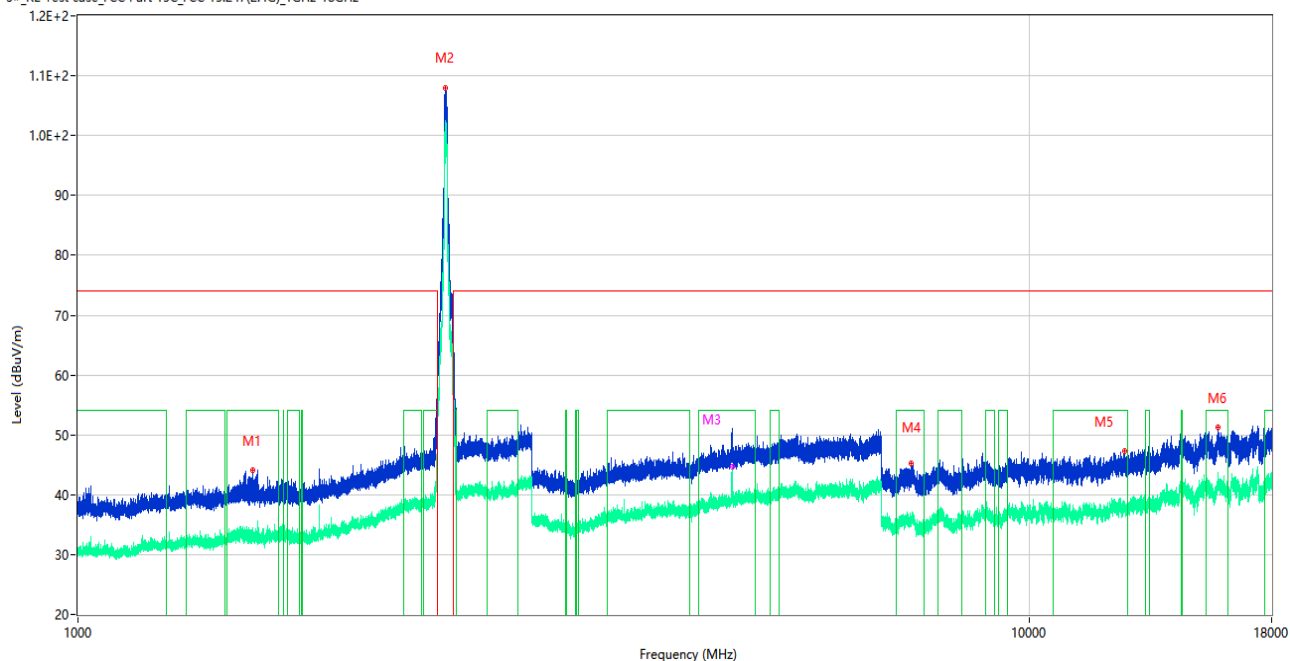
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1546.400	44.93	74.0	29.07	Peak	85.00	200	Vertical	Pass
1**	1546.400	32.48	54.0	21.52	AV	85.00	200	Vertical	Pass
2	2411.000	110.72	--	--	Peak	177.00	150	Vertical	N/A
2**	2411.000	103.99	--	--	AV	177.00	150	Vertical	N/A
3	4824.600	51.00	74.0	23.00	Peak	256.00	150	Vertical	Pass
3**	4824.600	45.02	54.0	8.98	AV	256.00	150	Vertical	Pass
4	7425.787	45.39	74.0	28.61	Peak	346.00	100	Vertical	Pass
4**	7425.787	36.27	54.0	17.73	AV	346.00	100	Vertical	Pass
5	12617.750	47.72	74.0	26.28	Peak	0.00	100	Vertical	Pass
5**	12617.750	37.92	54.0	16.08	AV	0.00	100	Vertical	Pass
6	15789.487	51.12	74.0	22.88	Peak	264.00	100	Vertical	Pass
6**	15789.487	41.52	54.0	12.48	AV	264.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 Middle Channel

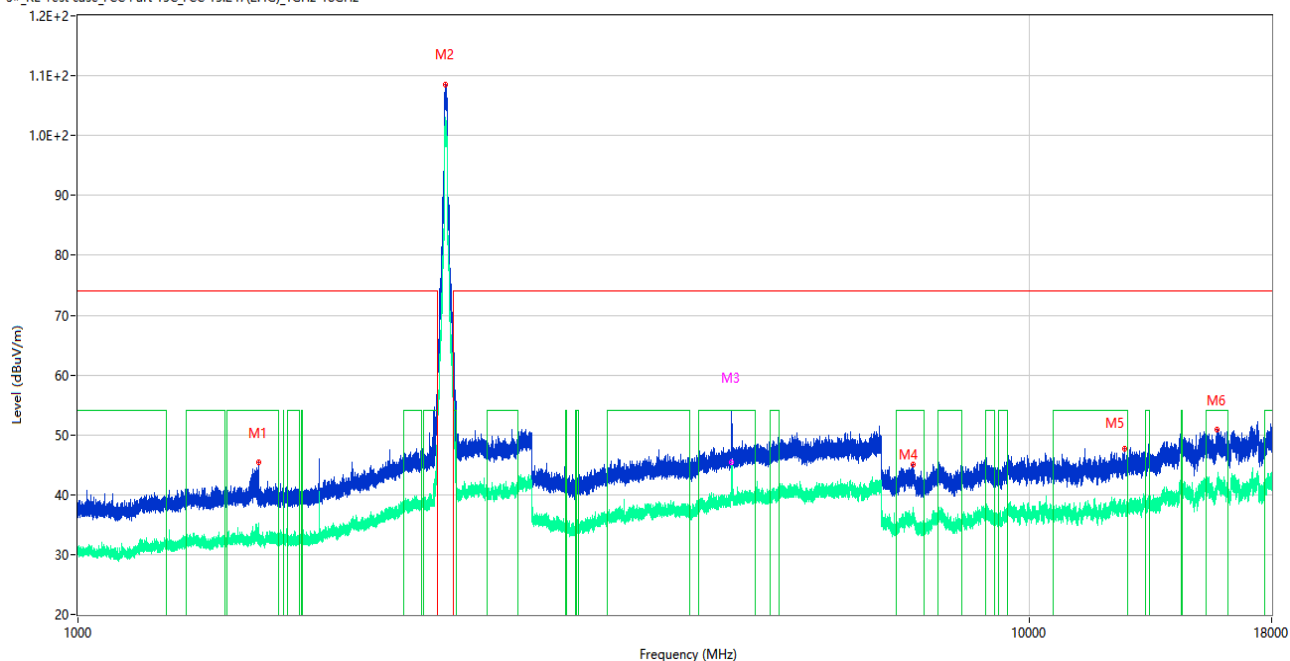
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1525.500	44.08	74.0	29.92	Peak	197.00	400	Horizontal	Pass
1**	1525.500	34.51	54.0	19.49	AV	197.00	400	Horizontal	Pass
2	2435.600	108.02	--	--	Peak	234.00	150	Horizontal	N/A
2**	2435.600	102.27	--	--	AV	234.00	150	Horizontal	N/A
3	4875.000	50.23	74.0	23.77	Peak	289.00	150	Horizontal	Pass
3**	4875.000	44.71	54.0	9.29	AV	289.00	150	Horizontal	Pass
4	7514.625	45.14	74.0	28.86	Peak	145.00	200	Horizontal	Pass
4**	7514.625	35.32	54.0	18.68	AV	145.00	200	Horizontal	Pass
5	12602.512	47.28	74.0	26.72	Peak	0.00	100	Horizontal	Pass
5**	12602.512	38.02	54.0	15.98	AV	0.00	100	Horizontal	Pass
6	15798.938	51.17	74.0	22.83	Peak	214.00	400	Horizontal	Pass
6**	15798.938	42.38	54.0	11.62	AV	214.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 Middle Channel

