

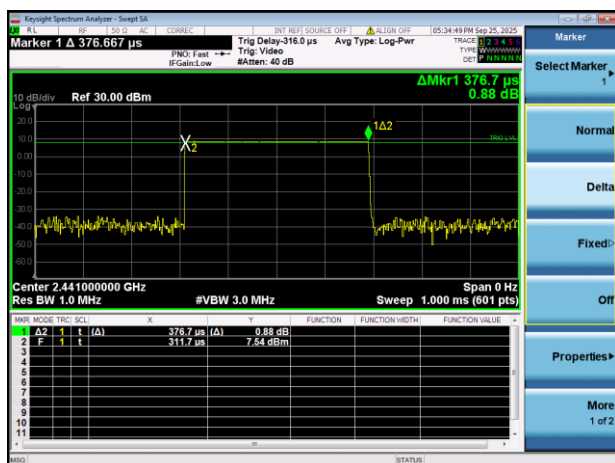
A.5 Time of Occupancy (Dwell time)

Test Data

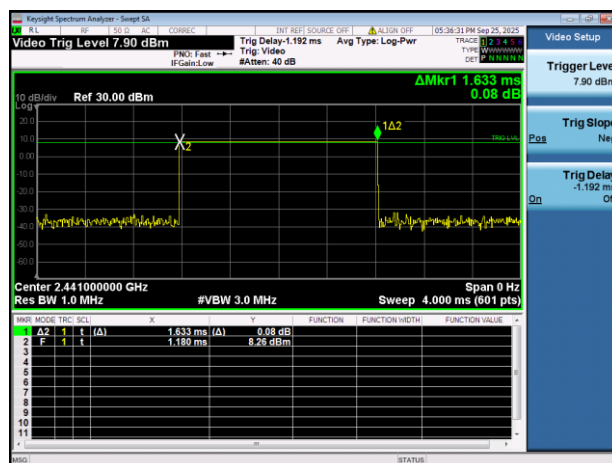
GFSK				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
DH 1	0.377	120.544	0.4	Pass
DH 3	1.633	261.280	0.4	Pass
DH 5	2.870	306.133	0.4	Pass
8-DPSK				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
DH 1	0.382	122.144	0.4	Pass
DH 3	1.633	261.280	0.4	Pass
DH 5	2.882	307.413	0.4	Pass
AFH Mode				
DH Packet	Pulse Width (ms)	Total of Dwell (ms)	Limit (sec)	Verdict
DH 1	0.375	60.000	0.4	Pass
DH 3	1.633	130.640	0.4	Pass
DH 5	2.240	119.467	0.4	Pass

Test Plots

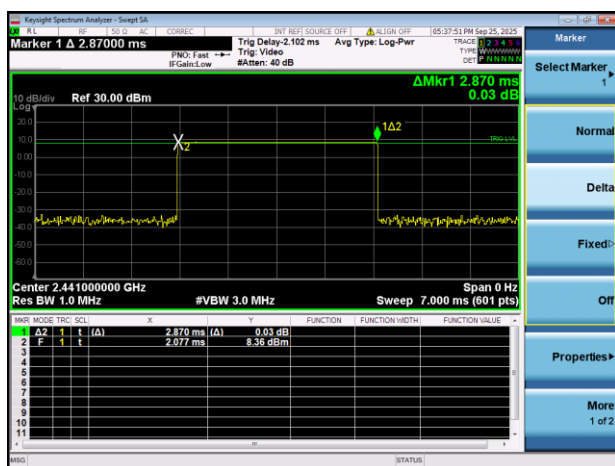
GFSK DH1



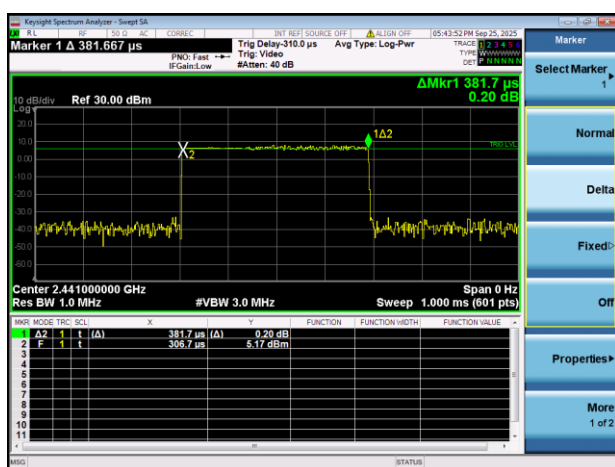
GFSK DH3



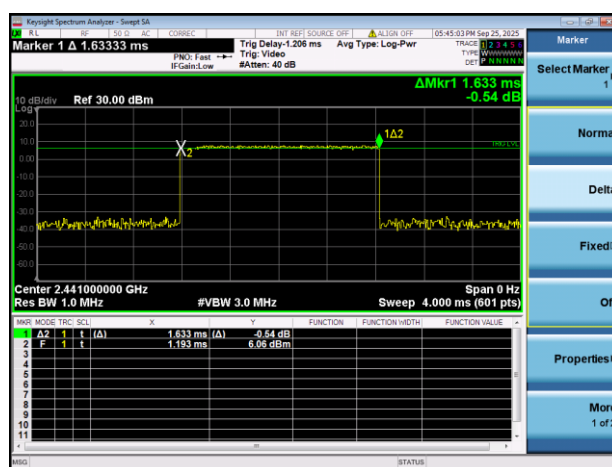
GFSK DH5



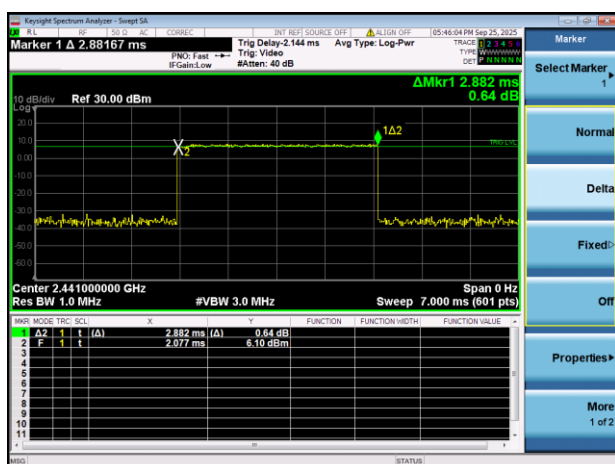
8-DPSK DH1



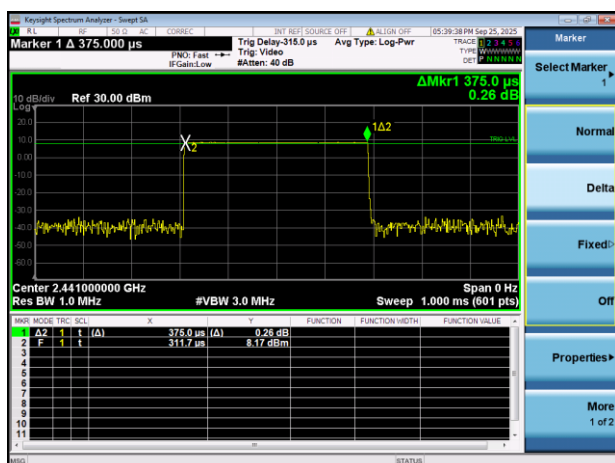
8-DPSK DH3



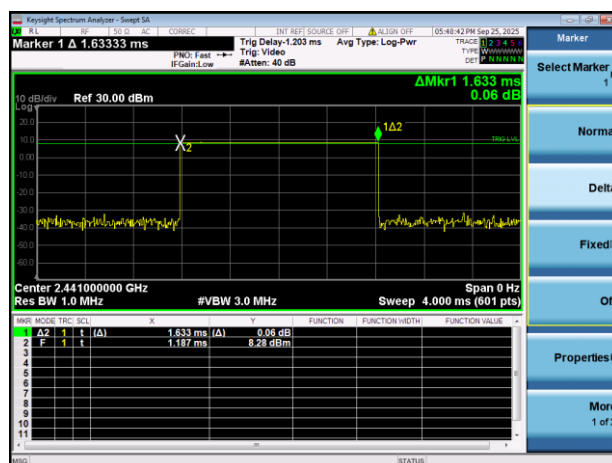
8-DPSK DH5



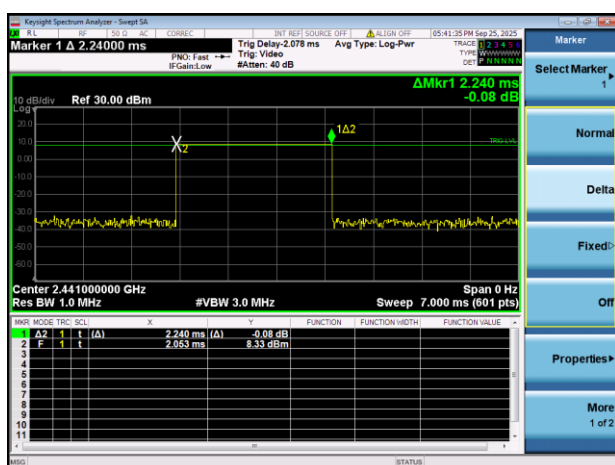
AFH Mode DH1



AFH Mode DH3



AFH Mode DH5



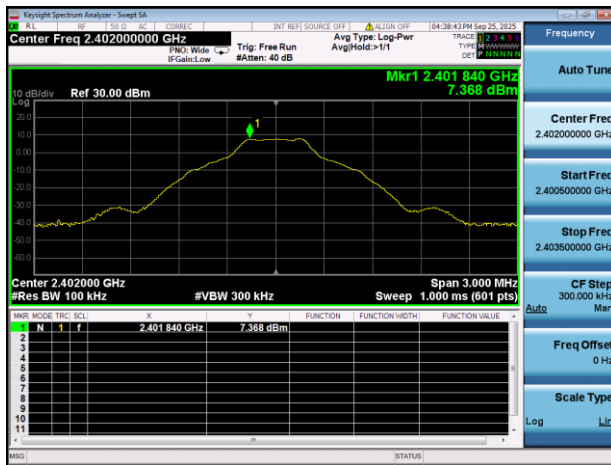
A.6 Conducted Spurious Emissions & Authorized-band band-edge