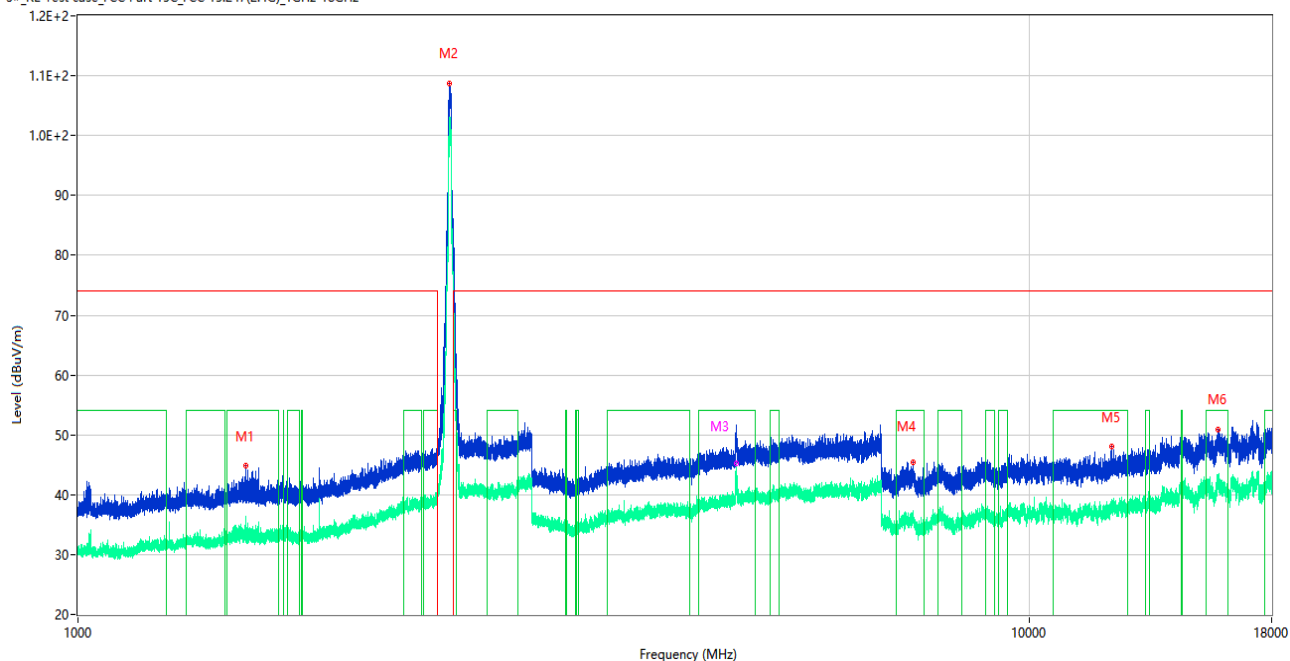
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1547.800	45.34	74.0	28.66	Peak	100.00	300	Vertical	Pass
1**	1547.800	35.29	54.0	18.71	AV	100.00	300	Vertical	Pass
2	2433.000	108.52	--	--	Peak	178.00	150	Vertical	N/A
2**	2433.000	101.32	--	--	AV	178.00	150	Vertical	N/A
3	4868.800	50.04	74.0	23.96	Peak	332.00	150	Vertical	Pass
3**	4868.800	45.42	54.0	8.58	AV	332.00	150	Vertical	Pass
4	7556.025	45.12	74.0	28.88	Peak	117.00	400	Vertical	Pass
4**	7556.025	36.24	54.0	17.76	AV	117.00	400	Vertical	Pass
5	12597.625	47.65	74.0	26.35	Peak	293.00	100	Vertical	Pass
5**	12597.625	38.31	54.0	15.69	AV	293.00	100	Vertical	Pass
6	15785.550	50.85	74.0	23.15	Peak	196.00	200	Vertical	Pass
6**	15785.550	41.89	54.0	12.11	AV	196.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 High Channel

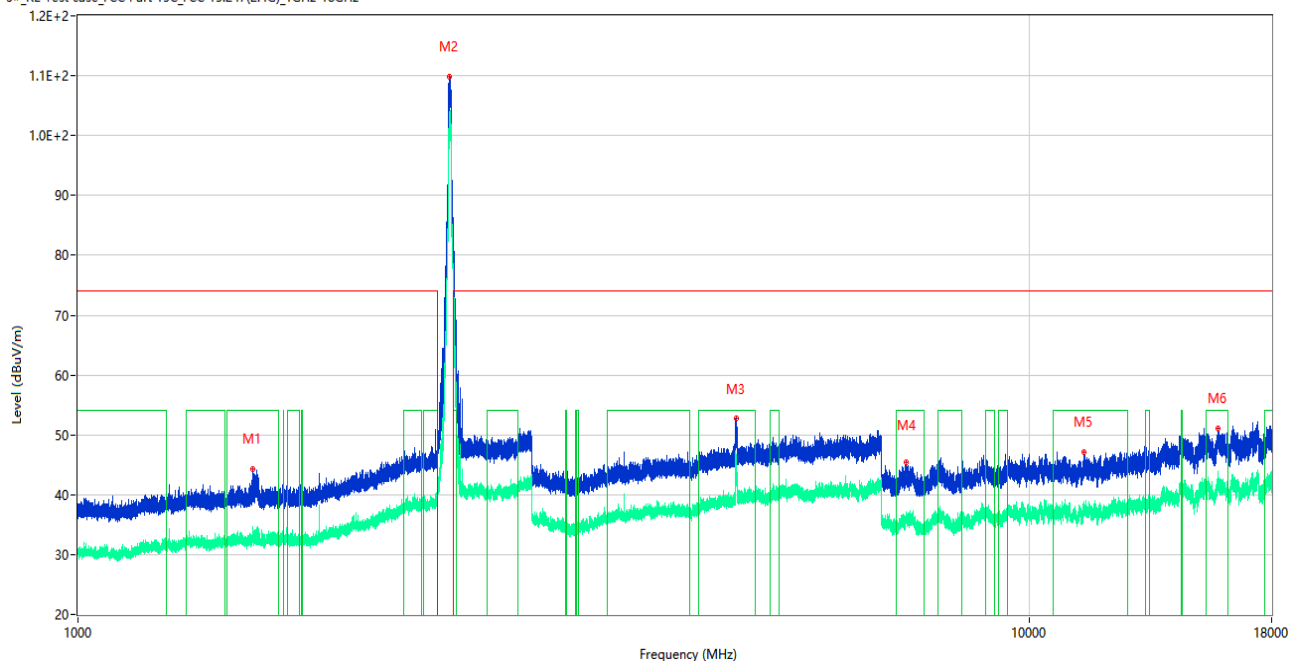
3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1499.800	44.77	74.0	29.23	Peak	189.00	400	Horizontal	Pass
1**	1499.800	32.79	54.0	21.21	AV	189.00	400	Horizontal	Pass
2	2460.800	108.73	--	--	Peak	257.00	200	Horizontal	N/A
2**	2460.800	103.00	--	--	AV	257.00	200	Horizontal	N/A
3	4925.000	48.94	74.0	25.06	Peak	274.00	150	Horizontal	Pass
3**	4925.000	45.28	54.0	8.72	AV	274.00	150	Horizontal	Pass
4	7547.975	45.42	74.0	28.58	Peak	69.00	100	Horizontal	Pass
4**	7547.975	36.34	54.0	17.66	AV	69.00	100	Horizontal	Pass
5	12233.075	47.98	74.0	26.02	Peak	207.00	200	Horizontal	Pass
5**	12233.075	38.29	54.0	15.71	AV	207.00	200	Horizontal	Pass
6	15799.725	50.96	74.0	23.04	Peak	190.00	100	Horizontal	Pass
6**	15799.725	43.06	54.0	10.94	AV	190.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 High Channel

3#_RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1525.900	44.31	74.0	29.69	Peak	106.00	400	Vertical	Pass
1**	1525.900	32.99	54.0	21.01	AV	106.00	400	Vertical	Pass
2	2460.600	109.89	--	--	Peak	174.00	150	Vertical	N/A
2**	2460.600	103.34	--	--	AV	174.00	150	Vertical	N/A
3	4926.400	52.74	74.0	21.26	Peak	243.00	100	Vertical	Pass
3**	4926.400	46.34	54.0	7.66	AV	243.00	100	Vertical	Pass
4	7423.200	45.39	74.0	28.61	Peak	310.00	300	Vertical	Pass
4**	7423.200	35.66	54.0	18.34	AV	310.00	300	Vertical	Pass
5	11412.838	47.15	74.0	26.85	Peak	152.00	100	Vertical	Pass
5**	11412.838	37.24	54.0	16.76	AV	152.00	100	Vertical	Pass
6	15792.638	51.08	74.0	22.92	Peak	332.00	200	Vertical	Pass
6**	15792.638	41.70	54.0	12.30	AV	332.00	200	Vertical	Pass

A.7 Band Edge (Restricted-band band-edge)

Note ¹: The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.

Note ²: The test data all are tested in the vertical and horizontal antenna which the trace is max hold. So these plots have shown the worst case.

Note ³: According the ANSI C63.10-2020, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

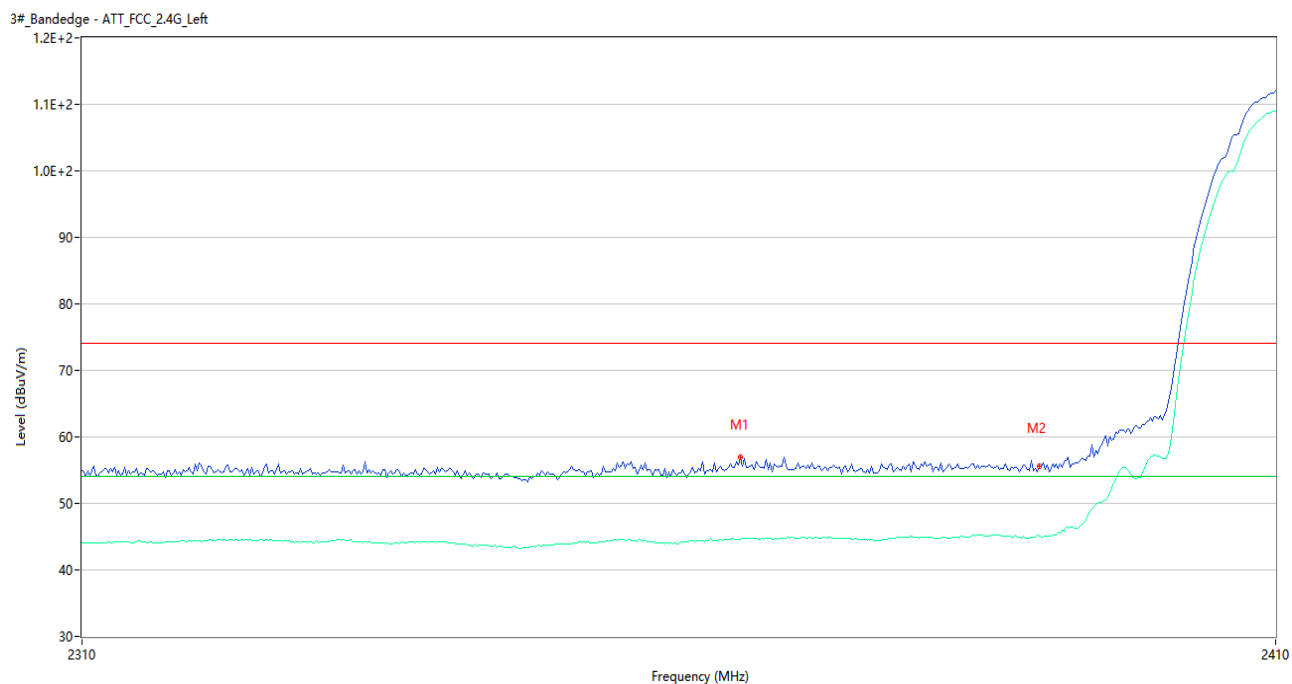
Note ⁴: All antenna were pre tested, but only the worst case has been reported in this report.

Note ⁵: Both horizontal and vertical directions were pre tested, only the worst configuration has been reported in this report.