Test Data

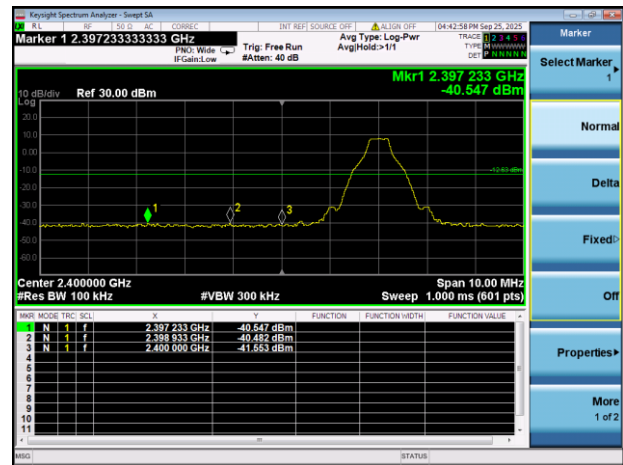
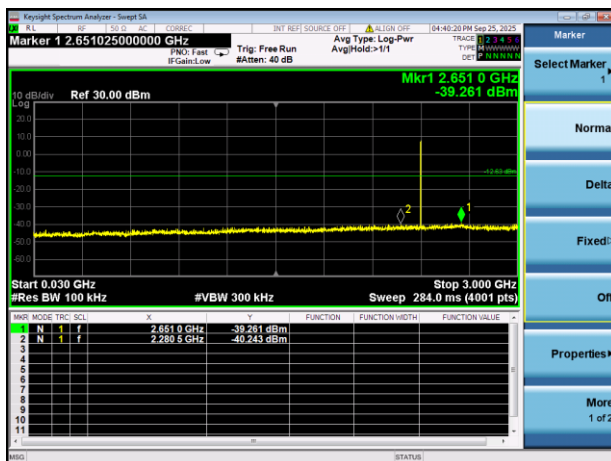
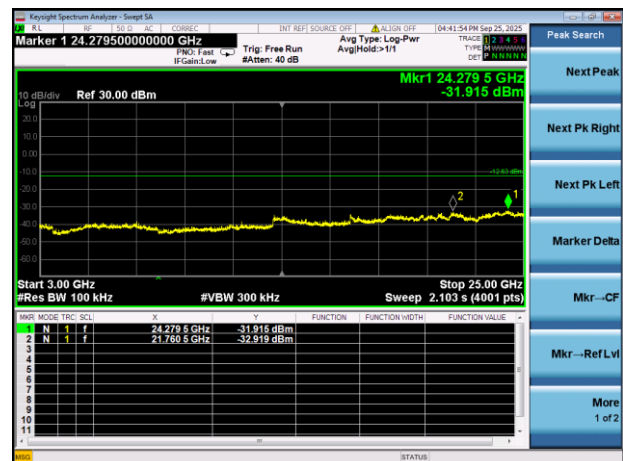
GFSK				
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-31.92	7.37	-12.63	Pass
Middle	-31.85	8.26	-11.74	Pass
High	-32.45	4.85	-15.15	Pass
8-DPSK				
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-33.25	5.58	-14.42	Pass
Middle	-31.11	6.21	-13.79	Pass
High	-33.14	2.37	-17.63	Pass
Hopping Mode				
Mode	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
GFSK	-31.44	7.93	-12.07	Pass
8-DPSK	-32.47	6.20	-13.80	Pass

Test Plots

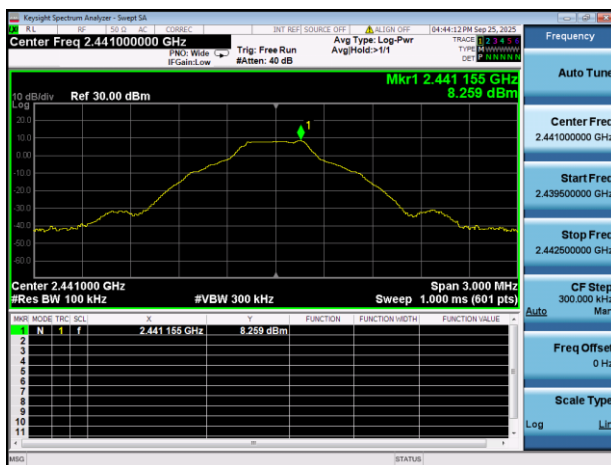
GFSK LOW CHANNEL, CARRIER LEVEL



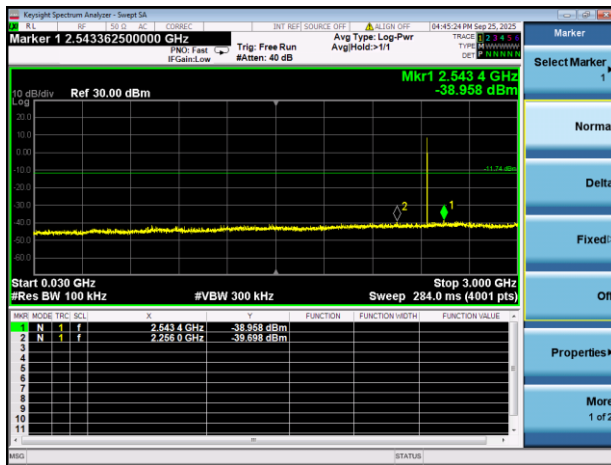
GFSK LOW CHANNEL, BAND EDGE

GFSK LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHzGFSK LOW CHANNEL, SPURIOUS
3 GHz ~ 25 GHz

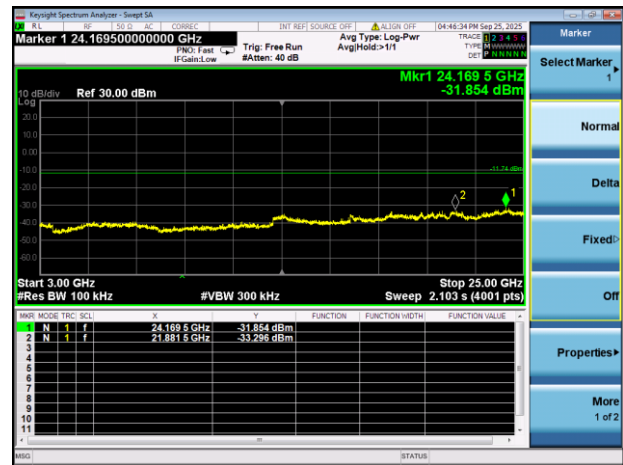
GFSK MIDDLE CHANNEL, CARRIER LEVEL



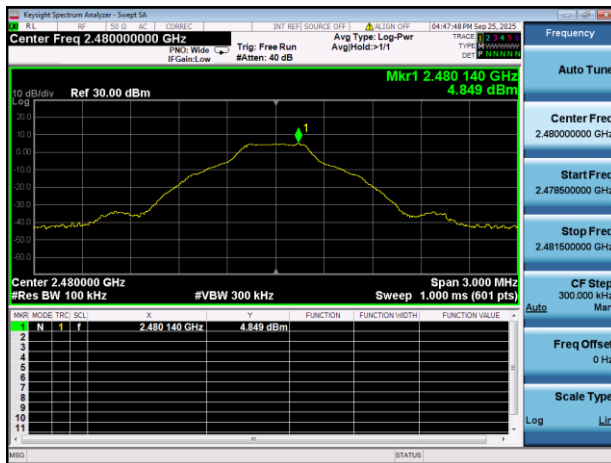
GFSK MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



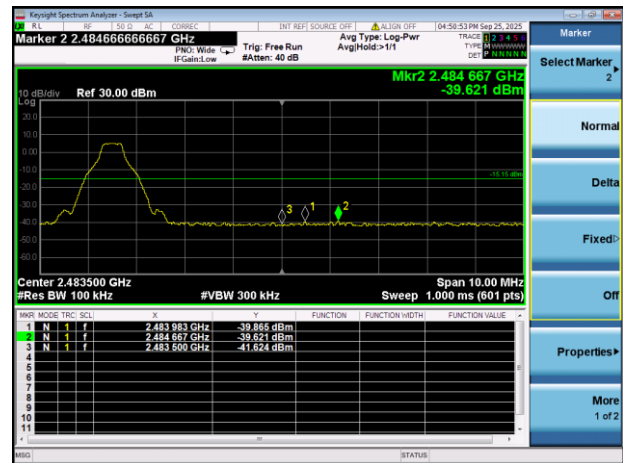
GFSK MIDDLE CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