Test Data and Plots

MIMO

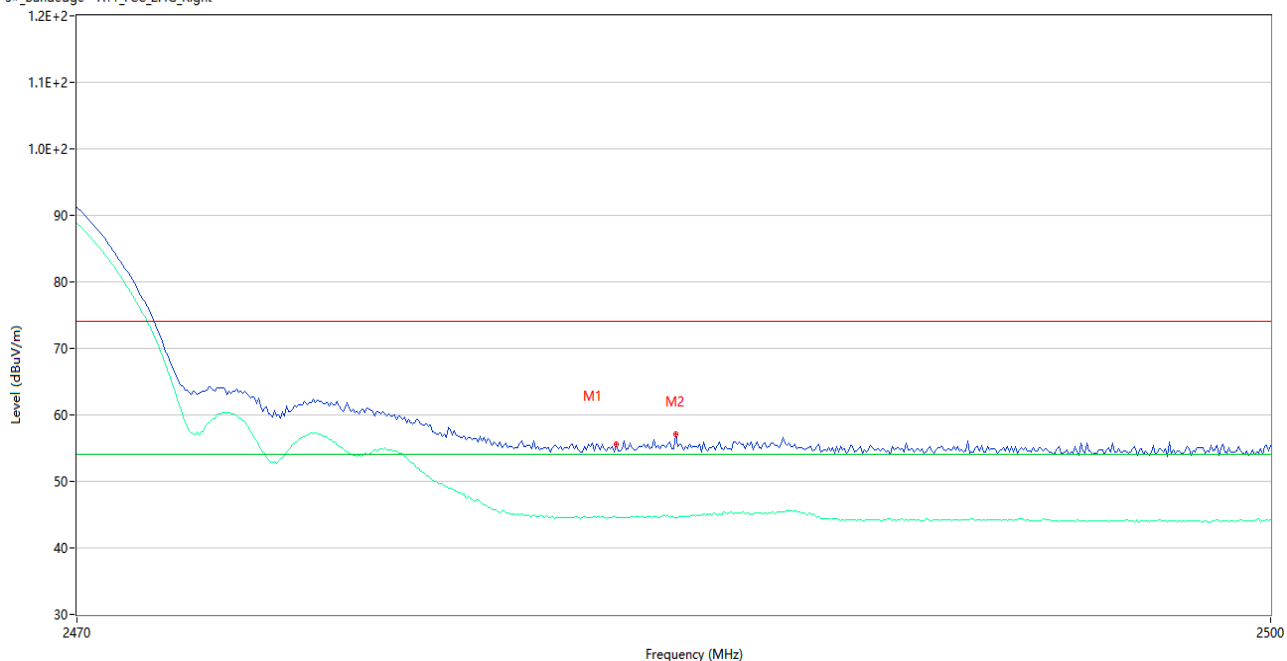
802.11b LOW CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2364.667	56.93	74.0	17.07	Peak	360.00	150	Vertical	Pass
1**	2364.667	44.54	54.0	9.46	AV	360.00	150	Vertical	Pass
2	2389.833	55.63	74.0	18.37	Peak	250.00	150	Vertical	Pass
2**	2389.833	45.03	54.0	8.97	AV	250.00	150	Vertical	Pass

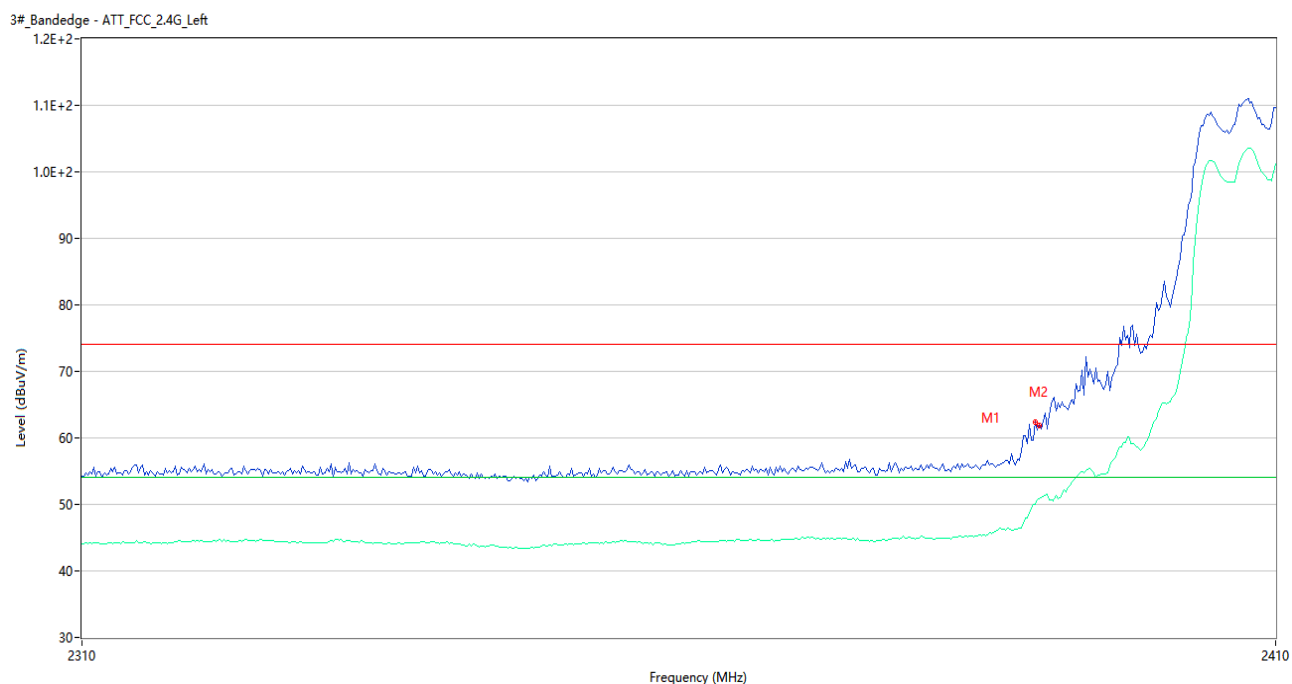
802.11b HIGH CHANNEL

3#_Bandedge - ATT_FCC_2.4G_Right



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	55.56	74.0	18.44	Peak	247.00	200	Vertical	Pass
1**	2483.500	44.64	54.0	9.36	AV	247.00	200	Vertical	Pass
2	2485.000	57.12	74.0	16.88	Peak	285.00	100	Vertical	Pass
2**	2485.000	44.64	54.0	9.36	AV	285.00	100	Vertical	Pass