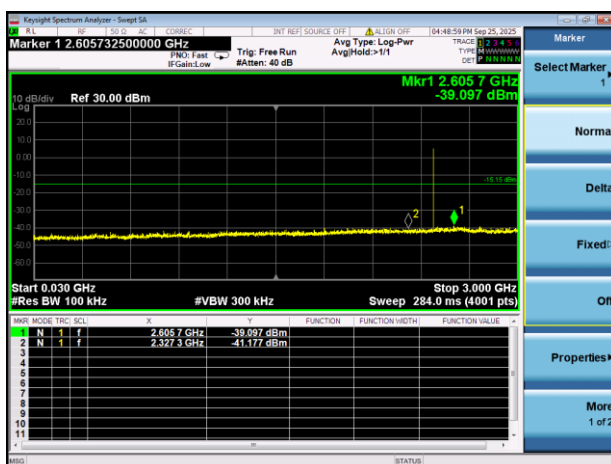
GFSK HIGH CHANNEL, CARRIER LEVEL



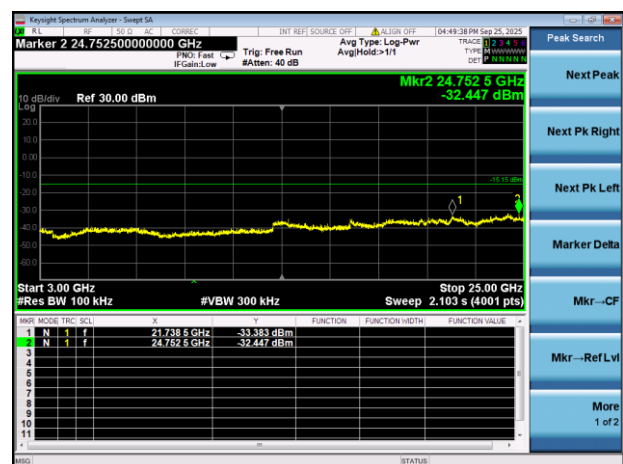
GFSK HIGH CHANNEL, BAND EDGE



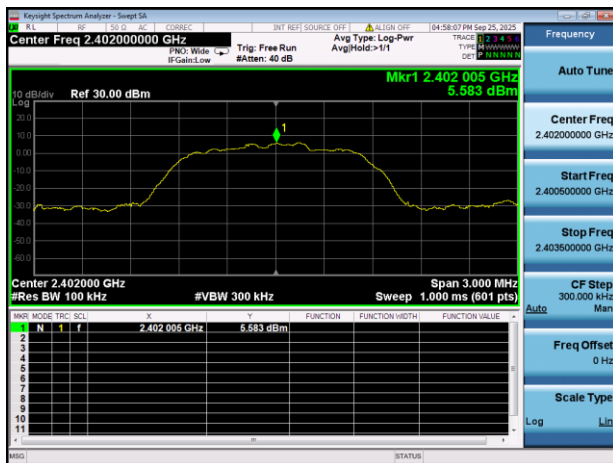
GFSK HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



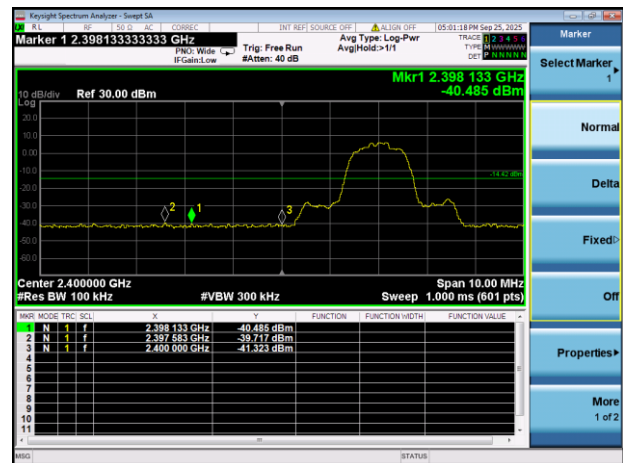
GFSK HIGH CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



8-DPSK LOW CHANNEL, CARRIER LEVEL

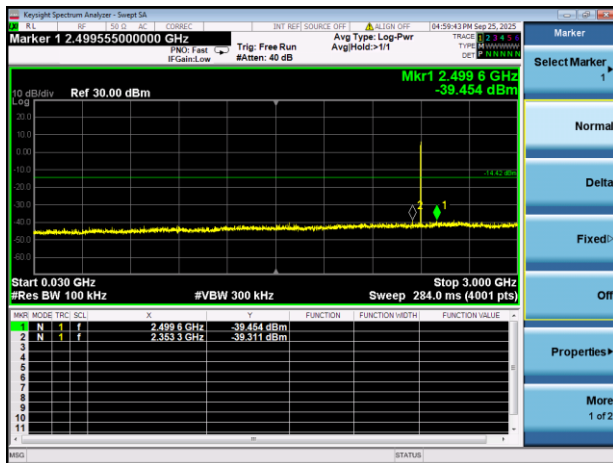


8-DPSK LOW CHANNEL, BAND EDGE



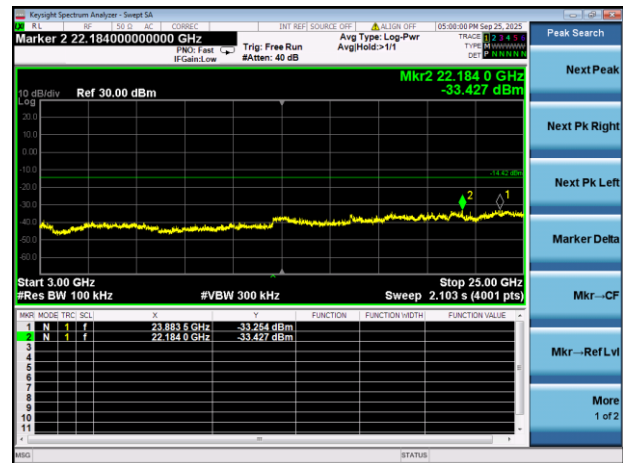
8-DPSK LOW CHANNEL, SPURIOUS

30 MHz ~ 3 GHz

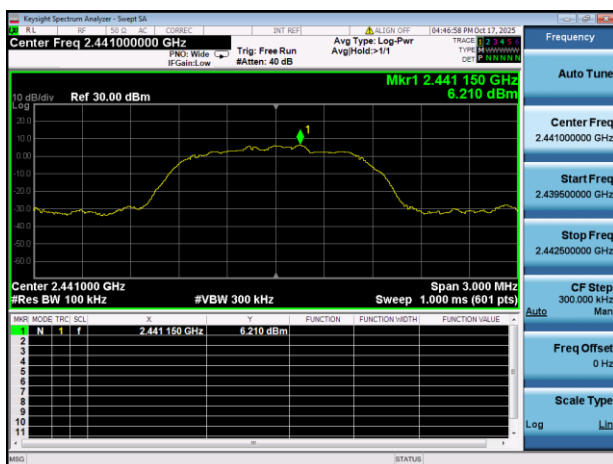


8-DPSK LOW CHANNEL, SPURIOUS

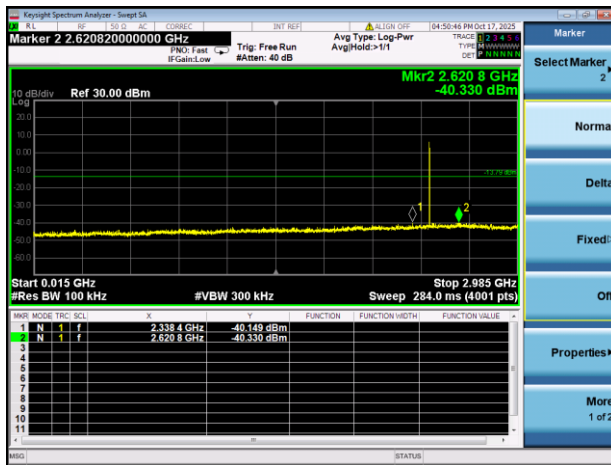
3 GHz ~ 25 GHz



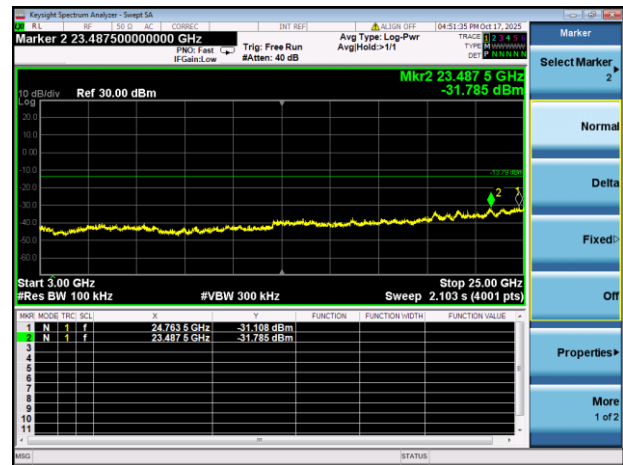
8-DPSK MIDDLE CHANNEL, CARRIER LEVEL



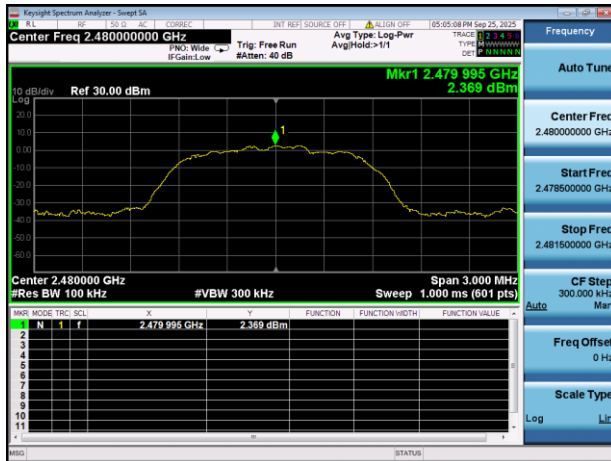
8-DPSK MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



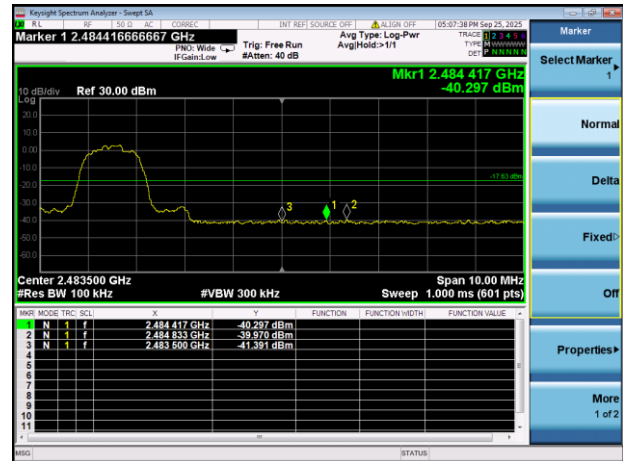
8-DPSK MIDDLE CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



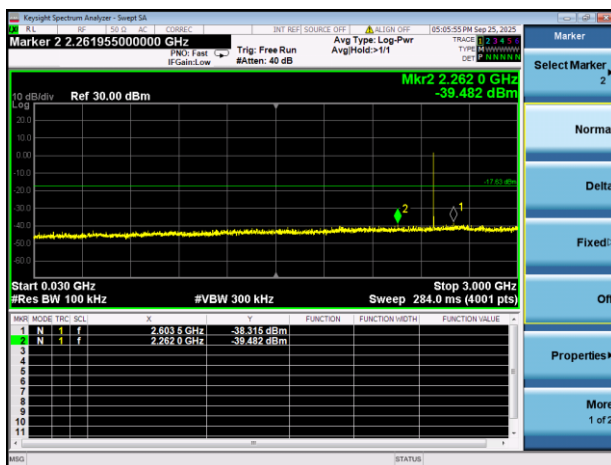
8-DPSK HIGH CHANNEL, CARRIER LEVEL



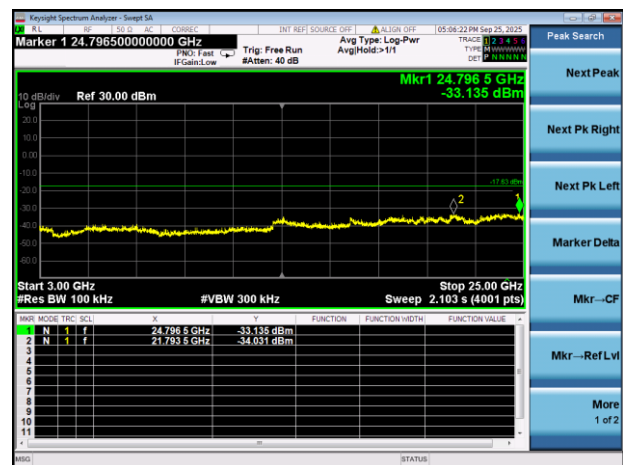
8-DPSK HIGH CHANNEL, BAND EDGE



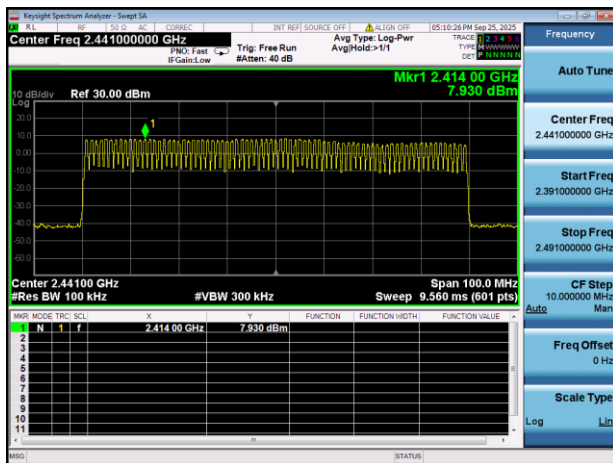
8-DPSK HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



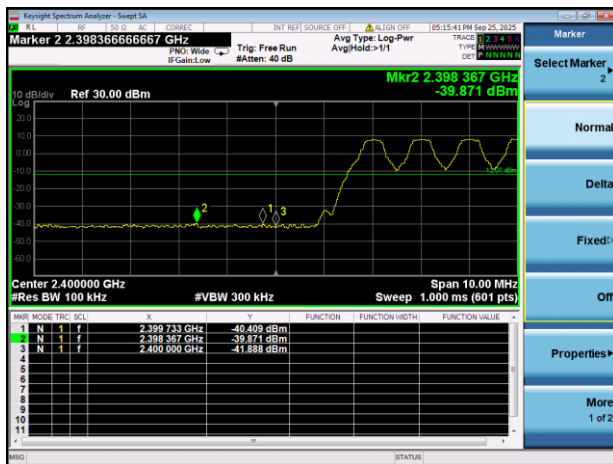
8-DPSK HIGH CHANNEL, SPURIOUS 3 GHz ~ 25 GHz



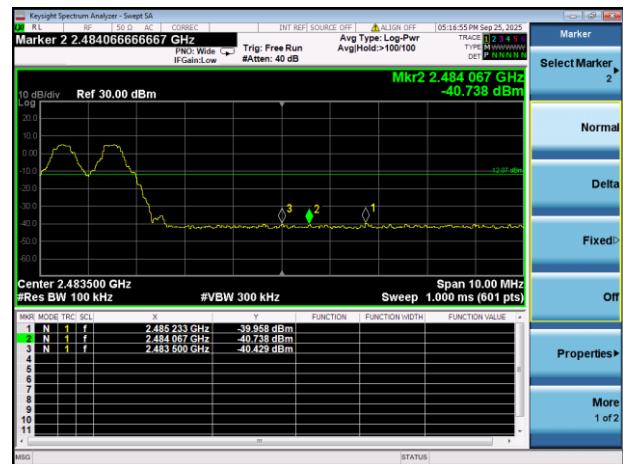
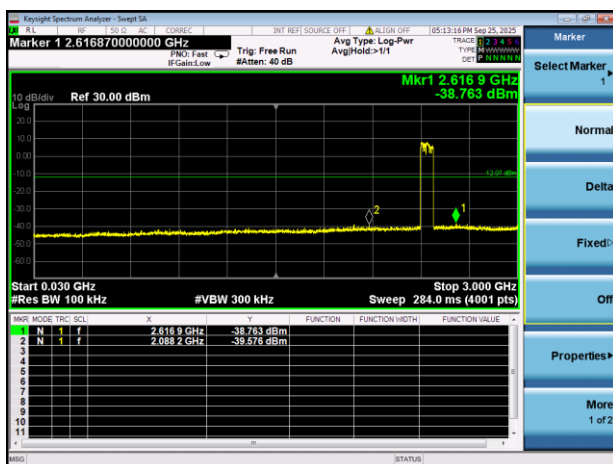
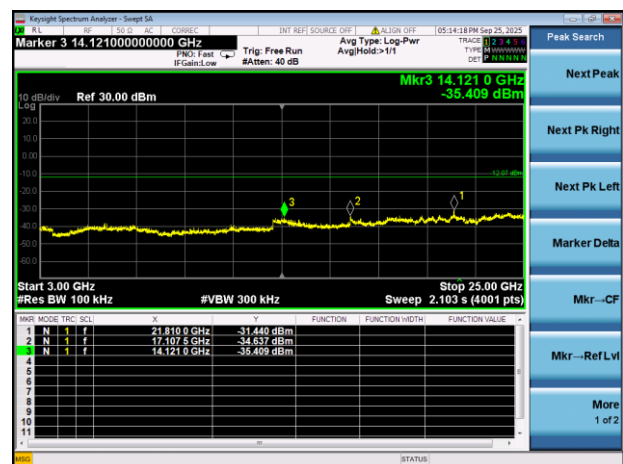
GFSK HOPPING, CARRIER LEVEL



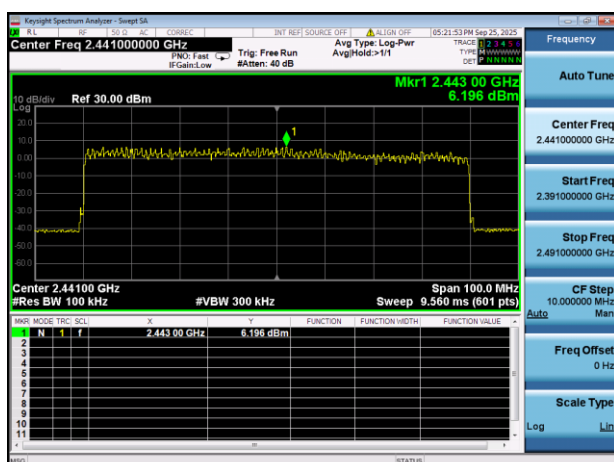
GFSK HOPPING BAND EDGE (LOW)



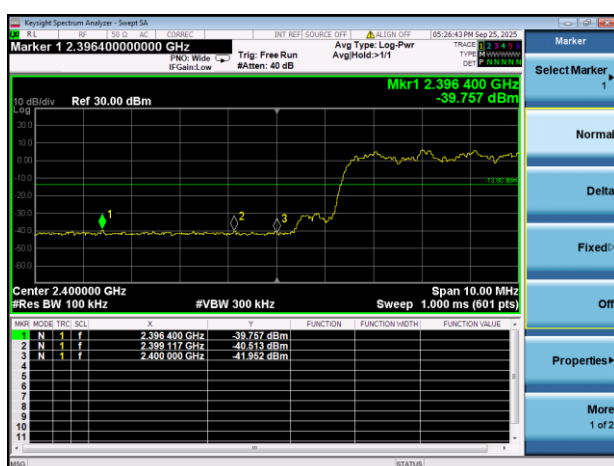
GFSK HOPPING BAND EDGE (HIGH)

GFSK Hopping Mode, SPURIOUS
30 MHz ~ 3 GHzGFSK Hopping Mode, SPURIOUS
3GHz ~ 25 GHz