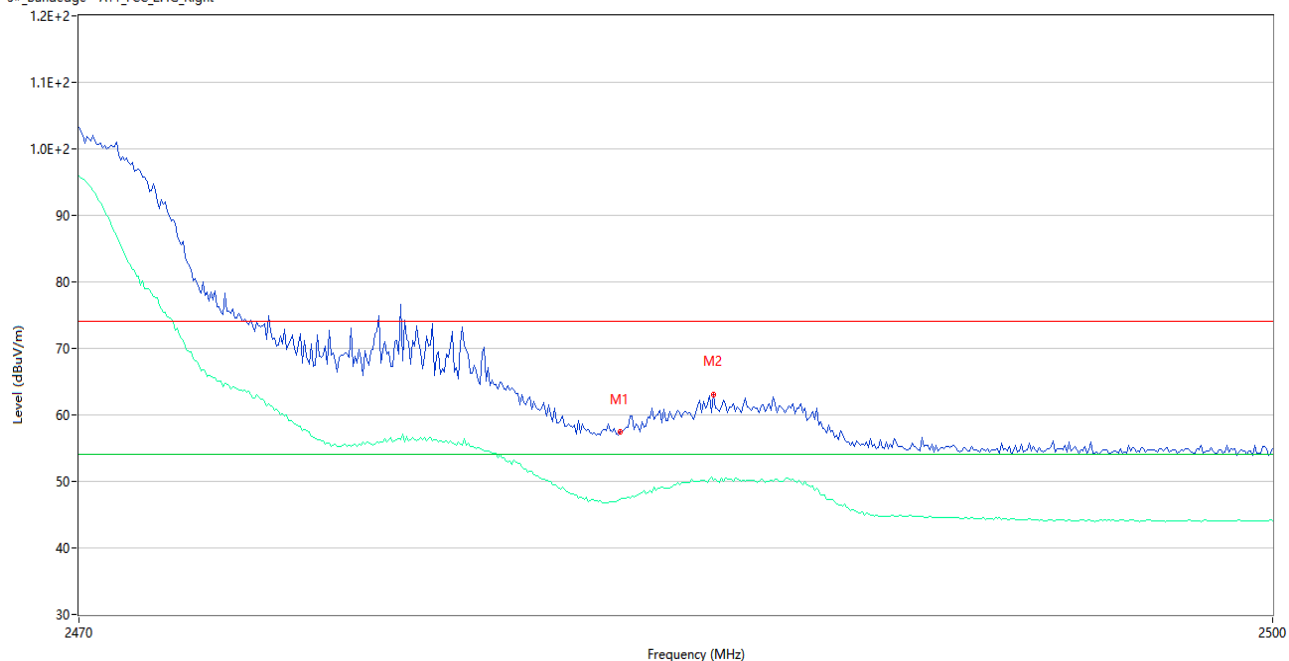
802.11g LOW CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2389.500	62.41	74.0	11.59	Peak	174.00	200	Vertical	Pass
1**	2389.500	50.06	54.0	3.94	AV	174.00	200	Vertical	Pass
2	2389.833	61.89	74.0	12.11	Peak	174.00	200	Vertical	Pass
2**	2389.833	50.92	54.0	3.08	AV	174.00	200	Vertical	Pass

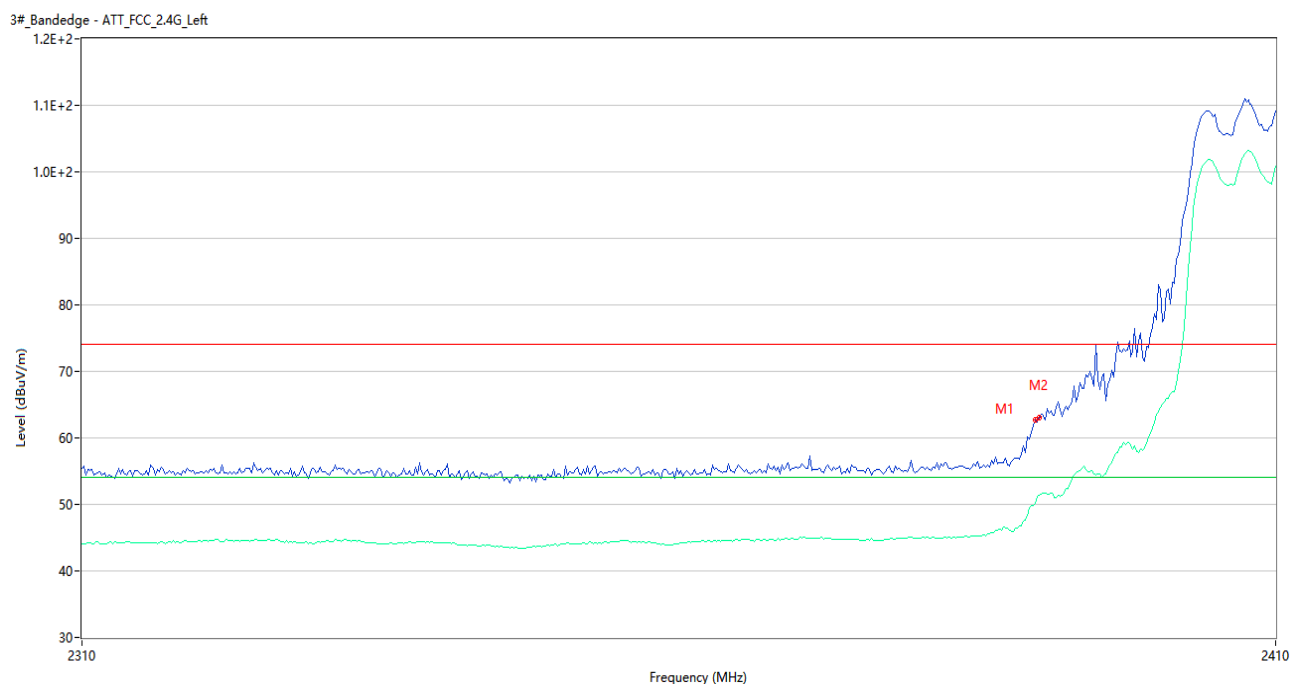
802.11g HIGH CHANNEL

3#_Bandedge - ATT_FCC_2.4G_Right



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.550	57.38	74.0	16.62	Peak	142.00	100	Vertical	Pass
1**	2483.550	47.22	54.0	6.78	AV	142.00	100	Vertical	Pass
2	2485.900	63.12	74.0	10.88	Peak	176.00	200	Vertical	Pass
2**	2485.900	50.13	54.0	3.87	AV	176.00	200	Vertical	Pass

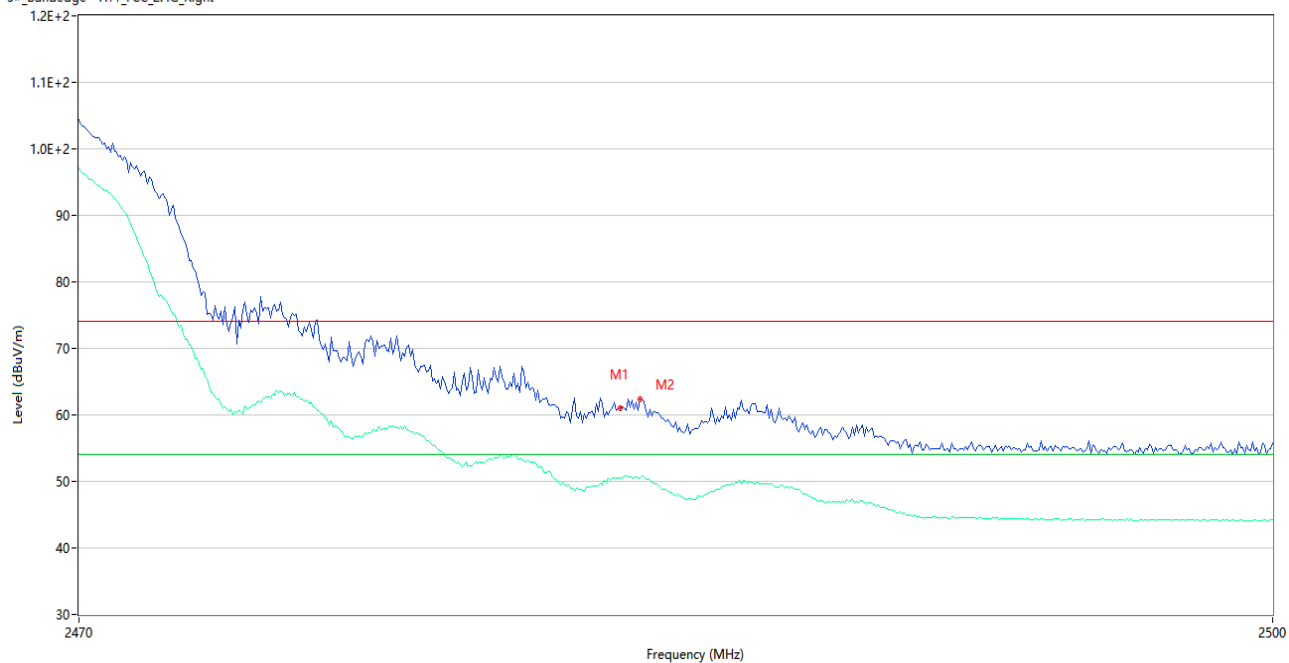
802.11n20 LOW CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2389.500	62.73	74.0	11.27	Peak	173.00	150	Vertical	Pass
1**	2389.500	50.24	54.0	3.76	AV	173.00	150	Vertical	Pass
2	2389.833	63.01	74.0	10.99	Peak	173.00	150	Vertical	Pass
2**	2389.833	50.99	54.0	3.01	AV	173.00	150	Vertical	Pass

802.11n20 HIGH CHANNEL

3#_Bandedge - ATT_FCC_2.4G_Right



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.550	61.08	74.0	12.92	Peak	167.00	100	Vertical	Pass
1**	2483.550	50.52	54.0	3.48	AV	167.00	100	Vertical	Pass
2	2484.050	62.38	74.0	11.62	Peak	159.00	100	Vertical	Pass
2**	2484.050	50.50	54.0	3.50	AV	159.00	100	Vertical	Pass

A.8 Power Spectral Density (PSD)

Test Data

ANT1

802.11b Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-13.40	8	Pass
Middle	-13.45	8	Pass
High	-13.30	8	Pass

802.11g Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-8.44	8	Pass
Middle	-10.38	8	Pass
High	-8.86	8	Pass

802.11n-20 MHz Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-9.40	8	Pass
Middle	-10.41	8	Pass
High	-10.28	8	Pass

ANT2

802.11b Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-13.13	8	Pass
Middle	-13.19	8	Pass
High	-13.56	8	Pass

802.11g Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-11.58	8	Pass
Middle	-9.90	8	Pass
High	-10.11	8	Pass

802.11n-20 MHz Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-11.64	8	Pass
Middle	-10.80	8	Pass
High	-8.94	8	Pass

MIMO

802.11b Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-10.25	7.37	Pass
Middle	-10.31	7.37	Pass
High	-10.42	7.37	Pass

802.11g Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-6.72	7.37	Pass
Middle	-7.12	7.37	Pass
High	-6.43	7.37	Pass

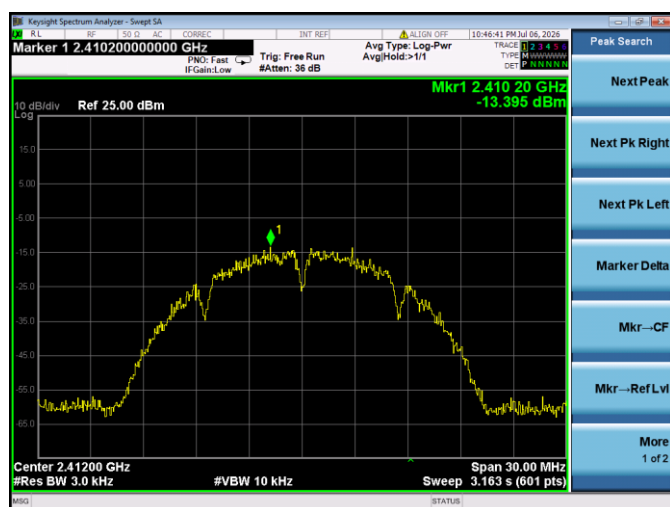
802.11n-20 MHz Mode:

Channel	Spectral Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
Low	-7.37	8	Pass
Middle	-7.59	8	Pass
High	-6.55	8	Pass