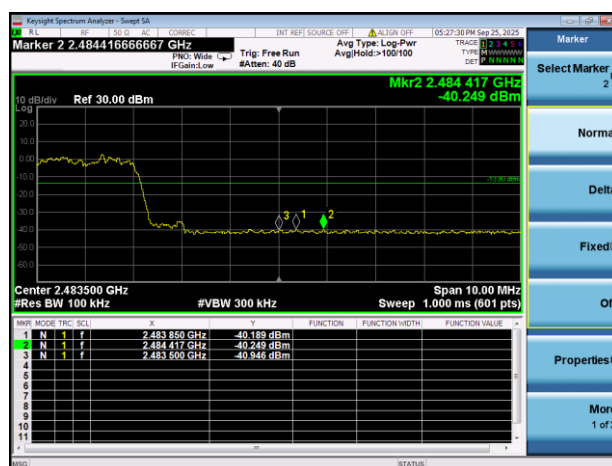
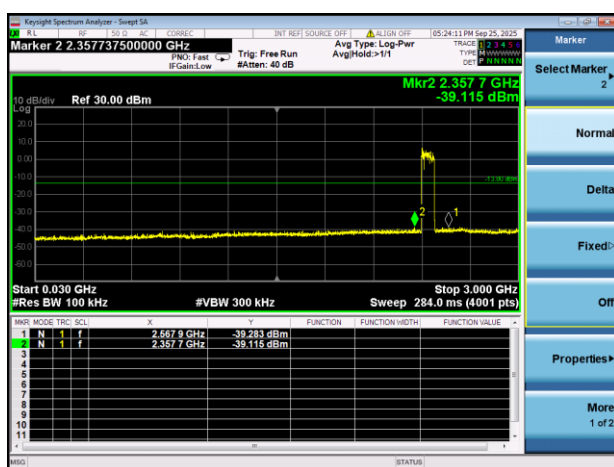
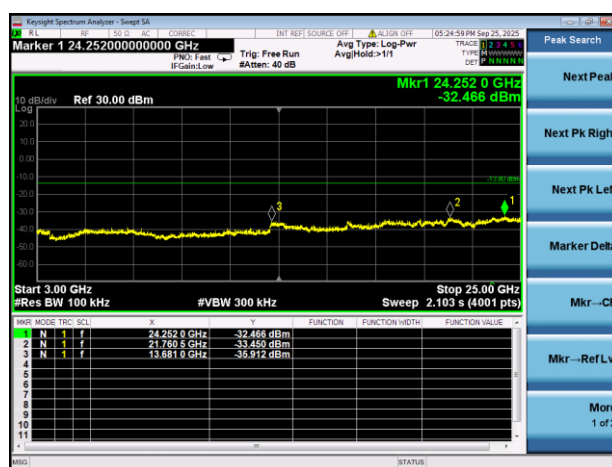
8-DPSK HOPPING, CARRIER LEVEL



8-DPSK Hopping BAND EDGE (LOW)

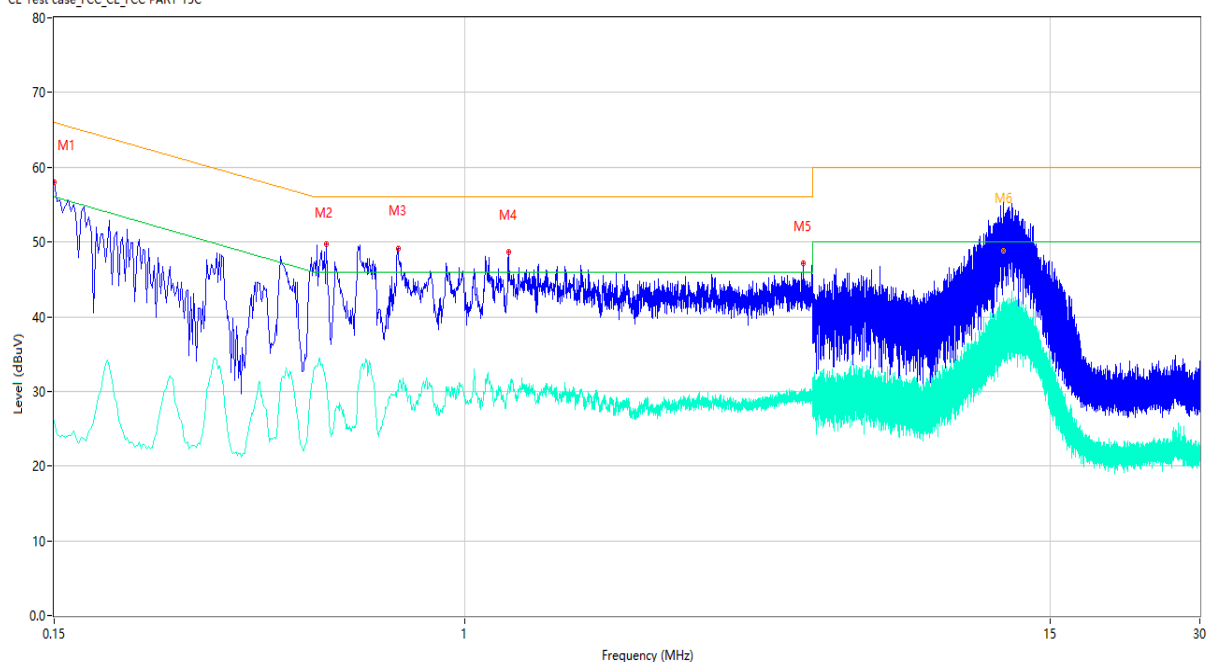


8-DPSK Hopping BAND EDGE (HIGH)

8-DPSK Hopping Mode, SPURIOUS
30 MHz ~ 3 GHz8-DPSK Hopping Mode, SPURIOUS
3GHz ~ 25 GHz

PHASE N

CE Test case_FCC_CE_FCC PART 15C



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.150	58.03	10.15	66.00	7.97	Peak	N	Pass
1**	0.150	26.11	10.15	56.00	29.89	AV	N	Pass
2	0.528	49.77	10.18	56.00	6.23	Peak	N	Pass
2**	0.528	30.86	10.18	46.00	15.14	AV	N	Pass
3	0.736	49.17	10.22	56.00	6.83	Peak	N	Pass
3**	0.736	30.00	10.22	46.00	16.00	AV	N	Pass
4	1.226	48.63	10.25	56.00	7.37	Peak	N	Pass
4**	1.226	30.57	10.25	46.00	15.43	AV	N	Pass
5	4.794	47.12	10.42	56.00	8.88	Peak	N	Pass
5**	4.794	30.01	10.42	46.00	15.99	AV	N	Pass
6	12.120	56.54	11.02	60.00	3.46	Peak	N	N/A
6*	12.120	48.89	11.02	60.00	11.11	QP	N	Pass
6**	12.120	42.52	11.02	50.00	7.48	AV	N	Pass

A.8 Radiated Spurious Emission

Note 1: The symbol of "--" in the table which means not application.

Note 2: 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.

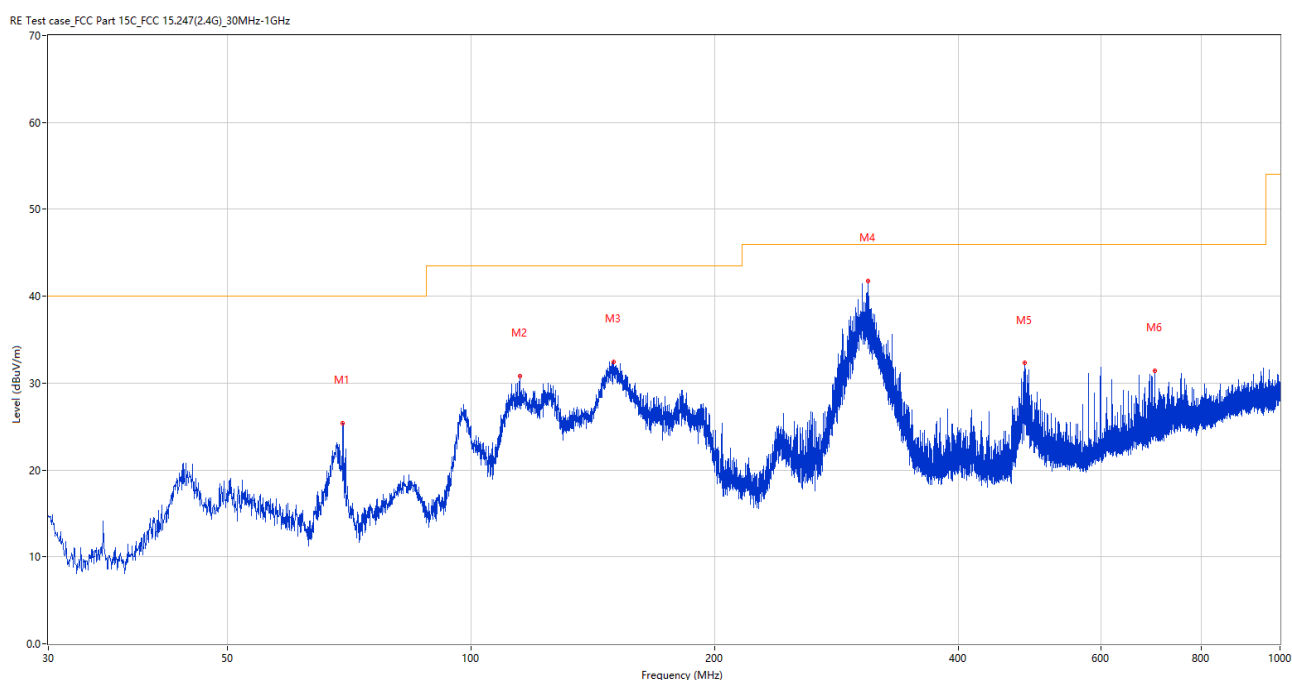
Note 3: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested.

Note 4: Results (dBuV/m) = Original reading level of Spectrum Analyzer (dBuV) + Factor (dB)

Note 5: 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.