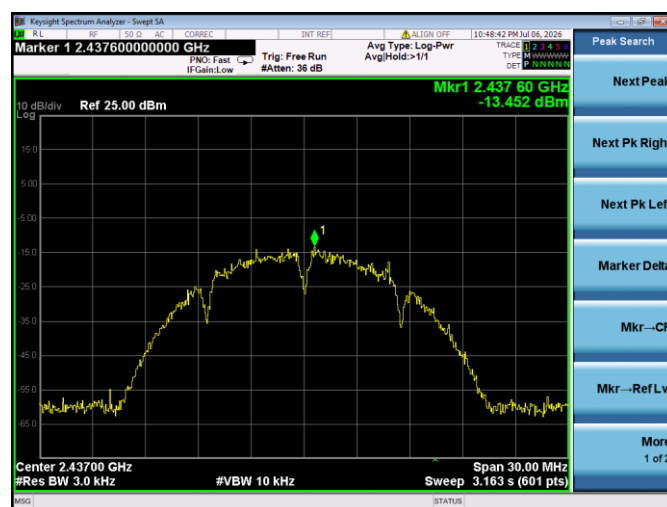
Test Plots

ANT1

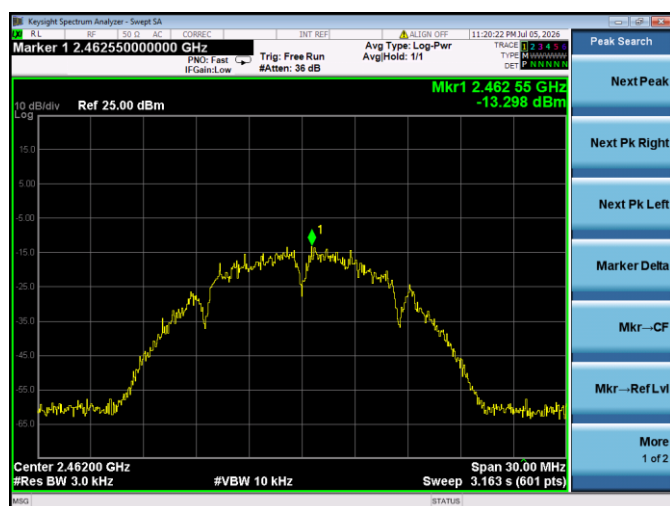
802.11b LOW CHANNEL



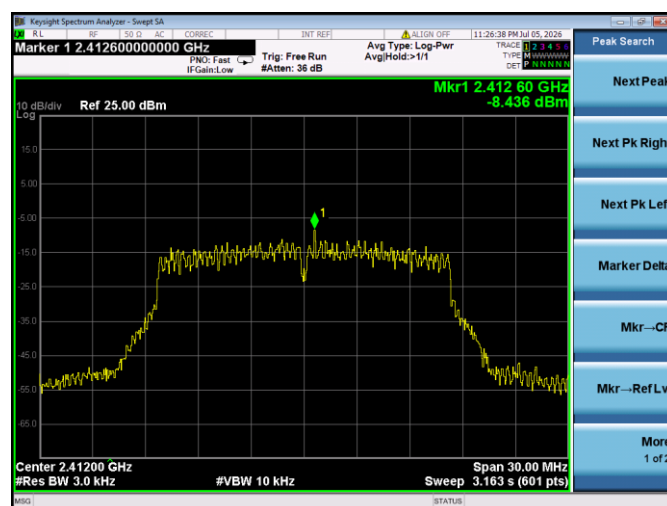
802.11b MIDDLE CHANNEL



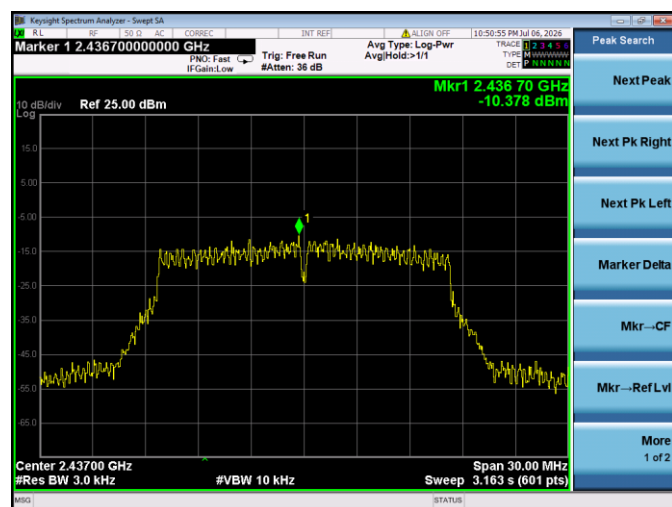
802.11b HIGH CHANNEL



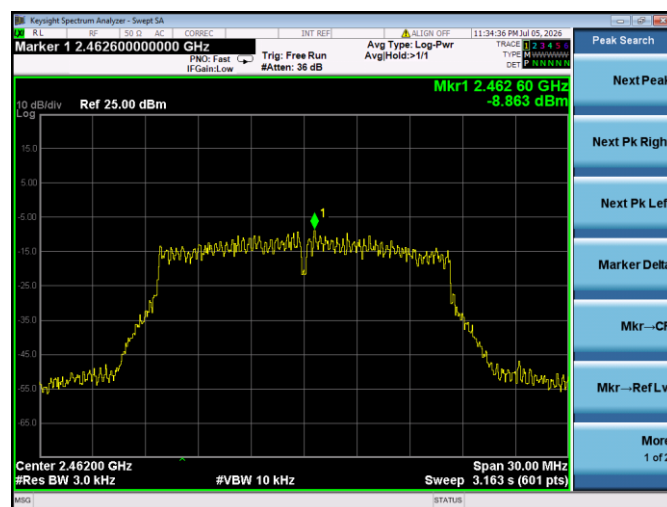
802.11g LOW CHANNEL



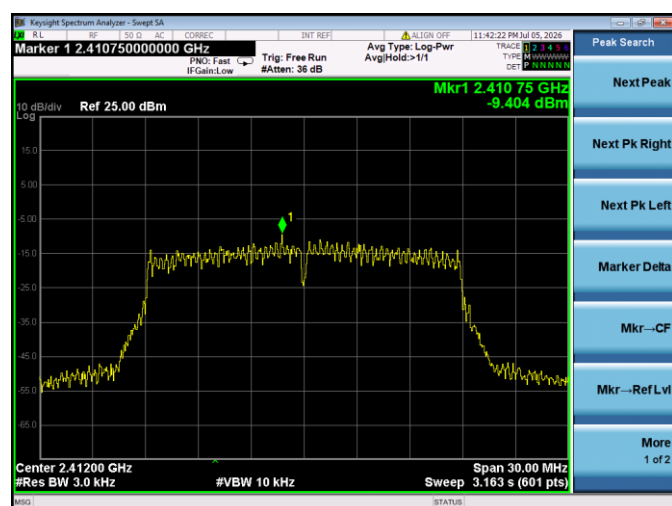
802.11g MIDDLE CHANNEL



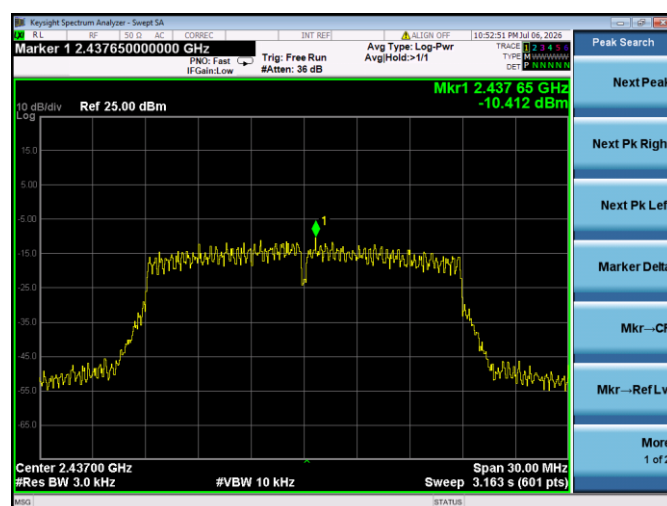