Test Data and Plots

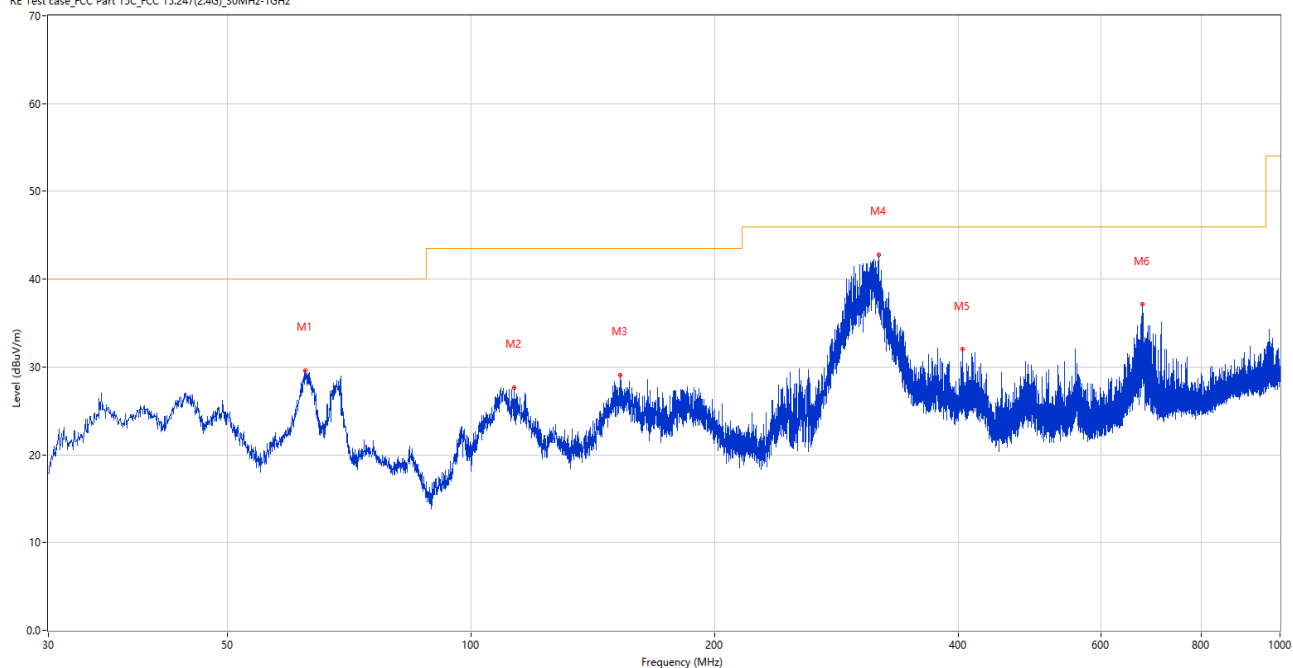
30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	69.382	25.39	-28.75	40.0	14.61	Peak	0.00	200	Horizontal	Pass
2	114.826	30.82	-27.29	43.5	12.68	Peak	238.00	200	Horizontal	Pass
3	149.892	32.45	-29.57	43.5	11.05	Peak	81.00	200	Horizontal	Pass
4	309.699	41.78	-23.20	46.0	4.22	Peak	248.00	100	Horizontal	Pass
5	483.669	32.30	-18.58	46.0	13.70	Peak	98.00	100	Horizontal	Pass
6	700.076	31.43	-13.76	46.0	14.57	Peak	5.00	100	Horizontal	Pass

30 MHz to 1 GHz, ANT V

RE Test case_FCC Part 15C_FCC 15.247(2.4G)_30MHz-1GHz



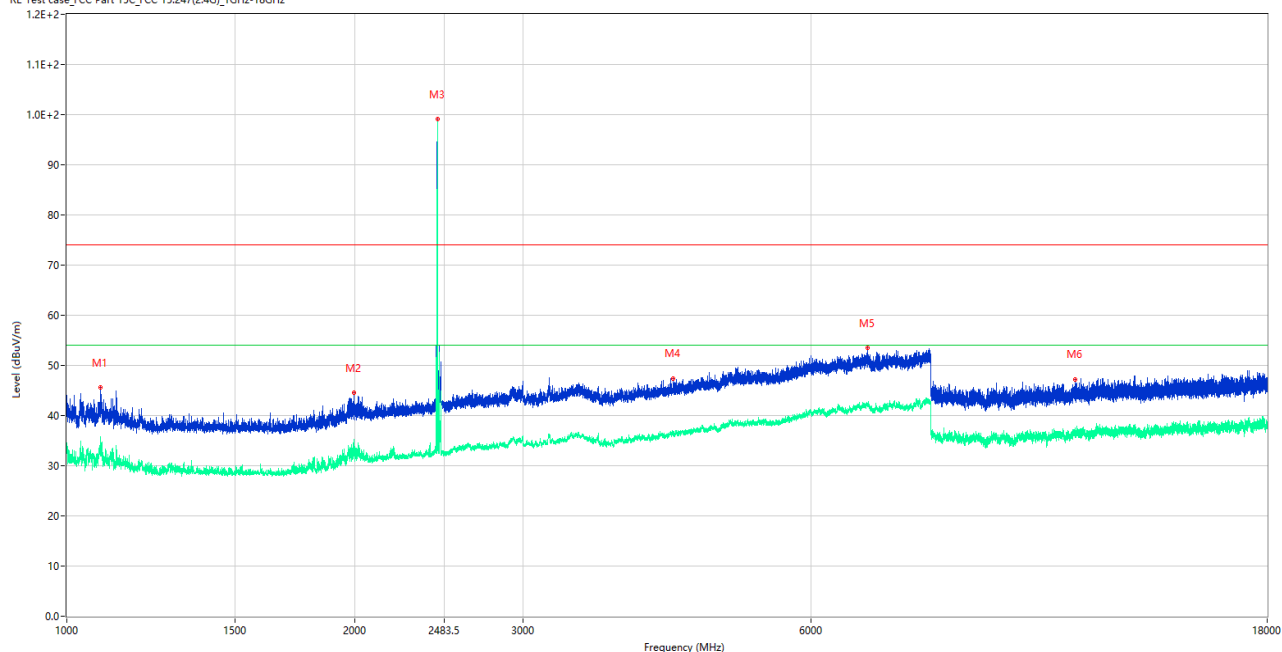
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	62.301	29.58	-26.59	40.0	10.42	Peak	1.00	100	Vertical	Pass
2	113.129	27.68	-26.99	43.5	15.82	Peak	158.00	100	Vertical	Pass
3	152.850	29.09	-29.44	43.5	14.41	Peak	173.00	200	Vertical	Pass
4	319.108	42.79	-22.80	46.0	3.21	Peak	149.00	200	Vertical	Pass
5	404.857	31.99	-20.27	46.0	14.01	Peak	113.00	200	Vertical	Pass
6	676.602	37.10	-14.17	46.0	8.90	Peak	125.00	200	Vertical	Pass

Note 1: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

Note 2: The spurious from 18GHz-25GHz is noise only, do not show on the report.

GFSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT H

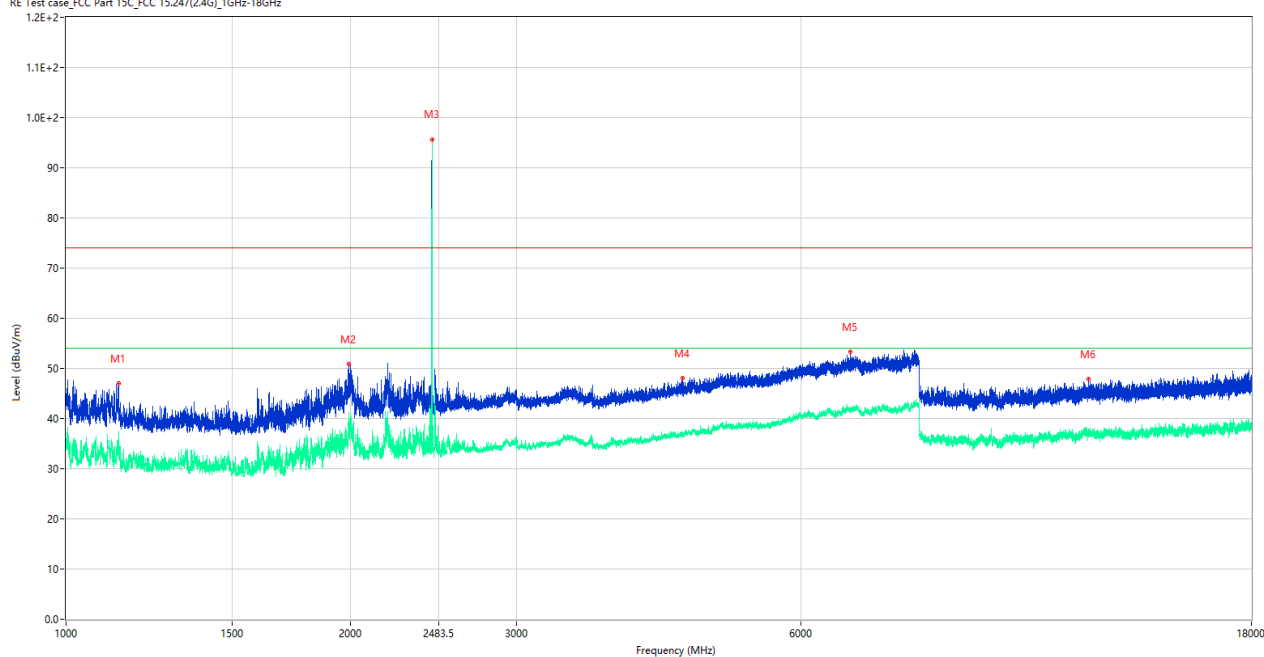
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1084.000	45.60	-15.71	74.0	28.40	Peak	168.00	150	Horizontal	Pass
1**	1084.000	32.98	-15.71	54.0	21.02	AV	168.00	150	Horizontal	Pass
2	1997.000	44.54	-14.44	74.0	29.46	Peak	164.00	150	Horizontal	Pass
2**	1997.000	32.57	-14.44	54.0	21.43	AV	164.00	150	Horizontal	Pass
3	2440.750	99.04	-12.38	74.0	-25.04	Peak	46.00	150	Horizontal	N/A
3**	2440.750	96.26	-12.38	54.0	-42.26	AV	46.00	150	Horizontal	N/A
4	4304.500	47.40	-3.50	74.0	26.60	Peak	345.00	150	Horizontal	Pass
4**	4304.500	36.62	-3.50	54.0	17.38	AV	345.00	150	Horizontal	Pass
5	6875.000	53.46	0.66	74.0	20.54	Peak	90.00	150	Horizontal	Pass
5**	6875.000	41.91	0.66	54.0	12.09	AV	90.00	150	Horizontal	Pass
6	11326.000	47.27	-4.20	74.0	26.73	Peak	350.00	150	Horizontal	Pass
6**	11326.000	36.62	-4.20	54.0	17.38	AV	350.00	150	Horizontal	Pass

GFSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT V

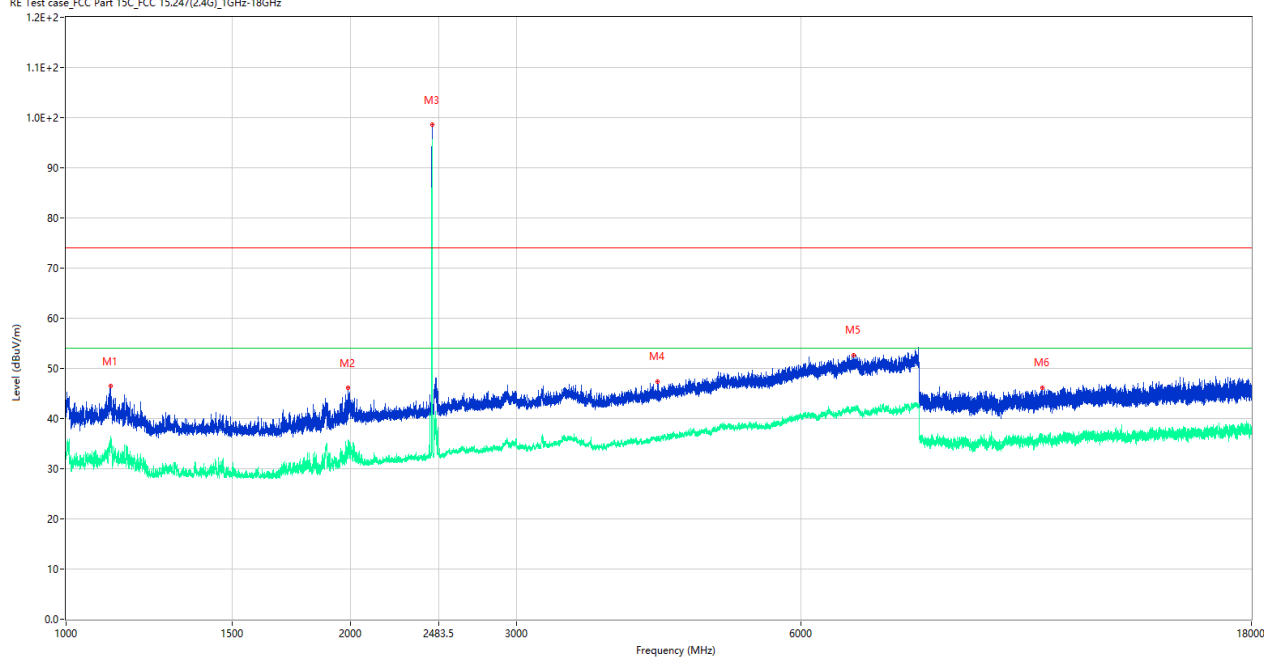
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1136.000	46.93	-15.53	74.0	27.07	Peak	104.00	150	Vertical	Pass
1**	1136.000	34.78	-15.53	54.0	19.22	AV	104.00	150	Vertical	Pass
2	1991.500	50.86	-14.69	74.0	23.14	Peak	104.00	150	Vertical	Pass
2**	1991.500	37.77	-14.69	54.0	16.23	AV	104.00	150	Vertical	Pass
3	2440.750	95.66	-12.38	74.0	-21.66	Peak	78.00	150	Vertical	N/A
3**	2440.750	92.68	-12.38	54.0	-38.68	AV	78.00	150	Vertical	N/A
4	4498.500	48.01	-3.24	74.0	25.99	Peak	290.00	150	Vertical	Pass
4**	4498.500	36.58	-3.24	54.0	17.42	AV	290.00	150	Vertical	Pass
5	6772.000	53.28	0.55	74.0	20.72	Peak	260.00	150	Vertical	Pass
5**	6772.000	41.32	0.55	54.0	12.68	AV	260.00	150	Vertical	Pass
6	12099.500	47.86	-3.12	74.0	26.14	Peak	240.00	150	Vertical	Pass
6**	12099.500	37.21	-3.12	54.0	16.79	AV	240.00	150	Vertical	Pass

8-DPSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT H

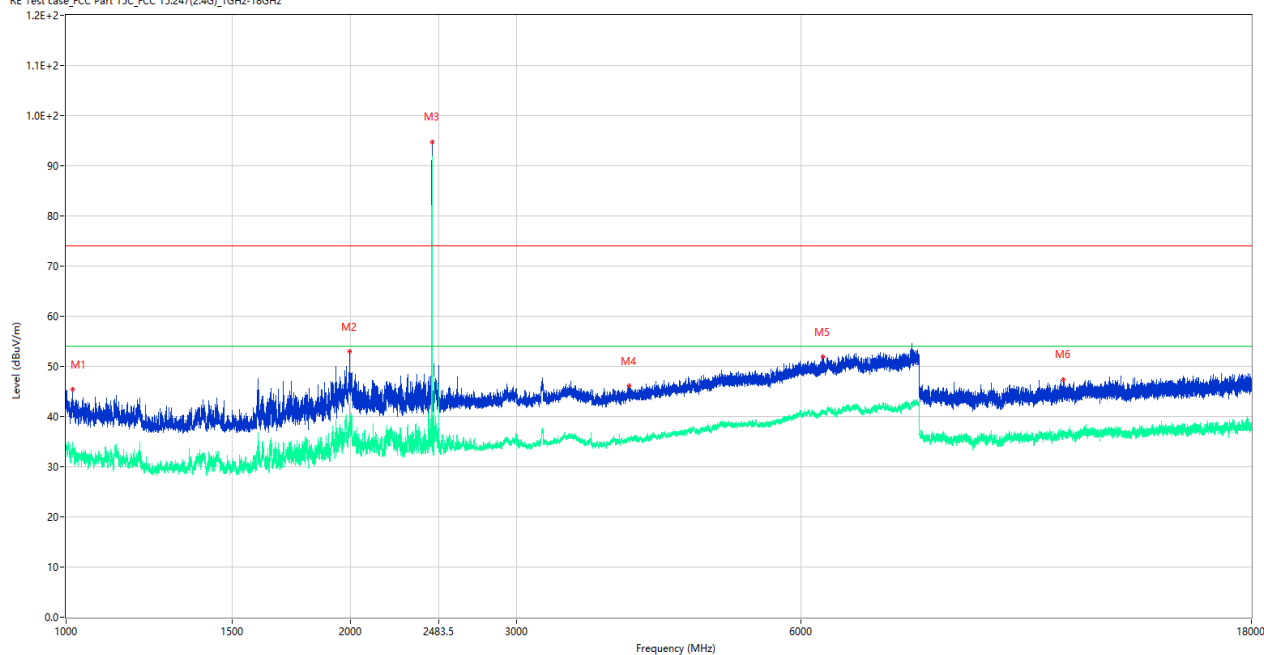
RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1114.750	46.42	-15.78	74.0	27.58	Peak	194.00	150	Horizontal	Pass
1**	1114.750	34.77	-15.78	54.0	19.23	AV	194.00	150	Horizontal	Pass
2	1989.500	46.12	-14.79	74.0	27.88	Peak	121.00	150	Horizontal	Pass
2**	1989.500	35.00	-14.79	54.0	19.00	AV	121.00	150	Horizontal	Pass
3	2441.000	98.52	-12.39	74.0	-24.52	Peak	52.00	150	Horizontal	N/A
3**	2441.000	95.23	-12.39	54.0	-41.23	AV	52.00	150	Horizontal	N/A
4	4226.500	47.30	-3.98	74.0	26.70	Peak	265.00	150	Horizontal	Pass
4**	4226.500	35.80	-3.98	54.0	18.20	AV	265.00	150	Horizontal	Pass
5	6817.500	52.65	0.35	74.0	21.35	Peak	360.00	150	Horizontal	Pass
5**	6817.500	41.77	0.35	54.0	12.23	AV	360.00	150	Horizontal	Pass
6	10806.000	46.22	-3.18	74.0	27.78	Peak	0.00	150	Horizontal	Pass
6**	10806.000	35.93	-3.18	54.0	18.07	AV	0.00	150	Horizontal	Pass

8-DPSK MIDDLE CHANNEL 1 GHz to 18 GHz, ANT V

RE Test case_FCC Part 15C_FCC 15.247(2.4G)_1GHz-18GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1016.000	45.38	-14.74	74.0	28.62	Peak	92.00	150	Vertical	Pass
1**	1016.000	34.45	-14.74	54.0	19.55	AV	92.00	150	Vertical	Pass
2	1996.500	52.96	-14.47	74.0	21.04	Peak	111.00	150	Vertical	Pass
2**	1996.500	38.02	-14.47	54.0	15.98	AV	111.00	150	Vertical	Pass
3	2441.000	94.76	-12.39	74.0	-20.76	Peak	78.00	150	Vertical	N/A
3**	2441.000	91.57	-12.39	54.0	-37.57	AV	78.00	150	Vertical	N/A
4	3945.500	46.17	-4.34	74.0	27.83	Peak	188.00	150	Vertical	Pass
4**	3945.500	35.19	-4.34	54.0	18.81	AV	188.00	150	Vertical	Pass
5	6329.000	51.96	-0.66	74.0	22.04	Peak	276.00	150	Vertical	Pass
5**	6329.000	41.19	-0.66	54.0	12.81	AV	276.00	150	Vertical	Pass
6	11372.500	47.39	-3.75	74.0	26.61	Peak	265.00	150	Vertical	Pass
6**	11372.500	36.41	-3.75	54.0	17.59	AV	265.00	150	Vertical	Pass

A.9 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: The Level (dBuV/m) has been corrected by factor.