802.11g HIGH CHANNEL

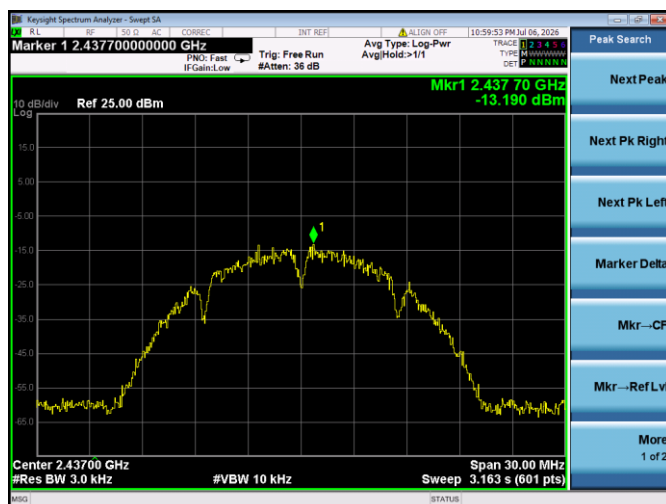
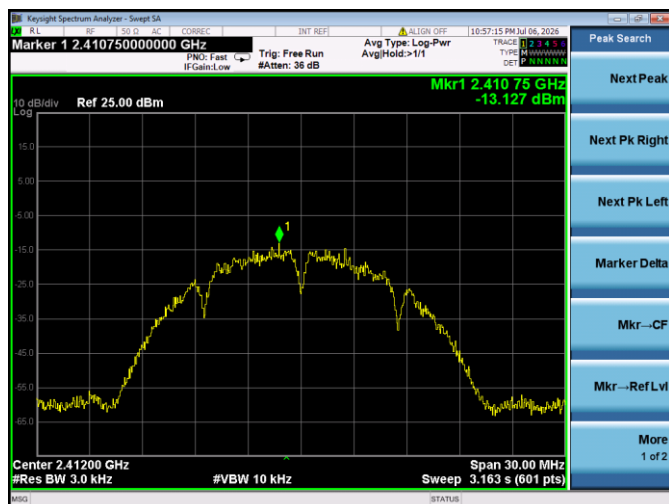
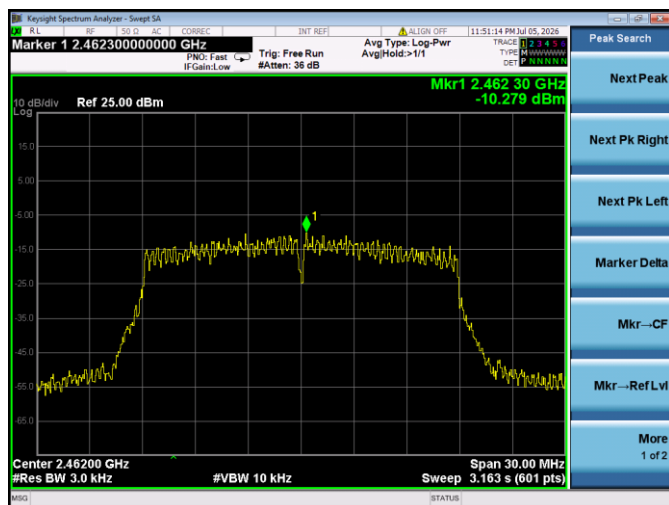


802.11n-20 MHz LOW CHANNEL

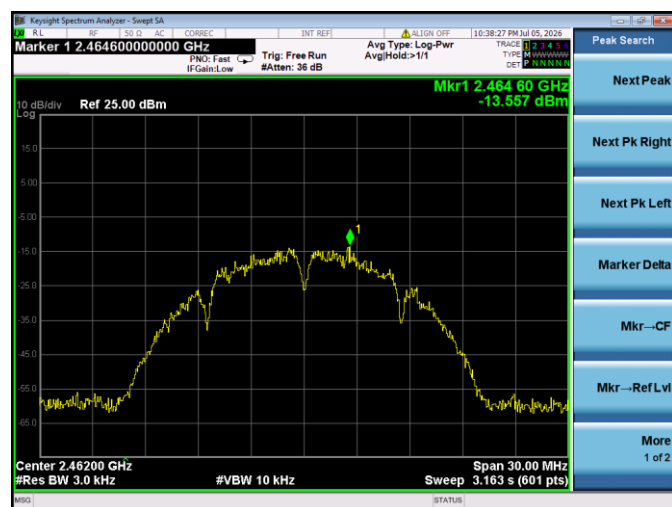


802.11n-20 MHz MIDDLE CHANNEL

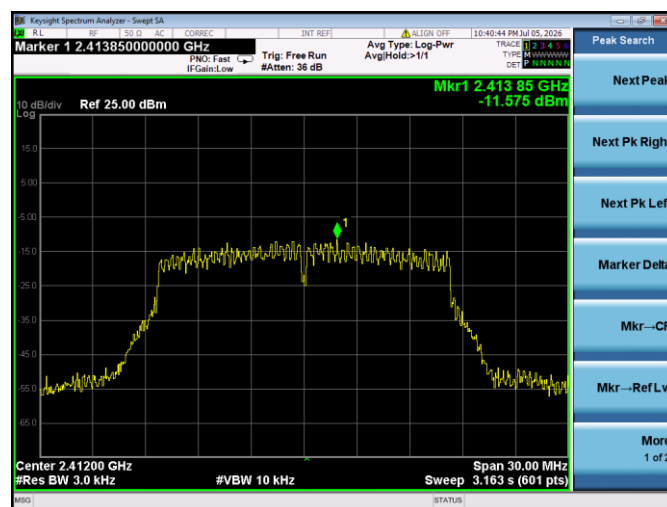




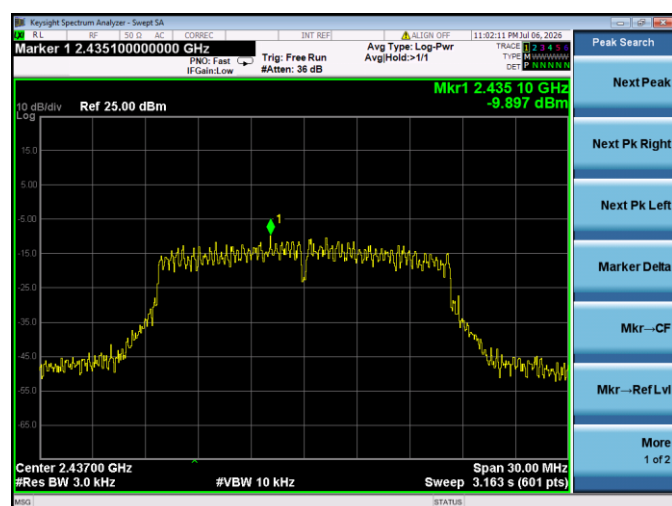
802.11b HIGH CHANNEL



802.11g LOW CHANNEL



802.11g MIDDLE CHANNEL



802.11g HIGH CHANNEL