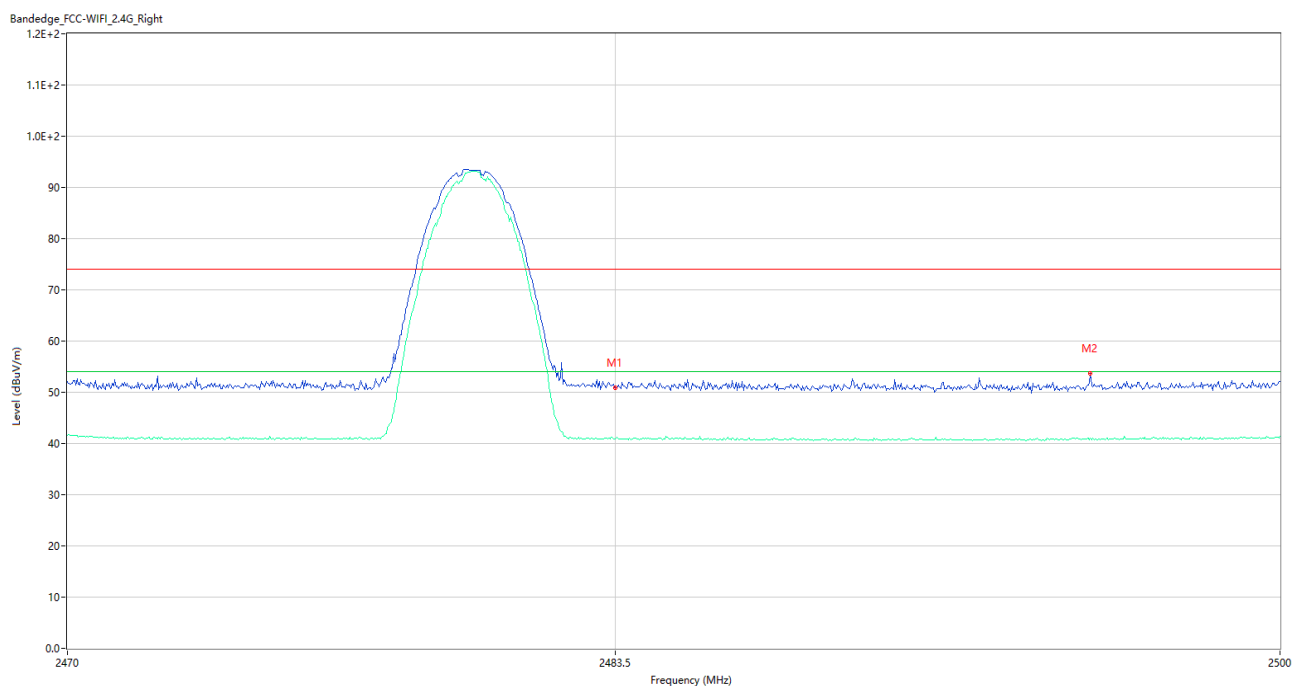
Test Data and Plots

GFSK LOW CHANNEL



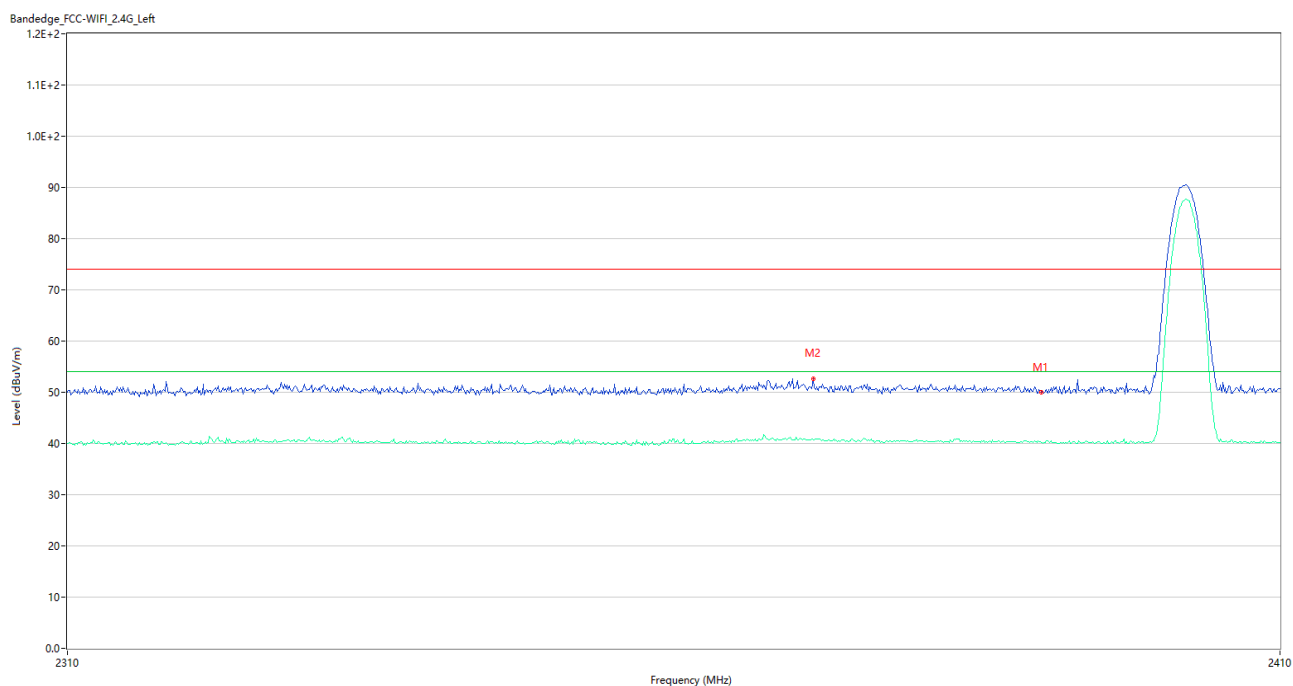
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2390.000	50.80	-4.87	74.0	23.20	Peak	59.18	150	Horizontal	Pass
1**	2390.000	40.10	-4.87	54.0	13.90	AV	59.18	150	Horizontal	Pass
2	2380.500	51.95	-4.34	74.0	22.05	Peak	7.00	150	Horizontal	Pass
2**	2380.500	40.43	-4.34	54.0	13.57	AV	7.00	150	Horizontal	Pass

GFSK HIGH CHANNEL



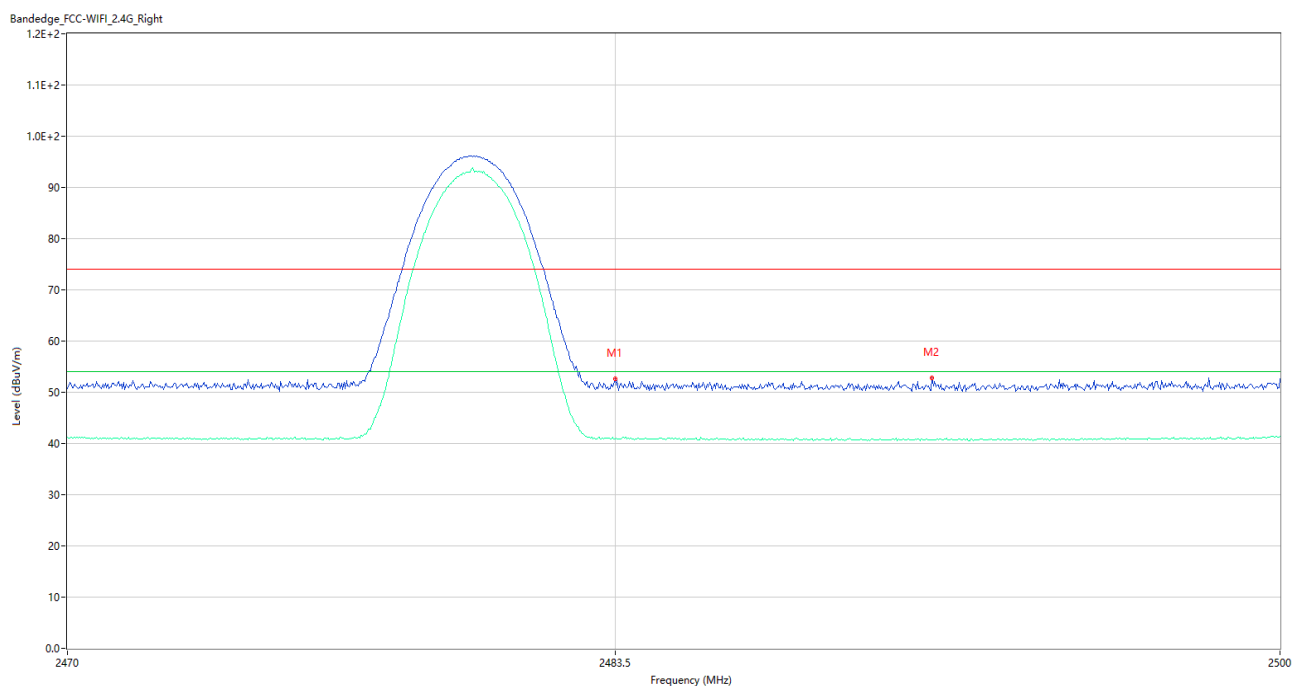
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	50.93	-3.78	74.0	23.07	Peak	204.00	150	Vertical	Pass
1**	2483.500	40.89	-3.78	54.0	13.11	AV	204.00	150	Vertical	Pass
2	2495.290	53.66	-3.93	74.0	20.34	Peak	96.00	150	Vertical	Pass
2**	2495.290	41.01	-3.93	54.0	12.99	AV	96.00	150	Vertical	Pass

8-DPSK LOW CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2390.000	49.99	-4.87	74.0	24.01	Peak	322.93	150	Vertical	Pass
1**	2390.000	40.24	-4.87	54.0	13.76	AV	322.93	150	Vertical	Pass
2	2371.000	52.63	-4.03	74.0	21.37	Peak	320.00	150	Vertical	Pass
2**	2371.000	40.66	-4.03	54.0	13.34	AV	320.00	150	Vertical	Pass

8-DPSK HIGH CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.500	52.56	-3.78	74.0	21.44	Peak	354.00	150	Horizontal	Pass
1**	2483.500	40.90	-3.78	54.0	13.10	AV	354.00	150	Horizontal	Pass
2	2491.360	52.85	-3.86	74.0	21.15	Peak	187.00	150	Horizontal	Pass
2**	2491.360	40.73	-3.86	54.0	13.27	AV	187.00	150	Horizontal	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SH2580981-AR-1.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SH2580981-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SH2580981-AI.PDF”.

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--END OF REPORT--